



Australian Government

AUM Automotive Manufacturing

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AUM20118 Certificate II in Automotive Manufacturing Production - Passenger Motor Vehicle

Modification History

Release	Comment
Release 1	New qualification.
Release 2	This version released with AUM Automotive Manufacturing Training Package version 2.1. The following elective units of competency have been deleted as directed by the AISC: • AUMFBK001 Receive and dispatch vehicle components. The above training products were identified as having zero enrolments over a three year period. Removed duplicate errors in unit grid and minor typographical errors in unit titles.

Qualification Description

This qualification reflects passenger vehicle production roles in the automotive manufacturing industry. These may include undertaking a range of limited supervisory tasks with accountability for the quality of outcomes. The qualification is suitable for entry into the automotive manufacturing industry.

No licensing, legislative or certification requirements apply to this qualification at the time of publication.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 9 units of competency:
 - 6 core units, plus
 - 3 elective units

Elective units must ensure the integrity of the qualification's Australian Qualification Framework (AQF) alignment and contribute to a valid, industry-supported vocational outcome, without duplicating the outcome of another unit chosen for this qualification.

The electives are to be chosen as follows:

- up to 3 elective units may be chosen from the elective units listed below
- up to 2 elective units may be chosen from a Certificate II qualification or above in this Training Package or another endorsed Training Package or accredited course

Core Units

Unit code	Unit title
AUMAF002	Maintain workplace relationships
AUMAMA001	Contribute to production goals
AUMAMA002	Work effectively in teams
AUMASA011	Apply safe work practices in the automotive manufacturing environment
AUMATK002	Prepare and operate tools, equipment and machinery
AUMFBM001	Prepare and process automotive materials and components

Elective Units

Unit code	Unit title
AUMATK013	Monitor and maintain automotive equipment
AUMFQM001	Apply continuous improvement in automotive manufacturing
AURAEA2002	Follow environmental and sustainability best practice in an automotive workplace
MSAENV272B	Participate in environmentally sustainable work practices
MSS402001	Apply competitive systems and practices
MSS402002	Sustain process improvements
MSS402010	Manage the impact of change on own work
MSS402040	Apply 5S procedures
MSS402051	Apply quality standards
MSS402080	Undertake root cause analysis

Qualification Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUM20118 Certificate II in Automotive Manufacturing Production – Passenger Motor Vehicle	AUM20113 Certificate II in Automotive Manufacturing Production – Passenger Motor Vehicle	Updates to core units of competency	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUM20218 Certificate II in Automotive Manufacturing Production - Bus, Truck and Trailer

Modification History

Release	Comment
Release 1	New qualification.
Release 2	This version released with AUM Automotive Manufacturing Training Package Version 2.1. The following elective units of competency have been deleted as directed by the AISC: • AUMATS001 Stamp and press vehicle parts. The above training products were identified as having zero enrolments over a three year period. Removed duplication errors in unit grids and typographical errors in unit titles.

Qualification Description

This qualification reflects the role of individuals who perform a range of tasks in the manufacturing sector. The range of technical skills and knowledge is limited. The qualification is suitable for entry into the automotive manufacturing industry.

No licensing, legislative or certification requirements apply to this qualification at the time of publication.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 14 units of competency:
 - 5 core units, plus
 - 9 elective units.

Elective units must ensure the integrity of the qualification's Australian Qualification Framework (AQF) alignment and contribute to a valid, industry-supported vocational outcome, without duplicating the outcome of another unit chosen for this qualification.

The electives are to be chosen as follows:

- up to 9 elective units may be chosen from the elective units listed below
- up to 3 elective units may be chosen from a Certificate II or above qualification in this Training Package or another endorsed Training Package or accredited course

Core Units

Unit code	Unit title
AUMAMA002	Work effectively in teams
AUMASA011	Apply safe work practices in the automotive manufacturing environment
AUMATK002	Prepare and operate tools, equipment and machinery
AUMGTA011	Read and interpret work orders and working drawings
AUMGTM001	Assemble vehicle components

Elective Units

Unit code	Unit title
AUMAMA001	Contribute to production goals
AUMATK013	Monitor and maintain automotive equipment
AUMFBM001	Prepare and process automotive materials and components
AUMFQM001	Apply continuous improvement in automotive manufacturing
AUMGCA001	Provide customer service
AUMGQA001	Apply workplace technical quality standards
AUMGTG001	Install fixed and moveable glass components on vehicles
AUMGTM002	Assemble vehicle frames and axles
AUMGTM013	Install or replace mechanical units and assemblies
AUMGTM004	Install and fit out components
AUMGTP001	Finish and paint vehicle body and part surfaces
AUMGTR003	Test, modify and repair vehicle electrical circuits and systems

Unit code	Unit title
AUMGTS001	Prepare materials for fabrication using jigs and fixtures
AUMGTS004	Fabricate parts for vehicle sub-assemblies
AUMGTT001	Apply trim to vehicle components
AUMGTW001	Perform basic welding, thermal cutting, heating and gouging
AUMGTW002	Perform mechanical cutting
AUMGTY001	Paint vehicle chassis and panels
AURAEA002	Follow environmental and sustainability best practice in an automotive workplace
AURAF001	Use numbers in an automotive workplace
AURETR006	Solder electrical wiring and circuits
MSS402001	Apply competitive systems and practices
MSS402002	Sustain process improvements
MSS402010	Manage the impact of change on own work
MSS402040	Apply 5S procedures
MSS402051	Apply quality standards
MSS402080	Undertake root cause analysis
TLID3036	Lift and move load using a mobile crane

Qualification Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUM20218 Certificate II in Automotive Manufacturing Production – Bus, Truck and Trailer	AUM20213 Certificate II in Automotive Manufacturing Production – Bus, Truck and Trailer	Updates to core units of competency	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUM30113 Certificate III in Automotive Manufacturing Technical Operations - Passenger Motor Vehicle

Modification History

Release	Comment
Release 1	Qualification updated to reflect the new standards for Training Packages Replaces AUM30112 Certificate III in Automotive Manufacturing Technical Operations – Passenger Motor Vehicle
Release 2	Updated due to superseded AUR units of competency

Qualification Description

This qualification reflects the role of individuals in passenger vehicle production roles in the automotive manufacturing industry. This may include performing a range of supervisory or specialist roles, such as quality specialist, process specialist, team leader or production supervisor. The qualification is suitable for entry into the automotive manufacturing industry.

No licensing, legislative or certification requirements apply to this qualification at the time of publication.

Packaging Rules

Total number of units = 10

- **6 core units**, plus
- **4 elective units**, of which:
 - up to 4 elective units may be chosen from the elective units listed below
 - up to 2 elective units may be chosen from a Certificate II qualification or above in this Training Package or another endorsed Training Package or accredited course, provided that the units chosen contribute to the vocational outcome of this qualification and do not duplicate the outcome of another unit chosen for the qualification.

Core Units

Unit code	Unit title

Unit code	Unit title
AUMAMA002	Work effectively in teams
AUMASM001	Monitor and maintain a safe automotive work environment
AUMFMM001	Reduce cycle time in automotive manufacturing work processes
AUMFMM002	Reduce waste in automotive manufacturing work processes
AUMFQM002	Sustain quality standards in an automotive manufacturing workplace
AUMGQA001	Apply workplace technical quality standards

Elective Units

Unit code	Unit title
AUMAMM001	Influence and lead work groups in an automotive manufacturing workplace
AUMATA003	Repair faults in vehicle metal components
AUMATA004	Diagnose and repair mechanical faults
AUMATA005	Rectify assembly faults
AUMATE001	Rework faulty production engines
AUMATN001	Repair structural faults in vehicles
AUMATP001	Rectify minor faults in vehicle paintwork
AUMATP002	Control vehicle paint line production
AUMATR001	Repair electrical faults in assembled vehicles
AUMATW001	Test vehicle welds ultrasonically
AUMFTA002	Perform die coating
AUMFTA003	Set and adjust automotive production machine tools
AUMFTA004	Monitor and maintain operation of metal treatment plants
AUMFTE001	Conduct engine hot tests
AUMFTM001	Undertake preliminary fault finding and machine reset

Unit code	Unit title
AUMGMA001	Participate in workplace productivity improvement processes
AUMGTM005	Read and interpret engineering drawings and determine requirements
AURAEA002	Follow environmental and sustainability best practice in an automotive workplace
BSBDIV301	Work effectively with diversity
BSBINM301	Organise workplace information
BSBINM302	Utilise a knowledge management system
BSBINN301	Promote innovation in a team environment
BSBWHS301	Maintain workplace safety
MSAPMSUP390A	Use structured problem solving tools
MSL973001A	Perform basic tests
MSL973007A	Perform microscopic examination
MSS402001A	Apply competitive systems and practices
MSS402002A	Sustain process improvements
MSS402010A	Manage the impact of change on own work
MSS402020A	Apply quick changeover procedures
MSS402021A	Apply Just in Time procedures
MSS402030A	Apply cost factors to work practices
MSS402031A	Interpret product costs in terms of customer requirements
MSS402040A	Apply 5S procedures
MSS403035A	Implement the visual workplace
MSS404082A	Assist in implementing a proactive maintenance strategy
TLIA3017A	Identify products and store to specifications
TLIA3023A	Coordinate stocktakes

Unit code	Unit title
TLIA4028A	Assess and monitor optimum stock levels

Qualification Mapping Information

AUM30112 Certificate III in Automotive Manufacturing Technical Operations - Passenger Motor Vehicle

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUM30218 Certificate III in Automotive Manufacturing Technical Operations - Bus, Truck and Trailer

Modification History

Release	Comment
Release 1	New qualification.
Release 2	This version released with AUM Automotive Manufacturing Training Package version 2.1. The following elective units of competency have been deleted as directed by the AISC: • AURHTB004 Overhaul air braking system components • AUMGTW006 Machine Parts. The above training products were identified as having zero enrolments over a three year period. Removed duplicate errors in unit grid and typographical errors in unit titles. The following unit was included in the elective bank: • AUMATA008 Produce drawings manually.

Qualification Description

This qualification reflects the role of individuals in the production of bus, truck and trailer and components manufacture. The qualification is suitable for entry into the automotive manufacturing industry.

No licensing, legislative or certification requirements apply to this qualification at the time of publication.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 28 units of competency:
 - 11 core units, plus
 - 17 elective units.

Elective units must ensure the integrity of the qualification's Australian Qualification Framework (AQF) alignment and contribute to a valid, industry-supported vocational outcome, without duplicating the outcome of another unit chosen for this qualification.

The electives are to be chosen as follows:

- up to 17 elective units may be chosen from the elective units listed below
- up to 5 elective units may be chosen from a Certificate II qualification or above in this Training Package or another endorsed Training Package or accredited course.

Core Units

Unit code	Unit title
AUMATK002	Prepare and operate tools, equipment and machinery
AUMATK013	Monitor and maintain automotive equipment
AUMGLM011	Apply heavy vehicle standards
AUMGQA001	Apply workplace technical quality standards
AUMGTA011	Read and interpret work orders and working drawings
AUMGTM005	Read and interpret engineering drawings and determine requirements
AUMGTW001	Perform basic welding, thermal cutting, heating and gouging
AUMGTW002	Perform mechanical cutting
AURAF A003	Communicate effectively in an automotive workplace
AURAMA001	Work effectively with others in an automotive workplace
AURASA002	Follow safe working practices in an automotive workplace

Elective Units

Unit code	Unit title
AUMABA012	Operate load shifting equipment
AUMATA008	Produce drawings manually
AUMGMA001	Participate in workplace productivity improvement processes
AUMGTA002	Service vehicle after assembly

Unit code	Unit title
AUMGTB011	Assemble, install and test braking system kits
AUMGTD001	Perform wheel alignment operations
AUMGTG001	Install fixed and moveable glass components on vehicles
AUMGTM001	Assemble vehicle components
AUMGTM002	Assemble vehicle frames and axles
AUMGTM004	Install and fit out components
AUMGTM006	Assemble, install and test hydraulic system kits
AUMGTM007	Assemble, install and test pneumatic system kits
AUMGTM008	Bond and repair fibreglass components
AUMGTM013	Install or replace mechanical units and assemblies
AUMGTN001	Replace and repair vehicle body panels and fittings
AUMGTP001	Finish and paint vehicle body and part surfaces
AUMGTP002	Rework vehicle paint faults
AUMGTR001	Install and replace vehicle electrical units and assemblies
AUMGTR002	Manufacture and modify vehicle wiring harnesses
AUMGTR003	Test, modify and repair vehicle electrical circuits and systems
AUMGTS001	Prepare materials for fabrication using jigs and fixtures
AUMGTS002	Prepare materials for fabrication using manual processes
AUMGTS003	Fabricate plugs
AUMGTS004	Fabricate parts for vehicle sub-assemblies
AUMGTT001	Apply trim to vehicle components
AUMGTW003	Perform manual metal arc welding
AUMGTW004	Perform gas tungsten arc welding
AUMGTW005	Perform gas metal arc welding

Unit code	Unit title
AUMGTY001	Paint vehicle chassis and panels
AUMGTY002	Install vehicle components
AUMGTY003	Modify and repair chassis and frames
AURACA001	Respond to customer needs and enquiries in an automotive workplace
AURAEA002	Follow environmental and sustainability best practice in an automotive workplace
AURHTB001	Diagnose and repair heavy vehicle air braking systems
AURHTD003	Diagnose and repair heavy commercial vehicle suspension systems
AURTTB004	Inspect and service air braking systems
AURTTD003	Inspect suspension systems
AURTTD004	Inspect and service suspension systems
MEM30031A	Operate computer-aided design (CAD) system to produce basic drawing elements
MSS402001	Apply competitive systems and practices
MSS402010	Manage the impact of change on own work
MSS402080	Undertake root cause analysis

Qualification Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUM30218 Certificate III in Automotive Manufacturing Technical Operations – Bus, Truck and Trailer	AUM30213 Certificate III in Automotive Manufacturing Technical Operations – Bus, Truck and Trailer	Updates to core units of competency	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Modification History

Release	Comment
Release 1	Qualification updated to reflect the new standards for Training Packages Replaces AUM40112 Certificate IV in Automotive Manufacturing
Release 2	Updated due to superseded imported AUR units.

Qualification Description

This qualification reflects the role of master technicians in the automotive manufacturing sector. The qualification is suitable for automotive manufacturing industries, including passenger motor vehicle and bus, truck and trailer.

No licensing, legislative or certification requirements apply to this qualification at the time of publication.

Entry Requirements

Those undertaking this qualification are required to have AUMGQA001 Apply workplace technical quality standards, or be able to demonstrate equivalent competency.

Packaging Rules

Total number of units = 10

- **3 core units**, plus
- **7 elective units**, of which:
 - all specialist elective units must be chosen from either Group A or Group B specialist elective units
 - up to 4 general elective units may be chosen from the general elective units listed below
 - up to 2 elective units may be chosen from a Certificate III qualification or above in this Training Package or another endorsed Training Package or accredited course, provided that the units chosen contribute to the vocational outcome of this qualification and do not duplicate the outcome of another unit chosen for the qualification.

Core Units

Unit code	Unit title	Prerequisites
AUMAMM001	Influence and lead work groups in an automotive manufacturing workplace	
AUMFMM003	Plan and organise automotive production and assembly processes	
MSS403041A	Facilitate breakthrough improvements	

Specialist Elective Units

Unit code	Unit title	Prerequisites
Group A		
AUMAQA001	Apply quality assurance techniques	
AUMATA002	Conduct post-production inspections and tests	
AUMATA006	Provide automotive manufacturing advice	
Group B		
MSS403011A	Facilitate implementation of competitive systems and practices	
MSS403040A	Facilitate and improve implementation of 5S	
MSS404053A	Use six sigma techniques	MSS404052A

General Elective Units

Unit code	Unit title	Prerequisites
AUMABM001	Control stock	
AUMAKM002	Produce computer-aided drawings	
AUMAMA003	Prepare new product designs	
AUMANA001	Prepare and document quotations	
AUMASA011	Apply safe work practices in the automotive manufacturing environment	
AUMATA001	Develop documentation and procedures	

Unit code	Unit title	Prerequisites
AUMATA007	Conduct vehicle performance tests	
AUMATA008	Produce drawings manually	
AUMATK004	Use and maintain measuring equipment	
AUMATK005	Calibrate measuring equipment	
AUMATK006	Test plant, tools, equipment, product and systems	
AUMATK007	Install vehicle plant, equipment or systems	
AUMATK008	Maintain vehicle plant, tools, equipment and systems	
AUMATK009	Repair vehicle plant, tools, equipment and systems	
AUMATK010	Manufacture and modify vehicle plant, tools, equipment and systems	
AUMATK011	Use technical data relating to plant, tools, equipment and systems	
AUMATR002	Install and maintain motor vehicle instrumentation sensors and transmitters	
AUMATW002	Inspect welding	
AUMFTA001	Document manufacturing design processes	
AUMFTA005	Analyse test vehicles for research purposes	
AURAEA004	Manage environmental and sustainability best practice in an automotive workplace	
AURMTE001	Test engines using a dynamometer	
AURTTA021	Diagnose complex system faults	
BSBLED401	Develop teams and individuals	
BSBPMG412	Apply project cost-management techniques	
BSBRKG304	Maintain business records	
BSBRSK401	Identify risk and apply risk management processes	
ICTICT103	Use, communicate and search securely on the internet	

Unit code	Unit title	Prerequisites
MSAPMSUP390A	Use structured problem solving tools	
MSS402002A	Sustain process improvements	
MSS402010A	Manage the impact of change on own work	
MSS402020A	Apply quick changeover procedures	
MSS402030A	Apply cost factors to work practices	
MSS402031A	Interpret product costs in terms of customer requirements	
MSS402050A	Monitor process capability	
MSS402051A	Apply quality standards	
MSS402060A	Use planning software systems in operations	
MSS402061A	Use SCADA systems in operations	
MSS402080A	Undertake root cause analysis	
MSS403001A	Implement competitive systems and practices	
MSS403002A	Ensure process improvements are sustained	
MSS403021A	Facilitate a Just In Time system	
MSS403030A	Improve cost factors in work practices	
MSS403032A	Analyse manual handling processes	
MSS403051A	Mistake proof an operational process	
MSS404050A	Undertake process capability improvements	MSS404052A
MSS404052A	Apply statistics to operational processes	
MSS404060A	Facilitate the use of planning software systems in a work area or team	

Qualification Mapping Information

AUM40112 Certificate IV in Automotive Manufacturing

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUM50113 Diploma of Automotive Manufacturing

Modification History

Release	Comment
Release 1	Qualification updated to reflect the new standards for Training Packages Replaces AUM50112 Diploma of Automotive Manufacturing
Release 2	Updated due to superseded AUR units of competency.

Qualification Description

This qualification reflects the role of individuals who perform a range of specialist roles in the automotive manufacturing sector. This may involve undertaking a range of complex and non-routine tasks with substantial self-direction and judgement, including leadership of others.

No licensing, legislative or certification requirements apply to this qualification at the time of publication.

Entry Requirements

Those undertaking this qualification are required to have completed AUM40113 Certificate IV in Automotive Manufacturing, or be able to demonstrate equivalent competence.

Packaging Rules

Total number of units = 9

- **3 elective units** from Group A specialist elective units, plus
- **6 elective units**, of which:
 - up to 6 general elective units may be chosen from the general elective units listed below
 - up to 2 elective units may be chosen from a Certificate IV qualification or above in this Training Package or another endorsed Training Package or accredited course, provided that the units chosen contribute to the vocational outcome of this qualification and do not duplicate the outcome of another unit chosen for the qualification.

Group A Specialist Elective Units

Unit Code	Unit Title
AUMAMA004	Coordinate automotive project activities
AUMFTA006	Develop research reports on vehicle design, development and production
AUMFTA007	Evaluate vehicle design, development and production information
AUMFTK001	Test automotive production components, equipment and systems
AUMFTM002	Create new product designs
AUMFTM003	Develop conceptual models and prototypes

General Elective Units

Unit Code	Unit Title
AURAF006	Conduct research and present technical reports
AURETA001	Analyse and evaluate electrical and electronic faults in electric over-hydraulic systems
AURETA002	Analyse and evaluate electrical and electronic faults in body management systems
AURETA003	Analyse and evaluate electrical and electronic faults in monitoring and protection systems
AURETA004	Analyse and evaluate electrical and electronic faults in convenience and entertainment systems
AURETA005	Analyse and evaluate electrical and electronic faults in theft-deterrent systems
AURETA006	Analyse and evaluate electrical and electronic faults in air conditioning and HVAC systems
AURETB002	Analyse and evaluate electrical and electronic faults in braking systems
AURETE001	Analyse and evaluate electrical and electronic faults in engine management systems
AURETH013	Analyse and evaluate electrical and electronic faults in HEV and BEV management systems

Unit Code	Unit Title
AURETR033	Develop and apply network electronic control system modifications
AURETR034	Develop and apply electrical system modifications
AURETX001	Analyse and evaluate electrical and electronic faults in driveline management systems
AURLTB002	Analyse and evaluate faults in light vehicle braking systems
AURLTD007	Analyse and evaluate faults in light vehicle steering and suspension systems
AURLTE003	Analyse and evaluate faults in light vehicle engine and fuel systems
AURLTQ003	Analyse and evaluate faults in light vehicle transmission and driveline systems
AURTTL015	Develop and apply gas fuel system modifications
BSBPMG514	Manage project cost
BSBPMG517	Manage project risk
BSBPMG521	Manage project integration
BSBWHS506	Contribute to developing, implementing and maintaining WHS management systems
BSBWOR502	Lead and manage team effectiveness
MSAENV472B	Implement and monitor environmentally sustainable work practices
MSAENV672B	Develop workplace policy and procedures for environmental sustainability
MSL924002A	Use laboratory application software

Qualification Mapping Information

AUM50112 Diploma of Automotive Manufacturing

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMABA012 Operate load shifting equipment

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to safely use load shifting equipment.

It applies to those in a manufacturing environment and involves the application of skills and knowledge to select and use suitable load shifting equipment and perform pre-operational inspections to ensure its safe operation.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Unit Sector

Support and Logistics

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Inspect load shifting equipment	1.1 Complete inspection of load shifting equipment according to workplace procedures 1.2 Identify load weights and volumes and receive confirmation from supervisor 1.3 Identify and document equipment faults and report to appropriate personnel
2. Lift, shift and place load	2.1 Identify load characteristics and handling requirements to select an appropriate shifting device 2.2 Plan shifting route, and identify and control potential hazards 2.3 Place load in specified locations without causing damage to property, machinery or equipment 2.4 Complete lift, shift and placement of load using approved work health and safety (WHS) methods and equipment,

Elements	Performance Criteria
	according to workplace procedures
3. Complete load shifting operations	3.1 Complete post-inspection of load shifting equipment 3.2 Identify, tag and report faults 3.3 Store and secure load shifting equipment in accordance with workplace requirements 3.4 Complete load shifting documentation and maintenance records according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret load shifting equipment operating procedures and safety requirements - review load shifting equipment pre- and post-inspection schedules.
Writing skills to:	legibly complete inspection schedules, maintenance reports and workplace documents.
Oral communication skills to:	- convey identified equipment faults to appropriate personnel - speak clearly and directly to inform others of loading and shifting requirements - communicate equipment operating instructions and load weights and volumes to co-workers.
Numeracy skills to:	- identify and where necessary estimate weights and volumes of objects to be shifted - identify numbers in metric and imperial units and measurements.
Planning and organising skills to:	- identify and prepare load shifting equipment and work area - identify overhead and ground level workplace hazards - conduct pre- and post-use inspection of equipment - complete workplace documentation.
Problem-solving skills to:	- identify load shifting equipment appropriate for the job - identify load shifting equipment faults and defects.
Teamwork skills to:	advise co-workers of load shifting activities.

Unit Mapping Information

<i>Code and title current version</i>	<i>Code and title previous version</i>	<i>Comments</i>	<i>Equivalence status</i>
AUMABA012 Operate load shifting equipment	AUMABA002 Operate load shifting equipment	Additions to Assessment Requirements due to rationalisation of Range of Conditions. Minor changes to ensure policy adherence.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMABA012 Operate load shifting equipment

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must have competently operated load shifting equipment on a minimum of two occasions, in the manner described in the Performance Criteria of this unit.

Individuals must demonstrate they can:

- conduct pre- and post-operational checks to load shifting equipment, including inspection of:
 - hydraulic and pneumatic leaks
 - lifting block
 - operation of control system
 - vehicle hazard warning light
 - wheels and tyres
 - wire rope, chains and lifting attachments
- comply with workplace procedures and relevant load shifting regulations, standards and codes of practice
- select and use load shifting equipment appropriate to weight and volume of load
- store and secure load shifting equipment appropriately
- complete load shifting equipment records.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- WHS requirements when operating load shifting equipment, including overhead and ground level workplace hazards
- types, application and operation of load shifting equipment, including:
 - overhead travelling crane
 - pallet truck
 - trolley jack

- pre and post-use inspection procedures for load shifting equipment
- methods of determining load specifications, including weight, size and type
- methods of determining appropriate load shifting equipment for the circumstance
- load shifting equipment maintenance reports and schedules
- load shifting equipment storage procedures.

Assessment Conditions

Assessors of this unit must satisfy the assessor requirements in applicable vocational education and training legislation, frameworks and/or standards.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the operation of load-shifting equipment, e.g. load shifting equipment log books.

The following resources must be made available:

- manufacturing workplace or simulated workplace
- load shifting devices and equipment, including:
 - overhead travelling crane
 - pallet truck
 - trolley jack.
- workplace documentation relating to load shifting, including load shifting equipment inspection documentation
- load shifting equipment operating instructions and procedures relevant to a manufacturing environment.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMABM001 Control Stock

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMABM4001 Control stock

Application

This unit describes the performance outcomes required to maintain stock levels in an automotive workplace.

It involves the application of skills and knowledge at a specialist level.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Competency Field

Manufacturing - Common

Unit Sector

Support and Logistics - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Process stock orders	1.1 Parts are identified and matched by numbers, codes and location tags 1.2 Orders for stock are accurately processed according to workplace procedures 1.3 Stock ordering and recording systems are maintained 1.4 <i>Purchase and supply agreements</i> are correctly used and appropriate details recorded

Elements	Performance Criteria
2. Organise and administer stocktakes	2.1 Stocktakes are organised at the appropriate time, and responsibilities are allocated to personnel 2.2 Reports on stocktake data are produced within required timelines
3. Identify stock losses and faulty or damaged parts	3.1 Losses are identified, recorded and assessed against forecast potential loss according to workplace procedures 3.2 Faulty or damaged parts are identified and assessed for repair, returned to supplier or scrapped according to workplace procedures 3.3 Avoidable losses and causes are identified and appropriate solutions recommended and implemented to prevent future avoidable losses
4. Maintain stock levels	4.1 Reserve stocks are transferred from warehouse to ensure production build line or customer requirements are met 4.2 Requisition and order forms are completed for identified stock maintenance requirements 4.3 Unavailable stock is recorded and reported to appropriate personnel for action

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Learning skills to:	- draw on prior knowledge to identify the nature and scope of new tasks in routine situations - seek advice, reflect on and respond to feedback from trusted sources.
Reading skills to:	- interpret stock ordering and stocktake documentation - interpret work procedures - interpret purchase and supply agreements.
Writing skills to:	- legibly fill out stock control and stocktake documentation - complete faulty or damaged parts report sheets and workplace documents.
Oral communication skills to:	- follow oral work instructions - report stock control problems to supervisor - communicate with production line team members.

Skills	Description
Numeracy skills to:	- recognise and match numbers, codes and location tags - use whole numbers and simple fractions, decimals and percentages - calculate with whole numbers or simple fractions using addition, subtraction, division and multiplication manually or using a calculator.
Digital literacy skills to:	- enter data into computerised stock management systems - create reports from computerised stock management systems.
Planning and organising skills to:	organise work and plan processes to ensure stock is at optimal levels.
Problem-solving skills to:	analyse stock records to determine stock losses and to make appropriate recommendations for improvements.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Purchase and supply agreements</i> must include:	records of obligations to sell and buy quantities of goods over time.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMABM001 Control Stock

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMABM4001 Control stock

Performance Evidence

Before competency can be determined, individuals must have competently controlled stock levels on a minimum of three occasions.

Individuals must demonstrate they can:

- order, control and administer a continuous stock supply
- conduct stocktake and detect stock discrepancies
- identify and deal with faulty and damaged stock
- maintain stock control documentation and computer records.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- stock ordering procedures
- stock level maintenance techniques
- stocktake procedures
- stock recording systems, including computerised and manual systems
- types of stock control documentation and systems
- reasons for stock loss, and damage and control methods.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence of stock monitoring and distribution, e.g. stock control sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- equipment required for the control of stock, including:
 - computerised stock control program
 - warehousing containing stocked components
 - stock control documentation
 - stock taking documentation
- a selection of parts and components that need to be stored.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMAF001 Apply for jobs and undertake job interviews

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAF1001 Manage personal career goals

Application

This unit describes the performance outcomes required to prepare and apply for a job in a range of contexts.

It involves the application of skills and knowledge at secondary school level or above.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing – Common

Unit Sector

Foundation Skills

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Gather and evaluate information on employment opportunities	1.1 Employment sources are identified and searched, and employment opportunities identified 1.2 Opportunities are reviewed and additional information obtained 1.3 Opportunities are clarified and graded according to own preferences, and a preferred opportunity is chosen

Elements	Performance Criteria
2. Prepare and apply for a job	2.1 Selection criteria in job opportunity are reviewed 2.2 Own skills profile is analysed against selection criteria 2.3 Application for preferred job opportunity is prepared against criteria and checked for errors
3. Prepare a résumé	3.1 Résumé content is identified and prepared 3.2 Résumé is completed using an appropriate structure and format, and checked for errors
4. Prepare for and undertake a job interview	4.1 Preparation for job interview is undertaken 4.2 Potential interviews are rehearsed 4.3 Interview is undertaken
5. Review and evaluate interview performance	5.1 Feedback on performance in the interview is sought 5.2 Strengths and areas for improvement in the application and interview process are identified 5.3 Strategies for improving application and interview skills are identified

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Learning skills to:	- pose simple questions to help focus information search - use simple web searches to locate information - evaluate relevance of information on familiar subjects - develop a simple plan to achieve personal goals.
Reading skills to:	- interpret job application and understand job role description - check for errors in typed job application and résumé.
Writing skills to:	complete a job application and a résumé.
Oral communication skills to:	rehearse and undertake an interview for a job.
Numeracy skills to:	- interprets and uses times and dates - follows directions to get to interview location.
Digital literacy skills to:	operate a computer to search employment databases and find information about an employer and job opportunity.
Planning and organising	plan and rehearse an interview

Skills	Description
skills to:	arrive at interview on time wearing appropriate clothing and with relevant documentation.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Preparation for job interview</i> must include:	- anticipating interview questions and planning suitable answers - clarifying the time and place of the interview - making sure personal presentation is appropriate - sourcing accurate information on the organisation and job position.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMAF001 Apply for jobs and undertake job interviews

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAF1001 Manage personal career goals

Performance Evidence

Before competency can be determined, individuals must have competently prepared for and undertaken a job interview on a minimum of three occasions.

Individuals must demonstrate they can:

- find an appropriate job offer using an employment database
- complete a job application
- complete a résumé
- undertake and evaluate a job interview.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- methods of sourcing jobs
- methods of prioritising job options
- procedures for completing job applications, including procedures for completing selection criteria
- procedures for completing résumés, including using résumé templates in computer word-processing programs
- interview techniques and strategies for improving interview performance.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to job applications and job interviews, e.g. an employer's letter advising of job application outcome.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- employment databases, including paper-based and internet
- computer with word-processing software that includes résumé templates.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFA002 Maintain workplace relationships

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFA2002 Maintain effective workplace relationships

Application

This unit describes the skills and knowledge required to work effectively with others in the automotive environment.

It applies to individuals in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication

Competency Field

Manufacturing - Common

Unit Sector

Foundation Skills

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Give and receive instructions	1.1 <i>Instructions</i> and messages are delivered and received using appropriate <i>communication techniques</i> and workplace format 1.2 Instructions and messages are identified and confirmed 1.3 Outcomes are monitored and feedback is given to ensure instructions are followed
2. Follow workplace	2.1 Workplace diversity, equal opportunity and

Elements	Performance Criteria
procedures	conflict-resolution procedures are identified, confirmed and followed 2.2 Personnel responsible for receiving complaints about breaches of diversity, equal opportunity and conflict resolution are identified 2.3 Required workplace documentation is completed

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret workplace instructions and messages - interpret workplace diversity, equal opportunity and conflict-resolution procedures.
Writing skills to:	- accurately record workplace instructions and messages - legibly and accurately fill out workplace diversity, equal opportunity and conflict resolution documentation.
Oral communication skills to:	- give and receive workplace instructions and messages - provide feedback on instructions and messages - inform relevant personnel of equal opportunity and conflict-resolution problems.
Planning and organising skills to:	involve co-workers in team meetings.
Problem-solving skills to:	identify and apply workplace procedures to resolve conflict.
Teamwork skills to:	participate in a manufacturing team environment, follow instructions and convey messages.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Instructions</i> must include:	demonstration

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

	• explanation • practical instruction • online explanation.
<i>Communication technique</i> must include:	• non-verbal communication • face-to-face communication with individuals and groups.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMAF002 Maintain workplace relationships

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAF002 Maintain effective workplace relationships

Performance Evidence

Before competency can be determined, individuals must have competently demonstrated effective workplace communication processes on a minimum of two occasions.

Individuals must demonstrate they can:

- give and receive workplace information and messages
- modify activities to cater for variations in the workplace
- communicate clearly and directly with others in the workplace
- follow workplace diversity, equal opportunity and conflict-resolution procedures
- complete workplace documentation relating to workplace relationships
- follow workplace procedures relating to workplace relationships.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace diversity, equal opportunity and conflict-resolution procedures
- effective workplace communication and workplace relationship practices
- workplace instruction and message delivery and receiving techniques
- workplace communication protocols.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to participating in workplace relationships.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- workplace instructions and messages
- workplace conflict, diversity and equal opportunity procedures.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMAKM002 Produce computer-aided drawings

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAKM5002 Produce computer-aided drawings

Application

This unit describes the performance outcomes required to produce drawings using computer-aided drafting (CAD) equipment and techniques, required in the design, development and production of vehicles and components.

It applies to those in an automotive manufacturing environment.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Competency Field

Manufacturing - Common

Unit Sector

Information Technology - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare for the job	1.1 CAD project objectives and job order are identified and confirmed according to workplace procedures 1.2 CAD requirements and processes are determined based on consideration of project and identified parameters 1.3 Required computer software is selected and installed if required according to workplace procedures

Elements	Performance Criteria
	1.4 Files of digitised information relevant to the project are retrieved and converted if required
2. Gather measurements	2.1 Measurements of components, sub-assemblies and products are identified and recorded 2.2 Calculations of required dimensions and other drafting details based on measurements are made 2.3 Critical information relevant to the CAD project is identified
3. Prepare drawings	3.1 Critical dimensions and data for the required drawings are established 3.2 Preliminary sketches are prepared and reviewed with appropriate personnel 3.3 CAD package is accessed using the necessary commands according to project objectives, operating instructions and workplace procedures 3.4 2D and 3D computer graphics systems are used to meet project objectives and specifications
4. Check and save drawing files	4.1 Drawings are checked against project objectives and specifications 4.2 CAD data files are stored according to workplace procedures and archiving requirements
5. Plot drawings	5.1 Computer hardware is activated to scan, print or plot as required 5.2 Retrieved information is plotted according to software instructions and task requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Learning skills to:	learn new design and re-design approaches integral to the process.
Reading skills to:	- extract key information from software and hardware operating instructions - interpret work orders and instructions.
Writing skills to:	complete CAD information.
Oral communication skills	actively participate in team decision-making meetings.

Skills	Description
to:	
Numeracy skills to:	• identify and interpret mathematical information in job orders • identify and record measurements • prepare and review sketches • perform calculations • use 2D and 3D shape tolerances.
Digital literacy skills to:	• operate computer systems and CAD software to design and draw items.
Planning and organising skills to:	• prepare drawing equipment and specifications • manage time when planning and preparing CAD drawings • organise CAD drawing priorities.
Problem-solving skills to:	• identify drawing non-conformance.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Critical information</i> must include:	• drafting standards • measurements of components and sub-assemblies • system accuracy • workplace-accepted tolerances.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMAKM002 Produce computer-aided drawings

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAKM5002 Produce computer-aided drawings

Performance Evidence

Before competency can be determined, individuals must have competently produced computer-aided drafting (CAD) drawings on a minimum of three occasions.

Individuals must demonstrate they can:

- communicate clearly and directly in order to review preliminary sketches with appropriate personnel
- gather object parameters and measurements in a team environment
- solve problems, particularly in teams, in order to meet performance indicators
- apply workplace procedures and instructions
- produce CAD drawings of vehicle or components
- manage time when planning and preparing CAD drawings
- organise work priorities relating to CAD drawing requirements.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures relating to using CAD
- CAD techniques
- CAD drawing standards
- job specifications and work plans relating to CAD drawing requirements
- processes to set up required CAD packages
- processes to gather object parameters and measurements for CAD drawings
- processes to prepare CAD drawings
- processes to plot CAD drawings.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the CAD drawings they have worked on.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- workplace procedures relating to CAD
- CAD system and program
- CAD software instructions
- job specifications relating to CAD.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMAMA001 Contribute to production goals

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAMA2001 Manage personal workplace

Application

This unit describes the performance outcomes required to manage a personal workplace to help ensure production goals are met and to contribute to cost-reduction measures.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Management, Leadership and Supervision

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Identify production goals	1.1 Workplace procedures relevant to the work area are identified and interpreted 1.2 <i>Production indicators</i> and timelines are identified and confirmed
2. Support the achievement of production goals	2.1 Work production and quality goals are monitored and variations responded to promptly

Elements	Performance Criteria
	2.2 Work plans, workplace instructions, job specifications and schedules are applied and followed according to workplace procedures 2.3 Changes in work requirements are clarified with supervisor 2.4 Work goals are reviewed and continuous improvement recommendations are discussed with team members and supervisors
3. Contribute to cost reduction	3.1 Cost performance indicators are identified and confirmed 3.2 Cost-reduction targets are reviewed and modified if required 3.3 Production and quality problems are identified and work plan adjustments reported

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret job requirements, workplace procedures, work instructions and production indicators - interpret production schedules and work plan.
Writing skills to:	legibly fill out production work sheets and reports.
Oral communication skills to:	- clarify workplace instructions and procedures - report continuous improvement recommendations - discuss changes to work requirements and performance indicators at team meetings - inform supervisor of work production problems and possible resolution.
Numeracy skills to:	- identify production lead times, dates and production numbers - interpret production specifications - identify cost reduction targets - comprehend relevant unit quantity and measurements.
Planning and organising skills to:	- achieve production continuous improvement and quality goals - apply workplace instructions and standardisation procedures.
Self-management skills to:	manage time in planning and preparing for work.
Problem-solving skills to:	- identify production problems aligned to production indicators - identify and apply workplace procedures and instructions.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Production indicators must include:</i>	• component specifications • production schedules • workplace quality.
<i>Changes in work requirements must include:</i>	• line speed • personnel absences • process change • short lead time.
<i>Cost performance indicators must include:</i>	• cycle time • productivity • waste avoidance.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMAMA001 Contribute to production goals

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAMA2001 Manage personal workplace

Performance Evidence

Before competency can be determined, individuals must have competently achieved work production and quality goals on a minimum of two occasions.

Individuals must demonstrate they can:

- follow workplace procedures relating to production goals
- achieve production and built-in quality goals
- respond to changing work requirements and production goals
- contribute to cost-reduction initiatives relating to production goals
- identify production and quality problems.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures relating to contributing to production goals
- production schedules, work plans and job specifications relating to production goals
- workplace continuous improvement principles and production goals
- production methods and quality goals
- workplace cost reduction and waste avoidance practices relating to production.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to activities that contribute to achieving workplace production goals.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- workplace procedures and instructions relevant to the work area and production goals
- production schedules, work plans and job specifications
- production indicators relating to production goals
- work sheets and documentation relating to production goals.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMAMA002 Work effectively in teams

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAMA2002 Work effectively with others in teams
Release 2	Updated for clarity and policy adherence

Application

This unit describes the performance outcomes required to work effectively as part of a workplace team.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Management, Leadership and Supervision

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Contribute to teams	1.1 Identify workplace procedures and job role requirements 1.2 Identify team decision-making processes in accordance with workplace requirements and procedures 1.3 Demonstrate participation in team decision making
2. Contribute to work tasks	2.1 Identify roles and responsibilities of self and other team members for production targets 2.2 Follow verbal and written work instructions 2.3 Maintain work effectiveness when changes to teams occur
3. Contribute to team	3.1 Identify and communicate potential work task improvements

Elements	Performance Criteria
review of work tasks	to the team 3.2 Complete appropriate documentation of work task improvements and forward to appropriate personnel for consideration

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret safety information, including job safety analysis (JSA) sheets and safe work method statements (SWMS) where relevant - identify basic job instructions and production targets - interpret workplace meeting procedures, agendas, notices and schedules.
Oral communication skills to:	- actively participate in team decision making and team meetings - follow verbal instructions.
Numeracy skills to:	interpret team key production indicators and production targets.
Teamwork skills to:	understand team member production roles and responsibilities

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMAMA002 Work effectively in teams (Release 2)	AUMAMA002 Work effectively in teams (Release 1)	Minor updates to Assessment Requirements. Performance Criteria changed from passive to active voice.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMAMA002 Work effectively in teams

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAMA2002 Work effectively with others in teams
Release 2	Updated for clarity and policy adherence

Performance Evidence

Before competency can be determined, individuals must have competently worked effectively with others in workplace teams on a minimum of two occasions.

Individuals must demonstrate they can:

- participate in team meetings
- comply with workplace procedures when working with others in teams
- complete tasks in line with job safety analysis (JSA) and safe work method statements (SWMS)
- undertake tasks as a member of the team according to work instructions
- participate in team discussions of work tasks
- participate in team decision making
- participate in achieving team production targets and key production indicators.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- fundamentals of team structures
- team reporting procedures
- basic conflict-resolution strategies
- decision-making processes
- causes of conflict in a team
- workplace meeting procedures
- workplace procedures

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to working effectively with others in a manufacturing team.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- workplace or simulated workplace
- workplace procedures relating to working effectively with others in teams
- workplace team meeting notices and schedules
- work teams made up of a range of different work groups
- meeting agendas.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMAMA003 Prepare new product designs

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAMA4003 Prepare new product designs

Application

This unit describes the performance outcomes required to assist professional and other personnel in the planning and design of new products or sub-assemblies.

It applies to those in an automotive environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Common

Unit Sector

Management, Leadership and Supervision

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Establish design requirements	1.1 New product design information is identified from customer needs and <i>workplace requirements</i> 1.2 Product information is gathered and analysed, and work plan is developed 1.3 Constraints on design concepts are identified and documented 1.4 Suitable strategies are developed to address identified design constraints

Elements	Performance Criteria
2. Create design concept	2.1 Initial design concept based on identified requirements is created 2.2 Function, physical requirements and impact of the design concept are reviewed with appropriate personnel 2.3 Modifications to the initial design concept are made according to feedback provided by engineering, marketing and other appropriate personnel
3. Produce concept sketches	3.1 Sketches are prepared to illustrate and explain proposed design concept 3.2 Concept sketches are reviewed and evaluated in consultation with engineering, marketing and other appropriate personnel and suitable changes are made 3.3 Critical dimensions and data of design concept are identified 3.4 Drawings of components and sub-assemblies are prepared with required level of accuracy 3.5 Materials, components and related costs are estimated in consultation with engineering, marketing and other appropriate personnel
4. Determine suitable manufacturing methods, materials and processes	4.1 Suitable manufacturing methods are identified for the production of components and sub-assemblies 4.2 Suitable manufacturing methods and materials are identified for the production of components and sub-assemblies 4.3 Suitable assembly and finishing methods for components and sub-assemblies are identified and evaluated
5. Evaluate feasibility	5.1 Proposed manufacturing processes are evaluated against the design requirements in consultation with design, engineering, marketing and other appropriate personnel 5.2 Suitable trials of the design are devised and conducted, and outcomes are documented
6. Modify design	6.1 Product design is suitably modified, based on the outcomes of the feasibility evaluations and trials 6.2 Further trials and testing is conducted to confirm the suitability of the modified design against requirements 6.3 Outcomes of the modification and trialling of the new design concept are documented according to workplace procedures
7. Complete work processes	7.1 Design of the new product is documented according to workplace procedures 7.2 Design documentation is processed for approval according to workplace procedures 7.3 Design documentation is stored and distributed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify and gather information on customer needs, competitor products, workplace objectives, fashion trends, safety needs and relevant workplace requirements - interpret the outcomes of feasibility evaluations and trials.
Writing skills to:	legibly document new design requirements, concept constraints, trials, modification outcomes and the final new product design.
Oral communication skills to:	- consult with appropriate personnel to review the design concept and sketches - evaluate manufacturing methods with production engineering personnel, marketing and other appropriate personnel.
Teamwork skills to:	work effectively with a wide range of people while reviewing and evaluating the design process.
Numeracy skills to:	- calculate critical dimensions and interpret data - prepare 2D and 3D drawings - calculate estimates of required materials, components and related costs - document outcomes of the modification and trialling of the new design concept using mathematical language.
Digital Literacy skills to:	use computer systems for drawing and sketching.
Planning and Organising skills to:	meet work plan.
Problem Solving skills to:	develop the design, to work within constraints, to respond to feedback from evaluation and trials.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace requirements</i> must include:	• Australian Design Rules (ADR) • industry codes of practice • vehicle modification standards.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMAMA003 Prepare new product designs

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAMA4003 Prepare new product designs

Performance Evidence

Before competency can be determined, individuals must have competently prepared a new product design on a minimum of three occasions.

Individuals must demonstrate they can:

- create initial design concepts
- modify initial design concepts to reflect feedback
- produce design drawings of components and sub-assemblies
- identify and evaluate the manufacturing method of the new product and perform trials
- modify the product design as necessary and conduct further tests
- document the design process of the new product.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- principles of design as they relate to product design
- methods of establishing new design requirements, including determining constraints of design concepts
- methods of creating design concepts, including producing design sketches
- methods of quantifying design concepts, including calculating dimensions
- selecting and justifying the selection of:
 - type of materials and material specifications
 - appropriate processes for a range of product and market applications
- calculating product cost estimates, process time and cost benefit of new product to organisation
- work health and safety (WHS) requirements and workplace procedures relating to preparing new product designs
- design procedures and prototyping activities relating to preparing new product designs
- material and product testing procedures

- design process documentation, records and reports relating to new product designs.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the product designs that they have prepared.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- drawing equipment
- workplace procedures relating to the preparation of new product designs
- tools, equipment and machinery required for the production process of motor vehicles and components
- sources of information from which to determine customer needs, competitor products, workplace objectives, fashion trends, safety needs and relevant legislative requirements for new product design
- workplace documentation relating to preparing new product designs.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMAMA004 Coordinate automotive project activities

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAMA5004 Coordinate project activities

Application

This unit describes the performance outcomes required to coordinate project activities in a broader project, and includes coordinating resources in order to meet project timelines and requirements.

It applies to those in an automotive manufacturing environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Common

Unit Sector

Management, Leadership and Supervision

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Develop project understanding	1.1 Project plans are reviewed with <i>project leader</i> to identify required outcomes 1.2 <i>Project requirements</i> are reviewed and clarified 1.3 Work instructions, plans and processes are identified 1.4 Resource requirements are identified and tasks allocated to team members

Elements	Performance Criteria
2. Implement project	2.1 Agreed project scope and processes are implemented according to relevant legislation, regulations, codes of practice and workplace procedures 2.2 Progress is recorded and reported according to workplace procedures and requirements
3. Monitor and coordinate project	3.1 Team members are supported to ensure that the outcomes of project activities and timelines are met 3.2 Record-keeping systems are monitored to ensure that they are maintained by the team members
4. Coordinate project follow-up activities	4.1 Project activity, outcomes and processes are reviewed with stakeholders against the project plan and scope 4.2 Delivery of project activity reports is monitored to ensure that reports are complete 4.3 Project leader is assisted in assembling data and issues for inclusion in project final report

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret and review the project plan - interpret instructions and plans, relevant legislation, regulations, standards, codes of practice, established safe practices and workplace procedures.
Writing skills to:	record and report project progress.
Oral communication skills to:	- communicate with project team members and key stakeholders - discuss project plan with team leader and clarify project requirements - allocate tasks to team members - verbally report progress and talk to team members to ensure that they are supported.
Numeracy skills to:	- determine project timelines - calculate budgets and costs - calculate material requirements.
Digital literacy skills to:	use computers and computer software, such as email, databases, spreadsheets and word processing.

Skills	Description
Planning and organising skills to:	set up processes and procedures to ensure that timelines, budgets and risk management plans are followed.
Problem-solving skills to:	manage problems as they arise.
Teamwork skills to:	- work effectively with diverse team members - actively support team members - ensure that team members are contributing to the project.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Project leader</i> must include:	person with authority to undertake the project and to realise project's objectives, and contribute to the project design, further design, prioritisation, and resources.
<i>Project requirements</i> must include:	- budget - project risk management plans - timelines.
<i>Stakeholders</i> must include:	- corporate resource and budget managers - design engineers - trial operators.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMAMA004 Coordinate automotive project activities

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAMA5004 Coordinate project activities

Performance Evidence

Before competency can be determined, individuals must have competently coordinated project activities on a minimum of two occasions.

Individuals must demonstrate they can:

- comply with legislation, regulations, standards, codes of practice, safe work practices and workplace procedures relevant to project scope
- communicate project activities with team members
- allocate tasks, resources, processes, costs and timelines
- coordinate automotive project plan and activities
- monitor team members
- ensure project activity reports are completed
- assist project leader in the preparation of the project final report.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- legislation, regulations, standards, codes of practice, safe work practices and workplace procedures relevant to project scope
- workplace systems and processes to supply resource requirements
- principles of project management
- methods of implementing project activities:
 - identifying processes and required resources from project plan
 - identifying and allocating tasks from project plan
 - recording and reporting procedures for monitoring progress of project activities
- methods of monitoring projects:
 - procedures for communicating between project members
 - methods of monitoring and supporting team members
 - methods of monitoring project timelines

- procedures for reviewing project outcomes
- types, layout and application of project reports.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the automotive project activities that they have coordinated.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- legislation, regulations, standards and codes of practice relevant to project scope
- workplace procedures relating to automotive project activities
- stakeholders
- record keeping systems
- automotive project plans
- automotive project activity reports.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMAMM001 Influence and lead work groups in an automotive manufacturing workplace

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAMM3001 Influence and lead work groups in an automotive manufacturing environment

Application

This unit describes the performance outcomes required to influence and lead work groups and resolve problems in an automotive manufacturing environment.

It involves the application of skills and knowledge at a specialist level.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Competency Field

Manufacturing - Common

Unit Sector

Management, Leadership and Supervision - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section

Elements	Performance Criteria
1. Plan and determine work group task	1.1 Work instructions and work health and safety (WHS) requirements are identified 1.2 Current work processes are monitored for efficiency and effectiveness 1.3 Process methods necessary to complete a group task are planned 1.4 Responsibility for planning and completing components of the group task is assigned on an individual or shared basis
2. Participate in work group task	2.1 Communication methods appropriate to the group task are applied 2.2 Responsibility for quality and project timelines and proposed productivity outcomes are agreed 2.3 Assistance in completing the group task is sought from appropriate personnel as required 2.4 Problems are discussed and resolved according to workplace procedures
3. Monitor progress of work group task	3.1 Contribution of individual group members to work task progress is monitored 3.2 Feedback is provided to the work group on effectiveness of the group task 3.3 Ways of improving performance are proposed and agreed on

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret team key production indicators and production goals - interpret production requirements and meeting agendas - interpret work instructions.
Writing skills to:	- legibly enter information into manufacturing control documents - complete production control sheets and graphs - legibly complete safety, accident and incident reporting documents.
Oral communication skills to:	- actively participate in team decision making and team meetings - communicate and contribute to the structure of team tasks.

Skills	Description
Numeracy skills to:	• read, interpret and prepare control sheets and charts • interpret team key production indicators and production goals.
Planning and Organising skills to:	• adapting to changing work conditions • manage time when planning, preparing and organising work priorities.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Work instructions must include:	• machine set-up procedures • operator instruction sheets (OIS) or workplace equivalent • preventative maintenance checklists • process control plans (PCPs) or workplace equivalent • standard operating procedures (SOPs) or workplace equivalent.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMAMM001 Influence and lead work groups in an automotive manufacturing workplace

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAMM3001 Influence and lead work groups in an automotive manufacturing environment

Performance Evidence

Before competency can be determined, individuals must have competently participated in influencing and leading work groups on a minimum of three occasions.

Individuals must demonstrate they can:

- give and receive instructions relating to group task
- work and communicate effectively with others in an automotive manufacturing environment
- influence and lead work groups within scope of own authority to:
 - achieve production goals
 - achieve work quality goals
 - identify problems and apply problem-resolution techniques
- follow work instructions, workplace diversity, equal opportunity and conflict-resolution procedures
- respond constructively to changing work requirements
- show initiative in adapting to changing work conditions or contexts
- manage time when planning, preparing and organising work priorities.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- established workplace communication techniques, channels and protocols
- work health and safety (WHS) requirements relating to influencing and leading automotive manufacturing work groups
- workplace diversity, equal opportunity and conflict-resolution procedures when influencing and leading work groups
- quality systems and performance measures
- recording, reporting and maintenance procedures relating to influencing and leading automotive work groups.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to activities related to leading work groups in an automotive manufacturing environment.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- work instructions
- workplace conflict-resolution, diversity and equal opportunity procedures that inform work involving influencing and leading automotive manufacturing work groups.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMANA001 Prepare and document quotations

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMANA3001 Prepare and document quotation

Application

This unit describes the performance outcomes required to determine job requirements and produce a quotation for a customer.

It applies to those in an automotive environment.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Competency Field

Manufacturing - Common

Unit Sector

Loss Assessment or Repair Quoting

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Determine customer requirements	1.1 Customer requirements are established and job parameters specified according to workplace procedures 1.2 Customer requirements are compared with existing workplace products and services 1.3 Variations required by the customer are established
2. Estimate the job	2.1 Variations from standard workplace product or service are identified and estimated

Elements	Performance Criteria
	2.2 Additional processes, parts and skills required to meet customer requirements are estimated 2.3 Workplace job costing procedures, including cost-reduction initiatives, are used to estimate materials, parts, labour and equipment costs for the job 2.4 Estimates for contingencies and changed work requirements are included in the total job cost
3. Document and confirm quotation	3.1 Quotation is prepared and confirmed with client according to workplace procedures 3.2 Customer purchase and payment arrangements are negotiated 3.3 Changes and variations are negotiated to meet customer and workplace needs 3.4 Workplace record and customer file are processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify job and customer requirements - interpret workplace procedures and specifications relating to quotation.
Writing skills to:	- produce job requirements and material lists - legibly complete quotation, associated workplace records and customer file.
Oral communication skills to:	communicate and negotiate with customers.
Numeracy skills to:	- identify customer specifications - determine job budget including, materials, parts, labour and equipment costs - estimate contingencies and changed work requirements - produce a quotation that has mathematical information legibly embedded.
Planning and organising skills to:	determine order and timing of processes.
Problem-solving skills to:	determine process needed to fulfil customer product or service

Skills	Description
	requirements.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Cost-reduction initiatives</i> must include:	• continuous improvement programs • waste avoidance.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMANA001 Prepare and document quotations

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMANA3001 Prepare and document quotation

Performance Evidence

Before competency can be determined, individuals must have competently prepared and documented a quotation on a minimum of three occasions.

Individuals must demonstrate they can:

- prepare a detailed estimate of job labour, parts, equipment and materials based on customer requirements
- accurately estimate the job, allowing for contingencies
- prepare a detailed, legible quotation document
- follow workplace procedures when preparing and processing the quotation.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- procedures for determining and negotiating customer requirements in order to prepare a quotation
- procedures for planning and estimating a job, including:
 - methods of determining labour rates and job time length
 - methods of determining job processes and material requirements
 - methods of planning for contingencies
- cost minimisation and waste avoidance procedures and practices
- workplace quotation flow chart.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to quotations they have prepared.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- real or simulated customer product or service requiring a quotation
- workplace documentation for estimating and preparing a quotation
- workplace procedures for preparing and processing a quotation.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMAQA001 Apply quality assurance techniques

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAQA4001 Apply quality assurance techniques
Release 2	Amendments made to the unit to include OHS requirements. Reference to SNR updated to NVR in Assessment Conditions to reflect new Standards for Registered Training Organisations.

Application

This unit describes the performance outcomes required to apply quality assurance techniques required in an automotive manufacturing environment.

It involves the application of skills and knowledge during the design, development and production of automotive plant, tools, equipment and systems at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Common

Unit Sector

Quality

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Interpret and apply workplace quality	1.1 <i>Instructions</i> and plans are interpreted to identify processes and materials to complete work tasks

Elements	Performance Criteria
standards	1.2 Workplace quality standards are interpreted and applied to work tasks 1.3 Process improvement tools are used either individually or in a team to identify design, development and production quality problems
2. Monitor and report on quality	2.1 Finished materials and products are checked for quality against workplace quality standards and according to workplace procedures 2.2 Non-conforming materials and products are identified and reported 2.3 Quality problems are analysed to identify the root cause using analytical tools 2.4 Strategies to improve quality are developed and recommended according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify and review quality improvement plans - interpret instructions and plans, relevant legislation, regulations, standards, codes of practice, safe work practices and workplace procedures.
Writing skills to:	legibly record and report quality improvement progress.
Oral communication skills to:	- communicate between production and quality team members - discuss quality improvement plans with team leader and clarify quality assurance requirements.
Numeracy skills to:	- use analytical tools, instructions and plans - calculate materials to complete work tasks.
Digital literacy skills to:	use computers and computer software, such as email, databases, spreadsheets and word processing.
Teamwork skills to:	work effectively with diverse team members.

Range of Conditions

and occupational health and safety (OHS) This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Instructions</i> must include:	• engineering specifications and drawings • operator instruction systems (OIS) or workplace equivalent • process control plans (PCPs) or workplace equivalent • standard operating procedures (SOPs) or workplace equivalent.
<i>Workplace procedures</i> must include:	• quality standards • use of tools and equipment • work health and safety (WHS) and occupational health and safety (OHS) requirements • workplace recording and reporting.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMAQA001 Apply quality assurance techniques

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMAQA4001 Apply quality assurance techniques
Release 2	Amendments made to the unit to include OHS requirements. Reference to SNR updated to NVR in Assessment Conditions to reflect new Standards for Registered Training Organisations.

Performance Evidence

Before competency can be determined, individuals must have competently applied quality standards on a minimum of three occasions.

Individuals must demonstrate they can:

- comply with workplace production standards and quality assurance techniques
- apply workplace procedures relating to quality assurance techniques
- communicate effectively with team leaders and team members to ensure quality assurance
- document quality improvement activity and techniques
- complete quality improvement reports.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- quality processes
- workplace procedures relating to quality assurance techniques
- process improvement tools
- processes and procedures for implementing quality improvement activities, including:
 - processes and required resources from a quality improvement plan
 - identifying and allocating tasks from the quality improvement plan
 - recording and reporting procedures for monitoring progress of quality improvement plan activities
- types, layout and application of quality improvement activity reports.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the application of quality assurance techniques.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- tools, equipment and machinery required when producing motor vehicles
- workplace procedures relating to quality assurance techniques
- quality improvement plan
- process control plans (PCPs) or workplace equivalent.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM013 Install or replace mechanical units and assemblies

Modification History

Release	Comment
Release 1	New unit of competency

Application

This unit describes the performance outcomes required to apply safe work practices in a manufacturing environment.

It involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Health and Safety

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Identify work health and safety requirements	1.1 Identify Work health and safety (WHS) requirements applicable to the job context 1.2 Identify roles and responsibilities of key personnel connected with WHS 1.3 Identify and locate personal protective equipment (PPE) applicable to the job context
2. Follow work health and safety procedures	2.1 Carry out housekeeping according to workplace procedures and WHS requirements 2.2 Identify and undertake appropriate manual-handling techniques and utilise safety equipment according to workplace and manufacturer procedures and WHS requirements 2.3 Utilise personal protective equipment (PPE) according to workplace and manufacturer procedures and WHS

Elements	Performance Criteria
	requirements 2.4 Maintain and store PPE according to workplace and manufacturer procedures
3. Respond to hazards and emergencies in the workplace	3.1 Identify and report workplace hazards and risks according to workplace procedures 3.2 Identify non-conformance in the use, storage and labelling of hazardous materials and report to the appropriate personnel 3.3 Identify and follow emergency procedures, reporting to appropriate personnel according to workplace procedures and WHS requirements 3.4 Access and use emergency equipment according to manufacturer procedures and WHS requirements
4. Complete incident and accident reports	4.1 Identify workplace incident and accident reporting procedures 4.2 Complete incident and accident reports according to workplace procedures, submitting to appropriate personnel 4.3 Identify, tag and report faulty emergency equipment

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret workplace and WHS procedures that support safe work practices - interpret and use operating procedures for PPE, manual handling and emergency equipment - interpret safety data sheets (SDS) - interpret labels on containers and hazardous materials.
Writing skills to:	legibly and accurately complete incident and accident reports, workplace hazards and risk assessment forms.
Oral communication skills to:	- report non-conformance in the use, storage and labelling of hazardous materials - report workplace emergencies to appropriate personnel.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMASA011 Apply safe work practices in a manufacturing environment	AUMASA001 Apply safe work practices in the automotive manufacturing environment	Rationalisation of Elements. Additions to Assessment Requirements due to rationalisation of Range of Conditions. Minor changes to ensure policy adherence.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM013 Install or replace mechanical units and assemblies

Modification History

Release	Comment
Release 1	New unit of competency

Performance Evidence

Before competency can be determined, individuals must have competently applied safe workplace practices in a manufacturing environment on a minimum of two occasions, in the manner described in the Performance Criteria of this unit.

Individuals must demonstrate they can:

- follow workplace procedures that support safe work practices
- locate, select and use personal protective equipment (PPE) required to work safely in a manufacturing environment
- select and use approved manual-handling techniques required to work safely in a manufacturing environment
- identify and manage workplace hazards within scope of own responsibility
- complete workplace incident and accident report forms, and risk assessment forms.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- workplace procedures required to work safely, including:
 - emergency procedures
 - procedures for storing and labelling hazardous materials
 - procedures for recording and reporting incidents and accidents
 - procedures for removing spillages
 - cleaning and maintaining workplace.
- WHS requirements to ensure safe work practices, including:
 - first aid equipment
 - procedures for handling hazardous material
 - hazard control procedures, including those for hazardous materials and toxic substances
 - manual-handling techniques
 - personal protective clothing and equipment

- safe use of tools, equipment and machinery
- types of PPE equipment relevant to own work, including:
 - ear plugs
 - glasses
 - gloves
 - helmets
 - protective clothing
 - safety boots
- manual-handling techniques
- common workplace hazards and treatment methods.

Assessment Conditions

Assessors of this unit must possess a high level of skills and knowledge in the training product being delivered including knowledge/awareness of the latest techniques and processes.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence of their application of safe work practices in the manufacturing environment, e.g. risk assessment sheets.

The following resources must be made available:

- manufacturing workplace or simulated workplace
- workplace procedures that support safe work practices
- PPE appropriate to the candidate's work area
- a range of workplace material requiring handling and storage
- manual handling equipment
- incident and accident reports
- risk assessment forms.
-

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMASM001 Monitor and maintain a safe automotive work environment

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMASM3001 Maintain a safe automotive manufacturing work environment

Application

This unit describes the performance outcomes required to monitor and maintain a safe automotive manufacturing environment.

It involves the application of skills and knowledge at a supervisory level to ensure a safe work environment for co-workers in the work area.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Common

Unit Sector

Health and Safety - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Identify and manage hazards in work area	1.1 <i>Instructions</i> and plans are reviewed and safety concerns are identified 1.2 Work area is reviewed and safety concerns and hazards are identified

Elements	Performance Criteria
	1.3 Hazards are managed prior to starting work according to workplace procedures and work health safety (WHS) requirements
2. Maintain the necessary conditions for a safe work environment	2.1 Risk control measures are identified and implemented 2.2 Relevant WHS information is accurately and clearly explained to personnel 2.3 Current and updated WHS information is made readily and regularly accessible to personnel in a timely manner according to workplace procedures 2.4 Information about identifying hazards and controlling risks is regularly provided and explained to the work group
3. Monitor and improve safety in area of own responsibility	3.1 Accident and incident records and statistics are maintained and analysed according to workplace procedures 3.2 Best practice initiatives to reduce waste and environmental risk are identified, implemented and monitored 3.3 Effectiveness of control measures is monitored and inadequacies are promptly identified and resolved or reported to appropriate personnel 3.4 Opportunities are provided for personnel to contribute their views on current and future WHS practices, including views on how to eliminate or control risks 3.5 Recommendations for improvements are made to the appropriate person according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret WHS requirements and workplace procedures - interpret work area instructions and plans to identify principal hazards and safety concerns in the work area.
Writing skills to:	- complete risk assessment forms - legibly complete accident and incident records.
Oral communication skills to:	- explain WHS information, including workplace procedures - engage with others in identifying workplace hazards and controlling risks - communicate the effectiveness of control measures and make

Skills	Description
	recommendations for improvement.
Numeracy skills to:	maintain and analyse accident and incident records and statistics.
Problem-solving skills to:	- identify control measures to address issues from risk analysis - identify best practice and reduce environmental risk and waste.
Teamwork skills to:	- work with diverse team members in a supervisory role to: - ensure safe work practices are followed - encourage changed behaviour where unsafe practices are identified.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Instructions</i> must include:	- job sheets, work plans, specifications, drawings and designs - manufacturer instructions for the use of equipment and materials - production planning figures - reporting and communications.
<i>Workplace procedures</i> must include:	- continuous improvement processes and standards - quality guidelines - recording and reporting guidelines - safe use of tools, equipment and machinery - WHS requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMASM001 Monitor and maintain a safe automotive work environment

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMASM3001 Maintain a safe automotive manufacturing work environment

Performance Evidence

Before competency can be determined, individuals must have competently maintained a safe automotive manufacturing work environment on a minimum of three occasions.

Individuals must demonstrate they can:

- perform a risk analysis of the work area
- monitor the work environment and identify work health and safety (WHS) inadequacies
- comply with WHS requirements and workplace procedures for monitoring and maintaining a safe work environment
- identify and make recommendations relating to WHS improvements.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements of an automotive manufacturing work environment
- procedures for performing risk analyses and applying appropriate control measures
- procedures for distributing WHS information to personnel
- methods of maintaining and analysing accident and incident reports
- procedures for monitoring and evaluating WHS control measures to maintain a safe automotive work environment.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that demonstrates they have monitored and maintained a safe automotive work environment, e.g. risk analysis sheets, or accident or incident reports.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- automotive manufacturing work area instructions and plans
- workplace procedures and instructions relevant to the candidate's automotive manufacturing work area
- risk analysis documentation
- incident and accident reports
- access to a workplace team.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATA001 Develop documentation and procedures

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replace AUMATA2001 Develop and produce documentation and procedure

Application

This unit describes the performance outcomes required to develop and trial documentation and procedures in a range of contexts for production activities.

It applies to those working in an automotive and related component manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Competency Field

Manufacturing - Common

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Identify documentation and procedure requirements	1.1 Need for documentation is identified and evaluated in consultation with management and production departments 1.2 Specifications are prepared ensuring that documentation and procedures will facilitate effective communication between relevant internal and external personnel

Elements	Performance Criteria
	1.3 Scope of documentation and procedure requirements is discussed and finalised with management and production departments
2. Develop draft documentation and procedures	2.1 Draft documentation and associated procedures are drafted according to approved arrangements 2.2 Draft documentation and procedures are prepared and trialled with intended users according to workplace procedures 2.3 Draft documentation and procedures are modified according to trial feedback
3. Finalise documentation and procedures	3.1 Documentation and procedures as approved are produced according to specifications and workplace procedures 3.2 Intended users are instructed in the use of documentation and procedures according to workplace procedures and requirements 3.3 Documentation and procedures are distributed and stored according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret workplace procedures - interpret workplace instructions - identify quality assurance system and technical documentation.
Writing skills to:	complete draft documentation and workplace instructions.
Oral communication skills to:	- speak clearly and directly in order to communicate changes in documentation development to relevant personnel - gather feedback.
Numeracy skills to:	identify sequences.
Initiative skills to:	adapt to changing work conditions or contexts.
Planning and organising skills to:	- manage time when planning, preparing and organising work priorities - organise own work priorities.
Teamwork skills to:	apply teamwork to a range of situations, including the trialling of new documentation.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	• quality and continuous improvement processes • recording and reporting • site guidelines • work health and safety (WHS) requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATA001 Develop documentation and procedures

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replace AUMATA2001 Develop and produce documentation and procedures

Performance Evidence

Before competency can be determined, individuals must have competently developed and produced documentation and procedures on a minimum of two occasions.

Individuals must demonstrate they can:

- analyse a process and identify the need for supporting documentation and procedures
- discuss the need for supporting documentation and procedures with relevant stakeholders and integrate feedback into the design
- develop, trial and modify draft documentation
- store documentation for production activities.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures to be followed when developing documents and procedures, including work health and safety (WHS) procedures
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost and waste avoidance practices
- problem identification and resolution techniques
- requirements relating to the documentation and procedures to be developed
- trialling and modifying processes to follow when producing documentation and procedures
- procedures for storing and distributing documentation.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to documents and procedures they have developed.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- tools, equipment and machinery that require documentation
- workplace procedures to be followed when developing documentation and procedures
- production processes that require documentation.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATA002 Conduct post-production inspections and tests

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA3002 Conduct final inspections and functional tests

Application

This unit describes the performance outcomes required to carry out post-production inspections and tests of vehicles, components and systems.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing – Common

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan inspection and tests	1.1 Work order and specifications are reviewed and inspection and test requirements determined 1.2 Inspection and test procedures are identified and confirmed 1.3 Inspection test tools and equipment are selected and checked
2. Conduct inspections and	2.1 Vehicles, components and systems are inspected and tested

Elements	Performance Criteria
tests	for functional operation to ensure specifications, tolerances and workplace standards are met 2.2 Surfaces are inspected and tested against job specifications and workplace quality standards 2.3 Inspection is completed according to <i>workplace procedures</i>
3. Identify faults	3.1 Vehicles, components and systems not meeting job specifications and workplace quality standards are identified 3.2 Faults are labelled according to workplace procedures
4. Record and report findings	4.1 Appropriate workplace forms are selected for recording faults 4.2 Job sheets and work orders are completed according to workplace procedures 4.3 Inspection and testing results are reported to appropriate personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify work health and safety (WHS) requirements and workplace procedures relating to inspection and testing - interpret job specifications and tolerances - interpret workplace forms.
Writing skills to:	- legibly label faults - complete job sheets and work orders.
Numeracy skills to:	inspect and test vehicles, components and systems and compare findings to specifications.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i>	- inspection and testing of vehicles, components and systems - identifying faults

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

must include:	• pre- and post-use inspection of equipment • recording and reporting inspection and test results • WHS requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATA002 Conduct post-production inspections and tests

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA3002 Conduct final inspections and functional tests

Performance Evidence

Before competency can be determined, individuals must have competently conducted post-production inspection and tests of vehicles, components and systems on a minimum of three occasions.

Individuals must demonstrate they can:

- observe work health and safety (WHS) requirements when inspecting and testing post-production vehicles, components and systems
- apply workplace procedures for inspecting and testing vehicles, components and systems
- select suitable inspection methods and techniques
- conduct post-production inspections and tests, identifying non-conformances
- clearly and legibly communicate inspection and test results
- complete workplace inspection and test documentation.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- types and application of post-production inspection and testing procedures
- workplace quality standards relating to post-production vehicles, components and systems, including types, purpose and operation of test equipment
- workplace procedures and documentation for inspecting and testing vehicles, components and systems
- WHS requirements when inspecting and testing vehicles, components and systems
- test equipment and test materials.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles that they have worked on, e.g. inspection reports.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- tools, equipment and machinery required to inspect and test vehicles, components and systems
- vehicles, components and systems that require inspecting and testing
- WHS requirements relating to inspecting and testing vehicles, components and systems
- work sheets, work orders and job specifications relating to post-production inspections and tests
- workplace procedures relating to inspecting and testing vehicles, components and systems.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATA003 Rectify faults in vehicle metal components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA3003 Rectify faults in vehicle metal components

Application

This unit describes the performance outcomes required to assess and repair faults to vehicle metal components as a result of manufacturing and production line damage or defective metal.

It applies to individuals in an automotive and related component manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing – Common

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Work order, job instructions and quality requirements are located and confirmed with appropriate personnel 1.2 Tools and equipment required for the job are identified, selected and checked for faults and correct operation 1.3 Materials required to complete the job are identified and

Elements	Performance Criteria
	prepared 1.4 Repair plan is prepared and confirmed with appropriate personnel
2. Assess fault	2.1 Vehicle components are inspected for fault against job specifications and workplace quality standards 2.2 Fault or defects are assessed and cause identified
3. Repair fault	3.1 Repair activities are carried out according to workplace procedures 3.2 Appropriate tools are used to repair fault or defects 3.3 Faulty or defective areas are repaired to original equipment manufacturer (OEM) specifications and workplace quality standards 3.4 Repaired components are inspected for compliance against OEM specifications and returned to the production sequence
4. Complete work processes	4.1 Work area is cleaned, and materials disposed of, reused or recycled according to workplace procedures and cost-reduction initiatives 4.2 Tools and equipment are cleaned, checked, maintained and stored according to workplace procedures 4.3 Faulty tools and equipment are identified, tagged and reported 4.4 Repair work sheet is completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret workplace procedures and work health and safety (WHS) requirements - interpret OEM repair specifications - identify repair plan and job specifications.
Writing skills to:	- complete repair work sheets - complete repair work plan - complete faulty equipment tags.
Oral communication skills to:	confirm job instructions and quality requirements with appropriate personnel.

Skills	Description
Numeracy skills to:	inspect vehicle metal components against job specifications.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	- quality requirements - recording and reporting - use of repair equipment - WHS requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATA003 Rectify faults in vehicle metal components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA3003 Rectify faults in vehicle metal components

Performance Evidence

Before competency can be determined, individuals must have competently repaired faults in vehicle metal components on a minimum of three occasions.

Individuals must demonstrate they can:

- observe workplace procedures relating to repairing vehicle metal component faults
- comply with work health and safety (WHS) requirements relating to repairing faults in vehicle metal components
- select suitable repair methods and techniques
- select and conduct component inspections
- follow workplace quality guidelines when repairing vehicle metal components
- repair and rectify vehicle metal components
- select and use repair tools and equipment correctly
- comply with original equipment manufacturer (OEM) specifications when repairing vehicle metal components
- complete work sheets and documentation detailing repair of vehicle metal component faults.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements and workplace procedures relating to repairing vehicle metal component faults
- types of inspection procedures of vehicle metal components and their application
- types of metal damage and defects
- operation of specialist metal repair tools and equipment
- metal component repair techniques
- workplace quality documentation relating to repairing vehicle metal component faults.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- workplace instructions and procedures relevant to repairing faults in vehicle metal components
- WHS equipment appropriate to the work being performed
- metal repair tools and equipment required for inspecting and rectifying faults in vehicle metal components
- vehicles or vehicle panels and components with defects that require repair.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATA004 Diagnose and repair mechanical faults

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA3004 Rectify mechanical faults on assembled vehicles

Application

This unit describes the performance outcomes required to diagnose and repair mechanical faults based on recommendations from inspection records.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Common

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare for diagnostic and repair activities	1.1 Work instructions, inspection reports, forms and quality requirements are obtained, confirmed with appropriate personnel, and applied 1.2 Tools, equipment and materials are identified, obtained and prepared
2. Undertake diagnostic and	2.1 Diagnostic and repair activities are carried out according to

Elements	Performance Criteria
repair activities	<i>workplace procedures</i> 2.2 Inspection reports are interpreted, mechanical faults identified, and corrective action is planned 2.3 Faults are rectified according to specification 2.4 Faults are re-diagnosed to ensure they have been eliminated, and final adjustments are made
3. Complete work processes	3.1 Repair documentation is completed according to workplace procedures 3.2 Work area is cleaned, and materials disposed of or recycled according to workplace requirements 3.3 Tools and equipment are cleaned, checked, maintained and stored according to workplace requirements 3.4 Faulty tools and equipment are identified, tagged and reported 3.5 Work sheets and inspection reports are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work instructions and workplace procedures - interpret inspection reports, repair manuals and specification sheets.
Writing skills to:	- complete inspection and fault rectification reports - prepare a repair plan - complete faulty equipment tags.
Oral communication skills to:	- inform team members of suitable repair methods used in correcting faults - communicate and receive work instructions.
Numeracy skills to:	interpret job instructions.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	• continuous improvement processes • equipment maintenance and storage • quality guidelines • recording and reporting • use of equipment • work health and safety (WHS) requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATA004 Diagnose and repair mechanical faults

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA3004 Rectify mechanical faults on assembled vehicles

Performance Evidence

Before competency can be determined, individuals must have competently conducted mechanical rectification to a vehicle and its components on a minimum of two occasions.

Individuals must demonstrate they can:

- locate, interpret and apply relevant work instructions and job specifications
- comply with work health and safety (WHS) requirements relating to diagnosing and repairing mechanical faults
- follow workplace procedures relating to repairing mechanical faults
- use tools and equipment safely when repairing mechanical faults
- communicate and work effectively with others in an automotive manufacturing environment
- repair at least two of the following mechanical faults to specification:
 - ancillary mechanical components
 - brakes
 - engine and drive train
 - fluid leaks
 - steering and suspension
- complete work sheets detailing work activity relating to diagnosing and repairing mechanical faults.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relating to rectifying mechanical faults
- work instructions and workplace procedures relating to rectifying mechanical faults
- workplace quality standards relating to rectifying mechanical faults
- manufacturing and production techniques relevant to repairing mechanical faults

- tools and equipment used to repair mechanical faults
- common mechanical faults, symptoms and diagnosis techniques
- vehicle mechanical systems, parts and their construction
- vehicle specifications.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- work orders and instructions, and workplace procedures relating to rectifying mechanical faults
- WHS requirements relevant to rectifying mechanical faults
- production line of vehicles or components with mechanical faults
- tools and equipment for rectifying mechanical faults
- workplace repair documentation and job specifications.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATA005 Rectify assembly faults

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA3005 Rectify assembly faults in assembled vehicles

Application

This unit describes the performance outcomes required to rectify assembly faults based on recommendations from vehicle inspection and test reports.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Common

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare work	1.1 Work order and work instructions, inspection reports and specifications are obtained and confirmed 1.2 Tools, equipment and materials required for the job are selected and inspected for safe operation and quality
2. Locate and rectify faults	2.1 <i>Workplace procedures</i> are identified and followed

Elements	Performance Criteria
	2.2 Faults are located and diagnosed, and correction method is planned 2.3 Replacement materials are identified, obtained and prepared according to inspection reports 2.4 Rectification activities are carried out according to vehicle specifications 2.5 Faults are re-diagnosed to ensure they have been rectified and final adjustments are made
3. Complete work processes	3.1 Work area is cleaned, and materials disposed of or recycled according to workplace procedures 3.2 Tools and equipment are cleaned, checked and stored according to workplace procedures 3.3 Faulty tools and equipment are identified, tagged and reported 3.4 Repair inspection reports and work sheets are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work health and safety (WHS) requirements - interpret work orders, work instructions and inspection reports - interpret workplace procedures.
Writing skills to:	- legibly complete work sheets and repair inspection reports - complete faulty equipment tags.
Oral communication skills to:	- inform team members of work plan for rectifying vehicle faults - communicate in the workplace and use automotive terminology.
Numeracy skills to:	- interpret vehicle specifications - identify part numbers.
Digital literacy skills to:	- use digital measuring tools - use workplace computer systems.
Planning and organising skills to:	prepare work area, tools, materials and repair plan.
Problem-solving skills to:	identify assembly faults and best correction method.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	• continuous improvement processes • equipment maintenance and storage • quality guidelines • recording and reporting • use of equipment • WHS requirements.
<i>Faults</i> must include:	• body panel and component fit • door gaps • surface damage • vehicle sealing • weld defects.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATA005 Rectify assembly faults

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA3005 Rectify assembly faults in assembled vehicles

Performance Evidence

Before competency can be determined, individuals must have competently rectified assembly faults to vehicles and components on a minimum of two occasions.

Individuals must demonstrate they can:

- apply relevant workplace instructions, and quality and job specifications
- comply with work health and safety (WHS) requirements relating to rectifying assembly faults
- follow workplace procedures relating to rectifying assembly faults
- use tools and equipment safely when rectifying assembly faults
- communicate effectively in the automotive manufacturing workplace
- disassemble and re-assemble vehicle door components
- replace door trim
- rectify vehicle water and wind leaks
- diagnose and rectify assembly faults relating to:
 - door and boot seal faults
 - vehicle body gaps
 - vehicle floor sealing.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures relating to rectifying assembly faults
- workplace quality standards relating to rectifying assembly faults
- common assembly and sealing system faults
- types and uses of tools and equipment appropriate to rectifying assembly faults
- sealing system testing techniques, including water and wind testing
- vehicle specifications, components and systems

- WHS requirements relating to rectifying assembly faults.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- vehicle specifications
- inspection and test reports for assembly faults
- repair tools and equipment required to repair assembly faults
- vehicles or components with defects
- repair and work instructions
- workplace procedures, including quality procedures, relating to rectifying assembly faults
- WHS requirements relating to rectifying assembly faults.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATA006 Provide automotive manufacturing advice

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA4006 Provide technical advice

Application

This unit describes the performance outcomes required to provide technical advice relating to automotive manufacturing activities.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist technician level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Common

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Identify and analyse technical issues	1.1 Stakeholder requirements and workplace procedures relating to the technical issue are identified 1.2 Processes and materials required to complete work task are identified 1.3 Circumstances are analysed, and issues identified and clarified

Elements	Performance Criteria
	1.4 Research necessary to further clarify technical issues is conducted and findings are analysed
2. Formulate advice	2.1 Options relating to the provision of advice are identified and evaluated 2.2 Options are prioritised and preferred options are chosen
3. Provide advice	3.1 Advice is discussed with relevant stakeholders 3.2 Stakeholder requirements are negotiated, documented and incorporated into the proposed advice 3.3 Concluding advice is presented to relevant stakeholders according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Learning skills to:	research automotive development activities.
Reading skills to:	- interpret and critically analyse complex texts - interpret instructions and plans, relevant regulations, standards, codes of practice, safe work practices, and workplace procedures.
Writing skills to:	provide, record and report on technical activities and quality improvement progress.
Oral communication skills to:	- discuss, identify and clarify technical issues with relevant stakeholders - listen to stakeholder feedback regarding proposed advice and negotiate any changes to advice.
Digital literacy skills to:	use computers and computer software, such as email, databases, spreadsheets and word processing.
Initiative skills to:	adapt to changing work conditions or contexts.
Planning and organising skills to:	- manage time when planning, preparing and organising work priorities - take responsibility for organising own work priorities.
Problem-solving skills to:	access, interpret and apply information on relevant organisational procedures and instructions.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Advice</i> must:	• include formal or informal, and verbal or written • formal and informal, verbal and written information related to automotive development activities associated with team members and job role.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATA006 Provide automotive manufacturing advice

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA4006 Provide technical advice

Performance Evidence

Before competency can be determined, individuals must have competently provided automotive manufacturing technical advice on a minimum of three occasions.

Individuals must demonstrate they can:

- identify technical issues through an analysis of stakeholder requirements, workplace procedures and work task processes and materials
- devise advice options and determine preferred option
- incorporate stakeholder requirements into advice
- present concluding advice to stakeholders
- follow workplace procedures for providing technical advice
- comply with work health and safety (WHS) requirements, and relevant regulations, standards and codes of practice.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS and environmental requirements relating to automotive manufacturing activities
- application, purpose and operation of common automotive manufacturing tools, equipment and processes
- methods for identifying issues in automotive manufacturing processes
- procedures for rectifying common automotive manufacturing process issues
- methods for presenting advice to stakeholders, including producing word-processed reports.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the automotive manufacturing issues on which they provided advice, e.g. a report with concluding advice.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- automotive manufacturing process to produce a product, including tools, equipment and machinery and the relevant workplace procedures
- workplace instructions and specifications relating to the product produced in the process.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATA007 Conduct vehicle performance tests

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA4007 Conduct simulated or road performance test

Application

This unit describes the performance outcomes required to carry out pre-road test checks on vehicles, as well as final simulated or on-road performance tests.

It applies to those in an automotive manufacturing environment.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Competency Field

Common

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare for the job	1.1 <i>Workplace procedures</i> are identified 1.2 Vehicle to be tested is positioned and secured to prevent injury or damage 1.3 Vehicle fuel and lubricant levels are checked 1.4 Driver safety items are checked according to workplace procedures to ensure they are functional and suitable to

Elements	Performance Criteria
	vehicle specifications 1.5 Temporary registration plates are fitted 1.6 Pre-inspection checklist is completed
2. Test vehicle performance	2.1 Vehicle is secured on chassis dynamometer for testing, if applicable 2.2 Vehicle is driven and tested on-road according to state road regulations 2.3 Vehicle is tested under load conditions 2.4 Adjustments are made if necessary during on-road tests
3. Respond to faults	3.1 Vehicle performance test reports are completed, with faults recorded and reported to appropriate personnel 3.2 Vehicle quarantine procedures are implemented to ensure faulty vehicles are not returned to customer 3.3 Vehicle is placed in quarantine based on type of faults to be rectified
4. Rectify faults	4.1 Vehicle reports of performance test results are used to identify faults 4.2 Tools and equipment are selected and used to conduct rectification 4.3 Faults are rectified so that vehicle performs to manufacturer specifications and complies with roadworthy requirements
5. Complete work processes	5.1 Vehicle is retested to ensure faults have been rectified and vehicle performs to manufacturer specifications 5.2 Compliance and vehicle identification plates are fitted, if applicable 5.3 Final inspection and dispatch form are completed and submitted to appropriate personnel 5.4 Job rectification report is completed

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret vehicle performance specifications - analyse vehicle quality inspection reports - interpret vehicle operating instructions.

Skills	Description
Writing skills to:	- complete test and rectification reports - complete fault rectification plans - record vehicle faults.
Oral communication skills to:	inform management and customers of vehicle faults and repair requirements.
Numeracy skills to:	- analyse vehicle performance graphs and specifications - identify vehicle component part numbers.
Initiative skills to:	adapt to changing employment conditions and contexts.
Planning and organising skills to:	prepare vehicle for testing and plan its performance test.
Problem-solving skills to:	access, interpret and apply workplace procedures and work instructions, particularly to ensure faulty vehicles are quarantined.
Technology skills to:	operate vehicle operating systems.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	- road testing - using test equipment - operating vehicles - work health and safety (WHS) requirements - workplace recording and reporting.
<i>Testing</i> must include:	- braking - gauges - lights - rattles - ride - squeaks - steering - turn indicators - vibrations - warning lights.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATA007 Conduct vehicle performance tests

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA4007 Conduct simulated or road performance test

Performance Evidence

Before competency can be determined, individuals must have competently tested vehicle performance on a minimum of three occasions.

Individuals must demonstrate they can:

- follow workplace procedures relating to performance testing a vehicle
- comply with work health and safety (WHS) requirements relating to conducting vehicle performance tests
- communicate test requirements and results with co-workers
- identify faults in, and non-conformance of, vehicle components and systems
- conduct adjustments and repairs on vehicles to rectify faults and adjust to vehicle specifications
- read quality inspection reports and identify performance faults
- confirm that performance complies with vehicle specifications
- use vehicle performance testing equipment
- report performance test results.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relating to conducting vehicle performance tests
- vehicle performance testing procedures and practices
- vehicle specifications
- workplace communication methods during performance testing
- workplace quality requirements relevant to vehicle performance testing
- types and purpose of test equipment
- vehicle components and their purpose
- state road regulations

- vehicle manufacturer operating procedures
- workplace recording and reporting procedures.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements and driver license requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles on which they have conducted performance tests, e.g. performance test orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- vehicles for testing
- vehicle specifications
- documentation covering:
 - pre-inspection checklists
 - inspection and dispatch forms
 - work and test instructions
 - performance test procedures
 - performance test results
 - fault indicators
 - retesting and release processes
- vehicle operating instructions
- workplace vehicle performance testing procedures.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATA008 Produce drawings manually

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA5008 Produce drawings manually

Application

This unit describes the skills and knowledge required to produce drawings using manual drafting techniques.

It applies to those in an automotive and related component manufacturing environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan drawings	1.1 Project objectives and design brief are defined and clarified according to workplace procedures 1.2 Drafting requirements and processes are clarified based on project objectives and specifications 1.3 <i>Drawing specifications</i> are identified and confirmed with

Elements	Performance Criteria
	appropriate personnel 1.4 Required drawing resources are selected
2. Prepare and check drawings	2.1 Critical dimensions and data for the required drawing are established 2.2 Preliminary sketches are prepared and reviewed with appropriate personnel 2.3 Drawings are prepared according to project objectives, specifications and workplace procedures 2.4 Drawings are checked against project objectives, specifications and workplace quality standards, and necessary changes are made
3. Document drawings	3.1 Drawings and technical information are documented according to project requirements and workplace procedures 3.2 Drawings are processed for approval by appropriate personnel 3.3 Drawings and associated documentation are stored according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret drawing objectives and specifications - interpret technical information.
Writing skills to:	- produce drawing requirements and material lists - list dimensions and specifications in drawings.
Oral communication skills to:	communicate with customers and others in the workplace.
Numeracy skills to:	calculate dimensions and specifications.
Digital literacy skills to:	use drawing equipment.
Initiative skills to:	change work conditions to suit drawing requirements.
Planning and organising skills to:	- manage given timelines - prepare drawing materials and equipment.
Problem-solving skills to:	identify where drawings do not comply with specifications.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Drawing specifications</i> must include:	• manufacturing processes • measurements and specifications • quality and technical information.
<i>Resources</i> must include:	• design brief and associated design specifications • drawing equipment • product and sub-assembly to be designed.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATA008 Produce drawings manually

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATA5008 Produce drawings manually

Performance Evidence

Before competency can be determined, individuals must have competently produced manual drawings on a minimum of three occasions.

Individuals must demonstrate they can:

- comply with workplace drawing standards
- comply with Australian drawing standards
- maintain a working knowledge of work systems and manufacturing practices
- apply workplace requirements in relation to:
 - production goals
 - work quality goals
 - changing work requirements
 - applying problem-solving techniques
- clarify drawing requirements
- select drawing equipment
- make required measurements
- prepare drawings manually
- check, document and store drawings.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- drawing standards
- drawing procedures, specifications, schedules and work plans
- processes to clarify manual drafting requirements
- procedures for making and listing drawing measurements
- procedures for checking, documenting and storing drawings.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to drawings that have been produced manually.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- product or sub-assembly to be designed
- design brief and associated design specifications
- drawing work plan and instructions
- drawing specifications
- drawing equipment
- workplace drawing procedures.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATE001 Rework faulty production engines

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATE3001 Rework production engines

Application

This unit describes the performance outcomes required to rework faulty engines based on test results that identify operating inconsistencies or faults.

It applies to those in an automotive and related component manufacturing environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Technical - Engines

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 <i>Workplace procedures</i> are identified and applied 1.2 Work instructions, including relevant inspection reports and forms and quality requirements, are identified, confirmed and applied 1.3 Tools and equipment for reworking engine are identified and selected, and checked for faults 1.4 Materials appropriate to the work application are identified,

Elements	Performance Criteria
	obtained and prepared
2. Confirm test findings	2.1 Engine is tested to simulate normal operating conditions 2.2 Computerised or physical tests are conducted on the reported faults of the engine against designated performance specifications 2.3 Results of tests are confirmed and documented
3. Rectify engine fault	3.1 Fault is identified and diagnosed, and suitable repair is planned 3.2 Rectification is applied according to engineering specifications 3.3 Engine is re-tested to ensure rework has eliminated the fault and final adjustments are made 3.4 Engine is transferred to the designated holding area
4. Complete work processes	4.1 Work area is cleaned, and materials disposed of, reused or recycled according to workplace procedures 4.2 Tools and equipment are cleaned, checked, maintained and stored according to workplace procedures 4.3 Faulty equipment is identified, tagged and reported 4.4 Documentation is completed, outlining work conducted and outcome, according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work instructions and inspection reports - interpret original equipment manufacturer (OEM) manuals and specification sheets.
Writing skills to:	- complete work sheets and fault rectification reports - prepare a repair plan - complete faulty equipment tags.
Oral communication skills to:	give and receive work instructions.
Numeracy skills to:	interpret job instructions and engineering specifications.
Problem-solving skills to:	identify engine faults from test results.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	• continuous improvement processes and standards • workplace quality guidelines • guidelines for recording and reporting faults in vehicle engines • use of repair equipment • work health and safety (WHS) requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATE001 Rework faulty production engines

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATE3001 Rework production engines

Performance Evidence

Before competency can be determined, individuals must have competently reworked production engines on a minimum of two occasions.

Individuals must demonstrate they can:

- locate, interpret and apply repair information and job specifications
- comply with work health and safety (WHS) requirements relating to the rework of faulty production engines
- follow workplace procedures relating to the repair of engine faults
- use tools and equipment safely
- communicate effectively and safely with others in an engine repair workshop
- handle and place engines safely.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relevant to repairing engines
- workplace procedures relating to repair of engine faults
- engine repair quality standards
- automotive industry terminology relating to engines and their components
- mechanical principles and functions of engines
- mechanical tools and equipment to repair faulty engines
- engine faults and symptoms
- engine testing techniques and equipment
- engine rework techniques and equipment.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the engines on which they have worked e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- original equipment manufacturer (OEM) procedures for repairing engines
- workplace instructions relating to the rework of faulty engines
- engine specifications
- engines with production faults
- tools and equipment for reworking engines.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATK002 Prepare and operate tools, equipment and machinery

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK2002 Prepare, use and operate equipment, tools and machinery
Release 2	Updated for clarity and policy adherence

Application

This unit describes the performance outcomes required to prepare and operate tools, equipment and machinery in an automotive environment.

It involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical - Tools and Equipment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Select and check tools, equipment and machinery	1.1 Select tools, equipment and machinery according to the job requirements 1.2 Check tools, equipment and machinery for safe operation according to workplace procedures and manufacturer specifications
2. Operate tools, equipment and machinery	2.1 Operate tools, equipment and machinery according to work health and safety (WHS) requirements workplace procedures and manufacturer specifications

Elements	Performance Criteria
	2.2 Maintain and store tool and equipment and machinery according to workplace procedures
3. Complete work processes	3.1 Identify, tag and report faulty tools, equipment and machinery according to workplace procedures 3.2 Clean work area according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret manufacturer specifications and operating instructions - understand workplace procedures.
Writing skills to:	complete faulty equipment tags.
Oral communication skills to:	report faulty tools, equipment and machinery to appropriate personnel.
Numeracy skills to:	calibrate equipment to manufacturer specifications.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMATK002 Prepare and operate tools, equipment and machinery (Release 2)	AUMATK002 Prepare and operate tools, equipment and machinery (Release 1)	Minor updates to Assessment Requirements. Performance Criteria changed from passive to active voice.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATK002 Prepare and operate tools, equipment and machinery

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK2002 Prepare, use and operate equipment, tools and machinery
Release 2	Updated for clarity and policy adherence

Performance Evidence

Before competency can be determined, individuals must have competently prepared and operated tools, equipment and machinery in an automotive environment on a minimum of two occasions.

Individuals must demonstrate they can:

- observe workplace procedures relating to the use of the tools, equipment and machinery
- select, check and prepare tools, equipment and machinery, including:
 - assembly equipment
 - fastening equipment
 - hand tools
 - power tools.
- operate tools, equipment and machinery according to manufacturer procedures and workplace health and safety (WHS) requirements
- identify, tag and report faults with the tools, equipment and machinery
- store tools and equipment, and shut down machinery
- clean work area and maintain tools, equipment and machinery.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- work health and safety requirements relating to the use of the tools, equipment and machinery
- personal protective equipment relevant to the tools, equipment and machinery used
- original equipment manufacturer operating instructions
- types, characteristics, uses and limitations of automotive tools, equipment and machinery

- handling, storage and maintenance procedures for tools, equipment and machinery
- procedures for recording and reporting faults with tools, equipment and machinery

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to reports on faulty tools, equipment and machinery.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- tools, equipment and machinery required for work processes
- operating procedures for tools, equipment and machinery.
-

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATK004 Use and maintain measuring equipment

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4004 Use measuring equipment

Application

This unit describes the performance outcomes required to use, adjust and maintain measuring equipment used in automotive development, service and repair.

It applies to those in an automotive and related component manufacturing environment at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Technical - Tools and Equipment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare to carry out measurements	1.1 <i>Measuring instructions</i> and work plans are identified and interpreted 1.2 Measuring methods appropriate to the circumstances are selected according to workplace procedures 1.3 <i>Measuring equipment</i> is selected and checked to ensure it is

Elements	Performance Criteria
	calibrated within appropriate tolerances
2. Carry out measurements and analyse results	2.1 Measurement is carried out according to workplace procedures and equipment manufacturer specifications 2.2 Measurement results are compared with specifications to assess compliance or non-compliance 2.3 Results are documented and recommendations are made
3. Maintain measuring equipment	3.1 Information required for equipment maintenance is accessed from manufacturer specifications and interpreted 3.2 Measuring equipment is checked and calibrated against manufacturer specifications and faulty equipment is tagged and removed from service according to workplace procedures 3.3 Measuring equipment is maintained and stored and maintenance records are completed according to workplace and equipment manufacturer specifications

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify job requirements from work plan - interpret workplace procedures and manufacturer specifications relating to the calibration, use and maintenance of tools and equipment.
Writing skills to:	- document measurement results and recommendations - complete faulty equipment tags and maintenance records.
Numeracy skills to:	- interpret numerical information in workplace procedures and manufacturer specifications to calibrate, use and maintain tools and equipment - interpret measurement results and compare with specifications to indicate compliance or non-compliance - list measurements.
Digital literacy skills to:	use measuring equipment with integrated computer controls.
Problem-solving skills to:	interpret measurement results and make recommendations.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Measuring instructions</i> must include:	• job sheets, work plans, specifications, drawings and designs • manufacturing instructions.
<i>Measuring equipment</i> must include:	• callipers, vernier callipers, dividers and feeler gauges • ohm meters, volt meters, amp meters, pressure gauges, torsion wrenches.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATK004 Use and maintain measuring equipment

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4004 Use measuring equipment

Performance Evidence

Before competency can be determined, individuals must have competently used measuring equipment on a minimum of three occasions.

Individuals must demonstrate they can:

- observe workplace procedures relating to the use and maintenance of measuring equipment
- select measuring equipment
- check the currency of calibration of the measuring equipment
- use a range of relevant measuring equipment
- carry out maintenance of measuring equipment
- store measuring equipment.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures and work health and safety requirements relating to the use and maintenance of measuring equipment
- types of measuring equipment
- procedures for calibrating measuring equipment
- handling and storage of measuring equipment
- procedures for recording results and reporting equipment faults.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to using and maintaining measuring equipment, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- measuring equipment required in the production process
- measuring equipment operating procedures
- workplace procedures relating to the use and maintenance of measuring equipment
- procedures for calibrating measuring equipment.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATK005 Calibrate measuring equipment

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4005 Calibrate measuring equipment in automotive development

Application

This unit describes the performance outcomes required to calibrate mechanical, electrical and gas measuring equipment used in automotive development.

It applies to those in an automotive and related component manufacturing environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Common

Unit Sector

Technical - Tools and Equipment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare to calibrate equipment	1.1 Calibration <i>instructions</i> , work plans and workplace checklists are read and interpreted to identify processes 1.2 Calibration equipment is checked for accuracy and currency 1.3 Testing sequence and specified procedures are determined according to industry standards, manufacturer instructions and workplace procedures

Elements	Performance Criteria
2. Regulate equipment	2.1 Calibration equipment is used and readings are recorded according to <i>workplace procedures</i> 2.2 Calibration equipment is adjusted according to instructions 2.3 Calibration equipment is re-tested to validate adjusted reading
3. Complete work processes	3.1 Calibration equipment is re-tagged with currency and standard of calibration 3.2 Evidence of wear, malfunction or out-of-tolerance adjustments is detected, reported and repaired within scope of authority 3.3 Equipment and tools are cleaned, inspected for serviceable condition, and stored at the completion of the process 3.4 Work area is cleaned and restored according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret job requirements from calibrating instructions and work plans - identify workplace procedures relevant to calibrating measurement equipment - interpret manufacturer instructions to calibrate measuring equipment.
Writing skills to:	- document measurement results - complete faulty equipment reports.
Oral communication skills to:	speak clearly and directly in order to communicate equipment calibrating activities.
Numeracy skills to:	- interpret numerical information in workplace procedures and manufacturer calibrating instructions - interpret measurement results and compare with specifications - list measurements.
Digital literacy skills to:	use measuring equipment with integrated computer controls.
Planning and organising skills to:	manage work time and organise work priorities.

Problem-solving skills to:	• access, interpret and apply calibrating information, instructions and workplace procedures, particularly to testing sequences and requirements.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Instructions</i> must include:	• calibration specifications • industry code of practice and standards • job sheets • manufacturer instructions • use and operation of tools and equipment • work plans.
<i>Workplace procedures</i> must include:	• use, maintenance and storage of calibration equipment • procedure manuals • quality and continuous improvement programs • recording and reporting • work health and safety (WHS) requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATK005 Calibrate measuring equipment

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4005 Calibrate measuring equipment in automotive development

Performance Evidence

Before competency can be determined, individuals must have competently calibrated measuring equipment on a minimum of three occasions.

Individuals must demonstrate they can:

- comply with relevant regulations, standards, codes of practice, workplace procedures and established safe practices when calibrating measuring equipment
- plan for and calibrate automotive measuring equipment
- complete workplace documentation relating to calibrating measuring equipment.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) requirements relating to calibrating measuring equipment
- industry code of practice for calibrating equipment
- key features of calibration equipment and procedures for its safe use, maintenance and adjustment
- calibration problem identification and resolution methods
- procedures for recording, reporting and maintaining workplace records.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the measuring equipment that they have calibrated, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- measuring equipment that requires calibrating
- manufacturer instructions and procedures for calibrating equipment
- workplace procedures and WHS requirements relating to calibrating measurement equipment to a standard
- calibrating equipment.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATK006 Test plant, tools, equipment, product and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4006 Test plant, tooling, equipment, product or systems

Application

This unit describes the performance outcomes required to prepare, set up and test plant, tools, equipment, product and systems used to produce motor vehicles.

It applies to those in an automotive manufacturing environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Technical - Tools and Equipment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan test	1.1 <i>Workplace procedures</i> to test plant, tools, equipment, product or systems are identified and verified 1.2 <i>Test instructions</i> and workplace checklists are interpreted to identify processes and materials 1.3 Test equipment and plant tools are obtained according to work plans and workplace procedures 1.4 Test equipment and tools are prepared and calibrated

Elements	Performance Criteria
	according to standards, operating instructions and workplace procedures
2. Conduct test	2.1 Components to be tested are prepared and connected to test equipment 2.2 Components are tested or cycled through test procedures according to test specifications 2.3 Evidence of wear, malfunction or out-of-tolerance adjustment is reported and necessary action is taken
3. Interpret test results	3.1 Test results are interpreted to identify possible causes of malfunction or unserviceability 3.2 Further tests are conducted where required to determine causes of faults, malfunction or unserviceability
4. Initiate corrective action	4.1 Corrective action is implemented according to workplace procedures 4.2 Recommendations and corrective actions are documented according to procedures
5. Complete work processes	5.1 Test results are reported to appropriate personnel and workplace documentation is completed and stored according to workplace procedures 5.2 Work area and testing equipment are cleaned, inspected and stored according to workplace procedures 5.3 Faulty test equipment is identified, tagged and reported

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret test results and documentation - interpret workplace procedures, manufacturer instructions, schedules, reports, manuals and work plans - identify recommended repair procedures and specifications.
Writing skills to:	- prepare and develop work and test plans - record test results and outcomes - complete serviceability documentation.
Oral communication skills to:	- discuss repair plans and schedules with relevant personnel - communicate clearly and directly in order to deliver test information to audiences of varying technical background.

Numeracy skills to:	- interpret and document test specifications - determine schedule timelines - calculate material requirements - use test equipment.
Digital literacy skills to:	use electronic test equipment and computer testing programs.
Planning and organising skills to:	manage testing timelines and organise tests, plans and reports.
Problem-solving skills to:	- analyse test results and recommend rectification action - apply corrective actions, particularly when notifying colleagues of test outcomes.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	- quality and continuous improvement programs - recording and reporting test outcomes - test equipment use, maintenance and storage - testing guidelines - work health and safety (WHS) requirements.
<i>Test instructions</i> must include:	- compliance with industry standard and code of practice - job sheets and work plans - manufacturer instructions, specifications and drawings - workplace procedures relating to the use and operation of test tools and equipment.
<i>Components</i> must include:	- production tools and equipment - vehicle product and systems.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATK006 Test plant, tools, equipment, product and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4006 Test plant, tooling, equipment, product or systems

Performance Evidence

Before competency can be determined, individuals must have competently tested plant, tools, equipment, product or systems on a minimum of two occasions.

Individuals must demonstrate they can:

- comply with industry standards and codes of practice relating to testing automotive plant, tools, equipment, products and services
- comply with work health and safety (WHS) requirements when testing
- follow workplace procedures when testing plant, tools, equipment, products and systems
- apply workplace testing procedures
- prepare for tests or trials of plant, tools, equipment, product and systems
- follow work plans and test instructions of plant, tools, equipment, product and systems
- perform tests or trials on automotive plant, tools, equipment, products and services
- complete reports of test results.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements when testing plant, tools, equipment, products and systems
- workplace procedures when testing plant, tools, equipment, products and systems
- testing procedures relevant to automotive plant, tools, equipment, products and systems
- procedures for preparing and calibrating test equipment
- product and system specifications
- types of test tools and equipment, and procedures for their safe use, operation and maintenance
- techniques for identifying and resolving problems
- procedures for interpreting test results
- procedures for recording and reporting test records and information.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the testing of plant, tools, equipment, product and systems, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- workplace procedures when testing plant, tools, equipment, products and systems
- WHS requirements when testing plant, tools, equipment, products and systems
- tools and equipment to test plant, tools, equipment, product and systems
- plant, tools, equipment, product or systems used to produce motor vehicles
- workplace test instructions, work plans and procedures.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATK007 Install vehicle plant, equipment and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4007 Install plant, equipment or systems

Application

This unit describes the performance outcomes required to install the plant, equipment and systems required for the design, development and production of motor vehicles.

It applies to those in an automotive manufacturing environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Technical - Tools and Equipment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare for installation	1.1 Installation <i>instructions</i> and work plans are identified and confirmed with appropriate personnel and <i>installation requirements</i> are determined 1.2 Parts, plant and equipment required for installation are obtained according to workplace procedures and within scope of responsibilities 1.3 <i>Workplace procedures</i> for installing vehicle plant, equipment

Elements	Performance Criteria
	and systems are identified 1.4 Work site is prepared according to installation plan and requirements of the manufacturer of the component parts, plant and equipment 1.5 Compliance of prepared work site with design drawings, work specifications, and work health and safety (WHS) requirements is determined
2. Conduct installation	2.1 Pre-installation of parts, plant, equipment, fixtures and additional low voltage wiring is completed according to the installation plan and work specifications 2.2 Parts, plant, equipment, fixtures and additional low voltage wiring are installed according to installation plan and work specifications 2.3 Parts, plant, equipment, fixtures and additional low voltage wiring installations are checked against technical and safety requirements
3. Finalise installation	3.1 Installation is checked against design specifications, workplace quality standards, manufacturer instructions and WHS requirements 3.2 Installation faults are reported and rectified according to workplace procedures 3.3 Installation reports are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret WHS requirements and workplace procedures for installing vehicle plant, equipment and systems - interpret work plans, installation plans and design drawings.
Writing skills to:	- complete installation reports - complete inventory lists.
Oral communication skills to:	- discuss and clarify project plan with production team - discuss installation timetable, resource and personnel requirements.
Numeracy skills to:	interpret vehicle specifications

	- calculate material requirements - identify installation measurements.
Initiative skills to:	adapt to changing work conditions or contexts.
Planning and organising skills to:	- set up installation processes and procedures - ensure installations are completed on time and to specifications - prepare work site for equipment installation.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Instructions</i> must include:	- installation and work plans - job sheets, job specifications and design drawings - manufacturer instructions for the use of equipment and materials - work plans - workplace procedures to install plant and equipment.
<i>Installation requirements</i> must include:	- physical resources - staffing.
<i>Workplace procedures</i> must include:	- quality and continuous improvement programs - recording and reporting installation outcomes - WHS requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATK007 Install vehicle plant, equipment and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4007 Install plant, equipment or systems

Performance Evidence

Before competency can be determined, individuals must have competently installed plant, equipment and systems on a minimum of two occasions.

Individuals must demonstrate they can:

- follow workplace installation procedures of vehicle plant, equipment and systems
- maintain knowledge of workplace inventory processes of vehicle plant, equipment and systems
- install plant, equipment and systems safely, in line with work health and safety (WHS) requirements
- prepare and test installed plant, equipment and system
- complete installation forms relating to testing vehicle plant, equipment and systems
- achieve work quality goals when testing vehicle plant, equipment and system.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements and workplace procedures relating to installing vehicle plant, equipment and systems
- methods for installing vehicle plant, equipment and systems
- vehicle plant installation plans and design drawings
- types of tools and equipment and their operating procedures
- problem identification and resolution techniques
- workplace recording and reporting documentation.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicle plant, equipment and systems they have installed, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- tools, plant, equipment and system required in the installation process
- workplace documentation:
 - design drawings
 - fault reports
 - installation plans
 - inventory lists
 - vehicle specifications
 - work instructions
- workplace procedures for installing plant and equipment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATK008 Maintain vehicle plant, tools, equipment and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4008 Maintain plant, tooling, equipment or systems

Application

This unit describes the performance outcomes required to maintain and service plant, tools, equipment and systems required for the design, development and production of motor vehicles.

It applies to those in an automotive manufacturing environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Technical - Tools and Equipment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Develop maintenance plans	1.1 Workplace procedures for maintaining plant, tools, equipment and systems are confirmed 1.2 Plant, tools, equipment or system to be maintained is identified

Elements	Performance Criteria
	1.3 Instructions , plans and workplace checklists are identified 1.4 Preventative maintenance requirements are identified from manufacturer recommendations 1.5 Preventative maintenance work plan and schedules are prepared and submitted to appropriate personnel
2. Conduct maintenance	2.1 Preventative maintenance is conducted according to work plans and procedures and plant, tool, equipment or system is inspected for wear, defects and damage 2.2 Maintenance requirements are reported and recommendations made to appropriate personnel 2.3 Maintenance activities are conducted and results documented
3. Monitor performance post-maintenance	3.1 Critical performance measures and observations of plant, tool, equipment or system are obtained and recorded 3.2 Recorded performance measures and observations are compared against specifications and reported according to workplace procedures
4. Conduct adjustments and service	4.1 Checks and adjustments are made as required 4.2 Lubrication and regular servicing are carried out according to workplace procedures and manufacturer specifications 4.3 Adjustments and servicing procedures are documented
5. Document outcomes	5.1 Routine adjustments, and emergency and preventative maintenance activities are documented 5.2 Defective or malfunctioning plant, tools, equipment and system are reported according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify workplace procedures - interpret maintenance schedules and work plans - identify maintenance instructions.
Writing skills to:	record and report maintenance progress and outcomes.
Oral communication skills to:	- communicate between team members - discuss maintenance plans and schedules

	• discuss performance measures.
Numeracy skills to:	• interpret specifications • determine maintenance schedule timelines • calculate material requirements • operate measuring tools and equipment.
Digital literacy skills to:	• operate computer-based maintenance programs.
Initiative skills to:	• adapt to changing work conditions and contexts.
Planning and organising skills to:	• manage timelines when planning, preparing and conducting maintenance.
Problem-solving skills to:	• identify problems and recommend solutions.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Instructions</i> must include:	• job sheets • maintenance instructions • manufacturer instructions • use and operation of tools and equipment • work plans, specifications and drawings • workplace procedures • workplace reporting and communications.
<i>Preventative maintenance</i> must include:	• plans for daily, weekly, monthly and annual inspection and servicing of plant, tools, equipment and systems.

Unit Mapping Information

No equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATK008 Maintain vehicle plant, tools, equipment and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4008 Maintain plant, tooling, equipment or systems

Performance Evidence

Before competency can be determined, individuals must have competently maintained plant, tools, equipment or systems on a minimum of two occasions.

Individuals must demonstrate they can:

- work and communicate with others in an automotive manufacturing workplace
- maintain plant, tools, equipment and systems according to workplace procedures and work health and safety (WHS) requirements
- adjust and service plant, tools, equipment and systems
- prepare reports relating to the maintenance of vehicle plant, tools, equipment and systems
- achieve work quality goals relating to the maintenance of vehicle plant, tools, equipment and systems
- complete workplace documents of maintenance activity and process outcomes.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures and WHS requirements relating to the maintenance of vehicle plant, tools, equipment and systems
- production performance requirements relating to the maintenance of vehicle plant, tools, equipment and systems
- operation of systems and components relating to the maintenance of vehicle plant, tools, equipment and systems
- types of tools and equipment and their safe operating procedures
- tool and equipment maintenance requirements
- environmental protection requirements
- communication protocols
- problem identification and resolution techniques when maintaining vehicle plant, tools, equipment and systems

- procedures for recording and reporting workplace information relating to the maintenance of vehicle plant, tools, equipment and systems.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to maintaining vehicle plant, tools, equipment and systems, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- workplace procedures relating to the maintenance of vehicle plant, tools, equipment and systems
- production plant, tools, equipment or systems requiring maintenance
- maintenance instructions, materials, workplace information, work plans and specifications.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATK009 Repair vehicle plant, tools, equipment and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4009 Repair plant, tooling, equipment or systems

Application

This unit describes the performance outcomes required to repair plant, tools, equipment and systems used in the design, development and production of motor vehicles.

It applies to those in an automotive manufacturing environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Common

Unit Sector

Technical - Tools and Equipment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Identify faulty plant, tools, equipment and systems	1.1 Reported defects of plant, tool, equipment or system are investigated and faults identified 1.2 Repair <i>instructions</i> and plans are interpreted to identify required processes and materials 1.3 Plant, tool, equipment or system is inspected and operated to confirm nature of reported fault

Elements	Performance Criteria
	1.4 Repair plan is developed with production and maintenance personnel
2. Remove faulty plant, tools, equipment and systems	2.1 Identified faulty plant, tool, equipment or system is removed according to the repair plan and in line with workplace procedures 2.2 Where required, faulty plant, tool, equipment or system is temporarily replaced
3. Diagnose faults	3.1 Faults are located, causes identified, and repair strategy is developed that addresses fault-rectification requirements 3.2 Information from maintenance records, test results and fault diagnosis guides is used to assist in fault identification 3.3 Specialist advice is obtained, where required, to confirm rectification strategy
4. Repair faults	4.1 Faulty plant, tool, equipment or system is dismantled according to the repair strategy 4.2 Component parts are assessed and repair strategy is developed according to workplace procedures 4.3 Component parts are repaired, modified or replaced 4.4 Parts requiring specialist repair are tagged and repair instructions documented according to workplace procedures 4.5 Repaired plant, tools and equipment are re-assembled
5. Re-install plant, tools, equipment and systems	5.1 Re-installation plan for plant, tool, equipment or system is confirmed with relevant personnel 5.2 New or repaired plant, tool, equipment or system is re-installed and checked for compliance and correct operation
6. Calibrate and adjust plant, equipment and systems	6.1 New or repaired plant, tool, equipment or system is calibrated, adjusted and tested 6.2 Details of the repair, re-commissioning, testing and serviceability are documented according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	interpret repair instructions, schedules, reports and work plans.

Writing skills to:	- document removal, installation and repair plans - record and report repair progress and outcomes - complete equipment tags.
Oral communication skills to:	discuss repair plans and schedules with production and maintenance personnel.
Numeracy skills to:	- interpret repair instructions - determine repair schedule timelines - calculate material requirements - use calibration, measuring tools and equipment.
Planning and organising skills to:	follow workplace schedules, timeline and repair plans.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Instructions</i> must include:	- drawings and designs - fault diagnosis - job sheets - repair instructions - reporting and communications - service schedules - work plans - workplace procedures relating to repairing plant, tools, equipment and systems.
<i>Workplace procedures</i> must include:	- equipment use - recording and reporting - repair, testing, maintenance and storage - work health and safety (WHS) requirements.

Unit Mapping Information

No equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATK009 Repair vehicle plant, tools, equipment and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4009 Repair plant, tooling, equipment or systems

Performance Evidence

Before competency can be determined, individuals must have competently repaired plant, tools, equipment and systems on a minimum of two occasions.

Individuals must demonstrate they can:

- discuss repair plans and schedules with production and maintenance personnel
- repair plant, tools, equipment and systems according to workplace procedures and work health and safety (WHS) requirements
- prepare repair plans for vehicle plant, tools, equipment and systems
- test, calibrate and adjust re-commissioned plant, tools, equipment and systems
- achieve work quality goals relating to the repair of vehicle plant, tools, equipment and systems
- complete required housekeeping and documentation relating to the repair of vehicle plant, tools, equipment and systems.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements when repairing plant, tools, equipment and systems
- workplace procedures to repair plant, tools, equipment and systems
- methods of preparing and calibrating equipment
- operation of plant, tools, equipment and systems
- types of tools and equipment and procedures for their safe use, operation and maintenance
- techniques for identifying and resolving problems
- procedures for reporting and recording repair records and information.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the repair of vehicle plant, tools, equipment and systems that they have worked on, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- WHS requirements to repair plant, tools, equipment and systems
- tools and equipment to conduct repairs
- plant, tools, equipment and systems used in the production of motor vehicles that require repairs
- workplace repair instructions, plans and procedures
- repair instructions, work plans and specifications relating to the repair of vehicle plant, tools, equipment and systems.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATK010 Manufacture and modify vehicle plant, tools, equipment and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4010 Manufacture or modify plant, tooling, equipment or systems

Application

This unit describes the performance outcomes required to manufacture or modify plant, tools, equipment and systems used in the design, development and production of motor vehicles.

It applies to those in an automotive manufacturing environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Common

Unit Sector

Technical - Tools and Equipment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan the job	1.1 <i>Instructions</i> and plans are interpreted to identify required processes and materials 1.2 Requirements for the manufacture or modification are confirmed with engineering personnel 1.3 Fabrication and machining processes and instructions are

Elements	Performance Criteria
	determined and clarified with relevant personnel 1.4 Work plan, timelines and list of required resources are developed and communicated to relevant personnel
2. Produce parts for plant and equipment	2.1 Specifications for parts are used to determine dimensions and processes for manufacture or modification 2.2 Materials, tools, equipment and assembly or fabrication jigs or fixtures are selected and prepared to specification 2.3 Components or parts are manufactured or modified according to specifications and workplace procedures
3. Modify tools, jigs and fixtures	3.1 Specifications for modifications of tools, jigs or fixtures are used to determine the dimensions and processes 3.2 Materials, tools, equipment and assembly or fabrication jigs are selected and prepared 3.3 Modifications are conducted according to specifications and workplace procedures
4. Fabricate or modify plant and equipment	4.1 Specifications for manufactured or modified plant, tool, equipment or system are interpreted 4.2 Materials, parts, sub-assemblies, tools, equipment and assembly or fabrication jigs are selected and prepared 4.3 Plant, tools and equipment are fabricated, machined and assembled according to workplace procedures
5. Check and test parts	5.1 Test equipment and rigs are used to confirm serviceability of manufactured or modified plant, tools and equipment 5.2 Completed plant, tools and equipment are tagged, sealed or packaged, and dispatched to store or production area
6. Complete workplace documentation	6.1 Manufacturing details or modifications to the plant, tools and equipment are documented according to workplace procedures 6.2 Documentation is stored and distributed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	interpret manufacture or modification instructions, schedules,

	reports, manuals and plans • interpret repair procedures and specifications.
Writing skills to:	• document manufacture and modification plans • record and report manufacturing or modification outcomes • complete material lists and timetables.
Oral communication skills to:	• communicate ideas with team members • discuss plans and schedules with relevant personnel.
Numeracy skills to:	• interpret part specifications • determine schedule timelines and associated costs • calculate material requirements • use calibrating measuring tools and equipment.
Planning and organising skills to:	• manage time when planning, preparing and organising work priorities.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Instructions</i> must include:	• job sheets and work plans • manufacturer instructions • reporting and communications • specifications and drawings • use and operation of tools and equipment • workplace instructions.
<i>Workplace procedures</i> must include:	• equipment use • quality standards • recording and reporting • work health and safety (WHS) requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATK010 Manufacture and modify vehicle plant, tools, equipment and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4010 Manufacture or modify plant, tooling, equipment or systems

Performance Evidence

Before competency can be determined, individuals must have competently manufactured or modified plant, tools, equipment and systems on a minimum of two occasions.

Individuals must demonstrate they can:

- discuss modifications with production and maintenance personnel
- manufacture or modify plant, tools, equipment or systems according to work health and safety (WHS) requirements and workplace procedures
- test manufactured or modified plant, tools, equipment and systems
- interpret performance results
- prepare reports of test results
- achieve work quality goals relating to the manufacture and modification of plant, tools, equipment and systems
- complete work area housekeeping.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relevant to manufacturing or modifying plant, tools, equipment and systems
- methods of preparing, testing and calibrating equipment
- types of tools, equipment and procedures and their safe use, operation and maintenance
- techniques for identifying and resolving problems
- procedures for recording and reporting workplace records and information.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the plant, tools, equipment or systems they have manufactured and modified, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- tools and equipment to manufacture or modify plant, tools, equipment and systems
- plant, tools, equipment and systems requiring manufacture or modification
- workplace instructions, work plans and specifications
- WHS requirements when manufacturing and modifying tools and systems
- workplace procedures relating to manufacturing and modifying tools and systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATK011 Use technical data relating to plant, tools, equipment and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4011 Interpret manuals, drawings and circuits for plant, tooling, equipment or systems

Application

This unit describes the performance outcomes required to interpret and apply information in plant, tool, equipment and system manuals, drawings and circuits when producing motor vehicles and components.

It applies to those in an automotive and related component manufacturing environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Technical - Tools and Equipment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Source technical data	1.1 Instructions and plans are read and interpreted to identify work area and related processes and materials 1.2 Appropriate <i>manuals, drawings and circuits</i> are identified and accessed

Elements	Performance Criteria
	1.3 Amendment status of manuals, drawings and circuits is clearly established to ensure correct technical data is used
2. Interpret technical data	2.1 Relevant sections of manuals, drawings and circuits are located in relation to the work to be carried out 2.2 Information is interpreted and work procedures and processes to be followed are determined
3. Apply technical data	3.1 Work is performed according to specified procedures and information in relevant sections of manuals, drawings and circuits, and work health and safety (WHS) procedures 3.2 Sequencing of work is determined and applied in line with manuals, drawings and circuits
4. Store technical data	4.1 Manuals, drawings and circuits are stored according to workplace procedures and to prevent damage 4.2 Workplace documentation is completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret instructions and work plans to identify processes and materials - identify amendments to drawings and workplace documents - interpret manuals, drawings, circuits and specifications.
Writing skills to:	complete work sheets and documents.
Numeracy skills to:	interpret numerical information embedded in manuals, drawings, circuits and specifications.
Planning and organising skills to:	perform work according to specified procedures and information provided in relevant sections of manuals, drawings and circuits.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Manuals, drawings and circuits must include:

- manufacturer manuals of plant, tools, equipment and systems
- safe operating procedures for plant, tools, equipment and systems.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATK011 Use technical data relating to plant, tools, equipment and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATK4011 Interpret manuals, drawings and circuits for plant, tooling, equipment or systems

Performance Evidence

Before competency can be determined, individuals must have competently interpreted manufacturing technical data on a minimum of two occasions.

Individuals must demonstrate they can:

- access and interpret manuals, drawings and circuits required for the work
- determine work procedures and processes from manuals, drawings and circuits
- apply procedures, processes, work sequencing and work health and safety (WHS) procedures in the work
- store manuals, drawings and circuits of plant, tools, equipment and systems.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- types and layout of manuals, drawings and circuits and their symbols, codes and legends
- methods of determining work procedures and processes from manuals, drawings and circuits
- methods of storing manuals, drawings and circuits.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to having interpreted manuals, drawings and circuits of plant, tools, equipment and systems, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- manuals, drawings and circuits
- job instructions required in the production process
- vehicle manufacturing equipment
- operating procedures and specifications for plant, tools and equipment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM013 Install or replace mechanical units and assemblies

Modification History

Release	Comment
Release 1	New unit of competency

Application

This unit describes the performance outcomes required to monitor and maintain automotive tools, equipment and machinery.

It involves monitoring the tools, equipment and machinery during operation, performing minor maintenance, and applying preventative maintenance procedures.

It applies to those in an automotive and related component manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical - Tools and Equipment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Monitor operation	1.1 Identify and monitor processes relevant to the task according to manufacturer specifications, workplace instructions and procedures 1.2 Monitor operation of tools, equipment and machinery to ensure they are performing according to job requirements and operator instructions
2. Perform minor maintenance	2.1 Perform minor maintenance on tools, equipment and machinery according to manufacturer specifications, workplace procedures and WHS requirements 2.2 Identify maintenance requirements outside the range of

Elements	Performance Criteria
	operator expertise or responsibility and report to appropriate personnel, in accordance with workplace procedures
3. Apply preventative maintenance	3.1 Check tools, equipment and machinery used in the manufacturing process according to workplace and manufacturer preventative maintenance procedures 3.2 Report identified requirements of tools, equipment and machinery to appropriate personnel according to workplace procedures
4. Complete monitoring and maintenance procedures	4.1 Maintain and clean equipment, tools, machinery and work areas according to workplace procedures 4.2 Identify, tag and report faulty or damaged tools, equipment and machinery according to workplace procedures 4.3 Complete workplace documentation and equipment maintenance reports according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify and understand tools, equipment and machinery operator instructions - follow manufacturer maintenance specifications - identify WHS requirements relating to monitoring and maintaining equipment - understand and follow manufacturer preventative maintenance procedures.
Writing skills to:	legibly complete equipment maintenance schedules and report faulty tools, equipment and machinery tags.
Oral communication skills to:	- inform supervisor of faulty or damaged equipment, tools and machinery - report maintenance requirements to appropriate personnel.
Numeracy skills to:	- identify deviations from correct operation of tools, equipment and machinery from measurements and calculations - understand time and dates in maintenance schedules.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMATK013 Monitor and maintain automotive equipment	AUMATK003 Monitor and maintain automotive equipment	Additions to Assessment Requirements due to rationalisation of Range of Conditions. Minor changes to ensure policy adherence.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM013 Install or replace mechanical units and assemblies

Modification History

Release	Comment
Release 1	New unit of competency

Performance Evidence

Before competency can be determined, individuals must have competently monitored and maintained tools, equipment and machinery on a minimum of two occasions, in the manner described in the Performance Criteria of this unit.

Individuals must demonstrate they can:

- observe workplace procedures and safety requirements relating to monitoring and maintaining tools, equipment and machinery
- monitor the operation of tools, equipment and machinery
- identify faults in the operation of tools, equipment and machinery, and determine action to be taken
- perform minor and preventative maintenance of tools, equipment and machinery, including:
 - carrying out visual inspections
 - conducting pre-start checks
 - conducting shutdown checks
 - removing and replacing parts or components
 - maintaining or replacing consumables
 - making minor adjustments
 - providing feedback on ways to improve equipment maintenance
- correctly and legibly complete workplace documentation relating to monitoring and maintaining tools, equipment and machinery

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- work health and safety requirements relating to monitoring and maintaining tools, equipment and machinery
- equipment, material and personal safety requirements relating to monitoring and maintaining tools, equipment and machinery

- types, uses, limitations and care of basic servicing tools and common lubricants and applicators relevant to tools, equipment and machinery in the vehicle or component manufacturing workplace
- monitoring and maintenance procedures for tools, equipment and machinery in the vehicle or component manufacturing workplace
- maintenance requirements for tools, equipment and machinery, including:
 - adjustment
 - cleaning
 - modification
 - repair
 - replacement
 - servicing
- workplace procedures relating to monitoring and maintaining equipment, including:
 - continuous improvement practices
 - operation of tools, equipment and machinery
 - workplace instructions.
-

Assessment Conditions

Assessors of this unit must satisfy the assessor requirements in applicable vocational education and training legislation, frameworks and/or standards.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the tools, equipment and machinery they have monitored and maintained, e.g. repair orders.

The following resources must be made available:

- automotive workplace or simulated workplace
- tools, equipment and machinery required for the production process of motor vehicles or components, including:
 - hand, power and air tools
 - production assembly equipment.
- tools, equipment and machinery operating procedures
- maintenance tools relevant to the tools, equipment and machinery
- monitoring and maintenance documentation relevant to the tools, equipment and machinery.
-

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATN001 Repair structural faults in vehicles

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATN3001 Conduct structural rectification of vehicle bodies

Application

This unit describes the performance outcomes required to inspect, assess and repair structural faults in vehicle bodies and components.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Competency Field

Common

Unit Sector

Technical - Body

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Workplace procedures are identified and followed 1.2 Work instructions, repair plan, rectification reports and vehicle specifications are obtained and confirmed 1.3 Tools and equipment are selected and inspected for faults

Elements	Performance Criteria
2. Assess defects to inform repair plan	2.1 Vehicle bodies and components are assessed to confirm type and cause of structural defect 2.2 Type of structural repair is selected and planned 2.3 Repair plan is presented to appropriate personnel for approval 2.4 Materials required for the repair are identified, obtained and prepared
3. Repair defects	3.1 Defective section of vehicle body or component is repaired or replaced according to job specifications 3.2 Defect repair is finished to job specifications 3.3 Repaired defects are inspected for quality and serviceability according to workplace procedures
4. Complete work processes	4.1 Work area is cleaned, and materials disposed of or recycled according to workplace procedures 4.2 Tools and equipment are cleaned, checked and stored according to workplace procedures 4.3 Faulty equipment is tagged and reported to supervisor 4.4 Repair documents are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify work health and safety (WHS) requirements and workplace procedures - interpret work instructions, inspection reports and repair plan.
Writing skills to:	- legibly complete repair plan - complete faulty equipment tags.
Oral communication skills to:	inform team members of repair plan and methods.
Numeracy skills to:	- interpret vehicle specifications - identify part numbers.
Digital literacy skills to:	- use digital repair and alignment tools - use repair, welding and alignment equipment

	• use workplace computer systems.
Initiative skills to:	• adapt to changing work conditions and contexts.
Planning and organising skills to:	• plan and prepare tools, equipment, materials, repair plan and work area • organise and conduct repairs in the given time.
Problem-solving skills to:	• access, interpret and apply work instructions and workplace procedures • ensure cutting, grinding and welding activities comply with WHS requirements.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	• quality requirements • recording and reporting • use of equipment • WHS requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATN001 Repair structural faults in vehicles

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATN3001 Conduct structural rectification of vehicle bodies

Performance Evidence

Before competency can be determined, individuals must have competently repaired structural faults on vehicle bodies and components on a minimum of three occasions.

Individuals must demonstrate they can:

- locate, interpret and apply relevant rectification instructions and information
- calculate material requirements
- conduct repairs that comply with vehicle specifications
- use tools and equipment safely to repair structural faults in vehicles
- repair structural faults in vehicles according to work health and safety (WHS) requirements and workplace procedures
- communicate repair requirements with co-workers.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements to repair vehicle structural faults
- workplace procedures to repair vehicle structural faults
- repair quality standards
- repair techniques for vehicle bodies and components
- procedures for using tools and equipment
- methods and techniques required to repair structural faults and defects
- vehicle specifications
- material handling procedures.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- tools, equipment and materials required for structural rectification
- vehicles or components requiring structural rectification or repair
- vehicle specifications
- repair plan and work instructions
- workplace procedures to repair vehicle structural faults.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATP001 Rectify minor faults in vehicle paintwork

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATP3001 Rectify paintwork

Application

This unit describes the performance outcomes required to assess and rectify paintwork on vehicle bodies and components as a result of manufacturing and production line damage or defective painting procedures.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Technical - Paint

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 <i>Workplace procedures</i> for the assessment and repair of vehicle paintwork are identified 1.2 Work instructions, rectification reports and quality standards are obtained and confirmed 1.3 Spray painting tools, equipment and materials are identified,

Elements	Performance Criteria
	prepared and checked for correct operation
2. Assess paintwork defects	2.1 Vehicle body panels and components are inspected to confirm extent and nature of paint defect 2.2 Damaged or defective paintwork is assessed and a repair plan developed and confirmed
3. Rectify paintwork defects	3.1 Defective areas are prepared 3.2 Surrounding areas are protected from repair activities 3.3 Paint defects are rectified in line with vehicle specifications and workplace quality standards 3.4 Paint drying method is selected and applied 3.5 Repaired vehicle is prepared for final inspection and returned to production sequence
4. Complete work processes	4.1 Work area is cleaned, and materials disposed of or recycled according to workplace procedures 4.2 Tools and equipment are cleaned, checked and stored according to workplace procedures 4.3 Faulty equipment is identified, tagged and reported to supervisor 4.4 Workplace documentation is completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify WHS requirements and workplace procedures - interpret work instructions, vehicle inspection reports and repair plans - identify vehicle paint specifications.
Writing skills to:	- complete workplace repair documents - legibly prepare a repair plan - record paint material quantities - complete faulty equipment tags.
Oral communication skills to:	- inform paint team of suitable repair plan - communicate with paint suppliers.

Numeracy skills to:	identify and measure paint quantities.
Digital literacy skills to:	- use digital paint measuring equipment - use workplace paint computer systems.
Planning and organising skills to:	- plan and prepare tools, equipment, materials, repair plan and work area - rectify paintwork in the given time.
Problem-solving skills to:	- solve paint line problems in order to meet performance outcomes - interpret and apply work instructions and workplace procedures.
Technology skills to:	use manual and robotic painting equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	- paint quality standards - recording and reporting - use of equipment - WHS requirements relating to rectifying paintwork.
<i>Workplace documentation</i> must include:	- consumable and material lists - repair plans and work orders - workplace inspection reports.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATP001 Rectify minor faults in vehicle paintwork

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATP3001 Rectify paintwork

Performance Evidence

Before competency can be determined, individuals must have competently rectified minor faults in vehicle and component paintwork on a minimum of two occasions.

Individuals must demonstrate they can:

- locate, interpret and apply relevant rectification information and specifications
- use spray painting tools, equipment and materials safely
- mix and apply paint according to workplace procedures and specifications
- rectify minor paint defects according to workplace quality standards, job specifications, work health and safety (WHS) requirements, and workplace procedures.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements to rectify vehicle paintwork
- workplace procedures to rectify vehicle paintwork
- procedures for ensuring serviceability of equipment
- paint quality standards
- automotive refinishing terminology
- vehicle painting techniques
- paint viscosity
- paint damage and defects
- procedures for the safe use of painting tools and equipment
- processes for calculating, mixing and applying paint material
- location of paint safety data sheets (SDS)
- job specifications
- materials handling, storage and waste management procedures.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- vehicles or components that require paint rectification
- paint measuring equipment
- primers, paint and clear coats
- vehicle and paint codes and specifications
- workplace documentation, including SDS
- workplace procedures relating to rectifying vehicle paintwork
- work instructions relating to rectifying vehicle paintwork
- spray painting tools and equipment for rectifying vehicle paintwork
- approved spray painting and preparation booths.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATP002 Control vehicle paint line production

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATP3002 Control paint line production processes

Application

This unit describes the performance outcomes required to control a paint line in a vehicle production process and avoid vehicle painting inconsistencies.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Technical - Paint

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 <i>Workplace procedures</i> are identified and followed 1.2 Work instructions, production reports and quality standards are confirmed with appropriate personnel 1.3 Tools and equipment are selected, checked for serviceability, and faults are rectified or reported

Elements	Performance Criteria
	1.4 Appropriate materials are identified, obtained and prepared
2. Assess paint line flow	2.1 Paint is regularly checked for batch accuracy, consistency and viscosity prior to adding it to the paint production line 2.2 Paint lines are checked for faults and inconsistencies 2.3 Paint supply and production requirements are monitored to ensure required colour transition 2.4 Paint line is monitored for faults and maintained as required according to workplace procedures
3. Rectify problems	3.1 Production line problems are assessed and cause of any problems is identified 3.2 Cause of problems is analysed and rectified 3.3 Paint line problems are addressed to ensure correct operation
4. Complete work processes	4.1 Work area is cleaned, and materials disposed of or recycled according to workplace requirements 4.2 Paint line tools and equipment are cleaned, maintained and stored according to workplace procedures 4.3 Workplace documentation outlining nature of problem, work conducted and outcome is completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify work health and safety (WHS) requirements and workplace procedures relating to paint line production - interpret work instructions and production needs - interpret vehicle inspection reports and vehicle specifications.
Writing skills to:	- legibly enter data associated with production process - complete production line documentation - record paint and material quantities.
Numeracy skills to:	- measure paint quantities - identify paint code and required material quantities.
Digital literacy skills to:	use paint line production and computer systems.
Initiative skills to:	adapt to changing paint line production needs.

Planning and organising skills to:	• arrange paint line colour change requirements • prepare paint materials and work area • interpret and apply paint line production information, workplace instructions and workplace procedures.
Problem-solving skills to:	• resolve paint line problems in order to meet performance outcomes.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	• paint line system operation • quality and continuous improvement processes and standards • recording and reporting of paint line outcome • use of equipment • WHS requirements relating to paint line production process.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATP002 Control vehicle paint line production

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATP3002 Control paint line production processes

Performance Evidence

Before competency can be determined, individuals must have competently operated and monitored a paint line production process on a minimum of three occasions.

Individuals must demonstrate they can:

- locate, interpret and apply paint line information, quality standards and paint specifications
- comply with work health and safety (WHS) requirements relating to controlling vehicle paint line production
- follow workplace procedures relating to controlling vehicle paint line production
- use paint production line tools and equipment safely
- communicate paint line requirements to co-workers
- complete a paint line assessment, including entry of a new batch of same colour paint and changeover to a new colour
- rectify paint line faults
- complete paint line job sheets and reports relating to vehicle paint line production.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements to operate a production paint line
- production line quality standards
- vehicle painting techniques
- automotive refinishing terminology
- paint line tools and equipment
- paint viscosity
- paint line systems and control techniques
- processes for calculating paint material
- location of paint safety data sheets (SDS)

- paint codes and vehicle specifications
- procedures for material handling, storage and waste management.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles that they have worked on, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- vehicles or components that require painting
- paint measuring equipment
- primers, paint and clear coats
- vehicle paint codes and specifications
- workplace procedures to operate a production paint line
- work instructions relating to controlling vehicle paint line production
- spray painting tools and equipment
- approved spray painting booths
- work sheets, SDS and production paint line documents.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATR001 Repair vehicle electrical faults in assembled vehicles

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATR3001 Rectify electrical faults on assembled vehicles

Application

This unit describes the performance outcomes required to repair electrical faults in assembled vehicles, based on recommendations from inspection reports.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist technician level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Technical - Electrical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 <i>Workplace instructions</i> are identified and used to determine <i>job requirements</i> 1.2 Repair procedures and fault inspection reports are sourced

Elements	Performance Criteria
	and interpreted 1.3 Repair and replacement materials are identified, obtained and prepared according to inspection reports 1.4 Tools and equipment are identified for rectification of electrical faults
2. Diagnose and rectify electrical faults	2.1 Faults are located and diagnosed, and corrective repairs are planned 2.2 Rectification activities are carried out according to vehicle specifications and workplace procedures 2.3 Faults are re-diagnosed to ensure their elimination
3. Complete work processes	3.1 Repair documentation is completed according to workplace procedures 3.2 Final inspection is made to ensure work is to workplace quality standards 3.3 Tools and equipment are cleaned, checked, maintained and stored, and work area is cleaned, according to workplace procedures 3.4 Faulty tools and equipment are identified, tagged and reported to supervisor 3.5 Work area is cleaned, and materials disposed of, reused or recycled according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work instructions, work health and safety (WHS) requirements and workplace procedures - interpret inspection reports and vehicle specifications.
Writing skills to:	- complete repair documentation - complete faulty equipment tags - prepare a repair plan.
Oral communication skills to:	- communicate electrical faults with co-workers - use automotive terminology relevant to the job.
Numeracy skills to:	- identify vehicle specifications and part numbers of replacement parts - identify component faults from inspection reports and test

	measurements.
Digital literacy skills to:	• use digital electrical testing and measuring equipment • use workplace computer systems.
Problem-solving skills to:	• interpret inspection reports • identify vehicle electrical faults • apply repair procedures to electrical faults.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace instructions</i> must include:	• operator instruction sheets (OIS) or workplace equivalent • process control plans (PCPs) or workplace equivalent • standard operation procedures (SOPs) or workplace equivalent • testing and repair techniques • vehicle specifications and drawings.
<i>Job requirements</i> must include:	• circuit testing and repair methods • correct use of tools and equipment • identification of electrical faults • methods to remove and replace electrical units.
<i>Tools and equipment</i> must include:	• hand tools • electrical testing equipment • multimeters • test lamps.
<i>Workplace procedures</i> must include:	• pre- and post-use inspection of equipment • recording and reporting • test equipment operating instructions • WHS requirements relating to rectifying electrical faults.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATR001 Repair vehicle electrical faults in assembled vehicles

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATR3001 Rectify electrical faults on assembled vehicles

Performance Evidence

Before competency can be determined, individuals must have competently repaired electrical faults in assembled vehicles on a minimum of three occasions.

Individuals must demonstrate they can:

- locate, interpret and apply repair information and vehicle electrical specifications
- comply with workplace procedures and work health and safety (WHS) requirements relating to repairing electrical faults in assembled vehicles
- use electrical repair tools and equipment
- communicate electrical faults and rectification requirements to co-workers
- diagnose, rectify and reassemble electrical system faults to specifications on three of the following:
 - vehicle fails to crank
 - lighting system malfunction
 - instrumentation malfunction
 - heating, ventilation and air conditioning (HVAC) system malfunction
 - diagnostic fault code present
 - engine check light on
- conduct vehicle electrical system testing and inspection
- complete workplace repair documentation and test results.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relating to repairing electrical faults in assembled vehicles
- workplace procedures relating to repairing electrical faults in assembled vehicles
- workplace quality standards relating to rectifying electrical faults

- manufacturing and production techniques for locating and rectifying electrical faults in assembled vehicles
- common assembly and electrical system faults
- types and use of tools and equipment used when locating and rectifying electrical faults in assembled vehicles
- electrical system testing equipment and techniques
- vehicle electrical components and system specifications.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- vehicle electrical system specifications
- inspection reports relating to repairing electrical faults in assembled vehicles
- electrical repair tools and equipment
- electrical test equipment
- vehicles or components with defects
- repair instructions relating to electrical faults in assembled vehicles
- repair quality procedures relating to electrical faults in assembled vehicles
- workplace procedures to rectify electrical faults
- work sheets and repair documentation relating to electrical faults in assembled vehicles.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATR002 Install and maintain motor vehicle instrumentation sensors and transmitters

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATR4002 Use sensors to acquire motor vehicle data for development purposes

Application

This unit describes the performance outcomes required to install, adjust and maintain instrumentation sensors and transmitters used to gather data for development purposes.

It applies to those in an automotive and related component manufacturing environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Technical - Electrical and Electronic

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Identify sensors, transmitters and final control elements	1.1 Workplace requirements relevant to the use of sensors, transmitters and final control elements are identified with appropriate personnel 1.2 <i>Instructions</i> and work plans are identified and interpreted 1.3 Specifications from data sheets, circuit diagrams and

Elements	Performance Criteria
	engineering drawings are determined 1.4 Sensors, transmitters and final control elements are selected and prepared, and installation is planned and documented
2. Install sensors, transmitters and final control elements	2.1 Equipment is prepared for installation 2.2 Equipment is installed 2.3 Test is set up to determine correct calibration, operation and data feed
3. Maintain and diagnose faults with sensors, transmitters and final control elements	3.1 Preventative maintenance schedules are implemented 3.2 Periodic tests to ensure continued integrity of data are undertaken 3.3 Sample data is viewed periodically for obvious irregularities and unexplained aberrations
4. Complete fault documentation and plan corrective action	4.1 Operation of sensors, transmitters and final control elements is monitored and assessed against predetermined specifications and manufacturer's technical data 4.2 Fault conditions are identified, localised and monitored 4.3 Faults are documented and reported to appropriate personnel
5. Restore equipment and finalise housekeeping	5.1 Equipment is recovered, and checked for serviceability and calibration 5.2 Serviceable equipment is returned to store for future use 5.3 Unserviceable equipment is sent for repair or disposal according to workplace procedures 5.4 Workplace documentation and test results are completed

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret workplace procedures - interpret manufacturer installation instructions, installation reports and work plans.
Writing skills to:	- develop installation plans - record installation outcomes.
Oral communication skills to:	- communicate irregularities and identified faults with team members - discuss work plans and schedules with relevant personnel.

Numeracy skills to:	• interpret vehicle data • interpret circuit diagrams and engineering drawings • determine workplace timelines • calculate material requirements • use, test and calibrate measuring equipment.
Digital literacy skills to:	• use electronic sensors, transmitters and final control systems.
Planning and organising skills to:	• plan, prepare and organise the installation of instrumentation sensors, transmitters and final control elements • prepare work area, materials and equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Instructions</i> must include:	• job sheets, work plans, specifications and drawings • use and operation of tools and equipment • work health and safety (WHS) requirements relating to installing and maintaining motor vehicle instrumentation sensors and transmitters • workplace and manufacturer instructions.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATR002 Install and maintain motor vehicle instrumentation sensors and transmitters

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATR4002 Use sensors to acquire motor vehicle data for development purposes

Performance Evidence

Before competency can be determined, individuals must have competently installed, adjusted and maintained instrumentation sensors and transmitters on a minimum of three occasions.

Individuals must demonstrate they can:

- comply with workplace procedures and work health and safety (WHS) requirements relating to installing, adjusting and maintaining instrumentation sensors and transmitters
- comply with industry code of practice in using instrumentation sensors, signal transmitters and final control units
- communicate vehicle data with co-workers
- select tools and equipment appropriate to the installation and maintenance of motor vehicle instrumentation sensors and transmitters
- check the currency of equipment calibrations
- complete test results relating to installing, adjusting and maintaining instrumentation sensors and transmitters.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relating to installing, adjusting and maintaining instrumentation sensors and transmitters
- workplace procedures to gather data from vehicle sensors for further development
- types of sensors, signal transmitters and final control elements, and procedures for their safe use, operation and maintenance
- procedures for identifying faulty sensors
- recording and reporting documentation and vehicle data.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- sensors to acquire motor vehicle data for development purposes
- tools and equipment required to gather data
- workplace and manufacturer instructions
- work plans and sensor specifications
- workplace procedures to gather data from vehicle sensors for further development.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATW001 Test vehicle welds ultrasonically

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATW3001 Test welds ultrasonically

Application

This unit describes the performance outcomes required to inspect, analyse and assess welds on vehicle bodies or components using ultrasonic testing equipment.

It applies to those in an automotive and related component manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Technical - Welding, Grinding Machining and Soldering

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Work instructions, relevant inspection reports, and quality requirements are identified and confirmed with appropriate personnel and applied 1.2 Tools and equipment to carry out tasks are selected and checked for serviceability, and faults are rectified or reported

Elements	Performance Criteria
	1.3 Weld test plan is prepared listing proposed weld methods and techniques 1.4 Ultrasonic test equipment is selected and work area is prepared for use
2. Analyse and test welds	2.1 Specified welds from various parts of the vehicle body and components are identified and selected 2.2 Welds are visually inspected and analysed, and findings are recorded 2.3 Welds are tested with ultrasonic equipment according to workplace procedures 2.4 Weld breaking points are established and tested with ultrasonic equipment 2.5 Testing sequence is repeated on multiple weld samples 2.6 Test results are recorded and reported according to workplace procedures
3. Complete work processes	3.1 Tools and equipment are cleaned, checked, maintained and stored, and work area is cleaned, according to workplace procedures 3.2 Faulty tools and equipment are identified, tagged and reported to supervisor 3.3 Scrap materials are disposed of or recycled according to workplace procedures and cost-reduction initiatives 3.4 Work sheets and results of ultrasonic weld tests are recorded according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify work health and safety (WHS) requirements and workplace procedures relating to ultrasonic weld testing - interpret ultrasonic test equipment instructions and weld testing plan - interpret manufacturer's weld specifications and weld inspection reports.
Writing skills to:	- complete work sheets and ultrasonic test results - prepare weld test and inspection plan

	complete faulty equipment tags.
Oral communication skills to:	- communicate identified weld faults - confirm testing requirements - speak clearly and directly when presenting ultrasonic test results and rectification options.
Numeracy skills to:	- identify ultrasonic test equipment settings - measure material from specifications - identify weld production quality.
Digital literacy skills to:	set and use ultrasonic test equipment and instructions.
Initiative skills to:	adapt to changing work conditions.
Planning and organising skills to:	- manage time when planning and preparing ultrasonic testing - prepare equipment and work area.
Self-management skills to:	manage test and inspection outcomes.
Problem-solving skills to:	- solve problems particularly in teams in order to meet performance indicators - access, interpret and apply information on workplace procedures and instructions, particularly to ensure correct use of ultrasonic equipment during testing procedures.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	- guidelines for recording and reporting test results - use and maintenance of ultrasonic test equipment - weld quality guidelines - WHS requirements to test vehicle welds ultrasonically.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATW001 Test vehicle welds ultrasonically

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATW3001 Test welds ultrasonically

Performance Evidence

Before competency can be determined, individuals must have competently tested welds using ultrasonic equipment on a minimum of two occasions.

Individuals must demonstrate they can:

- locate, interpret and apply ultrasonic weld testing instructions
- follow manufacturer's weld standards and specifications
- comply with work health and safety (WHS) requirements and workplace procedures when conducting ultrasonic testing
- comply with workplace quality requirements
- use ultrasonic equipment safely to test welds
- communicate ultrasonic test requirements with co-workers
- interpret ultrasonic weld test results
- complete work sheets and test results relating to testing vehicle welds ultrasonically.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements when conducting ultrasonic testing
- workplace procedures when conducting ultrasonic testing, including ultrasonic testing procedures
- weld quality standards
- weld terminology
- vehicle welding techniques of metal components
- vehicle specifications.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to vehicle welds they have tested ultrasonically, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- ultrasonic testing equipment and instructions
- welded vehicles or components for testing
- work sheets and test result documents relating to ultrasonic vehicle welds
- workplace procedures and WHS requirements to conduct ultrasonic testing.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMATW002 Inspect welding

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATW4002 Conduct welding inspection

Application

This unit describes the performance outcomes required to prepare and perform welding inspections using established procedures.

It applies to those in an automotive and related manufacturing environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Technical - Welding, Grinding, Machining and Soldering

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare inspections	1.1 Welding requirements and weld specifications are identified from welding standards 1.2 Weld quality requirements for inspection are established and confirmed 1.3 Inspection methods, tools and test equipment are selected and prepared

Elements	Performance Criteria
	1.4 Welding test and inspection plan is prepared according to workplace procedures
2. Conduct inspections	2.1 Welding processes are monitored to ensure industry welding standards are met 2.2 Welding is tested according to test equipment workplace procedures 2.3 Weld defects are identified and corrective actions taken 2.4 Weld test results are analysed using test equipment and according to workplace procedures
3. Report findings	3.1 Test results, analysis and recommendations for action are reported according to workplace procedures 3.2 Test result sheets are legibly completed 3.3 Work area is cleaned, and waste materials disposed of, reused or recycled according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify work health and safety (WHS) requirements and workplace procedures relating to inspecting welding - interpret test equipment instructions, weld inspections and test reports - interpret manufacturer's weld specifications - interpret equipment standard operating procedures (SOPs) or workplace equivalent.
Writing skills to:	complete test result sheets.
Oral communication skills to:	- identify and clarify welding requirements - communicate test and inspection results with production teams.
Numeracy skills to:	analyse numerical information in welding test results.
Problem-solving skills to:	- identify welding problems in order to meet workplace performance indicators - determine welding recommendations following analysis of welding test results.
Technology skills to:	use specialised equipment, such as non-destructive weld testing

	equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	• recording and reporting guidelines for inspection and test results • use of welding test equipment • weld quality guidelines • WHS requirements to conduct weld inspection.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMATW002 Inspect welding

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMATW4002 Conduct welding inspection

Performance Evidence

Before competency can be determined, individuals must have competently inspected and tested welds on vehicles bodies and components on a minimum of three occasions.

Individuals must demonstrate they can:

- conduct welding inspections and tests, and identify deviations, observing work health and safety (WHS) requirements and workplace procedures
- select and use weld inspection and testing equipment, methods and techniques
- interpret workplace weld quality requirements
- make recommendations for action, based on analysis of test results
- clearly and legibly report inspection and test results and recommendations.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements when inspecting welds
- workplace procedures when inspecting welds
- weld testing equipment methods and techniques
- processes for conducting post-welding inspections and tests
- workplace weld quality requirements
- non-destructive testing techniques
- methods for correcting welding defects
- methods of controlling distortion of welds.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the inspection and testing of vehicle and component welds, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- tools, equipment and machinery required for inspecting and testing welding of vehicles and componentry
- vehicles and components with welds that require inspecting and testing
- workplace procedures and WHS requirements to inspect welds.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFBM001 Prepare and process automotive materials and components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFBM2001 Prepare and process materials and components

Application

This unit describes the performance outcomes required to prepare and process automotive materials and components for production.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Support and Logistics - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan for work	1.1 <i>Work instructions</i> and job requirements are identified and confirmed 1.2 Materials and components are identified and selected
2. Prepare and inspect	2.1 Materials and components are <i>visually inspected</i> to ensure

Elements	Performance Criteria
materials and components	specifications and quality standards are met 2.2 Defective materials and components are identified, tagged and isolated according to workplace procedures 2.3 Materials are prepared, loaded, lined up and secured according to work instructions and workplace procedures
3. Process materials and components	3.1 Materials and components are processed according to workplace instructions, procedures and work health and safety (WHS) requirements using recommended production sequences and tools and equipment 3.2 Quality control methods and measures are identified and applied 3.3 Materials and components are finished to workplace quality standards and specifications 3.4 Work sheets and production documents are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	interpret workplace instructions, WHS requirements and workplace procedures.
Writing skills to:	- complete production schedules and quality control forms - complete work sheets and workplace documents.
Oral communication skills to:	- refer production problems to team leader or supervisor - speak clearly and directly in team meetings.
Numeracy skills to:	- match part numbers to work instructions and bill of materials - identify lengths, weights and specification measurements - measure materials and components to determine compliance with job specification.
Digital literacy skills to:	use workplace computer production systems.
Initiative skills to:	adapt to changing work conditions.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Work instructions</i> must include:	• operator instruction sheets (OIS) or workplace equivalent • preventative maintenance checklists • process control plans (PCPs) or workplace equivalent • standard operating procedures (SOPs) or workplace equivalent • workplace procedures.
<i>Visually inspected</i> must include:	• identifying manufacturing and production defects • matching part numbers, bin and batch numbers • specifications, shape and tolerances.
<i>Workplace procedures</i> must include:	• production sequence • quality control methods and measures • WHS requirements • workplace quality standards.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFBM001 Prepare and process automotive materials and components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFBM2001 Prepare and process materials and components

Performance Evidence

Before competency can be determined, individuals must have competently prepared and processed automotive materials and components on a minimum of two occasions.

Individuals must demonstrate they can:

- identify workplace procedures and instructions relating to preparing and processing vehicle materials and components
- comply with work health and safety (WHS) requirements relating to the materials and components being processed
- identify faults in materials and components before processing
- prepare materials and components for further processing according to workplace quality standards and specifications
- process materials and components according to workplace quality standards and specifications
- complete workplace documentation relating to the preparation and processing of automotive materials and components.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- relevant WHS procedures relating to preparing and processing automotive materials and components
- procedures for handling and storing materials and components
- fault identification and resolution techniques
- workplace recording, reporting and equipment maintenance requirements.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to preparing and processing automotive materials and components, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- manufacturing workplace or simulated workplace
- workplace instructions relating to preparing and processing automotive materials and components
- operator instruction sheets (OISs) or workplace equivalent
- standard operating procedures (SOPs) or workplace equivalent
- process control plans (PCPs) or workplace equivalent
- a range of materials and components required for the manufacturing process
- production tools and equipment relating to preparing and processing automotive materials and components
- work sheets and workplace documentation relating to

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFMM001 Reduce cycle time in automotive manufacturing work processes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFMM3001 Reduce cycle time in work processes

Application

This unit describes the performance outcomes required to reduce cycle time in automotive manufacturing processes.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Passenger Motor Vehicle

Unit Sector

Management, Leadership and Supervision - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Review work processes	1.1 Inefficient <i>production processes</i> and opportunities for <i>reducing cycle time</i> are identified 1.2 Total cycle time for identified processes is calculated and production time recorded

Elements	Performance Criteria
	1.3 High cycle time and processes that do not value add are identified
2. Plan and implement cycle time reduction	2.1 Proposed changes are planned and documented 2.2 Cycle time reduction plans are approved by appropriate personnel 2.3 Implementation of new processes is supported in line with workplace procedures 2.4 Cycle times following the implementation of plans are documented
3. Record changes in cycle times	3.1 Cycle time changes are confirmed and recorded 3.2 Information concerning endorsed changes is communicated to team members 3.3 Validation of the new processes is supported according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	interpret cycle time processes and production documents.
Writing skills to:	- legibly enter information into cycle time documents - complete production sheets - complete cycle time plan.
Oral communication skills to:	- refer workplace cycle time issues to team leader and supervisor - speak clearly and directly when presenting continual improvement ideas and solutions to problems.
Problem-solving skills to:	determine required workplace quality standards and continual improvement opportunities.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised

wording, if used in the performance criteria, is detailed below.

<i>Production processes</i> must include:	• documentation and record-keeping activities • supply processes • work area set-up time.
<i>Reducing cycle time</i> must include:	• inspection time • process time • queue time • storage time.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFMM001 Reduce cycle time in automotive manufacturing work processes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFMM3001 Reduce cycle time in work processes

Performance Evidence

Before competency can be determined, individuals must have competently contributed to reducing cycle time that does not value add to work processes on a minimum of three occasions.

Individuals must demonstrate they can:

- understand cycle time instructions
- comply with cycle time procedures
- comply with work health and safety (WHS) requirements during work processes
- identify cycle time problems and recommend corrective action
- work and communicate effectively with others to reduce cycle time
- achieve production and work quality goals
- respond constructively to changing work requirements
- manage time when planning and preparing work priorities
- complete work sheets and cycle time quality control documents.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- production cycle time
- cycle time work plan
- workplace communication protocols relating to work cycle time
- type of cycle time problems and resolution techniques
- quality control systems and performance indicators and measures
- recording and reporting procedures relating to work cycle time.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to reducing cycle time in automotive manufacturing, e.g. production output graphs.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- production cycle times and performance indicators
- vehicle or component production line or simulated production line
- work instructions relating to reducing cycle time
- tools, equipment and machinery that assist in reducing cycle time.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFMM002 Reduce waste in automotive manufacturing work processes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFMM3002 Reduce waste in work processes

Application

This unit describes the performance outcomes required to reduce waste in the automotive manufacturing environment.

It involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Motor Vehicle

Unit Sector

Management, Leadership and Supervision - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Review waste generated in manufacturing processes	1.1 Inefficient <i>production processes</i> and opportunities for reducing <i>waste in work processes</i> are identified in line with <i>workplace procedures</i> 1.2 Total <i>waste</i> for identified processes is calculated 1.3 High waste and processes that do not value add are identified

Elements	Performance Criteria
2. Plan and implement waste reduction	2.1 Proposed changes are planned and documented 2.2 Waste-reduction plans are approved by appropriate personnel 2.3 Implementation of new processes is supported in line with workplace procedures 2.4 Waste generated following the implementation of plans is documented
3. Record changes in waste generated	3.1 Waste changes are confirmed and recorded 3.2 Information concerning endorsed changes is communicated to team members 3.3 Validation of the new processes is supported according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret workplace procedures and work health and safety (WHS) requirements - interpret work area and noticeboard workplace instructions - interpret waste-reduction plan.
Writing skills to:	- legibly enter information into waste control documents - complete plan to reduce waste in work processes.
Oral communication skills to:	speak clearly and directly when presenting continuous improvement and waste-reduction ideas.
Numeracy skills to:	- measure materials and components to determine compliance with specifications - complete quality control checklists and graphs.
Problem-solving skills to:	determine required workplace quality standards and continuous improvement opportunities.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised

wording, if used in the performance criteria, is detailed below.

<i>Production processes</i> must include:	• documents and record-keeping activities • supply processes • work area set-up time.
<i>Waste in work processes</i> must include:	• recording the number of production rejects.
<i>Workplace procedures</i> must include:	• continuous improvement systems • quality standards • recording and reporting guidelines • WHS requirements.
<i>Waste:</i>	• must include: • activities and related expenses that are totally unnecessary, such as scrap and re-work • hidden waste consisting of costs associated with activities that do not add value, such as inspection and storage of components and materials • involves: • continuous improvement systems that reduce non-value adding and unnecessary activities • costs associated with failures, appraisals and surpluses.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFMM002 Reduce waste in automotive manufacturing work processes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFMM3002 Reduce waste in work processes

Performance Evidence

Before competency can be determined, individuals must have competently contributed to reducing waste in work processes on a minimum of three occasions.

Individuals must demonstrate they can:

- understand waste-reduction instructions
- comply with waste-reduction procedures
- comply with work health and safety (WHS) requirements relating to reducing waste in automotive processes
- identify production process waste and recommend corrective action
- work and communicate effectively with others to reduce waste
- achieve production and work quality goals
- respond constructively to changing work requirements
- apply waste-reduction techniques
- manage time when planning and preparing work priorities
- complete work sheets and waste-reduction documents.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures and work plans
- waste-reduction procedures suitable to automotive work processes
- resolution techniques to reduce waste in automotive work processes
- quality control systems and performance indicators and measures relating to reducing waste in automotive work processes
- recording and reporting procedures relating to waste reduction.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to reducing waste in automotive work processes, e.g. recycling graphs.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- waste-reduction procedures in automotive work processes
- continuous improvement plan relating to waste reduction in automotive work processes
- workplace instructions and procedures relevant to reducing waste in automotive work processes
- waste-reduction systems, and equipment to reduce automotive waste
- examples of waste materials and components in manufacturing.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFMM003 Plan and organise automotive production and assembly processes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFMM3003 Plan and organise production

Application

This unit describes the performance outcomes required to plan and organise workplace, resources and processes required for the production and assembly of vehicles and components.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Management, Leadership and Supervision - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Production needs are identified and clarified according to job orders 1.2 <i>Workplace procedures</i> relating to production are identified

Elements	Performance Criteria
	and followed 1.3 Materials, tools and equipment are selected, prepared and inspected for safe operation 1.4 Faulty material, tools and equipment are reported to appropriate personnel
2. Identify production team and resources	2.1 Production team personnel and contractors are selected based on required skills 2.2 Materials, tools, equipment, jigs and other resources are identified using workplace job information 2.3 Production drawings and specifications are prepared detailing quality and quantities
3. Develop quotas and production schedule	3.1 Job quotas showing personnel, consumables and resource costs are developed 3.2 Production schedules are developed showing job sequence and estimated start and completion dates 3.3 Quotas and production schedules are submitted to the appropriate personnel for approval
4. Assign production tasks	4.1 Production tasks and activities are identified and assigned to personnel 4.2 Production team members are briefed on respective job role
5. Implement production plan	5.1 Personnel, resources and timelines for production are inspected and confirmed according to workplace procedures and requirements 5.2 Potential production problems are identified and actioned according to workplace procedures 5.3 Appropriate personnel are kept informed of production progress
6. Review and complete job	6.1 Production is monitored for quality, budget and time schedule 6.2 Work area and tools are cleaned and inspected according to workplace procedures 6.3 Job documentation is completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description

Reading skills to:	interpret production schedules, work orders and workplace procedures.
Writing skills to:	- complete production schedules - prepare production budgets - prepare staffing schedules.
Oral communication skills to:	- communicate required outcomes to personnel - update appropriate personnel on production progress.
Numeracy skills to:	- calculate timelines and schedules - interpret production budgets - identify production quotas.
Digital literacy skills to:	use workplace computer systems.
Planning and organising skills to:	arrange personnel appropriate to skill needs.
Problem-solving skills to:	- identify production faults - highlight production areas for improvement.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	- continuous improvement programs - job role and responsibilities - quality requirements - recording and reporting - work health and safety (WHS) requirements.
<i>Resources</i> must include:	- job specifications - production drawings - production plant, tools and equipment - production schedules - workplace reporting systems.
<i>Information</i> must include:	- production requirements - production specifications - work orders - workplace operating procedures.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFMM003 Plan and organise automotive production and assembly processes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFMM3003 Plan and organise production

Performance Evidence

Before competency can be determined, individuals must have competently planned and organised a production task on a minimum of three occasions.

Individuals must demonstrate they can:

- communicate production plans with co-workers
- apply problem-solving techniques when planning production
- prepare production quotas and schedules
- identify and apply job information and workplace procedures
- follow work health and safety (WHS) requirements when planning and organising production
- manage production personnel, schedules and budgets.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- quality standards relating to workplace production and assembly processes
- automotive production techniques, including methods of:
 - stamping car body parts
 - welding car body parts
 - car body painting
 - metal casting
 - final assembly
- production materials, tools and equipment
- environmental and WHS requirements when planning and organising production
- workplace documentation covering procedures, specifications and schedules in automotive production and assembly processes
- processes for determining production personnel and resource requirements
- development principles for production budget, quotas, time and schedule

- company procedures for assigning personnel
- procedures for implementing production plan procedures for reviewing production progress and outcomes.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to automotive production and assembly processes, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- component or vehicle specifications
- repair tools and equipment
- components that require production
- workplace instructions relating to production and assembly processes
- workplace quality procedures relating to production and assembly processes
- workplace environmental guidelines
- WHS requirements when planning and organising production
- workplace procedures to plan production
- job orders relating to production and assembly processes.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFQM001 Apply continuous improvement in automotive manufacturing

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFQM2001 Monitor and maintain continuous improvement of systems and processes

Application

This unit describes the performance outcomes required to apply continuous improvement systems and processes to products and processes in an automotive manufacturing environment.

It involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Quality - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare for continuous improvement	1.1 Quality requirements are identified and applied 1.2 Manufacturing <i>systems and processes</i> are identified from workplace instructions

Elements	Performance Criteria
2. Apply continuous improvement	2.1 <i>Continuous improvement tools</i> and <i>problem-solving techniques</i> relevant to the process are identified and applied 2.2 Proposed improvements to processes are trialled, monitored and evaluated 2.3 <i>Waste</i> minimisation principles and processes are identified 2.4 Recommendations are made according to <i>workplace procedures</i>
3. Monitor continuous improvement	3.1 Continuous improvement requirements are monitored to ensure products and processes comply with workplace quality 3.2 Workplace continuous improvement systems and processes are monitored on an ongoing basis to capitalise on identified opportunities 3.3 Continuous improvement forms and work sheets are completed according to workplace procedures

Foundation Skills

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Reading skills to:	- identify manufacturing schedules and production quality requirements - identify workplace waste-minimisation processes.
Writing skills to:	complete continuous improvement, work sheets and production improvement forms.
Oral communication skills to:	- communicate workplace systems and processes with co-workers - communicate improvement ideas at team meetings and with supervisors.
Initiative skills to:	identify improvement opportunities and take steps to share ideas.
Problem-solving skills to:	identify manufacturing problems and analyse them for improvement opportunities.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate,

accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Systems and processes</i> must include:	• assembly sequence • batch building • established continuous improvement system, such as Kaizen or workplace equivalent • lean manufacturing processes • picking of parts, restocking and quality inspections.
<i>Continuous improvement tools</i> must include:	• balanced scorecards • benchmarking • cause and effect diagrams • fishbone diagram or workplace equivalent • lead time • performance measurement • plan-do-check-act (PDCA) or workplace equivalent • run charts • statistics • upstream and downstream customer feedback.
<i>Problem-solving techniques</i> must include:	• step-by-step process • use of measurement.
<i>Waste</i> must include:	• excess inventory and stock • excessive cycle time • activities that do not value add • over-processing • rejects • rework.
<i>Workplace procedures</i> must include:	• quality processes for ensuring that built-in quality requirements are met • standardisation • work health and safety (WHS) requirements • workplace instructions.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFQM001 Apply continuous improvement in automotive manufacturing

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFQM2001 Monitor and maintain continuous improvement of systems and processes

Performance Evidence

Before competency can be determined, individuals must have competently undertaken the continuous improvement of systems and processes on a minimum of two occasions.

Individuals must demonstrate they can:

- apply workplace continuous improvement processes
- apply production problem-solving techniques
- identify opportunities for improvement and recommend solutions
- comply with work health and safety (WHS) requirements when applying workplace improvements
- follow workplace procedures for continuous improvement in automotive manufacturing
- follow work instructions for continuous improvement in automotive manufacturing
- monitor and evaluate the improvement of systems and processes.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements and workplace procedures when applying workplace continuous improvement
- workplace continuous improvement tools, systems and processes relating to automotive manufacturing
- continuous improvement forms and work sheets relating to automotive manufacturing
- waste minimisation procedures relating to automotive manufacturing.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to continuous improvement in automotive manufacturing, e.g. continuous improvement plan.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- workplace instructions relating to automotive manufacturing
- workplace continuous improvement procedures
- tools, equipment and machinery required in the manufacturing process
- continuous improvement forms and work sheets.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFQM002 Sustain quality standards in an automotive manufacturing workplace

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFQM3002 Sustain quality standards

Application

This unit describes the performance outcomes required to identify, develop and sustain quality standards in an automotive manufacturing environment.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Quality - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Identify quality standards	1.1 <i>Workplace instructions</i> are interpreted to identify work area processes and required materials 1.2 Workplace quality goals are identified and confirmed 1.3 Work plan is prepared for review of quality improvements
2. Monitor quality	2.1 Work processes are monitored for effectiveness according to

Elements	Performance Criteria
standards	<i>workplace procedures</i> and <i>resources</i> 2.2 <i>Quality performance standards</i> are maintained according to the workplace quality plan
3. Suggest corrective activity	3.1 Deviations to the quality standards are identified and corrective actions are considered 3.2 Implementation plan for changes is confirmed 3.3 Procedures reflecting proposed improvements are confirmed 3.4 Deviations and proposed corrective actions are documented and referred to appropriate personnel
4. Implement adjustments	4.1 Quality process improvements are approved and implemented 4.2 Improved process is reviewed and validated 4.3 Workplace documents are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	interpret workplace procedures and workplace quality standards.
Writing skills to:	- legibly enter information into quality assurance documents - legibly complete quality improvement reporting documents - complete quality control checklists and graphs.
Oral communication skills to:	- expand knowledge of workplace quality standards from discussions with co-workers - communicate recommendations for quality improvement with appropriate personnel.
Problem-solving skills to:	interpret and apply workplace quality ideas and proposals to improve work outcome.
Teamwork skills to:	involve production co-workers with processes and work outcomes.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential

operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace instructions</i> must include:	• engineering specifications and drawings • machine set-up procedures • operator instruction sheets (OIS) or workplace equivalent • preventative maintenance checklists • process control plans (PCPs) or workplace equivalent • reporting and communication procedures • standard operating procedures (SOPs) or workplace equivalent • use and operation of tools and equipment.
<i>Workplace procedures</i> must include:	• continuous improvement processes and standards • quality guidelines • recording and reporting.
<i>Resources</i> must include:	• work orders, job cards, quotes and estimates, and job specifications • work reports • work to be inspected • workplace quality standards and documentation.
<i>Quality performance standards</i> must include:	• developing and producing motor vehicles • manufacturing and designing continuous improvement plans • production quality management techniques • production quality plans and drawings.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFQM002 Sustain quality standards in an automotive manufacturing workplace

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFQM3002 Sustain quality standards

Performance Evidence

Before competency can be determined, individuals must have competently participated in maintaining workplace quality standards on a minimum of three occasions.

Individuals must demonstrate they can:

- comply with workplace quality standards
- apply quality systems according to workplace procedures
- apply quality performance measures
- document and report quality outcomes
- achieve work quality goals in the automotive workplace
- modify activities to cater for manufacturing variations and quality standards.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace quality productivity systems and processes
- quality measurement tools
- automotive manufacturing continuous improvement processes.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles that they have worked on, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- work to be inspected and work orders
- job cards, quotes and job specifications
- workplace quality standards relating to automotive manufacturing
- workplace quality measurement methods and techniques.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFTA001 Document manufacturing design processes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA3001 Document designs

Application

This unit describes the performance outcomes required to document the design details of the production processes of vehicles and their components.

It applies to those in an automotive and related manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Identify document needs	1.1 Design brief and <i>requirements</i> are identified and confirmed with appropriate personnel 1.2 Production processes, drawings, technical specifications and instructions are identified and clarified with participating personnel

Elements	Performance Criteria
2. Develop draft documents	2.1 Draft documents relating to the specification, costing, manufacture and assembly of products are prepared according to workplace procedures 2.2 Draft document content is confirmed with relevant personnel and their feedback integrated as appropriate
3. Finalise documentation process	3.1 Approved documents are communicated to relevant production, management and engineering personnel 3.2 Documents are distributed and stored according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret production and work area requirements - interpret workplace procedures and product specifications - interpret design brief.
Writing skills to:	legibly complete design documents.
Oral communication skills to:	communicate and negotiate with workplace personnel on document design and content.
Numeracy skills to:	- quantify workplace document needs - determine document budget, materials and resources - produce a document with mathematical information.
Digital literacy skills to:	use workplace computer programs and design applications.
Initiative skills to:	adapt to document design requirements.
Planning and organising skills to:	manage document research, design and development time.
Problem-solving skills to:	- identify problems, particularly in production, to meet performance indicators - access, interpret and apply workplace procedures and instructions to ensure documents meet workplace template requirements and standards.
Teamwork skills to:	work in a design consultation process.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Requirements</i> must include:	• design quality • materials • production processes • testing and costing.
<i>Documents</i> must include:	• budgets • material requirements • production processes • resources • specified parameters • test requirements • timelines.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFTA001 Document manufacturing design processes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA3001 Document designs

Performance Evidence

Before competency can be determined, individuals must have competently developed and designed workplace documents on a minimum of two occasions.

Individuals must demonstrate they can:

- comply with workplace procedures when designing production documents
- apply working knowledge of production practices and systems
- identify design requirements
- communicate with internal personnel to seek their input into and approval of documents
- design and modify documents
- incorporate design quality, materials, production processes, testing and costing into document design process
- complete, disseminate and store design documents.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace documents covering procedures, specifications, schedules, quality instructions, procedures and performance indicators
- workplace communication protocols for developing and disseminating design documentation
- processes to identify design requirements
- processes to identify critical product quality, materials, tests and costing
- processes for developing and storing documents.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the automotive production documents that they have designed, e.g. a copy of the production documents.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- real or simulated automotive production document requirements
- automotive production document design brief and development instructions
- computer system and design software
- workplace procedures relating to the design of automotive production documents.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFTA002 Perform die coating

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA3002 Conduct die coating

Application

This unit describes the performance outcomes required to coat dies for their later use in casting processes.

It applies to those in an automotive and related component manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Job instructions and quality requirements are identified and confirmed with appropriate personnel 1.2 Tools and equipment required for the job are selected and checked for faults and correct operation 1.3 Materials required to complete the job are identified and

Elements	Performance Criteria
	prepared
2. Disassemble and inspect dies	2.1 Die is safely located in the coating area 2.2 Die coating insulation materials are inspected for wear, and removed if required 2.3 Dies are inspected and analysed for defects, and identified defects are rectified according to workplace procedures 2.4 Dies are tested to ensure rectification has eliminated the fault, and adjustments are made if required
3. Coat and assemble dies	3.1 Die coating insulation material is selected and prepared according to workplace procedures 3.2 Die is cleaned in preparation for coating and heated according to workplace and equipment manufacturer recommendations and work health and safety (WHS) requirements 3.3 Die coating insulation material is applied to the die, and die is assembled and checked in preparation for pressing according to workplace and equipment manufacturer recommendations 3.4 Die is returned to production sequence
4. Complete work processes	4.1 Work area is cleaned, and materials disposed of or recycled according to workplace procedures 4.2 Tools and equipment are cleaned, checked, maintained and stored according to workplace procedures 4.3 Documentation is completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret WHS requirements - interpret workplace procedures, job instructions and quality requirements - interpret manufacturer recommendations and specifications.
Writing skills to:	recode die coating intervals and work sheets.
Oral communication skills to:	confirm job instructions and quality requirements with appropriate personnel.

Numeracy skills to:	calculate surface area, required materials, and volume of die coating.
Problem-solving skills to:	determine required tools and equipment for the job and assess defects for solutions.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	- equipment use, maintenance and storage - recording and reporting - WHS requirements relating to die coating - workplace quality and continuous improvement programs.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFTA002 Perform die coating

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA3002 Conduct die coating

Performance Evidence

Before competency can be determined, individuals must have competently coated dies on a minimum of five occasions.

Individuals must demonstrate they can:

- interpret workplace quality requirements
- clean, inspect, assemble and disassemble dies
- select and perform minor rectification to dies
- manually handle dies
- apply die coating according to work health and safety (WHS) requirements and workplace procedures.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements when applying die coating
- workplace procedures to apply coating to production dies
- die coating application methods and processes
- principles of die casting:
 - purpose of dies
 - methods of producing die castings
 - die coat functions
- procedures to inspect die castings
- methods of die disassembling and re-assembling
- defects in production dies and their causes
- damage that can be caused to castings through inappropriate handling and storage
- minor rectification methods of die faults:
 - methods of testing die re-work
 - die coat selection, cleaning and heating methods
- equipment used in die coating.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the dies that they have coated, e.g. work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- tools, equipment, material and machinery required to coat dies
- a range of dies relevant to motor vehicle or component manufacturing
- materials to test die coating
- workplace procedures relating to applying coating to production dies
- work sheets and job specifications relating to applying coating to production dies.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFTA003 Set and adjust automotive production machine tools

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA3003 Conduct tool setting

Application

This unit describes the performance outcomes required to set and adjust production machine tools.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Job instructions and quality requirements are located and confirmed with appropriate personnel 1.2 Tools and equipment required for the job are selected and checked for faults and correct operation

Elements	Performance Criteria
	1.3 Materials required to complete the job are identified and prepared
2. Select and check machining tools	2.1 Machining tools are selected according to the machine's maintenance schedule and specifications 2.2 Machining tools are inspected and tested for compliance with specifications 2.3 Out-of-specification tools are processed for repair or disposal according to workplace procedures 2.4 Machining tools are cleaned, prepared for use, and protected for transit
3. Remove and replace machining tools	3.1 Required location for the machining tools is checked and confirmed against machine specifications 3.2 Machine is made safe according to work health and safety (WHS) requirements and workplace procedures prior to commencing work 3.3 Machining tools are located and removed, and replacement machining tools are installed and set to machine specifications 3.4 Machine safety guards are checked for correct fitting according to machine specifications 3.5 Test runs are conducted according to WHS requirements and workplace procedures , and sample products are checked
4. Maintain machining tools and stock levels	4.1 Machining tools are maintained according to workplace procedures 4.2 Stock levels of machining tools are reviewed and action taken to avoid stock-out situations 4.3 Stock levels of consumables are maintained to support continuity of operations
5. Complete work processes	5.1 Work area is cleaned, and materials disposed of or recycled according to workplace procedures 5.2 Tools and equipment are cleaned, checked, maintained and stored according to workplace procedures 5.3 Workplace documentation is completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret WHS requirements, workplace procedures, job instructions and quality requirements - interpret manufacturer procedures and job specifications.
Writing skills to:	complete machine tool maintenance work sheets.
Oral communication skills to:	confirm job instructions and quality requirements with appropriate personnel.
Numeracy skills to:	identify tool measurements and check them against job specifications.
Planning and organising skills to:	prepare work area, tools and machines to ensure production is not interrupted.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	- continuous improvement programs - recording and reporting - use of tools and equipment - WHS requirements relating to setting and adjusting production machine tools - workplace quality standards for setting and adjusting production machine tools.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFTA003 Set and adjust automotive production machine tools

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA3003 Conduct tool setting

Performance Evidence

Before competency can be determined, individuals must have competently set and adjusted production machine tools on a minimum of five occasions.

Individuals must demonstrate they can:

- select, inspect and test machining tools according to work health and safety (WHS) requirements and workplace procedures
- remove, install and set machining tools to specifications
- perform machine test run and test sample products
- maintain stock levels of machining tools
- complete workplace documents, recording tool setting installation date and time and maintenance requirements.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements and workplace procedures relating to setting and adjusting production machine tools
- equipment use and tool settings
- types, application and operation of machine tools
- machine and tool testing procedures
- methods relating to removing, installing and setting tools to:
 - set tools to machine specifications
 - conduct test runs
- methods of maintaining and documenting stock levels of machine tools.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the automotive production machine tools that they have worked on, e.g. production machine work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- tools, equipment, material and machinery required for conducting tool setting
- a range of machines that require tool setting relevant to motor vehicle or component manufacturing
- workplace procedures to set and adjust production machine tools
- work sheets, job specifications and workplace documentation to record tool setting installation date and time and maintenance requirements.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFTA004 Monitor and maintain operation of metal treatment plants

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA3004 Monitor and maintain metals treatment plant operations

Application

This unit describes the performance outcomes required to monitor and maintain a multi-stage metal treatment plant designed to clean and prepare metal bodies for painting.

It applies to individuals in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan for work	1.1 Job instructions, plant processes, and <i>workplace procedures</i> are identified 1.2 Quality requirements, sampling and testing schedule, and inspection procedures are identified

Elements	Performance Criteria
	1.3 Treatment solution specifications are identified from workplace instructions and are confirmed
2. Monitor metal treatment plant operating processes	2.1 Sample sources are identified from plant schematics, and sampling and testing schedule is followed 2.2 Sampling is carried out according to workplace procedures and sampling and testing schedule 2.3 Samples are labelled and tested to approved procedures, and results are documented in line with inspection reports, forms and quality requirements 2.4 Process non-conformance is identified and confirmed with appropriate personnel
3. Maintain product quality	3.1 Product quality checks are carried out according to work quality goals 3.2 Operation faults are diagnosed and rectified or reported for specialist support 3.3 Excess or contaminated materials are cleaned and disposed of according to workplace procedures 3.4 Defects are analysed, and causes of faults identified and investigated 3.5 Actions to restore the product quality are implemented, checked and confirmed according to workplace instructions 3.6 Defects that cannot be resolved are recorded and reported for specialist attention
4. Complete work processes	4.1 Reports covering each defect and response are completed according to workplace procedures 4.2 Tools, equipment and work areas are cleaned and made safe 4.3 Workplace documentation is completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret job requirements, work instructions, work health and safety (WHS) requirements and workplace procedures - interpret schematics, sampling and testing schedules - interpret metal treatment plant operating procedures.

Writing skills to:	complete defect reports and metal treatment work sheets.
Oral communication skills to:	- refer non-conformance to supervisor and co-workers - speak clearly and directly in order to report faults to specialist support personnel.
Numeracy skills to:	- identify job specifications - estimate material quantities.
Planning and organising skills to:	manage time when planning, preparing and organising metal treatment operations.
Problem-solving skills to:	identify metal treatment plant problems, particularly in teams, in order to meet performance indicators.
Technology skills to:	operate metal treatment plant and equipment.
Teamwork skills to:	work effectively with co-workers in a manufacturing treatment plant.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	- quality standards - recording and reporting - use of equipment and metal treatment plant - waste disposal, recycling and re-use guidelines - WHS requirements relating to monitoring and maintaining a metal treatment plant.
<i>Work quality goals</i> must include:	- identifying faults - minimising and eliminating defects.
<i>Materials</i> must include:	- chemicals - solutions.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFTA004 Monitor and maintain operation of metal treatment plants

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA3004 Monitor and maintain metals treatment plant operations

Performance Evidence

Before competency can be determined, individuals must have competently monitored and maintained metal treatment plants on a minimum of three occasions.

Individuals must demonstrate they can:

- comply with work health and safety (WHS) requirements and workplace procedures relating to monitoring and maintaining metal treatment operations
- comply with workplace quality requirements
- use metal treatment equipment safely
- monitor and maintain a multi-stage metal treatment plant over five full shifts during which:
 - pre-start checks are conducted according to workplace procedures
 - solutions are maintained to specifications using approved sampling, testing and remedial processes
 - plant operations are maintained to specification
 - product quality is maintained to specification
 - treatment-related metal product faults are rectified
- complete workplace documentation and reporting requirements (some simulation may be required to ensure adequate scope).

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements and workplace procedures relating to operating a metal treatment plant
- metal surface quality requirements for vehicle painting
- metal treatment plant functions, flow systems, control and documentation systems
- common metal treatment plant product faults and defects
- flow control systems and adjustment processes

- basic chemical uses and reactions in relation to the treatment of metals for painting
- testing processes and specifications relating to titration, pressure and coating integrity
- processes for the calculation of material requirements
- key components of paint safety data sheets (SDS)
- procedures for identifying and handling hazardous materials and dangerous goods
- material handling, storage and environmentally compliant waste management processes.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the metal treatment plants that they have monitored and maintained, e.g. maintenance work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- metal treatment plant tools, equipment and chemicals
- workplace procedures relating to operating a metal treatment plant
- metal cleaning products
- metal components that require treatment
- metal treatment plant work sheets.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFTA005 Analyse test vehicles for research purposes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA4005 Analyse a test vehicle for research purposes

Application

This unit describes the performance outcomes required to analyse a test vehicle or prototype vehicle for the purpose of testing the vehicle and its components.

It applies to those in an automotive and related component manufacturing environment.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare vehicle	1.1 <i>Workplace procedures</i> are identified and followed 1.2 Research objectives, work plans and check lists are identified for test 1.3 <i>Instructions</i> and <i>analysis parameters</i> are interpreted 1.4 Vehicle system and component monitoring and testing equipment are installed and checked for operation according

Elements	Performance Criteria
	to workplace and manufacturer procedures 1.5 Vehicle is checked for safe and correct operation within the parameters of the test plan
2. Operate and monitor vehicle	2.1 Vehicle is operated in line with test requirements 2.2 Performance of vehicle during test is monitored 2.3 Observations are recorded according to workplace procedures and research objectives
3. Complete test documentation	3.1 Running observations are reviewed and report is prepared according to workplace procedures 3.2 Final analysis and test findings are reported to management and engineering personnel according to workplace procedures 3.3 Vehicle records are maintained and updated information is processed according to work instructions and workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret research objectives relating to vehicle test - interpret vehicle specifications and test results - interpret workplace and manufacturer instructions, schedules, reports, manuals and work plans.
Writing skills to:	- prepare test plan - complete records of test results and outcomes.
Oral communication skills to:	- discuss vehicle test results with relevant personnel - communicate test results between team members and management - communicate work plans, schedules and analysed vehicle information to team members of varying technical backgrounds.
Numeracy skills to:	- interpret vehicle performance against manufacturer specifications - determine schedule timelines - use test equipment.
Digital literacy skills to:	use electronic test equipment and computer testing programs.
Initiative skills to:	adapt to different vehicle models that require testing.

Planning and organising skills to:	• manage testing times • plan, prepare and organise work priorities.
Problem-solving skills to:	• solve problems, particularly in teams, paying attention to performance indicators that reflect changed circumstances • comply with relevant workplace procedures and test instructions.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	• quality standards • recording and reporting • use of equipment • WHS requirements.
<i>Instructions</i> must include:	• job sheets, work plans and specifications • manufacturer and workplace instructions • use and operation of testing tools and equipment • workplace procedures.
<i>Analysis parameters</i> must include:	• operational performance • test designers.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFTA005 Analyse test vehicles for research purposes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA4005 Analyse a test vehicle for research purposes

Performance Evidence

Before competency can be determined, individuals must have competently analysed a test vehicle for research purposes on a minimum of three occasions.

Individuals must demonstrate they can:

- comply with work health and safety (WHS) requirements and workplace procedures when testing vehicles for research purposes
- prepare a vehicle for test or trial
- perform test or trial, operating a test vehicle for research purposes
- communicate test findings with appropriate personnel
- prepare reports of results
- achieve test objectives and quality goals.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements and workplace procedures relating to testing vehicles for research purposes
- vehicle test or trial activities
- test tools, equipment and procedures
- vehicle performance characteristics and specifications
- recording and reporting processes for test findings.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements and hold relevant vehicle operating licences.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles on which they have worked, e.g. work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- personal protective equipment (PPE) appropriate for vehicle testing procedures
- vehicle test or trial instructions
- vehicle specifications
- test tools and equipment
- vehicles for test or trial.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFTA006 Develop research reports on vehicle design, development and production

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA5006 Produce research reports

Application

This unit describes the performance outcomes required to carry out research activities, analyse research data, and produce research reports relating to the design, development and production of motor vehicles, in conjunction with engineering personnel.

It applies to those in an automotive manufacturing environment at a specialist technician level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Determine research requirements	1.1 Research brief or problem is defined in conjunction with relevant design, engineering, marketing, production or other personnel 1.2 Research processes and requirements are developed from an

Elements	Performance Criteria
	analysis of available information 1.3 Research processes and requirements are documented and validated
2. Conduct research	2.1 Research strategies for use in the research project are identified and evaluated 2.2 Research plan is submitted for approval 2.3 Research activities are conducted 2.4 Collected information is processed and summarised according to the research strategy
3. Evaluate research outcomes	3.1 Research data is analysed 3.2 Research outcomes are structured to address research brief or defined problem 3.3 Specific issues and important additional findings are highlighted and summarised 3.4 Research outcomes are discussed with relevant personnel and appropriate adjustments are made to findings based on feedback
4. Document and distribute research outcomes	4.1 Research outcomes are summarised 4.2 Research documentation is completed, saved and stored for future reference 4.3 Research documentation is distributed to specified personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret research information on workplace objectives, vehicle market trends and safety requirements - interpret research data for evaluation and trials.
Writing skills to:	document new design requirements, concept restraints, trials, tests and modification outcomes.
Oral communication skills to:	- review the design concept with appropriate personnel - review and evaluate concept sketches with engineering, marketing and other appropriate personnel - evaluate manufacturing methods with production engineering, marketing and other appropriate personnel.

Numeracy skills to:	• calculate critical dimensions and interpret data • estimate required materials, components and related costs.
Teamwork skills to:	• apply teamwork to a range of situations, including conducting research.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFTA006 Develop research reports on vehicle design, development and production

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA5006 Produce research reports

Performance Evidence

Before competency can be determined, individuals must have competently prepared research reports on vehicle design, development and production on a minimum of three occasions.

Individuals must demonstrate they can:

- comply with workplace research standards
- successfully complete a range of research reports
- complete related workplace research documentation.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- types and limitations of quantitative and qualitative research methods
- workplace procedures and work plans to develop vehicle research reports
- mechanical, electrical and fabrication designs
- operation and selection of computer hardware and software applications and systems
- quality control systems, including performance indicators
- procedures for recording, reporting and maintaining organisational records and information.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the research documentation that they have developed, e.g. research reports.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- sources of information from which to determine customer needs, competitor products, workplace objectives, fashion trends and safety requirements
- workplace procedures relating to developing research reports
- materials and equipment necessary to produce research reports.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFTA007 Evaluate vehicle design, development and production information

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA5007 Seek, evaluate, organise and prepare information

Application

This unit describes the performance outcomes required to gather, assess, record and store relevant information to assist in decision making in the course of the design, development and production of motor vehicles.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Obtain information	1.1 <i>Workplace instructions</i>, production plans, processes and materials are identified to complete tasks 1.2 Sources of information are regularly reviewed for usefulness

Elements	Performance Criteria
	and reliability 1.3 Information is updated, and relevant factors and problems that could affect decision making in area of responsibility are considered
2. Evaluate information	2.1 Information is assessed for its validity and reliability 2.2 Information is organised into a suitable form to assist decision making 2.3 Opportunities to establish and maintain contacts with those who may provide useful information are considered 2.4 Conclusions drawn from relevant information are based on reasoned argument and appropriate evidence
3. Record and store information	3.1 Effective methods of recording and storing information are researched and identified 3.2 Information is recorded and stored for easy retrieval using accepted formats, systems and workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret information on customer needs, competitor products, workplace objectives, fashion trends, safety needs and relevant legislative requirements - interpret the outcomes of feasibility evaluations and trials.
Writing skills to:	document new design requirements, concept restraints, trials, tests and modification outcomes, and the final new product design.
Oral communication skills to:	- discuss design concept with appropriate personnel - discuss and evaluate concept sketches by consulting with engineering, marketing and other appropriate personnel - evaluate manufacturing methods by consulting with engineering, marketing and other appropriate personnel.
Numeracy skills to:	- estimate required materials, components and related costs by consulting with engineering, marketing and other appropriate personnel - calculate critical dimensions and interpret data.
Teamwork skills to:	work with a wide range of people while reviewing and evaluating

	design and development processes.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace instructions</i> must include:	• job sheets, plans, specifications, drawings and designs • workplace procedures and manufacturer instructions.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFTA007 Evaluate vehicle design, development and production information

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTA5007 Seek, evaluate, organise and prepare information

Performance Evidence

Before competency can be determined, individuals must have competently evaluated vehicle information on a minimum of three occasions.

Individuals must demonstrate they can:

- comply with relevant legislation, regulations, standards, codes of practice, safe work practices and workplace procedures relevant to the decision-making process in the design, development and production of motor vehicles
- communicate effectively with engineering, marketing and other appropriate personnel to inform evaluation of information
- apply, within scope of own authority, the requirements of the job or work role in relation to:
 - seeking, evaluating, recording and storing relevant information to assist decision making
 - achieving work quality goals
 - completing work area housekeeping requirements, including the documentation of project activity and process outcomes.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures to seek, evaluate and prepare information
- workplace instructions
- production work plans
- communication techniques to seek and elicit information from co-workers
- procedures for recording, reporting and maintaining organisational records and information.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the information that they have evaluated, e.g. evaluation reports.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- workplace procedures for seeking, evaluating and preparing information
- sources of information relevant to the design, development and production of motor vehicles.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFTE001 Conduct engine hot tests

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTE3001 Conduct engine hot test

Application

This unit describes the performance outcomes required to assess the status of an engine for operating inconsistencies or faults.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Technical - Engines

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Work instructions and specifications are identified and confirmed 1.2 Tools and equipment for the job are inspected and faults are rectified or reported 1.3 Materials list is interpreted and materials are selected and

Elements	Performance Criteria
	prepared
2. Shift and mount engine	2.1 Workplace procedures are identified and followed 2.2 Engine is transferred from assembly line to the engine testing area 2.3 Engine is mounted in engine testing cradle for hot test procedures
3. Hot test engine	3.1 Services are connected to the engine, simulating normal operating conditions, and engine is brought to hot operating conditions 3.2 Mechanical, sensory and electronic scan tool tests are conducted and results are compared against performance specifications 3.3 Minor modifications are carried out according to workplace procedures 3.4 Test results are recorded and documented 3.5 Engine is designated as conforming or requiring rectification, and is labelled and prepared for transfer to assembly line or engine rectification area
4. Complete work processes	4.1 Workplace documentation is completed 4.2 Work area is cleaned and materials disposed of, reused or recycled according to workplace procedures 4.3 Tools and equipment are cleaned, checked, maintained and stored according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work instructions and inspection reports - interpret manuals and specification sheets.
Writing skills to:	- complete faulty engine and equipment tags - complete test and fault rectification reports.
Numeracy skills to:	- identify engineering specifications - measure parts and components to determine compliance with specifications - interpret results from test equipment.

Skills	Description
Digital literacy skills to:	• use engine electronic test equipment.
Planning and organising skills to:	• prepare work area, engines and equipment • manage engine test time.
Problem-solving skills to:	• identify engine running defects.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	• engine test equipment operations • recording and reporting • work health and safety (WHS) requirements • workplace quality guidelines.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFTE001 Conduct engine hot tests

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTE3001 Conduct engine hot test

Performance Evidence

Before competency can be determined, individuals must have competently conducted an engine hot test on a minimum of three occasions.

Individuals must demonstrate they can:

- interpret and apply job specifications and work instructions when conducting engine hot test
- apply quality requirements when conducting engine hot test
- use tools and equipment safely when conducting engine hot test
- use engine hot test procedures to identify non-conforming engine faults, using electronic scan tools, mechanical and sensory tests, following work health and safety (WHS) requirements and workplace procedures
- complete workplace test records and documents.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements and workplace procedures for conducting hot engine tests
- workplace production quality standards
- manufacturing and production techniques for engines
- engine testing terminology
- types and uses of engine test tools and equipment
- engine faults and symptoms
- engine parts and construction
- engine testing techniques and equipment
- processes for calculating material requirements.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements and relevant vehicle operating licences.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles on which they have worked, e.g. work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workshop
- workplace procedures to conduct hot engine tests
- work instructions for conducting hot engine tests
- tools, equipment and machinery required to conduct an engine hot test
- engines requiring hot engine tests and engine manufacturer specifications
- engine test cradle or workplace equivalent.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFTK001 Test automotive production components, equipment and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTK5001 Establish a test or trial for components of plant, tooling, equipment or systems

Application

This unit describes the performance outcomes required to design and establish a test of components, plant, tools, equipment, product and systems used in the production of motor vehicles.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Technical - Tools and Equipment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Identify test objectives	1.1 Workplace procedures to test and trial components of plant, tools, equipment, product or systems are identified and verified

Elements	Performance Criteria
	1.2 Instructions and work plans are interpreted to identify processes and materials to be used in testing 1.3 Materials and components to be tested are obtained 1.4 Test objectives are identified and confirmed with appropriate personnel
2. Determine test methodology	2.1 Sequence and specified procedures for test are determined according to workplace procedures and manufacturer instructions 2.2 Test tools and equipment are identified and obtained according to job requirements 2.3 Stakeholders are identified and consulted and test is modified to incorporate feedback
3. Identify and allocate resources to test	3.1 Resources and appropriate personnel required to test material or component are identified and allocated 3.2 Test plan is prepared according to workplace procedures, and confirmed with relevant stakeholders
4. Monitor test	4.1 Testing is monitored according to workplace procedures 4.2 Support is provided to personnel conducting the test 4.3 Modifications to test plan are proposed to stakeholders and accepted changes are implemented
5. Complete work processes	5.1 Feedback from involved stakeholders is sought on test or trial and integrated into procedure documentation 5.2 Test procedures are documented and recorded according to workplace procedures 5.3 Test reports are distributed according to work plan and workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret instructions, schedules, reports, operating manuals and work plans - review test results and documentation.
Writing skills to:	- develop and document test plans - complete test report.

Skills	Description
Oral communication skills to:	• allocate tasks to team members • communicate test results between team members • discuss work plans and schedules with relevant personnel.
Numeracy skills to:	• interpret test specifications • analyse test results.
Teamwork skills to:	• work with others to set up and conduct a test.
Digital literacy to:	• use electronic tools and equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Instructions must include:	• manufacturer instructions for test components • specifications and drawings • test and trial requirements • procedures for the operation of tools and equipment • test instructions.
Stakeholders must include:	• design engineers • resource and budget managers.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFTK001 Test automotive production components, equipment and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTK5001 Establish a test or trial for components of plant, tooling, equipment or systems

Performance Evidence

Before competency can be determined, individuals must have competently performed testing on a minimum of two occasions.

Individuals must demonstrate they can:

- test components of plant, tools, equipment, product or systems according to required workplace test and trial procedures
- complete test record work sheets
- communicate test results with co-workers
- establish and monitor tests or trials and review and report test results
- modify test activities to cater for variations in workplace.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) requirements and workplace procedures to test components, plant, tools, equipment, product and systems
- industry standards and codes of practice relating to testing components, equipment and systems
- types and operation of common automotive production components, equipment and systems
- types and limitations of common testing techniques for automotive production components, equipment and systems
- procedures for testing automotive production components, equipment and systems
- processes for recording and reporting test outcomes
- test work sheets and records.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the automotive production components, equipment and systems that they have tested, e.g. test work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- vehicle automotive production components, equipment and systems requiring testing
- test equipment required for the testing of automotive production components, equipment and systems
- test plan, instructions and procedures relating to tests of components, equipment and systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFTM001 Undertake preliminary fault finding and machine reset

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTM3001 Undertake preliminary fault finding and machine reset

Application

This unit describes the performance outcomes required to enable an operator to perform a simple fault-finding task in a production environment.

It applies to those in a manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Technical – Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare for fault finding and machine reset	1.1 <i>Work instructions</i> are identified and confirmed 1.2 Fault-finding checklist is developed and implemented 1.3 Machines and equipment for <i>preliminary fault finding and reset</i> are identified

Elements	Performance Criteria
2. Undertake fault finding and machine reset	2.1 Machine faults and machine reset requirements are identified according to checklist 2.2 Identified faults are repaired, adjusted and recorded 2.3 Machines are reset as required according to workplace procedures 2.4 Machinery repair team and other relevant personnel are advised of outcomes
3. Complete work processes	3.1 Causes of faults are reported to appropriate personnel 3.2 Suggestions for improvement to machine operating procedures are reported 3.3 New process is validated and workplace is restored 3.4 Work sheets are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	• interpret instructions relating to machine operating procedures • analyse fault checklists and reports.
Writing skills to:	• complete fault finding checklist and reports.
Oral communication skills to:	• refer equipment, tool and machinery faults to appropriate personnel • communicate machine faults and reset requirements to co-workers.
Numeracy skills to:	• record parts numbers and materials used for stock control • use imperial and metric systems to required specifications.
Planning and organising skills to:	• prepare machines and work area for fault-finding activities.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate,

accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Work instructions</i> must include:	• manufacturer instructions for the use of equipment and materials • workplace procedures relating to the use and operation of tools and equipment • workplace instructions, including: • drawings and designs • fault-finding plans • job sheets • machine reset specifications • workplace procedures relating to reporting and communications.
<i>Preliminary fault finding and reset</i> must include:	• communication with production line supervisor and emergency repair team • following workplace checklists and routines to establish: • component defects • machine malfunction faults • machine reset requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFTM001 Undertake preliminary fault finding and machine reset

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTM3001 Undertake preliminary fault finding and machine reset

Performance Evidence

Before competency can be determined, individuals must have competently demonstrated that they can undertake preliminary fault finding and machine resetting on a minimum of three occasions.

Individuals must demonstrate they can:

- comply with workplace procedures and work health and safety (WHS) requirements when undertaking machine fault finding and reset
- follow safe fault-finding and resetting practices
- follow and execute preliminary fault-finding checklist
- document fault finding outcomes
- comply with work quality goals.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures and WHS requirements relating to undertaking machine fault finding and reset
- workplace production processes and requirements
- fault-finding materials, equipment and tools
- fault-finding methods and techniques
- quality and performance measures
- recording, reporting and maintenance information.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the machinery on which they have worked, e.g. maintenance work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated environment
- fault-finding tools and equipment for automotive manufacturing machinery
- automotive manufacturing machinery with faults that require testing and resetting
- workplace procedures, manufacturer operating instructions and fault-finding checklists for automotive manufacturing machinery.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFTM002 Create new product designs

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTM5002 Create new product designs

Application

This unit describes the performance outcomes required to create new designs for the plant, tools, equipment and systems required in the design, development and production of motor vehicles.

It applies to those in a manufacturing environment and involves the application of skills and knowledge at a specialist level.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Technical – Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Establish design requirements	1.1 Work instructions and plans are interpreted to identify processes and materials required 1.2 Information is gathered and analysed to determine key requirements of new design 1.3 Requirements of new design are documented according to

Elements	Performance Criteria
	workplace procedures
2. Identify constraints	2.1 Constraints on design concepts are identified and documented 2.2 Suitable strategies are developed to address identified constraints on designs
3. Create design concept	3.1 Initial design concept based on identified design requirements and constraints is created 3.2 Function, physical requirements and impact of the design concept are reviewed with appropriate personnel 3.3 Modifications to the initial design concept are made according to feedback provided by appropriate personnel
4. Produce design concept	4.1 Sketches are prepared to illustrate and explain proposed design concept 4.2 Concept sketches are reviewed with appropriate personnel and suitable changes are made 4.3 Critical dimensions and data of the design concept are identified 4.4 Drawings are prepared to enable manufacturing methods to be identified and evaluated 4.5 Draft product specifications are prepared according to workplace procedures
5. Determine suitable manufacturing methods, materials and processes	5.1 Suitable manufacturing methods are identified for the production of components and sub-assemblies 5.2 Identified manufacturing methods for components and sub-assemblies are evaluated with engineering personnel 5.3 Suitable assembly and finishing methods for the purpose of product design are identified and evaluated
6. Evaluate feasibility of design and manufacture	6.1 Proposed design and manufacturing processes are evaluated against the design requirements with appropriate personnel 6.2 Suitable design tests are conducted, and outcomes are documented
7. Modify design	7.1 Product designs are modified if necessary, based on test outcomes 7.2 Further tests are conducted to confirm modified design against design requirements 7.3 Outcomes of modifications and testing of new design concept are documented
8. Complete work processes	8.1 Documentation requirements for proposed new product design and associated manufacturing processes are identified 8.2 Design documents are processed for approval 8.3 Design documents are distributed and stored according to

Elements	Performance Criteria
	workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work instructions and design plans - interpret test outcomes.
Writing skills to:	- document new design requirements, concept constraints, trials or tests, modification outcomes, and the final new product design - complete design documents and test results.
Oral communication skills to:	- review and evaluate concept sketches with engineering personnel - evaluate manufacturing methods with production engineering personnel.
Numeracy skills to:	- identify design dimensions - calculate materials required for manufacture - document outcomes of the modification and testing of the new design concept using mathematical language.
Teamwork skills to:	work with engineering and manufacturing co-workers while reviewing and evaluating the design.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Information</i> must include:	- Australian Design Rules (ADR) - fashion trends - safety needs - workplace production capability.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFTM002 Create new product designs

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTM5002 Create new product designs

Performance Evidence

Before competency can be determined, individuals must have competently created new product designs on a minimum of three occasions.

Individuals must demonstrate they can:

- comply with relevant legislation, regulations, standards, codes of practice, safe work practices and workplace procedures for creating new product designs
- create initial design concepts within constraints
- modify initial design concepts according to feedback
- produce design drawings of components and sub-assemblies
- identify and evaluate the manufacturing method of the new product and perform trials
- modify product design as necessary and conduct further tests
- document the design process of the new product.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- principles and methods of design
- methods for identifying design concept constraints, and strategies for dealing with them
- methods for creating design concepts, including design sketches
- methods of quantifying design concepts, including calculating:
 - dimensions of design
 - type of materials and material specifications
 - product cost estimates, process time and cost-benefit of new product
- methods of incorporating work health and safety (WHS) requirements into new product designs
- testing procedures for new product designs
- design process documentation, records and reports.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the designs that they have created, e.g. documentation of product design process.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- workplace or simulated workplace suitable to design products
- drawing and design equipment
- tools, equipment and machinery required for the production process of motor vehicles or components
- design instructions and plans
- sources of information from which to determine customer needs, competitor products, workplace objectives, fashion trends and safety needs.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMFTM003 Develop conceptual models and prototypes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTM5003 Develop conceptual models and prototypes

Application

This unit describes the performance outcomes required to develop and trial conceptual models and prototypes in the design, development and production of motor vehicles.

It applies to those in an automotive manufacturing environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Passenger Vehicle

Unit Sector

Technical - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Determine model and prototype requirements	1.1 <i>Workplace requirements</i> for the development of conceptual <i>models and prototypes</i> are confirmed 1.2 <i>Instructions</i> and plans are interpreted to identify processes and materials needed to undertake the work 1.3 Client requirements for model and prototype are confirmed with relevant personnel 1.4 Approval is sought for the proposed development or

Elements	Performance Criteria
	modifications to conceptual model and prototype
2. Plan model and prototype-making activities	2.1 Steps involved in the development or modification of the model and prototype are identified 2.2 Fabrication and machining processes and instructions are determined 2.3 Timetable, resource requirements, personnel, and purchase and supply schedule are confirmed 2.4 Approved plan is communicated to relevant personnel
3. Prepare tools and equipment	3.1 Required tools and equipment to construct or modify the model or prototype are selected and prepared for use 3.2 Necessary materials and components are obtained according to design requirements
4. Produce conceptual model and prototype	4.1 Model and prototypes are designed according to design plans and specifications 4.2 Model and prototypes are fabricated and constructed according to plans and specifications 4.3 Completed model and prototypes are compared to specification and modified as required
5. Test and modify model and prototype	5.1 Model and prototypes are tested and checked against project objectives, design specifications and workplace standards 5.2 Test results are analysed and action is taken where required to modify the model and prototypes 5.3 Outcomes of development process and associated testing are documented and referred to relevant personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	interpret instructions and plans, regulations, standards, codes of practice, fabrication, equipment processes, work practices and workplace procedures relevant to developing conceptual models and prototypes.
Writing skills to:	develop model and prototype plan.
Oral communication skills to:	discuss and clarify project plan with relevant personnel, communicating complex relationships between ideas and

Skills	Description
	information in a style appropriate to audience and purpose discuss timetable, resource and personnel requirements with relevant personnel.
Numeracy skills to:	- calculate budgets and costs - calculate material requirements - operate measuring tools and equipment.
Digital literacy skills to:	- use computers and computer software, such as email, databases, spread sheets and word processing, to convey ideas, tests and reports - use computerised equipment for model and prototype development and shaping.
Planning and organising skills to:	- set up processes and procedures to ensure that timelines and budgets are managed - develop or modify conceptual models and prototypes.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace requirements</i> must include:	- equipment use - quality and continuous improvement processes - recording and reporting guidelines - work health and safety (WHS) requirements relating to the development of models and prototypes.
<i>Models and prototypes</i> must be:	- formed using metal, plastics, clay, fibre glass, wood, foam, and other suitable material - shaped through the development and use of moulds, templates, carving and computerised shaping equipment on material.
<i>Instructions</i> must include:	- job sheets, plans, specifications, drawings and designs - manufacturer instructions - workplace procedures relating to the development of prototypes.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMFTM003 Develop conceptual models and prototypes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMFTM5003 Develop conceptual models and prototypes

Performance Evidence

Before competency can be determined, individuals must have competently developed conceptual models and prototypes on a minimum of two occasions.

Individuals must demonstrate they can:

- comply with workplace standards, safe work practices and workplace procedures for developing conceptual models and prototypes
- communicate effectively with design engineers during development process
- apply, within scope of own authority, the requirements of the job in relation to:
 - developing conceptual models and prototypes that satisfy customer requirements
 - achieving work quality goals
 - completing documentation of the model and prototype development process
 - completing work area housekeeping requirements, including documentation of project activity, process and outcomes.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) requirements when developing models and prototypes
- common types and applications of conceptual model and prototype plans and specifications
- workplace procedures for developing conceptual models and prototypes
- methods for determining model and prototype requirements and producing models
- operation of vehicle design software systems and components
- techniques to test and evaluate models and prototypes against project objectives, specifications and workplace standards
- workplace quality standards relating to developing conceptual models and prototypes
- procedures for recording and reporting workplace records and information.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the conceptual models and prototypes that they have developed, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- workplace location or simulated environment
- materials, tools, equipment and machinery required for developing conceptual models and prototypes
- workplace procedures to develop conceptual models and prototypes.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGCA001 Provide customer service

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGCA2001 Provide customer service
Release 2	Updated for clarity and policy adherence

Application

This unit describes the performance outcomes required to meet the needs and expectations of customers when delivering a service.

It applies to those working in a range of contexts.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Sales and Marketing

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Identify customer needs	1.1 Identify types of customers and their expectations and needs through consultation and negotiation 1.2 Regularly identify and monitor customer needs through formal and informal communication channels to identify required services 1.3 Assess current products and services against customer needs to determine the ability of the enterprise to meet them

Elements	Performance Criteria
2. Respond to customer needs	2.1 Respond to customer requests in a timely and efficient manner 2.2 Promote workplace services and products to the customer in a manner that assists the development of a positive and professional relationship 2.3 Address customer dissatisfaction promptly according to workplace procedures
3. Evaluate service provided	3.1 Evaluate service provided to the customer and take appropriate action to resolve any issues or complaints 3.2 Seek feedback from customers on the product or service provided 3.3 Document customer feedback according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Learning skills to:	draw on prior knowledge to identify customer needs.
Reading skills to:	- identify workplace procedures relating to required customer service - identify customer requests and instructions.
Writing skills to:	legibly complete workplace customer feedback and survey sheets.
Oral communication skills to:	speak clearly and directly when presenting customer service problems or issues to appropriate personnel.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGCA001 Provide customer service (Release 2)	AUMGCA001 Provide customer service (Release 1)	Minor updates to Assessment Requirements. Performance Criteria changed from passive	Equivalent

Code and title current version	Code and title previous version	Comments	Equivalence status
		to active voice. Rationalisation of Range of Conditions.	

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGCA001 Provide customer service

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGCA2001 Provide customer service
Release 2	Updated for clarity and policy adherence

Performance Evidence

Before competency can be determined, individuals must have competently demonstrated that they can provide effective customer service on a minimum of two occasions.

Individuals must demonstrate they can:

- promote products and services in a clear and direct manner
- identify customer needs and expectations
- resolve customer concerns and complaints by taking appropriate action, including:
 - handling customer needs in a courteous, discreet and sensitive manner
 - addressing customer complaints and escalating where necessary
- apply workplace procedures relating to customer feedback, including:
 - customer service and continuous improvement processes
 - workplace customer service practices

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- effective customer services principles, including requirements to meet customer service needs and expectations
- workplace products and services
- customer service reporting procedures
- customer service problem-resolution procedures.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that demonstrates they have provided customer service, e.g. customer testimonials.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- workplace or simulated workplace
- workplace instructions, including customer requirements
- workplace customer service procedures
- customers with different needs
- workplace complaint-resolution procedures
- customer service feedback surveys and reporting procedures

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM013 Install or replace mechanical units and assemblies

Modification History

Release	Comment
Release 1	New unit of competency

Application

This unit describes the performance outcomes required to locate, interpret and apply Australian Design Rules (ADR), original equipment manufacturer (OEM) requirements, Heavy Vehicle National Law (HVNL) regulations, and Vehicle Standards Bulletin 6 (VSB6) National Code of Practice - Heavy Vehicle Modifications.

It applies to those working in the commercial vehicle industry, and involves the application of skills and knowledge at a specialist level.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Unit Sector

Regulatory or Legal - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Review standards	1.1 Identify heavy vehicle modification standards 1.2 Interpret and apply ADR, OEM requirements, HVNL regulations, and VSB6 specifications for heavy vehicles
2. Check that vehicle complies with standards	2.1 Check workplace manufacturing or modification drawings according to workplace procedures and work health and safety requirements 2.2 Check standards against OEM requirements
3. Complete documentation	3.1 Report non-compliance of manufacturing or modification drawing to standards to appropriate personnel for rectification according to workplace procedures

Elements	Performance Criteria
	3.2 Complete relevant workplace documentation according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify requirements of standards - interpret engineering drawings and working drawings - interpret workplace procedures - interpret OEM specifications.
Writing skills to:	complete workplace documentation.
Oral communication skills to:	report non-compliance to relevant personnel.
Numeracy skills to:	compare measurements and identify non-conformance.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGLM011 Apply heavy vehicle standards	AUMGLM001 Apply heavy vehicle standards	Minor changes to Performance Criteria Additions to Assessment Requirements due to rationalisation of Range of Conditions. Minor changes to ensure policy adherence. Addition of 'in states where applicable' to instances of HVNL.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM013 Install or replace mechanical units and assemblies

Modification History

Release	Comment
Release 1	New unit of competency

Performance Evidence

Before competency can be determined, individuals must have competently confirmed the compliance of heavy vehicles with Australian Design Rules (ADR) and Vehicle Standards Bulletin 6 (VSB6) National Code of Practice - Heavy Vehicle Modifications on a minimum of two occasions, in the manner described in the Performance Criteria of this unit.

Individuals must demonstrate they can:

- identify and apply standards relevant to the situation, including:
 - ADR relevant to heavy vehicle modifications
 - HVNL regulations, in states/territories where applicable
 - OEM guides and manuals
 - VSB6 National Code of Practice - Heavy Vehicle Modifications.
- comply with workplace procedures and other requirements when checking heavy vehicles for compliance, including:
 - code of practice
 - VSB6
 - OEM specifications
 - workplace quality.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- workplace procedures for applying heavy vehicle standards, including:
 - WHS procedures
 - procedures for recording and reporting non-compliance of standards
- OEM requirements
- VSB6 National Code of Practice
- ADR relevant to VSB6
- Heavy Vehicle National Law (HVNL) regulations in states where applicable
- methods of determining compliance of working drawings against standards.

Assessment Conditions

Assessors of this unit must satisfy the assessor requirements in applicable vocational education and training legislation, frameworks and/or standards.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles on which they have worked, e.g. repair orders.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- two different heavy vehicles
- heavy vehicle engineering and working drawings
- VSB6 National Code of Practice
- ADR relevant to VSB6
- HVNL regulations in states where applicable
- OEM manuals and guides
- tools and equipment for checking heavy vehicles against standards
- workplace documentation relevant to applying heavy vehicle standards to heavy vehicles and recording results.
-

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGMA001 Participate in workplace productivity improvement processes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGMA3001 Participate in workplace productivity
Release 2	Updated for clarity and policy adherence

Application

This unit describes the performance outcomes required to identify opportunities to improve workplace productivity. It applies to those working in a production environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Management, Leadership and Supervision

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Determine work area productivity	1.1 Identify and confirm work area processes, goals, job specifications and workplace requirements 1.2 Monitor work area processes for efficiency and effectiveness using available workplace resources
2. Identify productivity improvement opportunities	2.1 Analyse work area processes for problems and identify areas for improvement 2.2 Apply appropriate quality tools and techniques for identifying causes of problems and areas for improvement

Elements	Performance Criteria
	2.3 Develop draft recommendations for improvement
3. Communicate productivity improvement ideas	3.1 Present draft recommendations for improvement and discuss with others in a team 3.2 Finalise and document recommendations according to workplace procedures 3.3 Suggest final recommendations to appropriate personnel according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Learning skills to:	research ideas to improve workplace productivity.
Reading skills to:	- identify work instructions and workplace procedures - read workplace productivity improvement forms.
Oral communication skills to:	- expand knowledge of workplace systems and processes through discussion with co-workers - communicate recommendations for improvements with appropriate personnel.
Numeracy skills to:	understand basic numerical information embedded in work area process goals and job specifications.
Problem-solving skills to:	identify areas for improvement after analysing the work area.
Teamwork skills to:	involve co-workers in team discussions to achieve positive work outcomes.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGMA001 Participate in workplace productivity	AUMGMA001 Participate in workplace productivity	Minor updates to Assessment Requirements. Performance Criteria	Equivalent

Code and title current version	Code and title previous version	Comments	Equivalence status
improvement processes (Release 2)	improvement processes (Release 1)	changed from passive to active voice. Rationalisation of Range of Conditions.	

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGMA001 Participate in workplace productivity improvement processes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGMA3001 Participate in workplace productivity
Release 2	Updated for clarity and policy adherence

Performance Evidence

Before competency can be determined, individuals have competently made recommendations that lead to process improvements on a minimum of two occasions.

Individuals must demonstrate they can:

- analyse their work area and identify productivity problems and areas for improvement, referring to workplace resources including:
 - job specifications
 - production schedules
 - work instructions.
- develop ideas to improve the work area productivity
- communicate those ideas and information with co-workers
- work with co-workers to communicate improvement recommendations to appropriate personnel.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- procedures for monitoring efficiency of work area processes in a manufacturing environment
- procedures for identifying and resolving work area problems in a manufacturing environment
- continuous improvement processes
- waste minimisation practices.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that demonstrates they have participated in workplace productivity, e.g. documented recommendations for process improvement.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- production workplace or simulated workplace
- workplace procedures for documenting and recommending workplace improvements
- work instructions; job specifications; and tools, equipment and machinery operating procedures for work area.
-

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGQA001 Apply workplace technical quality standards

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGQA3001 Inspect work and apply organisation technical quality standards
Release 2	Updated for clarity and policy adherence

Application

This unit describes the performance outcomes required to inspect completed work against job specifications and workplace technical quality standards.

It involves the application of skills and knowledge at a technician level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Quality

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare for inspection	1.1 Identify workplace materials and equipment required for inspection processes 1.2 Identify, tag and report damaged or unserviceable equipment 1.3 Identify and apply workplace instructions and quality guidelines
2. Inspect work	2.1 Identify and apply job specification, work order, inspection processes and quality standards 2.2 Undertake workplace inspection processes against work quality goals

Elements	Performance Criteria
	2.3 Identify and follow work health and safety (WHS) requirements 2.4 Apply workplace quality standards when conducting inspections, according to workplace procedures 2.5 Protect workplace materials and equipment against damage during inspection, according to workplace instructions and quality guidelines
3. Complete work processes	3.1 Inspect completed work to ensure quality outcomes against job specifications, and the achievement of customer requirements 3.2 Complete and report work sheets and quality reports

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret inspection processes and procedures - identify workplace quality standards and their application.
Writing skills to:	- legibly complete workplace quality documentation - complete faulty equipment tags.
Oral communication skills to:	present quality reports.
Numeracy skills to:	measure materials and components and determine compliance with specifications.
Problem-solving skills to:	determine required workplace quality standards.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGQA001 Apply workplace technical quality standards (Release	AUMGQA001 Apply workplace technical quality standards (Release 1)	Minor updates to Assessment Requirements. Performance Criteria	Equivalent

Code and title current version	Code and title previous version	Comments	Equivalence status
2)		changed from passive to active voice. Rationalisation of Range of Conditions.	

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGQA001 Apply workplace technical quality standards

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGQA3001 Inspect work and apply organisation technical quality standards
Release 2	Updated for clarity and policy adherence

Performance Evidence

Before competency can be determined, individuals must have competently inspected completed work to ensure quality standards have been met on a minimum of two occasions.

Individuals must demonstrate they can:

- follow workplace procedures when inspecting work against quality goals, including:
 - identification and elimination of defects
 - attention to job specifications and tolerances
 - efficient production times.
- conduct workplace technical quality inspections in line with established quality standards
- protect workplace equipment and property during quality inspections
- complete workplace quality documentation.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- work health and safety (WHS) requirements for conducting workplace inspections
- procedures to determine if completed vehicle production work meets job specifications and production schedule
- indicators of technical quality standards and processes for establishing them
- work inspection procedures, including:
 - observation techniques
 - non-destructive testing
- types and applications of quality reports.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that demonstrates that they have inspected completed work to ensure workplace quality standards have been met, e.g. inspection work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- manufacturing workplace or simulated workplace
- finished manufactured components requiring quality inspection
- tools, equipment and machinery required for quality inspection process
- workplace quality standards relating to the work to be quality inspected
- workplace procedures relating to conducting quality inspections of completed work
- workplace documentation related to performing and recording quality inspections.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTA002 Service vehicle after assembly

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTA3002 Service after assembly
Release 2	Updated for clarity and policy adherence

Application

This unit describes the performance outcomes required to service vehicles after their assembly by applying lubricants and fluids and bleeding their air and hydraulic systems.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare for work	1.1 Identify vehicle service requirements from work orders 1.2 Select tools, equipment and materials relevant to vehicle service requirements 1.3 Check all selected tools, equipment and materials to ensure they are in good working order to meet job requirements
2. Select and use lubricants and fluids	2.1 Select and match lubricants and fluids to vehicle specifications, according to lubrication and fluid data sheets 2.2 Use lubricants and fluids on the identified parts 2.3 Fill reservoirs and mechanical assemblies to specified levels

Elements	Performance Criteria
3. Bleed air and hydraulic systems	3.1 Identify bleeding points for air and hydraulic systems from specification sheets 3.2 Bleed air and hydraulic systems according to workplace procedures and manufacturer specifications
4. Complete work processes	4.1 Identify and report faults to appropriate personnel 4.2 Clean and maintain tools, equipment and work area, identifying, tagging and reporting faulty equipment according to workplace procedures 4.3 Dispose of waste and used materials, ensuring they are disposed of, reused or recycled according to workplace procedures and product specifications 4.4 Complete service checklists and workplace material lists according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify manufacturer specifications and service instructions - identify work health and safety (WHS) requirements and workplace procedures for operating tools, equipment and machinery.
Writing skills to:	- complete faulty equipment tags and service reports - complete service checklists, workplace forms and schedules.
Oral communication skills to:	notify appropriate personnel of identified system faults.
Numeracy skills to:	- identify lubricant and fluid quantities and volume - interpret service specifications and requirements.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGTA002 Service vehicle after assembly (Release 2)	AUMGTA002 Service vehicle after assembly (Release 1)	Minor updates to Assessment Requirements. Performance Criteria changed from passive to active voice. Rationalisation of Range of Conditions.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTA002 Service vehicle after assembly

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTA3002 Service after assembly
Release 2	Updated for clarity and policy adherence

Performance Evidence

Before competency can be determined, individuals must have competently serviced vehicles after assembly on a minimum of two occasions.

Individuals must demonstrate they can:

- follow workplace procedures and work health and safety (WHS) requirements when servicing vehicles after assembly
- read and interpret job sheets and specification sheets
- locate and identify vehicle service schedules and information
- select and use appropriate lubricants, greases and special fluids, including:
 - greases
 - oils
 - special fluids.
- service and bleed air and hydraulic systems and components using safe work practices
- select and use service tools and equipment
- dispose of waste and used materials appropriately, and reuse or recycle where appropriate
- maintain and complete workplace records.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- types and location of vehicle systems that require after assembly servicing, including:
 - types of air and hydraulic systems
 - types and function of reservoirs and mechanical assemblies that require filling with fluids and lubricants
- procedures for servicing vehicle systems, including:

- WHS and environmental procedures for servicing vehicles after assembly
- types and layout of vehicle servicing schedules
- types and characteristics of lubricants, greases and fluids
- servicing equipment operating procedures
- methods for identifying faults when filling reservoirs and mechanical assemblies, and bleeding air and hydraulic systems
- procedures for completing servicing documentation.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles that they have serviced after assembly, e.g. servicing work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- vehicles requiring after assembly servicing
- workplace procedures relating to servicing vehicles after assembly
- WHS equipment relevant to servicing vehicles after assembly
- vehicle after assembly servicing specifications
- tools, equipment, lubricants, fluids and machinery required for the after assembly service of vehicles
- vehicle after assembly servicing work sheets.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM013 Install or replace mechanical units and assemblies

Modification History

Release	Comment
Release 1	New unit of competency

Application

This unit describes the performance outcomes required to read and interpret a work order and working drawings in automotive manufacturing processes.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Review work order and working drawings	1.1 Obtain and review set of instructions associated with work order according to workplace procedures 1.2 Identify symbols, codes, legends and diagrams in the working drawing 1.3 Identify products, systems, components and items represented in the working drawing 1.4 Identify and confirm job specifications with relevant personnel
2. Interpret working drawings	2.1 Determine required materials and equipment from drawing, using suitable information sources 2.2 Identify required specifications and drawing types 2.3 Estimate material, equipment and production time

Elements	Performance Criteria
3. Check that working drawings reflect work order	3.1 Check drawing to confirm that it represents specifications in work order 3.2 Store drawing for later retrieval according to workplace procedures 3.3 Complete workplace documents according to workplace procedures 3.4 Record and store outcomes of check according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	locate explicit information in work orders, job specifications and working drawings.
Writing skills to:	- produce legible measurements, specifications and legends - legibly complete work sheets.
Numeracy skills to:	- locate simple material dimensions in drawings and compare them to supplier details - calculate material and resource requirements.
Oral communication skills to:	discuss work order where necessary to clarify customer requirements and specifications.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGTA011 Read and interpret work orders and working drawings	AUMGTA001 Read and interpret work orders and working drawings	Additions to Assessment Requirements due to rationalisation of Range of Conditions. Minor changes to ensure policy adherence.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM013 Install or replace mechanical units and assemblies

Modification History

Release	Comment
Release 1	New unit of competency

Performance Evidence

Before competency can be determined, individuals must competently read and interpret work orders and working drawings on a minimum of two occasions, in the manner described in the Performance Criteria of this unit.

Individuals must demonstrate they can:

- establish that a working drawing complies with job, and original equipment manufacturer (OEM) and material specifications
- determine job processes and requirements from work orders and working drawings, including:
 - customer requirements
 - original equipment manufacturer (OEM) procedures
 - material requirements.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- workplace procedures relating to reading and interpreting work orders and working drawings
- types and layout of work orders and working drawings, including symbols, codes and legends
- procedures for identifying job specifications, processes and materials
- workplace procedures relating to work orders and working drawings, including:
 - continuous improvement practices
 - environmental requirements
 - quality guidelines
 - recording and reporting.

Assessment Conditions

Assessors of this unit must satisfy the assessor requirements in applicable vocational education and training legislation, frameworks and/or standards.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that they have interpreted work orders and working drawings, e.g. work sheets.

The following resources must be made available:

- manufacturing workplace or simulated workplace
- work orders, working drawings and specifications
- tools, equipment and materials required in the drawing process
- workplace procedures required to read and interpret work orders and working drawings
- work instructions to read and interpret work orders and working drawings.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM013 Install or replace mechanical units and assemblies

Modification History

Release	Comment
Release 1	New unit of competency

Application

This unit describes the performance outcomes required to assemble, install and test a vehicle braking system kit and its associated components.

It applies to individuals in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical - Brakes

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Plan the job	1.1 Determine installation process using work order and job specifications 1.2 Identify, select and inspect braking system components to be installed 1.3 Select tools and equipment required for the job and check for safe operation 1.4 Access assembly and installation information from manufacturer specifications
2. Assemble and install braking system kit	2.1 Carry out assembly and installation activities according to workplace procedures 2.2 Assemble braking system kit, referring to appropriate sources of information 2.3 Install braking system kit using installation procedures that

Elements	Performance Criteria
	comply with manufacturer specifications, tolerances and adjustment requirements
3. Test braking system	3.1 Access and interpret test information from manufacturer specifications 3.2 Carry out system tests and inspection according to manufacturer specifications or workplace procedures 3.3 Record braking system assembly and test results
4. Complete work processes	4.1 Clean tools and equipment, inspect for defects and store according to workplace procedures 4.2 Identify, tag and report faulty tools and equipment according to workplace procedures 4.3 Complete workplace documentation according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify workplace procedures and work health and safety (WHS) requirements - interpret job instructions and braking system manufacturer specifications - follow assembly specifications.
Writing skills to:	- legibly record braking system test results - complete faulty equipment tags.
Numeracy skills to:	measure components and equipment to determine compliance with specifications.
Oral communication skills to:	refer tool, equipment and machinery faults to supervisor.
Planning and organising skills to:	- identify and prepare braking system kits - identify and prepare assembly equipment and work area - conduct braking system tests.
Problem-solving skills to:	solve problems when braking system tests do not comply with specifications.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGTB011 Assemble, install and test braking system kits	AUMGTB001 Assemble, install and test braking system kits	Additions to Assessment Requirements due to rationalisation of Range of Conditions. Minor changes to ensure policy adherence. Addition of multi-combination braking system compatibility to knowledge evidence.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM013 Install or replace mechanical units and assemblies

Modification History

Release	Comment
Release 1	New unit of competency

Performance Evidence

Before competency can be determined, individuals must have competently assembled, installed and tested a braking system kit on a minimum of one occasion, in the manner described in the Performance Criteria of the unit.

Individuals must demonstrate they can:

- comply with workplace procedures and quality guidelines relating to assembling and installing braking system kits
- assemble and install braking system kit and its components
- test at least one of the following braking systems:
 - electric
 - hydraulic
 - mechanical
- check all sources of information for assembling braking system kit, including:
 - customer requirements
 - manufacturer specifications
 - Vehicle Standards Bulletin 6 (VSBS) national Code of Practice – Heavy Vehicle Modifications

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- WHS requirements and workplace procedures relating to assembling, installing and testing braking system kits
- braking system operating principles
- fabrication and routing procedures for brake lines
- procedures for assembling, fitting, bleeding and adjusting braking system kits
- brake fluid types and applications
- compatibility of different braking systems and technologies within truck/trailer combinations, including compliance, safety and performance implications.

Assessment Conditions

Assessors of this unit must satisfy the assessor requirements in applicable vocational education and training legislation, frameworks and/or standards.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles on which they have worked, e.g. work sheets.

The following resources must be made available:

- automotive workplace or simulated workplace
- work sheets and workplace procedures relating to assembling and installing braking system kits
- braking system kits
- manufacturer specifications for braking system kits
- manufacturer fitting and operating instructions
- tools, equipment and fluids relating to assembling and installing braking systems
- vehicle or simulated frame for fitting a braking system kit.
-

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTD001 Perform wheel alignment operations

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTD3001 Perform wheel alignment operations
Release 2	Updated for clarity and policy adherence

Application

This unit describes the performance outcomes required to perform wheel alignments and adjustments.

It applies to those in an automotive industry and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical - Steering and Suspension

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare for the job	1.1 Identify wheel alignment specification and adjustment procedures to determine alignment process 1.2 Complete wheel alignment pre-checks according to vehicle manufacturer specifications and workplace procedures
2. Align wheels	2.1 Select wheel alignment measuring tools and equipment and connect to the vehicle according to workplace procedures 2.2 Access and interpret information on wheel alignment equipment from manufacturer specifications

Elements	Performance Criteria
	2.3 Align wheels using alignment procedures that comply with manufacturer specifications and workplace procedures 2.4 Adjust aligned wheels according to vehicle manufacturer specifications
3. Complete work processes	3.1 Clean and maintain wheel alignment tools, equipment and work area, inspecting for faults according to workplace procedures 3.2 Identify, tag and report faulty equipment 3.3 Record pre- and post-wheel alignment measurements, and complete workplace forms according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Learning skills to:	understand wheel alignment principles.
Reading skills to:	interpret wheel alignment specifications and operating procedures for alignment tools and equipment.
Writing skills to:	- complete faulty equipment tags - legibly record wheel alignment results.
Oral communication skills to:	- refer tool, equipment and machinery faults to appropriate personnel - speak clearly and directly to inform co-workers of wheel alignment results.
Numeracy skills to:	- measure alignment angles to determine compliance with specifications - understand imperial and metric systems - read measuring equipment.
Planning and organising skills to:	identify and prepare wheel alignment equipment and work area.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGTD011 Perform wheel alignment operations (Release 2)	AUMGTD001 Perform wheel alignment operations (Release 1)	Minor updates to Assessment Requirements. Performance Criteria changed from passive to active voice. Rationalisation of Range of Conditions.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTD001 Perform wheel alignment operations

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTD3001 Perform wheel alignment operations
Release 2	Updated for clarity and policy adherence

Performance Evidence

Before competency can be determined, individuals must have competently performed wheel alignment operations on a minimum of two occasions.

Individuals must demonstrate they can:

- use and set up wheel alignment equipment, including:
 - testing equipment
 - wheel alignment equipment
- comply with work health and safety (WHS) requirements to perform wheel alignment
- interpret alignment specifications
- perform wheel alignment and adjustments according to job specifications and workplace procedures on:
 - powered vehicles
 - towed vehicles (trailers)
- record wheel alignment measurements
- complete wheel alignment workplace documentation.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- workplace procedures and WHS requirements relating to performing wheel alignment
- steering angle geometry
- types, applications and operation of wheel alignment equipment
- methods of sourcing wheel alignment specifications
- wheel alignment problem identification and resolution techniques.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles on which they have worked, e.g. work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- wheel alignment tools and equipment
- wheel alignment instructions and specifications
- vehicles requiring wheel alignment
- workplace procedures relating to wheel alignment and adjustment.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTG001 Install fixed and moveable glass components on vehicles

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTG3001 Install fixed and moveable glass components
Release 2	Updated for clarity and policy adherence

Application

This unit describes the performance outcomes required to cut, prepare and install fixed and moveable glass components on vehicles.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical - Glazing

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Plan and prepare for work	1.1 Identify job specifications from work orders and work instructions 1.2 Identify relevant workplace procedures 1.3 Select materials to meet work requirements and job specifications
2. Fabricate templates, mark and cut glass	2.1 Fabricate templates to meet job specifications

Elements	Performance Criteria
openings	2.2 Use templates to mark and cut glass opening using workplace methods and equipment 2.3 Prepare vehicle panels and trims for installing glass components
3. Install glass components	3.1 Identify and select adhesives or glass retaining systems according to work order and job specification 3.2 Install glass components according to vehicle manufacturer specifications 3.3 Check installed glass components against specifications and leak testing, taking corrective action as required
4. Complete work processes	4.1 Clean work area, disposing of recycling materials according to workplace procedures 4.2 Check, clean and maintain tools and equipment, and store according to workplace procedures 4.3 Complete workplace documentation according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret job specifications and work instructions - identify work health and safety (WHS) requirements from workplace procedures - interpret operating procedures of tools and equipment - identify work orders.
Writing skills to:	complete job sheets relating to installation.
Numeracy skills to:	- identify, mark out and measure glass components and templates according to specifications - use measuring equipment.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGTG001 Install fixed and moveable glass components on vehicles (Release 2)	AUMGTG001 Install fixed and moveable glass components on vehicles (Release 1)	Minor updates to Assessment Requirements. Performance Criteria changed from passive to active voice. Rationalisation of Range of Conditions.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTG001 Install fixed and moveable glass components on vehicles

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTG3001 Install fixed and moveable glass components
Release 2	Updated for clarity and policy adherence

Performance Evidence

Before competency can be determined, individuals must have competently installed glass components on vehicles on a minimum of two occasions.

Individuals must demonstrate they can:

- interpret job information
- mark out and fabricate templates for glass components
- select appropriate glass sealants, adhesives, tools and equipment
- prepare, install and adjust fixed and moveable glass components according to workplace procedures and work health and safety (WHS) requirements, including:
 - vehicle protection measures
 - personal protective equipment – safety glasses, gloves and coveralls
- leak test installed glass components
- check, clean and maintain tools and equipment, and store appropriately
- clean and recycle appropriate material
- complete workplace documentation relating to installation.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- workplace procedures and WHS requirements relating to installing fixed and moveable glass components on vehicles
- workplace quality guidelines for installing glass components in vehicles
- work documentation covering procedures, specifications, schedules and work plans
- template measuring and marking out procedures
- cutting procedures for vehicle panels and trim

- installation procedures for fixed, bonded and moveable glass components
- urethane, rubber and butyl installation methods
- bonded glass installation methods.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles on which they have worked, e.g. work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- tools and equipment required for installing glass components
- automotive vehicle or simulated frame for glass installation
- materials to produce templates for glass components
- fixed and movable glass components
- work orders and job specifications
- WHS requirements for installing glass components on vehicles, including:
 - vehicle protection equipment
 - personal protective equipment, including safety glasses, gloves and coveralls
- workplace procedures to install fixed and moveable glass components on vehicles
- workplace documentation relating to installing glass components on vehicles, including:
 - customer details
 - glass warranty information
 - work sheets.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM001 Assemble vehicle components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM2001 Assemble components

Application

This unit describes the performance outcomes required to prepare and assemble vehicle components according to work order instructions and job specifications.

It applies to those in an automotive environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Work orders are reviewed to identify parts and materials to be assembled 1.2 Parts and materials are dispatched to assembly area 1.3 Details of parts and materials are recorded for stock control 1.4 Tools and equipment are selected and inspected and faults reported

Elements	Performance Criteria
2. Load parts onto assembly jigs	2.1 Workplace procedures are identified and followed 2.2 Parts are loaded onto assembly jig according to workplace instructions 2.3 Parts are aligned and clamped according to workplace instructions
3. Select and use adhesives, sealants, solvents and fasteners	3.1 Adhesives and sealants are selected as per work order requirements 3.2 Solvents are selected and used to remove excess adhesives and sealants 3.3 Fasteners are identified, selected and fitted to component according to work order instructions
4. Produce finished product	4.1 Parts are positioned and secured according to job specifications 4.2 Fasteners are tensioned to job specifications 4.3 Assemblies are inspected for quality and checked against job specifications
5. Complete work processes	5.1 Work area, tools and equipment are cleaned, checked and stored according to workplace procedures 5.2 Faulty equipment is identified, tagged and reported 5.3 Waste material is collected, recycled or disposed of according to workplace procedures 5.4 Work sheets are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret job specifications, work instructions and workplace procedures - identify equipment operating instructions - interpret parts and material lists.
Writing skills to:	- complete faulty equipment tags - complete work sheets relating to assembly.
Oral communication skills to:	refer tool, equipment and machinery faults to appropriate personnel.

Skills	Description
Numeracy skills to:	- record parts and materials use for stock control - use imperial and metric systems for bolt tensioning to required specifications.
Planning and organising skills to:	- identify and prepare components, equipment and work area - follow assembly specifications - operate assembly tools and equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Workplace procedures must include:	- recording and reporting - use and maintenance of equipment - work health and safety (WHS) requirements to assemble components - work instructions required to assemble components.
Fasteners must include:	- clips, pins and clamps - nuts and bolts - screws.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTM001 Assemble vehicle components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM2001 Assemble components

Performance Evidence

Before competency can be determined, individuals must have competently assembled vehicle components on a minimum of two occasions.

Individuals must demonstrate they can:

- interpret material lists, drawings, specifications and production schedules
- select appropriate parts, materials, tools and equipment
- assemble components to specifications and according to workplace procedures and work health and safety requirements
- follow workplace instructions and safe work practices
- complete work sheets relating to assembling vehicle components.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures relating to component assembly
- parts and materials relating to the assembly of vehicle components, including:
 - adhesives
 - sealants
 - solvents
- fasteners, including clips, pins and clamps, nuts and bolts, and screws
- types, application and operation of common vehicle component assembly equipment
- manual-handling techniques for vehicle components
- techniques for identifying faults in vehicle components
- communication protocols to report equipment faults.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicle components that they have assembled, e.g. assembly work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- workplace procedures relating to component assembly
- tools and equipment required for the assembly of components
- parts, fasteners, adhesives and assembly components
- vehicle or simulated frame requiring assembly of components
- assembly work sheets and job specifications.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM002 Assemble vehicle frames and axles

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM3002 Assemble frame and axle
Release 2	Updated for clarity and policy adherence

Application

This unit describes the performance outcomes required to assemble vehicle frames, axles, suspension and associated components.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Plan and prepare assembly	1.1 Interpret materials, parts, drawings and work orders to establish work requirements 1.2 Identify, select and operate lifting equipment according to workplace procedures 1.3 Select and inspect tools and equipment, reporting any faults
2. Cut, drill and weld chassis frame	2.1 Cut chassis as specified in work order and working drawings 2.2 Drill holes that comply in size and position with drawing specifications

Elements	Performance Criteria
	2.3 Weld chassis rails according to workplace procedures, drawing specifications and, if applicable, standards
3. Fit axles, suspension, brackets, fixtures and service lines	3.1 Select and use fasteners according to drawing specifications 3.2 Assemble and attach axles, suspension, brackets and fixtures to chassis 3.3 Fit and tension bolts and fasteners to specifications 3.4 Route, fasten, tie and clip service lines to specifications
4. Complete work processes	4.1 Clean, inspect and store work area, tools and equipment according to workplace procedures 4.2 Identify, tag and report faulty equipment 4.3 Collect waste material, and recycle or dispose of according to workplace procedures 4.4 Record workflow and production schedule and complete workplace documents

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret job specifications, work orders, work instructions and workplace procedures - analyse tool and equipment operating instructions - identify components and materials list - identify appropriate welding standards.
Writing skills to:	- complete faulty equipment tags - complete production schedules.
Oral communication skills to:	report faulty equipment to appropriate personnel.
Numeracy skills to:	- record parts and materials used for stock control - use imperial and metric systems for bolt tensioning to required specifications.
Planning and organising skills to:	- identify and prepare frame and axle components, equipment and work area - follow assembly specifications.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGTM002 Assemble vehicle frames and axles (Release 2)	AUMGTM002 Assemble vehicle frames and axles (Release 1)	Minor updates to Assessment Requirements. Performance Criteria changed from passive to active voice. Rationalisation of Range of Conditions.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM002 Assemble vehicle frames and axles

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM3002 Assemble frame and axle
Release 2	Updated for clarity and policy adherence

Performance Evidence

Before competency can be determined, individuals must have competently assembled vehicle frames and axles on a minimum of two occasions.

Individuals must demonstrate they can:

- communicate with co-workers in assembly area
- select appropriate parts, materials, tools and equipment for assembling vehicle frames and axles
- assemble frames, axles, suspension and associated components according to workplace procedures and work health and safety (WHS) requirements
- weld components according to job specifications, workplace procedures and WHS requirements
- clean store area, tools and equipment and
- dispose of or recycle waste material appropriately complete vehicle frame and axle assembly workplace documents.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- WHS requirements relating to assembling vehicle frames and axles
- types and applications of vehicle frames, axles and suspension systems
- procedures for assembling vehicle frames and axles, including:
 - component parts and materials, including:
 - fasteners: clips, pins and clamps; nuts and bolts; and screws
 - service lines
 - types, application and operation of common vehicle component assembly equipment, including fastener tensioning procedures
- manual-handling techniques for vehicle frames and axles

- communication protocols to report equipment faults.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicle frames and axles that they have assembled, e.g. assembly work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- tools and equipment required for the assembly of vehicle frames and axles
- workplace instructions, procedures and job specifications relating to assembling frames and axles
- materials, axles, suspension systems, service lines and components to produce an assembled frame and axles
- vehicle or simulated frame
- assembly work sheets and job specifications.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM004 Install and fit out components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM2004 Install and fit out components
Release 2	Updated for clarity and policy adherence.

Application

This unit describes the performance outcomes required to install and fit out body, trimming and mechanical components.

It applies to those working in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication

Unit Sector

Technical - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Plan and prepare	1.1 Identify and confirm work orders and job specifications 1.2 Select tools, equipment and materials, checking for quality and safe operation according to job requirements 1.3 Access assembly and installation information from manufacturer specifications
2. Select and use fasteners, adhesives, sealants and solvents	2.1 Identify and follow workplace procedures 2.2 Identify, select and fit fasteners to meet job requirements 2.3 Identify, select and apply adhesives and sealants to meet job requirements

Elements	Performance Criteria
	2.4 Select and use solvents to remove excess adhesives and sealants
3. Install components	3.1 Identify, select and match parts and components, according to work order and job specifications 3.2 Position, secure and tension parts and components according to job specifications 3.3 Inspect installed components and sub-assemblies, checking for quality and fit according to job specifications and workplace procedures
4. Route service lines	4.1 Identify and locate service lines according to job requirements 4.2 Route, tie and clip service lines according to job specifications 4.3 Inspect and test installed service lines according to workplace procedures and job specifications
5. Complete work processes	5.1 Collect unused materials and store or dispose of in line with workplace procedures 5.2 Clean and maintain work area, checking and storing tools and equipment according to workplace procedures 5.3 Identify, tag and report faulty equipment 5.4 Complete work sheets and production records

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work orders and job specifications - interpret workplace procedures and manufacturer installation specifications - identify application precautions when applying adhesives, sealants and solvents.
Writing skills to:	- complete faulty tool and equipment tags - complete work sheets and production records.
Oral communication skills to:	report tool and equipment faults.
Numeracy skills to:	- measure components and equipment to determine compliance with job specifications - estimate material quantities

Skills	Description
	determine material and fastener requirements from job specifications.
Planning and organising skills to:	- identify and prepare materials, equipment and work area - follow manufacturer installation specifications.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGTM004 Install and fit out components (Release 2)	AUMGTM004 Install and fit out components (Release 1)	Minor updates to Assessment Requirements. Performance Criteria changed from passive to active voice. Rationalisation of Range of Conditions.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM004 Install and fit out components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM2004 Install and fit out components
Release 2	Updated for clarity and policy adherence.

Performance Evidence

Before competency can be determined, individuals must have competently installed and fitted out components on a minimum of two occasions.

Individuals must demonstrate they can:

- follow safe work practices when installing and fitting out components
- select, use and maintain tools and equipment required for the installation and fit out
- select and use fasteners, adhesives, sealants and solvents required for the installation and fit out
- install and fit out components and sub-assemblies according to workplace instructions, workplace procedures and work health and safety (WHS) requirements
- route and test service lines, including:
 - electrical wiring
 - pneumatic or hydraulic.
- collect and store unused material
- clean work area appropriately
- complete workplace documentation relating to installing and fitting out components.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- workplace procedures, quality guidelines, reporting procedures, and WHS requirements relating to installing and fitting out components
- component installation and fit out equipment operating procedures
- procedures for operating component lifting equipment
- techniques for installing and fitting out components, including:
 - procedures for applying vinyls and fabrics

- procedures for routing service lines
- procedures for tensioning bolts and fasteners
- testing procedures of components
- communication protocols to report equipment faults.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the components that they have installed and fitted out, e.g. installation work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- components requiring installation and fit out to vehicles
- installation and fit out tools and equipment
- parts, fasteners and adhesives suitable to the components to be installed and fitted out
- vehicles or simulated frame
- workplace procedures, instructions and specifications relating to the components to be installed and fitted out.
-

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM005 Read and interpret engineering drawings and determine requirements

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM3005 Read and interpret engineering drawings and job specifications
Release 2	Updated for clarity and policy adherence

Application

This unit describes the performance outcomes required to determine production processes and materials from engineering drawings and specification sheets.

It applies to individuals in a manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Plan and prepare	1.1 Identify symbols, codes, legends and diagrams in engineering drawings 1.2 Identify and interpret manufacturing information, products, systems and components represented in engineering drawings 1.3 Determine work requirements and confirm with appropriate personnel
2. Determine processes	2.1 Identify specific customer and job requirements

Elements	Performance Criteria
	2.2 Identify required manufacturing processes from drawing, and select materials according to job requirements and workplace procedures
3. Complete work processes	3.1 Prepare production order according to engineering drawings and workplace procedures 3.2 Record engineering drawing outcomes and workplace documents and store engineering drawings according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret engineering drawings, job specifications and workplace procedures - identify customer requirements.
Writing skills to:	legibly prepare production work orders.
Numeracy skills to:	- identify measurements and symbols in engineering drawings and job specifications - calculate material requirements.
Planning and organising skills to:	plan and organise the job, choosing from different options, identifying possible risks, and calculating and accessing relevant resources.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGTM005 Read and interpret engineering drawings and determine requirements (Release 2)	AUMGTM005 Read and interpret engineering drawings and determine requirements (Release 1)	Minor updates to Assessment Requirements. Performance Criteria changed from passive to active voice.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM005 Read and interpret engineering drawings and determine requirements

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM3005 Read and interpret engineering drawings and job specifications
Release 2	Updated for clarity and policy adherence

Performance Evidence

Before competency can be determined, individuals must have competently read and interpreted engineering drawings and job specifications on a minimum of two occasions.

Individuals must demonstrate they can:

- identify job requirements from engineering drawings
- identify and select appropriate production processes and material requirements according to engineering drawings, workplace procedures and work health and safety (WHS) requirements
- determine production timelines
- produce production work orders.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- workplace procedures relating to reading and interpreting engineering drawings
- types, applications and layout of engineering drawings, including:
 - codes
 - symbols
 - legends
 - diagrams
- procedures for determining materials, production processes and production timelines from engineering drawings and job specifications
- procedures for preparing production work orders.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the engineering drawings and job specifications that they have interpreted, e.g. production work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- manufacturing workplace or simulated workplace
- engineering drawings and job specifications
- equipment and material necessary to produce production work orders.
-

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM006 Assemble, install and test hydraulic system kits

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM3006 Assemble and install hydraulic system kit
Release 2	Updated for clarity and policy adherence

Application

This unit describes the performance outcomes required to assemble, install and test a hydraulic system kit and its associated components.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical – Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare hydraulic system kit	1.1 Determine job requirements from work order and workplace instructions 1.2 Identify assembly and installation information from manufacturer specifications 1.3 Select tools and equipment to meet job requirements, checking for quality and correct operation

Elements	Performance Criteria
2. Assemble hydraulic system	2.1 Assemble hydraulic system kit according to manufacturer specifications and workplace procedures 2.2 Install hydraulic system kit using installation procedures that comply with manufacturer specifications and tolerances, and without causing damage to components or systems
3. Test hydraulic system	3.1 Access and interpret testing procedures and requirements from manufacturer specifications 3.2 Test hydraulic system according to manufacturer specifications and adjust if required 3.3 Record final inspection and test results according to workplace procedures
4. Complete work processes	4.1 Clean tools and equipment, inspect for defects, and store according to workplace procedures 4.2 Identify, tag and report faulty equipment according to workplace procedures 4.3 Collect waste material and recycle or dispose of according to workplace procedures 4.4 Complete installation work sheets according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret manufacturer specifications and tolerances - interpret work order, job specifications and installation information.
Writing skills to:	- legibly record hydraulic system test results - complete checklists and faulty equipment tags.
Oral communication skills to:	- clarify workplace instructions and determine job requirements - communicate test results and required adjustments.
Numeracy skills to:	- interpret manufacturer specifications and tolerances - interpret test measurements and results.
Planning and organising skills to:	- identify and prepare hydraulic system kit and its components - follow manufacturer assembly specifications and instructions - prepare assembly equipment and work area.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGTM006 Assemble, install and test hydraulic system kits (Release 2)	AUMGTM006 Assemble, install and test hydraulic system kits (Release 1)	Minor updates to Assessment Requirements. Performance Criteria changed from passive to active voice.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM006 Assemble, install and test hydraulic system kits

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM3006 Assemble and install hydraulic system kit
Release 2	Updated for clarity and policy adherence

Performance Evidence

Before competency can be determined, individuals must have competently assembled, installed and tested a hydraulic system kit on a minimum of one occasion.

Individuals must demonstrate they can:

- assemble and install hydraulic system kit according to workplace procedures and work health and safety (WHS) and environmental requirements
- adjust and test hydraulic system kit according to workplace procedures and WHS and environmental requirements
- complete installation work sheets.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- basic operating principles of hydraulic systems
- WHS and environmental procedures relating to assembling, installing, testing and adjusting hydraulic system kits
- types and applications of hydraulic system kits, including:
 - hydraulic system schematic symbols
 - types of hydraulic fluids and their application
- procedures for assembling, fitting and adjusting hydraulic system kits
- hydraulic system test procedures.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the hydraulic system kits that they have assembled and installed, e.g. installation work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- hydraulic system kits, manufacturer specifications and fitting instructions
- vehicle or simulated frame that requires fitting of a hydraulic system kit
- tools and equipment required to install and test hydraulic system kits
- work sheets for assembling, installing and testing hydraulic system kits.

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM007 Assemble, install and test pneumatic system kits

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM3007 Assemble and install pneumatic system kit

Application

This unit describes the performance outcomes required to assemble, install and test a vehicle pneumatic system kit and its associated components.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare pneumatic system kit	1.1 Work order and workplace instructions are used to determine job requirements 1.2 <i>Assembly and installation information</i> is identified from manufacturer specifications 1.3 Tools and equipment are selected to meet job requirements

Elements	Performance Criteria
	and checked for quality and correct operation
2. Assemble pneumatic system	2.1 Workplace procedures are identified and followed 2.2 Pneumatic system kit is assembled according to manufacturer specifications 2.3 Pneumatic system kit is installed using installation procedures that comply with manufacturer specifications and tolerances and without causing damage to components or systems
3. Test pneumatic system	3.1 Testing procedures and requirements are accessed and interpreted from manufacturer specifications 3.2 Pneumatic system is tested according to manufacturer specifications and adjusted if required 3.3 Final inspection and test results are recorded according to workplace procedures
4. Complete work processes	4.1 Tools and equipment are cleaned, inspected for defects and stored according to workplace procedures 4.2 Faulty equipment is identified, tagged and reported 4.3 Waste material is collected, recycled or disposed of according to workplace procedures 4.4 Workplace documents are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret pneumatic system kit assembly and installation information - interpret manufacturer specifications and tolerances - identify work order and job specifications.
Writing skills to:	- legibly record pneumatic system test results - complete workplace checklists and faulty equipment tags.
Oral communication skills to:	- clarify workplace instructions and determine job requirements - communicate test results and required adjustments.
Numeracy skills to:	- interpret manufacturer specifications and tolerances - interpret test measurements and results.
Planning and organising	identify and prepare pneumatic system kit and its components

Skills	Description
skills to:	• follow manufacturer assembly specifications and instructions • prepare assembly equipment and work area.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Assembly and installation information</i> must include:	• customer requirements for the assembly and installation of pneumatic system kits • pneumatic system kit manufacturer specifications • vehicle manufacturer specifications.
<i>Workplace procedures</i> must include:	• work health and safety (WHS) and environmental requirements to assemble and install pneumatic system kits • pneumatic system testing and adjustment procedures.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTM007 Assemble, install and test pneumatic system kits

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM3007 Assemble and install pneumatic system kit

Performance Evidence

Before competency can be determined, individuals must have competently assembled, installed and tested a pneumatic system kit on a minimum of one occasion.

Individuals must demonstrate they can:

- assemble pneumatic system kit according to manufacturer specifications
- install pneumatic system to vehicle according to work instructions, workplace procedures and work health and safety (WHS) requirements
- adjust and test pneumatic system kit according to workplace procedures and WHS and environmental requirements
- complete installation work sheets.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- basic operating principles of pneumatic systems
- WHS and environmental procedures relating to assembling, installing and testing pneumatic system kits
- types and applications of pneumatic system kits, including pneumatic system schematic symbols
- procedures for assembling, fitting and adjusting pneumatic system kits
- pneumatic system test procedures.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the pneumatic system kits that they have assembled and installed, e.g. installation work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- pneumatic system kits, manufacturer specifications and fitting instructions
- vehicle or simulated frame that requires fitting of a pneumatic system kit
- tools and equipment required to install and test pneumatic system kits
- work sheets for assembling, installing and testing pneumatic system kits.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM008 Bond and repair fibreglass components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM3008 Bond and repair components using fibreglass reinforced plastic techniques

Application

This unit describes the performance outcomes required to bond and repair components using fibreglass reinforced plastics (FRP) techniques.

It applies to those in an automotive and related component manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan the job	1.1 Items to be bonded and repaired are identified from work orders 1.2 FRP <i>materials and equipment</i> are identified, selected and prepared 1.3 Component surface area is calculated and FRP materials are prepared

Elements	Performance Criteria
	1.4 Required quantities of gel-coat, resins, catalyst and matting are calculated 1.5 Correct set-up and facilities of ventilated work area are confirmed and faults and non-compliances are reported
2. Bond and repair components	2.1 Workplace procedures are identified and followed 2.2 FRP edges and surfaces are prepared according to workplace procedures 2.3 FRP materials are mixed in approved containers 2.4 FRP materials are applied according to workplace procedures 2.5 Components are finished according to workplace quality procedures
3. Complete work processes	3.1 Equipment is cleaned and stored according to workplace procedures 3.2 Work area is cleaned, and waste materials are disposed of or recycled according to workplace procedures 3.3 Completed FRP component is checked against job specifications 3.4 Workplace documents are completed according to procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work health and safety (WHS) and workplace procedures, job instructions and component specifications - interpret safety data sheets (SDS) - information about FRP application processes.
Writing skills to:	- legibly complete faulty equipment tags - complete work sheets and FRP materials list - prepare an FRP repair plan.
Oral communication skills to:	- use FRP terminology in the workplace - report faulty FRP application equipment.
Numeracy skills to:	- calculate and record surface area - calculate and record required FRP materials, quantities and percentages - identify component specifications

Skills	Description
	identify part numbers.
Digital literacy skills to:	- use digital scales - use workplace computer systems.
Planning and organising skills to:	- prepare FRP application equipment, materials and work area - ensure FRP materials are correctly calculated and identified.
Problem-solving skills to:	- resolve FRP problems and meet job outcomes - interpret and apply work instructions to ensure FRP materials are correctly mixed.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Materials and equipment</i> must include:	- catalyst - FRP specialist tools - gel-coats and pigments - measuring equipment for bonding and repairing fibreglass components - mixing containers for bonding and repairing fibreglass components - reinforced matting - release agents - resins.
<i>Workplace procedures</i> must include:	- use of FRP equipment - WHS requirements to bond and repair fibreglass components.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTM008 Bond and repair fibreglass components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTM3008 Bond and repair components using fibreglass reinforced plastic techniques

Performance Evidence

Before competency can be determined, individuals must have competently bonded and repaired components using fibreglass reinforced plastics (FRP) materials on a minimum of two occasions.

Individuals must demonstrate they can:

- interpret bonding and repair requirements from work sheets
- calculate surface areas and FRP materials
- prepare surfaces for FRP activities
- mix and apply FRP materials according to specifications, work health and safety (WHS) requirements and workplace procedures
- bond and repair components according to WHS and environmental requirements
- finish FRP surface to job specifications according to WHS and environmental requirements.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS and environmental requirements relating to bonding and repairing fibreglass components, including relevant personal protective equipment (PPE)
- procedures for measuring and calculating FRP-related requirements
- types and applications of FRP composite materials
- FRP bonding, repair and surface finishing procedures for fibreglass components.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the fibreglass components that they have bonded and repaired, e.g. repair work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- workplace instructions detailing work to be performed
- PPE relevant to the work to be performed
- FRP materials, tools and equipment relevant to the work to be performed
- components that require FRP bonding and repair.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM013 Install or replace mechanical units and assemblies

Modification History

Release	Comment
Release 1	New unit of competency

Application

This unit describes the performance outcomes required to install, and replace and adjust mechanical units and assemblies.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical - Manufacture

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Plan and prepare	1.1 Interpret drawings and work orders to establish work requirements 1.2 Select lifting gear and operate according to workplace procedures 1.3 Select and inspect tools and equipment and report any faults
2. Install and test mechanical units and assemblies	2.1 Select fasteners, fittings and materials for installation 2.2 Install and test mechanical units and assemblies according to job specifications and work health and safety (WHS) procedures 2.3 Use tools and equipment to install and replace assemblies
3. Remove, replace and test mechanical units and	3.1 Access and interpret assembly information from manufacturer specifications

Elements	Performance Criteria
assemblies	3.2 Remove and replace mechanical units and assemblies according to manufacturer specifications and WHS procedures 3.3 Test mechanical units and assemblies according to manufacturer specifications
4. Complete work processes	4.1 Clean and check work area and store tools and equipment according to workplace procedures 4.2 Identify, tag and report faulty equipment 4.3 Collect waste material and recycle or dispose of according to workplace procedures 4.4 Complete workplace documents according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret job specifications, work instructions, work orders and workplace procedures - interpret equipment operating instructions - identify parts and material lists - interpret installation, removal and testing instructions.
Writing skills to:	legibly complete faulty equipment tags.
Oral Communication to:	report faulty equipment to appropriate personnel.
Numeracy skills to:	measure components, assemblies and equipment to determine compliance with specifications.
Planning and organising skills to:	- identify and prepare components, equipment and work area - follow assembly instructions and specifications.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGTM013	AUMGTM003 Install	Additions to	Equivalent

Code and title current version	Code and title previous version	Comments	Equivalence status
Install or replace mechanical units and assemblies	and replace mechanical units and assemblies	Assessment Requirements due to rationalisation of Range of Conditions. Minor changes to ensure policy adherence.	

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTM013 Install or replace mechanical units and assemblies

Modification History

Release	Comment
Release 1	New unit of competency

Performance Evidence

Before competency can be determined, individuals must have competently installed and replaced mechanical units and assemblies on a minimum of two occasions, in the manner described in the Performance Criteria of this unit.

Individuals must demonstrate they can:

- install and replace mechanical units and assemblies according to workplace procedures and work health and safety (WHS) requirements
- use hand and power tools and equipment safely when installing and replacing mechanical units and assemblies
- test mechanical units and assemblies

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- workplace procedures relating to installing and replacing mechanical units and assemblies, including:
 - recording and reporting requirements
 - WHS requirements for safe use of installation and replacement equipment
- operating procedures for installation and replacement equipment
- procedures for operating lifting equipment
- techniques for installing and replacing mechanical units and assemblies
- testing procedures of mechanical units and assemblies
- communication protocols to report equipment faults.

Assessment Conditions

Assessors of this unit must satisfy the assessor requirements in applicable vocational education and training legislation, frameworks and/or standards.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the mechanical units and assemblies that they have installed and replaced, e.g. installation work sheets.

The following resources must be made available:

- automotive workplace or simulated workplace
- tools, equipment and machinery required for the installation and assembly of mechanical units and assemblies
- mechanical units and assemblies
- workplace procedures and instructions relating to installing and replacing mechanical units and assemblies
- vehicle or simulated frame
- installation work sheets and job specifications.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTN001 Replace and repair vehicle body panels and fittings

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTN3001 Rectify and replace vehicle body panels and ancillary fittings

Application

This unit describes the performance outcomes required to remove and replace new or repaired vehicle body panels, body sections, and ancillary fittings.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Body

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Work instructions and job specifications are identified and confirmed 1.2 Tools and equipment required for the job are selected and

Elements	Performance Criteria
	inspected for safe operation 1.3 Work area is prepared to ensure safety of personnel, workplace and other vehicles 1.4 Repair plan is developed and confirmed with appropriate personnel
2. Replace body panels and fittings	2.1 Workplace procedures are identified and followed 2.2 Replacement information is identified and interpreted from original equipment manufacturer (OEM) specifications 2.3 Components are refitted using OEM approved methods, materials and equipment 2.4 Sealant is selected and applied according to OEM specifications 2.5 Replacement activities are completed within industry timelines and standards
3. Repair faulty or damaged panels	3.1 Damaged sections are inspected and a rectification process identified 3.2 Damaged or faulty panels are rectified according to workplace procedures and quality standards 3.3 Repair documentation is completed according to workplace procedures
4. Complete work processes	4.1 Work area is cleaned, and materials disposed of or recycled according to workplace procedures 4.2 Tools and equipment are cleaned, checked and stored according to workplace procedures 4.3 Faulty equipment is tagged and reported 4.4 Work sheets are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret workplace procedures and work health and safety (WHS) requirements - interpret job instructions, repair plan and OEM specifications.
Writing skills to:	- legibly complete repair documentation - complete faulty equipment tags

Skills	Description
	accurately prepare a repair plan.
Oral communication skills to:	- inform team members of repair plans - use automotive terminology in the workplace - communicate OEM specifications to co-workers.
Numeracy skills to:	- identify OEM and job specifications - identify material requirements from repair plan.
Initiative skills to:	adapt to changing work conditions.
Planning and organising skills to:	- manage job repair time - identify and select repair equipment, materials and work area.
Problem-solving skills to:	- meet job outcome requirements - interpret and apply workplace procedures and work instructions.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	- OEM vehicle specifications - workplace quality guidelines for repairing vehicle body panels and fittings - procedures for recording and reporting repair processes of vehicle body panels and fittings - workplace waste disposal, recycling and re-use guidelines - WHS requirements for repairing vehicle body panels and fittings.
<i>Materials</i> must include:	- repair tools and equipment used with vehicle body panels and fittings - sealing and adhesive materials relevant to repairing vehicle body panels and fittings.
<i>Replacement activities</i> for vehicle body panels and fittings must include:	- bolt on repair procedures - bond on repair procedures - weld on repair procedures

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTN001 Replace and repair vehicle body panels and fittings

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTN3001 Rectify and replace vehicle body panels and ancillary fittings

Performance Evidence

Before competency can be determined, individuals must have competently rectified and replaced vehicle panels and fittings on a minimum of two occasions.

Individuals must demonstrate they can:

- apply original equipment manufacturer (OEM) specifications
- remove and replace panels and ancillary fittings according to workplace procedures and work health and safety (WHS) requirements
- repair damaged body panels and components according to workplace procedures and WHS requirements
- identify body panels and components
- apply manual-handling techniques when replacing and repairing body panels and fittings
- apply appropriate sealants and adhesives when repairing body panels and components
- complete body panel replacement and repair work sheets.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relating to replacing and repairing vehicle panels and fittings
- types and functions of body panels and fittings
- removal and replacement procedures for body panels and fittings
- methods of sourcing and interpreting OEM specifications for body panels, body sections and fittings
- repair techniques and procedures for body panels and fittings, including:
 - bolt on repair procedures
 - bond on repair procedures
 - weld on repair procedures

- types of sealants and their application requirements for replacing and repairing body panels and fittings.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the body panels and fittings that they have replaced and repaired, e.g. repair work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- workplace instructions relating to replacing and repairing body panels and fittings
- OEM specifications of body panels and fittings
- vehicle body panels and fittings with defects
- repair tools and equipment for body panels and fittings
- welding equipment and adhesives.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTP001 Finish and paint vehicle body and part surfaces

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTP3001 Finish surfaces for painting

Application

This unit describes the performance outcomes required to finish and paint vehicle body and part surfaces.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Paint

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare for work processes	1.1 Work orders, instructions, reports and quality requirements are obtained and confirmed 1.2 Spray booths, and hand and air tools are selected and checked for correct operation and faults are rectified or reported 1.3 Paint materials are identified and selected from job specifications

Elements	Performance Criteria
2. Prepare surface for painting	2.1 Workplace procedures are identified and followed 2.2 Surfaces are cleaned, degreased and prepared according to workplace procedures 2.3 Final finishing is performed on components and panel surfaces to workplace standards 2.4 Reject components and surfaces are identified, recorded and reported for rework or scrap according to workplace procedures
3. Prime painted surfaces	3.1 Paint materials are mixed and applied according to workplace procedures 3.2 Painted surfaces are finished to workplace quality standard 3.3 Reject paintwork is identified, recorded and reworked according to workplace procedures
4. Complete work processes	4.1 Work area is cleaned, and materials disposed of or recycled according to workplace procedures 4.2 Tools and equipment are cleaned, checked and stored according to workplace procedures 4.3 Faulty equipment is tagged and reported to supervisor 4.4 Workplace documentation is completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret workplace procedures - follow work instructions.
Writing skills to:	- complete rectification repair documentation - record paint quantities and materials - complete faulty equipment tags.
Numeracy skills to:	- measure paint quantities - set spray booth baking temperatures - identify quantities of paint materials.
Digital literacy skills to:	- use digital paint workshop equipment - use paint computer systems.
Initiative skills to:	adapt to changing work conditions.

Skills	Description
Planning and organising skills to:	• prepare tools, equipment, materials and work area.
Problem-solving skills to:	• identify paint defects.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	• original equipment manufacturer (OEM) vehicle specifications • workplace quality guidelines for finishing vehicle body and part surfaces • procedures for recording and reporting finishing processes of vehicle body and part surfaces • workplace waste disposal, recycling and re-use guidelines • work health and safety (WHS) requirements for finishing vehicle body and part surfaces.
<i>Final finishing</i> must include:	• hand and mechanical sanding • paint edge feathering.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTP001 Finish and paint vehicle body and part surfaces

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTP3001 Finish surfaces for painting

Performance Evidence

Before competency can be determined, individuals must have competently finished and painted body and part surfaces on a minimum of two occasions.

Individuals must demonstrate they can:

- perform work according to work health and safety (WHS) and environmental procedures
- clean, degrease and prepare vehicle body and part surfaces for painting
- identify paint specifications and application methods
- use spray painting tools and equipment safely and effectively
- mix and apply paint according to job specifications
- identify and rectify paint defects according to workplace quality standards or specifications
- complete vehicle body and part surface finishing and painting work sheets.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS and environmental procedures relating to finishing and painting vehicle and body part surfaces
- procedures for finishing vehicle body and part surfaces for painting
- procedures for painting vehicle body and part surfaces, including:
 - types, application and operation of vehicle body painting equipment
 - processes for calculating and mixing paint materials
 - techniques for applying paint material
 - paint viscosity
 - paint defects and paint defect rectification techniques
 - methods of finishing painted body and part surfaces
- methods of sourcing and interpreting components of safety data sheets (SDS) relating to finishing and painting vehicle body and part surfaces.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicle body and part surfaces that they have finished and painted, e.g. work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- workplace instructions relating to finishing and painting vehicle body and part surfaces
- original equipment manufacturer (OEM) specifications of vehicle body and part surfaces
- vehicle body and part surfaces requiring finishing and painting
- finishing tools and equipment for vehicle body and part surfaces
- paint measuring equipment
- primers, paint and clear coats
- paint specifications
- personal protective equipment (PPE) for finishing and painting vehicle body and part surfaces
- spray painting guns, tools and equipment
- approved spray painting and preparation booths.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTP002 Rework vehicle paint faults

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTP3002 Rework paint faults

Application

This unit describes the performance outcomes required to identify and rework vehicle paint surface defects and faults.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Paint

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare for paint rework process	1.1 Paint faults are identified and repair methods planned 1.2 Causes of faults are identified to ensure faults are rectified during rework 1.3 Tools, equipment and <i>materials</i> are selected and inspected for quality
2. Prepare surfaces for	2.1 Masking is applied to surrounding panels to protect painted

Elements	Performance Criteria
rework	surfaces from overspray 2.2 Faulty paint surfaces are scuffed back and cleaned to required pre-paint standard 2.3 Prepared area is inspected to ensure paint fault has been removed
3. Apply primer, hi-fill and colour	3.1 Primer and hi-fill are applied and prepared according to manufacturer specifications 3.2 Paint colour is matched according to vehicle paint code 3.3 Paint colour is mixed to manufacturer-recommended viscosity 3.4 Paint colour is applied and blended into the existing paint work using tools, equipment and materials according to workplace procedures and work health and safety (WHS) requirements
4. Finish paint surfaces	4.1 Painted surfaces are dried according to paint manufacturer specifications 4.2 Repainted surfaces are polished to job specification 4.3 Surrounding areas are cleaned and any overspray removed according to workplace procedures
5. Complete work processes	5.1 Tools and equipment are cleaned and inspected 5.2 Faulty tools and equipment are identified, tagged, reported and sent for repair 5.3 Work area is cleaned, and materials disposed of or recycled according to workplace procedures 5.4 Work job sheets are completed and supervisor is notified

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret workplace procedures and WHS requirements - interpret job instructions, repair methods and manufacturer specifications.
Writing skills to:	- complete faulty equipment tags - legibly complete work sheets.
Numeracy skills to:	- accurately measure paint quantities - identify paint codes

Skills	Description
	legibly record paint quantities.
Digital literacy skills to:	- use digital paint equipment - use computer paint mixing and drying systems.
Planning and organising skills to:	- prepare paint equipment and materials - rectify paintwork in given timeline.
Problem-solving skills to:	- identify paint defects - interpret and apply work instructions.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Materials must include:	- abrasive papers - clear coat - colour paint - etch and surface primer - hi-fill - masking tapes and papers - paint reducer - plastic sheets - polishing agents - solvents - tac rags.
Workplace procedures must include:	- workplace quality guidelines for reworking vehicle paint faults - procedures for recording and reporting rework of vehicle paint faults - workplace waste disposal, recycling and re-use guidelines - WHS and environmental requirements for reworking vehicle paint faults relating to the disposal of unused paint products, contaminated rags and masking materials.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTP002 Rework vehicle paint faults

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTP3002 Rework paint faults

Performance Evidence

Before competency can be determined, individuals must have competently reworked the paintwork of vehicles on a minimum of two occasions.

Individuals must demonstrate they can:

- identify and apply paint rework practices
- use spray painting tools and equipment
- prepare, mix and apply primers, fillers and paint according to workplace procedures, work health and safety (WHS) requirements and job specifications
- identify paint surface defects and techniques to repair them
- use solvents to remove rust, grease and protective waxes
- select and use appropriate sealants, adhesives, paints, tools and equipment
- use mechanical and manual sanding techniques
- complete work sheets detailing vehicle paint fault rework.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures and WHS requirements relating to identifying paint surface defects and techniques to repair them
- WHS requirements relating to spray painting equipment
- procedures for reworking vehicle paint faults, including:
 - types, application and operation of vehicle body painting equipment
 - processes for calculating, mixing and applying paint materials
 - techniques for applying paint material, including spray painting
 - paint viscosity
 - paint defects and paint defect rectification techniques
- methods of finishing painted body and part surfaces

- methods of sourcing and interpreting components of safety data sheets (SDS) relating to reworking vehicle paint faults.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicle paint faults that they have reworked, e.g. paint rework work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- vehicles or components with paint faults that require rework
- paint measuring equipment
- spray painting tools, equipment and consumables
- primers, paint and clear coats
- vehicle paint specifications
- vehicle protective equipment and materials
- personal protective equipment (PPE) for finishing and painting vehicle body and part surfaces
- approved spray painting, preparation and drying booths.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTR001 Install and replace vehicle electrical units and assemblies

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTR3001 Install or replace electrical and electronic units and assemblies

Application

This unit describes the performance outcomes required to install and replace electrical units and assemblies in vehicles. It involves the fitting of aftermarket electrical equipment and the replacement of original equipment manufacturer (OEM) components that are not connected to the vehicle's controller area network (CAN) data bus.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist technician level.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Electrical and Electronic

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare to install or replace units and assemblies	1.1 <i>Workplace instructions</i> are used to determine job requirements 1.2 Installation or replacement options are analysed, selected and

Elements	Performance Criteria
	prepared 1.3 Tools and equipment are identified for effective installation or replacement procedures
2. Install or replace and test units and assemblies	2.1 Workplace procedures are identified and followed 2.2 Installation or replacement procedures are identified from manufacturer specifications 2.3 Electrical units and assemblies are installed or replaced using approved methods, tools and equipment and according to manufacturer specifications 2.4 Electrical units and assemblies are tested according to job requirements and manufacturer specifications
3. Complete work processes	3.1 Final inspection is made to ensure work is to workplace quality standards 3.2 Tools and equipment are cleaned, checked and stored according to workplace procedures 3.3 Faulty equipment is identified, tagged and reported 3.4 Work sheets and test result documents are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- follow work instructions, workplace procedures and work health and safety (WHS) requirements - interpret removal and installation processes from manufacturer specifications.
Writing skills to:	- legibly enter information into work sheets - complete faulty equipment tags.
Numeracy skills to:	- match materials and component part numbers to work instructions and bills of material - understand measurements of voltage, current and resistance relating to electrical circuits - measure materials and components to determine compliance with job specifications.
Initiative skills to:	adapt to changing work conditions or contexts.

Skills	Description
Problem-solving skills to:	• resolve removal and installation problems and material defects.
Planning and organising skills to:	• prepare components, equipment and work area.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace instructions</i> must include:	• OEM vehicle electrical unit and assembly removal and installation techniques • OEM vehicle electrical unit and assembly testing and repair processes.
<i>Tools and equipment</i> must include:	• crimping tools • electrical tape • hand tools • insulation testers • soldering iron • terminals and connectors • testing equipment: • multimeters • ohm meters • wire and cabling of various colours and sizes.
<i>Workplace procedures</i> must include:	• workplace quality guidelines for installing and replacing vehicle electrical units and assemblies • procedures for recording and reporting the installation and replacement of vehicle electrical units and assemblies • WHS requirements for installing and replacing vehicle electrical units and assemblies.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTR001 Install and replace vehicle electrical units and assemblies

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTR3001 Install or replace electrical and electronic units and assemblies

Performance Evidence

Before competency can be determined, individuals must have competently installed or replaced electrical units and assemblies on a minimum of two occasions.

Individuals must demonstrate they can:

- select and use tools and equipment relating to installing and replacing vehicle electrical units and electrical assemblies
- follow workplace instructions to install and replace electrical units and electrical assemblies
- install electrical units and assemblies according to manufacturer specifications
- replace electrical units and assemblies according to workplace procedures
- follow work health and safety (WHS) requirements when installing and replacing electrical units and assemblies
- test electrical units and assemblies according to manufacturer specifications and workplace procedures
- complete workplace documents.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures relating to installing and replacing vehicle electrical units and assemblies
- vehicle electrical unit removal procedures and methods for opening electrical connections
- vehicle electrical unit installation procedures:
 - cable repair techniques
 - cable termination techniques
 - installation tools and equipment
- vehicle electrical unit testing procedures.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the electrical units and assemblies that they have installed or replaced, e.g. installation work sheet.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- workplace instructions, including fitting instructions
- workplace procedures relating to installing and replacing vehicle electrical units and assemblies
- a range of electrical units and assemblies
- vehicle that requires electrical units and assemblies to be fitted
- tools and equipment required for installing and replacing vehicle electrical units and assemblies
- work order and job specifications for installing and replacing vehicle electrical units and assemblies
- relevant work sheets and test result documentation.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTR002 Manufacture and modify vehicle wiring harnesses

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTR3002 Manufacture or modify wiring harnesses

Application

This unit describes the performance outcomes required to manufacture or modify wiring harnesses. It includes modifying the existing wiring harness to customer requirements, making a new wiring harness, and testing the finished product.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Electrical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare for work	1.1 <i>Workplace instructions</i> are reviewed and wiring harness is inspected to determine job requirements 1.2 Wiring harness manufacture or modification options are analysed, selected and prepared 1.3 <i>Tools and equipment</i> are identified for the effective

Elements	Performance Criteria
	manufacture or modification of wiring harness 1.4 Materials for the manufacture or modification are identified and sourced
2. Manufacture, modify and test	2.1 Manufacturer wiring diagrams and specifications are identified and interpreted 2.2 Wiring harness is manufactured or modified to job specifications using appropriate tools, techniques and materials 2.3 Harness is tested prior to placing in service and results are recorded
3. Complete work processes	3.1 Final inspection is made to ensure work is to workplace quality standard 3.2 Tools and equipment are cleaned, checked and stored according to workplace procedures 3.3 Faulty equipment is identified, tagged and reported 3.4 Work sheets and test result documents are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work instructions - identify work health and safety (WHS) requirements and workplace procedures - interpret wiring harness manufacturing techniques and specifications.
Writing skills to:	- legibly enter information into work sheets - complete faulty equipment tags.
Oral communication skills to:	refer tool, equipment and machinery faults to appropriate personnel.
Numeracy skills to:	- match materials and component part numbers to work instructions and bills of material - understand wiring dimension and wire gauge relating to electrical circuits - measure materials and components according to job specifications.

Problem-solving skills to:	confirm manufacturing and modification techniques to meet the required job specifications.
Planning and organising skills to:	- identify and prepare components, equipment and work area - follow work instructions and specifications - operate tools and equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace instructions</i> must include:	- job specifications - manufacturer and repair work instructions.
<i>Tools and equipment</i> must include:	- crimping tools and cable terminations - hand tools - multimeters - soldering equipment - test lamps.
<i>Materials</i> must include:	- connectors - electrical wiring of various types and sizes - flexible conduit and electrical tape - terminals.
<i>Workplace procedures</i> must include:	- procedures for recording and reporting wiring harness manufacture and modification - use of tools and equipment for manufacturing and modifying wiring harnesses - WHS requirements for manufacturing and modifying wiring harnesses - workplace quality standards relevant to manufacturing and modifying wiring harnesses.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTR002 Manufacture and modify vehicle wiring harnesses

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTR3002 Manufacture or modify wiring harnesses

Performance Evidence

Before competency can be determined, individuals must have competently manufactured and modified wiring harnesses on a minimum of two occasions.

Individuals must demonstrate they can:

- select and use tools and equipment for manufacturing and modifying wiring harnesses
- comply with work health and safety (WHS) requirements relevant to manufacturing and modifying wiring harnesses
- manufacture wiring harnesses
- modify and repair wiring harnesses
- test wiring harnesses and identify faults
- terminate electrical connectors and terminals
- complete wiring harness manufacture and modification work sheets.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relevant to manufacturing and modifying wiring harnesses
- manufacturing and modification procedures of wiring harnesses, including:
 - repair techniques
 - termination techniques
 - connector and terminal removal and replacement techniques
- testing procedures of wiring harnesses, including:
 - terminal retention checks
 - use of relevant testing tools and equipment.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the wiring harnesses that they have manufactured and modified, e.g. wiring harness manufacture work sheet.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- wiring harness manufacturing, modification and repair work instructions
- wiring harness specifications
- a range of wiring harnesses required for the production process
- tools and equipment required for the manufacture and modification of wiring harnesses
- wiring harness work sheets and test result documentation.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTR003 Test, modify and repair vehicle electrical circuits and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTR3003 Perform minor modifications and repairs to electrical circuits and systems

Application

This unit describes the performance outcomes required to test, modify and repair electrical circuits and systems in vehicles.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Electrical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare for work	1.1 Workplace instructions are identified to determine job requirements 1.2 <i>Tools and materials</i> are identified for effective modification and repairs to electrical circuits and systems

Elements	Performance Criteria
2. Test electrical circuits and identify faults	2.1 Workplace procedures are identified and followed 2.2 Testing procedures are carried out according to job requirements and manufacturer specifications 2.3 Faults are determined using appropriate tools and techniques 2.4 Faults are identified and repair options planned
3. Complete modifications and repairs	3.1 Modifications and repairs to electrical circuits and systems are carried out according to work orders and manufacturer specifications 3.2 Wiring and electrical circuits are modified or repaired using appropriate tools and equipment and without causing damage to components or system 3.3 Wiring and electrical circuits are tested for correct operation according to manufacturer specifications and workplace procedures
4. Finish the job	4.1 Final inspection is made to ensure work is to workplace quality standards 4.2 Tools and equipment are checked and stored according to workplace procedures 4.3 Faulty equipment is identified, tagged and reported 4.4 Work sheets and test result documents are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work instructions, workplace procedures and work health and safety (WHS) requirements - identify testing and repair techniques from manufacturer specifications.
Writing skills to:	- complete work sheets relating to the testing and repair of basic electrical circuits and systems - complete faulty equipment tags.
Oral communication skills to:	refer equipment faults to appropriate personnel.
Numeracy skills to:	match materials and component part numbers to work

	instructions and bills of material • understand measurements of voltage, current and resistance relating to electrical circuits • measure materials and components to determine compliance with specifications.
Initiative skills to:	• adapt to changing work conditions.
Planning and organising skills to:	• identify and prepare components, equipment and work area.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Tools and materials</i> must include:	• electrical components, wiring, clips, globes, fuses and tapes • hand tools, test lamps and multimeters • soldering equipment.
<i>Workplace procedures</i> must include:	• procedures for recording and reporting the testing, modification and repair of electrical circuits and systems • use of tools and equipment for testing, modifying and repairing vehicle electrical circuits and systems • WHS requirements for testing, modifying and repairing vehicle electrical circuits and systems • workplace quality standards relevant to testing, modifying and repairing vehicle electrical circuits and systems.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTR003 Test, modify and repair vehicle electrical circuits and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTR3003 Perform minor modifications and repairs to electrical circuits and systems

Performance Evidence

Before competency can be determined, individuals must have competently tested, modified and repaired electrical circuits and systems on a minimum of two occasions.

Individuals must demonstrate they can:

- select and use tools and equipment when modifying, repairing and testing electrical circuits and systems according to workplace procedures and work health and safety (WHS) requirements
- test and identify faults in electrical circuits and systems
- repair electrical circuits and systems
- complete workplace documentation relating to testing, repair and modification of electrical circuits and systems.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relating to testing, repair and modification of electrical circuits and systems
- electrical circuit and system testing procedures
- electrical circuit and system modification and repair procedures, including:
 - repair techniques
 - use of relevant tools and equipment.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the electrical circuit and systems that they have tested, modified and repaired, e.g. work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- workplace instructions for the testing, modification and repair of electrical circuits and systems
- a range of electrical circuits and systems
- electrical circuit and system specifications
- tools and equipment required for the testing, modification and repair of electrical circuits and systems
- electrical circuit and system work sheets.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTS001 Prepare materials for fabrication using jigs and fixtures

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTS3001 Prepare materials for fabrication using jigs and fixtures

Application

This unit describes the performance outcomes required to prepare materials according to drawing specifications and then use jigs and fixtures to fabricate components.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Fabrication

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Hand tools, equipment and resources are selected and inspected, and faults are repaired or reported 1.2 Appropriate lifting equipment is selected and used according to workplace procedures

Elements	Performance Criteria
	1.3 Work information and working drawings are identified and confirmed
2. Select and mark out materials	2.1 Work health and safety (WHS) requirements and workplace procedures are identified and followed 2.2 Materials are selected, marked out and prepared according to job specifications 2.3 Defective materials are set aside for scrap or rework
3. Load and unload materials onto jig or fixture	3.1 Material and parts are positioned and secured in jig to prevent movement 3.2 Materials and parts are loaded and unloaded into jig according to WHS requirements and workplace procedures
4. Fabricate parts	4.1 Materials are shaped to fit jig and checked against job specifications 4.2 Materials positioned in jig are bolted or welded according to job specification 4.3 Fabrication process is completed according to workplace procedures 4.4 Fabricated components are removed from jig and checked for compliance, and faulty components are returned for rework
5. Complete work processes	5.1 Work area, jigs, tools and equipment are cleaned, maintained and inspected according to workplace procedures 5.2 Faulty equipment is identified, tagged and reported 4.3 Work sheets and production schedule are completed and given to appropriate personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret workplace procedures, WHS requirements, workplace quality standards, job instructions and working drawings - identify installation sequence.
Writing skills to:	- complete production schedule documentation - prepare work plan - complete machine maintenance forms - complete faulty equipment tags.

Numeracy skills to:	• count parts and components to be placed into jig • select and arrange correct size and amount of required fasteners • identify and adjust welder machine settings.
Planning and organising skills to:	• plan and assemble parts into jigs or fixtures • complete job to specification and timeline.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Resources</i> must include:	• jigs and fixtures • job specifications • lifting equipment • pre-formed parts • production materials and drawings • securing processes: • bolts • clamps • metal pins • work plans • workplace procedures.
<i>Workplace procedures</i> must include:	• procedures for recording and reporting the preparation of materials for fabrication using jigs and fixtures • use of tools and equipment for preparing materials for fabrication using jigs and fixtures • WHS requirements for preparing materials for fabrication using jigs and fixtures • workplace quality standards relevant to preparing materials for fabrication using jigs and fixtures.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTS001 Prepare materials for fabrication using jigs and fixtures

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTS3001 Prepare materials for fabrication using jigs and fixtures

Performance Evidence

Before competency can be determined, individuals must have competently prepared materials for fabrication using jigs and fixtures on a minimum of two occasions.

Individuals must demonstrate they can:

- identify and apply job information and specifications
- interpret drawings and material lists
- identify and select materials for fabrication according to job specifications
- fix materials in jig or fixture according to workplace procedures and work health and safety (WHS) requirements
- fabricate common automotive components using jigs and fixtures according to workplace procedures and WHS requirements
- maintain a clean and safe work area
- apply manual-handling techniques with jigs and fixtures, and their associated materials
- complete workplace documentation relating to preparing materials for fabrication using jigs and fixtures.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relating to preparing materials for fabrication using jigs and fixtures
- methods of interpreting fabrication requirements from drawings and material lists
- procedures for preparing materials for fabrication using jigs and fixtures
- types of fabrication tools and equipment and their application and operation
- types and use of jigs and fixtures
- fabrication processes using jigs and fixtures of common automotive components
- common automotive manufacturing parts and assembly faults
- handling and storage procedures for automotive manufacturing materials.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the materials that they have prepared for fabrication using jigs and fixtures, e.g. fabrication work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- working drawings relating to fabrication
- specifications of materials and components
- jigs and fixtures relevant to the material to be prepared
- tools and equipment relevant to preparing materials for fabrication using jigs and fixtures
- personal protective equipment (PPE) relevant to the jigs and fixtures in use
- lifting equipment relevant to the fabrication material.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTS002 Prepare materials for fabrication using manual processes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTS3002 Prepare materials for fabrication using manual processes

Application

This unit describes the performance outcomes required to identify and prepare materials for fabrication using manual processes.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Fabrication

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 <i>Workplace procedures</i> are identified and followed 1.2 Job specifications, working drawings and <i>calculations</i> are identified and interpreted 1.3 Tools, equipment and resources are selected and inspected,

Elements	Performance Criteria
	and faults reported
2. Select fabrication materials	2.1 Fabrication materials are identified and prepared according to job specifications and working drawings 2.2 Defective materials are set aside for scrap or rework
3. Bend, shape and fabricate material	3.1 Bending, shaping and fabricating processes are applied according to job specifications and working drawings 3.2 Material distortion prevention measures are identified and applied according to job requirements 3.3 Bent, shaped and fabricated materials are checked against job specifications or working drawings
4. Complete the job	4.1 Work area is cleaned, and materials disposed of or recycled according to workplace procedures 4.2 Tools and equipment are cleaned, checked and stored according to workplace procedures 4.3 Faulty equipment is tagged and reported 4.4 Work sheets are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	interpret workplace procedures, work health and safety (WHS) requirements, job instructions and working drawings.
Writing skills to:	- prepare work plan - complete work sheets and production schedule documentation.
Numeracy skills to:	- count items and parts required for fabrication - adjust weld machine settings - calculate bend angles.
Planning and organising skills to:	plan daily production activities, equipment and work area.
Self-management skills to:	take responsibility for own work area.
Technology skills to:	operate workplace machines.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	• procedures for recording and reporting the preparation of materials for fabrication • use of tools and equipment required when preparing materials for fabrication using manual processes • WHS requirements for preparing materials for fabrication using manual processes • workplace quality standards relevant to preparing materials for fabrication using manual processes.
<i>Calculations</i> must include:	• loss and gain calculations on folded materials • volumes, area, circumference and perimeters relevant to preparing materials for fabrication using manual processes.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTS002 Prepare materials for fabrication using manual processes

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTS3002 Prepare materials for fabrication using manual processes

Performance Evidence

Before competency can be determined, individuals must have competently used manual processes to prepare materials for fabrication on a minimum of two occasions.

Individuals must demonstrate they can:

- identify and apply job information and specifications
- interpret drawings and material lists for fabrication
- identify, select and mark out materials for fabrication according to job specifications
- manually prepare materials for fabrication according to workplace procedures and work health and safety (WHS) requirements
- fabricate common automotive components using manual processes according to workplace procedures and WHS requirements
- complete workplace documentation relating to preparing materials for fabrication using manual processes
- maintain a clean and safe work area.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relating to preparing materials for fabrication using manual processes
- methods of interpreting fabrication requirements from drawings and material lists
- procedures for preparing materials for fabrication
- types of fabrication tools and equipment and their application and operation
- fabrication processes using manual processes for common automotive components
- common automotive manufacturing parts and assembly faults
- handling and storage procedures of automotive manufacturing materials.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the materials that they have prepared for fabrication using manual processes, e.g. fabrication work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- working drawings and specifications of components that require materials for manufacturing
- tools and equipment relevant to preparing materials for fabrication using manual processes
- personal protective equipment (PPE) relevant to the manual processes in use
- lifting equipment relevant to the fabrication material.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTS003 Fabricate plugs

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTS3003 Fabricate plugs

Application

This unit describes the performance outcomes required to fabricate a plug for fibreglass components.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Fabrication

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan for fabrication	1.1 Work order and job specifications are identified and job requirements and <i>plug material</i> are confirmed 1.2 <i>Equipment</i> for fabrication of plug is selected and checked for safe operation 1.3 Plug shape is established and plug dimensions are determined from job specifications

Elements	Performance Criteria
2. Shape material for plug	2.1 Workplace procedures are identified and followed during the shaping activities 2.2 Plug templates and patterns are identified and produced from selected materials 2.3 Plug material is cut and prepared according to job specifications 2.4 Material surface is shaped using fabrication equipment 2.5 Plug dimensions are checked against template and job specifications
3. Complete work processes	3.1 Plug is finished according to workplace procedures and job requirements 3.2 Work area and equipment are cleaned, inspected and maintained according to workplace procedures 3.3 Waste material is collected and recycled or disposed of according to workplace procedures 3.4 Faulty equipment is identified, tagged and reported 3.5 Job sheets are completed and reported to appropriate personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret workplace procedures, job instructions and equipment operating procedures - identify quality requirements and inspection specifications.
Writing skills to:	complete faulty equipment tags.
Numeracy skills to:	- calculate material quantities - identify plug specifications.
Planning and organising skills to:	- conduct work in the given time - prepare materials, equipment and work areas.
Self-management skills to:	- manage time when planning and preparing for work - take responsibility for organising work.
Problem-solving skills to:	identify and solve problems, particularly in teams, in order to meet job outcome.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Plug material</i> must include:	• aluminium and sheet steel • plastic filler • timber.
<i>Equipment</i> must include:	• hand tools appropriate for fabricating plugs • metal shaping equipment • woodworking tools.
<i>Workplace procedures</i> must include:	• procedures for recording and reporting the fabrication of plugs • use of tools and equipment required to fabricate plugs • work health and safety (WHS) requirements for fabricating plugs • workplace quality standards relevant to fabricating plugs.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTS003 Fabricate plugs

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTS3003 Fabricate plugs

Performance Evidence

Before competency can be determined, individuals must have competently fabricated plugs on a minimum of two occasions.

Individuals must demonstrate they can:

- identify and apply work instructions and specifications
- identify plug defects and repair them to specifications
- produce formed plug to meet the job specification and production requirements according to workplace procedures and work health and safety (WHS) requirements
- select and use materials, tools and equipment when fabricating plugs
- complete fabrication work sheets and faulty equipment tags.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures to fabricate plugs for fibreglass components
- equipment safety requirements relevant to fabricating plugs
- workplace quality standards relevant to fabricating plugs
- plug fabrication techniques, including materials to use in the fabrication of plugs and their handling techniques
- plug shaping techniques
- use of tools and equipment relating to fabricating plugs
- environmental requirements relating to the disposal of waste materials.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the plugs that they have fabricated, e.g. fabrication work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- work instructions, working drawings and plug specifications
- materials for plug fabrication
- tools, equipment, patterns and templates for fabricating plugs
- workplace procedures relating to fabricating plugs.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTS004 Fabricate parts for vehicle sub-assemblies

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTS3004 Fabricate parts for sub-assemblies

Application

This unit describes the performance outcomes required to produce, finish and test parts and components for vehicle sub-assemblies.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Fabrication

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Work orders, job specifications and drawings are identified and confirmed 1.2 Tools, equipment and materials are identified, selected and prepared according to work order and job specification 1.3 Materials are inspected for quality, and defects identified and reported

Elements	Performance Criteria
	1.4 Welding equipment is selected, inspected, tested and adjusted according to job requirements
2. Weld components	2.1 Components are welded as identified in working drawings according to workplace procedures 2.2 Welds are completed to workplace quality standards and weld specifications 2.3 Welded parts are checked against job specifications 2.4 Weld faults are identified and rectified according to workplace procedures
3. Assemble and finish sub-assemblies	3.1 Sub-assemblies are completed and checked against job specification 3.2 Sub-assembly fasteners are tensioned to specifications 3.3 Seals, adhesives and sealants are applied to ensure joints are leak free
4. Complete work processes	4.1 Final inspections are made and faulty sub-assemblies are reworked in line with workplace procedures 4.2 Tools, equipment and work areas are cleaned, maintained, and inspected according to workplace procedures 4.3 Waste material is collected and recycled or disposed of according to workplace procedures 4.4 Faulty equipment is identified, tagged and reported according to workplace procedures 4.5 Work job sheets are completed and reported to supervisor

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret workplace procedures, work health and safety (WHS) requirements, work orders, job specifications and drawings - interpret equipment operating procedures and work instructions.
Numeracy skills to:	- identify part numbers and quantities - interpret job specification measurements - set welding equipment - use measuring equipment.
Writing skills to:	complete faulty equipment tags

	legibly complete production documents.
Oral communication skills to:	inform team members of suitable fabrication sequence and methods.
Planning and organising skills to:	- select and prepare equipment, materials and work area - fabricate parts for sub-assemblies within required timelines.
Problem-solving skills to:	access, interpret and apply work orders and work instructions.
Teamwork skills to:	work as part of a production team.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	- procedures for recording and reporting the fabrication of parts for vehicle sub-assemblies - use of tools and equipment for fabricating parts for vehicle sub-assemblies - WHS requirements for fabricating parts for vehicle sub-assemblies - workplace quality standards relevant to fabricating parts for vehicle sub-assemblies.
<i>Quality standards</i> must include:	- component fit and finish of fabricated parts for vehicle sub-assemblies - weld quality of fabricated parts for vehicle sub-assemblies.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTS004 Fabricate parts for vehicle sub-assemblies

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTS3004 Fabricate parts for sub-assemblies

Performance Evidence

Before competency can be determined, individuals must have competently fabricated parts for sub-assemblies on a minimum of two occasions.

Individuals must demonstrate they can:

- locate, interpret and apply fabrication information and specifications
- use tools, equipment and welding equipment safely
- fabricate parts for sub-assemblies according to workplace procedures and work health and safety (WHS) requirements
- follow work instructions and production schedules when fabricating parts for vehicle sub-assemblies
- use inspection and checking processes and identify faulty parts of vehicle sub-assemblies.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relevant to fabricating vehicle sub-assemblies
- types of vehicle sub-assemblies and their components
- original equipment manufacturer operating procedures
- component fabrication alignment procedures
- welding types and techniques for fabricating vehicle sub-assemblies
- assembly procedures of vehicle sub-assemblies.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicle sub-assemblies that they have fabricated, e.g. production work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- work instructions for fabricating vehicle sub-assemblies
- vehicle sub-assembly components
- vehicle sub-assembly specifications
- tools, equipment and welding equipment relevant to fabricating vehicle sub-assemblies.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTT001 Apply trim to vehicle components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTT2001 Apply trim to components

Application

This unit describes the performance outcomes required to measure, cut and attach trim materials to vehicle components.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Trimming and Upholstery

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Work orders, job specifications and working drawings are identified, interpreted and confirmed 1.2 Trim materials, tools and equipment are selected and inspected, and faults repaired or reported
2. Match materials	2.1 Trim materials are matched, measured and cut according to job specifications and workplace procedures

Elements	Performance Criteria
	2.2 Material characteristics are identified and selected for use 2.3 Attaching or bonding information is identified and interpreted from <i>appropriate sources</i>
3. Attach materials	3.1 <i>Workplace procedures</i> are identified and followed 3.2 Trim materials are pre-fitted and checked for alignment, appearance and quality according to job specifications 3.3 Trim materials are attached to components by approved methods
4. Complete work processes	4.1 Tools and equipment are cleaned, inspected and stored according to workplace procedures 4.2 Faulty equipment is identified, reported and tagged 4.3 Work areas are cleaned, and unused materials stored 4.4 Waste materials are removed and disposed of or recycled according to workplace environmental procedures 4.5 Work sheets are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work health and safety (WHS) requirements and workplace procedures - interpret machine safe operating procedures - interpret job specifications, work orders and working drawings.
Writing skills to:	- complete work sheets and job schedules - prepare work plans and inspection reports - complete machine maintenance forms - complete faulty equipment tags - complete job consumable lists.
Oral communication skills to:	- confirm work orders and job specifications with appropriate personnel - report faults with materials, tools and equipment.
Numeracy skills to:	- calculate material length, width and height - calculate measurements from working drawings - mark out materials

	• set trimming machine settings • use measuring equipment • identify common 2D and 3D trim shapes.
Initiative skills to:	• adapt to changing work conditions.
Planning and organising skills to:	• interpret and apply information on job requirements, quality and workplace procedures • plan work from work orders.
Self-management skills to:	• take responsibility for organising own work.
Problem-solving skills to:	• access, interpret and apply information on workplace procedures and instructions.
Teamwork skills to:	• solve problems particularly in teams in order to meet job outcomes.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Appropriate sources</i> must include:	• customer requirements • material and product specifications.
<i>Workplace procedures</i> must include:	• procedures for recording and reporting the application of trim to vehicle components • use of tools and equipment for applying trim to vehicle components • WHS requirements for applying trim to vehicle components • workplace quality standards relevant to applying trim to vehicle components.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTT001 Apply trim to vehicle components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTT2001 Apply trim to components

Performance Evidence

Before competency can be determined, individuals must have competently applied trim to vehicle components on a minimum of three occasions.

Individuals must demonstrate they can:

- locate, interpret and apply work information and specifications relating to applying trim to vehicle components
- use trimming, bonding and attaching equipment safely
- cut covers and trim to job specifications
- select appropriate bonding and attaching processes for applying trim to vehicle components
- attach trim to vehicle components according to workplace procedures and work health and safety (WHS) requirements
- complete work sheets relating to applying trim to vehicle components.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relevant to applying trim to vehicle components
- procedures for trim matching, measuring and calculating required trim dimensions
- trim cutting procedures
- trim application and removal methods
- trim adjustment methods
- types and use of materials and equipment relevant to applying trim to vehicle components, including:
 - glues
 - rivets
 - trim cutting equipment
 - trim forming equipment

- trim stapling equipment
- sewing procedures of vehicle trim.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicle components to which they have applied trim, e.g. production work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- trim application work sheets, instructions and job specifications
- vehicle trimming materials, equipment and consumables
- vehicle components that require trimming
- personal protective equipment (PPE) relevant to applying trim to vehicle components.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTW001 Perform basic welding, thermal cutting, heating and gouging

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTW3001 Conduct basic welding, thermal cutting, heating and gouging operations
Release 2	Updated for clarity and policy adherence

Application

This unit describes the performance outcomes required to perform basic welding, thermal cutting, heating and gouging operations.

It applies to those in the automotive manufacturing industry and involves the application of skills and knowledge at a production worker level.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Unit Sector

Technical - Welding, Grinding, Machining and Soldering

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare for work	1.1 Identify job requirements and welding information from work instructions 1.2 Identify, select and inspect welding equipment and resources 1.3 Identify work health and safety (WHS) requirements according to workplace procedures 1.4 Obtain materials and components of the required size, type and quantity, and inspect for compliance 1.5 Plan work areas and welding according to workplace

Elements	Performance Criteria
	procedures
2. Perform basic welding	2.1 Set up weld equipment to suit job requirements and workplace procedures 2.2 Select welding methods to suit job requirements 2.3 Carry out welding according to workplace standards and without causing damage to property, vehicle or components
3. Perform basic thermal cutting, heating and gouging work	3.1 Set up basic thermal cutting, heating and gouging equipment to suit job requirements and workplace procedures 3.2 Select basic thermal cutting, heating and gouging equipment to suit job requirements 3.3 Carry out basic thermal cutting, heating and gouging according to workplace standards and without causing damage to property, vehicle or components
4. Complete work processes	4.1 Check completed work against job specifications 4.2 Collect and store materials that can be reused 4.3 Remove waste and scrap materials according to workplace procedures 4.4 Clean work area and maintain equipment 4.5 Identify, tag and report faulty equipment 4.6 Complete workplace documentation in line with requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret sketches and drawings - interpret safety data sheets (SDS) - identify WHS signs and symbols in the workplace - interpret workplace procedures; job instructions; and welding, cutting and heating plan.
Writing skills to:	- complete basic welding, heating and cutting job cards - complete faulty equipment tags.
Numeracy skills to:	- identify and set gas working pressures - set machine settings - measure materials to specifications.

Digital literacy skills to:	• use basic electronic welding and thermal cutting equipment.
Planning and organising skills to:	• plan and prepare equipment, work area and materials to job specifications.
Problem-solving skills to:	• identify workplace hazards.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGTW001 Perform basic welding, thermal cutting, heating and gouging (Release 2)	AUMGTW001 Perform basic welding, thermal cutting, heating and gouging (Release 1)	Minor updates to Assessment Requirements. Performance Criteria changed from passive to active voice.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTW001 Perform basic welding, thermal cutting, heating and gouging

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTW3001 Conduct basic welding, thermal cutting, heating and gouging operations
Release 2	Updated for clarity and policy adherence

Performance Evidence

Before competency can be determined, individuals must have competently demonstrated basic welding, thermal cutting, heating and gouging operations; each on a minimum of three occasions.

Individuals must demonstrate they can:

- apply workplace requirements, procedures and workplace health and safety (WHS) practices in relation to:
 - weld production
 - work quality
- perform gas metal arc welding (GMAW) and manual metal arc welding (MMAW) processes
- perform oxy-acetylene welding processes
- perform thermal cutting, heating and gouging processes
- use relevant tools and equipment for the process
- check completed work against job specifications
- collect and store materials that can be reused
- clean work area and maintain equipment complete workplace documentation relating to basic welding, thermal cutting, heating and gouging operations.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- work health and safety (WHS) requirements in relation to basic welding, thermal cutting, heating and gouging work tasks, including personal protective equipment (PPE)
- types of welding rods and their application

- MMAW techniques
- GMAW techniques
- thermal cutting, heating and gouging techniques
- welding quality standards
- oxy-acetylene welding techniques

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles or components on which they have performed basic welding, thermal cutting, heating and gouging, e.g. production work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- vehicles or components that require basic welding, thermal cutting, heating and gouging operations
- WHS equipment, including PPE relating to basic welding, thermal cutting, heating and gouging
- workplace procedures, equipment and operating instructions relating to basic welding, thermal cutting, heating and gouging
- welding consumables and materials
- welding equipment and accompanying operating instructions, including:
 - gas metal arc welding (GMAW) equipment
 - manual metal arc welding (MMAW) equipment
 - oxy-acetylene plant and equipment
 - thermal cutting, heating and gouging equipment
- work sheets relating to basic welding, thermal cutting, heating and gouging operations.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTW002 Perform mechanical cutting

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTW3002 Conduct mechanical cutting operations
Release 2	Updated for clarity and policy adherence

Application

This unit describes the performance outcomes required to prepare and operate mechanical cutting equipment.

It involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical – Welding

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare for work	1.1 Identify job requirements and specifications from work order and drawings 1.2 Select appropriate cutting equipment, inspecting for safe operation and identifying faults 1.3 Set and adjust cutting equipment for use, according to material type and job specifications 1.4 Identify cutting list from work plan and plan cutting processes to ensure minimal waste
2. Undertake cutting	2.1 Identify and use personal protective equipment (PPE)

Elements	Performance Criteria
processes	according to workplace procedures and work health and safety (WHS) requirements 2.2 Check equipment safety stops and guards, adjusting if necessary 2.3 Operate equipment according to manufacturer instructions and workplace procedures 2.4 Inspect and cut material according to job specifications 2.5 Identify cutting defects and take corrective action
3. Complete work processes	3.1 Clean and maintain work area and equipment according to workplace procedures 3.2 Identify, tag and report faulty cutting equipment 3.3 Complete cutting list and give to appropriate personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Learning skills to:	- draw on prior knowledge to identify job needs - locate, evaluate and organise job information.
Reading skills to:	- interpret workplace procedures and work health and safety (WHS) requirements - identify work orders and cutting list - interpret working drawings, job specifications and manufacturer instructions.
Writing skills to:	- prepare cutting list - complete faulty equipment tags.
Oral communication skills to:	report machine faults.
Numeracy skills to:	- mark materials to specifications - calculate measurements from working drawings - identify quantities - follow cutting list.
Planning and organising skills to:	- select and use cutting equipment - plan cutting operation - prepare cutting equipment, materials and work area.

Self-management skills to:	- perform cutting activities within required workplace timelines - maintain equipment according to workplace procedures.
Problem-solving skills to:	identify machine faults.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AUMGTW002 Perform mechanical cutting (Release 2)	AUMGTW002 Perform mechanical cutting (Release 1)	Minor updates to Assessment Requirements. Performance Criteria changed from passive to active voice. Rationalisation of Range of Conditions.	Equivalent

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTW002 Perform mechanical cutting

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTW3002 Conduct mechanical cutting operations
Release 2	Updated for clarity and policy adherence

Performance Evidence

Before competency can be determined, individuals must have competently demonstrated mechanical cutting on a minimum of three occasions.

Individuals must demonstrate they can:

- identify and apply mechanical cutting information and job specifications
- prepare cutting list and plan cutting processes
- set up and use mechanical cutting equipment according to workplace procedures, work health and safety (WHS) requirements, and working drawings
- inspect and cut material according to job specifications, operating equipment according to manufacturer instructions and workplace procedures
- identify, tag and report faulty cutting equipment
- complete cutting list.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- WHS requirements, personal protective equipment (PPE) and workplace procedures relating to operating mechanical cutting equipment
- types, applications and operation of mechanical cutting equipment
- procedures for setting up and operating mechanical cutting equipment
- material-handling techniques relating to performing mechanical cutting
- methods for preparing cutting lists.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the mechanical cutting operations that they have performed, e.g. production work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- workplace or simulated workplace
- WHS equipment and personal protective equipment (PPE) required for mechanical cutting operations
- mechanical cutting equipment
- material for cutting
- marking and measuring equipment relevant to performing mechanical cutting
- working drawings and cutting specifications
- work sheets relating to performing mechanical cutting operations.
-

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTW003 Perform manual metal arc welding

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTW3003 Perform manual metal arc welding operations

Application

This unit describes the performance outcomes required to prepare and weld components using the manual metal arc welding (MMAW) process.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Welding, Grinding, Machining and Soldering

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Work order, job specification and resources are identified and inspected for compliance 1.2 Welding standards are identified 1.3 Weld specifications are identified from work sheets and work instructions 1.4 Weld size, type, sequence and quantity of materials are

Elements	Performance Criteria
	identified 1.5 Welding plan is prepared 1.6 Work area is prepared, and potential hazards identified according to workplace procedures
2. Weld materials	2.1 Workplace procedures are identified and followed 2.2 Welding equipment is set and used according to operating procedures 2.3 Distortion prevention measures are identified and adjusted if required 2.4 Welding equipment is set and used according to operating procedures 2.5 Test runs are conducted according to work instruction and quality requirements 2.6 Materials are welded using MMAW process to required specifications
3. Check welds	3.1 Weld quality and specifications are confirmed by non-destructive inspection 3.2 Weld defects are identified, prepared and re-welded, and appropriate personnel notified
4. Complete job	4.1 Welds are cleaned using appropriate techniques according to work instructions 4.2 Work area is cleaned and cleared of waste according to workplace procedures 4.3 Welding equipment is cleaned, maintained and stored according to workplace procedures 4.4 Faulty equipment is identified, tagged and reported 4.5 Work sheets are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work health and safety (WHS) requirements, workplace procedures, work instructions, job specifications and welding plans - interpret welding standards

	• identify weld inspection reports and weld quality requirements • interpret welding machine operating procedures.
Writing skills to:	• complete welding plan • legibly complete work sheets and inspection reports • prepare weld rectification plan • complete faulty equipment tags.
Numeracy skills to:	• identify and set machine settings • measure material from job specifications • calculate material requirements • calculate welding time.
Planning and organising skills to:	• prepare work area, welding equipment and materials to job specifications • manage job outcomes and production time.
Problem-solving skills to:	• identify and apply distortion prevention measures.
Technology skills to:	• use welding equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Resources</i> must include:	• manual metal arc welding equipment • materials and equipment for preventing distortion during welding, including braces, clamps, jigs and fixtures • materials for welding • materials and equipment for non-destructive testing of welds • workplace welding standards relevant to the work being performed.
<i>Workplace procedures</i> must include:	• operating procedures of manual metal arc equipment • procedures for recording and reporting manual metal arc welding processes • WHS and environmental requirements relating to manual metal arc welding procedures.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTW003 Perform manual metal arc welding

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTW3003 Perform manual metal arc welding operations

Performance Evidence

Before competency can be determined, individuals must have competently demonstrated manual metal arc welding operations on a minimum of three occasions.

Individuals must demonstrate they can:

- identify welding requirements from work sheets and work instructions
- prepare welding equipment and work area according to workplace procedures and work health and safety (WHS) requirements
- perform manual metal arc welding while controlling weld distortion, according to workplace procedures, applicable welding standards, and WHS requirements
- inspect welding using non-destructive testing procedures and identify and rectify faults
- clean welds and work area, and maintain and store welding equipment according to workplace procedures and WHS requirements
- complete manual metal arc welding work sheets.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements and workplace procedures relating to performing manual metal arc welding:
 - hazard identification and risk control methods
 - personal protective equipment (PPE)
- types of materials that can be welded using manual metal arc welding
- types of metal arc welding electrodes and their application
- basic welding symbols
- procedures for setting up and operating MMAW equipment
- material preparation techniques for manual metal arc welding
- methods for identifying and repairing weld defects
- manual metal arc welding distortion control techniques

- metal arc weld test procedures, including non-destructive testing
- welding standards applicable to manual metal arc welding.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the manual metal arc welding operations that they have performed, e.g. production work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- work orders and job specifications
- applicable manual metal arc welding standards
- safe operating procedures and PPE relating to MMAW
- MMAW equipment
- consumables and materials for MMAW
- production work sheets for the welding job.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTW004 Perform gas tungsten arc welding

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTW3004 Perform gas tungsten arc welding operations

Application

This unit describes the performance outcomes required to perform welding operations using gas tungsten arc welding (GTAW).

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Welding, Grinding, Machining and Soldering

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Work order, job specification and resources are identified and inspected for compliance 1.2 Welding standards are identified 1.3 Weld specifications are identified from job sheets and work instructions 1.4 Weld size, type, sequence and quantity of materials are

Elements	Performance Criteria
	identified 1.5 Welding plan is prepared 1.6 Work area is prepared, and potential hazards identified according to workplace procedures
2. Weld materials	2.1 Workplace procedures are identified and followed 2.2 Welding equipment is set and used according to operating procedures 2.3 Distortion prevention measures are identified and adjusted if required 2.4 Welding equipment is set and used according to operating procedures 2.5 Test runs are conducted according to work instructions and quality requirements 2.5 Materials are welded using GTAW process to required specifications
3. Check welds	3.1 Weld specifications and quality requirements are confirmed by non-destructive visual inspection 3.2 Weld defects are identified and prepared for re-welding, and appropriate personnel are notified
4. Complete job	4.1 Welds are cleaned using appropriate techniques according to work instruction 4.2 Work area is cleaned and cleared of waste according to workplace procedures 4.3 GTAW equipment is cleaned, maintained and stored according to workplace procedures 4.4 Faulty equipment is identified, tagged and reported 4.5 Work sheets are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work health and safety (WHS) requirements, workplace procedures and work instructions - interpret weld plans and weld inspection reports - interpret GTAW operating instructions

	• interpret welding standards • understand weld specifications • recognise safe operating procedures.
Writing skills to:	• complete welding plan • legibly complete work sheets and inspection reports • prepare weld repair plan • complete faulty equipment tags.
Oral communication skills to:	• inform team members of suitable welding methods • confirm GTAW and production requirements • present rectification options.
Numeracy skills to:	• identify and set GTAW machine settings • measure material from job specifications • calculate material requirements • calculate welding time.
Digital literacy skills to:	• set electronic welding equipment.
Planning and organising skills to:	• prepare work area, welding equipment, materials and job specifications • manage job outcomes and production time.
Problem-solving skills to:	• identify weld defects.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Resources</i> must include:	• argon shielding gas • filler rods • gas nozzles • stainless steel, mild steel and aluminium materials • standard and inverter GTAW • materials and equipment for preventing distortion during welding, including braces, clamps, jigs and fixtures • tungsten electrodes • welding shields • materials and equipment for non-destructive testing of welds • workplace welding standards and WHS requirements relevant to the work being performed.

Workplace procedures must include:	• operating procedures of GTAW equipment • procedures for recording and reporting GTAW processes • WHS and environmental requirements relating to GTAW procedures.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTW004 Perform gas tungsten arc welding

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTW3004 Perform gas tungsten arc welding operations

Performance Evidence

Before competency can be determined, individuals must have competently demonstrated gas tungsten arc welding (GTAW) operations on a minimum of three occasions.

Individuals must demonstrate they can:

- identify welding requirements from work sheets and work instructions
- prepare welding equipment and work area according to workplace procedures and work health and safety (WHS) requirements
- perform GTAW using standard and inverter welding equipment, while controlling weld distortion, according to workplace procedures, applicable welding standards, and WHS requirements
- inspect welding using non-destructive testing procedures and identify and rectify faults
- clean welds and work area, and maintain and store welding equipment according to workplace procedures and WHS requirements
- complete GTAW work sheets.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements and workplace procedures relating to performing gas tungsten arc welding:
 - hazard identification and risk control methods
 - personal protective equipment (PPE)
- types of materials that can be welded using GTAW
- types of GTAW electrodes and their application
- basic welding symbols
- procedures for setting up and operating GTAW equipment, including standard and inverter welders
- material preparation techniques for GTAW

- methods for identifying and repairing weld defects
- GTAW distortion control techniques
- metal arc weld test procedures, including non-destructive testing
- welding standards applicable to GTAW.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the gas tungsten arc welding operations that they have performed, e.g. production work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- work orders and job specifications
- applicable gas tungsten arc welding standards
- safe operating procedures and PPE relating to gas tungsten arc welding
- gas tungsten arc welding equipment
- consumables and materials for gas tungsten arc welding
- production work sheets for the welding job.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTW005 Perform gas metal arc welding

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTW3005 Perform gas metal arc welding operations

Application

This unit describes the performance outcomes required to weld components using the gas metal arc welding (GMAW) process.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Welding, Grinding, Machining and Soldering

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Weld specifications are identified and confirmed from job sheets, welding standards and work instructions 1.2 Welding safety equipment and welder are identified, obtained and inspected for faults and correct operation 1.3 <i>Resources</i> and work areas are prepared and potential hazards identified

Elements	Performance Criteria
2. Weld materials	2.1 Workplace procedures are identified and followed 2.2 GMAW equipment is prepared, adjusted and used according to manufacturer operating procedures 2.3 Weld test runs are conducted according to work plan, weld specifications and quality requirements 2.4 Materials are welded using GMAW process to specifications
3. Check welds	3.1 Welds are cleaned using appropriate techniques according to work instruction 3.2 Weld quality and specifications are checked and confirmed by non-destructive testing 3.3 Weld defects are identified and prepared for re-welding, and appropriate personnel are notified
4. Complete job	4.1 Work areas are cleaned and cleared of waste materials according to workplace procedures 4.2 GMAW equipment is cleaned, maintained, inspected and stored according to workplace procedures 4.3 Faulty welding equipment is identified, tagged and reported 4.4 Work sheets are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Learning skills to:	locate, evaluate and organise information.
Reading skills to:	- interpret work health and safety (WHS) requirements, workplace procedures, work instructions and work plans - identify weld inspection reports and weld quality requirements - interpret welding standards - interpret job specifications - interpret equipment safe operating procedures.
Writing skills to:	- complete welding plans - legibly complete work sheets and inspection reports - prepare weld rectification plans - complete faulty equipment tags.

Numeracy skills to:	- identify and set machine settings - measure materials from job specifications.
Digital literacy skills to:	identify, set and operate welding equipment.
Planning and organising skills to:	- prepare work area, welding equipment, materials and job specifications - manage job outcomes and production time.
Problem-solving skills to:	identify and apply distortion prevention measures.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Resources</i> must include:	- materials for welding - welding equipment, including: - GMAW - GMAW wire - shielding gas - tips, liners and nozzles - welding face shield - materials and equipment for preventing distortion during welding, including braces, clamps, jigs and fixtures - materials and equipment for non-destructive testing of welds - workplace welding standards and WHS requirements relevant to the work being performed.
<i>Workplace procedures</i> must include:	- operating procedures of GMAW equipment - procedures for recording and reporting GMAW processes - WHS and environmental requirements relating to GMAW procedures.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTW005 Perform gas metal arc welding

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTW3005 Perform gas metal arc welding operations

Performance Evidence

Before competency can be determined, individuals must have competently demonstrated gas metal arc welding (GMAW) operations on a minimum of three occasions.

Individuals must demonstrate they can:

- identify welding requirements from work sheets and work instructions
- prepare welding equipment and work area according to workplace procedures and work health and safety (WHS) requirements
- perform GMAW using standard and inverter welding equipment, while controlling weld distortion, according to workplace procedures, applicable welding standards, and WHS requirements
- inspect welding using non-destructive testing procedures and identify and rectify faults
- clean welds and work area, and maintain and store welding equipment according to workplace procedures and WHS requirements
- complete GMAW work sheets.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements and workplace procedures relating to performing gas metal arc welding:
 - hazard identification and risk control methods
 - personal protective equipment (PPE)
- types of materials that can be welded using GMA welding
- types of GMAW electrodes and their application
- basic welding symbols
- procedures for setting up and operating GMAW equipment, including standard and inverter welders
- material preparation techniques for GMAW

- methods for identifying and repairing weld defects
- GMAW distortion control techniques
- GMAW test procedures, including non-destructive testing
- welding standards applicable to GMAW.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the gas metal arc welding operations that they have performed, e.g. production work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- work orders and job specifications
- applicable gas metal arc welding standards
- safe operating procedures and PPE relating to gas metal arc welding
- gas metal arc welding equipment
- consumables and materials for gas metal arc welding
- production work sheets for the welding job.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTY001 Paint vehicle chassis and panels

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTY3001 Paint chassis or panels

Application

This unit describes the performance outcomes required to prepare and apply paint to produce a quality finish on vehicle chassis and panels.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a production worker level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Chassis and Frame

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Prepare for painting	1.1 <i>Paints and materials</i> are identified and prepared according to <i>workplace procedures</i> 1.2 Panels are masked off to ensure surrounding areas are protected from overspray 1.3 Spraying <i>equipment</i> is selected and inspected, and faulty equipment identified, tagged and reported to appropriate

Elements	Performance Criteria
	personnel 1.4 Paint colours are matched according to job specifications and vehicle paint code
2. Operate spraying equipment	2.1 Spray painting guns are checked and adjusted for spray pattern, fan width and paint flow 2.2 Spray painting booths are inspected for correct operation and adjusted if required
3. Apply paint	3.1 Primers and paint are applied to ensure interior and exterior surfaces are coated 3.2 Paint is applied according to manufacturer's recommended thickness, lustre and surface finish 3.3 Paint coatings are monitored for surface blemishes 3.4 Paint viscosity is monitored and adjusted to ensure compliance with paint manufacturer specifications
4. Inspect painted surfaces	4.1 Painted surfaces are visually inspected and faults identified 4.2 Painted surfaces with paint faults are redirected for rework and appropriate personnel are notified
5. Complete work processes	5.1 Spraying equipment is cleaned and inspected according to workplace procedures 5.2 Work areas are cleaned, and unused materials stored 5.3 Waste materials are removed and disposed of according to workplace environmental procedures 5.4 Workplace job sheets or production schedules are completed

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret workplace procedures, work health and safety (WHS) requirements and job instructions - identify vehicle inspection reports - interpret paint codes.
Writing skills to:	- complete work plans and workplace documentation - complete faulty equipment tags.
Numeracy skills to:	- measure paint quantities - record paint quantities and materials.

Digital literacy skills to:	• use digital paint measuring equipment • use painting booths • use paint computer systems.
Initiative skills to:	• adapt to changing work conditions.
Planning and organising skills to:	• prepare a work and repair plan • conduct paintwork rectification in the given time • prepare paint equipment, materials and work areas.
Problem-solving skills to:	• solve problems particularly in teams in order to meet job requirements.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Paints and materials</i> must include:	• abrasive papers • clear coats: 2k and 1k • etch primers • hi-fillers • masking tapes and materials • paint: 2k and 1k • paint reducers • polishing products • solvents • surface primers.
<i>Workplace procedures</i> must include:	• procedures for recording and reporting the painting of the vehicle chassis and panels • WHS requirements for painting vehicle chassis and panels.
<i>Equipment</i> must include:	• air and hand sanding equipment • high pressure spray guns • high volume low pressure spray guns • paint and air recirculating systems • safety equipment and personal protective equipment (PPE) relevant to painting vehicle chassis and panels.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTY001 Paint vehicle chassis and panels

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTY3001 Paint chassis or panels

Performance Evidence

Before competency can be determined, individuals must have competently painted vehicle chassis and panels on a minimum of two occasions.

Individuals must demonstrate they can:

- identify painting requirements from work sheets and work instructions
- mask panels, prepare spraying equipment, and match paint colours
- mix paint and apply to panels according to workplace procedures, job requirements and work health and safety (WHS) requirements
- check paint work is to job requirements and identify and rectify faults
- clean work area, and maintain and store painting equipment according to workplace procedures and WHS requirements
- complete painting work sheets.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relating to painting vehicle chassis and panels
- techniques for vehicle painting
- types of tools and equipment used when painting vehicle chassis and panels
- techniques for identifying paint defects
- paint repair techniques and equipment
- processes for calculating, mixing and applying paint material
- methods of sourcing and interpreting components of safety data sheets (SDS) relating to painting vehicle chassis and panels
- procedures for paint material handling, storage and workplace waste management.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicle chassis and panels that they have painted, e.g. production work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- vehicle chassis and panels that require painting
- work orders and work instructions
- paint measuring equipment
- primers, paints and clear coats
- paint specifications and paint codes
- personal protective clothing and equipment required to paint vehicle chassis and panels
- spray painting tools and equipment
- approved spray painting and preparation booths.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTY002 Install vehicle components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTY3002 Mount and install assembled component to chassis or frame

Application

This unit describes the performance outcomes required to mount and install assembled components to a chassis or frame (e.g. vehicle cabin, sleeper or vehicle bodies).

It applies to those in an automotive and related component manufacturing environment and involves the application of skills and knowledge at a specialist level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Chassis and Frame

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Hand <i>tools and equipment</i> are selected and inspected, and faults repaired or reported 1.2 Appropriate lifting equipment is selected and checked for safe operation 1.3 Fasteners are identified from job specifications 1.4 Job <i>information</i> and working drawings are identified,

Elements	Performance Criteria
	interpreted and confirmed
2. Position and tension components	2.1 Workplace procedures are identified and followed 2.2 Components are matched, positioned and secured according to work instruction and component specifications 2.3 Fasteners are tensioned to specification 2.4 Components are inspected for alignment and quality according to work order and workplace quality standards
3. Hook up systems	3.1 Component service lines are hooked up according to drawings and component specifications 3.2 Completed hook-up is checked against job specifications, and then tested and inspected for quality and operation
4. Complete work processes	4.1 Work area and equipment are cleaned, inspected and maintained according to workplace procedures 4.2 Faulty equipment is identified, tagged and reported 4.3 Work sheets and production schedule are completed and given to appropriate personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- identify workplace procedures and work health and safety (WHS) requirements - interpret job instructions, working drawings, original equipment manufacturer (OEM) guides and, if applicable, requirements of Vehicle Standards Bulletin 6 (VSB6) National Code of Practice – Heavy Vehicle Modifications - interpret component specifications - identify installation sequences - identify work sheets and inspection forms.
Writing skills to:	- complete production schedules, equipment maintenance forms and faulty equipment tags - prepare sequence work plans.
Numeracy skills to:	- identify drawing and component specifications - use measuring equipment - identify fastener quantities and tension specifications.

Planning and organising skills to:	select and prepare components, equipment and work area.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Tools and equipment</i> must include:	- hand and power tools - lifting equipment - vehicle protection equipment.
<i>Information</i> must include:	- component and service line specifications - component assembly instructions - customer requirements - manufacturer specifications and guides - VS6 - work orders and job specifications - workplace procedures and instructions.
<i>Workplace procedures</i> must include:	- equipment operations - quality standards - recording and reporting - WHS requirements - work instructions.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTY002 Install vehicle components

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTY3002 Mount and install assembled component to chassis or frame

Performance Evidence

Before competency can be determined, individuals must have competently installed vehicle components on a minimum of two occasions.

Individuals must demonstrate they can:

- mount and install assembled components and service lines to a chassis or frame according to workplace procedures and work health and safety (WHS) requirements
- follow job specifications and work instructions when installing vehicle components
- identify materials lists, working drawings and production requirements
- select components for installation
- select and use tools and equipment for installing vehicle components
- complete workplace documentation relating to installing vehicle components
- apply manual-handling techniques relating to installing vehicle components.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures and WHS requirements relating to installing vehicle components, including safe use of vehicle component installation equipment
- quality standards relating to installing vehicle components
- manufacturing procedures and vehicle component specifications
- material-handling techniques for installing vehicle components
- work sheets and production schedule documentation relating to installing vehicle components
- vehicle components
- procedures for operating lifting equipment required to install vehicle components.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles on which they have worked, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- working drawings and component specifications for installation
- original equipment manufacturer (OEM) installation guides
- service line fasteners and assembled components
- tools and equipment required to install vehicle components
- personal protective clothing and equipment relating to work requirements
- Vehicle Standards Bulletin 6 (VSB6) National Code of Practice – Heavy Vehicle Modifications
- workplace procedures for installing vehicle components
- lifting equipment required to install vehicle components.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AUMGTY003 Modify and repair chassis and frames

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTY3003 Modify or rectify chassis and frame and associated components

Application

This unit describes the performance outcomes required to modify, repair and align chassis and frame components.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Chassis and Frame

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Inspect vehicle	1.1 Inspection activities are carried out according to <i>workplace procedures</i> 1.2 Chassis or frame is measured and inspected to determine modification or repair requirements 1.3 Inspection report and work plan are prepared during inspection

Elements	Performance Criteria
2. Modify, repair and align chassis or components	2.1 Vehicle specifications are identified and interpreted according to original equipment manufacturer (OEM) specifications and regulatory requirements 2.2 Tools and equipment are selected and checked for correct operation, and identified faults reported 2.3 Chassis or frame is modified or repaired and then aligned according to job sheet and work order
3. Complete work processes	3.1 Completed work is checked against job sheet and OEM specifications 3.2 Work areas, tools and equipment are cleaned and stored according to workplace procedures 3.3 Work forms and final inspection reports are completed and submitted to appropriate personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret job requirements from work plan and OEM specifications - interpret inspection reports and job sheets.
Writing skills to:	- legibly prepare work plans - complete final inspection reports.
Numeracy skills to:	- identify component part numbers and amounts - interpret measurements from OEM specifications - identify and set equipment.
Planning and organising skills to:	- select and prepare equipment, materials and work area - complete job within required timelines.
Self-management skills to:	take responsibility for organising work role and priorities.
Technology skills to:	- use chassis or frame measuring systems - use induction heating equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include:	• OEM specifications and regulatory requirements • recording and reporting requirements • tools and test equipment • work health and safety (WHS) requirements • workplace instructions.
<i>Tools and equipment</i> must include:	• chassis alignment equipment • clamps, bracing and jiggling systems • hand and power tools • measuring equipment • welding, cutting and heating equipment.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTY003 Modify and repair chassis and frames

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTY3003 Modify or rectify chassis and frame and associated components

Performance Evidence

Before competency can be determined, individuals must have competently modified and repaired a chassis and frame on a minimum of one occasion.

Individuals must demonstrate they can:

- follow workplace procedures and work health and safety (WHS) requirements when modifying and repairing chassis and frames
- maintain a working knowledge of vehicle chassis and components
- identify faults and non-conformance of vehicle components and systems against original equipment manufacturer (OEM) specifications
- modify and repair chassis and frame components, which must include cutting and joining as well as straightening the chassis
- identify workplace quality standards relating to modifying and repairing chassis and frames
- use workplace equipment when modifying and repairing chassis and frames
- follow safe work practices when modifying and repairing chassis and frames
- complete repair and inspection reports relating to modified and repaired chassis and frames.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements and workplace procedures relating to modifying and repairing chassis and frames
- workplace documentation relating to modified and repaired chassis and frames:
 - OEM specifications
 - Vehicle Standards Bulletin 6 (VSB6) National Code of Practice – Heavy Vehicle Modifications
 - inspection and testing procedures

- work instructions
- fault indicators
- retesting and release processes
- work plans
- types of vehicle chassis and frames
- inspection and measuring techniques of chassis and frames
- chassis and frame alignment techniques
- modification and repair requirements of chassis and frames
- cutting and welding procedures of chassis and frames.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles on which they have worked, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- chassis and frames
- OEM specifications to modify and repair chassis and frames
- tools and equipment required to modify and repair chassis and frames
- workplace inspection and testing procedures relating to the modification and repair of chassis and frames
- WHS equipment relating to the modification and repair of chassis and frames
- workplace documentation, including job sheets, relating to the modification and repair of chassis and frames.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

AURACA001 Respond to customer needs and enquiries in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to identify customer needs and enquiries, and provide effective information and advice when supplying automotive products and services.

It applies to those working in an automotive workplace.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Sales and Marketing

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify customer need or enquiry regarding	1.1 Customer is greeted according to workplace procedures and customer service standards

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
product or service	1.2 Customer requirement relating to specific product or service is identified and <i>clarified</i> 1.3 Referrals to appropriate personnel are provided where customer need or enquiry is outside scope of own responsibility or authority
2. Provide information and advice to customer	2.1 <i>Information</i> that addresses customer need or enquiry is provided in a timely, efficient and courteous manner to build a positive relationship and customer loyalty 2.2 Questions are asked to confirm that information satisfies customer need or enquiry 2.3 Outstanding customer requirements are identified and promptly addressed in a courteous and discreet manner, or are referred to appropriate personnel
3. Finalise customer contact	3.1 Customer feedback about product or service is sought and recorded as required according to workplace procedures 3.2 Required follow-up action is completed effectively according to workplace procedures and timeframes 3.3 Customer complaints or dissatisfaction are addressed or escalated to appropriate personnel as required 3.4 Interaction with customer is concluded in line with workplace procedures and customer service standards

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Writing skills to:	- legibly and accurately fill out workplace documentation - provide information or record customer requirements in relevant forms or documentation.
Oral communication skills to:	- speak clearly to be understood, using appropriate automotive workplace terms - use appropriate visual gestures to assist customer understanding - listen effectively, giving feedback to customer to confirm clear

Skills	Description
	understanding.
Planning and organising skills to:	set and monitor timeframes or schedules relating to customer service.
Problem solving skills to:	- identify own role and responsibilities in the workplace - follow workplace procedures for responding to customer enquiries.
Technology skills to:	operate telephone systems and other communication equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Clarification must include:	- open and closed questioning - active listening.
Information must include:	- explaining features and benefits of workplace product or service using clear, jargon-free language - discussing alternative product or service where appropriate - recommending product or service suitable to customer requirements.

Unit Mapping Information

Equivalent to AURACA2001 Establish relations with customers

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURACA001 Respond to customer needs and enquiries in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- identify needs or enquiries of three different customers with different requirements, including one dissatisfied customer
- provide advice or information on automotive products and services to above customers.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- techniques for assisting customers, including:
 - effective questioning
 - active listening
 - building rapport
 - explaining clear options
 - making recommendations
 - finalising contact
- customer service standards and practices relevant to automotive workplaces, including:
 - greeting and farewelling customers
 - recording customer requirements and enquiries
 - customer service delivery standards
 - contact and follow-up procedures
- indicators of customer dissatisfaction, including verbal and non-verbal cues
- techniques for resolving customer problems, including procedures for complaint escalation

- key legal requirements relating to customer rights as a consumer, and business obligations under Australian Consumer Law (ACL)
- procedures for making referrals relating to:
 - customer dissatisfaction
 - suppliers of other products and services
- key features and benefits of workplace-specific products and services
- techniques for undertaking basic calculations to provide information to customers relating to quantities, timeframes, and delivery of automotive products and services.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to having responded to customer needs and enquiries, e.g. complaints register.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following must be made available:

- automotive workplace or simulated workplace
- three different customers with different requirements, including one dissatisfied customer.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURAEA002 Follow environmental and sustainability best practice in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to follow environmental and sustainability best practices, including complying with established workplace procedures and environmental regulations as well as following sustainability practices that may reduce the environmental impact of work practices and outputs.

It applies to those working in the automotive industry.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Environment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify environmental	1.1 Reasons for ethical environmental practice in workplace are

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
and sustainability best practices relating to own automotive workplace	identified 1.2 Own environmental responsibilities in the workplace are identified 1.3 Procedures and equipment that enable compliance with environmental regulatory requirements are identified in own workplace 1.4 Procedures and equipment that support sustainability best practice are identified in own workplace
2. Follow environmental best practice procedures in course of own work	2.1 Wastewater and contaminants are identified and prevented from entering water systems or from contaminating land according to workplace procedures and regulatory requirements 2.2 Hazardous airborne particles, gases and fumes are identified and reduced or prevented from being emitted according to workplace procedures and regulatory requirements 2.3 Hazardous noise types and activities are identified, confined to agreed operating hours, and reduced or prevented according to workplace procedures and regulatory requirements 2.4 Environmental damage and breaches of environmental regulations are reported as required to supervisor
3. Follow sustainability best practice procedures in course of own work	3.1 Recyclable and non-recyclable materials are identified, sorted and stored according to workplace procedures 3.2 Recyclable and non-recyclable materials are disposed of according to workplace procedures and regulatory requirements 3.3 Methods to reduce energy resource consumption are followed according to workplace procedures 3.4 Problems with complying with <i>sustainability best practice</i> are reported as required to supervisor

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.

Skills	Description
Reading skills to:	interpret information from workshop literature when seeking environmental and sustainability best practice procedures.
Oral communication skills to:	- speak clearly and directly when presenting problems and issues and communicating information relating to environmental issues - discuss environmental and sustainability best practice in automotive workplace with colleagues.
Planning and organising skills to:	plan own work requirements and actions to ensure environmental and sustainability best practices are followed.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Sustainability best practice</i> must include:	- recycling or reusing waste - conserving energy - conserving natural resources, such as water.

Unit Mapping Information

Equivalent to AURAEA2002 Apply environmental and sustainability best practice in an automotive workplace

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURAEA002 Follow environmental and sustainability best practice in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in the unit's elements and performance criteria, range of conditions and foundation skills:

- follow environmental and sustainability best practice in an automotive workplace on three different occasions

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- environmental regulations and standards relevant to own automotive workplace, including commonwealth, state and territory legislation and local government by-laws and regulations
- procedures for reporting environmental damage and breaches
- procedures and processes that support environmental sustainability practices, including:
 - reducing waste
 - reusing materials
 - recycling waste
- types of waste produced by automotive workplaces and their impact on the environment, including:
 - vehicle wastes, including:
 - coolants
 - oils
 - exhaust emissions
 - evaporative fuel emissions
 - waste components, including tyres
 - noise

- workplace wastes, including:
 - cleaning materials
 - paper waste
 - general rubbish
- procedures for minimising waste
- procedures for sorting and storing items for recycling or disposal
- procedures for reducing resource consumption, including water, electricity, fossil fuels and chemicals
- procedures for controlling hazards to stormwater and wastewater drainage systems, including:
 - capturing, storing and disposing of fluids released from vehicles
 - trapping spills, including the use of spill kits
 - preventing hazards entering stormwater and wastewater drainage systems, including bunding, grease traps and triple interceptors
- procedures for protecting air quality and controlling noise hazards, including:
 - minimising the emission of airborne particles, gases and fumes
 - containing and redirecting airborne particles, gases and fumes
 - insulating noise from automotive workshops.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to having followed environmental and sustainability best practice in their automotive workplace, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- environmental regulations and standards relevant to own automotive workplace, including commonwealth, state and territory legislation and local government by-laws and regulations.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURAEA004 Manage environmental and sustainability best practice in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to plan and implement a management system to ensure the protection of the environment, and implement and manage sustainability best practice activities in an automotive workplace.

It applies to those working in the automotive service and repair industry.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Environment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Plan compliance with environmental	1.1 Environmental laws, regulations and standards, and sustainability best practices relevant to own automotive workplace are sourced

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
regulations and sustainability best practice	and interpreted 1.2 Penalties for workplace and individual breaches of legislation are identified 1.3 Workplace activities and equipment that are required to comply with environmental laws, regulations and standards are identified 1.4 Workplace activities relevant to sustainability best practices are identified 1.5 Environmental action plan is developed that incorporates workplace activities, environmental laws, regulations and standards, and sustainability best practices
2. Implement environmental action plan	2.1 Workplace procedures, equipment and materials are established to meet workplace environmental and sustainability best practice requirements, or existing procedures, equipment and materials are evaluated and updated as required to determine ability to meet requirements 2.2 Checklists are developed to ensure procedures are followed 2.3 Safety data sheets (SDS) are sourced and stored, and staff notified of their location 2.4 Emergency response procedures for major environmental accidents are developed and documented, and staff are notified of location and documentation developed for recording accidents and spills 2.5 Staff are advised of workplace procedures, and use of equipment, materials and checklists 2.6 Workplace procedures are put in place to address complaints regarding environmental issues
3. Review environmental action plan	3.1 Environmental laws, regulations and standards, and sustainability best practices relevant to work in the automotive industry are regularly sourced and interpreted 3.2 Environmental audit of workplace is carried out regularly and results are compared with environmental laws, regulations and standards, and sustainability best practices 3.3 Environmental action plan is updated as required to ensure compliance with environmental laws, regulations and standards, and sustainability best practices relevant to work in the automotive industry 3.4 Workplace procedures, equipment and materials are put in place, or existing ones modified, to meet changed workplace environmental and sustainability best practice requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret information relating to environmental laws, regulations and standards, and sustainability best practices.
Writing skills to:	• develop workplace documentation, such as workplace procedures and checklists • legibly and accurately complete environmental incident reports.
Oral communication skills to:	• communicate ideas and information to ensure all work is undertaken according to environmental best practice.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, estimate material requirements required for the work, and calculate wastage rates of various methods.
Planning and organising skills to:	• plan and organise activities, including: • preparing equipment • material recycling and waste management systems • use planning, checking and inspection techniques to avoid environmental contamination and wastage.
Self-management skills to:	• work autonomously.
Teamwork skills to:	• supervise others in ensuring compliance with workplace procedures.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Sustainability best practice</i>	• recycling or reusing waste

must include:	• conserving energy • conserving natural resources, such as water.
<i>Environmental action plan</i> must include:	• workplace environmental and sustainability best practice requirements • actions to meet requirements • person or people responsible for carrying out actions • timeframe for carrying out actions • quantified reduction targets in volume, weight or costs.
<i>Emergency response procedures</i> must include:	• dealing with large spills • dealing with toxic chemical leaks.
<i>Environmental audit</i> must include:	• determining staff adherence to workplace procedures • determining types and occurrences of accidents • identifying workplace activities and equipment that are required to comply with environmental laws, regulations and standards • identifying workplace activities relevant to sustainability best practices • analysing suitability of safety data sheets • analysing suitability of workplace procedures and equipment to comply with environmental laws, regulations and standards, including analysing new technologies.

Unit Mapping Information

Equivalent to AURAEA4004 Manage environmental compliance in an automotive workplace

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURAEA004 Manage environmental and sustainability best practice in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in the unit's elements and performance criteria, range of conditions and foundation skills:

- develop, implement and review an environmental action plan for one automotive workplace.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- environmental regulations and standards relevant to own automotive workplace, including commonwealth, state and territory legislation and local government by-laws and regulations
- procedures and processes that support environmental sustainability practices, including:
 - reducing waste
 - reusing materials
 - recycling waste
- types of waste produced by automotive workplaces and their impact on the environment, including:
 - vehicle wastes, including:
 - coolants
 - oils
 - exhaust emissions
 - evaporative fuel emissions
 - waste components, including tyres
 - noise

- workplace wastes, including:
 - cleaning materials
 - paper waste
 - general rubbish
- procedures for minimising waste
- procedures for sorting and storing items for recycling or disposal
- procedures for reducing resource consumption, including water, electricity, fossil fuels and chemicals
- procedures for controlling hazards to stormwater and wastewater drainage systems, including:
 - capturing, storing and disposing of fluids released from vehicles
 - trapping spills, including the use of spill kits
 - preventing hazards entering stormwater and wastewater drainage systems, including bunding, grease traps and triple interceptors
- procedures for protecting air quality and controlling noise hazards, including:
 - minimising the emission of airborne particles, gases and fumes
 - containing and redirecting airborne particles, gases and fumes
 - insulating noise from automotive workshops
- procedures for developing an environmental action plan, including:
 - identifying environmental and sustainability best practice requirements for an automotive workplace
 - identifying workplace measures, including equipment and processes, to meet environmental and sustainability best practice requirements
 - identifying persons responsible for carrying out measures within and outside the workplace
 - identifying timeframe for carrying out measures
 - identifying quantified reduction targets in volume, weight and costs
 - identifying frequency of performing workplace environmental audits
- procedures for implementing an environmental action plan, including:
 - evaluating workplace environmental and sustainability measures
 - selecting suitable workplace environmental and sustainability measures
 - establishing workplace environmental and sustainability measures, including:
 - developing checklists
 - developing emergency response procedures
 - instructing staff
- procedures for addressing complaints from the public, regulatory authorities and staff
- procedures for reviewing an environmental action plan, including workplace environmental audit.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to having managed environmental and sustainability compliance in their automotive workplace, e.g. environmental action plan.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- environmental regulations and standards relevant to automotive workplace, including commonwealth, state and territory legislation and local government by-laws and regulations
- workplace environmental auditing documentation.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
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AURFA001 Use numbers in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to make basic mathematical measurements and calculations relating to vehicle inspection, service and repairs. It includes undertaking calculations to inform parts and labour quotations and the completion of other automotive workplace documentation.

It applies to those required to apply entry-level proficiency in numerically orientated problem-solving skills.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Foundation Skills

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Estimate and make	1.1 Requirements for measurements are identified from task

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
measurements for work	instructions 1.2 Numerical information in automotive workplace texts and tasks is identified 1.3 Workplace measuring equipment and operations appropriate to text and task are identified and selected 1.4 Accurate measurements are made according to task requirements and workplace procedures
2. Undertake mathematical calculations in workplace activities	2.1 Procedures are established for recording numerical information or interpreting measurement information relating to automotive inspection, service or repair 2.2 Calculations using required mathematical operations are undertaken as required 2.3 Conversions between units of measurement are undertaken as required 2.4 Problem solving processes are used to resolve measurement and calculation tasks
3. Check and communicate results	3.1 Measurement and calculation outcomes are reviewed and checked 3.2 Final calculations and numerical information are documented according to workplace procedures and using mathematical language and symbols appropriate for the task

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Writing skills to:	legibly and accurately enter information and complete workplace documentation.
Numeracy skills to:	fill out workplace documentation, such as daily time sheets and repair work orders.
Technology skills to:	use calculators.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Text and task</i> must include one of the following:	• text: • repair work orders and job cards • time sheets • work schedules • material and part requisitions • repair quotations • stock records • supply quotations • task: • estimating resource or time requirements • estimating and adjusting equipment and machinery settings • sourcing numerical information from workshop service manuals and vehicle repair information.
<i>Calculations</i> must include:	• using simple mathematical operations involving automotive data and equipment, with or without the assistance of a calculator and involving: • addition • subtraction • multiplication • division • whole numbers, fractions and percentages.

Unit Mapping Information

Equivalent to AURFA2001 Use numbers in an automotive workplace

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURAF A001 Use numbers in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- make accurate measurements relating to three vehicle inspection, service or repair tasks, presenting the measurement outcomes in whole numbers, fractions and percentages
- make accurate calculations based on above measurements demonstrating the use of the following mathematical operations:
 - addition
 - subtraction
 - multiplication
 - division.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- workplace procedures relating to collecting numerical information
- metric and non-metric systems of measurement as they relate to vehicle repairs
- units of measurement used in vehicle inspection, service and repairs
- mathematical operations involving calculations of whole numbers, fractions and percentages, including:
 - addition
 - subtraction
 - multiplication
 - division
- procedures for checking measurement and calculation outcomes
- protocols for using numbers when filling out:

- timesheets
- repair orders.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to having used numbers in the automotive workplace, e.g. repair orders showing parts, time worked and work done.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- written automotive text and service information and documentation, such as workshop service manuals, vehicle repair information, stock records, job cards, repair quotations, time sheets, and supply quotations
- equipment appropriate for undertaking measurements and calculations, such as calculators or computers.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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AURFA003 Communicate effectively in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to communicate in an automotive workplace. It involves communicating effectively by conveying and receiving information using verbal and non-verbal techniques and correct automotive technical terminology.

It applies to those working in the automotive service and repair industry.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Foundation Skills

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to communicate	1.1 Purpose of communication is established and relevant information is identified

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	1.2 Non-verbal information is examined and interpreted, as required 1.3 Suitable communication method is chosen to suit audience and purpose 1.4 Relevant information is prepared and prioritised in a logical manner
2. Participate in routine verbal communication	2.1 Information is conveyed clearly in verbal exchanges using language, tone and pace appropriate to audience and purpose 2.2 Automotive terminology, including vehicle and component descriptions, is used accurately and according to industry conventions 2.3 Verbal exchanges with others are conducted in a courteous and professional manner 2.4 Active listening and questioning techniques are used to clarify and confirm understanding 2.5 Own opinions are clearly expressed and those of others are listened to without interruption
3. Carry out routine written and non-verbal communication	3.1 Accurate and factual information is conveyed clearly in written and other non-verbal communication 3.2 Non-verbal techniques appropriate to the situation are used effectively in interactions with others 3.3 Intended meaning is clarified with recipients as required
4. Operate workplace communication system	4.1 Workplace communication device appropriate for the task is selected according to workplace procedures 4.2 Key functions of workplace communication system are used according to equipment specifications and workplace procedures
5. Contribute to workplace communication	5.1 Requests for information from colleagues are responded to in a timely manner 5.2 Contributions are made to work group activities and meetings 5.3 Clarification is sought from supervisor or colleagues relating to instructions or information as required 5.4 Feedback from supervisor or colleagues is sought and incorporated into own communication

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Reading skills to:	interpret instructions and requirements in written automotive workplace material.
Digital literacy skills to:	- use digital systems and tools to: - communicate with others - access, extract, organise and present information.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Professional manner</i> must be:	- consistent with workplace communication protocols - appropriate to age, cultural diversity and special needs.
<i>Communication system</i> must include:	- communication devices, including: - telephones - computers.

Unit Mapping Information

Equivalent to AURAF0203 Communicate effectively in an automotive workplace

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURAF A003 Communicate effectively in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- complete three of the following communication tasks in an automotive workplace:
 - exchange verbal information regarding work task with colleague
 - exchange verbal information regarding work task with supervisor
 - request verbal clarification of work task from supervisor
 - request information from external customer using the telephone
 - request information from external customer using email.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- common automotive technical terms and their application to an automotive workplace
- active listening and questioning techniques
- verbal communication techniques, including:
 - one-on-one
 - group and team interactions
- collaborative and inclusive techniques for interacting with others, including techniques appropriate to differing ages, cultural backgrounds and special needs
- workplace forms and documents in electronic and hard copy, including:
 - workplace instructions or work orders
 - manufacturer service, repair and equipment manuals
- types of non-verbal communication techniques, including:
 - visual gestures and sign language

- body language
- signage
- electronic and mechanical signals
- workplace procedures and requirements relating to:
 - workplace document style, format and layout
 - use of communication systems, including email, telephone, intercom and social media
 - reporting
- types of communication devices in automotive workplaces
- operating features of communication devices, including:
 - computers and tablets with email and social media software
 - intercoms and two-way radios
 - telephone systems, including mobile phones.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to having communicated effectively in the automotive workplace, e.g. emails, text messages, or written documentation of conversations.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- supervisor, colleagues and customers with whom to communicate in verbal and written exchanges
- workplace communication devices, including a telephone system and computer.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURFA006 Conduct research and present technical reports

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to research technical subject matter, and prepare and present a technical report of findings. It involves identifying and analysing research requirements, planning and conducting the research, evaluating findings, and developing and presenting the technical report.

It applies to those working in the automotive service and repair industry at a specialist technician or manager level.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Foundation Skills

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Determine research	1.1 Problem requiring research is identified and clarified

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
requirements	1.2 Research purpose, objectives and limits, and timeframe are identified, clearly defined, and confirmed 1.3 Research outline is prepared and confirmed with key stakeholders
2. Plan research	2.1 Systematic methodology for information collection is developed 2.2 Appropriate sources of research information are identified, reviewed and assessed 2.3 Research design is developed according to research requirements 2.4 Resources that support research requirements are identified and sourced 2.5 Pilot study is conducted to identify variations or additions to proposed research plan
3. Conduct research	3.1 Research is carried out according to established purpose, process and objectives 3.2 Research data is collected, manipulated as required, and stored for future reference
4. Analyse research information	4.1 Research data is prepared for analysis 4.2 Data is analysed using appropriate methods according to workplace procedures 4.3 Conclusions, findings and recommendations are drawn from data analysis and documented according to workplace procedures
5. Prepare and present research report	5.1 Technical report, and as required associated presentation materials, are prepared according to report requirements and workplace standards 5.2 Report is presented according to workplace procedures 5.3 Information management and report storage requirements are followed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description

Skills	Description
Learning skills to:	- locate and analyse a range of technical information and documents relevant to work activities - develop strategies to research and write technical reports.
Reading skills to:	- interpret technical information, instructions and requirements - interpret graphical illustrations, technical information and terminology in manuals and textbooks.
Writing skills to:	- communicate ideas and information using relevant automotive terminology - prepare and present textual and numerical information in technical reports.
Oral communication skills to:	clarify and confirm report requirements, including target audience.
Technology skills to:	use workplace technology to access technical documents, including computerised technology.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Research outline</i> must include:	- information entry, including hard and soft copy - data storage and version control - print output.
<i>Research</i> must include one of the following:	- desk-based research - experiments - tests.
<i>Research design</i> must include:	- research methodology - data gathering methods - data analysis methods.
<i>Report requirements</i> must satisfy:	- purpose - objectives - timeframe - planned process - reporting, including findings and proposed actions or recommendations.

Workplace standards must include:	• agreed quality standards • suitability for intended audience and purpose • use of specialist or management summaries • compliance with protocols, conventions and legal requirements relating to acknowledgements and intellectual property.

Unit Mapping Information

Equivalent to AURAF006 Prepare technical reports

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURAF006 Conduct research and present technical reports

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- research and prepare two different technical reports, in which the work must involve:
 - accessing and interpreting relevant automotive technical information
 - developing a research outline
 - undertaking detailed research of the subject area
 - analysing data
 - developing conclusions, findings and recommendations
 - presenting reports to intended target audience.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- research methods, including:
 - qualitative, including:
 - participant observations
 - interviews
 - focus groups
 - quantitative, including:
 - questionnaires
 - laboratory experiments
- procedures for undertaking research, including:
 - planning the research, including:
 - identifying the problem

- defining purpose and limits of the research
- developing a research outline
- sourcing information
- designing the research, including:
 - methodology
 - data gathering
 - data analysis
 - conducting pilot studies
- conducting the research, including data gathering, including common testing procedures
- data analysis, including calculating mean, mode, median and percentages
- drawing conclusions from data analysis
- preparing and presenting a technical report, including:
 - writing for a specific audience
 - using pictures and diagrams
 - using style guides
 - storing data and documents.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to researching, preparing and presenting technical reports in the automotive workplace, e.g. technical reports and presentation notes.

Assessment must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- situations requiring research activities and technical report writing
- range of reference materials relevant to technical research activities
- commercially realistic number of co-workers to which the technical report may be presented.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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AURAMA001 Work effectively with others in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to work effectively with a range of people in an automotive workplace. It involves identifying own and others' job roles, communicating appropriately, working in shared tasks, and dealing with issues, problems and conflicts.

It applies to those working in the automotive service and repair industry.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Management, Leadership and Supervision

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Determine own and	1.1 Own and others' workplace responsibilities and duties are

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
others' roles and job requirements	<i>identified</i> 1.2 Clarification is sought from colleagues and supervisor where uncertainty or overlap of job roles occurs 1.3 Communication with colleagues and others is performed in a courteous manner, using language appropriate to the audience, and according to workplace procedures 1.4 Differences in personal values and beliefs of colleagues are accepted and professional behaviour maintained in all activities 1.5 Safe and appropriate workplace attire is identified, used and maintained
2. Work in shared tasks	2.1 Own and others' roles in shared tasks are determined and clarified 2.2 Participation in task planning is carried out as required, work-related information is shared, and constructive contributions are made 2.3 Work tasks are carried out according to personal roles and responsibilities and workplace requirements 2.4 Support is provided to colleagues to ensure tasks and goals are met, as required 2.5 Constructive feedback on performance provided by colleagues is requested, acknowledged, and acted on 2.6 Suggestions for improvements to processes are made and discussed with colleagues
3. Deal effectively with issues, problems and conflict in work groups	3.1 Personal issues that impact on own work and relationships with colleagues are discussed with supervisor, as required 3.2 Workplace issues with colleagues are identified, discussed and a resolution found according to workplace procedures 3.3 Difficult to resolve issues, problems and conflict are escalated to appropriate person according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	identify own skills and knowledge to perform the job and identify gaps.
Reading skills to:	- access workplace procedures and identify and interpret sections relating to workplace diversity, equal opportunity, discrimination and conflict resolution - access and interpret work task instructions and work schedule requirements.
Oral communication skills to:	- clarify and confirm information and instructions using active listening and questioning techniques - speak clearly and directly to present problems or issues to appropriate person.
Planning and organising skills to:	plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Identification</i> must be based on:	- information and instructions about: - objectives - performance requirements - workplace procedures.

Unit Mapping Information

Equivalent to AURAMA2001 Work effectively with others

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURAMA001 Work effectively with others in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- work effectively with others in an automotive workplace, in which the work must involve:
 - participating in one shared work task involving two colleagues
 - providing support on a work task to a colleague
 - responding to feedback provided by a group member
 - facilitating the resolution of a work issue or problem.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- common types of automotive workplace job roles and accountabilities, including:
 - trainee assistant
 - technician
 - diagnostic technician
 - workshop supervisor
 - accounts person
 - sales person
 - business owner
 - customer
- key features of workplace policies and procedures, including:
 - codes of conduct, including those for workplace:
 - discrimination
 - violence, bullying and harassment

- disciplinary policies
 - leave policies
- basic communication techniques and styles for different audiences, including appropriate language, tone and emphasis
- fundamentals of working effectively with others, including:
 - active listening
 - establishing common goals
 - assigning roles
 - creating objectives and timelines
 - resolving conflicts quickly and fairly
- methods for obtaining and giving feedback, including:
 - formal and informal performance appraisal methods
 - verbal and non-verbal communication techniques
 - techniques for supporting work group members
- basic ethical principles of respect for persons, including:
 - understanding and respecting cultural differences
 - identifying common ground
- basic conflict-resolution strategies
- workplace procedures and requirements relating to personal presentation, attire and grooming.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to having worked effectively with others in an automotive workplace, e.g. supervisor performance reports.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace

- commercially realistic range of diverse workplace colleagues
- documentation, including workplace policies and procedures manuals relating to ethics, employee and employer rights and responsibilities, attire and grooming, job descriptions and organisational charts.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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AURASA002 Follow safe working practices in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to identify and follow safety and emergency procedures in an automotive workplace. It involves those safety procedures to be followed when using workplace hand tools and hand-held power tools, fixed equipment, and chemicals, and when running vehicles and machinery. It includes the individual's responsibility for safety and emergency response in the event of an accident or incident.

It applies to those working on agricultural machinery, heavy commercial vehicles, light vehicles, marine vessels, motorcycles, mobile plant machinery or outdoor power equipment in the automotive service and repair industry.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Common

Unit Sector

Health and Safety

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and follow workplace safety procedures	1.1 Workplace procedures relating to personal safety are identified and followed 1.2 Unsafe situations and hazards are identified and reported according to workplace procedures 1.3 Machinery and equipment breakdowns are identified and reported according to workplace procedures 1.4 Fire hazards are identified and reported, and precautions taken according to workplace procedures 1.5 Workplace procedures and safety requirements for handling and storing dangerous goods and hazardous substances are identified and followed 1.6 Workplace manual handling procedures are identified and followed 1.7 Participation in any WHS consultative arrangements established by workplace is undertaken
2. Identify and follow workplace emergency procedures	2.1 Workplace emergency procedures regarding illness and accidents are identified and followed 2.2 Safety warning alarms and workplace evacuation procedures are identified and followed 2.3 Firefighting appliances and equipment are located and identified for emergency use and application 2.4 Qualified persons are identified for contacting in the event of an incident, accident or sickness of self, co-workers, staff, customers and others 2.5 Accident and incident documentation requirements are followed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description

Skills	Description
Learning skills to:	locate sources of information relating to workplace safety requirements.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking procedures required to carry out work safely.
Writing skills to:	legibly and accurately enter information into workplace safety documents and check sheets.
Oral communication skills to:	- clarify instructions - inform personnel of workplace hazards.
Numeracy skills to:	match hazardous material weights and volumes to safety data sheets (SDS) and work instructions.
Planning and organising skills to:	plan own work requirements to achieve required outcomes while working according to safety requirements.
Self-management skills to:	- follow workplace safety requirements without constant supervision - identify and look after own safety.
Problem solving skills to:	- recognise when unsure of safety procedures and seek help - recognise potential workplace hazards and take action.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Workplace procedures</i> must include procedures for:	- selecting and using personal protective equipment (PPE) - identifying hazards - running motor vehicles in the workplace - emergency, fire and accident.
<i>Qualified persons</i> must include:	- those holding a current recognised qualification in any of the following: - first aid - cardiopulmonary resuscitation - fire warden and workplace evacuation - occupational or work health and safety representative.

Unit Mapping Information

Equivalent to AURASA2002 Apply safe working practices in an automotive workplace

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURASA002 Follow safe working practices in an automotive workplace

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in the unit's elements and performance criteria, range of conditions and foundation skills:

- move two heavy items in an automotive workplace
- use two different dangerous goods in an automotive workplace
- identify fire safety equipment and its correct application in an automotive workplace
- identify emergency evacuation procedures and responsibilities of self and co-workers in an automotive workplace
- raise a safety concern at either a work health and safety (WHS) or occupational health and safety (OHS) consultative meeting
- carry out a hazard inspection in an automotive workplace
- complete an incident report.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- basic aspects of relevant state or territory WHS or OHS legislation, including:
 - employer responsibilities for workplace practices
 - employee responsibilities to participate in WHS practices
 - employee responsibility to ensure own work practices protect the safety of self, other workers and other people in the workplace
- purpose and structure of WHS or OHS workplace committees, including roles of workplace personnel
- personal safety in an automotive workplace, including:
 - hearing protection
 - skin protection

- protective clothing
- protective footwear
- eye protection
- manual handling, including:
 - storing items
 - planning the lift
 - using correct lifting techniques and equipment
- workplace practices, including:
 - housekeeping
 - observing personal hygiene
 - identifying slip hazards and trip hazards
- meaning of WHS or OHS symbols and signs
- machine and equipment safety, including:
 - using compressed air
 - using machine guards
 - electrical tools, including:
 - checking before use
 - faulty equipment tagging and isolation procedures
 - dangers of using electrical tools around water
 - vehicle lifting equipment, including:
 - using jacks and stands
 - using hoists
 - safe working load (SWL) of jacks and hoists
- vehicle safety, including:
 - engine moving parts
 - engine and exhaust hot components
 - electrical hazards associated with:
 - high voltage ignition systems
 - wearing jewellery while working around high current wiring systems
 - batteries
 - fuel, including petrol, diesel and natural and petroleum gas
 - high voltage in battery electrical and hybrid vehicles
- hazardous materials, including handling and storing:
 - oils
 - brake fluid
 - brake dust
 - chemicals
 - cleaning products
 - safety data sheets (SDS)
- emergency procedures, including:

- personnel responsibilities
- evacuation procedures and assembly points.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to having followed safe work practices while working in an automotive workplace, e.g. documented hazard inspection or incident report.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- workplace procedures and instructions relating to safe work practices
- workplace safety and emergency evacuation procedures
- hazardous chemicals and dangerous goods information
- safety materials and equipment relevant to an automotive workplace
- fire safety equipment
- documents for recording workplace safety, accidents and incidents.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURETA001 Analyse and evaluate electrical and electronic faults in electronic over hydraulic systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate electrical and electronic faults in the embedded network electronic over hydraulic systems of vehicles or machinery in order to initiate action to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions.

The unit applies to those working in the automotive service and repair industry on network electronic over hydraulic systems in vehicles or machinery, which may be wheeled or track type machinery.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of the analysis and evaluation is determined from workplace instructions 1.2 Specifications for electronic over hydraulic system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified and risks are managed according to workplace procedures and safety and environmental requirements
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 Analytical and evaluative methodology is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected and prepared for use 2.5 Electronic over hydraulic system and components are prepared for the diagnostic process
3. Carry out failure analysis	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, regulatory requirements, Australian Design Rules, and financial implications 4.3 Report is prepared specifying analysis and evaluation process,

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored, and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to electronic over hydraulic systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings • document and complete reports.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calibrate testing equipment and present analytical results.
Planning and organising skills to:	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	• use specialised electronic over hydraulic system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety and environmental requirements</i> must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: • identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems • working with high pressure fluid hazards • tagging out and isolating machines, and wheel chocking • environmental requirements, including procedures for trapping, storing and disposing of fluids released from hydraulic systems.
<i>Analytical and evaluative methodology</i> must include:	• diagnostic process, sequence, tests and testing equipment.

Unit Mapping Information

Equivalent to AURETA5001 Analyse and evaluate electrical and electronic faults in electric over-hydraulic systems

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURETA001 Analyse and evaluate electrical and electronic faults in electronic over hydraulic systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate an electrical or electronic fault in the electronic over hydraulic systems of two different vehicles or machinery
- the above faults must involve two of the following systems:
 - traction motion control
 - excavator bucket control
 - steering control
 - crane ram control
 - garbage compactor control.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) or occupational health and safety (OHS) requirements relating to analysing and evaluating electrical and electronic faults in electronic over hydraulic systems, including procedures for:
 - identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems
 - working with high pressure fluid hazards
 - tagging out and isolating machines, and wheel chocking
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from electronic over hydraulic systems
- principles and processes involved in planning and implementing analysis and evaluation of electrical and electronic faults in electronic over hydraulic systems

- design and planning of diagnostic procedures of electronic over hydraulic system faults, including procedures for diagnosing:
 - hydraulic faults
 - mechanical faults
 - electrical faults
- procedures for analysing and evaluating electronic over hydraulic system faults, including:
 - system failure analysis
 - component failure analysis
- types, functions, operation and limitations of electronic over hydraulic systems, including:
 - gateway network control module
 - bus network topography
 - hydraulic control module functions
 - associated network electronic over hydraulic system components
 - sensor and actuator control and monitoring systems
 - control signal circuits
 - operator joystick control devices
 - solenoid and proportional valve control of hydraulic fluid
- testing procedures for electronic over hydraulic systems, including the use of:
 - digital multimeter
 - scan tool
 - oscilloscope
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate electrical and electronic faults in electronic over hydraulic systems
- procedures for accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs), including:
 - conditions that set the DTCs
 - conditions for running DTCs
 - live data
 - freeze frame data
 - waveforms
- procedures for documenting and reporting the analysis and evaluation process
- requirements of Australian Design Rules (ADRs) relating to electronic over hydraulic systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the electronic over hydraulic systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer electronic over hydraulic system specifications
- two different vehicles or machinery with faults in the electronic over hydraulic systems specified in the performance evidence
- diagnostic tools and equipment for vehicle or machinery electronic over hydraulic system fault diagnosis, including:
 - digital multimeter
 - scan tool
 - oscilloscope
- tools, equipment and materials appropriate for analysing and evaluating electronic over hydraulic systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURETA002 Analyse and evaluate electrical and electronic faults in body management systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate electrical and electronic faults in the embedded network body management systems of vehicles and machinery in order to initiate action to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions.

It applies to those working in the automotive service and repair industry on embedded network body management systems in vehicles or machinery.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of the analysis and evaluation is determined from workplace instructions 1.2 Specifications for body management system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified and risks are managed according to workplace procedures and safety requirements
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 Analytical and evaluative methodology is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected and prepared for use 2.5 Body management system and components are prepared for the diagnostic process
3. Carry out failure analysis	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, regulatory requirements, Australian Design Rules, and financial implications 4.3 Report is prepared specifying analysis and evaluation process,

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored, and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to body management systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings • document and complete reports.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calibrate testing equipment and present analytical results.
Planning and organising skills to:	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	• use specialised body management system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems.
<i>Analytical and evaluative methodology</i> must include:	diagnostic process, sequence, tests and testing equipment.

Unit Mapping Information

Equivalent to AURETA5002 Analyse and evaluate electrical and electronic faults in safety systems

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURETA002 Analyse and evaluate electrical and electronic faults in body management systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate an electrical or electronic fault in the embedded network body management systems of two different vehicles or machinery
- the above faults must involve two of the following systems:
 - vehicle or machinery access
 - safety restraint
 - vehicle or machinery infotainment
 - theft deterrent
 - monitoring and tracking
 - air conditioning and heating, ventilation and air conditioning (HVAC).

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to analysing and evaluating faults in body management systems, including procedures for identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems
- principles and processes involved in planning and implementing analysis and evaluation of body management system faults
- design and planning of diagnostic procedures of body management system faults, including procedures for diagnosing:
 - hydraulic faults
 - mechanical faults

- electrical faults
- procedures for analysing and evaluating body management system faults, including:
 - system failure analysis
 - component failure analysis
- types, functions, operation and limitations of body management systems, including:
 - gateway network control module
 - bus network topography
 - body control module (BCM) functions
 - sensor and actuator control and monitoring systems
 - control signal circuits
- testing procedures for body management systems, including the use of:
 - digital multimeter
 - scan tool
 - oscilloscope
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate electrical and electronic faults in body management systems
- procedures for accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs), including:
 - conditions that set the DTCs
 - conditions for running DTCs
 - live data
 - freeze frame data
 - waveforms
- procedures for documenting and reporting the analysis and evaluation process
- requirements of Australian Design Rules (ADRs) relating to body management systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the body management systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer body management system specifications
- two different vehicles or machinery with faults in the body management systems specified in the performance evidence
- diagnostic equipment for body management system fault diagnosis, including:
 - digital multimeter
 - scan tool
 - oscilloscope
- tools, equipment and materials appropriate for analysing and evaluating body management systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURETA003 Analyse and evaluate electrical and electronic faults in monitoring and protection systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate electrical and electronic faults in the embedded network monitoring and protection systems of vehicles or machinery in order to initiate action to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions.

It applies to those working in the automotive service and repair industry on network monitoring and protection systems in vehicles or machinery.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of the analysis and evaluation is determined from workplace instructions 1.2 Specifications for embedded network monitoring and protection system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified and risks are managed according to workplace procedures and safety requirements
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 Analytical and evaluative methodology is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected and prepared for use 2.5 Monitoring and protection system and components are prepared for the diagnostic process
3. Carry out failure analysis	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, regulatory requirements, Australian Design Rules, and financial implications 4.3 Report is prepared specifying analysis and evaluation process,

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored, and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to monitoring and protection systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings • document and complete reports.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calibrate testing equipment and present analytical results.
Planning and organising skills to:	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	• use specialised monitoring and protection system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems.
<i>Analytical and evaluative methodology</i> must include:	• diagnostic process, sequence, tests and testing equipment.

Unit Mapping Information

Equivalent to AURETA5003 Analyse and evaluate electrical and electronic faults in monitoring and protection systems

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURETA003 Analyse and evaluate electrical and electronic faults in monitoring and protection systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate an electrical or electronic fault in the embedded network monitoring and protection systems of two different vehicles or machinery
- the above faults must involve two of the following:
 - monitoring system (excluding monitoring control module)
 - monitoring control module
 - protection system (excluding protection control module)
 - protection control module.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to analysing and evaluating faults in monitoring and protection systems, including procedures for identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems
- principles and processes involved in planning and implementing analysis and evaluation of electrical and electronic faults in monitoring and protection systems
- design and planning of diagnostic procedures, including procedures for diagnosing:
 - sensor and actuator mechanical faults
 - electrical faults
- types, functions, operation and limitations of monitoring and protection systems, including:

- gateway network control module
- bus network topography
- body control module (BCM) functions
- sensor and actuator control and monitoring systems
- control signal circuits
- testing procedures for network monitoring and protection management systems, including the use of:
 - digital multimeter
 - scan tool
 - oscilloscope
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate electrical and electronic faults in monitoring and protection systems
- procedures for accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs), including:
 - conditions that set the DTCs
 - conditions for running DTCs
 - live data
 - freeze frame data
 - waveforms
- procedures for documenting and reporting the analysis and evaluation process
- requirements of Australian Design Rules (ADRs) relating to monitoring and protection systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the monitoring and protection systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer monitoring and protection system specifications
- two different vehicles or machinery with monitoring and protection system faults
- diagnostic equipment for monitoring and protection system fault diagnosis, including:
 - digital multimeter
 - scan tool
 - oscilloscope
- tools, equipment and materials appropriate for analysing and evaluating monitoring and protection systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURETA004 Analyse and evaluate electrical and electronic faults in convenience and entertainment systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate electrical and electronic faults in the embedded network convenience and entertainment systems of vehicles or machinery in order to initiate action to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions.

It applies to those working in the automotive service and repair industry on network convenience and entertainment systems in vehicles or machinery.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical

Elements and Performance Criteria

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of the analysis and evaluation is determined from workplace instructions 1.2 Specifications for embedded network convenience and entertainment system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified and risks are managed according to workplace procedures and safety requirements
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 Analytical and evaluative methodology is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected and prepared for use 2.5 Convenience and entertainment system and components are prepared for the diagnostic process
3. Carry out failure analysis	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, regulatory requirements, Australian Design Rules, and financial implications 4.3 Report is prepared specifying analysis and evaluation process, and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored, and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to convenience and entertainment systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings • document and complete reports.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calibrate testing equipment and present analytical results.
Planning and organising	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within

Skills	Description
skills to:	workplace timeframes.
Technology skills to:	use specialised convenience and entertainment system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems.
<i>Analytical and evaluative methodology</i> must include:	diagnostic process, sequence, tests and testing equipment.

Unit Mapping Information

Equivalent to AURETA5004 Analyse and evaluate electrical and electronic faults in convenience and entertainment systems

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURETA004 Analyse and evaluate electrical and electronic faults in convenience and entertainment systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate an electrical or electronic fault in the embedded network convenience and entertainment systems of two different vehicles or machinery
- the above faults must involve two of the following:
 - convenience system (excluding convenience control module)
 - convenience control module
 - entertainment system (excluding entertainment control module)
 - entertainment control module.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to analysing and evaluating faults in convenience and entertainment systems, including procedures for identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems
- principles and processes involved in planning and implementing analysis and evaluation of electrical and electronic faults in convenience and entertainment systems
- design and planning of diagnostic procedures of convenience and entertainment system faults, including procedures for diagnosing:
 - electrical faults
 - electronic faults

- procedures for analysing and evaluating electrical and electronic faults in convenience and entertainment systems, including:
 - system failure analysis
 - component failure analysis
- types, functions, operation and limitations of convenience and entertainment systems, including:
 - gateway network control module
 - bus network topography
 - body control module (BCM) functions
 - associated network convenience and entertainment system components
 - sensor and actuator control and monitoring systems
 - control signal circuits
- testing procedures for convenience and entertainment systems, including the use of:
 - digital multimeter
 - scan tool
 - oscilloscope
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate electrical and electronic faults in convenience and entertainment systems
- procedures for accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs), including:
 - conditions that set the DTCs
 - conditions for running DTCs
 - live data
 - freeze frame data
 - waveforms
- procedures for documenting and reporting the analysis and evaluation process
- requirements of Australian Design Rules (ADRs) relating to convenience and entertainment systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to convenience and entertainment systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer convenience and entertainment system specifications
- two different vehicles or machinery with convenience and entertainment system faults
- diagnostic equipment for convenience and entertainment system fault diagnosis, including:
 - digital multimeter
 - scan tool
 - oscilloscope
- tools, equipment and materials appropriate for analysing and evaluating convenience and entertainment systems.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURETA005 Analyse and evaluate electrical and electronic faults in theft-deterrent systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate electrical and electronic faults in the embedded network theft-deterrent systems of vehicles or machinery in order to initiate action to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions.

It applies to those working in the automotive service and repair industry on network theft-deterrent systems of vehicles or machinery.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of the analysis and evaluation is determined from workplace instructions 1.2 Specifications for embedded network theft-deterrent system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified and risks are managed according to workplace procedures and safety requirements
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 Analytical and evaluative methodology is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected and prepared for use 2.5 Theft-deterrent system and components are prepared for the diagnostic process
3. Carry out failure analysis	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, regulatory requirements, Australian Design Rules, and financial implications 4.3 Report is prepared specifying analysis and evaluation process, and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored, and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to theft-deterrent systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings • document and complete reports.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calibrate testing equipment and present analytical results.
Planning and organising	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within

Skills	Description
skills to:	workplace timeframes.
Technology skills to:	use specialised theft-deterrent system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems.
<i>Analytical and evaluative methodology</i> must include:	diagnostic process, sequence, tests and testing equipment.

Unit Mapping Information

Equivalent to AURETA5005 Analyse and evaluate electrical and electronic faults in theft-deterrent systems

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURETA005 Analyse and evaluate electrical and electronic faults in theft-deterrent systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate an electrical or electronic fault in the embedded network theft-deterrent systems of two different vehicles or machinery
- the above faults must involve two of the following systems:
 - locking and securing
 - passive entry
 - integrated alarm
 - engine immobiliser
 - remote access.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to analysing and evaluating faults in theft-deterrent systems, including procedures for identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems
- principles and processes involved in planning and implementing analysis and evaluation of electrical and electronic faults in theft-deterrent systems
- design and planning of diagnostic procedures for faults in theft-deterrent systems, including procedures for diagnosing:
 - electrical faults
 - electronic faults
- types, functions, operation and limitations of theft-deterrent systems, including:

- gateway network control module
- bus network topography
- body control module (BCM) functions
- associated embedded network theft-deterrent system components
- sensor and actuator control and monitoring systems
- control signal circuits
- testing procedures for theft-deterrent systems, including the use of:
 - digital multimeter
 - scan tool
 - oscilloscope
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate electrical and electronic faults in theft-deterrent systems
- procedures for accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs), including:
 - conditions that set the DTCs
 - conditions for running DTCs
 - live data
 - freeze frame data
 - waveforms
- procedures for documenting and reporting the analysis and evaluation process
- requirements of Australian Design Rules (ADRs) relating to theft-deterrent systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the theft-deterrent systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer theft-deterrent system specifications
- two different vehicles or machinery with faults in the theft-deterrent systems specified in the performance evidence
- diagnostic equipment for theft-deterrent system fault diagnosis, including:
 - digital multimeter
 - scan tool
 - oscilloscope
- tools, equipment and materials appropriate for analysing and evaluating theft-deterrent systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURETA006 Analyse and evaluate electrical and electronic faults in air conditioning and HVAC systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate electrical and electronic faults in embedded network air conditioning and heating, ventilation and air conditioning (HVAC) systems of vehicles or machinery in order to initiate action to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions.

It applies to those working in the automotive service and repair industry on the air conditioning and HVAC systems of vehicles or machinery.

Licensing requirements apply to this unit. Users are advised to check with the relevant regulatory authority.

Competency Field

Electrical

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of the analysis and evaluation is determined from workplace instructions 1.2 Specifications for embedded network air conditioning and HVAC system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified and risks are managed according to workplace procedures and safety and environmental requirements
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 Analytical and evaluative methodology is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected and prepared for use 2.5 Air conditioning and HVAC system and components are prepared for the diagnostic process
3. Carry out failure analysis	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, regulatory and licensing requirements, and financial implications 4.3 Report is prepared specifying analysis and evaluation process,

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored, and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to air conditioning and HVAC systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings • document and complete reports.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calibrate testing equipment and present analytical results.
Planning and organising skills to:	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	• use specialised air conditioning and HVAC system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety and environmental requirements</i> must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: • working with refrigerants at boiling point given risk of frostbite • working with system lubricants, including carcinogenic oils • handling flammable refrigerants • using personal protective equipment • identifying fire safety equipment • environmental requirements, including procedures for preventing loss of refrigerant to the atmosphere.
<i>Analytical and evaluative methodology</i> must include:	• diagnostic process, sequence, tests and testing equipment.
<i>Regulatory and licensing requirements</i> must include those of:	• Australian Refrigeration Council (ARCtick) • Australian automotive code of practice: Control of refrigerant gases during manufacture, installation, servicing or de-commissioning of motor vehicle air conditioners • Australian Design Rules (ADRs).

Unit Mapping Information

Equivalent to AURETA5006 Analyse and evaluate electrical and electronic faults in climate-control systems

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURETA006 Analyse and evaluate electrical and electronic faults in air conditioning and HVAC systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate an electrical or electronic fault in the air conditioning and heating, ventilation and air conditioning (HVAC) systems of two different vehicles or machinery
- the above faults must involve two of the following:
 - compressor system
 - control module
 - system pressure and temperature sensor
 - erratic performance of air conditioning and HVAC system.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to analysing and evaluating faults in air conditioning and HVAC systems, including procedures for:
 - working with refrigerants at boiling point given risk of frostbite
 - working with system lubricants, including carcinogenic oils
 - handling flammable refrigerants
 - using personal protective equipment
 - identifying and using fire safety equipment
- environmental requirements, including procedures for preventing loss of refrigerant to the atmosphere

- principles and processes involved in planning and implementing analysis and evaluation of electrical and electronic faults in air conditioning and HVAC systems
- design and planning of diagnostic procedures for faults in air conditioning and HVAC systems, including procedures for diagnosing:
 - electrical faults
 - electronic faults
- types, functions, operation and limitations of air conditioning and HVAC systems, including:
 - gateway network control module
 - bus network topography
 - body control module (BCM) functions
 - associated network air conditioning and HVAC system components
 - sensor and actuator control and monitoring systems
 - control signal circuits
- testing procedures for air conditioning and HVAC systems, including the use of:
 - digital multimeter
 - scan tool
 - oscilloscope
 - manifold and gauge set
 - recovery unit
 - vacuum pump
 - electronic leak detector
 - nitrogen cylinder and regulator
 - digital vacuum gauge (vacrometer)
 - electronic scales
 - oil injector
 - infra-red thermometer (pyrometer)
 - electronic temperature probe
 - valve core removing or replacement tool
 - humidity detector (psychrometer)
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate electrical and electronic faults in air conditioning and HVAC systems
- procedures for accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs), including:
 - conditions that set the DTCs
 - conditions for running DTCs
 - live data
 - freeze frame data
 - waveforms
- procedures for documenting and reporting the analysis and evaluation process

- regulatory and licensing requirements relating to air conditioning and HVAC systems, including those of:
 - Australian Refrigeration Council (ARCtick)
 - Australian automotive code of practice: Control of refrigerant gases during manufacture, installation, servicing or de-commissioning of motor vehicle air conditioners
 - Australian Design Rules (ADRs).

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements and hold an Australian Refrigerant Council (ARC) Refrigerant Handling licence.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the air conditioning and HVAC systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive service and repair workplace or simulated workplace
- workplace instructions
- manufacturer air conditioning and HVAC system specifications
- regulatory and licensing requirements, including:
 - Australian automotive code of practice: Control of refrigerant gases during manufacture, installation, servicing or de-commissioning of motor vehicle air conditioners
 - Australian Design Rules (ADRs)
- two different vehicles or machinery with air conditioning and HVAC system faults specified in the performance evidence
- diagnostic equipment for air conditioning and HVAC systems
- tools, equipment and materials appropriate for analysing and evaluating air conditioning and HVAC systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURETB002 Analyse and evaluate electrical and electronic faults in dynamic control management systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate electrical and electronic faults in embedded network dynamic control management systems in vehicles or machinery in order to initiate action to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method.

The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions. These systems include the functions of an electronic braking control module (EBCM), such as anti-lock braking, brake assist, descent control, electronic brake force distribution, electronic park brake, hill start assist, stability control, traction control and active roll-over protection.

It applies to those working in the automotive service and repair industry on embedded network dynamic control management systems of vehicles or machinery.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical – Brakes

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of the analysis and evaluation is determined from workplace instructions 1.2 Specifications for dynamic control management system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified and risks are managed according to workplace procedures and safety requirements
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 Analytical and evaluative methodology is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected and prepared for use 2.5 Dynamic control management system and components are prepared for the diagnostic process
3. Carry out failure analysis	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, regulatory requirements, Australian Design Rules, and financial implications 4.3 Report is prepared specifying analysis and evaluation process, and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored, and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to dynamic control management systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings • document and complete reports.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calibrate testing equipment and present analytical results.
Planning and organising	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within

Skills	Description
skills to:	workplace timeframes.
Technology skills to:	use specialised dynamic control management system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems.
<i>Analytical and evaluative methodology</i> must include:	diagnostic process, sequence, tests and testing equipment.

Unit Mapping Information

Equivalent to AURETB5002 Analyse and evaluate electrical and electronic faults in braking systems

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURETB002 Analyse and evaluate electrical and electronic faults in dynamic control management systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate an electrical or electronic fault in the dynamic control management systems of two different vehicles or machinery
- the above faults must involve two of the following:
 - anti-lock braking system (ABS)
 - ABS and integrated traction control system
 - traction and stability control system
 - electronic braking control module (EBCM).

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to analysing and evaluating faults in dynamic control management systems, including procedures for identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems
- principles and processes involved in planning and implementing analysis and evaluation of electrical and electronic faults in dynamic control management systems
- design and planning of diagnostic procedures for faults in dynamic control management systems, including procedures for diagnosing:
 - electrical faults
 - electronic faults

- types, functions, operation and limitations of dynamic control management systems, including:
 - gateway network control module
 - bus network topography
 - body control module (BCM) functions
 - associated network dynamic control management system components
 - sensor and actuator control and monitoring systems
 - control signal circuits
 - ABS
 - stability control systems (SCS)
 - traction control systems (TCS)
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate electrical and electronic faults in dynamic control management systems
- testing procedures for dynamic control management systems, including the use of:
 - digital multimeter
 - scan tool
 - oscilloscope
 - four-wheel dynamometer
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate electrical and electronic faults in dynamic control management systems
- procedures for accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs), including:
 - conditions that set the DTCs
 - conditions for running DTCs
 - live data
 - freeze frame data
 - waveforms
- procedures for documenting and reporting the analysis and evaluation process
- requirements of Australian Design Rules (ADRs) relating to dynamic control management systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the dynamic control management systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer dynamic control management system specifications
- two different vehicles or machinery with faults in the dynamic control management systems specified in the performance evidence
- diagnostic equipment for dynamic control management systems
- tools, equipment and materials appropriate for analysing and evaluating dynamic control management systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURETE001 Analyse and evaluate electrical and electronic faults in engine management systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate electrical and electronic faults in embedded network engine management systems of vehicles or machinery in order to initiate action to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions.

It applies to those working in the automotive service and repair industry on embedded network engine management systems of vehicles or machinery.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical - Engines

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of the analysis and evaluation is determined from workplace instructions 1.2 Specifications for engine management system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified and risks are managed according to workplace procedures and safety requirements
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 Analytical and evaluative methodology is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected and prepared for use 2.5 Engine management system and components are prepared for the diagnostic process
3. Carry out failure analysis	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, regulatory requirements, Australian Design Rules, and financial implications 4.3 Report is prepared specifying analysis and evaluation process,

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored, and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to engine management systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings • document and complete reports.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calibrate testing equipment and present analytical results.
Planning and organising skills to:	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	• use specialised engine management system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: • working on vehicle systems with ignition high voltages • identifying hazards and controlling risks associated with wearing jewellery while around high current wiring systems • working with high pressure fuel systems.
<i>Analytical and evaluative methodology</i> must include:	• diagnostic process, sequence, tests and testing equipment.

Unit Mapping Information

Equivalent to AURETE5001 Analyse and evaluate electrical and electronic faults in engine management systems

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURETE001 Analyse and evaluate electrical and electronic faults in engine management systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate an electrical or electronic fault in the engine management systems of two different vehicles or machinery
- the above faults must involve two of the following systems:
 - direct injection diesel engine management system
 - common rail diesel engine management system
 - distributor-less electronic ignition petrol engine management system.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to analysing and evaluating faults in engine management systems, including procedures for:
 - working on vehicle systems with ignition high voltages
 - identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems
 - working with high pressure fuel systems
- principles and processes involved in planning and implementing analysis and evaluation of electrical and electronic faults in engine management systems
- design and planning of diagnostic procedures for faults in engine management systems, including procedures for diagnosing:
 - electrical faults
 - electronic faults

- types, functions, operation and limitations of engine management systems, including:
 - spark ignition engine management systems
 - diesel fuel injection systems
 - gateway network control module
 - bus network topography
 - associated network engine management systems
 - sensor and actuator control and monitoring systems
 - control signal circuits
- testing procedures for engine management systems, including the use of:
 - digital multimeter
 - scan tool
 - oscilloscope
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate electrical and electronic faults in engine management systems
- procedures for accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs), including:
 - conditions that set the DTCs
 - conditions for running DTCs
 - live data
 - freeze frame data
 - waveforms
- procedures for documenting and reporting the analysis and evaluation process
- requirements of Australian Design Rules (ADRs) relating to engine management systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the engine management systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer engine management system specifications
- two different vehicles or machinery with faults in the engine management systems specified in the performance evidence
- diagnostic equipment for engine management systems, including:
 - digital multimeter
 - scan tool
 - oscilloscope
- tools, equipment and materials appropriate for analysing and evaluating engine management systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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AURETH013 Analyse and evaluate electrical and electronic faults in HEV and BEV management systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate electrical and electronic faults in the embedded network management systems of hybrid, plug-in hybrid and battery electric vehicles (HEV, PHEV and BEV) in order to initiate action to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions. Importance is placed in the unit on applying electrical safety procedures when working on high voltage (HV) rechargeable energy storage systems (RESS).

It applies to those working in the automotive service and repair industry on HEV, PHEV or BEV embedded network management systems.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical - Hybrid Vehicle and Battery Electric Vehicle

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of the analysis and evaluation is determined from workplace instructions 1.2 Specifications for HEV, PHEV or BEV management system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified, appropriate precautions are taken, and risks are managed according to workplace procedures, safety requirements, and requirements of Australian Design Rules (ADRs) and AS 5732 Electric vehicle operations: Maintenance and repair
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 Analytical and evaluative methodology is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected, checked and prepared for use 2.5 HEV, PHEV or BEV management system and components are prepared for the diagnostic process
3. Carry out failure analysis	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, requirements of ADRs and AS 5732

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	4.3 Report is prepared specifying analysis and evaluation process, and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored, and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to HEV, PHEV and BEV management systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings • document and complete reports.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calibrate testing equipment and present analytical results.
Planning and organising skills to:	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	• use specialised HEV, PHEV and BEV management system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: • identifying hazards and controlling risks associated with: • working with high voltages on vehicle electrical systems • working with hazardous materials and toxic substances • wearing jewellery while working around high electrical currents • minimising risk, including: • analysing task to define risk • applying electrical safety precautions, including ‘one hand’ rule, live system warning tags and signs, depowering the vehicle, isolating the HV RESS electrical supply, and stabilising the vehicle HV electrical systems • using personal protective equipment, including electrical safety gloves with 1000 volt rating and Australian standards rated HV insulating mat • identifying fire safety equipment.
<i>Analytical and evaluative methodology</i> must include:	• diagnostic process, sequence, tests and testing equipment.

Unit Mapping Information

Equivalent to AURETH5013 Analyse and evaluate electrical and electronic faults in electric and hybrid vehicle systems

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURETH013 Analyse and evaluate electrical and electronic faults in HEV and BEV management systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate an electrical or electronic fault in the network management systems of one hybrid electric vehicle (HEV) and one battery electric vehicle (BEV)
- the above faults must involve two of the following:
 - battery management system (BMS)
 - rechargeable energy storage system (RESS)
 - power distribution unit (PDU)
 - high voltage traction motor drive assembly
 - direct current (DC) to DC converter assembly
 - RESS cooling system.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to analysing and evaluating electrical and electronic faults in HEV and BEV management systems, including procedures for:
 - identifying hazards and controlling risks associated with:
 - working with high voltages on vehicle electrical systems
 - working with hazardous materials and toxic substances
 - wearing jewellery while working around high electrical currents
 - minimising risk, including:

- analysing task to define risk
- applying electrical safety precautions, including ‘one hand’ rule, live system warning tags and signs, depowering the vehicle, isolating the HV RESS electrical supply, and stabilising the vehicle HV electrical systems
- using personal protective equipment (PPE), including electrical safety gloves with 1000 volt rating and Australian standards rated HV insulating mat
- identifying and using fire safety equipment
- methods for locating and content of manufacturer specifications, workplace procedures, Australian standards and Australian Design Rules (ADRs) relating to embedded network management systems of HEV, plug-in hybrid electric vehicle (PHEV) and BEV
- principles and processes involved in planning and implementing analysis and evaluation of electrical and electronic faults in HEV, PHEV and BEV embedded network management systems
- design and planning of diagnostic procedures for electrical and electronic faults in HEV and BEV management systems, including procedures for diagnosing:
 - mechanical faults
 - electrical faults
 - electronics faults
- types, function and operation of hybrid and battery electric vehicle systems, including:
 - DC electric motor types, including:
 - separately excited motors
 - permanent magnet motors
 - alternating current (AC) electric motor types, including:
 - induction motors
 - brushless motors
 - HV traction motor drive assembly and motor controllers, including:
 - variable pulse width DC types
 - variable frequency and variable amplitude AC motor types
 - on-board RESS system and batteries, including:
 - lead acid
 - nickel metal hydride
 - lithium ion
 - ultra capacitors and super capacitors
 - key features of associated components and systems, including:
 - BMS
 - PDU
 - DC to DC converter assembly
 - RESS cooling system, including the vehicle HVAC system
 - parallel HEVs and PHEVs
 - series HEVs and PHEVs
 - power split HEVs and PHEVs

- testing procedures for HEV and BEV management systems, including:
 - vehicle dynamic and static testing procedures
 - abnormal noise analysis
 - component failure analysis
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate electrical and electronic faults in HEV, PHEV and BEV management systems
- procedures for accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs), including:
 - conditions that set the DTCs
 - conditions for running DTCs
 - live data
 - freeze frame data
 - waveforms
- procedures for documenting and reporting the analysis and evaluation process
- requirements of AS 5732 Electric vehicle operations: Maintenance and repair relating to HEV, PHEV and BEV management systems.
- requirements of Australian Design Rules (ADRs) relating to HEV, PHEV and BEV management systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the HEV, PHEV and BEV management systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions

- PPE, including electrical safety gloves with 1000 volt rating and Australian standards rated HV insulating mat
- AS 5732 Electric vehicle operations: Maintenance and repair
- manufacturer HEV, PHEV or BEV management system specifications
- one HEV with a network management system fault
- diagnostic equipment for HEV and BEV management systems, including:
 - digital multimeter
 - scan tool
 - oscilloscope
- tools, equipment and materials appropriate for analysing and evaluating electrical and electronic faults in HEV and BEV management systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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AURETR006 Solder electrical wiring and circuits

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to solder electrical components, electrical circuits and system wiring. It involves preparing for the task, preparing components, circuits and wiring for soldering, carrying out soldering, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The electrical wiring and circuits include those in agricultural machinery, heavy commercial vehicles, light vehicles, vessels, mobile plant machinery, motorcycles or outdoor power equipment.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical - Electrical and Electronic

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to solder electrical wiring and circuits	1.1 Job requirements are determined according to workplace instructions 1.2 Technical procedures and information are accessed and interpreted 1.3 Hazards associated with the work are identified and risks are managed 1.4 Tools and equipment are selected and checked for serviceability
2. Prepare components, circuits and wiring for soldering	2.1 Materials and components to be joined are selected and prepared according to workplace procedures and <i>safety and environmental requirements</i> 2.2 Solder and flux type are identified and prepared 2.3 Soldering equipment is cleaned and prepared ready for use
3. Carry out soldering of components, circuits and wiring	3.1 Soldering is carried out according to workplace quality expectations, and without causing damage to vehicle, components, electrical circuits and system wiring 3.2 Soldered connection is inspected visually and checked to ensure effectiveness
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and vehicle, vessel or machinery is presented ready for use 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description

Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	interpret text, symbols and wiring diagrams relating to soldering repair information in manufacturer specifications, and workplace instructions and procedures.
Writing skills to:	legibly and accurately fill out workplace documentation, recording parts and material used.
Numeracy skills to:	- interpret measurements of wire size and gauge relating to electrical wiring and circuits to select correct items - measure components to determine compliance with manufacturer specifications.
Planning and organising skills to:	plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	use specialised workplace technology, including soldering irons and heat guns.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety and environmental requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: - using safety data sheets (SDS) - selecting and using personal protective equipment (PPE) - safely handling materials during solder process - safely operating soldering equipment - identifying and using firefighting and first aid equipment - environmental requirements, including procedures for trapping, storing and disposing of material released during soldering process.

Unit Mapping Information

Equivalent to AURETR2006 Carry out soldering of electrical wiring and circuits

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURETR006 Solder electrical wiring and circuits

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in the unit's elements, performance criteria, range of conditions and foundation skills:

- solder the wiring of six different electrical components, in which the work must involve:
 - different sized gauge wires
 - electrical terminals
 - resin core solder
 - heat shrink sleeving.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to soldering electrical wiring and circuits, including procedures for:
 - using safety data sheets (SDS)
 - selecting and using personal protective equipment (PPE)
 - safely handling materials during solder process
 - safely operating soldering equipment
 - identifying and using firefighting and first aid equipment
- environmental requirements, including procedures for trapping, storing and disposing of material released during soldering process
- location and content of workplace preparation and soldering procedures, SDS and manufacturer specifications
- procedures for preparing to solder electrical wiring and circuits, including:
 - preparing and cleaning components to be soldered, including selecting appropriate cleaning solutions

- methods of holding components to be soldered
- soldering fluxes and their application
- resin core solder types, diameter and application
- types and applications of soldering irons
- procedures for soldering electrical wiring and circuits, including:
 - applying heat and solder to the parts to be joined
 - allowing cooling without movement
- work completion procedures for soldering electrical wiring and circuits, including procedures for final visual inspection of soldered connections, including:
 - manufacturer and workplace specifications for acceptable soldering standard
 - post-soldering insulation, including heat shrink sleeving and application of electrical tape.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the electrical wiring and circuits that they have soldered, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- six different electrical components requiring soldering of their wiring
- tools, equipment and material appropriate for soldering electrical components, circuits and system wiring, including:
 - automotive wiring
 - range of electrical terminals
 - resin core solder
 - heat shrink sleeving
 - soldering iron.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURETR033 Develop and apply network electronic control system modifications

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to develop, apply and validate significant modifications to existing network electronic control systems in order to vary or enhance performance. These systems include two-wire high and low speed (CAN-bus) and single wire low speed (LIN-bus) network circuits. The unit involves identifying the modification requirement, developing the modification specifications, applying and testing the modification, and completing workplace processes and documentation.

Significant and non-routine modifications are those that require compliance with Australian Design Rules and Vehicle Safety Bulletins.

It applies to those working in the automotive service and repair industry. The network electronic control systems include those of agricultural machinery, heavy commercial vehicles, light vehicles, marine vessels, mobile plant machinery, motorcycles or outdoor power equipment.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical - Electrical and Electronic

Elements and Performance Criteria

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the modification requirement	1.1 Job requirements are determined from workplace instructions 1.2 Reasons for the modification are identified and confirmed with appropriate persons 1.3 Modification options are identified and reported to appropriate persons according to workplace procedures 1.4 Hazards associated with the work are identified and risks are managed 1.5 Legal and safety impacts of the modification are considered, as required, according to regulatory requirements
2. Develop and validate the modification specification	2.1 Manufacturer specifications for the existing network electronic control systems are sourced and interpreted 2.2 Criteria for selecting the modification method and evaluating the outcomes are identified and documented 2.3 Proposed modification method is identified, selected and evaluated from available options 2.4 Selected option, including material choices and processes, is developed in detail and progressively assessed against established criteria 2.5 Modification specification is documented according to workplace procedures
3. Apply and test the modification specification	3.1 Tools, test equipment and materials required to support the modification procedure are identified, selected and prepared for use 3.2 Selected modification method is carried out according to workplace procedures and safety requirements 3.3 Post-modification testing is carried out according to workplace procedures to confirm modification outcomes are as intended, and any problems detected as having been introduced during the modification process are rectified 3.4 Test results and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.5 Variations needed during the modification process or as a result of testing are incorporated into the modification specification 3.6 Information and detail relating to the modification are documented and provided to the appropriate parties according to regulatory and commercial obligations

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored, and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	locate and evaluate appropriate sources of information.
Reading skills to:	- interpret the operating and testing procedures for network electronic control system testing equipment from workplace and manufacturer literature - research, organise and interpret technical information from manufacturer and workshop literature when seeking network electronic control system specifications and procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting modification findings and recording parts and material used.
Oral communication skills to:	clarify instructions, gain information from supervisors, and report modification outcomes.
Numeracy skills to:	- measure network electronic control system components and use basic mathematical operations, including addition and subtraction, to calculate tolerances and deviations from manufacturer specifications - interpret precision measuring equipment and test equipment units and scales.

Skills	Description
Planning and organising skills to:	plan own work requirements and prioritise and sequence actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	use specialised diagnostic equipment, including scan tools and oscilloscopes.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: - identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems - using personal protective equipment (PPE) and hand tools.

Unit Mapping Information

Equivalent to AURETR5033 Develop and apply electronic systems modification

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURETR033 Develop and apply network electronic control system modifications

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- develop and apply one of the following significant and non-routine modifications on the network electronic control system of two different vehicles, vessels, machinery or equipment:
 - adapt or modify network electronic control system to a significantly changed capability
 - adapt network electronic control system for different work conditions
 - modify or install a significant network electronic control system for a special purpose.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to developing and applying network electronic control system modifications, including procedures for:
 - identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems
 - using personal protective equipment (PPE) and hand tools
- location and content of manufacturer specifications, workplace procedures and other relevant technical information relating to modifying network electronic control systems
- principles and processes involved in planning and implementing modifications to network electronic control systems
- types, functions, operation and limitations of the main automotive industry network electronic control systems being modified

- types, functions, operation and limitations of diagnostic testing equipment required for network electronic control system modifications, including scan tools and oscilloscopes
- requirements of Australian Design Rules (ADRs) and Vehicle Safety Bulletins (VSBs) relating to network electronic control system modifications
- procedures for documenting and reporting the modification specifications and outcomes.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the network electronic control systems that they have modified, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive service repair workplace or simulated workplace
- workplace instructions
- manufacturer network electronic control system specifications
- ADRs and VSBs relating to network electronic control system modifications
- two different vehicles, vessels, machinery or equipment requiring network electronic control system modification
- diagnostic equipment for network electronic control system modification, including scan tools and oscilloscopes
- tools, equipment and materials appropriate for completing network electronic control system modifications.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURETR034 Develop and apply electrical system modifications

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to develop, apply and validate significant modifications to existing electrical systems in order to vary or enhance performance. These systems are single wire (non CAN-bus) network circuits. The unit involves identifying the modification requirement, developing the modification specifications, applying and testing the modification, and completing workplace processes and documentation.

Significant and non-routine modifications are those that require compliance with Australian Design Rules and Vehicle Safety Bulletins.

It applies to those working in the automotive service and repair industry. The electrical systems include those of agricultural machinery, bicycles, heavy commercial vehicles, light vehicles, marine vessels, mobile plant machinery, motorcycles or outdoor power equipment.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical - Electrical and Electronic

Elements and Performance Criteria

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the modification requirement	1.1 Job requirements are determined from workplace instructions 1.2 Reasons for the modification are identified and confirmed with appropriate persons 1.3 Modification options are identified and reported to appropriate persons according to workplace procedures 1.4 Hazards associated with the work are identified and risks are managed 1.5 Legal and safety impacts of the modification are considered, as required, according to regulatory requirements
2. Develop and validate the modification specification	2.1 Manufacturer specifications for the existing electrical system are sourced and interpreted 2.2 Criteria for selecting the modification method and evaluating the outcomes are identified and documented 2.3 Proposed modification method is identified, selected and evaluated from available options 2.4 Selected option, including material choices and processes, is developed in detail and progressively assessed against established criteria 2.5 Modification specification is documented according to workplace procedures
3. Apply and test the modification specification	3.1 Tools, test equipment and materials required to support the modification procedure are identified, selected and prepared for use 3.2 Selected modification method is carried out according to workplace procedures and safety requirements 3.3 Post-modification testing is carried out according to workplace procedures to confirm modification outcomes are as intended, and any problems detected as having been introduced during the modification process are rectified 3.4 Test results and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.5 Variations needed during the modification process or as a result of testing are incorporated into the modification specification 3.6 Information and detail relating to the modification are documented and provided to the appropriate parties according to regulatory and commercial obligations
4. Complete work	4.1 Final inspection is made to ensure work is to workplace

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
processes	expectations 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored, and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	locate and evaluate appropriate sources of information.
Reading skills to:	- interpret the operating and testing procedures for electrical system testing equipment from workplace and manufacturer literature - research, organise and interpret technical information from manufacturer and workshop literature when seeking electrical system specifications and procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting modification findings and recording parts and material used.
Oral communication skills to:	clarify instructions, gain information from supervisors, and report modification outcomes.
Numeracy skills to:	- measure electrical system components and use basic mathematical operations, including addition and subtraction, to calculate tolerances and deviations from manufacturer specifications - interpret precision measuring equipment and test equipment units and scales.
Planning and organising	plan own work requirements and prioritise and sequence actions to achieve required outcomes and ensure tasks are completed

Skills	Description
skills to:	within workplace timeframes.
Technology skills to:	• use measuring equipment, including micrometers • use specialised diagnostic equipment, including multimeters and scan tools.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: • identifying hazards and controlling risks associated with: • working on vehicle ignition systems with injector high voltages • wearing jewellery while working around high current wiring systems • using personal protective equipment (PPE) and hand tools.

Unit Mapping Information

Equivalent to AURETR5034 Develop and apply electrical systems modification

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURETR034 Develop and apply electrical system modifications

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- develop and apply one of the following significant and non-routine modifications on the electrical system of two different vehicles, vessels, machinery or equipment:
 - adapt or modify electrical system to a significantly changed capability
 - adapt electrical system for different work conditions
 - modify or install a significant electrical system for a special purpose.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to developing and applying electrical system modifications, including procedures for:
 - identifying hazards and controlling risks associated with:
 - working on vehicle ignition systems with injector high voltages
 - wearing jewellery while working around high current wiring systems
 - using personal protective equipment (PPE) and hand tools
- location and content of manufacturer specifications, workplace procedures and other relevant technical information relating to modifying electrical systems
- principles and processes involved in planning and implementing modifications to electrical systems
- types, functions, operation and limitations of the electrical systems being modified
- types, functions, operation and limitations of diagnostic testing equipment required for electrical system modifications, including scan tools and oscilloscopes

- requirements of Australian Design Rules (ADRs) and Vehicle Safety Bulletins (VSBs) relating to electrical system modifications
- procedures for documenting and reporting the modification specifications and outcomes.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the electrical systems that they have modified, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive service repair workplace or simulated workplace
- workplace instructions
- manufacturer electrical system specifications
- ADRs and VSBs relating to electrical system modifications
- two different vehicles, vessels, machinery or equipment requiring electrical system modification
- diagnostic equipment for electrical system modifications, including digital multimeters and scan tools
- tools, equipment and materials appropriate for completing electrical system modifications.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURETX001 Analyse and evaluate electrical and electronic faults in driveline management systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate electrical and electronic faults in the embedded network driveline management systems of vehicles or machinery in order to initiate action to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions.

It applies to those working in the automotive service and repair industry on embedded network driveline management systems of vehicles or machinery.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical - Transmission

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of the analysis and evaluation is determined from workplace instructions 1.2 Specifications for driveline management system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified and risks are managed according to workplace procedures and safety requirements
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 Analytical and evaluative methodology is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected and prepared for use 2.5 Driveline management system and components are prepared for the diagnostic process
3. Carry out failure analysis	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, regulatory requirements, Australian Design Rules, and financial implications 4.3 Report is prepared specifying analysis and evaluation process,

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored, and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to driveline management systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings • document and complete reports.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calibrate testing equipment and present analytical results.
Planning and organising skills to:	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	• use specialised driveline management system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: • identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems • working with high pressure fluid.
<i>Analytical and evaluative methodology</i> must include:	• diagnostic process, sequence, tests and testing equipment.

Unit Mapping Information

Equivalent to AURETX5001 Analyse and evaluate electrical and electronic faults in transmission and driveline systems

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURETX001 Analyse and evaluate electrical and electronic faults in driveline management systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate an electrical or electronic fault in the driveline management systems of two different vehicles or machinery
- the above faults must involve the following systems:
 - transmission
 - driveline.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to analysing and evaluating faults in driveline management systems, including procedures for:
 - identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems
 - working with high pressure fluid
- principles and processes involved in planning and implementing analysis and evaluation of electrical and electronic faults in driveline management systems
- design and planning of diagnostic procedures for faults in driveline management systems, including procedures for diagnosing:
 - electrical faults
 - electronic faults
- types, functions, operation and limitations of driveline management systems, including:
 - driveline management systems, including:

- clutches
- torque converters
- manual transmissions
- automatic transmissions
- drive and power take-off shafts
- differentials
- drivelines
- gateway network control module:
 - bus network topography
 - associated network electronic vehicle or machinery systems
 - sensor and actuator control and monitoring systems
 - control signal circuits
- testing procedures for driveline management systems, including the use of:
 - digital multimeter
 - scan tool
 - oscilloscope
 - four-wheel dynamometer
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate electrical and electronic faults in driveline management systems
- procedures for accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs), including:
 - conditions that set the DTCs
 - conditions for running DTCs
 - live data
 - freeze frame data
 - waveforms
- procedures for documenting and reporting the analysis and evaluation process
- requirements of Australian Design Rules (ADRs) relating to driveline management systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the driveline management systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer driveline management system specifications
- two different vehicles or machinery with driveline management system faults
- diagnostic equipment for driveline management systems
- tools, equipment and materials appropriate for analysing and evaluating driveline management systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURHTB001 Diagnose and repair heavy vehicle air braking systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to diagnose and repair faults in the air braking systems of heavy vehicles. It involves preparing for the task, selecting the correct diagnostic procedure, carrying out the diagnosis and the repair, performing post-repair testing, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The air braking systems include those in agricultural machinery, heavy commercial vehicles or mobile plant machinery.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical - Heavy Vehicle

Unit Sector

Technical - Brakes

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to diagnose and repair air braking system	1.1 Job requirements are determined from workplace instructions 1.2 Diagnostic information is sourced and interpreted 1.3 Diagnostic options are analysed and those most appropriate to the circumstances are selected 1.4 Hazards associated with the work are identified and risks are managed 1.5 Diagnostic tools and equipment are selected and checked for serviceability
2. Diagnose air braking system	2.1 <i>Diagnostic tests</i> are carried out according to manufacturer specifications, workplace procedures, and <i>safety and environmental requirements</i> 2.2 Faults are identified from diagnostic test results and causes of faults are determined 2.3 Diagnosis findings, including recommendations for necessary repairs or adjustments, are reported according to workplace procedures
3. Repair air braking system	3.1 <i>Repair information</i> is sourced and interpreted 3.2 Repair options are analysed and those most appropriate to the circumstances are selected 3.3 Repair tools, equipment and materials are selected and checked 3.4 Repairs and component replacements and adjustments are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements, and without causing damage to components or systems 3.5 <i>Post-repair testing</i> is carried out according to workplace procedures to confirm fault rectification, and any further problems detected as having been introduced during the repair process are rectified
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and vehicle is presented ready for use 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking braking system specifications and procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting diagnostic findings, making repair recommendations, and recording parts and material used.
Oral communication skills to:	- clarify instructions - report diagnostic findings and make repair recommendations.
Numeracy skills to:	measure braking system components and use basic mathematical operations, including addition and subtraction, to calculate distances, tolerances and deviations from manufacturer specifications.
Planning and organising skills to:	plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	use braking system diagnostic equipment and measuring equipment, such as vernier calipers, micrometers and brake drum micrometers.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Diagnostic tests</i> must include:	- friction material wear - drum brake component serviceability - disc brake component serviceability - air pressure testing.

<i>Safety and environmental requirements</i> must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: • working safely with stored energy in springs and high air pressure systems • managing and controlling brake dust and brake fluids • removing and refitting wheel assemblies • environmental requirements, including procedures for trapping, storing and disposing of hazardous materials and substances released from braking systems, including brake dust and fibres.
<i>Repair information</i> must include procedures relating to:	• removing, replacing and adjusting system components • dismantling, repairing, reassembling and adjusting systems.
<i>Post-repair testing</i> must include:	• stall testing of service, park, emergency and secondary brakes • dynamic brake performance testing using approved methods or equipment.

Unit Mapping Information

Equivalent to AURHTB3001 Repair air braking systems

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURHTB001 Diagnose and repair heavy vehicle air braking systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- diagnose and repair a fault in three heavy vehicle air braking systems as follows:
 - one disc braking system, in which the work must involve removing and refitting or replacing the brake actuators, disc pads and disc rotors
 - one drum braking system, in which the work must involve removing and refitting or replacing the brake actuators, brake shoes and drums
 - one air braking system, in which the work must involve removing and refitting or replacing the following:
 - air compressor, delivery and storage components
 - slack adjusters
 - pneumatic and electronic control circuits and valves.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to diagnosing and repairing air braking systems, including procedures for:
 - working safely with stored energy in springs and high air pressure systems
 - managing and controlling brake dust and brake fluids
 - removing and refitting wheel assemblies
- environmental requirements, including procedures for trapping, storing and disposing of hazardous materials and substances released from braking systems, including brake dust and fibres
- Australian Design Rules ADR35 and ADR38 relating to repairing heavy vehicle brakes

- operating principles of air braking systems and associated components, including:
 - levers
 - friction
 - pneumatics
 - electronics
- application, purpose and operation of heavy vehicle air braking systems and components, including:
 - disc braking systems
 - drum braking systems
 - air compressors, air storage, air dryers and valves
 - brake actuators
 - foot valves
 - air control valves
 - manual and automatic slack adjusters
 - trailer brake valves
 - pneumatic and electronic control circuits and valves
- diagnostic testing procedures for air braking systems, including:
 - air control system testing
 - air brake component inspection and evaluation
 - brake system stationary and mobile performance tests
- repair procedures for air braking system components, including:
 - wheel end components, including:
 - disc braking systems
 - drum braking systems
 - air compressors, air storage, air dryers and valves
 - brake actuators
 - foot valves
 - manual and automatic slack adjusters
 - trailer brake valves
 - pneumatic and electronic control circuits and valves
- post-repair testing procedures for air braking systems, including stationary and mobile performance tests.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the heavy vehicle air braking systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer braking system specifications
- two different heavy vehicles with faults in the air braking systems specified in the performance evidence
- diagnostic equipment for heavy vehicle air braking systems
- Australian Design Rules ADR35 and ADR38
- tools, equipment and materials appropriate for repairing and adjusting heavy vehicle air braking systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURHTD003 Diagnose and repair heavy commercial vehicle suspension systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to diagnose and repair faults in the suspension systems of heavy commercial vehicles. It involves preparing for the task, selecting the correct diagnostic procedure, carrying out the diagnosis and the repair, performing post-repair testing, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The suspension systems include those in heavy commercial vehicles. This unit does not apply to agricultural machinery or mobile plant machinery.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical - Heavy Vehicle

Unit Sector

Technical - Steering and Suspension

Elements and Performance Criteria

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to diagnose and repair heavy vehicle suspension system	1.1 Job requirements are determined from workplace instructions 1.2 Diagnostic information is sourced and interpreted 1.3 Diagnostic options are analysed and those most appropriate to the circumstances are selected 1.4 Hazards associated with the work are identified and risks are managed 1.5 Diagnostic tools and equipment are selected and checked for serviceability
2. Diagnose suspension system	2.1 Diagnostic tests are carried out according to manufacturer specifications, workplace procedures and safety requirements 2.2 Faults are identified from diagnostic test results and causes of faults are determined 2.3 Diagnosis findings, including recommendations for necessary repairs or adjustments, are reported according to workplace procedures
3. Repair suspension system	3.1 Repair information is sourced and interpreted 3.2 Repair options are analysed and those most appropriate to the circumstances are selected 3.3 Repair tools, equipment and materials are selected and checked according to manufacturer procedures 3.4 Repairs and component replacements and adjustments are carried out according to manufacturer specifications, workplace procedures and safety requirements, and without causing damage to components or systems 3.5 Post-repair testing is carried out according to workplace procedures to confirm fault rectification, and any further problems detected as having been introduced during the repair process are rectified
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and vehicle is presented ready for use 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking suspension system specifications and procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting diagnostic findings, making repair recommendations, and recording parts and material used.
Oral communication skills to:	- clarify instructions - report diagnostic findings and make repair recommendations.
Numeracy skills to:	measure suspension system components and use basic mathematical operations, including addition and subtraction, to calculate distances, tolerances and deviations from manufacturer specifications.
Planning and organising skills to:	plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	use measuring equipment, such as tape measures, rulers and vernier calipers.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: - working with stored energy in springs, air springs, accumulators and torsion bars - lifting, supporting and manual handling heavy vehicle suspension systems.

Unit Mapping Information

Equivalent to AURHTD3003 Repair suspension systems (heavy vehicle)

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURHTD003 Diagnose and repair heavy commercial vehicle suspension systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- diagnose and repair a fault in:
 - the following two heavy commercial vehicle suspension systems:
 - leaf spring suspension
 - air spring suspension
 - one of the following heavy commercial vehicle suspension systems:
 - equaliser beam suspension
 - torsion bar suspension
 - electronically controlled suspension.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to diagnosing and repairing heavy vehicle suspension systems, including procedures for:
 - working with stored energy in springs, air springs, accumulators and torsion bars
 - lifting, supporting and manual handling heavy vehicle suspension systems
- operating principles of heavy vehicle suspensions and associated components, including:
 - rigid and independent suspensions
 - sprung and unsprung mass
 - ride and curb height
 - spring dampers

- spring types
- application, purpose and operation of heavy vehicle suspension systems and components, including:
 - air spring suspension
 - leaf spring suspension, including:
 - front suspension
 - rear suspension, including single and tandem axle
 - equaliser beam suspension
 - torsion bar suspension
 - electronically controlled suspension
- diagnostic testing procedures for heavy vehicle suspension systems, including:
 - component wear analysis
 - checking axle alignment
 - checking fluid leaks
 - checking air leaks
 - checking ride and curb height
 - control system tests
- repair procedures for heavy vehicle suspension systems, including procedures for:
 - removing, repairing and replacing suspension components, and springs and spring dampers
 - aligning axles
- post-repair testing procedures for heavy vehicle suspension systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the heavy vehicle suspension systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer suspension system specifications
- heavy commercial vehicles with faults in the different suspension systems listed in the performance evidence
- diagnostic equipment for heavy commercial vehicle suspension systems
- tools, equipment and materials appropriate for repairing and adjusting heavy commercial vehicle suspension systems.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURLTB002 Analyse and evaluate faults in light vehicle braking systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate faults in light vehicle braking systems in order to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions.

It applies to those working in the automotive service and repair industry. The braking systems include those of light vehicles, light commercial vehicles or outdoor power equipment.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical - Light Vehicle

Unit Sector

Technical - Brakes

Elements and Performance Criteria

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of the analysis and evaluation is determined from workplace instructions 1.2 Specifications for light vehicle braking system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified and risks are managed according to workplace procedures, and safety and environmental requirements
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 Analytical and evaluative methodology is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected and prepared for use 2.5 Braking system and components are prepared for the diagnostic process
3. Carry out analysis and evaluation	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, regulatory requirements, Australian Design Rules, and financial implications 4.3 Report is prepared specifying analysis and evaluation process,

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to light vehicle braking systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings • document and complete reports.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate testing equipment and present analytical results.
Planning and organising skills to:	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	• use specialised light vehicle braking system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety and environmental requirements</i> must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for working with brake friction materials • environmental requirements, including procedures for managing and controlling brake dust and brake fluid released from braking systems.
<i>Analytical and evaluative methodology</i> must include:	• diagnostic process, sequence, tests and testing equipment.

Unit Mapping Information

Equivalent to AURLTB5002 Analyse and evaluate light vehicle braking system faults

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURLTB002 Analyse and evaluate faults in light vehicle braking systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate a fault in the:
 - hydraulic braking system of a light vehicle
 - mechanical braking system of a different light vehicle
 - electronic braking system of a third light vehicle.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to analysing and evaluating faults in light vehicle braking systems, including procedures for working with brake friction materials
- environmental requirements, including procedures for managing and controlling brake dust and brake fluid released from braking systems
- principles and processes involved in planning and implementing analysis and evaluation of light vehicle braking system faults
- design and planning of diagnostic procedures of light vehicle braking system faults, including procedures for diagnosing:
 - hydraulic faults
 - mechanical faults
 - electrical faults
- procedures for analysing and evaluating light vehicle braking system faults, including:
 - system failure analysis
 - component failure analysis

- types, functions, operation and limitations of the following systems, including:
 - disc and drum assemblies
 - parking brake
 - hydraulic components, including:
 - master cylinder
 - braking system valves and switches
 - electronic systems, including:
 - anti-lock braking systems (ABS)
 - electronic braking systems (EBS)
- testing procedures for light vehicle braking systems, including:
 - disc and drum assemblies
 - parking brakes
 - hydraulic components
 - electronic components
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate faults in light vehicle braking systems
- procedures for documenting and reporting the analysis and evaluation process
- requirements of Australian Design Rules (ADRs) relating to light vehicle braking systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the light vehicle braking systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer light vehicle braking system specifications

- three different light vehicles with faults in the braking systems specified in the performance evidence
- diagnostic equipment for light vehicle braking systems
- tools, equipment and materials appropriate for analysing and evaluating light vehicle braking systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURLTD007 Analyse and evaluate faults in light vehicle steering and suspension systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate faults in light vehicle steering and suspension systems in order to initiate action to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions.

It applies to those working in the automotive service and repair industry. The steering and suspension systems include those of light vehicles, light commercial vehicles or outdoor power equipment.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical - Light Vehicle

Unit Sector

Technical - Steering and Suspension

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of the analysis and evaluation is determined from workplace instructions 1.2 Specifications for light vehicle steering or suspension system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified and risks are managed according to workplace procedures, and safety and environmental requirements
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 Analytical and evaluative methodology is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected and prepared for use 2.5 Steering or suspension system and components are prepared for the diagnostic process
3. Carry out failure analysis	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, regulatory requirements, Australian Design Rules, and financial implications 4.3 Report is prepared specifying analysis and evaluation process,

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to light vehicle steering and suspension systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings • document and complete reports.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate testing equipment and present analytical results.
Planning and organising skills to:	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	• use specialised light vehicle steering and suspension system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety and environmental requirements</i> must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for working with: • stored energy in springs, air springs and torsion bars • high pressure and high temperature steering system fluids • environmental requirements, including procedures for trapping, storing and disposing of fluids released from steering and suspension systems.
<i>Analytical and evaluative methodology</i> must include:	• diagnostic process, sequence, tests and testing equipment.

Unit Mapping Information

Equivalent to AURLTD5007 Analyse and evaluate light vehicle steering and suspension system faults

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURLTD007 Analyse and evaluate faults in light vehicle steering and suspension systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate a fault in the:
 - steering system of a light vehicle
 - suspension system of a different light vehicle
 - steering system or suspension system of a third light vehicle.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to analysing and evaluating faults in light vehicle steering and suspension systems, including procedures for working with:
 - stored energy in springs, air springs and torsion bars
 - high pressure and high temperature steering system fluids
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from steering and suspension systems
- principles and processes involved in planning and implementing analysis and evaluation of light vehicle steering and suspension system faults
- design and planning of diagnostic procedures of light vehicle steering and suspension system faults, including procedures for diagnosing:
 - hydraulic faults
 - mechanical faults
 - electrical faults

- procedures for analysing and evaluating light vehicle steering and suspension system faults, including:
 - system failure analysis
 - component failure analysis
- types, functions, operation and limitations of the following systems, including:
 - steering system and components:
 - manual steering
 - steering system theory, including steering angles
 - hydraulic power assisted steering
 - electric power assisted steering
 - electrohydraulic assisted steering
 - front suspension system and components, including short and long arm and MacPherson strut
 - rear suspension and components, including rigid axle and independent suspension
- testing procedures for light vehicle steering and suspension systems, including:
 - power steering
 - manual steering
 - electrical controllers
 - hydraulic pressures
 - mechanical components
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate faults in light vehicle steering and suspension systems
- procedures for documenting and reporting the system analysis and evaluation process
- requirements of Australian Design Rules (ADRs) relating to light vehicle steering and suspension systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the light vehicle steering and suspension systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer light vehicle steering and suspension system specifications
- three different light vehicles with steering and suspension system faults
- diagnostic equipment for light vehicle steering and suspension systems
- tools, equipment and materials appropriate for analysing and evaluating light vehicle steering and suspension systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURLTE003 Analyse and evaluate faults in light vehicle engine and fuel systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate faults in light vehicle engine and fuel systems in order to initiate action to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions.

It applies to those working in the automotive service and repair industry. The engine and fuel systems may be petrol or diesel and include those of light vehicles or light commercial vehicles.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical - Light Vehicle

Unit Sector

Technical - Engines

Elements and Performance Criteria

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of analysis and evaluation is determined from workplace instructions 1.2 Specifications for light vehicle engine or fuel system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified and risks are managed according to workplace procedures, and <i>safety and environmental requirements</i>
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 <i>Analytical and evaluative methodology</i> is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected and prepared for use 2.5 Engine or fuel system and components are prepared for the diagnostic process
3. Carry out failure analysis	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, regulatory requirements, Australian Design Rules, and financial implications 4.3 Report is prepared specifying analysis and evaluation process, and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to light vehicle engine and fuel systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings • document and complete reports.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate testing equipment and present analytical results.
Planning and organising	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within

Skills	Description
skills to:	workplace timeframes.
Technology skills to:	use specialised light vehicle engine and fuel system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety and environmental requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for working with: - hot engine components and rotating engine components - hazardous substances, including: - diesel fuel - petrol fuel - engine oil and coolants - environmental requirements, including procedures for trapping, storing and disposing of fluids released from engine and fuel systems.
<i>Analytical and evaluative methodology</i> must include:	diagnostic process, sequence, tests and testing equipment.

Unit Mapping Information

Equivalent to AURLTE5003 Analyse and evaluate light vehicle engine and fuel system faults

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURLTE003 Analyse and evaluate faults in light vehicle engine and fuel systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate a fault in the:
 - engine system of a light vehicle
 - fuel system of a different light vehicle
 - engine or fuel system of a third light vehicle.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to analysing and evaluating faults in light vehicle engine and fuel systems, including procedures for working with:
 - hot engine components and rotating engine components
 - hazardous substances, including:
 - diesel fuel
 - petrol fuel
 - engine oil and coolants
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from engine and fuel systems
- principles and processes involved in planning and implementing analysis and evaluation of light vehicle engine and fuel system faults
- design and planning of diagnostic procedures of light vehicle engine and fuel system faults, including procedures for diagnosing:
 - hydraulic faults

- mechanical faults
- electrical faults
- procedures for analysing and evaluating light vehicle engine and fuel system faults, including:
 - system failure analysis
 - component failure analysis
- types, functions, operation and limitations of the following engine and fuel systems:
 - petrol engines
 - diesel engines
 - petrol fuel systems
 - diesel fuel systems
- testing procedures for light vehicle engine and fuel systems, including:
 - engine performance under load
 - fuel flow and pressure
 - cooling system performance under load
 - oil pressure
 - exhaust flow
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate faults in light vehicle engine and fuel systems
- procedures for documenting and reporting the analysis and evaluation process
- requirements of Australian Design Rules (ADRs) relating to light vehicle engine and fuel systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the light vehicle engine and fuel systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer light vehicle engine and fuel system specifications
- three different light vehicles with engine and fuel system faults
- diagnostic equipment for light vehicle engine and fuel systems
- tools, equipment and materials appropriate for analysing and evaluating light vehicle engine and fuel systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURLTQ003 Analyse and evaluate faults in light vehicle transmission and driveline systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and evaluate faults in light vehicle transmission and driveline systems in order to initiate action to sustain, vary or enhance performance. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions.

It applies to those working in the automotive service and repair industry. The transmission and driveline systems include those of light vehicles, light commercial vehicles or outdoor power equipment.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical - Light Vehicle

Unit Sector

Technical - Driveline and Final Drives

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Objective of the analysis and evaluation is determined from workplace instructions 1.2 Specifications for light vehicle transmission or driveline system are sourced and interpreted 1.3 System faults, deficiencies or discrepancies are identified and confirmed 1.4 Hazards associated with the work are identified and risks are managed according to workplace procedures, and safety and environmental requirements
2. Prepare for analysis and evaluation	2.1 Evaluation criteria are developed or adopted to meet the objective of the analysis and evaluation 2.2 Analytical and evaluative methodology is developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer specifications and workplace procedures 2.4 Tools and materials required to support the diagnostic procedure are identified, selected and prepared for use 2.5 Transmission or driveline system and components are prepared for the diagnostic process
3. Carry out failure analysis	3.1 Selected analytical and evaluative methodology is followed according to manufacturer specifications and workplace procedures 3.2 Tests are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluation criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements
4. Make recommendations	4.1 Options for responding to the objective are determined from further research of technical support information 4.2 Rectification method is selected from an analysis of the options, operating conditions, regulatory requirements, Australian Design Rules, and financial implications 4.3 Report is prepared specifying analysis and evaluation process,

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	and detailing and justifying rectification method or variation to the rectification method
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored according to workplace procedures 5.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• apply learning and processes to different situations.
Reading skills to:	• research, organise and interpret technical information relating to light vehicle transmission and driveline systems.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting failure analysis findings.
Numeracy skills to:	• use mathematical ideas and techniques to complete measurements, calculate analytical requirements, calibrate testing equipment and present analytical results.
Planning and organising skills to:	• plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	• use specialised light vehicle transmission and driveline system diagnostic equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety and environmental requirements</i> must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: • lifting, supporting and manually handling light vehicle transmission and driveline systems • working with rotating shafts • environmental requirements, including procedures for trapping, storing and disposing of fluids released from transmission and driveline systems.
<i>Analytical and evaluative methodology</i> must include:	• diagnostic process, sequence, tests and testing equipment.

Unit Mapping Information

Equivalent to AURLTQ5003 Analyse and evaluate light vehicle driveline system faults

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURLTQ003 Analyse and evaluate faults in light vehicle transmission and driveline systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate a fault in the:
 - transmission system of a light vehicle
 - driveline system of a different light vehicle
 - transmission or driveline system of a third light vehicle.

Knowledge Evidence

- Individuals must be able to demonstrate knowledge of:
- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to analysing and evaluating faults in light vehicle transmission and driveline systems, including procedures for:
 - lifting, supporting and manually handling light vehicle transmission and driveline systems
 - working with rotating shafts
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from transmission and driveline systems
- principles and processes involved in planning and implementing analysis and evaluation of light vehicle transmission and final drive system faults
- design and planning of diagnostic procedures of light vehicle transmission and driveline system faults, including procedures for diagnosing:
 - hydraulic faults
 - mechanical faults
 - electrical faults

- procedures for analysing and evaluating light vehicle transmission and driveline system faults, including:
 - system failure analysis
 - component failure analysis
- types, functions, operation and limitations of light vehicle transmission and driveline systems and components, including:
 - clutches
 - manual transmissions
 - automatic transmissions
 - torque converters
 - drive shafts
 - final drives
- types, functions, operation and limitations of four-wheel drive system components, including:
 - transfer cases
 - differentials
 - free wheel hubs
- testing procedures for light vehicle transmission and driveline systems, including:
 - transmission shift quality
 - drive shaft run-out
 - driveline operating angles
 - clutch performance under load
 - transmission fluid quality
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate faults in light vehicle transmission and driveline systems
- procedures for documenting and reporting the analysis and evaluation process
- requirements of Australian Design Rules (ADRs) relating to light vehicle transmission and driveline systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the light vehicle transmission and driveline systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer light vehicle transmission and driveline system specifications
- three different light vehicles with transmission and driveline system faults
- diagnostic equipment for light vehicle transmission and driveline systems
- tools, equipment and materials appropriate for analysing and evaluating light vehicle transmission and driveline systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURMTE001 Test engines using a dynamometer

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to test engines using a dynamometer. The engines being tested may be in a vehicle or stand alone. It involves preparing for the task, selecting the correct test procedure, carrying out testing, analysing test results, and completing workplace processes and documentation. It involves setting up and conducting dynamometer tests on engines, and logging, analysing and reporting the test data in order to maximise engine performance.

It applies to those working in the motor sport industry.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Motor Sport

Unit Sector

Technical - Engines

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare for dynamometer operation	1.1 Job requirements are determined from test information 1.2 Dynamometer is checked for calibration and serviceability according to manufacturer and workplace procedures 1.3 Tools, equipment and materials are selected and checked for serviceability 1.4 Hazards associated with the work are identified and risks are managed according to safety and environmental requirements 1.5 Engine or vehicle is checked prior to testing according to manufacturer and workplace procedures 1.6 Engine or vehicle connections to dynamometer are checked and secured according to manufacturer, workplace and safety procedures
2. Conduct dynamometer testing	2.1 Appropriate load and run sequence and test parameters are determined, including run-in period for new engines 2.2 Selected dynamometer testing sequence is carried out according to manufacturer and team procedures and safety requirements, and data is documented 2.3 Correction factors are calculated and applied to data
3. Analyse test results	3.1 Dynamometer test data is analysed and conclusions are drawn about condition and performance of engine and associated systems according to manufacturer specifications and workplace procedures 3.2 Findings are reported based on dynamometer data, including recommendations for engine configuration and/or modifications to improve performance, according to workplace procedures 3.3 Recommended engine modifications are tested on dynamometer according to manufacturer and workplace procedures and safety requirements, and data is documented 3.4 Data is presented to team members according to workplace procedures
4. Complete work processes	4.1 Dynamometer shutdown procedure is carried out according to manufacturer and workplace procedures and safety requirements 4.2 Engine is disconnected from dynamometer according to manufacturer and workplace procedures 4.3 Dynamometer and associated equipment are checked and maintained according to workplace procedures 4.4 Tools and equipment are checked and stored according to workplace procedures

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	4.5 Workplace documentation, including dynamometer test results, are processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	apply learning and processes to different situations.
Reading skills to:	research, organise and interpret technical information relating to engine dynamometer testing.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting failure analysis findings.
Numeracy skills to:	use basic mathematical operations to complete measurements, calculate analytical requirements, calibrate testing equipment, and present test results.
Planning and organising skills to:	plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Digital Literacy skills to:	use dedicated engine dynamometer software.
Technology skills to:	use specialised engine dynamometer equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Test information</i> must	workplace instructions

include:	category regulations and component supplier specifications, including allowable quality, materials, equipment and specifications.
<i>Safety and environmental requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: - connecting and securing engines to dynamometers - dealing with exhaust gases from engines - dealing with high levels of noise - environmental requirements, including procedures for trapping, storing and disposing of fluids released during engine testing.
<i>Checking of engine or vehicle</i> must include:	- engine oil level and condition - cooling system condition and coolant level - exhaust extraction system connection - drive shaft condition and connection.

Unit Mapping Information

Equivalent to AURMTE4001 Test engines using a dynamometer

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURMTE001 Test engines using a dynamometer

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- carry out dynamometer testing on two different engines.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to testing engines using a dynamometer, including procedures for:
 - connecting and securing engines to dynamometers
 - dealing with exhaust gases from engines
 - dealing with high levels of noise
- environmental requirements, including procedures for trapping, storing and disposing of fluids released during engine testing
- application, purpose and operation of engine dynamometers, including associated hardware and software
- engine and chassis dynamometer testing procedures, including:
 - dynamometer preparation procedures
 - engine connection and securing procedures
 - vehicle connection and securing procedures
 - test environment correction factors
 - dynamometer data interpretation and analysis
- operator dynamometer maintenance procedures
- engine performance and dynamometer terminology.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the engines that they have tested using a dynamometer, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- two different engines requiring testing using a dynamometer
- engine or chassis dynamometer
- tools and equipment appropriate for connecting, securing and disconnecting engines to dynamometers.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURTTA021 Diagnose complex system faults

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to diagnose faults in complex vehicle, vessels or machinery systems to determine the repair action necessary to restore system performance. It involves confirming the existence of a complex system fault, choosing the required diagnostic procedure and tools, applying the diagnostic procedure, reporting conclusions, and making repair recommendations.

A complex system integrates two or more automotive systems, or incorporates three or more mechanical, hydraulic, pneumatic, electrical or electronic sub-systems. Examples include electronically controlled automatic transmissions, anti-lock braking systems, and engine management systems integrating ignition, fuel and transmission control systems.

It applies to those working in the automotive service and repair industry.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical Miscellaneous

Unit Sector

Technical

Elements and Performance Criteria

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm work requirement regarding complex system fault	1.1 Nature and objective of diagnosis requirements are determined from workplace instructions 1.2 Existence of fault is confirmed from direct or indirect evidence 1.3 Information, including customer complaint, is sourced to provide a full overview of all faults and conditions under which they occur
2. Analyse information	2.1 Function and operation of the system when operating correctly are identified 2.2 Information is analysed and affected systems are identified 2.3 Manufacturer specifications and other technical information are accessed and interpreted 2.4 Tests are identified and selected from range of available options, and testing sequence is established 2.5 Testing equipment is obtained and prepared according to manufacturer specifications and workplace procedures 2.6 Tools, equipment and materials required to support the diagnostic process are identified, selected and prepared for use 2.7 Hazards associated with the work are identified and risks are managed according to workplace procedures and safety requirements
3. Perform diagnosis	3.1 Tests are applied systematically and efficiently to gather precise data on system operation according to manufacturer specifications, workplace procedures, and safety and environmental requirements 3.2 Test results are compared with manufacturer specifications and conclusions are drawn and documented according to workplace procedures, including recommendations for necessary repairs 3.3 Diagnostic findings are verified, as required, by using reliable alternative or optional process according to manufacturer specifications and workplace procedures 3.4 Conclusions are provided to appropriate personnel or customer to confirm further action to be taken
4. Complete work processes	4.1 Vehicle or machinery is presented ready to be repaired or returned to the customer 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored according to

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	research, organise and interpret technical information from manufacturer and workshop literature when seeking specifications and procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting diagnostic findings and making repair recommendations.
Oral communication skills to:	clarify instructions, gain information from customers and supervisor, report diagnostic findings, and make repair recommendations.
Numeracy skills to:	measure components and use basic mathematical operations, including addition and subtraction, to calculate tolerances and deviations from manufacturer specifications.
Planning and organising skills to:	plan own work requirements and prioritise and sequence actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	- use precision measuring equipment, such as micrometers and vernier calipers - use specialised integrated system diagnostic equipment, such as scan tools.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements for working safely with the vehicle systems being tested, including procedures for: • selecting and using personal protective equipment (PPE) • using tools and equipment.

Unit Mapping Information

Equivalent to AURTTA4021 Carry out diagnosis of complex system faults

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURTTA021 Diagnose complex system faults

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- diagnose complex system faults on three different vehicles, machinery or vessels
- the above diagnosis must involve two of the following types of complex faults:
 - one fault that is in a complex system that integrates two or more automotive systems
 - one fault that incorporates three or more mechanical, hydraulic, pneumatic, electrical or electronic sub-systems.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to diagnosing complex system faults in vehicles, vessels or machinery, including working safely with the systems being tested, including procedures for:
 - selecting and using personal protective equipment (PPE)
 - using tools and equipment
- types, application and operation of complex systems, including:
 - systems that integrates two or more automotive systems
 - systems that incorporate three or more mechanical, hydraulic, pneumatic, electrical or electronic sub-systems
- diagnostic procedures for complex systems, including stages within the diagnostic procedure
- methods of gathering information on complex system faults, including customer questioning techniques
- types and applications of diagnostic flow charts

- types, applications, limitations and operation of diagnostic tools, including:
 - multimeters
 - scan tools, including:
 - diagnosis trouble codes (DTC) and the conditions that caused the code to be set
 - live data
 - snap shots
 - oscilloscopes
 - mechanical, hydraulic and pneumatic test equipment
- methods of differentiating between fault symptoms and fault cause.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicle or machinery complex system faults that they have diagnosed, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer system specifications
- three different vehicles, vessels or machinery that have the complex system faults specified in the performance evidence
- tools, equipment and materials appropriate for diagnosing complex system faults in vehicles, vessels or machinery.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURTTB004 Inspect and service air braking systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to inspect and service air braking systems according to manufacturer specifications. It involves preparing for the task, inspecting the system, reporting the inspection findings, servicing and adjusting the system, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The air braking systems include those of agricultural machinery, heavy commercial vehicles or mobile plant machinery.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical Miscellaneous

Unit Sector

Technical - Brakes

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to inspect and service air braking system	1.1 Job requirements are determined from workplace instructions 1.2 Servicing information is sourced and interpreted 1.3 Hazards associated with the work are identified and risks are managed 1.4 Tools, equipment and materials are selected and checked for serviceability
2. Inspect air braking system	2.1 Inspection is carried out according to manufacturer specifications, workplace procedures, and <i>safety and environmental requirements</i> 2.2 Inspection results are compared with manufacturer specifications 2.3 Inspection findings are reported according to workplace procedures, including recommendations for necessary repairs or adjustments
3. Service air braking system	3.1 Service and adjustments are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements, and without causing damage to <i>components</i> or systems 3.2 <i>Post-service testing</i> is carried out according to workplace procedures
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and vehicle is presented ready for use 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description

Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking inspection and service procedures and specifications relating to air braking systems.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting inspection findings, making recommendations, and recording parts and material used.
Oral communication skills to:	- clarify instructions - report inspection findings and make repair recommendations.
Numeracy skills to:	- measure brake components and use basic mathematical operations, including addition and subtraction, to calculate distances, tolerances and deviations from manufacturer specifications - interpret measuring equipment scales.
Technology skills to:	use precision measuring equipment, such as vernier calipers.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety and environmental requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: - managing and controlling brake dust - working with stored energy - environmental requirements, including procedures for trapping, storing and disposing of brake dust released from air braking systems.
<i>Components</i> must include:	- air compressor, filters, air drier, receivers and tanks - drive belts - spring brake chambers, hoses and adjusters - discs, pads, drums and linings - brake valves - brake lights

	• trailer brake valves.
<i>Post-service testing</i> must include:	• static and dynamic testing of braking system.

Unit Mapping Information

Equivalent to AURTTB2004 Inspect and service air braking systems

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURTTB004 Inspect and service air braking systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- inspect and service the air braking systems of two different vehicles or machinery, including:
 - one air disc braking system
 - one air drum braking system.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to inspecting and servicing air braking systems, including procedures for:
 - managing and controlling brake dust
 - working with stored energy
- environmental requirements, including procedures for trapping, storing and disposing of brake dust released from air braking systems
- identification and function of major air braking components, including:
 - air compressor, filters, air drier, receivers and tanks
 - drive belts
 - spring brake chambers, hoses and adjusters
 - discs, pads, drums and linings
 - brake valves
 - brake lights
 - trailer brake valves
- basic operation of air braking systems, including:

- mechanical
- pneumatic
- inspection procedures for air braking systems, including:
 - component wear analysis
 - air system assessment
- service and adjustment procedures for air braking systems, including:
 - brake adjustment
 - parking and emergency brake adjustment
- post-service testing procedures for air braking systems, including static and dynamic testing.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the air braking systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer air braking system specifications
- two different vehicles or machinery with air disc and air drum braking systems requiring servicing
- tools, equipment and materials appropriate for inspecting and servicing air braking systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURTTD003 Inspect suspension systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to inspect and test front and rear suspension system components and assess their condition. It involves preparing for the task, inspecting the system, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The suspension systems include those of heavy commercial vehicles or light vehicles.

This unit applies to those inspecting suspension systems prior to conducting a wheel alignment.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publications.

Competency Field

Mechanical Miscellaneous

Unit Sector

Technical - Steering and Suspension

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to inspect suspension system	1.1 Job requirements are determined from workplace instructions 1.2 Inspection information is sourced and interpreted 1.3 Hazards associated with the work are identified and risks are managed 1.4 Tools, equipment and materials are selected and checked for serviceability
2. Inspect suspension system	2.1 Inspection is carried out according to manufacturer specifications, workplace procedures and safety requirements 2.2 Inspection results are compared with manufacturer specifications 2.3 Inspection findings are reported according to workplace procedures, including recommendations for necessary repairs or adjustments
3. Complete work processes	3.1 Final inspection is made to ensure work is to workplace expectations and vehicle is presented ready for use 3.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 3.3 Tools and equipment are checked and stored according to workplace procedures 3.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking inspection procedures and specifications relating to suspension systems.
Writing skills to:	legibly and accurately fill out documentation when reporting inspection findings and making recommendations.

Skills	Description
Oral communication skills to:	- clarify instructions - report inspection findings to appropriate personnel.
Numeracy skills to:	compare component wear against manufacturer specifications and use basic mathematical operations, including addition and subtraction, to calculate distances, tolerances and deviations from manufacturer specifications.
Problem solving skills to:	refer problems outside area of responsibility to appropriate person.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Inspection</i> must include:	visual, aural and functional assessments of front and rear suspension components, including for damage, corrosion, wear and leakage.
<i>Safety requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: - lifting and supporting vehicles - working with stored energy in springs and accumulators.

Unit Mapping Information

Equivalent to AURTTD2003 Inspect suspension systems

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURTTD003 Inspect suspension systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- inspect the front and rear suspension systems of two different vehicles.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to inspecting suspension systems, including procedures for:
 - lifting and supporting vehicles
 - working with stored energy in springs and accumulators
- identification and function of major front and rear suspension components, including:
 - control arms, bushes, links and rods
 - ball joints
 - struts and springs
 - leaf springs, hangers and shackles
 - torsion bars
 - air suspension
 - shock absorbers
 - height control systems
- basic operation of front and rear suspension systems
- inspection and reporting procedures for suspension systems and components, including:
 - component wear analysis
 - fluid leaks.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the suspension systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer suspension system specifications
- two different vehicles with suspension systems requiring inspection prior to wheel alignment
- tools, equipment and materials appropriate for inspecting suspension systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURTTD004 Inspect and service suspension systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to inspect and service front and rear suspension systems. It involves preparing for the task, inspecting the front and rear suspension system for wear, oil or air leaks and physical damage, reporting the inspection findings, servicing and adjusting the system, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The suspension systems include those of agricultural machinery, heavy commercial vehicles, light vehicles, mobile plant machinery, motorcycles, outdoor power equipment or trailers.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical Miscellaneous

Unit Sector

Technical - Steering and Suspension

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to inspect and service suspension system	1.1 Job requirements are determined from workplace instructions 1.2 Servicing information is sourced and interpreted 1.3 Hazards associated with the work are identified and risks are managed 1.4 Tools, equipment and materials are selected and checked for serviceability
2. Inspect suspension system	2.1 Inspection is carried out according to manufacturer specifications, workplace procedures and safety requirements 2.2 Inspection results are compared with manufacturer specifications 2.3 Inspection findings are reported according to workplace procedures, including recommendations for necessary repairs or adjustments
3. Service suspension system	3.1 Service and adjustments are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements , and without causing damage to components or systems 3.2 Post-service testing is carried out according to workplace procedures
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and vehicle is presented ready for use 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.

Skills	Description
Reading skills to:	interpret information from manufacturer and workshop literature when seeking service procedures and specifications relating to suspension systems.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting inspection findings, making recommendations, and recording parts and material used.
Oral communication skills to:	- clarify instructions - report inspection findings and make repair recommendations.
Numeracy skills to:	use basic mathematical operations, including addition and subtraction, to compare component wear to distances, tolerances and deviations in manufacturer specifications.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: - working with stored energy - isolating and stabilising vehicles and machinery.
<i>Environmental requirements</i> must include:	procedures for trapping, storing and disposing of lubricants and fluids released from suspension systems.

Unit Mapping Information

Equivalent to AURTTD2004 Inspect and service suspension systems

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURTTD004 Inspect and service suspension systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- inspect and service the front and rear suspension systems of two different vehicles or machinery.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to inspecting and servicing suspension systems, including procedures for:
 - working with stored energy
 - isolating and stabilising vehicles and machinery
- environmental requirements, including procedures for trapping, storing and disposing of lubricants and fluids released from suspension systems
- identification, function and basic operation of major front and rear suspension components, including:
 - spring types and dampers
 - suspension arms
 - suspension components
- types and applications of lubricants and fluids
- inspection procedures for suspension systems, including:
 - analysing component wear
 - checking fluid and air leaks
 - evaluating physical damage
- service and adjustment procedures for suspension systems, including:

- adjusting and replenishing oil and fluid levels as required
- lubricating components
- post-service testing procedures for suspension systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the suspension systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer suspension system specifications
- two different vehicles or machinery with suspension systems requiring servicing
- tools, equipment and materials appropriate for inspecting and servicing suspension systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

AURTTL015 Develop and apply gas fuel system modifications

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to develop, apply and validate significant modifications to existing gas fuel systems in order to vary or enhance performance. It involves identifying the modification requirement, developing the modification specifications, applying and testing the modification, and completing workplace processes and documentation.

Significant and non-routine modifications are those that require compliance with Australian Design Rules and Vehicle Safety Bulletins.

It applies to those working in the automotive service and repair industry. The gas fuel systems include those of agricultural machinery, forklifts, heavy commercial vehicles, light vehicles or mobile plant machinery.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Competency Field

Mechanical Miscellaneous

Unit Sector

Technical - Alternative Fuels

Elements and Performance Criteria

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the modification requirement	1.1 Job requirements are determined from workplace instructions 1.2 Reasons for the modification are identified and confirmed with appropriate persons 1.3 Modification options are identified and presented to appropriate persons according to workplace procedures 1.4 Hazards associated with the work are identified and risks are managed 1.5 Legal and safety impacts of the modification are considered, as required, according to regulatory requirements
2. Develop and validate the modification specification	2.1 Manufacturer benchmark specifications for the existing gas fuel system are sourced and interpreted 2.2 Criteria for selecting the modification method and evaluating the outcomes are identified and documented 2.3 Proposed modification method is identified, selected and evaluated from available options 2.4 Selected option, including material choices and processes, is developed in detail and progressively assessed against established criteria 2.5 Modification specification is documented according to workplace procedures
3. Apply and test the modification specification	3.1 Tools, test equipment and materials required to support the modification procedure are identified, selected and prepared for use 3.2 Selected modification method is carried out according to workplace procedures, and safety and environmental requirements 3.3 Post-modification testing is carried out according to workplace procedures to confirm modification outcomes are as intended, and any problems detected as having been introduced during the modification process are rectified 3.4 Test results and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.5 Variations needed during the modification process or as a result of testing are incorporated into the modification specification 3.6 Information and detail relating to the modification are documented and provided to the appropriate parties according to regulatory and commercial obligations

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	locate and evaluate appropriate sources of information.
Reading skills to:	- interpret the operating and testing procedures for gas fuel system testing equipment from workplace and manufacturer literature - research, organise and interpret technical information from manufacturer and workshop literature when seeking gas fuel system specifications and procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting modification findings and recording parts and material used.
Oral communication skills to:	clarify instructions, gain information from supervisors, and report modification outcomes.
Numeracy skills to:	- measure gas fuel system components and use basic mathematical operations, including addition and subtraction, to calculate tolerances and deviations from manufacturer specifications - interpret precision measuring equipment and test equipment units and scales.
Planning and organising skills to:	plan own work requirements and prioritise and sequence actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.

Skills	Description
Technology skills to:	• use precision measuring equipment, such as micrometers and vernier calipers • use specialised testing equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety and environmental requirements</i> must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for working with extremely cold and flammable gas • environmental requirements, including procedures for preventing loss of gas to atmosphere.

Unit Mapping Information

Equivalent to AURTTL5015 Develop and apply gas fuel system modifications

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURTTL015 Develop and apply gas fuel system modifications

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- develop and apply the following significant and non-routine modifications on the gas fuel systems of two different vehicles or machinery:
 - adapt or modify gas fuel system to a significantly changed capability
 - adapt gas fuel system for different work conditions
 - modify or install a significant gas fuel system for a special purpose.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to developing and applying gas fuel system modifications, including procedures for working with extremely cold and flammable gas
- environmental requirements, including procedures for preventing loss of gas to atmosphere
- principles and processes involved in planning and implementing modifications to gas fuel systems
- types, functions, operation and limitations of gas fuel systems being modified, including:
 - liquefied petroleum gas (LPG)
 - compressed natural gas (CNG)
 - liquefied natural gas (LNG)
- types, functions, operation and limitations of diagnostic testing equipment required for gas fuel system modifications
- associated vehicle systems and their impact on gas fuel system operation

- requirements of Australian Design Rules (ADRs) and Vehicle Safety Bulletins (VSBs) relating to gas fuel system modifications
- procedures for documenting and reporting the modification specifications and outcomes.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the gas fuel systems that they have modified, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer gas fuel system specifications
- ADRs and Vehicle Safety Bulletins (VSBs) relating to gas fuel system modifications
- two different vehicles or machinery requiring gas fuel system modification n
- tools, equipment and materials appropriate for carrying out gas fuel system modifications.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

BSBDIV301 Work effectively with diversity

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to recognise and interact productively with diversity in the workplace. It covers sensitive responses to, and interactions with, all manner of diversity that might be encountered during the course of work.

It applies to individuals who work in a variety of contexts where they will be expected to interact with a diverse client and/or co-worker population. They may also provide some leadership and guidance to others and have some limited responsibility for the output of others.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Workforce Development – Diversity

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1 Recognise individual differences and respond appropriately	1.1 Recognise and respect individual differences in colleagues, clients and customers 1.2 Respond to differences sensitively 1.3 Ensure behaviour is consistent with legislative requirements and enterprise guidelines 1.4 Accommodate diversity using appropriate verbal and non-verbal

ELEMENT	PERFORMANCE CRITERIA
	communication
2 Work effectively with individual differences	2.1 Recognise and document knowledge, skills and experience of others in relation to team objectives 2.2 Encourage colleagues to utilise and share their specific qualities, skills or backgrounds with other team members and clients in order to enhance work outcomes 2.3 Ensure relations with customers and clients demonstrate that diversity is valued by the business

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.3, 2.1	Comprehends textual information to determine regulatory requirements and adhere to internal policies
Writing	1.4, 2.1	- Records key information related to the outcomes of the job, using appropriate vocabulary and style - Varies writing style to meet requirements of audience and purpose
Oral Communication	1.2, 1.3, 1.4, 2.2, 2.3	- Uses appropriate tone, speech and pace in verbal interactions - Selects vocabulary appropriate to the audience
Navigate the world of work	1.3	Complies with legislative requirements and explicit policies and procedures
Interact with others	1.1, 1.2, 1.4, 2.1-2.3	- Identifies and takes steps to follow accepted communication practices and protocols - Contributes to work group activities using accepted conventions - Recognises common cultural and other differences of people in the work context and makes adjustments to respect and accommodate these differences
Get the work done	2.1	Plans and implements routine tasks according to directions

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBDIV301 Work effectively with diversity	BSBDIV301A Work effectively with diversity	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBDIV301 Work effectively with diversity

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to:

- adjust language and behaviour as required by interactions with diversity
- identify and respect individual differences in colleagues, clients and customers
- apply relevant regulations, standards and codes of practice.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- identify major groups in the workplace and community, as defined by cultural, religious and other traditions and practices
- identify reasonable adjustments that facilitate participation by people with a disability
- explain the value of diversity to the economy and society in terms of:
 - workforce development
 - Australia's place in the global economy
 - innovation
 - social justice.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced in the workforce development – diversity field of work and include access to:

- office equipment and resources
- examples of regulations, standards and codes of practice working with diversity

- examples of workplace diversity issues
- case studies and, where possible, real situations
- examples of workplace diversity policies and procedures
- interaction with others.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBINM301 Organise workplace information

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to gather, organise and apply workplace information in the context of an organisation's work processes and knowledge management systems.

It applies to individuals who perform a defined range of skilled operations in various work contexts. They may exercise discretion and judgement using appropriate knowledge of information management to provide technical advice and support to a team.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Knowledge Management – Information Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1 Collect and assess information	1.1 Access product and service information in accordance with organisational requirements 1.2 Ensure methods of collecting information are reliable and make efficient use of available time and resources 1.3 Assess information for clarity, accuracy, currency and relevance to intended tasks 1.4 Use interpersonal skills to access relevant information from

ELEMENT	PERFORMANCE CRITERIA
	teams and individuals
2 Organise information	2.1 Organise information in a format suitable for analysis, interpretation and dissemination in accordance with organisational requirements 2.2 Use appropriate technology/systems to maintain information in accordance with organisational requirements 2.3 Collate information and materials and communicate to relevant designated persons 2.4 Identify difficulties organising and accessing information and solve collaboratively with individuals and team members 2.5 Update and store information in accordance with organisational requirements and systems
3 Review information needs	3.1 Actively seek feedback on clarity, accuracy and sufficiency of information to ensure relevance of information and system 3.2 Review the contribution of information to decision making and implement appropriate modifications to collection processes 3.3 Identify future information needs and incorporate modifications to collection processes 3.4 Document future information needs and incorporate in modifications to reporting processes

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.1-1.3, 2.1-2.3, 2.5, 3.2	Recognises and assesses textual information to complete tasks according to requirements
Writing	2.1, 2.2, 2.3, 2.5, 3.1, 3.4	Completes workplace records, forms and documentation accurately using correct format, accurate spelling and grammar and terminology specific to requirements
Oral Communication	1.4, 2.3, 2.4, 3.1	Elicits the view and opinions of others and obtains information by listening and questioning

		Participates in a verbal exchange of ideas/solutions using clear language to contribute information and convey issues
Navigate the world of work	1.1, 2.1, 2.5	Understands rights and responsibilities and complies with explicit policies and procedures and legal and regulatory requirements
Interact with others	1.4, 2.3, 2.4, 3.1	- Identifies and follows accepted communication practices and protocols - Complies with work instructions and contributes to work group discussions using accepted conventions
Get the work done	1.1, 1.2, 2.1, 2.2, 2.4, 3.2, 3.3	- Plans and implements routine tasks and workload making decisions about sequencing and timing - Makes low impact decisions within familiar situations, based on a range of predefined or routine solutions, and evaluates the effectiveness of the outcome - Uses digital technology to access and record information and to communicate with others

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBINM301 Organise workplace information	BSBINM301A Organise workplace information	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBINM301 Organise workplace information

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to:

- efficiently and effectively gather, assess, organise and use workplace information as part of own job role
- provide accurate information for defined purposes
- maintain and handle data and documents systematically
- use business technology to manage information
- communicate with colleagues and clients using effective interpersonal skills to obtain and check workplace information
- apply relevant legislation and regulations to workplace information
- monitor, review and modify information processes.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- explain how legislation and regulations may affect the gathering organising and distribution of workplace information
- describe methods for checking validity of information and its sources
- describe organisational recordkeeping and filing systems, security procedures and safe recording practices
- identify workplace policies and procedures relating to workplace information.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced in the knowledge management – information management field of work and include access to:

- business technology
- workplace policies and procedures
- relevant legislation and codes of practice
- office equipment and resources
- examples of information documents found in the workplace
- interaction with others.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBINM302 Utilise a knowledge management system

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to access a knowledge management system, use monitoring and review processes to provide feedback and improve own work practices using the system.

This includes a whole range of strategies, methods, activities and techniques used formally and informally by individuals and the organisation (as formalised in a knowledge management system) to identify, collect, organise, store, retrieve, analyse, share and apply knowledge to the work of the organisation.

It applies to individuals who apply a broad range of competencies in various work contexts. They may exercise discretion and judgement using appropriate theoretical knowledge of knowledge management to assist in increasing productivity, to improve quality or to recognise the benefits to the organisation through the improved use of knowledge.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Knowledge Management – Information Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1 Access and use	1.1 Access knowledge management system to assist with specific

ELEMENT	PERFORMANCE CRITERIA
knowledge management system	tasks, in line with system procedures 1.2 Administer system, in line with legislative, regulatory and organisational procedures
2 Input to knowledge management system	2.1 Gather, analyse and prepare inputs for contribution to system, in line with procedures 2.2 Check inputs for clarity, accuracy, currency and relevance 2.3 Make inputs to system, in line with procedures 2.4 Analyse requirements of the system and ensure suggestions for improvements are provided to relevant personnel
3 Review and improve work practices	3.1 Provide feedback about clarity, accuracy, currency and relevance of system's output to relevant personnel 3.2 Document learning resulting from use of the system 3.3 Improve work practices as a result of learning from use of the system

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Learning	3.2, 3.3	Builds on knowledge and experience from the use and review of using the knowledge management system, and applies knowledge to improve work practices
Reading	1.1, 1.2, 2.1, 2.2, 2.4, 3.2	Comprehends textual information, incorporating ideas and concepts from a range of sources, and checks for accuracy and relevance
Writing	1.2, 2.3, 2.4, 3.1, 3.2	Documents information analysis and emphasises key outcomes using vocabulary and structure appropriate to audience
Oral Communication	2.4, 3.1	- Expresses own observations and opinions using clear and specific language to relevant personnel - Elicits views and information from others and obtains information by listening and questioning
Navigate the	1.1, 1.2, 2.1, 2.3, 3.3	Understands rights and responsibilities, and complies with explicit procedures in the workplace

world of work		
Interact with others	2.4, 3.1	Identifies and takes steps to follow accepted communication practices and protocols when providing feedback
Get the work done	1.1, 1.2, 2.1, 2.4, 3.3	- Plans and implements routine tasks and workload making limited decisions on sequencing, timing and collaboration - Uses basic functions of digital technology tools to read, record, search and input required information - Uses analytical processes to review and evaluate the effectiveness of workplace systems and suggest improvements

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBINM302 Utilise a knowledge management system	BSBINM302A Utilise a knowledge management system	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBINM302 Utilise a knowledge management system

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to:

- access, use and review a knowledge management system in accordance with organisational policies and procedures
- provide feedback to the organisation about improvements to the knowledge management system
- produce records of outcomes resulting from the use of the system.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- identify key provisions of relevant legislation, regulations, standards and codes of practice that may affect knowledge management
- describe organisational policies and procedures for knowledge management.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced in knowledge management – information management field of work and include access to:

- office equipment and resources
- examples of information documents found in the workplace
- a knowledge management system (which can be a simulated system to satisfy privacy and confidentiality provisions).

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBINN301 Promote innovation in a team environment

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to be an effective and proactive member of an innovative team.

It applies to individuals who play a proactive role in demonstrating, encouraging or supporting innovation in a team environment. The individual may be a team participant or a team leader. Teams may be formal or informal and may comprise a range of personnel.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Creativity and Innovation – Innovation

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1 Create opportunities to maximise innovation within the team	1.1 Evaluate and reflect on what the team needs and wants to achieve 1.2 Check out information about current or potential team members' work in the context of developing a more innovative team 1.3 Bring people into the team or make suggestions for team members based on what needs to be achieved and the potential for cross fertilising ideas

ELEMENT	PERFORMANCE CRITERIA
	1.4 Acknowledge, respect and discuss the different ways that people may contribute to building or enhancing the team
2 Organise and agree effective ways of working	2.1 Jointly establish ground rules for how the team will operate 2.2 Agree and communicate responsibilities in ways that encourage and reinforce team-based innovation 2.3 Agree and share tasks and activities to ensure the best use of skills and abilities within the team 2.4 Plan and schedule activities to allow time for thinking, challenging and collaboration 2.5 Establish personal reward and stimulation as an integral part of the team's way of working
3 Support and guide colleagues	3.1 Model behaviour that supports innovation 3.2 Seek external stimuli and ideas to feed into team activities 3.3 Proactively share information, knowledge and experiences with other team members 3.4 Challenge and test ideas within the team in a positive and collaborative way 3.5 Proactively discuss and explore ideas with other team members on an ongoing basis
4 Reflect on how the team is working	4.1 Debrief and reflect on activities and on opportunities for improvement and innovation 4.2 Gather and use feedback from within and outside the team to generate discussion and debate 4.3 Discuss the challenges of being innovative in a constructive and open way 4.4 Take ideas for improvement, build them into future activities and communicate key issues to relevant colleagues 4.5 Identify, promote and celebrate successes and examples of successful innovation

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.2, 4.2	Interprets and analyses textual information, from a wide range of sources, to identify information relevant to team activities
Writing	2.2, 3.3, 4.4	Uses clear language and formats appropriate for the audience to highlight and present specific information
Oral Communication	1.2, 1.3, 1.4, 2.1, 2.2, 3.5, 4.1, 4.2, 4.3, 4.4, 4.5	- Actively participates in verbal exchanges of ideas and elicits the views and opinions of team members by listening and questioning - Uses clear language to clarify rules and roles relating to team activities in formal and informal situations
Numeracy	1.2, 4.2	Interprets numeric information relevant to team activities
Navigate the world of work	1.1, 3.1, 3.2, 3.5	Understands the nature and purpose of own role and how it affects others in the work context
Interact with others	1.1-1.4, 2.1, 2.2, 3.1, 3.2, 3.4, 3.5, 4.1, 4.2, 4.4, 4.5	- Uses inclusive techniques to initiate, contribute and promote discussion amongst potentially diverse team members - Recognises the importance of establishing and building effective working relationships - Selects the appropriate form, channel and mode of communication for a specific purpose relevant to own role
Get the work done	1.3, 1.4, 2.2, 2.4, 2.5, 3.2, 3.4, 4.2, 4.4, 4.5	- Plans, sequences and prioritises tasks for efficient and effective outcomes - Contributes to continuous improvement of current work practices by applying basic principles of analytical and lateral thinking - Uses problem-solving processes to address less predictable problems, and when appropriate, seeking input from others - Reflects on outcomes and further explores own and the team's role in implementing innovation

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBINN301 Promote innovation in a team environment	BSBINN301A Promote innovation in a team environment	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBINN301 Promote innovation in a team environment

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to:

- apply practices that promote innovation within a team including:
 - modelling open and respectful communications
 - contributing to the make-up and rules of the team
 - planning and scheduling of activities
 - reflecting on activities, feedback and challenges to identify improvement options
- encourage others to contribute to innovation in the team
- implement improvements and communicate about them.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- explain what innovation is, the different types of innovation and the benefits of innovation
- describe the internal and external factors that contribute to a team becoming and remaining innovative including:
 - team characteristics
 - the role of group dynamics and diversity
 - broader environmental factors
- explain how activities can encourage or hinder innovation in a team including:
 - allocation of time and activities
 - modelling behaviour
 - rewards and recognition
 - communications

- feedback.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced in the creativity and innovation and include access to:

- workplace documents
- case studies and, where possible, real situations
- office equipment and resources
- interaction with others.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBLED401 Develop teams and individuals

Modification History

Release	Comments
Release 2	This version released with BSB Business Services Training Package Version 2.0. Version created to clarify assessment requirements
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to determine individual and team development needs and to facilitate the development of the workgroup.

It applies to individuals with a broad knowledge of learning and development who apply their skills in addressing development needs to meet team objectives. They may have responsibility to provide guidance or to delegate aspects of tasks to others.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Workforce Development – Learning and Development

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine development needs	1.1 Systematically identify and implement learning and development needs in line with organisational requirements 1.2 Ensure that a learning plan to meet individual and group training and development needs is collaboratively developed, agreed to and

ELEMENT	PERFORMANCE CRITERIA
	implemented 1.3 Encourage individuals to self-evaluate performance and identify areas for improvement 1.4 Collect feedback on performance of team members from relevant sources and compare with established team learning needs
2. Develop individuals and teams	2.1 Identify learning and development program goals and objectives, ensuring a match to the specific knowledge and skill requirements of competency standards relevant to the industry 2.2 Ensure that learning delivery methods are appropriate to the learning goals, the learning style of participants, and availability of equipment and resources 2.3 Provide workplace learning opportunities, and coaching and mentoring assistance to facilitate individual and team achievement of competencies 2.4 Create development opportunities that incorporate a range of activities and support materials appropriate to the achievement of identified competencies 2.5 Identify and approve resources and time lines required for learning activities in accordance with organisational requirements
3. Monitor and evaluate workplace learning	3.1 Use feedback from individuals or teams to identify and implement improvements in future learning arrangements 3.2 Assess and record outcomes and performance of individuals/teams to determine the effectiveness of development programs and the extent of additional development support 3.3 Negotiate modifications to learning plans to improve the efficiency and effectiveness of learning 3.4 Document and maintain records and reports of competency according to organisational requirements

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description

Learning	1.1-1.4, 2.1-2.4, 3.1, 3.3	• Uses structured approaches to set goals, monitor progress and adjust learning approaches for self and others • Builds on knowledge and experience to facilitate interaction and learning with others
Reading	1.1, 1.2, 1.4, 2.1, 2.2, 2.4, 2.5, 3.1-3.4	• Analyses textual information from a range of sources to identify organisational requirements • Analyses information from a range of sources to evaluate performance
Writing	1.1, 1.2, 1.4, 2.1, 2.5, 3.1-3.4	• Develops materials to suit the requirements of different roles and individuals in the organisation • Maintains records using correct technical and organisational vocabulary
Oral Communication	1.2, 1.3, 1.4, 2.3, 3.1, 3.3	• Uses vocabulary appropriate to context and to establish a supportive and learning environment • Uses listening and questioning techniques to confirm or show understanding of different perspectives
Navigate the world of work	1.1, 2.5, 3.4	• Recognises and responds to explicit and implicit organisational procedures and protocols Understands how own role meshes with others and contributes to broader goals
Interact with others	1.2, 1.3, 1.4, 2.2, 2.3, 3.1, 3.3	• Selects and uses appropriate conventions and protocols when communicating with co-workers in a range of work contexts • Recognises the importance of building rapport to establish effective working relationships • Collaborates with others to achieve joint outcomes, playing an active role in facilitating effective group interaction • Negotiates with others to achieve joint/agreeable outcomes playing an active role in facilitating consensus in potentially contentious situations
Get the work done	1.1, 1.2, 1.4, 2.1, 2.2, 2.3, 2.5, 3.1, 3.2, 3.4	• Uses logical planning processes to organise, implement and monitor learning and development needs • Systematically gathers and analyses all relevant information and evaluates options to make informed decisions • Evaluates outcomes of decisions to identify opportunities for improvement

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBLED401 Develop teams and individuals Release 2	BSBLED401 Develop teams and individuals Release 1	Updated to clarify assessment requirements	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBLED401 Develop teams and individuals

Modification History

Release	Comments
Release 2	This version released with BSB Business Services Training Package Version 2.0. Version created to clarify assessment requirements
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to:

- systematically identify and implement learning opportunities for others
- collect feedback on team and individual performance
- give and receive feedback from team members to encourage participation in and effectiveness of the team
- collaboratively develop learning plans to match skill needs of individuals and groups
- provide mentoring and coaching assistance to teams and individuals
- monitor and review workplace learning.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- describe facilitation techniques to encourage team development and improvement
- outline organisational policies, plans and procedures for developing teams
- identify career paths and competency standards relevant to the industry.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced in the workforce learning and development field of work and include access to:

- office equipment and resources
- learning and development plans, policies and procedures
- case studies and, where available, real situations
- interaction with others.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBPMG412 Apply project cost management techniques

Modification History

Release	Comments
Release 2	This version released with BSB Business Services Training Package Version 2.0. Version created to correct typographical error.
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to assist in producing a project budget, to monitor project expenditure and contribute to cost finalisation processes.

It applies to individuals who are project practitioners working in a project support role.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Management and Leadership – Project Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Assist in developing project budget	1.1 Implement cost-estimating methods against duration/effort and resource requirements 1.2 Determine estimated costs for tasks and activities and confirm degree of accuracy with relevant stakeholders 1.3 Communicate cost estimates, where required, to others to

ELEMENT	PERFORMANCE CRITERIA
	contribute to project budget and cash flow management 1.4 Contribute to developing cost management strategies and processes, and providing financial authorisation within delegated authority
2. Monitor project costs	2.1 Monitor income and expenditure against project budget baseline at predetermined intervals 2.2 Identify and report variations in budget using established project cost methods, techniques and tools 2.3 Implement action and report progress to ensure cost objectives remain achievable throughout project life cycle
3. Contribute to cost-finalisation process	3.1 Assist in finalisation and transfer of financial assets, liabilities and records to relevant parties 3.2 Assist in review of project outcomes through use of project cost records to determine effectiveness of cost-management processes 3.3 Document cost-management lessons learned for application in future projects

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.2, 2.4, 3.2	Applies appropriate strategies to construct meaning from complex texts
Writing	2.2, 2.3, 3.1, 3.2, 3.3	Prepares reports and reviews matching writing style to purpose and audience
Oral Communication	1.2, 1.3, 3.1, 3.2	- Uses clear language and appropriate features to convey and discuss cost-management issues - Uses active listening and questioning to check understanding
Numeracy	1.1, 1.2, 1.4, 2.1-2.3, 3.1, 3.2	- Extracts and evaluates mathematical information embedded in a range of tasks and texts - Uses a range of informal and formal oral and written mathematical language and symbols to communicate

		mathematically
Navigate the world of work	1.4, 2.3	Recognises and follows protocols that must be respected and maintained
Interact with others	1.2, 1.3, 3.1, 3.2	- Uses appropriate communication practices in a range of work contexts - Collaborates and cooperates with others to achieve shared goals
Get the work done	1.2, 2.1, 2.2, 3.1, 3.2	- Plans, organises and implements tasks required to achieve required outcomes - Reflects on outcomes to identify future improvement opportunities - Utilises features of digital systems to complete routine tasks

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBPMG412 Apply project cost management techniques Release 2	BSBPMG412 Apply project cost management techniques Release 1	Updated to correct typographical error	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBPMG412 Apply project cost management techniques

Modification History

Release	Comments
Release 2	This version released with BSB Business Services Training Package Version 2.0. Version created to correct typographical error.
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to:

- produce a project budget
- closely monitor project expenditure
- finalise project costs and make recommendations for possible improvements to future projects.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- explain budgeting processes and their relationship to project life cycle
- explain how to apply cost management tools and techniques.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced in the management and leadership – project management field of work and include access to:

- project management budgets and related documentation
- case studies or, where possible, real situations.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBPMG514 Manage project cost

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to identify, analyse and refine project costs to produce a budget, and to use this budget as the principal mechanism to control project cost.

It applies to individuals responsible for managing and leading a project in an organisation, business, or as a consultant.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Management and Leadership – Project Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine project costs	1.1 Determine resource requirements for individual tasks identified in the work breakdown structure, with input from stakeholders and guidance from others 1.2 Estimate project costs to enable project budget to be prepared within agreed tolerances 1.3 Develop a project budget 1.4 Develop a cost-management plan, within delegated authority, to ensure clarity of understanding and ongoing management of

ELEMENT	PERFORMANCE CRITERIA
	project finances
2. Monitor and control project costs	2.1 Implement agreed financial-management processes and procedures to monitor actual expenditure against budget 2.2 Select and use cost-analysis methods and tools to identify cost variations and evaluate alternative actions 2.3 Implement and monitor agreed actions to maintain financial objectives 2.4 Provide accurate and timely financial reports
3. Complete cost-management processes	3.1 Conduct appropriate activities to signify financial completion 3.2 Review project outcomes using available records to determine effectiveness of project cost management 3.3 Review cost-management issues and document improvements

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.1, 1.2, 2.2, 3.2, 3.3	- Interprets and analyses textual information from a range of sources - Reviews, compares and contrasts information related to budget
Writing	1.3, 1.4, 2.4, 3.3	Drafts and develops documents using appropriate format and language for context
Oral Communication	1.1	- Participates in verbal exchanges using clear language and appropriate tone and syntax to provide relevant information - Uses active listening and questioning to elicit views and opinions of others
Numeracy	1.1-1.4, 2.1, 2.2, 2.4, 3.1, 3.2	Uses mathematical formulae to calculate resources against predetermined budgets, solve variances and finalise project costs
Navigate the world of work	1.4, 2.1	Adheres to organisational policies and procedures and understands responsibilities of own role

Interact with others	1.1	Selects and uses appropriate conventions and protocols when communicating with internal and external stakeholders to confirm requirements, seek guidance or share information
Get the work done	1.1, 1.3, 1.4, 2.2, 2.3, 2.4, 3.2, 3.3	- Plans and schedules complex activities, monitors implementation and manages relevant communication - Monitors actions against goals, adjusting plans and resources where necessary - Uses analytical skills to review and evaluate process and decide on future improvements - Uses digital applications to access, organise, integrate and share relevant information in effective ways

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBPMG514 Manage project cost	BSBPMG514A Manage project cost	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBPMG514 Manage project cost

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to:

- work closely with others to determine resources against budgetary frameworks
- prepare a budget and cost-management plan for a project
- monitor costs across a project's life cycle including solving cost variations and analysing possible alternatives
- record expenditure, create accurate financial reports and review cost-management processes.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- explain appropriate budgeting processes, tools and techniques
- describe methods and tools for costing and cost analysis
- explain strategies for managing costs and their application in different situations
- outline processes for reviewing costs against outcomes
- summarise key organisational policies and procedures applicable to this role.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced in the management and leadership – project management field of work and include access to:

- workplace documentation, including budgets and other financial documents
- case studies and, where possible, real situations.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBPMG517 Manage project risk

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to manage risks that may impact achievement of project objectives. It involves identifying, analysing, treating and monitoring project risks, and assessing risk management outcomes.

It applies to individuals responsible for managing and leading a project in an organisation, business, or as a consultant.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Management and Leadership – Project Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Identify project risks	1.1 Determine risk objectives and standards, with input from stakeholders 1.2 Establish project risk context to inform risk management processes 1.3 Identify project risks using valid and reliable risk identification methods 1.4. Classify project risks within agreed risk categories

ELEMENT	PERFORMANCE CRITERIA
2. Analyse project risks	2.1 Determine risk analysis classification criteria and apply to agreed risk ranking system 2.2 Use risk analysis processes, within delegated authority, to analyse and qualify risks, threats and opportunities 2.3 Determine risk priorities in agreement with project client and other stakeholders 2.4 Document risk analysis outcomes for inclusion in risk register and risk management plan
3. Establish risk treatments and controls	3.1 Identify and document existing risk controls 3.2 Consider and determine risk treatment options using agreed consultative methods 3.3 Record and implement agreed risk treatments 3.4 Update risk plans and allocate risk responsibilities to project team members
4. Monitor and control project risks	4.1 Establish regular risk review processes to maintain currency of risk plans 4.2 Regularly monitor risk environment to identify changed circumstances impacting project risks 4.3 Determine risk responses to changed environment 4.4 Implement agreed risk responses and modify plans to maintain currency of risk treatments and controls
5. Assess risk management outcomes	5.1 Review project outcomes to determine effectiveness of risk-management processes and procedures 5.2 Identify and document risk management issues and recommended improvements for application to future projects

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.1-1.4, 2.1, 2.2, 3.1, 3.2, 4.2, 5.1, 5.2	Interprets and critically analyses complex texts from a range of sources and determines how content may be applied according to organisational requirements

Writing	1.3, 1.4, 2.1, 2.4, 3.1, 3.3, 3.4, 4.1, 4.3, 4.4, 5.2	- Documents risks, risk analysis and risk controls using required formats and structure - Modifies and updates workplace documentation according to requirements
Oral Communication	1.1, 2.3, 3.4	- Participates in verbal exchanges using clear language to provide and seek information - Uses active listening and questioning techniques to confirm understanding
Numeracy	1.3, 2.1, 2.3	Analyses numerical data to identify project risk levels and rank risks according to agreed system of classification
Navigate the world of work	1.1, 2.2	- Determines and adheres to organisational policies and standards - Considers own role in terms of its contribution to broader goals of work environment
Interact with others	1.1, 2.3, 3.4	- Selects and uses appropriate conventions and protocols when communicating with internal and external stakeholders to seek or share information - Actively identifies requirements of important communication exchanges, selecting appropriate channels, format and content to suit purpose and audience
Get the work done	1.1-1.4, 2.1, 3.2, 4.1, 4.4, 5.1	- Identifies and develops approaches to risk management and implements complex tasks to achieve outcomes - Analyses information to make decisions, involving others when appropriate - Uses formal and informal processes to monitor implementation of decisions and reflect on outcomes

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBPMG517 Manage project risk	BSBPMG517A Manage project risk	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBPMG517 Manage project risk

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to:

- conduct effective risk management for a project of sufficient complexity to demonstrate the full range of performance requirements
- apply risk management techniques, strategies and tools.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- identify project risks in a range of risk categories
- explain key components of a risk management plan
- outline industry sector risk classifications and relate these to different risk contexts
- summarise organisational and industry standard risk frameworks
- identify and describe characteristics, techniques and appropriate applications of quantitative and qualitative risk management techniques and approaches.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced in the management and leadership – project management field of work and include access to:

- workplace risk management documentation
- feedback from project stakeholders about how risks were managed.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBPMG521 Manage project integration

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to integrate and balance overall project management functions of scope, time, cost, quality, human resources, communications, risk and procurement across the project life cycle; and to align and track project objectives to comply with organisational goals, strategies and objectives.

It applies to individuals responsible for managing and leading a project in an organisation, business, or as a consultant.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Management and Leadership – Project Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Establish project	1.1 Identify, clarify and prepare project initiation documentation 1.2 Identify relationship between the project and broader organisational strategies and goals 1.3 Negotiate and document project objectives, outcomes and benefits 1.4 Negotiate project governance structure with relevant

ELEMENT	PERFORMANCE CRITERIA
	authorities and stakeholders 1.5 Prepare and submit project charter for approval by relevant authorities
2. Undertake project planning and design processes	2.1 Establish and implement a methodology to disaggregate project objectives into achievable project deliverables 2.2 Identify project stages and key requirements for stage completion against client requirements and project objectives 2.3 Analyse project management functions to identify interdependencies and impacts of constraints 2.4 Develop a project management plan that integrates all project-management functions with associated plans and baselines 2.5 Establish designated mechanisms to monitor and control planned activity 2.6 Negotiate approval of project plan with relevant stakeholders and project authority
3. Execute project in work environment	3.1 Manage the project in an established internal work environment to ensure work is conducted effectively throughout the project 3.2 Maintain established links to align project objectives with organisational objectives throughout the project 3.3 Within authority levels, resolve conflicts negatively affecting attainment of project objectives
4. Manage project control	4.1 Ensure project records are updated against project deliverables and plans at required intervals 4.2 Analyse and submit status reports on project progress and identified issues with stakeholders and relevant authorities 4.3 Analyse and submit impact analysis of change requests for approval, where required 4.4 Maintain relevant project logs and registers accurately and regularly to assist with project audit 4.5 Ensure associated plans are updated to reflect project progress against baselines and approved changes
5. Manage project finalisation	5.1 Identify and allocate project finalisation activities 5.2 Ensure project products and associated documentation are prepared for handover to client in a timely manner 5.3 Finalise financial, legal and contractual obligations

ELEMENT	PERFORMANCE CRITERIA
	5.4 Undertake project review assessments as input to future projects

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.1, 1.2, 2.4, 4.1, 4.2, 4.3	Applies appropriate strategies to construct meaning from complex texts
Writing	1.1, 1.3, 1.5, 2.2, 2.4, 4.1, 4.4, 4.5	Develops and maintains project documentation using formats and language appropriate to context
Oral Communication	1.3, 1.4, 2.6	- Participates in verbal exchanges using clear and detailed language to provide and seek information - Uses active listening and questioning to confirm understanding
Numeracy	1.1, 2.1-2.4, 4.2, 4.3, 5.3	Uses a wide range of mainly formal and some informal, oral and written mathematical language and representation to communicate mathematically
Navigate the world of work	1.2, 1.5, 5.3	Adheres to organisational and legislative requirements
Interact with others	1.3, 1.4, 2.6, 3.3	- Selects and uses appropriate communication practices to seek or share information with stakeholders - Collaborates with others to achieve joint outcomes, playing an active role in facilitating effective group interaction and negotiating outcomes
Get the work done	1.1, 1.2, 1.5, 2.1-2.5, 3.1, 3.2, 4.1-4.5, 5.1-5.4	- Organises time and effort around priorities and results, focusing beyond immediate tasks to consider work performance of the group - Sequences and schedules complex activities, monitors implementation and manages relevant communication - Reflects on outcomes to contribute to future projects

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBPMG521 Manage project integration	BSBPMG521A Manage project integration	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBPMG521 Manage project integration

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to:

- work closely with others to integrate all project management functions across a project life cycle according to organisational objectives
- negotiate with internal and external stakeholders
- create accurate project management documentation
- make suggestions for improvements to managing project integration in the future.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- summarise project governance models
- describe range of methodologies to break project objectives into achievable project deliverables
- outline role of project life cycle stages, phases and structures relevant to industry and project context
- identify and describe appropriate organisational documentation for recording strategies and goals for integration processes.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced in the management and leadership – project management field of work and include access to:

- project documentation
- case studies and, where possible, real situations

- interaction with others.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBRKG304 Maintain business records

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to maintain the records of a business or records system in good order on a day-to-day basis.

It applies to individuals who follow established guidelines and processes to assist them to carry out their work. They work under supervision or in consultation with more senior staff or system users to support effective recordkeeping and governance practices across the organisation.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Knowledge Management – Recordkeeping

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Collate business records	1.1 Identify individual records or information which should be incorporated into business or records system according to organisational criteria 1.2 Sort records in accordance with workplace requirements 1.3 Follow security and access requirements in accordance with organisational procedures

ELEMENT	PERFORMANCE CRITERIA
2. Update business or records system	2.1 Identify and record control information for describing new records to be incorporated into business or records system 2.2 Update control information describing movement or use of records within business or records system 2.3 Accurately record and update control information in business or records system 2.4 Identify and remove records of completed business activities from current system for disposal
3. Prepare reports from the business or records system	3.1 Interpret requests for reports and clarify the content and frequency sought, where necessary 3.2 Prepare reports from business or records system in accordance with instructions or request 3.3 Prepare reports in accordance with organisational security and access procedures

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.1, 1.3, 2.1, 2.4, 3.1	Gathers and interprets textual information from different sources to determine how information may be applied to job requirements
Writing	2.1, 2.2, 2.3, 3.1	Uses clear and industry related terminology to complete and update workplace information
Oral Communication	3.1	Uses questioning and active listening techniques to confirm job requirements
Numeracy	1.1	Recognises and uses numerical systems associated with recordkeeping systems
Navigate the world of work	1.3, 3.3	Takes some personal responsibility for following organisational procedures
Get the work done	1.1, 1.2, 2.1, 2.3, 2.4, 3.2	- Takes responsibility for planning and organising own workload to ensure work deadlines are met - Takes responsibility for the outcomes of routine

		decisions related directly to own role

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBRKG304 Maintain business records	BSBRKG304B Maintain business records	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBRKG304 Maintain business records

Modification History

Release	Comments
Release1	This version first released with BSB Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to:

- collate business records in compliance with organisational procedures and workplace requirements
- record and update control information accurately in business records system.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- outline the organisational requirements regarding the maintenance and security of business records
- describe the general principles and processes of records management and records management systems, such as:
 - systems of control
 - records continuum theory
 - mandate and ownership of business process
 - environmental context
 - records characteristics.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced in the knowledge management – recordkeeping field of work and include access to:

- relevant workplace documentation and resources

- case studies and, where possible, real situations
- interaction with others.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBRSK401 Identify risk and apply risk management processes

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to identify risks and to apply established risk management processes to a defined area of operations that are within the responsibilities and obligations of the role.

It applies to individuals with a broad knowledge of risk analysis or project management who contribute well developed skills in creating solutions to unpredictable problems through analysis and evaluation of information from a variety of sources. They may have responsibility to provide guidance or to delegate aspects of these tasks to others.

In this unit, risks applicable within own work responsibilities and area of operation, may include projects being undertaken individually or by a team, or operations within a section of the organisation.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Regulation, Licensing and Risk – Risk Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Identify risks	1.1 Identify the context for risk management 1.2 Identify risks using tools, ensuring all reasonable steps have

ELEMENT	PERFORMANCE CRITERIA
	been taken to identify all risks 1.3 Document identified risks in accordance with relevant policies, procedures, legislation and standards
2. Analyse and evaluate risks	2.1 Analyse and document risks in consultation with relevant stakeholders 2.2 Undertake risk categorisation and determine level of risk 2.3 Document analysis processes and outcomes
3. Treat risks	3.1 Determine appropriate control measures for risks and assess for strengths and weaknesses 3.2 Identify control measures for all risks 3.3 Refer risks relevant to whole of organisation or having an impact beyond own work responsibilities and area of operation to others as per established policies and procedures 3.4 Choose and implement control measures for own area of operation and/or responsibilities 3.5 Prepare and implement treatment plans
4. Monitor and review effectiveness of risk treatment/s	4.1 Regularly review implemented treatment/s against measures of success 4.2 Use review results to improve the treatment of risks 4.3 Provide assistance to auditing risk in own area of operation 4.4 Monitor and review management of risk in own area of operation

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.2	Comprehends documents and texts of varying complexity to extract and analyse relevant information
Writing	1.3, 2.1, 2.3, 3.5	Uses specific, industry related terminology and logical organisational structure in workplace documents that identify and analyse risk and report management process outcomes

Oral communication	2.1	Participates effectively in interactions with stakeholders by using questioning and listening to elicit opinions and clarify understanding
Numeracy	1.2, 4.1	Uses numerical tools to assess risk and uses numerical data to review plans
Navigate the world of work	1.1, 1.3, 3.3	- Complies with organisational and legislative requirements - Takes responsibility for identification and management of risk within own work context and refers matters to others as required
Interact with others	2.1	Selects appropriate communication protocols and conventions when conferring with others to establish risk management requirements
Get the work done	1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.4, 3.5, 4.1, 4.2, 4.3, 4.4	- Determines job sequence and works logically and systematically to undertake defined tasks - Uses analysis and consultative processes to inform decisions about selection and implementation of risk control measures - Evaluates effectiveness of plans and results to inform improvement decisions - Uses familiar digital technologies and systems to access information, prepare plans and communicate with others

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBRSK401 Identify risk and apply risk management processes	BSBRSK401A Identify risk and apply risk management processes	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBRSK401 Identify risk and apply risk management processes

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to apply organisational policies, procedures and processes to:

- identify risks
- consult with relevant stakeholders to analyse and evaluate risks
- identify and evaluate control measures
- develop and implement treatment plans for own area or responsibility
- refer risks that are beyond own area of responsibility to others
- maintain risk management documentation.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- outline techniques for identifying and evaluating risks
- outline organisational policies, procedures or processes for risk management
- give examples of areas where risks are commonly identified in an organisation
- outline the purpose and key elements of current risk management standards
- outline the legislative and regulatory context of the organisation in relation to risk management
- describe the organisation's auditing requirements relating to risk management.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced in the regulation, licensing and risk - risk management field of work and include access to:

- relevant legislation, regulations, standards and codes
- relevant workplace documentation and resources
- case studies and, where possible, real situations
- interaction with others.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBWHS301 Maintain workplace safety

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to implement and monitor the organisation's work health and safety (WHS) policies, procedures and programs as part of a small work team.

The unit applies to individuals who have a key role in maintaining workplace safety in an organisation. In their role they closely monitor aspects of work associated with the safe delivery of products and services, and they have a responsibility for influencing safety in the workplace.

NOTE: The terms 'occupational health and safety' (OHS) and 'work health and safety' (WHS) are equivalent and generally either can be used in the workplace. In jurisdictions where the Model WHS Legislation has not been implemented RTOs are advised to contextualise the unit of competency by referring to the existing State/Territory OHS legislative requirements.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Regulation, Licensing and Risk – Work Health and Safety

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Assist with	1.1 Use WHS legislation as the basis for meeting the health and

ELEMENT	PERFORMANCE CRITERIA
incorporating WHS policies and procedures into work team processes	safety requirements of a small work team 1.2 Assist in providing and clearly explaining information to the work team about the organisation's WHS policies, procedures, programs and legislative requirements 1.3 Assist in regularly providing and clearly explaining information to the work team about identifying hazards and risk assessment outcomes
2. Support participative arrangements for managing WHS	2.1 Implement and monitor organisational consultative procedures to facilitate participation of the work team in managing work area WHS 2.2 Deal promptly with issues raised through consultation according to organisational procedures for issue resolution 2.3 Encourage and assist work team members to contribute to managing WHS 2.4 Engage with individuals and work teams to identify and implement improvements in managing WHS feedback
3. Support the organisation's procedures for providing WHS training	3.1 Provide advice on WHS training needs of individuals and the work team 3.2 Provide advice on strategies and opportunities for developing work team's WHS competence 3.3 Provide coaching and mentoring assistance to work team members to support the effective development of individual and team WHS competence
4. Participate in identifying hazards, and assessing and controlling risks for the work area	4.1 Provide advice on hazards in the work area according to organisational policies and procedures, and WHS legal requirements 4.2 Support the implementation of procedures to control risks using the hierarchy of control and according to organisational procedures and WHS legal requirements 4.3 Identify and report inadequacies in existing risk control measures according to organisational procedures, the hierarchy of control and WHS legal requirements 4.4 Accurately complete and maintain WHS incident records in the work area according to organisational procedures and WHS legislative requirements

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.1, 1.2, 1.3	- Interprets and analyses legislative and organisational documentation - Applies appropriate strategies to construct meaning from legislative and organisational documentation
Writing	1.2, 1.3, 4.3, 4.4	Documents WHS information using required format and industry specific vocabulary
Oral communication	1.2, 1.3, 3.3	- Presents information using language appropriate to audience - Uses questioning and active listening to confirm understanding
Navigate the world of work	1.1, 1.2, 2.2, 4.1, 4.2, 4.3	- Follows policies, procedures and legislative requirements relevant to own role - Keeps up to date on changes to legislation or regulations relevant to own role
Interact with others	2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 4.1, 4.3, 4.4	- Selects appropriate communication protocols and conventions to provide information to others - Collaborates with others to achieve joint outcomes, playing an active role in facilitating effective group interaction, influencing direction and taking a leadership role on occasion - Beginning to provide feedback to others in forms they can engage with and respond to in the context of encouraging participative contributions
Get the work done	2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 4.4	- Sequences and schedules activities, monitors implementation and manages relevant communication - Initiates standard procedures when responding to issues raised through consultation - Uses feedback to identify and implement opportunities improve arrangements for managing WHS issues to improvement

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBWHS301 Maintain workplace safety	BSBWHS301A Maintain workplace safety	Updated to meet Standards for Training Packages Minor edits to clarify intent of performance criteria	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBWHS301 Maintain workplace safety

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to:

- implement and monitor the organisation's work health and safety (WHS) policies and procedures
- identify hazards and assess and control risks
- assist in explaining and improving WHS policies, procedures and legislative requirements applicable to the organisation
- assist in explaining hazards identification and risk assessment outcomes to other team members
- implement and monitor consultation about WHS according to legislative and organisational requirements
- deal promptly with issues raised as a result of WHS consultation
- encourage work team to contribute to identifying and implementing improvements to WHS feedback
- assist others to develop WHS competence and provide advice on training needs
- complete WHS documentation.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- describe characteristics and composition of the work team
- describe procedures for identifying hazards and assessing and controlling associated risks to health and safety, including the hierarchy of control
- outline organisational WHS policies and procedures including those relating to risk management, fire, emergencies, evacuation, incident investigation and reporting

- describe relevant Acts, regulations and codes of practice from all levels of government that impact on business operations, especially with regard to WHS and environmental issues, equal opportunity, industrial relations and anti-discrimination
- identify WHS aspects of other organisational systems and procedures.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced by individuals carrying out work health and safety duties in the workplace and include access to:

- safety processes relevant to the area of work
- organisational policies and procedures, standard operating procedures and plans
- WHS Acts, regulations, codes of practice, licensing requirements and standards
- appropriate office equipment and resources used in the identification and rectification of WHS compliance breaches.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBWHS506 Contribute to developing, implementing and maintaining WHS management systems

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to contribute to the development, implementation and maintenance of elements of a work health and safety management system (WHSMS).

It applies to individuals with organisational responsibilities for contributing to tasks in relation to elements of a WHSMS appropriate to the nature and scale of the organisation and its work health and safety (WHS) risks. These people will work in a range of WHS roles across all industries and will apply a substantial knowledge base and well-developed skills in a wide variety of WHS contexts.

NOTE: The terms 'occupational health and safety' (OHS) and 'work health and safety' (WHS) are equivalent and generally either can be used in the workplace. In jurisdictions where the Model WHS Legislation has not been implemented RTOs are advised to contextualise the unit of competency by referring to the existing State/Territory OHS legislative requirements.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Regulation, Licensing and Risk – Work Health and Safety

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the</i>	<i>Performance criteria describe the performance needed to</i>

ELEMENT	PERFORMANCE CRITERIA
<i>essential outcomes.</i>	<i>demonstrate achievement of the element.</i>
1 Contribute to development and implementation of a WHSMS	1.1 Access sources of information to determine the form, content, purposes and functions of a WHSMS 1.2 Identify duty holders and their roles and responsibilities in a WHSMS, according to WHS legislation 1.3 Advocate for the integration of return-to-work or injury management as part of an effective WHSMS 1.4 Contribute to the development of an organisational WHSMS that meets legal and organisational requirements 1.5 Communicate information about the WHSMS to relevant individuals and parties 1.6 Consult effectively with individuals and parties about implementing the WHSMS
2 Contribute to the development of WHS policy and commitment to the WHSMS	2.1 Communicate to individuals and parties the requirements of commitment to the WHSMS, and WHS policy 2.2 Contribute to the development and implementation of an initial WHS review, as required 2.3 Contribute to the development of WHS policy that meets requirements and is appropriate to the organisation 2.4 Facilitate and support the participation of, and consultation with, individuals and parties in developing WHS policy 2.5 Support documentation and communication of WHS policy to individuals and parties
3 Contribute to the development of the WHS plan	3.1 Communicate to individuals and parties the requirements of a WHS plan 3.2 Contribute to the development of a WHS plan appropriate to the organisation, that meets requirements 3.3 Facilitate and support the participation of, and consultation with individuals and parties in WHS plan development
4 Contribute to the implementation of the WHS plan	4.1 Communicate to individuals and parties the requirements for implementation of the WHS plan appropriate to the organisation 4.2 Contribute to the implementation of the WHS plan according to own job role 4.3 Facilitate and support the participation of, and consultation with individuals and parties in implementing the WHS plan
5 Contribute to the	5.1 Communicate to individuals and parties the requirements for

ELEMENT	PERFORMANCE CRITERIA
measurement and evaluation of WHS performance	measurement and evaluation appropriate to the organisation 5.2 Contribute to measurement and evaluation according to own job role 5.3 Facilitate and support the participation of, and consultation with individuals and parties in measuring and evaluating WHS performance
6 Contribute to the review and improvement of the WHSMS	6.1 Communicate to individuals and parties the requirements for review and improvement appropriate to the organisation 6.2 Contribute to review and improvement according to own job role 6.3 Facilitate and support the participation of, and consultation with individuals and parties in reviewing and improving the WHSMS

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.1, 1.2	Identifies, interprets and critically analyses complex texts in relation to WHSMS information
Writing	1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.5, 3.1, 4.1, 5.1, 6.1	- Matches style of writing to purpose and audience in consulting, developing and communicating about WHSMS and WHS policy - Uses appropriate layout, vocabulary, grammatical structure and conventions in consulting, developing and communicating about WHSMS and WHS policy
Oral communication	1.3, 1.4, 1.5, 1.6, 2.1, 2.4, 3.1, 3.4, 4.1, 5.1, 5.3, 6.1, 6.3	- Presents information about WHSMS and WHS policy using structure and language appropriate to the audience - Uses questions and active listening to extract main ideas, gather information, seek and offer opinions
Numeracy	5.2	Selects from, and applies, an expanding range of mathematical and problem-solving strategies in relation to WHMS measurement and evaluation
Navigate the world of work	1.1, 1.2, 2.1, 2.3	Accepts responsibility for developing, implementing or modifying workplace policies and procedures applicable to WHSMS

		Understands and keeps up to date with changes to legislation or regulations relevant to own rights and responsibilities and considers implications of these when negotiating, planning and undertaking work
Interact with others	1.4, 1.6, 2.4, 5.3, 6.3	Collaborates with others to achieve joint outcomes, playing an active role in facilitating effective group interaction
Get the work done	3.2, 3.3, 4.2, 4.3, 5.2, 6.2	- Sequences and schedules complex activities, monitors implementation and manages relevant communication in relation to WHS planning - Uses systematic, analytical processes in complex, non-routine situations, setting goals, gathering relevant information, and identifying and evaluating options against agreed criteria in review and evaluation of WHSMS - Utilises digital systems and tools in the context of WHS plan implementation and measurement and evaluation of WHS performance

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBWHS506 Contribute to developing, implementing and maintaining WHS management systems	BSBWHS506A Contribute to developing, implementing and maintaining WHS management systems	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBWHS506 Contribute to developing, implementing and maintaining WHS management systems

Modification History

Release	Comments
Release 1	This version first released with BSB01 Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to contribute to:

- developing, implementing, reviewing and improving a Work Health and Safety management system (WHSMS) for an organisation
- developing work health and safety (WHS) policy and gaining commitment to the WHSMS
- consultation and communications processes
- developing and implementing a WHS plan
- measuring and evaluating WHS performance.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- summarise the key elements of a WHSMS
- identify barriers to WHSMS implementation and strategies to remove them
- list the benefits to an organisation of having return-to-work and injury management integrated into the WHSMS
- list essential content of a WHS improvement action plan
- specify legislative requirements for WHS information and data, and consultation
- describe the nature of information and data that provide valid and reliable measures of performance of WHS management processes
- identify relevant Commonwealth and state or territory WHS Acts, regulations, codes of practice, standards and guidance material, and other relevant publications
- describe a range of commonly used WHSMS and the associated WHSMS certification standards

- specify requirements for recordkeeping that address WHS, privacy and other relevant legislation
- describe the roles and responsibilities of individuals and parties under WHS legislation
- specify WHS positive performance indicators.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced by individuals carrying out work health and safety duties in the workplace and include access to:

- office equipment and resources
- workplace policies and procedures
- relevant Acts, regulations, codes of practice, standards and guidelines case studies and, where possible, real situations
- interaction with others.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBWOR502 Lead and manage team effectiveness

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to lead teams in the workplace and to actively engage with the management of the organisation.

It applies to individuals working at a managerial level who facilitate work teams and build a positive culture within their work teams. At this level, work will normally be carried out using complex and diverse methods and procedures requiring the exercise of considerable discretion and judgement, using a range of problem solving and decision making strategies.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Industry Capability – Workplace Effectiveness

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Establish team performance plan	1.1 Consult team members to establish a common understanding of team purpose, roles, responsibilities and accountabilities in accordance with organisational goals, plans and objectives 1.2 Develop performance plans to establish expected outcomes, outputs, key performance indicators (KPIs) and goals for work team 1.3 Support team members in meeting expected performance

ELEMENT	PERFORMANCE CRITERIA
	outcomes
2. Develop and facilitate team cohesion	2.1 Develop strategies to ensure team members have input into planning, decision making and operational aspects of work team 2.2 Develop policies and procedures to ensure team members take responsibility for own work and assist others to undertake required roles and responsibilities 2.3 Provide feedback to team members to encourage, value and reward individual and team efforts and contributions 2.4 Develop processes to ensure that issues, concerns and problems identified by team members are recognised and addressed
3. Facilitate teamwork	3.1 Encourage team members and individuals to participate in and to take responsibility for team activities, including communication processes 3.2 Support the team in identifying and resolving work performance problems 3.3 Ensure own contribution to work team serves as a role model for others and enhances the organisation's image for all stakeholders
4. Liaise with stakeholders	4.1 Establish and maintain open communication processes with all stakeholders 4.2 Communicate information from line manager/management to the team 4.3 Communicate unresolved issues, concerns and problems raised by team members and follow-up with line manager/management and other relevant stakeholders 4.4 Evaluate and take necessary corrective action regarding unresolved issues, concerns and problems raised by internal or external stakeholders

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description

Reading	1.1, 4.4	Analyses and interprets textual information from the organisation's policies, goals and objectives to establish team goals or to determine corrective action
Writing	1.2, 2.1, 2.2, 2.4, 4.2, 4.3, 4.4	Prepares written reports and workplace documentation that communicate complex information clearly and effectively
Oral Communication	1.1, 2.3, 3.1, 4.1, 4.2, 4.3	- Engages in discussions or provides information using appropriate vocabulary and non-verbal features - Uses listening and questioning techniques to confirm understanding and to engage the audience
Navigate the world of work	1.1, 2.1, 2.2, 3.3	- Understands how own role contributes to broader organisational goals - Modifies or develops policies and procedures to achieve organisational goals
Interact with others	1.1, 1.3, 2.2, 2.3, 3.1, 3.2, 4.2, 4.3	- Selects and uses appropriate conventions and protocols when communicating with diverse stakeholders - Uses interpersonal skills to gain trust and confidence of team and provides feedback to others in forms that they can understand and use - Adapts personal communication style to build positive working relationships and to show respect for the opinions, values and particular needs of others - Plays a lead role in situations requiring effective collaboration, demonstrating high level conflict resolution skills and ability to engage and motivate others
Get the work done	1.2, 2.1, 2.2, 2.4, 3.2, 4.1, 4.3, 4.4	- Develops, implements and monitors plans and processes to ensure team effectiveness - Monitors and actively supports processes and development activities to ensure the team is focused on work outcomes - Plans for unexpected outcomes and implements creative responses to overcome challenges

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
BSBWOR502 Lead and manage team effectiveness	BSBWOR502B Ensure team effectiveness	Updated to meet Standards for Training Packages	Equivalent unit

Code and title current version	Code and title previous version	Comments	Equivalence status
		Title change	

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBWOR502 Lead and manage team effectiveness

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 1.0.

Performance Evidence

Evidence of the ability to:

- use leadership techniques and strategies to facilitate team cohesion and work outcomes including:
 - encouraging and fostering shared understanding of purpose, roles and responsibilities
 - identifying and resolving problems
 - providing feedback to encourage, value and reward others
 - modelling desired behaviour and practices
- develop policies and procedures to ensure team members take responsibility for own work and assist others to undertake required roles and responsibilities
- establish processes to address issues and resolve performance issues
- support team to meet expected performance outcomes including providing formal and informal learning opportunities as needed
- develop performance plans with key performance indicators (KPIs), outputs and goals for individuals or the team which incorporate input from stakeholders
- communicate effectively with a range of stakeholders about team performance plans and team performance
- facilitate two-way flow of information between team and management relevant to team performance
- evaluate and take necessary corrective action regarding unresolved issues, concerns and problems raised by internal or external stakeholders.

Note: if a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- explain how group dynamics can support or hinder team performance

- outline strategies that can support team cohesion, participation and performance
- explain strategies for gaining consensus
- explain issue resolution strategies.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced in the industry capability - workplace effectiveness field of work and include access to:

- workplace documents
- case studies and, where possible, real situations
- office equipment and resources
- interaction with others.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

ICTICT103 Use, communicate and search securely on the internet

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to connect to the internet, securely send and receive emails, search the internet using web browsers and interact securely and in a socially responsible manner with a range of different internet sites.

It applies to individuals who use business technology to perform a range of routine tasks in the workplace or home office with limited responsibility.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

General ICT

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Connect to and access the internet	1.1 Connect to internet via existing internet connection and confirm functionality 1.2 Open internet browser and set home page of personal choice by setting internet options 1.3 Ensure internet browser software security 1.4 Adjust display of the internet browser to suit personal requirements

ELEMENT	PERFORMANCE CRITERIA
	1.5 Modify toolbar to meet user and internet browser needs 1.6 Access a particular website, note privacy and other conditions of use, and retrieve data 1.7 Use socially responsible behaviour when sharing information on the internet 1.8 Enter uniform resource locator (URL) in address line of internet browser
2. Use email for communications	2.1 Open email application package, create new email message and add addressees 2.2 Compose text of an email message according to organisational guidelines, and spell check and edit text as required 2.3 Create and add an automatic signature for the user 2.4 Attach files to email message where required 2.5 Determine and set priority and send email message 2.6 Reply to and forward a received message using available features 2.7 Open and save an attachment to the relevant folder 2.8 Search for, sort and save email message using available settings 2.9 Adjust email accounts to restrict and quarantine possible email security problems 2.10 Print email message as required
3. Search the internet	3.1 Review organisational guidelines on internet access 3.2 Open internet application and locate and access a search engine on the internet, and define search expressions based on data required 3.3 Enter appropriate key words into the search engine to locate desired information 3.4 Refine a search depending on outcomes of original search 3.5 Save search expression results and present them in a report according to information requirements 3.6 Create a bookmark within the internet browser or a link for the required web page for the key results 3.7 Save key results in a bookmark folder 3.8 Modify internet browser options for printing and print a

ELEMENT	PERFORMANCE CRITERIA
	web page 3.9 Close internet browser
4. Access and use consumer specific sites on the internet	4.1 Identify, access and review information specific sites to gain consumer information 4.2 Identify and use internet application sites to lodge details and gain access and information 4.3 Access and use online forms on the internet
5. Undertake online transactions	5.1 Access online transaction site 5.2 Ensure security of transaction site 5.3 Enter required information into fields on merchant's website 5.4 Ensure pop-up dialog boxes, prompts or feedback mechanisms are completed 5.5 Enter, check and make changes to preferred transaction options 5.6 Complete online transaction 5.7 Record and archive receipts according to business processes 5.8 Close down and leave transaction process
6. Conduct an advanced search	6.1 Use search tools and advanced search features 6.2 Use Boolean search techniques when required to enhance the search 6.3 Use multiple or meta-search tools with a range of key words 6.4 Use search engines particular to a field of knowledge to refine the outcome 6.5 Access related virtual community sites and newsgroups, and note their objectives and operational arrangements 6.6 Conduct a search with domain names to refine the search
7. Use information that has been located	7.1 Cross reference information found by using several websites to determine accuracy of information 7.2 Check date that website was last updated or properties of website to determine currency of information 7.3 Determine website authority by looking at copyright statements, privacy statements and organisational information 7.4 Save and print information found in different file forms

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.1-1.3, 1.6, 2.1, 2.6-2.8, 3.1, 3.2, 4.1-4.3, 5.1, 5.2, 5.4, 5.5, 6.5, 7.1-7.3	Interprets textual information and instructions to efficiently undertake the task
Writing	2.1-2.3, 3.5, 5.3, 5.4, 5.7	- Uses required format to accurately enter information specific to requirements - Composes short and specific messages using format, grammar and language appropriate to audience
Navigate the world of work	1.7	Understands main responsibilities and boundaries of own role
Get the work done	1.1-1.8, 2.1, 2.3-2.10, 3.2-3.9, 4.1-4.3, 5.1-5.8, 6.1-6.6, 7.4	- Plans routine tasks with familiar goals and outcomes, taking limited responsibility for decisions regarding sequencing - Understands the purpose and specific functions of common digital tools used in work contexts - Recognises and responds to common operational problems when using web browsers - Takes responsibility for routine low-impact decisions within familiar situations - Implements basic security requirements related to own tasks

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTICT103 Use, communicate and search securely on the internet	ICAICT103A Use, communicate and search securely on the internet	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTICT103 Use, communicate and search securely on the internet

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 1.0.

Performance Evidence

Evidence of the ability to:

- connect to and access the internet
- send and receive emails
- secure internet access and email communications
- use search tools to locate information
- use different internet search techniques
- research and select appropriate website
- undertake online transactions
- assess the accuracy, currency, authority and reliability of the site and information located.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must :

- list basic technical terminology related to reading help files and prompts
- describe the basics of copyright and privacy statements
- explain different types of messages that occur, including error messages and messages to install plug-ins
- list different types of search engines and web browsers
- list procedures for using email applications
- list procedures for evaluating and assessing the authority, reliability and authenticity of information
- outline internet search functions
- describe internet speed and traffic loads related to times of accessing the internet
- describe the makeup and structure of internet addresses

- list organisational guidelines on internet and email use (web etiquette or netiquette)
- describe business process related to online transactions
- describe web browser update techniques
- explain what key words and bookmarks are used for.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the general information and communications technology (ICT) industry, and include access to:

- a personal computer or digital device with internet
- search engines currently used in industry
- organisational policies on internet usage.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

MEM30031A Operate computer-aided design (CAD) system to produce basic drawing elements

Modification History

Release 1 - New unit of competency

Unit Descriptor

This unit of competency covers the skills and knowledge required to apply functions of computer-aided design (CAD) software programs that are typically used in the production of detail drawings.

Application of the Unit

This unit is suitable for those working within a CAD or drafting work environment and may be applied across engineering and manufacturing environments. It covers competent use of a CAD program to perform basic drawing tasks used in the development of detail drawings. Drawings may include plans, diagrams, charts, circuits, systems or schematics.

This unit includes using computer equipment and selecting software functions in order to generate basic drawing elements.

Work is conducted under supervision.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of

performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Confirm drawing requirements	1.1	Confirm purpose, scope, and information and presentation requirements for drawing
		1.2	Review available information relevant to project and work requirements, and identify and address further information needs
		1.3	Identify computing equipment and software used in the organisation
		1.4	Identify work flow and procedures for work supervision
		1.5	Examine requirements for presentation of drawings
2	Identify key features of CAD software	2.1	Describe types of CAD software used for detail drafting, their key features and suitability for producing specific drawing outcomes
		2.2	Describe types of CAD software used for design drafting, their key features and suitability for producing specific drawing outcomes
		2.3	Identify differences in CAD process to generate 2-D drawings and 3-D models, and reasons for each presentation
		2.4	Identify differences in CAD process to generate single and multiple view drawings, and reasons for each presentation
		2.5	Identify CAD software used in the organisation and confirm compatibility with other software programs and peripheral equipment
		2.6	Identify software features for linked specifications, catalogues or materials ordering
3	Access software and set up for	3.1	Open software and navigate organisational filing and library system

	drawing work	3.2	Identify organisational and software templates and determine uses
		3.3	Identify organisational symbols, codes and standards to be applied in drafting work and how these are accessed and applied
		3.4	Apply workplace procedures to retrieve and manipulate required information and navigate computing technology
		3.5	Set up working environment
4	Produce basic drawing elements	4.1	Use CAD functions to produce basic drawing elements
		4.2	Use editing and transfer tools and methods to modify drawing elements
		4.3	Apply dimensions, text and symbols to drawing elements
		4.4	Import and export files into/out of working space
		4.5	Generate different views and perspectives
		4.6	Organise presentation of work
5	Complete CAD operations	5.1	Save and file drawing elements according to organisational procedures
		5.2	Print drawing elements and evaluate presentation
		5.3	Evaluate work and identify areas for improvement
		5.4	Close applications, perform CAD housekeeping and maintain organisational filing system

Required Skills and Knowledge

Required skills

Required skills include:

- literacy skills sufficient to read instructions for drawings work

- using computer technologies and navigating software
- numeracy skills sufficient to interpret technical information and determine scaling and layout issues
- navigating software to:
 - manipulate drawing entities
 - modify dimension styles
 - create and use layers
 - manipulate the drawing origin
 - define and utilise symbol libraries
 - utilise grids/grid snaps and object snaps
 - display views at multiple scales
 - add title blocks/frame to layout a drawing for printing
 - prepare advanced drawings in plane orthogonal or equivalent
 - set up prototype drawings
 - define and extract attribute data
 - create bills of materials (BOM) utilising attribute data and third-party application software

Required knowledge

Required knowledge includes:

- general knowledge of different approaches to drawing
- awareness of copyright and intellectual property issues and legislation in relation to drawing
- environmental and occupational health and safety (OHS) issues associated with the tools and materials used for drawing
- quality assurance procedures
- CAD program capabilities and processes

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria required skills and knowledge range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	A person who demonstrates competency in this unit must be able to use CAD software to produce graphics commonly used in drafting work.
Critical aspects for assessment and evidence required to demonstrate competency in this	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required

unit	knowledge, and be capable of applying the competency in new and different situations and contexts. Specifically the candidate must be able to: • work within typical site/teamwork structures and methods • apply worksite communication procedures • comply with organisational policies and procedures, including quality requirements • participate in work meetings • comply with quality requirements • use industry terminology • apply appropriate safety procedures • identify drawing work requirements and determine appropriate software functions and features • identify features and uses of CAD software used in detail and design drafting • access and use computing equipment and CAD software functions to produce drawing elements.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability. Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities. This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with drafting or other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways, including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Range Statement

CAD software	CAD software may include: • AutoCAD • Inventor • Revit • Solidworks • ProSteel • XSteel • other programs
Key features	Key features may include: • 2-D • 3-D modelling • built-in specifications • file import/export • save • undo • scale
Specific drawing outcomes	Specific drawing outcomes may include • 2-D • 3-D modelling • drawings for specific engineering applications • orthographic/isometric/perspectives/schematics
Basic drawing elements	Basic drawing elements may include: • points, line angles, circles, arcs, planes, figures

	and solids • squares, rectangles and triangles • bisected lines and dividing lines • polygon, ellipse, spline, dimension and hatch
Editing and transfer tools and methods	Editing and transfer tools and methods may include: • delete, fillet, chamfer, erase, trim/extend, break, undo and redo commands • zooming and panning • moving, copying, rotating and mirroring • polar and rectangular duplication • object snaps • dimensions • selecting entities • dividing • scaling • measuring • grouping

Unit Sector(s)

Drawing, drafting and design

Custom Content Section

Not applicable.

MSAENV272B Participate in environmentally sustainable work practices

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency covers the outcomes required to effectively measure current resource use and carry out improvements including those reducing negative environmental impacts of work practices. This unit is based on the sustainability guideline standard GCSSUS01A Participate in environmentally sustainable work practices.

Application of the Unit

Application of the unit	This competency applies to operators/team members who are required to follow procedures so as to work in an environmentally sustainable manner. This ensures regulatory compliance and also aims at minimising environmental risks and maximises the environmental performance of the process and the organisation. It includes: • Resources used • Potential environmental hazards • Improving environmental performance (within scope of competency and authority). This competency applies to all sectors of the manufacturing industry and members of its value chain. It may also be applied to all sections of an organisation, including office, warehouse etc. This unit will need to be appropriately contextualised as it is applied across an

	organisation and across different industry sectors.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	This unit has no prerequisites	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify current resource use and environmental issues.	1.1. Identify workplace <i>environmental and resource efficiency issues</i> . 1.2. Identify resources used in own work role. 1.3. <i>Measure</i> and record current usage of resources using <i>appropriate techniques</i> .

ELEMENT	PERFORMANCE CRITERIA
	1.4. Identify and report workplace environmental hazards to appropriate personnel.
2. Comply with environmental regulations.	2.1. Follow procedures to ensure compliance . 2.2. Report environmental incidents to appropriate personnel.
3. Seek opportunities to improve environmental practices and resource efficiency.	3.1. Follow enterprise plans to improve environmental practices and resource efficiency. 3.2. Make suggestions for improvements to workplace practices in own work area.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include the ability to:

- report as required by procedures
- follow procedures and instructions and respond to change
- ask questions and seek clarifications relating to work requirements

Reading and writing is required in order to interpret required procedures and complete required workplace forms/reports.

Numeracy is required to interpret numeric workplace information, readings and measurements, handle data as required and complete numeric components of workplace forms/reports.

Required knowledge

Competency includes sufficient knowledge to:

- have a basic understanding of sustainability
- know the environmental hazards/risks, resource use and inefficiencies associated with own workplace (at an appropriate level)
- know the relevant environmental and resource efficiency systems and procedures for own work area
- know the impact of laws and regulations to a level relevant to the work context

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competence in this unit must be able to provide evidence of the ability to follow workplace procedures according to instructions given and to participate in the improvement of environmental and resource efficient work practices at own level of responsibility. Evidence must be strictly relevant to the particular workplace role.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- identify and measure resources used in their job
- identify situations likely to lead to an environmental incident
- follow procedures related to environmental performance.

Consistent performance should be demonstrated. For example, look to see that:

- work is routinely to procedures
- the minimum of resources is used consistent with the job requirements, good practice and the procedures.

Context of and specific resources for assessment

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Depending on the selected methods of assessment access may be required to:

- workplace procedures and plans
- documentation in relation to production, waste, overheads, hazard control/management
- reports from supervisors/managers
- case study/scenarios

Method of assessment

A holistic approach should be taken to the assessment.

Competence in this unit may be assessed:

- by demonstration in the workplace

EVIDENCE GUIDE	
	• using targeted questioning for appropriate portions • by use of a suitable simulation and/or a range of case studies/scenarios • by a combination of these techniques. In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment.
Guidance information for assessment	Assessors need to be aware of any cultural issues that may affect responses to questions. Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Procedures	All operations are performed in accordance with procedures including all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.
Environmental and resource efficiency issues	Environmental and resource efficiency issues include minimisation of environmental risks and maximisation of opportunities to improve business environmental performance and to promote more efficient production and consumption of natural resources, for example by: • minimisation of waste, through implementation of the waste management hierarchy

RANGE STATEMENT	
	• efficient and effective use of energy and other resources • seeking alternative sources of energy • efficient use of materials and appropriate disposal of waste • use of controls to minimise the risk of environmental damage from hazardous substances • efficient water use • reducing emissions • life cycle analysis applied to issues such as energy supply, materials, transport, production
Measure	Measure should be interpreted in a manner consistent with the scope of the job and may include things like: • counting the number of items entering/leaving a work area • reading indicators in the work area • obtaining relevant information from support personnel • other simple means
Appropriate techniques	Appropriate techniques include: • material fed to/consumed by plant/equipment • plant meters and gauges • job cards including kanbans • examination of invoices from suppliers • measurements made under different conditions • examination of relevant information and data.
Compliance	Compliance includes meeting relevant federal, state and local government laws, by-laws, regulations and mandated codes of practice. It also includes any codes and standards that the enterprise applies voluntarily.
Incidents	Incidents include: • breaches or potential breaches of regulations • occurrences outside of standard procedure which may lead to lower environmental performance.
Enterprise plans	Enterprise plans include:

RANGE STATEMENT	
	• documented policies and procedures • work plans to minimise waste, increase efficiency of water/energy use, minimise environmental hazards
Suggestions	Suggestions include ideas that help to: • prevent and minimise environmental risks and maximise opportunities • reduce emissions of greenhouse gases • reduce use of non-renewable resources • improve energy efficiency • increase use of renewable, recyclable, reusable and recoverable resources • reduce waste • increasing the reusability/recyclability of wastes/products • reduce water usage and/or water wastage.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Competitive manufacturing tools

Co-requisite units

Co-requisite units		

MSAENV472B Implement and monitor environmentally sustainable work practices

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency covers the outcomes required to effectively analyse the workplace in relation to environmentally sustainable work practices and to implement improvements and monitor their effectiveness. This unit is based on the sustainability guideline standard GCSSUS02A Implement and monitor environmentally sustainable work practices.

Application of the Unit

Application of the unit	This competency applies to those who have responsibility for a specific area of work or who lead a work group or team. It addresses the knowledge, processes and techniques necessary to implement and monitor environmentally sustainable work practices, including the development of processes and tools. It includes: • Identifying areas for improvement • Developing plans to make improvements • Implementing and monitoring improvements in environmental performance. This competency applies to all sectors of the manufacturing industry and members of its value chain. It may also be applied to all sections of an organisation, including office, warehouse etc. This unit will need to be appropriately contextualised as it is applied across an organisation and across different industry sectors.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	This unit has no prerequisites	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Investigate current practices in relation to resource usage.	1.1 Identify environmental regulations applying to the enterprise. 1.2 Assess procedures for assessing <i>compliance</i> with environmental regulations. 1.3 Collect information on environmental and resource efficiency systems and procedures, and provide to the work group where appropriate. 1.4 Measure and record current resource usage by members of the work group.

ELEMENT	PERFORMANCE CRITERIA
	1.5 Analyse and record current purchasing strategies. 1.6 Analyse current work processes to access information and data and assist in identifying areas for improvement.
2. Set targets for improvements.	2.1 Seek input from stakeholders, key personnel and specialists. 2.2 Access external sources of information and data as required. 2.3 Evaluate alternative solutions to workplace environmental issues. 2.4 Set efficiency targets.
3. Implement performance improvement strategies.	3.1 Source techniques/tools to assist in achieving targets. 3.2 Apply continuous improvement strategies to own work area of responsibility and communicate ideas and possible solutions to the work group and management. 3.3 Integrate environmental and resource efficiency improvement plans for own work group with other operational activities and implement them. 3.4 Seek suggestions and ideas about environmental and resource efficiency management from stakeholders and act upon them where appropriate. 3.5 Implement costing strategies to fully value environmental assets.
4. Monitor performance.	4.1 Document outcomes and communicate reports on targets to key personnel and stakeholders. 4.2 Evaluate strategies. 4.3 Set new targets and investigate and apply new tools and strategies. 4.4 Promote successful strategies and reward participants where possible.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

REQUIRED SKILLS AND KNOWLEDGE

- using relevant environmental and resource efficiency systems, tools and procedures
- applying quality assurance systems relevant to own work area
- applying relevant supply chain procedures
- measurement and calculation techniques
- communication/consultation skills to ensure information is supplied to the work group

Reading and writing is required to comprehend documentation and interpret environmental and energy efficiency requirements and to document and maintain records

Numeracy is required to interpret numeric workplace information, readings and measurements, handle data as required and complete numeric components of workplace forms/reports.

Required knowledge

Required knowledge includes:

- how to access and use relevant environmental and resource efficiency systems, tools and procedures
- understanding of best practice approaches relevant to own area of responsibility
- strategies to maximise opportunities and minimise impacts relevant to own work area
- relevant environmental and resource efficiency issues specific to industry practices
- methods for measuring and calculating resource usage

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competence in this unit must be able to provide evidence of the ability to implement and monitor integrated environmental and resource efficiency management policies and procedures within an organisation.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

EVIDENCE GUIDE	
	• monitor and investigate current resource usage • develop plans to improve sustainability • implement environmental improvements. Consistent performance should be demonstrated. For example, look to see that: • environmental performance is routinely monitored and investigated • areas for improvements are followed through and the implemented changes are in turn monitored and investigated.
Context of and specific resources for assessment	This section should be read in conjunction with the range of variables for this unit of competency. Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required. Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed: • by demonstration in the workplace • using targeted questioning for appropriate portions • through use of specific project(s) • by use of a suitable simulation and/or a range of case studies/scenarios • by a combination of these techniques. In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or

EVIDENCE GUIDE	
	similar assessment.
Guidance information for assessment	Assessors need to be aware of any cultural issues that may affect responses to questions. Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Procedures	All operations are performed in accordance with procedures. Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards. Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Environmental and resource efficiency issues	Environmental and resource efficiency issues include: - addressing environmental and resource sustainability initiatives such as Environmental Management Systems, action plans, surveys and audits - reference to standards, guidelines and approaches such as: - ISO 14001 Environmental Management Systems - Life Cycle Analyses

RANGE STATEMENT	
	• Cradle to cradle • Global Reporting Initiative • Ecological footprinting • Triple Bottom Line reporting • Product Stewardship • determining enterprise's most appropriate waste treatment including waste to landfill, recycling, re-use and wastewater treatment • applying the waste management hierarchy in the workplace • initiating and/or maintaining appropriate enterprise procedures for operational energy consumption, including stationary energy and non stationary (transport) • efficient use of water • minimising greenhouse gas emissions • use of controls to minimise the risk of environmental damage from hazardous substances
Measure	Measuring techniques include: • material fed to/consumed by plant/equipment • plant meters and gauges • job cards including kanbans • examination of invoices from suppliers • measurements made under different conditions • examination of relevant information and data • others as appropriate to the specific industry contexts.
Techniques and tools	Techniques and tools may includeÂ : • visual workplace concepts • measurement, display and/or recording devices • changed work practices/procedures • competence development and awareness training • process and equipment items
Compliance	Compliance includes meeting relevant federal, state and local government laws, by-laws, regulations and codes of practice.
Incidents	Incidents include:

RANGE STATEMENT	
	• breaches or potential breaches of regulations • occurrences outside of standard procedure which may lead to lower environmental performance
Purchasing strategies	Purchasing strategies include: • influencing suppliers to take up environmental sustainability • selecting materials/components with a lower environmental profile.
Stakeholders, key personnel and specialists	Stakeholders, key personnel and specialists include individuals and groups both inside and outside the organisation that have some direct interest in the enterprise's conduct, actions, products and services, including: • employees at all levels of the organisation • customers • suppliers • other organisations • key personnel within the organisation, and specialists outside it who may have particular technical expertise
Suggestions	Suggestions includes ideas that help to: • prevent and minimise environmental risks and maximise opportunities • reduce emissions of greenhouse gases • reduce use of non-renewable resources • make more efficient use of energy, water and other resources • maximise opportunities to re use and recycle materials • identify strategies to offset or mitigate environmental impacts. e.g. purchasing of carbon credits • express purchasing power through the selection of suppliers with improved environmental performance. e.g. purchasing renewable energy and materials with lower embedded carbon • eliminate the use of hazardous and toxic materials increasing the reusability/recyclability of wastes/products.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Competitive manufacturing tools

Co-requisite units

Co-requisite units		

MSAENV672B Develop workplace policy and procedures for environmental sustainability

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency covers the outcomes required to develop and implement a workplace sustainability policy, including the modification of the policy to suit changed circumstances. This unit is based on the sustainability guideline standard GCSSUS03A Develop workplace policy and procedures for sustainability.

Application of the Unit

Application of the unit	This competency applies to team leaders/supervisors/managers who are required to develop approaches to environmental sustainability within workplaces, including the development and implementation of policy. It includes: • Communicating with relevant stakeholders • Developing and monitoring sustainability policies • Reviewing and improving sustainability policies. This competency applies to all sectors of the manufacturing industry. It may also be applied to all sections of an organisation, including office, warehouse etc. This unit will need to be appropriately contextualised as it is applied across an organisation and across different industry sectors.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	This unit has no prerequisites	

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Develop workplace sustainability policy.	1.1 Define <i>scope of sustainability policy</i> . 1.2 Identify and consult <i>stakeholders</i> as a key component of the policy development process. 1.3 Review environmental sustainability <i>strategies</i> relevant to all stages of work covered by the policy 1.4 Make recommendations for policy options based on likely effectiveness, timeframes and cost. 1.5 Develop policy is that reflects the organisation's commitment to sustainability as an integral part of the

ELEMENT	PERFORMANCE CRITERIA
	business planning and as a business opportunity. 1.6 Agree upon appropriate methods of implementation.
2. Communicate the policy.	2.1 Promote the policy, including its expected outcome to key stakeholders. 2.2 Inform those involved in implementing the policy as to outcomes expected, activities to be undertaken and responsibilities assigned.
3. Implement the policy.	3.1 Develop and communicate procedures to help implement the policy. 3.2 Implement strategies for continuous improvement in resource efficiency. 3.3 Establish record systems for tracking continuous improvements in sustainability approaches and assign responsibilities.
4. Review policy implementation	4.1 Record outcomes and provide feedback to key personnel and stakeholders. 4.2 Investigate success or otherwise of policy. 4.3 Monitor records to identify trends that may require remedial action, and use to promote continuous improvement of performance. 4.4 Modify policy and or procedures as required to ensure improvements are made.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- developing and implementing systems and procedures to aid in the achievement of sustainability in the workplace
- applying quality assurance systems relevant to own enterprise
- accessing and applying other relevant enterprise policies, procedures and protocols
- relevant industry competency
- interpreting business/strategic plans

This unit requires the ability to:

REQUIRED SKILLS AND KNOWLEDGE

- read and evaluate complex and formal documents such as policy and legislation
- research, analyse and present information
- prepare written reports requiring precision of expression and language and structures suited to the intended audience
- adjust communication to suit different audiences
- deal with different points of view and dissenting stakeholders.

Required knowledge

Required knowledge includes:

- understanding of relevant policy development and implementation processes and practices
- understanding of the principles, practices and available tools and techniques of sustainability management relevant to the particular industry context
- best practice approaches relevant to own work area
- equal employment opportunity, equity and diversity principles and occupational health and safety implications of policy/s being developed

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competence in this unit must be able to provide evidence of the ability to develop and implement integrated sustainability policies and procedures within an enterprise. The review of the policy after implementation will also need to be evidenced.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- develop relevant policy and procedures that comply with the regulatory requirements and business plans
- develop a workable implementation strategy
- include measurable criteria for reviewing improvement.

Consistent performance should be demonstrated. For

EVIDENCE GUIDE	
	example, look to see that: • policy implementation is reviewed • policy is developed to become part of the routine practices of the organisation.
Context of and specific resources for assessment	This section should be read in conjunction with the range of variables for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required. Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.
Method of assessment	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge. A holistic approach should be taken to the assessment. Competence in this unit may be assessed: • by demonstration in the workplace • using targeted questioning for appropriate portions • through use of specific project(s) • by use of a suitable simulation and/or a range of case studies/scenarios • by a combination of these techniques. In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment.
Guidance information for assessment	Assessors need to be aware of any cultural issues that may affect responses to questions. Assessment processes and techniques must be culturally

EVIDENCE GUIDE

	appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Scope of sustainability policy

Scope of sustainability policy include:

- The area/s of environmental sustainability to be targeted and whether social and economic sustainability will be incorporated
- The parts of the enterprise to which it is to apply, including whether it is for the whole enterprise, one site, one work area or combinations of these
- An investigation of the particular business and market context of the industry/ enterprise
- Addressing sustainability initiatives through reference to standards, guidelines and approaches such as:
 - ISO 14001 Environmental Management Systems
 - Life Cycle Analyses

RANGE STATEMENT	
	• Cradle to grave/cradle to cradle • Global Reporting Initiative • Ecological Footprint Assessment • Triple Bottom Line reporting • Product Stewardship.
Stakeholders	Stakeholders include individuals and groups both inside and outside the organisation that have some direct interest in the enterprise's conduct, actions, products and services, including: • employees at all levels of the organisation • customers • suppliers • regulators • other organisations.
Strategies	Implementation strategies include: • awareness raising among stakeholders • training of staff in principles and techniques of sustainability • promotional activities. Continuous improvement strategies include ongoing measuring, improving and monitoring such as: • Plan, do, check, act cycles • Kaizen (continuous improvement) • Kaizen blitz (breakthrough improvement event) • Six sigma approaches Environmental sustainability strategies include: • reducing toxic material and hazardous chemical use • minimising resource use through changes in processes, facility design and management • supply chain and life cycle management approaches • sourcing renewable energy and low carbon footprint materials • reducing, re-using, recycling and waste

RANGE STATEMENT

	reduction • product and process improvements • carbon offsets • reducing greenhouse gas and other emissions

Unit Sector(s)

Unit sector	

Competency field

Competency field	Competitive manufacturing tools

Co-requisite units

Co-requisite units		

MSAPMSUP390A Use structured problem solving tools

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This competency covers the solving of process and other problems, beyond those associated directly with the process unit/equipment, using structured process improvement tools to identify improvements and/or solve problems.

Application of the Unit

Application of this unit

The competency is typically performed by an experienced operator, team leader or supervisor.

Generally the person would be part of a team during the solving of complex or systemic problems and would be expected to perform all parts of this unit and at all times would be liaising and cooperating with other members of the team. This includes:

- using a range of formal problem solving techniques
- identifying and clarifying the nature of the problem
- devising the best solution
- evaluating the solution
- developing an implementation plan to rectify the problem.

This unit does not cover the solving of problems undertaken as part of the operator's normal role which is covered in the relevant operation competency unit.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Identify the problem.	1.1 Identify variances from normal operating parameters and product quality. 1.2 Define the extent, cause and nature of the problem by observation and investigation. 1.3 State and specify the problem clearly.
2. Determine fundamental cause of problem.	2.1 Identify possible causes based on experience and the use of problem solving tools/analytical techniques. 2.2 Develop possible cause statements. 2.3 Identify fundamental cause.
3. Determine corrective action.	3.1 Consider all possible options for resolution of the problem. 3.2 Consider strengths and weaknesses of possible options. 3.3 Determine corrective action to remove the problem and possible future causes. 3.4 Develop implementation plans identifying measurable objectives, resource needs and timelines in accordance with safety and operating procedures. 3.5 Develop recommendations for ongoing monitoring

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
	and testing.
4. Communicate recommendations.	4.1 Prepare report on recommendations. 4.2 Present recommendations to appropriate personnel. 4.3 Follow up recommendations if required.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Competence includes a thorough knowledge and understanding of the process, normal operating parameters, and product quality to recognise non-standard situations.

This unit of competency includes use of analytical techniques in problem solving such as:

- brainstorming
- fishbone diagrams/cause and effect diagrams
- process logic/process requirements
- logic tree
- similarity/difference analysis
- Pareto analysis
- force field/SWOT analysis
- flow charts
- control charts, runcharts and graphs
- scattergrams.

Action plans to solve problems are prepared including:

- priority requirements
- measurable objectives
- resource requirements
- methods for reaching objectives
- timelines
- coordination and feedback requirements
- safety requirements
- risk assessment
- environmental requirements.

Language, literacy and numeracy requirements

This unit requires the ability to read and interpret typical product specifications, job sheets and material labels as provided to operators.

Writing is required to the level of report writing and completing workplace forms.

Basic numeracy is also required, eg to interpret quality data and graphs.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to apply and explain:

- relevant equipment and operational processes
- enterprise policies and procedures
- enterprise goals, targets and measures
- enterprise quality, OHS and environmental requirements
- principles of decision-making strategies and techniques
- enterprise information systems and data collation
- industry codes and standards.

Consistent performance should be demonstrated. For example, look to see that:

- problems are recognised and clarified
- possible causes are identified, based on experience and use of analytical techniques in solving the problem, including:
 - identifying variations
 - identifying cause and effect
 - separating single problems from multiple problems
 - recognising recurring problems.
- fundamental cause of process or equipment faults is determined
- corrective/preventative implementation plans are developed to avoid recurrence of the problem
- implementation plan is presented to relevant personnel.

Assessment method and context

Assessment will occur on the job or in a simulated workplace.

Competence in this unit may be assessed:

- in a situation allowing the generation of evidence of the ability to recognise and respond to problems
- by using a suitable simulation and/or a range of case studies/scenarios
- through a combination of these techniques.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

The competency unit applies to a wide range of processes and equipment. The process manufacturing technical units of competency include a problem solving element where problems specific to that competency unit are to be resolved. This competency unit is where structured problem solving techniques are to be applied more broadly, or with greater depth/rigour than is implied by the problem solving element of the technical units.

In large plants or manufacturing organisations with multiple processes, it may apply to more than one process if those processes interact with each other. It applies to all operators across all functions.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Hazards

Typical hazards include leaks, spillages and equipment hazards that can occur during the walk-through of a plant.

Problems

'Anticipate and solve problems' means resolve a wide range of routine and non-routine problems, using product and process knowledge to develop solutions to problems which do not have a known solution/a solution recorded in the procedures.

Typical process and product problems may include:

- non- routine process and quality problems
- equipment selection, availability and failure
- teamwork and work allocation problems
- safety and emergency situations and incidents.
-

Unit Sector(s)

Not applicable.

MSL924002A Use laboratory application software

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the ability to use and apply computer application software in the laboratory, field and production plants for analysis and reporting.

Application of the Unit

Application of the unit	This unit of competency is applicable to technical officers and laboratory technicians in all industry sectors. It describes the application and use of software packages in the context of laboratory or field work. Typically this software would be for the storage, retrieval, analysis and display of information. There is no expectation that candidates would be able to customise the software to meet specific needs. Industry representatives have provided case studies to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. These can be found at the end of this unit of competency under the section 'This competency in practice'.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Access application software	1.1. Identify software required for the task 1.2. Open software from a personal computer or network terminal
2. Use software for specified purposes	2.1. Input a range of scientific data into a computing system 2.2. Conduct searches for the retrieval of required data 2.3. Use application features for efficient computation 2.4. Construct data sets and databases for numerical and graphical analyses
3. Produce reports of retrieved data and/or processed data	3.1. Analyse data using features of the software package 3.2. Select options for constructing data reports 3.3. Print the results of data analyses using features of the software package 3.4. Integrate data from diverse application software

ELEMENT	PERFORMANCE CRITERIA
	units in a report 3.5. Report the outcomes and rationale for computerised database searches where appropriate 3.6. Reference computerised data sources according to the style requirements of the enterprise
4. Perform simple record housekeeping	4.1. Backup worked data according to enterprise standard procedures 4.2. Maintain archive data according to enterprise standard procedures 4.3. Maintain hard copy data according to standard enterprise operating procedures 4.4. Apply approved antivirus software and general standard quarantine procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- using software application features and instructions to input, save, analyse, sort, retrieve and display the records or data
- using software for the analysis, reporting and management of laboratory and field data and information
- using in-house software manuals to augment skills and solve operational problems
- selecting the most appropriate software package for the task
- backing up electronic storage
- using scanning software to protect in-house software and data

Required knowledge

Required knowledge includes:

- applications of the software package
- terminology associated with the software packages
- basic knowledge of the types of spreadsheet, database, data analysis packages that are available
- application of specific software package features to relevant laboratory tasks

REQUIRED SKILLS AND KNOWLEDGE

- relationship between the protocol for data input and file storage of the data
- general file and record maintenance
- relevant health, safety and environment requirements

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment**Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Assessors should ensure that candidates can:

- select the most appropriate software package for the task from the suite of software applications available
- use routine instruction sets of the software package to complete the task
- use software to analyse data such as quality control and instrument performance characteristics
- back up electronic storage
- use scanning software to protect in-house software and data.

Context of and specific resources for assessment

This unit of competency is to be assessed in the workplace or simulated workplace environment.

This unit of competency may be assessed with:

- *MSL925001A Analyse data and report results*
- *relevant MSL974000 series units of competency*
- *relevant MSL975000 series units of competency.*

Resources may include:

- access to a computer network or a personal computer
- software packages that include a database package, spreadsheet, statistical analysis and simple graphics output
- input and output data.

Method of assessment

The following assessment methods are suggested:

- review of analysis tasks linking test results to the

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	generation of meaningful reports by the candidate • review of simple statistical and/or graphical analysis of quality control data completed by the candidate • oral and written exercises in preparation for keyboard activities. In all cases, practical assessment should be supported by questions to assess underpinning knowledge and those aspects of competency which are difficult to assess directly. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability. Access must be provided to appropriate learning and/or assessment support when required. The language, literacy and numeracy demands of assessment should not be greater than those required to undertake the unit of competency in a work like environment.
This competency in practice	Industry representatives have provided the case studies below to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. Manufacturing A laboratory technician performs tests on starting materials, such as appearance, identity, melting point, moisture content, trace elements, sulfated ash and assay. The results are entered in a computer database that allows trend analysis to be carried out on the test results for materials from each supplier. As a result, the technician may recognise when a supplier is experiencing potential problems with their production process. The technician would then notify the supervisor and/or supplier that there is a high probability that future supplies may be out of specification and that constant monitoring of starting materials will be required. Biomedical An important task of the technical officer in a pathology laboratory is to perform statistical analysis for quality control purposes. The software package provides for the input of data, analysis of mean value and variance as well

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	as graphical reporting. The technical officer uses a dedicated software package or a package within the customised pathology data management system in order to assess the validity of the results produced from the analytical instrument. Food processing A technical officer is required to perform a nutrient analysis of a food product, the results of which will be displayed on the food container. The output from the nutrient analysis is fed into a software program that calculates the levels of these components 'per portion' and 'per 100g' and displays the information in the correct tabular format. The software package is designed so that the technical officer can input new data or access existing data and manipulate that data to provide a full and accurate nutrient display or report.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Codes of practice	Where reference is made to industry codes of practice, and/or Australian/international standards, it is expected the latest version will be used
Information sources	Information sources may include: • manuals of enterprise standard instructions • hardware manuals • software manuals • training materials to orient software to enterprise needs • on-screen instructions embedded in the software
Software packages	Software packages may include:

RANGE STATEMENT	
	• word processing • spreadsheets • databases • graphical and statistical analysis • laboratory information systems
Occupational health and safety (OHS) and environmental management requirements	OHS and environmental management requirements: • all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through state/territory or federal legislation - these requirements must not be compromised at any time • all operations assume the potentially hazardous nature of samples and require standard precautions to be applied • where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health

Unit Sector(s)

Unit sector	Data

Competency field

Competency field	

Co-requisite units

Co-requisite units		

Co-requisite units		

MSL973001A Perform basic tests

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the ability to perform tests and measurements using standard methods with access to readily available advice from supervisors.

Application of the Unit

Application of the unit	This unit of competency is applicable to laboratory/field assistants working in all industry sectors. In general, they do not calibrate equipment and make only limited adjustments to the controls. They do not interpret or analyse results or troubleshoot equipment problems. Industry representatives have provided case studies to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. These are found at the end of this unit of competency under the section 'This competency in practice'.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret test requirements	1.1. Review test request to identify samples to be tested, test method and equipment involved 1.2. Identify hazards and enterprise controls associated with the sample, preparation methods, reagents and/or equipment
2. Prepare sample	2.1. Record sample description, compare with specification, record and report discrepancies 2.2. Prepare sample in accordance with appropriate standard methods
3. Check equipment before use	3.1. Set up test equipment in accordance with test method 3.2. Perform pre-use and safety checks in accordance with enterprise procedures and manufacturer's instructions 3.3. Identify faulty or unsafe equipment and report to appropriate personnel 3.4. Check calibration status of equipment and report any out of calibration items to appropriate personnel
4. Perform tests on samples	4.1. Identify, prepare and weigh or measure sample and standards to be tested

ELEMENT	PERFORMANCE CRITERIA
	4.2. Conduct tests in accordance with enterprise procedures 4.3. Record data in accordance with enterprise procedures 4.4. Perform calculations on data as required 4.5. Identify and report out of specification or atypical results promptly to appropriate personnel 4.6. Shut down equipment in accordance with operating procedures
5. Maintain a safe work environment	5.1. Use established safe work practices and personal protective equipment to ensure personal safety and that of other laboratory personnel 5.2. Minimise the generation of wastes and environmental impacts 5.3. Ensure safe disposal of laboratory and hazardous wastes 5.4. Clean, care for and store equipment and reagents as required

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- interpreting enterprise procedure or standard methods accurately
- using safety information, such as material safety data sheets (MSDS) and performing procedures safely
- checking test equipment before use
- completing all tests within required timeline without sacrificing safety, accuracy or quality
- calculating, recording and presenting results accurately and legibly
- maintaining security, integrity and traceability of all samples, data/results and documentation
- cleaning and maintaining equipment

Required knowledge

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge includes:

- concepts of metrology
- the international system of units (SI)
- purpose of test
- principles of the standard method
- pre-use equipment checks
- relevant standards/specifications and their interpretation
- sources of uncertainty in measurement and methods for control
- enterprise and/or legal traceability requirements
- interpretation and recording of test result, including simple calculations
- procedures for recognition/reporting of unexpected or unusual results
- relevant health, safety and environment requirements

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors should ensure that candidates can:

- accurately interpret enterprise procedures or standard methods
- complete all tests within the required timeline without sacrificing safety, accuracy or quality
- demonstrate close attention to the accuracy and precision of measurements and the data obtained
- maintain the security, integrity and traceability of all samples, data/results and documentation.

Context of and specific resources for assessment

This unit of competency is to be assessed in the workplace or simulated workplace environment.

This unit of competency may be assessed with:

- *MSL922001A Record and present data.*

Resources may include:

- standard laboratory equipped with appropriate

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	equipment standards and materials • enterprise procedures and standard methods, and equipment manuals • MSDS.
Method of assessment	The following assessment methods are suggested: • review of the quality of test data/results achieved by the candidate over time • inspection of records and workplace documentation completed by the candidate • feedback from peers and supervisors • observation of the candidate performing a range of basic tests • oral or written questioning to check underpinning knowledge of test procedures. In all cases, practical assessment should be supported by questions to assess underpinning knowledge and those aspects of competency which are difficult to assess directly. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability. Access must be provided to appropriate learning and/or assessment support when required. The language, literacy and numeracy demands of assessment should not be greater than those required to undertake the unit of competency in a work like environment.
This competency in practice	Industry representatives have provided the case studies below to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. Manufacturing Standard testing methods may be viewed as legal requirements that must be followed to ensure that a product manufactured in a chemical plant meets the specification by which it is sold to the customer. Technical assistants perform tests in a quality control laboratory to ensure that material meets legal requirements and the material is safe and effective in use. Peroxides may be present in ether as a result of

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light-catalysed air oxidation. Peroxides are toxic and can give rise to mixtures which are explosive when distilled. Technical assistants test ether to ensure that the level of peroxide is within acceptable limits. The test is done by shaking ether with a solution of potassium iodide. After standing for 30 minutes in the dark the yellow colour of the aqueous phase, due to the liberation of iodine, must not be more intense than a prepared standard solution. These tests ensure the quality and safety of the ether.

Food processing

A snack food company produces a range of high quality, impulse purchase snack foods. Some of these products are moisture and/or oxygen sensitive and are therefore packaged in multi-layer flexible packaging to provide optimum shelflife. The packaging must also be able to withstand the rigours of the production and distribution process. While the packaging is purchased to meet the shelflife and distribution specifications, the quality assurance program requires the periodic evaluation of the packaging materials against these specifications. A laboratory assistant uses standard methods to test the tearing resistance, bursting strength, impact resistance and permeability and/or leakage of the snack food packaging. Tests are also conducted on aspects of the manufacturing process that can affect shelflife. These tests involve the measuring of the heat-seam strength and the sealing performance of the closure process. The test results are recorded by the laboratory assistant to verify the conformance of the materials to the supplier specifications and of the process to the manufacturing specifications. The assistant reports any anomalies or non-conformances to the appropriate personnel.

Construction materials testing

A technician performs an Aggregate Stripping Test (AS 1141.50) and enters the results in the laboratory's information management system (LIMS). The resulting 20-30% stripped values (i.e. 70-80% adhering) indicate a 'fail' result. The technician notes that he has repeated the test and obtained the same 'fail' result. The laboratory manager reviews the results and asks the technician to explain how he performed the test. He describes how he prepared 3-4 mm thick plates of bitumen and binding agent in the mould and then placed 50 small clean pieces of aggregate on top. After treatment in an oven for 24

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	hours and a 50°C water bath in accordance with the test method, the technician had then carefully pulled out the pieces of aggregate and avoiding any twisting motion. He then estimated the % of bitumen adhering to each of the stones with the expectation that the stripped value would be about 5% (i.e. 95% adhering). The manager is satisfied that the technician has performed the test in accordance with the method and suggested that he now re-run the test with a known aggregate as a control. This test gives a stripped value of 5-7% (i.e. 93-95% adhering). The manager is now sufficiently confident of the laboratory's results to sign and issue the test report and explain the aggregate's 'test failure' to the client.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Codes of practice

Where reference is made to industry codes of practice, and/or Australian/international standards, it is expected the latest version will be used

Standards, codes, procedures and/or enterprise requirements

Standards, codes, procedures and/or enterprise requirements may include:

- Australian and international standards, such as:
 - AS ISO 1000-1998 The international system of units (SI) and its application
 - AS ISO 17025-2005 General requirements for the competence of testing and calibration laboratories
 - AS/NZS 2243 Set:2006 Safety in laboratories set
- Australian code of good manufacturing practice for medicinal products (GMP)
- calibration and maintenance schedules

RANGE STATEMENT	
	• enterprise recording and reporting procedures • equipment manuals • equipment startup, operation and shutdown procedures • MSDS and safety procedures • material, production and product specifications • national measurement regulations and guidelines • principles of good laboratory practice (GLP) • production and laboratory schedules • quality manuals • standard operating procedures (SOPs)
Concepts of metrology	Concepts of metrology may include: • that all measurements are estimates • measurements belong to a population of measurements of the measured parameters • repeatability • precision • accuracy • significant figures • sources of error • uncertainty • traceability
Preparation of samples	Preparation of samples may include: • sub-sampling or splitting using procedures, such as riffing, coning and quartering, manual and mechanical splitters • diluting samples • physical treatments, such as ashing, dissolving, filtration, sieving, centrifugation and comminution • moulding, casting or cutting specimens
Typical tests carried out by laboratory/field assistants	Typical tests carried out by laboratory/field assistants may include: • visual/optical tests of appearance, colour, texture, identity, turbidity, refractive index (alcohol content and Baume/Brix) • physical tests: • density, specific gravity and compacted

RANGE STATEMENT	
	- density • moisture content and water activity • particle size, particle shape and size distribution • chemical tests: • gravimetric • colorimetric • electrical conductivity (EC) and pH • specific ions using dipsticks and kits • nutrients (e.g. nitrates and orthophosphates) using basic kits • ashes, including sulphated ashes • biological/environmental tests: • pH, oxygen reduction potential (ORP), dissolved oxygen (DO) and (EC) • E coli using test kits • surface hygiene/presence of microbes • packaging tests: • tearing resistance, bursting strength and impact resistance • permeability and/or leakage • mechanical tests: • Emerson class • concrete slump
Measurements	Measurements may include: • simple ground surveys • meteorological parameters, such as wind direction/strength, rainfall, maximum/minimum temperature, humidity and solar radiation • simple background radiation survey • production/process parameters, such as temperature, flow and pressure • gas levels in a confined space
Common measuring equipment	Common measuring equipment may include: • dimension apparatus • DO and EC • analogue and digital meters and charts/recorders

RANGE STATEMENT	
	• basic chemical and biological test kits • dipsticks and site test kits (e.g. HACK) • timing devices • temperature measuring devices, such as thermometers and thermocouples
Hazards	Hazards may include: • electric shock • biohazards, such as microbiological organisms and agents associated with soil, air, water, blood and blood products, and human or animal tissue and fluids • solar radiation, dust and noise • chemicals, such as sulphuric acid, fluorides and hydrocarbons • aerosols • sharps, broken glassware and hand tools • flammable liquids • dry ice and liquid nitrogen • fluids under pressure • sources of ignition • occupational overuse syndrome, slips, trips and falls • manual handling, working at heights and working in confined spaces • crushing, entanglement and cuts associated with moving machinery or falling objects
Enterprise controls to address hazards	Enterprise controls to address hazards may include: • use of MSDS • use of signage, barriers and service isolation tags • use of personal protective equipment, such as hard hats, hearing protection, sunscreen lotion, gloves, safety glasses, goggles, face guards, coveralls, gowns, body suits, respirators and safety boots • use of appropriate equipment, such as biohazard containers and cabinets and laminar flow cabinets • recognising and observing hazard warnings and safety signs

RANGE STATEMENT	
	- labelling of samples, reagents, aliquoted samples and hazardous materials - handling and storage of all hazardous materials and equipment in accordance with labelling, MSDS and manufacturer's instructions, and enterprise procedures and regulations - cleaning and decontaminating equipment and work areas regularly using recommended procedures - following established manual handling procedures for tasks involving manual handling
Minimising environmental impacts	Minimising environmental impacts may involve: - recycling of non-hazardous waste, such as chemicals, batteries, plastic, metals and glass - appropriate disposal of hazardous waste - correct disposal of excess sample/test material - correct storage and handling of hazardous chemicals
Occupational health and safety (OHS) and environmental management requirements	OHS and environmental management requirements: - all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through state/territory or federal legislation - these requirements must not be compromised at any time - all operations assume the potentially hazardous nature of samples and require standard precautions to be applied - where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health

Unit Sector(s)

Unit sector	Testing

Competency field

Competency field	

Co-requisite units

Co-requisite units		

MSL973007A Perform microscopic examination

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the ability to set up a light microscope for optimum resolution, to prepare routine samples and to observe, identify and report sample characteristics.

Application of the Unit

Application of the unit	This unit of competency is applicable to laboratory or technical assistants in all industry sectors. The unit of competency covers limited interpretation and analysis of results. Troubleshooting of equipment and procedures is not required. Industry representatives have provided case studies to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. These are found at the end of this unit of competency under the section 'This competency in practice'.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Interpret test requirements	1.1. Review test request to identify samples to be tested, test method and equipment involved 1.2. Identify hazards associated with the sample, preparation methods and equipment and implement enterprise control measures
2. Set up work area for preparation and examination of samples	2.1. Collect equipment and arrange the workspace so that equipment can be used safely and efficiently 2.2. Perform pre-use and safety checks to ensure equipment is fit for purpose and report faulty or unsafe equipment to appropriate personnel
3. Prepare samples for examination	3.1. Log and label samples according to enterprise procedures to ensure traceability 3.2. Check suitability of the original and prepared sample for the examination and report unsuitable samples to appropriate personnel 3.3. Prepare and store the sample for examination following enterprise methods

ELEMENT	PERFORMANCE CRITERIA
4. Set up and use a light microscope	4.1. Set up the light path to optimise resolution 4.2. Select the appropriate objectives and filter for the sample being examined 4.3. Ensure that the lenses are clean 4.4. Adjust settings and alignment of the light path to optimise performance 4.5. Place sample correctly on the stage
5. Observe, identify and report sample characteristics	5.1. Recognise and identify significant sample characteristics 5.2. Perform required calculations accurately 5.3. Prepare and view control samples and check that results are consistent with expected values 5.4. Identify and report out of specification or atypical results promptly to appropriate personnel 5.5. Record and report data in accordance with enterprise procedures
6. Maintain a safe work environment	6.1. Ensure safety and minimise cross-contamination through the use of personal protective clothing and safety equipment 6.2. Handle all samples and equipment in accordance with enterprise safety protocols 6.3. Clean up spills using appropriate techniques to protect personnel, work area and environment 6.4. Minimise generation of waste and environmental impacts 6.5. Collect and dispose of all wastes safely 6.6. Report hazards and incidents to designated personnel using enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- setting up the workbench and microscope ergonomically

REQUIRED SKILLS AND KNOWLEDGE

- setting up, cleaning and using a light microscope to achieve optimum resolution of the specimen
- using personal protective clothing and other safety equipment correctly
- performing counts on samples
- performing basic measurements using grids
- logging and tracking samples through all steps from receiving a sample through to completion of a procedure and reporting
- interpreting and recording test results, including simple calculations
- correctly handling and storing samples and equipment

Required knowledge

Required knowledge includes:

- parts and functions of a light microscope
- importance and appropriate use of controls and certified reference materials
- hazards and risks in laboratories associated with performing microscopic examination
- enterprise and/or legal traceability requirements
- relevant health, safety and environment requirements

Specific industry

Additional knowledge requirements may apply for different industry sectors. For example:

Biological industry:

- basic structure and function of cells and organelles
- basic classes and classification of organisms of organisms, such as prokaryotes, eukaryotes, plants, animals, bacteria, viruses and prions
- cell physiology and processes, such as simple and facilitated diffusion, plasmolysis, osmosis, tonicity, active transport, energy production, mitosis, motility, phagocytosis and pinocytosis
- purposes and mechanisms of staining (e.g. Gram +ve and -ve)

Evidence Guide**EVIDENCE GUIDE**

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors should ensure that candidates can: • follow enterprise standards, procedures and practices • prepare suitable samples • recognise, identify and document significant sample characteristics • set up a light microscope for optimal resolution • maintain personal safety and that of others • minimise cross-contamination and contamination of the laboratory and environment.
Context of and specific resources for assessment	This unit of competency is to be assessed in the workplace or simulated workplace environment. This unit of competency may be assessed with: • <i>MSL922001A Record and present data</i> • <i>MSL933002A Contribute to the achievement of quality objectives</i> • <i>MSL943002A Participate in laboratory/field workplace safety</i> • <i>MSL953001A Receive and prepare samples for testing.</i> Resources may include: • standard laboratory equipped with appropriate equipment, such as light microscopes and samples • enterprise procedures, standard methods and materials.
Method of assessment	The following assessment methods are suggested: • observation of the candidate performing microscopic examinations • review of data records prepared by the candidate, such as counts, observations and results • feedback from supervisors and peers about adherence to enterprise/technical procedures • questioning to assess underpinning knowledge. In all cases, practical assessment should be supported by questions to assess underpinning knowledge and those aspects of competency which are difficult to assess directly. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and

EVIDENCE GUIDE

	disability. Access must be provided to appropriate learning and/or assessment support when required. The language, literacy and numeracy demands of assessment should not be greater than those required to undertake the unit of competency in a work like environment.
This competency in practice	Industry representatives have provided the case studies below to illustrate the practical application of this unit of competency and show its relevance in a workplace setting. Construction materials testing The supply of river sand is running out and quarries are accessing alternative sources of sand for use in concrete mixes in construction. The sand should not be an aggregate that is likely to break down into smaller particles. A technician in a quarry company is required to analyse samples of crushed rock using a light microscope. The technician looks for characteristics of the sample, such as angularities, roundness, sharpness, cracks, presence of organic matter, mineral structure and whether the particles are a conglomerate. If the sample does not meet the characteristics, the company will need to treat it to make it suitable for use in concrete mixes (for example by washing, crushing and sieving). Food processing A customer complaint is received about the baking properties of a flour delivery. The laboratory assistant at the flour mill is given the task of testing the starch content of the suspect flour. He/she prepares iodine stained samples of the returned flour and a range of baked and partially baked products prepared from it. First, the assistant makes up fresh iodine staining solution and then prepares slides of each sample for microscopic examination. He/she identifies the characteristic starch granules of the flour sample and records the degree of gelatinisation in the starch granules in the baked samples. He/she discusses the results with the supervisor and prepares a report for the customer. Biomedical A laboratory assistant works in the microbiology laboratory of a public hospital and is responsible for

EVIDENCE GUIDE

preparing and staining sputum smears from patients for micro and culture. The assistant puts on a clean gown and gloves before collecting the specimens from the reception area of the laboratory. The assistant prepares cultures of the sputum specimens on simple and selective media before preparing, fixing and staining smears for microscopic examination. The results are checked by the supervisor, entered into the laboratory information management system (LIMS) and sent to the appropriate section of the hospital.

Environmental

A laboratory assistant prepares media for plant tissue culture. There has been some contamination of Gram-positive bacteria in the last two batches and the supervisor has initiated an overhaul of the preparation and aliquotting procedure. The laboratory assistant has been asked to follow the new procedure exactly and to remove samples at each stage of ingredient addition for microscopic examination. The laboratory assistant records the exact addition amounts, batch numbers and brands of the reagents, the location of the addition (which biohazard cabinet), the equipment used and the pre-sterilisation records of all equipment.

The laboratory assistant then prepares slides, fixes them and performs a Gram stain on each of the aliquots removed from the new preparation run. Microscopic analysis of each aliquot reveals nil contamination. The supervisor decides that there has been a breach in the old procedure and the laboratory assistant is asked to follow the new procedure and to perform a routine microscopic check on all batches for the next month.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
Codes of practice	Where reference is made to industry codes of practice, and/or Australian/international standards, it is expected the latest version will be used
Standards, codes, procedures and/or enterprise requirements	Standards, codes, procedures and/or enterprise requirements may include: • Australian and international standards, such as: • AS ISO 17025-2005 General requirements for the competence of testing and calibration laboratories • AS/NZS ISO 9000 Set:2008 Quality management systems set • AS/NZS 2243 Set:2006 Safety in laboratories set • principles of good laboratory practice (GLP) • Australian code of good manufacturing practice for medicinal products (GMP) • safety manuals • quality manuals and equipment and procedure manuals • standard operating procedures (SOPs) • material safety data sheets (MSDS) • enterprise recording and reporting procedures • production and laboratory schedules • material, production and product specifications
Preparation of samples	Preparation of samples may include: • aseptic transfer of specimen • centrifugation • cooling • drying • filling a counting chamber in one continuous flow without bubbles or overflow • filtration • fixing of films to minimise cell damage and the production of artefacts • labelling • mounting of stained films, sections and whole mounts to ensure long term preservation • permanent labels for smears, films and sections for presentation, storage and retrieval • physical or chemical separation

RANGE STATEMENT	
	• selection of diluent to preserve or enhance visibility of the cells to be counted • selection, filling and cover slipping of a clean, dry counting chamber to ensure even distribution of cells during filling • serial dilution to enable individual cells to be reliably counted • staining of fixed material to illustrate required characteristics • sub-sampling • thin film or smear on a slide
Checking sample condition	Checking sample condition may include: • labelling • spillage • spoilage due to incorrect storage and transport conditions • temperature control • suitability for the examination
Pre-use checks	Pre-use checks may include: • calibration • cleaning/checking use by dates of reagents • routine maintenance
Equipment	Equipment may include: • glass slides • counting chambers (e.g. haemocytometer) • optical graticules and stage micrometers • tissue culture flasks
Light microscopes	Light microscopes may include: • bright field illumination microscopic examination up to 1000x magnification • stereomicroscopes and dissection microscopes • compound microscopes • phase contrast microscopes • inverted microscopes
Biological samples	Biological samples may include: • smears, impression smears, sections, squashes, films and whole mounts • a monolayer of cells in smears and films

RANGE STATEMENT	
	• fixed smears for demonstration of bacteria by the methylene blue and Gram staining techniques • blood films stained by a Romanowsky technique to clearly show differentiation of granulocytes • stained sections of animal tissues using regressive haematoxylin and eosin to differentiate cytoplasmic and nuclear detail • differentially stained monocotyledon and dicotyledon stem sections to demonstrate the structure of vascular bundles (xylem, phloem and cambium) • stained whole mounts of helminths • whole mounts, such as liver flukes, planaria and samples of animal faeces to demonstrate ova, cysts and larvae • pond water organisms • onion root tip squash • midstream sample of urine
Physical samples	Physical samples may include: • sand • asbestos fibres • coal samples • construction testing materials • geological specimens
Checking prepared samples	Checking prepared samples may include looking for: • clean and scratch-free microscope slides to reduce artefacts • preparation according to SOPs • a homogeneous suspension of sample • films and smears that have been fixed rapidly • thin films with a monolayer of cells • appropriate whole mounts for intact organisms • correct sample identification during and after processing
Sample characteristics	Sample characteristics are restricted to what can be viewed by bright light microscopy and may include:

RANGE STATEMENT	
	• shape and size of particles • presence of contamination • colour • consistency and variability • number of cells (e.g. cells in blood or other particulate samples, such as a yeast suspension or pollen grains) • type of cells, percentage of atypical cells, presence/absence of cells, size of cells, viable and non-viable cells and trajectory • presence of stained material, such as starch • colour/staining and morphology • motility
Calculations	Calculations may include: • dilutions • percentage viability • number of cells in original sample after dilution • calculation of cells/ml in a number of squares of a counting chamber
Hazards	Hazards may include: • micro-organisms and agents associated with soil, air, water, blood and blood products and human or animal tissue and fluids • chemicals and stains • sharps and broken glassware • aerosols
Safety practices and personal protective equipment	Safety practices and personal protective equipment may include: • use of MSDS • use of personal protective equipment, such as safety glasses, gloves and coveralls • use of biohazard containers and laminar flow cabinet • correct labelling of reagents and hazardous materials • handling and storing hazardous materials and equipment in accordance with labels, MSDS and manufacturer's instructions • ergonomic layout, correct illumination and

RANGE STATEMENT	
	organisation of workbench regular cleaning and/or decontamination of equipment and work areas
Occupational health and safety (OHS) and environmental management requirements	OHS and environmental management requirements: - all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through state/territory or federal legislation - these requirements must not be compromised at any time - all operations assume the potentially hazardous nature of samples and require standard precautions to be applied - where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health

Unit Sector(s)

Unit sector	Testing

Competency field

Competency field	

Co-requisite units

Co-requisite units		

MSS402001 Apply competitive systems and practices

Modification History

Release 1 - Supersedes and is equivalent to MSS402001A Apply competitive systems and practices

Application

This unit of competency covers the skills and knowledge required to implement basic improvement practices within an organisation using competitive systems and practices. The unit focuses on bringing together the basic concepts and the holistic application of these basic concepts and processes to operations. It would typically be carried out working as part of a team.

This unit applies to an individual in an organisation that has embarked on competitive systems and practices. The unit covers the skills and knowledge required to contribute to the competitive systems and practices processes and assumes that they are to be used within the scope of the individual's job and authority.

This unit requires the application of skills associated with planning and organising an individual's own role within the competitive systems and practices framework.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Competitive systems and practices

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the Performance criteria describe the performance needed to

essential outcomes.	demonstrate achievement of the element.
1 Identify own place in the value chain	1.1 Identify customers relevant to own work and their needs/requirements.
	1.2 Identify suppliers for own work.
	1.3 Identify value contributions along the chain.
	1.4 Identify and recommend methods of increasing own contribution to the value chain.
2 Improve the product and process value	2.1 Identify customer features/benefits in the product and process.
	2.2 Identify aspects of product and process which contribute to customer features/benefits.
	2.3 Identify aspects of product and process which do not contribute to customer benefits/features.
	2.4 Recommend methods of reducing waste and increasing features/benefits.
3 Use competitive systems and practices	3.1 Identify competitive systems and practices used in organisation and own work area.
	3.2 Apply practices appropriate for the job or process.
	3.3 Monitor the job/process and make adjustments to improve it in accordance with procedures.
	3.4 Identify own skill requirements and seek skill development, if required.

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Competitive systems and practices include one or more of:

- lean operations
- agile operations
- preventative and predictive maintenance approaches
- statistical process control systems, including six sigma and three sigma
- Just in Time (JIT), kanban and other pull-related operations control systems
- supply, value, and demand chain monitoring and analysis
- 5S
- continuous improvement (kaizen)
- breakthrough improvement (kaizen blitz)
- cause/effect diagrams
- overall equipment effectiveness (OEE)
- takt time
- process mapping
- problem solving
- run charts
- standard procedures
- current reality tree.

Customers include one or more of:

- internal or external customers and should be sufficiently close to the individual's work as to be easily identifiable
- final customers used as the basis for the identification of value and waste.

Suppliers include one or more of:

- internal suppliers
- external suppliers sufficiently close to the individual's work as to be easily identifiable.

Procedures (written, verbal, visual, computer based, etc.) include one or more of:

- work instructions
- standard operating procedures (SOPs)
- safe work method statements
- formulas/recipes
- batch sheets
- temporary instructions

- any similar instructions provided for the smooth running of the plant.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSS402001A Apply competitive systems and practices

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

Assessment Requirements for MSS402001 Apply competitive systems and practices

Modification History

Release 1 - Supersedes and is equivalent to MSS402001A Apply competitive systems and practices

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include the ability to always apply competitive systems and practices to their own job to:

- identify own place in the value chain relevant to their job
- use competitive systems and practices tools and thinking
- recommend improvements in product and/or process.

Knowledge Evidence

Must provide evidence that demonstrates knowledge relevant to their job role sufficient to fulfil their job role under routine only supervision, including:

- customer requirements and their role in fulfilling them
- the value chain for products they make and their place in it
- identification of muda (waste) and its reduction.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence shall be based on a holistic assessment of the evidence.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operation of the workplace
 - will typically include a supervisor/third-party report focussing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
 - must include the application of competitive systems and practice in own workplace
 - will typically include the use of appropriate tools, equipment and safety gear requiring demonstration of preparation, operation, completion and responding to problems.
- Assessment should occur in operational workplace situations.

- Knowledge evidence may be collected concurrently with performance evidence (provided a record is kept) or through an independent process such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competency and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with an organisation providing relevant environmental monitoring, management or technology services about performing the competency being assessed within the last twelve months.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

MSS402001A Apply competitive systems and practices

Modification History

New unit, superceding MSACMS200A Apply competitive manufacturing practices - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to implement basic improvement practices within an organisation using competitive systems and practices. The unit focuses on bringing together the basic concepts and the holistic application of these basic concepts and processes to operations. It would typically be carried out working as part of a team.

Application of the Unit

This unit applies to an individual in an organisation that has embarked on competitive systems and practices. The unit covers the skills and knowledge required to contribute to the competitive systems and practices processes and assumes that they are to be used within the scope of the individual's job and authority.

This unit requires the application of skills associated with planning and organising an individual's own role within the competitive systems and practices framework.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of

performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Identify own place in the value chain	1.1	Identify customers relevant to own work and their needs/requirements
		1.2	Identify suppliers for own work
		1.3	Identify value contributions along the chain
		1.4	Identify and recommend methods of increasing own contribution to the value chain
2	Improve the product and process value	2.1	Identify customer features/benefits in the product and process
		2.2	Identify aspects of product and process which contribute to customer features/benefits
		2.3	Identify aspects of product and process which do not contribute to customer benefits/features
		2.4	Recommend methods of reducing waste and increasing features/benefits
3	Use competitive systems and practices	3.1	Identify competitive systems and practices used in organisation and own work area
		3.2	Apply practices appropriate for the job or process
		3.3	Monitor the job/process and make adjustments to improve it in accordance with procedures
		3.4	Identify own skill requirements and seek skill development, if required

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- communicating with others to clarify scope of competitive systems and practices implementation and contributing suggestions for improvement
- visualising normal operational procedures in terms of flow and contribution to customer outcomes
- planning own tasks to support competitive systems and practices implementation
- implementing competitive systems and practices in own work area according to instructions
- identifying waste (muda)

Required knowledge

Required knowledge includes:

- internal and external customers and the value they derive from operations
- suppliers, their capabilities and contribution to value (this may be obtained from an existing value stream map or other enterprise documentation)
- waste (muda)
- relevant competitive systems and practices for own job and how to apply them
- factors impacting on product, operations and waste, particularly those wholly or partially under their control (and how to control them)

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	A person being assessed against this unit will work effectively in a competitive systems and practices environment, making continual positive contributions to the improvement of the business within the scope of their job.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify the scope of competitive systems and

	practices implemented in their work area • identify services and/or functions supplied by suppliers and to customers • identify own tasks and responsibilities and relate them to organisation and customer requirements • identify aspects of products and process which add to or detract from customer benefit • contribute suggestions for improvement.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads, and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.

Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control And Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted

	so as to take into account: - the stage of implementation of competitive systems and practices - the size of the enterprise - the work organisation, culture, regulatory environment and the industry sector
Customers	Customers may include: - internal or external customers and should be sufficiently close to the individual's work as to be easily identifiable - final customers used as the basis for the identification of value and waste The individual does not need to interface directly with the external customer, but should be provided with sufficient information to enable them to identify customer benefits and customer features
Suppliers	Suppliers may be: internal or external suppliers and should be sufficiently close to the individual's work as to be easily identifiable The operator does not need to interface directly with external suppliers, but should be provided with sufficient information to enable them to identify supplier contribution to their own work and to customer benefit
Procedures	Procedures may include: - work instructions - standard operating procedures - formulas/recipes - batch sheets - temporary instructions and similar instructions provided for the smooth running of the organisation - good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) and government regulations Procedures may be: - written, verbal, computer-based or in some other format

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS402002 Sustain process improvements

Modification History

Release 1. Supersedes and is equivalent to MSS402002A Sustain process improvements

Application

This unit of competency covers the skills and knowledge required by an individual to prevent process improvements in their own work from slipping back to former practices or digressing to less efficient practices.

This unit applies to organisations implementing competitive systems and practices and continuous improvement. It covers the skills needed to ensure that process improvements are sustained and opportunities taken to suggest further improvements.

Improvement initiatives can be made by any of a number of methods and by teams or individuals. The unit assumes that desired levels of performance or quality are known to employees.

The unit can be applied to all areas of an organisation, including production, maintenance, logistics and office functions.

This unit requires the application of skills associated with problem solving, initiative and enterprise and self-management in order to understand implement and monitor improvement practices. It also requires the ability to identify and address personal skill gaps in order to manage own ability to implement change.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Competitive systems and practices

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Examine previous improvements	1.1	Identify impact of previous process improvements to equipment, operations, services or products in own work area.
		1.2	Identify improvements where objectives have not been met.
2	Implement corrective actions	2.1	Identify corrective actions that can be taken by self on process improvements that have not met objectives.
		2.2	Obtain any required approvals.
		2.3	Identify any additional, personal skill gaps and seek skill development.
		2.4	Adopt improved processes.
3	Check changes	3.1	Identify claimed improvements.
		3.2	Identify methods of observing and measuring claimed improvements in own work area.
		3.3	Check if claimed improvements are occurring and report problems in accordance with procedures.
4	Check for further improvements	4.1	Look for areas of possible further improvement.
		4.2	Discuss further improvements with peers and supervisors.
		4.3	Take action to implement improvements in accordance with procedures.

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

- Competitive systems and practices include one or more of:**
- lean operations
 - agile operations
 - preventative and predictive maintenance approaches
 - statistical process control systems, including six sigma and three sigma
 - Just in Time (JIT), kanban and other pull-related operations control systems
 - supply, value, and demand chain monitoring and analysis
 - 5S
 - continuous improvement (kaizen)
 - breakthrough improvement (kaizen blitz)
 - cause/effect diagrams
 - overall equipment effectiveness (OEE)
 - takt time
 - process mapping
 - problem solving
 - run charts
 - standard procedures
 - current reality tree.

- Customers include one or more of:**
- internal customers
 - external customers sufficiently close to the individual's work as to be easily identifiable
 - final customers used as the basis for the identification of value and waste.

- Suppliers include**
- internal suppliers

one or more of:

- external suppliers sufficiently close to the individual's work as to be easily identifiable.

Measuring improvements includes one or more of:

- personally taking measurements
- arranging for measurements to be taken/made by appropriate personnel.

Procedures (written, verbal, visual, computer based, etc.) include one or any combination of:

- work instructions
- standard operating procedures (SOPs)
- safe work method statements
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant.

Corrective actions to sustain improvements include one or more of:

- techniques for preventing mistakes by designing the operations process, equipment and tools so that an operation literally cannot be performed incorrectly (e.g. baka-yoke)
- techniques that generate warning signals where a mistake is about to be performed (poka-yoke)
- administrative techniques, such as procedure/work instruction changes
- skilling techniques, such as training, mentoring, demonstration
- process techniques, such as changing the process/conditions/variables.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSS402002A Sustain process improvements

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

Assessment Requirements for MSS402002 Sustain process improvements

Modification History

Release 1. Supersedes and is equivalent to MSS402002A Sustain process improvements

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include the ability to examine three (3) or more previous improvements, including one (1) or more where improvement objectives have not been met, and to:

- identify corrective actions that can be taken by self
- implement those corrective actions
- check whether the claimed improvements have occurred
- check for further improvements.

Knowledge Evidence

Must provide evidence that demonstrates knowledge relevant to their job role sufficient to fulfil their job role under routine only supervision, including:

- muda (waste)
- indicators of processes not delivering claimed improvements
- baka-yoke and poka-yoke techniques.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence shall be based on a holistic assessment of the evidence.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operation of the workplace
 - will typically include a supervisor/third-party report focussing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
 - must include actions to sustain process improvements in own workplace
 - will typically include the use of appropriate tools, equipment and safety gear requiring demonstration of preparation, operation, completion and responding to problems.
- Assessment should occur in operational workplace situations.

- Knowledge evidence may be collected concurrently with performance evidence (provided a record is kept) or through an independent process such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competency and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with an organisation providing relevant environmental monitoring, management or technology services about performing the competency being assessed within the last twelve months.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

MSS402002A Sustain process improvements

Modification History

New unit, superseding MSACMS201A Sustain process improvements - Not equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to prevent process improvements in their own work from slipping back to former practices or digressing to less efficient practices.

Application of the Unit

This unit applies to organisations implementing competitive systems and practices and continuous improvement. It covers the skills needed to ensure that process improvements are sustained and opportunities taken to suggest further improvements.

Improvement initiatives can be made by any of a number of methods and by teams or individuals. The unit assumes that desired levels of performance or quality are known to employees.

The unit can be applied to all areas of an organisation, including production, maintenance, logistics and office functions.

This unit requires the application of skills associated with problem solving, initiative and enterprise and self-management in order to understand implement and monitor improvement practices. It also requires the ability to identify and address personal skill gaps in order to manage own ability to implement change.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the Performance criteria describe the performance needed to

essential outcomes of a unit of competency.

demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Examine previous improvements	1.1	Identify impact of previous process improvements to equipment, operations, services or products in own work area
		1.2	Identify improvements where objectives have not been met
2	Implement corrective actions	2.1	Identify corrective actions that can be taken by self on process improvements that have not met objectives
		2.2	Obtain any required approvals
		2.3	Identify any additional, personal skill gaps and seek skill development
		2.4	Adopt improved processes
3	Check changes	3.1	Identify claimed improvements
		3.2	Identify methods of observing and measuring claimed improvements in own work area
		3.3	Check if claimed improvements are occurring and report problems in accordance with procedures
4	Check for further improvements	4.1	Look for areas of possible further improvement
		4.2	Discuss further improvements with peers and supervisors
		4.3	Take action to implement improvements in accordance with procedures

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- communicating with others to clarify scope and stage of implementation of competitive systems and practices and contribute suggestions for further improvements in implementation
- visualising normal operational procedures in terms of flow and contribution to customer outcomes
- planning own tasks to support competitive systems and practices implementation
- implementing competitive systems and practices in own work area according to instructions
- identifying waste (muda)
- monitoring competitive systems and practices performance indicators in own work and work area

Required knowledge

Required knowledge includes:

- internal and external customers and the value they derive from own work area operations
- suppliers to own work area, their capabilities and contribution to customer benefit
- waste (muda)
- relevant competitive systems and practices for own job and how to apply and monitor the outcomes
- factors impacting on product, operations and waste, particularly those wholly or partially under their control (and how to control them)

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	A person being assessed against this unit will be able to demonstrate their willing adoption of new equipment, processes, procedures and practices as well as their

	expertise at implementing them and making critical reviews of their performance in line with their level of competence and authority.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • implement and monitor process improvements in own work area against objectives • contribute suggestions for further improvement/s • apply procedures for seeking approvals and reporting non-conformances.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made

	to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts

	• standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and industry sector
Customers	Customers may be: • internal or external customers and should be sufficiently close to the individual's work as to be easily identifiable • final customers used as the basis for the identification of value and waste The individual does not need to interface directly with the external customer, but should be provided with sufficient information to enable them to identify customer benefits and customer features
Suppliers	Suppliers may be: • internal or external suppliers and should be sufficiently close to the individual's work as to be easily identifiable The operator does not need to interface directly with external suppliers, but should be provided with sufficient information to enable them to identify supplier contribution to their own work and to customer benefit
Measuring improvements	Measuring improvements may include: • personally taking measurements • arranging for measurements to be taken/made by appropriate personnel
Procedures	Procedures may include: • work instructions • standard operating procedures • formulas/recipe • batch sheets • temporary instructions and similar instructions provided for the smooth running of the plant • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing

	practice (GMP) and responsible care) and government regulations Procedures may be: written, verbal, computer-based or in some other format
Improvements	Improvements include: - techniques for preventing mistakes by designing the operations process, equipment and tools so that an operation literally cannot be performed incorrectly (e.g. baka-yoke) - techniques that generate warning signals were a mistake is about to be performed (poka-yoke)

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS402010 Manage the impact of change on own work

Modification History

Release 1. Supersedes and is equivalent to MSS402010A Manage the impact of change on own work

Application

This unit of competency covers the skills and knowledge required by an individual to effectively manage the changes in their own work resulting from their organisation's implementation of competitive systems and practices.

This unit applies to an individual in an organisation implementing competitive systems and practices that affect the individual's own work. The unit includes the skills required to positively participate in ongoing and continuous change as it affects their work. The individual will be expected to deal with these changes as part of a team and to give feedback from their own perspective.

This unit requires the application of skills associated with problem solving, planning and organising and self-management for assessing and managing the impact of change on own work. This unit also requires the ability to seek information and feedback from team members on the impact of changes and suggested improvements.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Competitive systems and practices

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Examine the impact of change on own work practices	1.1	Identify competitive systems and practices relevant to changes in own work.
		1.2	Examine changes to work flow.
		1.3	Examine changes to equipment/process/physical environment.
		1.4	Examine changes to work relationship with team members and other teams.
		1.5	Examine changes to data collection needs.
		1.6	Examine changed work for impacts on health, safety and environment (HSE).
		1.7	Examine changes to quality requirements.
		1.8	Identify any additional individual skill needs.
		1.9	Identify other areas requiring assistance.
2	Implement change	2.1	Review changes which may have an adverse impact with team leader.
		2.2	Adopt changes to individual work practice.
		2.3	Seek assistance in gathering/processing data, as required.
		2.4	Implement the data collection/processing and take actions on resulting information in accordance with procedures.
		2.5	Seek assistance/training to meet needs caused by change.
3	Implement continuous improvement	3.1	Critically examine all changes.
		3.2	Identify impacts of changes both up and down the immediate value stream.

- 3.3 Identify areas for improvement.
- 3.4 Make recommendations for improvement in accordance with procedures.

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Competitive systems and practices include one or more of:

- lean operations
- agile operations
- preventative and predictive maintenance approaches
- statistical process control systems, including six sigma and three sigma
- Just in Time (JIT), kanban and other pull-related operations control systems
- supply, value, and demand chain monitoring and analysis
- 5S
- continuous improvement (kaizen)
- breakthrough improvement (kaizen blitz)
- cause/effect diagrams
- overall equipment effectiveness (OEE)
- takt time
- process mapping
- problem solving
- run charts
- standard procedures
- current reality tree.

Impact of change

- elements being undertaken individually or as part of a team

may include one or more of:

- seeking assistance from team leaders for areas outside the employee's range of responsibility and authority.

Procedures (written, verbal, visual, computer based, etc.) include one or more of:

- work instructions
- standard operating procedures (SOPs)
- safe work method statements
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant.

Gathering and monitoring performance data include one or more of:

- manual gathering by individual employees through charts, tally sheets or keypad/board entry
- automatic collection through software, such as SCADA software, ERP systems, MRP and proprietary systems.

Continuous improvement (kaizen) includes evaluation of one or more of:

- time required
- resources used
- resultant quality
- other aspects relevant to the process.

Stages where value stream actions may occur include one or more of:

- sales outlet/representative
- information gathering, data analysis and research
- product design
- raw material sourcing
- intermediate processing
- final assembler/collation/preparation
- support services (e.g. accounting, finance and legal)
- storage and delivery to customer
- after market support.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSS402010A Manage the impact of change on own work

Links

Companion Volume implementation guides are found in VETNet -
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Assessment Requirements for MSS402010 Manage the impact of change on own work

Modification History

Release 1. Supersedes and is equivalent to MSS402010A Manage the impact of change on own work

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include the ability, for one (1) or more changes, to:

- identify competitive systems and practices used in their own workplace
- identify change and its impact on own work practices in relation to implementation of competitive systems and practices
- adopt change and seek any required assistance
- identify areas for improvement.

Knowledge Evidence

Must provide evidence that demonstrates knowledge relevant to their job role sufficient to fulfil their job role under routine only supervision:

- features of common competitive systems and practices in use in own workplace
- sources of data on the process/plant
- methods of determining own skill needs
- health, safety and environment (HSE) principles relevant to own job
- change implementation contacts and procedures
- employee assistance mechanisms within organisation.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence shall be based on a holistic assessment of the evidence.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operation of the workplace
 - will typically include a supervisor/third-party report focusing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
 - must include evidence of responding to change in own workplace

- will typically include the use of appropriate tools, equipment and safety gear requiring demonstration of preparation, operation, completion and responding to problems.
- Assessment should occur in operational workplace situations. Knowledge evidence may be collected concurrently with performance evidence (provided a record is kept) or through an independent process such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required including, relevant workplace procedures, product and manufacturing specifications associated with this unit.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competency and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with an organisation providing relevant environmental monitoring, management or technology services about performing the competency being assessed within the last twelve months.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

MSS402010A Manage the impact of change on own work

Modification History

New unit, superseding MSACMC210A Manage the impact of change on own work - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required by an employee to effectively manage the changes in their own work resulting from their organisation's implementation of competitive systems and practices.

Application of the Unit

This unit applies to an employee in an organisation implementing competitive systems and practices that affect the employee's own work. The unit includes the skills required to positively participate in ongoing and continuous change as it affects their work. The employee will be expected to deal with these changes as part of a team and to give feedback from their own perspective.

This unit requires the application of skills associated with problem solving, planning and organising and self-management for assessing and managing the impact of change on own work. This unit also requires the ability to seek information and feedback from team members on the impact of changes and suggested improvements.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of

performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Examine the impact of change on own work practices	1.1	Identify competitive systems and practices relevant to changes in own work
		1.2	Examine changes to work flow
		1.3	Examine changes to equipment/process/physical environment
		1.4	Examine changes to work relationship with team members and other teams
		1.5	Examine changes to data collection needs
		1.6	Examine changed work for impacts on health, safety and environment (HSE)
		1.7	Examine changes to quality requirements
		1.8	Identify any additional individual skill needs
		1.9	Identify other areas requiring assistance
2	Implement change	2.1	Review changes which may have an adverse impact with team leader
		2.2	Adopt changes to individual work practice
		2.3	Seek assistance in gathering/processing data, as required
		2.4	Implement the data collection/processing and take actions on resulting information in accordance with procedures
		2.5	Seek assistance/training to meet needs caused by change
3	Implement continuous	3.1	Critically examine all changes
		3.2	Identify impacts of changes both up and down the

improvement

immediate value stream

3.3 Identify areas for improvement

3.4 Make recommendations for improvement in accordance with procedures

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- identifying the competitive systems and practices being implemented in the organisation that are relevant to own work, including, if implemented:
 - Just in Time (JIT) and kanban systems
 - preventative maintenance
 - 5S housekeeping
 - continuous improvement processes (e.g. kaizen)
 - waste (muda) elimination
 - formal problem solving procedures (e.g. root cause analysis (RCA))
- analysing own work procedures
- communicating with others in work area, team leaders and other employees relevant to changes in own work
- solving problems relevant to changes in own work
- identifying sources of assistance in organisation if difficulty is experienced with changes
- interpreting relevant procedures and instructions
- working as part of a team

Required knowledge

Required knowledge includes:

- features of common competitive systems and practices sufficient for identification, including:
 - JIT and kanban systems
 - preventative maintenance
 - 5S housekeeping
 - continuous improvement processes (e.g. kaizen)

- waste (muda) elimination
- formal problem solving procedures (e.g. RCA)
- current processes and principles of operation
- sources of data on the process/plant and possible applications to information
- methods of determining own skill needs and developing skills, if required
- HSE principles as relevant to own job
- change implementation contacts and procedures relevant to work area
- employee assistance mechanisms in the organisation

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify the competitive systems and practices used in their own work • identify changes to their own work flowing from the implementation of the relevant competitive systems and practices • implement changes • know when and how to seek assistance with work changes • make suggestions for improvements.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess response to

	contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on. • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems such as Systems Control and Data Acquisition (SCADA)

	software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • JIT, kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Managing impact of change	Managing impact of change may include: • elements being undertaken individually or as part of a team • seeking assistance from team leaders for areas outside the employee's range of responsibility and authority
Procedures	Procedures may include: • all work instructions • standard operating procedures • formulas/recipes • batch sheet • temporary instructions and similar instructions provided for the smooth running of the plant • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing

	practice (GMP) and responsible care) and government regulations Procedures may be: written, verbal, computer-based or in some other format
Gathering and monitoring performance data	The gathering and monitoring of performance data may be: - undertaken manually by individual employees through charts, tally sheets or keypad/board entry - collected automatically through software, such as SCADA software, ERP systems, MRP and proprietary systems
Continuous improvement	Continuous improvement in competitive systems and practices (often referred to as kaizen) includes: the continual evaluation and improvement of all process in terms of time required, resources used, resultant quality, and other aspects relevant to the process
Value stream	The value stream begins with the customer and includes all actions (both value adding and non-value added) by both internal sections/departments and external organisations to meet a customer requirement. Depending on the operations and the customer requirement stages where value stream actions may occur include: - sales outlet/representative - information gathering, data analysis and research - product design - raw material sourcing - intermediate processing - final assembler/collation/preparation - support services (e.g. accounting, finance and legal) - storage and delivery to customer - after market support

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS402020A Apply quick changeover procedures

Modification History

New unit, superseding MSACMT220A Apply quick changeover procedures - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to apply quick changeover procedures in an organisation implementing competitive systems and practices.

Application of the Unit

This unit applies to individuals in an organisation which is implementing competitive systems and practices and is pursuing quick changeover as one of its competitive operations tools. The unit can apply to quick changeovers of equipment, processes, batches or product type.

This unit covers the carrying out of these quick changeovers and also recommending improvements within the scope and authority of the individual's job.

Particular technical skills may also be required in some operations sectors and for some jobs. These skills should be gained from the Training Package relevant to the individual's industry and occupation.

This unit requires the application of skills associated with applying quick changeover procedures, including the planning and organising of own work, identifying problems and making suggestions for improvement of procedures.

This unit may not be applicable to a totally continuous operation producing only the one product, or simultaneous range of products. The unit is also not applicable to a maintenance/PVI shutdown as experienced by the continuous process manufacturers. However, where there is continuous operation on a campaign basis, it may be applied to the changeover between campaigns or similar changeovers.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Prepare for changeover	1.1	Determine when changeover will be required
		1.2	Review plans and instructions for quick changeover
		1.3	Identify role of others in quick changeover
		1.4	Obtain all required tools/parts/materials for changeover
		1.5	Organise process and tools/parts/materials ready for changeover
2	Make quick changeover	2.1	Plan changeover according to quick changeover principles
		2.2	Liaise and work with relevant people in quick changeover
		2.3	Complete changeover according to procedures
		2.4	Check output meets specification
		2.5	Debrief with all relevant stakeholders
		2.6	Note any steps which cause a problem
		2.7	Recommend changes to problematic steps
3	Improve occupational health and safety	3.1	Identify hazards to self or others in all steps/actions
		3.2	Determine risks from each hazard

- (OHS)
- 3.3 Identify actions which may be performed in a more ergonomic manner
 - 3.4 Recommend changes to improve OHS

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- determining/predicting when a changeover will occur through knowledge of products and processes in own work area
- communicating with others to clarify scope and procedures for quick changeover and contributing suggestions for improvement
- planning own tasks in quick changeover
- identifying and working to target changeover time
- working as part of a team
- setting up quick changeover using appropriate tools, process skills and procedures
- following OHS procedures and regulatory requirements and notifying risks

Required knowledge

Required knowledge includes:

- principles of quick changeover, including:
 - setting of target time for changeover
 - conversion of internal set-up time to external set-up time, where appropriate
 - simplification of changeover steps
 - monitoring and continuous improvement of changeovers
- relevant operational procedures
- target time for changeover
- relevant OHS regulations and requirements
- purposes/requirements of changeover
- methods of recommending changes
- quality requirements for products and processes
- minimisation of changeover waste (e.g. scrap and energy)

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify the scope and equipment to be used in a quick changeover implemented in their work area • identify the target time • understand the difference between internal and external changeover steps • identify own tasks and responsibilities in a quick changeover • identify problems in quick changeovers • contribute suggestions for improvement.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess response to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on)

	- targeted questioning - reports from supervisors, peers and colleagues (third-party reports) - portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: - lean operations - agile operations - preventative and predictive maintenance approaches - monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems - statistical process control systems, including six sigma and three sigma - Just in Time (JIT), kanban and other pull-related operations control systems - supply, value, and demand chain monitoring and analysis 5S

	• continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Changeover	Changeover may refer to: • an exchange of equipment (often dies or tools (traditional)) • a change between products/batches or between campaigns or processes. It may be any quantum change to produce a different product or undertake a different process In competitive systems and practices equipment-based quick changeover techniques in manufacturing can often be referred to under different names, for example: • single minute exchange of die (SMED) – The term originated with die changeovers but now often refers to the ability to perform any set-up activity in a minute or less of machine or process downtime • single-digit set-up – performing a set-up activity in a single-digit number of minutes (i.e. fewer than ten) • one touch exchange of die (OTED) – literally, changing a die with one physical motion, such as pushing a button; broadly, an extremely simple procedure for performing a set-up activity
Set-up	Set-up can be divided into two types: • internal set-up (work that can be done only when the machine or process is not actively engaged in production) • external set-up (work that can be done concurrently

	with the machine or process performing production duties) The same distinction can be applied to non-production equipment-based work areas where changeovers of processes or operations can be: • internal (requires work to stop, be reset, computers restarted, and so on) • external (where work can continue during the changeover)
Set-up time	Set-up time includes: • the work time required to change over a machine or process from one item or operation to the next item or operation
Procedures	Procedures may include: • work instructions • standard operating procedures • formulas/recipes • batch sheets • temporary instructions and similar instructions provided for the smooth running of operations, processes, plant and equipment • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) and government regulations Procedures may be: • written, verbal, computer-based or in some other format

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS402021A Apply Just in Time procedures

Modification History

New unit, superseding MSACMT221A Apply Just in Time (JIT) procedures - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to work in an organisation implementing Just in Time (JIT) procedures.

Application of the Unit

This unit applies to an individual working in an organisation following JIT who will need to follow procedures which are specific to JIT, such as the controlled flow of material (e.g. the use of kanban and elimination of waste). This will involve the individual in the application of the pull system to their job and the authorisation of product/material flows in accordance with procedures and their level of authority.

This unit requires the application of skills associated with planning and organising and self-management to deliver product on demand using necessary tools, equipment and processes to meet production requirements. The unit also requires an ability to recognise and act on problems that may interfere with meeting production demands.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Respond to indicator of demand	1.1	Identify pull of product through work role
		1.2	Recognise indicator of flow authorisation
		1.3	Identify production or service required
2	Make products or deliver service to demand	2.1	Make product or deliver service as required by ticket
		2.2	Identify any factors likely to prevent demand being satisfied in own work or work of the team
		2.3	Take action in accordance with procedures
3	Update demand information as required	3.1	Record information on ticket to procedures, as required
		3.2	Facilitate operation of flow authorisation as part of work
4	Recommend improvements	4.1	Examine the operation of the JIT system as it relates to own work
		4.2	Identify areas for improvement
		4.3	Identify any additional personal skill requirements to implement JIT procedures
		4.4	Recommend improvements

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- receiving ticket, kanban, order or other indicator of demand and interpreting correctly for own work function, including quantity, quality, time and delivery requirements
- ensuring that all production and movement of parts/material or delivery of a service for which the individual is responsible for takes place only as required by a downstream operation
- recognising and taking appropriate action on faults and other issues that may threaten the JIT delivery of own product or service
- reading and recording information on tickets or other indicators of demand
- suggest improvements to JIT system, as appropriate
- performing technical functions to meet indicators of demand from downstream and to issue indicators of demand upstream

Required knowledge

Required knowledge includes:

- relevant indicator of demands for own job
- own role in flow authorisation
- JIT methods relevant to job
- procedures for recommending improvements

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify the indicators of demand and the flow authorisation system in their work area • relate products and services supplied by suppliers and customers to the flow authorisation system • identify own tasks and responsibilities and relate them to the flow authorisation system • interpret received indicators of demand correctly for quantity, quality and time of delivery • contribute suggestions for improvement.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices.

	Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess response to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using some combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work

environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • JIT, kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
JIT	JIT is a scheduling concept that calls for any item or service needed for an operation, whether a service, raw material, finished item, or anything in between to be available:

	- precisely when the service, product or operation is to be produced or undertaken - in the right quantity and at the right quality
Product	Product may include: - a physical product - a supporting utility service, such as water, gas, power - some other service (e.g. cranes and forklifts)
Flow authorisation	Flow authorisation refers to: a system which authorises the worker to make a product without reference to another authority
Indicator of demand	An indicator of demand may include: - kanban bin, ticket or similar - some other indicator of demand pull which authorises production or movement of an item (in some plants, this may also include authorisation using SCADA software) In continuous operations organisations, production is measured in terms of production rate (e.g. kg/h, tonne/day) and rate is increased/decreased according to the flow authorisation which may be a kanban (e.g. ticket, order from a supplier) or may be a SCADA signal from a remote facility (e.g. customer tank) saying that resupply is required or similar
Ticket	A ticket may include: kanban or some other record, paper or electronic, which constitutes the whole or part of the flow authorising system (where kanban bins are used, there may be no other record)
Kanban	Kanban refers to: a card or sheet used to authorise production or movement of an item and may vary in format or content between organisations and departments
SCADA	SCADA refers to: a number of systems which automatically collect critical process data, perform required mathematical manipulations on it and then make control decisions and/or give required information to personnel for action
Pull system	A pull system refers to:

	• an operations planning system based on making on demand, as opposed to a push system based on making for stock using a sales forecast
Procedures	Procedures may include: • work instructions • standard operating procedures • formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) and government regulations Procedures may be: • written, verbal, computer-based or in some other format

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS402030A Apply cost factors to work practices

Modification History

New unit, superseding MSACMT230A Apply cost factors to work practices - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required by an individual to identify cost components in their work and to be able to determine, in general terms, the cost impacts of alternative actions.

Application of the Unit

This unit applies to an individual who is required to contribute to, and be involved in, the assessment of cost factors in their work. This may be done individually or in a team environment.

The unit covers the skills to be able to assess the relative costs of the alternatives and use this as one of the key factors in making decisions. Decisions are made within the scope of the employee's authority and according to procedures. Typical decisions include those that contribute to the efficient organisation of own work and the improvement of production time and cycle times.

This unit requires the application of skills associated with problem solving to identify cost factors and cost implications of own work and self-management to apply cost-effective practices.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised

unit of competency. text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Identify the major cost components of product or process in own work area	1.1	Identify cost components in the product or process in own work area
		1.2	Recognise the impact of current or alternative actions on costs
2	Identify constraints to cost-efficiency	2.1	Identify required production/process rate and major costs
		2.2	Identify costs factors under individual or team control
		2.3	Relate identified costs factors to impact on overall cost of production/process
		2.4	Identify cost factors that are a constraint to cost-efficiency in own work area
3	Apply cost-efficient work practices	3.1	Identify and explain to relevant people the implications of possible actions/changes to improve cost-efficiency in simple financial terms
		3.2	Identify non-financial implications of proposed changes in discussion with relevant people
		3.3	Select actions which minimise overall costs
		3.4	Monitor actions to ensure cost-efficiency in own work area is maintained

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- communicating with others to clarify cost factors and contribute suggestions for improvement
- visualising normal operational procedures in terms of flow
- distinguishing between fixed and variable costs
- identifying fixed and variable cost components relevant to own work, including where applicable:
 - power/energy
 - materials, plant and equipment
 - production or process time, including impact on salary and wages
 - office expenses
 - government taxes and charges

Required knowledge

Required knowledge includes:

- cost components of products made
- costs concepts, such as expense and income
- major cost contributors to product (e.g. energy)
- the difference between internally and externally controlled costs
- difference between overhead, labour and consumables

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify the scope of their own and their teams work and relate it to the overall flow of work in the organisation • express cost factors in specific terms (e.g. cost per

	item, process and task) and not just in a general manner • identify and express costs factors in simple financial terms • use cost factors to select lower cost alternatives when making decisions.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and

	literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems

	and practices - the size of the enterprise - the work organisation, culture, regulatory environment and the industry sector
Cost components	Cost components include: - fixed and variable costs, such as power/energy, materials, plant and equipment, production or process time, including impact on salary and wages - office expenses, such as telephone - government taxes and charges
Process	Process may include: a production, maintenance, logistics, office or other support process in an organisation
Overall cost	Overall cost may include: - the assessment of negative and positive financial implications - negative long-term issues, such as occupational health and safety (OHS), environmental and regulatory issues

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS402031A Interpret product costs in terms of customer requirements

Modification History

New unit, superseding MSACMT231A Interpret product costs in terms of customer requirements - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required by an individual to be able to identify the major cost components of either products or processes, the basic relationship of these to customer benefit, and use this to help minimise waste (defined as anything not delivering value as defined by the customer). It has a different focus to MSS402030A Apply cost factors to work practices, which focuses on costs in isolation, whereas this unit regards all costs not directly leading to customer benefit as waste.

Application of the Unit

This unit applies to an individual who uses their understanding of the customer's requirements of the product or process being undertaken as the basis for investigating work processes to identify waste sources and then takes action relevant to their level of competency and authority to reduce this waste. It requires an understanding of both the cost factors in the products they make and also the benefits which the customer derives from the product.

This competency may be performed individually or in a team-based environment.

This unit requires the application of skills associated with analysis and problem solving to identify waste and determine ways to minimise waste. This unit requires initiative and enterprise and application of learning in concepts of waste and waste minimisation.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Identify cost components deriving from customer benefit and other costs	1.1	Identify customer features/benefits in product or process being undertaken
		1.2	Identify cost components which deliver customer features/benefits and those which do not
2	Compare required performance of product or process steps with actual performance	2.1	Identify performance required to meet customer needs in own work and that of team
		2.2	Identify actual performance
		2.3	Compare cost components of products or process with current customer-related targets
		2.4	Separate costs components into those that contribute to customer features/benefits and those that do not
		2.5	Determine non-contributing cost components which are under control of the individual or team
3	Minimise waste	3.1	Recommend changes to eliminate or reduce waste
		3.2	Adopt changes which minimises waste
		3.3	Monitor effect of changes to ensure gains are made against customer features/benefits

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- identifying customer benefit in own work and that of the individual's team
- identifying financial and other performance indicators for own work and of team, including where appropriate, takt time
- communicating with others to clarify cost factors and contribute suggestions for improvement
- visualising normal operational procedures in terms of flow
- distinguishing between fixed and variable costs
- classifying fixed and variable cost components in terms of relevancy to customer benefit, including where applicable:
 - power/energy
 - materials, plant and equipment
 - production or process time, including impact on salary and wages
 - required and unnecessary downtime
 - office expenses
 - government taxes and charges

Required knowledge

Required knowledge includes:

- value as defined by the customer and the relevancy to own and team's work
- ability to access company information about:
 - customer features/benefits
 - cost components of products made
 - costs concepts, such as expense and income
 - major cost contributors to product (e.g. energy)
- the difference between internally and externally controlled costs
- difference between overhead, labour and consumables

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment

Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify customer benefit from own and team's work • express cost factors (financial and other factors) in specific terms (e.g. cost per item, process and task), and not just in a general manner • identify and express costs factors in simple financial terms • contribute suggestions for improvement to minimise waste and overall costs.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge.

	Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just In Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving

	• run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Customer features/benefits	Customer features/benefits include: • characteristics of the product or service which add value to the customer, this value may be assessed in financial or features terms The customer may be: • internal or external
Performance	Performance may include: • the rate of output of the plant compared to the rate required to meet demand • takt, where takt time is the allowable time to produce one product at the rate and quality customers are demanding it (this is NOT the same as cycle time, which is the normal time to complete an operation on a product – which should be less than or equal to takt time)
Customer-related targets	Customer-related targets include: • internally set financial and operational targets that contribute to meeting customer features/benefits
Contributing and non-contributing cost components	Contributing costs include: • costs that make a direct contribution to customer features/benefits. These costs continue to need to be incurred (although they may be minimised) in order to gain the customer feature/benefit Non-contributing costs include: • other costs that do not contribute to customer features/benefits. These may be costs that must be maintained, such as regulatory compliance and occupational health and safety (OHS) costs and other costs which are not required and do not contribute to customer features and so should be eliminated if possible (this is also defined in terms of waste – see

	below)
Waste	Waste (also known as muda in the Toyota Production System and its derivatives) includes: • any activity which does not contribute to customer or organisation benefit/features in the product Categories of waste include: • excess production and early production • delays • movement and transport • poor process design • inventory • inefficient performance of a process • making defective items Waste for this unit may include activities which do not yield any benefit to the organisation or any benefit to the organisations customers

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS402040 Apply 5S procedures

Modification History

Release 1. Supersedes and is equivalent to MSS402040A Apply 5S procedures

Release 2. Duplicated performance Criteria removed. Equivalent outcome.

Application

This unit of competency covers the skills and knowledge required by an individual to apply 5S procedures to their own job and work area. The unit assumes the individual has a particular job and an allocated work area and that processes in the work area are known by the individual.

This unit applies to an individual in an organisation who works in an operational position as part of production, maintenance, logistics, etc. The unit can also apply to individuals in other organisations who have a discrete role and responsibility for individually managed processes.

This unit applies where an organisation has decided to embark on a competitive systems and practices strategy and as part of this has adopted the philosophy of 5S as one of the tools to improve performance. The employee needs to apply 5S to their job and work area and maintain the housekeeping and other standards set by 5S.

This unit requires the application of skills associated with planning and organising, problem solving and self-management, in order to identify and implement 5S housekeeping practices.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Competitive systems and practices

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Sort needed items from unneeded	1.1	Identify all items in the work area.
		1.2	Sort items to achieve deliverables and value expected by downstream and final customers.
		1.3	Sort items required for regulatory or other required purposes.
		1.4	Place any non-essential item in an appropriate place other than the workplace.
		1.5	Regularly check that only essential items are in the work area.
2	Set the workplace in order	2.1	Identify the best location for each essential item.
		2.2	Place each essential item in its assigned location.
		2.3	After use immediately return each essential item to its assigned location.
		2.4	Regularly check that each essential item is in its assigned location.
3	Shine the work area	3.1	Keep the work area clean and tidy at all times.
		3.2	Conduct regular housekeeping activities during shift.
		3.3	Ensure the work area is neat, clean and tidy at both beginning and end of shift.
4	Standardise activities	4.1	Follow procedures.
		4.2	Follow checklists for activities, where available.
		4.3	Keep the work area to specified standard.
5	Sustain the 5S system	5.1	Clean up after completion of job and before commencing next job or end of shift.
		5.2	Identify situations where compliance to standards is unlikely and take actions specified in procedures.

- 5.3 Inspect work area regularly for compliance to specified standard.
- 5.4 Recommend improvements to lift the level of compliance in the workplace.

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Competitive systems and practices include one or more of:

- lean operations
- agile operations
- preventative and predictive maintenance approaches
- statistical process control systems, including six sigma and three sigma
- Just in Time (JIT), kanban and other pull-related operations control systems
- supply, value, and demand chain monitoring and analysis
- 5S
- continuous improvement (kaizen)
- breakthrough improvement (kaizen blitz)
- cause/effect diagrams
- overall equipment effectiveness (OEE)
- takt time
- process mapping
- problem solving
- run charts
- standard procedures
- current reality tree.

5S includes all of:

- sort

- set in order
 - shine
 - standardise
 - sustain.
- Sort includes all of:**
- separating necessary from unnecessary items (equipment and supplies)
 - keeping only what is absolutely necessary for the work processes that comprise the job
 - disposing of (or relocating) all other items.
- Set in order includes all of:**
- assigning required equipment and materials appropriate locations in the work area
 - consideration of frequency of use, ergonomics and work health and safety (WHS)
 - provision of facilities to maintain the locations.
- Shine includes one or more of:**
- keeping the work area clean at all times which should be carried out to a regular daily schedule against allowed time, usually at the end of the day or of a particular process
 - keeping work area organised
 - noting any signs of wear, damage, leakage, safety risks or other issues that require immediate attention.
- Best location includes one or more of:**
- changes to the layout of furniture
 - arrangement of equipment
 - provision of services
 - location of personnel.
- Standardising includes one or more of:**
- activities that help maintain the order and the housekeeping standards
 - using procedures and checklists developed from a procedure.
- Sustain includes one or more of:**
- making sure that daily activities are completed every day regardless of circumstance
 - cleaning up after a job
 - undertaking inspections, including:
 - informal inspections carried out often, at least weekly
 - formal inspections carried out at least monthly

- generating continuous improvement actions from daily activities
 - following up specific actions to generate continuous improvement.
- Items in work area include one or more of:**
- tools
 - jigs/fixtures
 - materials/components
 - plant and equipment
 - manuals
 - personal items (e.g. bags, lunch boxes and posters)
 - safety equipment and personal protective equipment (PPE)
 - other items which happen to be in the work area.
- Procedures (written, verbal, visual, computer based, etc.) include one or more of:**
- work instructions
 - standard operating procedures (SOPs)
 - safe work method statements
 - formulas/recipes
 - batch sheets
 - temporary instructions
 - any similar instructions provided for the smooth running of the plant.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSS402040A Apply 5S procedures

Release 2. Equivalent to MSS402040 Apply 5S procedures Release 1.

Links

The MSS Sustainability Companion Volume implementation Guides are available from VETNet: -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

Assessment Requirements for MSS402040 Apply 5S procedures

Modification History

Release 1. Supersedes and is equivalent to MSS402040A Apply 5S procedures

Release 2. Duplicated performance Criteria removed. Equivalent outcome.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include the ability, in one (1) or more allocated areas, to:

- implement and sustain 5S in own workplace
- identify own tasks and responsibilities
- contribute suggestions for improvement.

Knowledge Evidence

Must provide evidence that demonstrates knowledge relevant to their job role sufficient to fulfil their job role under routine only supervision, including:

- purpose of 5S in the workplace
- meaning and application of 5S steps to own workplace and job
- principles of efficient workplace organisation
- identifying waste (muda)
- procedures for recommending improvements.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence shall be based on a holistic assessment of the evidence.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operation of the workplace
 - will typically include a supervisor/third-party report focussing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
 - must include the application of 5S procedures in a work area where 5S has not previously been undertaken, or, demonstration of sustaining 5S principles in a work area that has already undergone prior 5S procedures
 - will typically include the use of appropriate tools, equipment and safety gear requiring demonstration of preparation, operation, completion and responding to problems.

- Assessment should occur in operational workplace situations. Knowledge evidence may be collected concurrently with performance evidence (provided a record is kept) or through an independent process such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competency and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with an organisation providing relevant environmental monitoring, management or technology services about performing the competency being assessed within the last twelve months.

Links

The MSS Sustainability Companion Volume implementation Guides are available from VETNet: -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

MSS402040A Apply 5S procedures

Modification History

New unit, superseding MSACMT240A Apply 5S procedures in a manufacturing environment
- Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required by an employee to apply 5S procedures to their own job and work area. The unit assumes the employee has a particular job and an allocated work area and that processes in the work area are known by the individual.

Application of the Unit

This unit applies to an individual in an organisation who works in an operational position as part of production, maintenance, logistics, and so on. The unit can also apply to individuals in other organisations who have a discrete role and responsibility for individually managed processes. For employees in an office, the specific office-related unit *MSS402041A Apply 5S* in an office should be selected.

This unit applies where an organisation has decided to embark on a competitive systems and practices strategy and as part of this has adopted the philosophy of 5S as one of the tools to improve performance. The employee needs to apply 5S to their job and work area and maintain the housekeeping and other standards set by 5S.

This unit requires the application of skills associated with planning and organising, problem solving and self-management, in order to identify and implement 5S housekeeping practices.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Sort needed items from unneeded	1.1	Identify all items in the work area
		1.2	Sort items to achieve deliverables and value expected by downstream and final customers
		1.3	Sort items required for regulatory or other required purposes
		1.4	Place any non-essential item in a appropriate place other than the workplace
		1.5	Regularly check that only essential items are in the work area
2	Set the workplace in order	2.1	Identify the best location for each essential item
		2.2	Place each essential item in its assigned location
		2.3	After use immediately return each essential item to its assigned location
		2.4	Regularly check that each essential item is in its assigned location
3	Shine the work area	3.1	Keep the work area clean and tidy at all times
		3.2	Conduct regular housekeeping activities during shift
		3.3	Ensure the work area is neat, clean and tidy at both beginning and end of shift

4	Standardise activities	4.1	Follow procedures
		4.2	Follow checklists for activities, where available
		4.3	Keep the work area to specified standard
5	Sustain the 5S system	5.1	Clean up after completion of job and before commencing next job or end of shift
		5.2	Identify situations where compliance to standards is unlikely and take actions specified in procedures
		5.3	Inspect work area regularly for compliance to specified standard
		5.4	Recommend improvements to lift the level of compliance in the workplace

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- communicating with others to clarify issues during 5S implementation, communicate results and contribute suggestions for improvement
- visualising operations in terms of flow and contribution to customer outcomes
- planning own tasks in implementation of 5S
- implementing 5S in own work area according to instructions
- identifying waste (muda)
- prioritising activities and items
- reading and interpreting documents describing procedures
- recording activities and results against templates and other prescribed formats
- working with others
- solving problems

Required knowledge

Required knowledge includes:

- operations and processes relevant to own job
- meaning and application of 5S steps to own job and work area
- principles of efficient workplace organisation
- purposes of 5S
- methods of making/recommending improvements

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify own tasks and responsibilities and relate them to organisation and customer requirements • identify and explain the stages of 5S • implement 5S in own work area • identify waste (muda) in the work area.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects

	• suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems

	• supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
5S	5S is a system of work organisation originally developed in Japan based around housekeeping principles. A close translation of the five stages in the housekeeping approach is: • sort • set in order • shine • standardise • sustain
Sort	Sort involves keeping only what is absolutely necessary for the processes in the work area. Sort includes: • clearing the work area of all non-essential equipment and materials Non-essential items are those not required to either produce product, conduct process or operations, or make required adjustments to equipment during process or operations
Set in order	Set in order includes: • assigning required equipment and materials appropriate locations in the work area

Shine	Shine includes: • keeping the work area clean at all times. This should be carried out to a regular daily schedule against allowed time and, on most occasions, at the end of a job
Standardise	Standardising includes: • activities that help maintain the order and the housekeeping standards • using procedures and checklists developed from a procedure
Sustain	Sustain includes: • making sure that daily activities are completed every day regardless of circumstance • cleaning up after a job • undertaking inspections, including: • informal inspections carried out often, at least weekly • formal inspections carried out at least monthly • generating continuous improvement actions from daily activities • following up specific actions to generate continuous improvement
Items in work area	Items in work area may include: • tools • jigs/fixtures • materials/components • plant and equipment • manuals • personal items (e.g. bags, lunch boxes and posters) • safety equipment and personal protective equipment • other items which happen to be in the work area
Procedures	Procedures may include: • work instructions • standard operating procedures • formulas/recipes • batch sheets • temporary instructions and similar instructions provided for the operation of the plant • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing

	practice (GMP) and responsible care) and government regulations Procedures may be: • written, verbal, computer based or in some other format

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS402050A Monitor process capability

Modification History

New unit, MSACMT250A Monitor process capability - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required for gathering of data and the interpretation of simple information to determine the compliance of the process and the taking of action as defined by the procedures where the information reveals the process is out of control parameters.

Application of the Unit

This unit applies to an individual in an organisation adopting specific competitive systems and practices, usually either six sigma or statistical process control/three sigma, as a means of determining and improving the capability of their process to customer requirements. The individual is involved in collecting specified data and performing specified manipulations to the data (typically by plotting on a chart or by entering into a nominated computer program). The information is typically presented to team members in terms of graphs/charts which they are expected to interpret at a basic level and then take action in accordance with procedures to restore the process to being under control parameters.

This unit requires the application of skills associated with entering and monitoring operational data and information and requires initiative, enterprise and problem solving in identifying production variations and making improvement recommendations.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

1	Collect and process data	1.1	Take specified measurements/readings, as required
		1.2	Enter data in log, computer or other record
		1.3	Manipulate and/or chart data as required by procedures
2	Identify variations that are not random and take action	2.1	Examine chart and/or reliability information
		2.2	Distinguish between random variations and those with an identifiable cause
		2.3	Take action specified in procedures when a variation with an identifiable cause occurs
3	Assist in process improvement	3.1	Collect data for process capability improvement trials
		3.2	Make recommendations for improvement
		3.3	Implement revised capability monitoring procedures

Elements and Performance Criteria

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- reading and interpreting electronic and hard copy operating instructions and documents, including where used:
 - work instructions

- standard operating procedures
- formulas/recipes
- production and batch sheets
- temporary instructions
- other provided operating instructions
- monitoring performance data against specifications and control parameters
- examining equipment procedures, products and processes for possible causes of variations
- identifying when corrective action is required by reference to procedures

Required knowledge

Required knowledge includes:

- data collection methods for operations in work area
- data processing techniques required
- basic variability and normal distribution
- recognition of identifiable causes in accordance with procedures
- causes of different types of identifiable causes as defined by procedures
- actions to be taken for the different causes

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence should be available of data collected and processed. There may also be evidence of assignable causes recognised and action taken. There should not be evidence of assignable causes being ignored. A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify the scope of operations, including required performance parameters in their work area • collect, enter and process data, including normal performance and variations • read and interpret data, including identifying variation to set parameters • determine where assignable causes can be allocated to variations and take appropriate action • participate in data collection, when required, for

	process capability trials • contribute suggestions for improvement.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems. • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector

Six sigma	Six sigma is a process improvement methodology based on statistical process control with six sigma limits which equates to 3.4 defects per million opportunities for each product or service transaction Six sigma is also often used as a general term covering a competitive systems and practices approach. Six sigma training typically covers several units of competency in this Training Package
Three sigma	Three sigma includes: statistical process control with three sigma limits which equates to 3 defects per thousand opportunities for each product or service transaction
Procedures	Procedures may include: - work instructions - standard operating procedures - formulas/recipes - batch sheets - temporary instructions and similar instructions provided for the smooth running of the plant - good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) - government regulations Procedures may be: - written, verbal, computer-based or in some other form
Random variation	Random variation is the term used in statistical control to refer to those variations for which no cause can be found
Identifiable cause	Identifiable cause (also referred to as assignable cause or special cause) refers to: those variations for which a cause can be found and so the cause of the variation eliminated
Process capability	Process capability means the capability of the process to deliver to customer defined requirements. Process capability includes process stability against standardised practices and documentation to eliminate variation against customer requirements

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS402051 Apply quality standards

Modification History

Release 2. Mapping updated to include superseded unit (not equivalent to LMTGN2002B Apply quality standards)

Release 1. Supersedes and is equivalent to MSS402051A Apply quality standards

Application

This unit of competency covers the skills and knowledge required to apply quality standards to work operations in an organisation. The unit is designed to complement competitive systems and practices units.

This unit applies to an individual who is expected to take responsibility for the quality of their own work, and to take actions specified in the procedures and within the scope of their job and authority to ensure that quality standards are met.

This unit requires the application of skills associated with interpreting and applying workplace standards and identifying and addressing problems that interfere with quality outcomes. The unit requires initiative, enterprise and self-management to ensure quality standards are achieved.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Competitive systems and practices

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the Performance criteria describe the performance needed to

essential outcomes.	demonstrate achievement of the element.
1	Assess own work
1.1	Continuously check completed work against workplace standards relevant to the operation being undertaken.
1.2	Demonstrate an understanding of how the work activities and completed work relate to the next production process or processes and to the final products or services concerned.
1.3	Identify and isolate faulty components, products or processes.
1.4	Record and/or report faults and any identified causes to the supervisor concerned, where required, in accordance with workplace procedures.
2	Assess quality of received components, parts or materials
2.1	Continuously measure/check received components, parts, materials, information, service or final products against workplace standards and specifications for conformance.
2.2	Demonstrate an understanding of how the received components, parts or materials, information or service relate to the current operation and how they contribute to the final quality of the product or service.
2.3	Identify and isolate faulty components, parts, materials or information that relate to the operator's work.
2.4	Record and/or report faults and any identified causes in accordance with workplace procedures.
2.5	Identify causes of any identified faults and take corrective action as specified in workplace procedures.
3	Investigate causes of quality deviations
3.1	Record information on quality and other indicators of process performance.
3.2	Investigate and report causes of deviations from specified quality standards for components.
3.3	Recommend suitable preventative action based on workplace quality standards and the identified causes of deviations from specified quality standards of materials.

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Competitive systems and practices include one or more of:

- lean operations
- agile operations
- preventative and predictive maintenance approaches
- statistical process control systems, including six sigma and three sigma
- Just in Time (JIT), kanban and other pull-related operations control systems
- supply, value, and demand chain monitoring and analysis
- 5S
- continuous improvement (kaizen)
- breakthrough improvement (kaizen blitz)
- cause/effect diagrams
- overall equipment effectiveness (OEE)
- takt time
- process mapping
- problem solving
- run charts
- standard procedures
- current reality tree.

Quality parameters include one or more of:

- finish
- size
- durability
- product or process variations
- materials

	• alignment • colour • damage and imperfections • time • is complete/contains all required information/data • complies to template • uses the correct styles and formats.
Quality checks include one or more of:	• visual inspection • physical measurements • chemical tests • checks against patterns, templates, styles, formats and guides • processing time.
Materials include one or more of:	• physical raw materials • orders, forms and other documentation • services required for undertaking an operation (e.g. power, water, compressed air and fuel).
Procedures (written, verbal, visual, computer based, etc) include one or more of:	• work instructions • standard operating procedures (SOPs) • safe work method statements • formulas/recipes • batch sheets • temporary instructions • any similar instructions provided for the smooth running of the plant.
Indicators of production performance include one or more of:	• number of items/production rate • delays and causes of delays (where known) • other information as specified in the procedures.
Data entry/recording includes one or more of:	• keyboard • written (including ticks or signs) • verbal.
Sources of information/documents include one	• quality and Australian Standards and procedures • work instructions, patterns, designs and recipes

- or more of:**
- organisation work procedures
 - manufacturer instructions for materials and equipment
 - organisational or external personnel
 - customer requirements.
- Investigate and report requires following set procedures which include one or more of:**
- verbal instructions
 - documented procedures
 - other quality procedures as implemented within an organisation or work environment.
- Workplace context includes one or more of:**
- work organisation procedures and practices relating to the manufacture and quality outcomes for products
 - conditions of service, legislation and industrial agreements, including:
 - workplace agreements and awards
 - federal or state/territory legislation
 - standard work practice.
- Reporting/communication includes one or more of:**
- verbal and written communication in accordance with organisational policies and procedures
 - oral, written or visual communication, including simple data.
- Being responsible for the maintenance of own work quality includes one or more of**
- contributing to the quality improvement of team or section output, where necessary, in accordance with workplace procedures
 - following safety, environmental, housekeeping and quality procedures as specified by materials/machine/equipment manufacturers, regulatory authorities and the organisation.
- Applicable regulations and legislation include one or more of**
- work health and safety (WHS) legislation relevant to workplace activities
 - workers compensation legislation.

Unit Mapping Information

Release 2. Mapping updated to include supersedes and not equivalent to LMTGN2002B
Apply quality standards

Release 1. Supersedes and is equivalent to MSS402051A Apply quality standards

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

Assessment Requirements for MSS402051 Apply quality standards

Modification History

Release 2. Mapping updated to include superseded unit (not equivalent to LMTGN2002B Apply quality standards)

Release 1. Supersedes and is equivalent to MSS402051A Apply quality standards

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include the ability, for one (1) or more products/processes, to:

- check and measure relevant quality parameters
- interpret results of quality checks in terms of specifications, patterns and work standards
- take required action where standards of materials, component parts, final product or work processes are found to be unacceptable
- maintain accurate records.

Knowledge Evidence

Must provide evidence that demonstrates knowledge relevant to their job role sufficient to fulfil their job role under routine only supervision, including:

- relevant quality standards, policies and procedures
- relevant production processes, materials and products
- relevant measurement techniques and quality checking procedures
- reporting procedures.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence shall be based on a holistic assessment of the evidence.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operation of the workplace
 - will typically include a supervisor/third-party report focussing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
 - must include the application of quality standards to own workplace

- will typically include the use of appropriate tools, equipment and safety gear requiring demonstration of preparation, operation, completion and responding to problems.
- Assessment should occur in operational workplace situations. Knowledge evidence may be collected concurrently with performance evidence (provided a record is kept) or through an independent process such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competency and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with an organisation providing relevant environmental monitoring, management or technology services about performing the competency being assessed within the last twelve months.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

MSS402051A Apply quality standards

Modification History

New unit, superseding MSACMT251A Apply quality standards - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to apply quality standards to work operations in an organisation. The unit is designed to complement competitive systems and practices units.

Application of the Unit

This unit applies to an individual who is expected to take responsibility for the quality of their own work, and to take actions specified in the procedures and within the scope of their job and authority to ensure that quality standards are met.

This unit requires the application of skills associated with interpreting and applying workplace standards and identifying and addressing problems that interfere with quality outcomes. The unit requires initiative, enterprise and self-management to ensure quality standards are achieved.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Assess own work	1.1	Continuously check completed work against workplace standards relevant to the operation being undertaken
		1.2	Demonstrate an understanding of how the work activities and completed work relate to the next production process or processes and to the final products or services concerned
		1.3	Identify and isolate faulty components, products or processes
		1.4	Record and/or report faults and any identified causes to the supervisor concerned, where required, in accordance with workplace procedures
2	Assess quality of received components, parts or materials	2.1	Continuously check received components, parts, materials, information, service or final products against workplace standards and specifications for conformance
		2.2	Demonstrate an understanding of how the received components, parts or materials, information or service relate to the current operation and how they contribute to the final quality of the product or service
		2.3	Identify and isolate faulty components, parts, materials or information that relate to the operator's work
		2.4	Record and/or report faults and any identified causes in accordance with workplace procedures
		2.5	Identify causes of any identified faults and take corrective action as specified in workplace procedures
3	Measure components, parts or materials	3.1	Measure materials, component parts, information, service or products, as required, using the appropriate measuring instruments in accordance with workplace procedures

4	Record information on production indicator	4.1	Record basic information on quality and other indicators of process performance in accordance with workplace procedures
5	Investigate causes of quality deviations	5.1	Investigate and report causes of deviations from specified quality standards for components
		5.2	Recommend suitable preventative action based on workplace quality standards and the identified causes of deviations from specified quality standards of materials

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- interpreting work instructions, specifications, standards and patterns appropriate to own work
- carrying out relevant visual inspections of materials, component parts and final products
- carrying out relevant physical/chemical measurements or tests
- maintaining accurate work records in accordance with procedures
- carrying out work in accordance with occupational health and safety (OHS) policies and procedures
- meeting work specifications
- communicating effectively within defined workplace procedures
- interpreting and applying defined procedures

Required knowledge

Required knowledge includes:

- relevant quality standards, policies and procedures
- relevant production processes, materials and products
- basic characteristics of materials used in the relevant production processes
- safety and environmental aspects of relevant production processes
- relevant measurement techniques and quality checking procedures
- workplace procedures
- reporting procedures

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • interpret, relevant work instructions, standards and specifications appropriate to own work • check and measure relevant quality parameters • interpret results of quality checks in terms of specifications, patterns and work standards • take required action where standards of materials, component parts, final product or work processes are found to be unacceptable • maintain accurate records.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of

	contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis

	• 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Quality parameters	Quality parameters may include: • finish • size • durability • product or process variations • materials • alignment • colour • damage and imperfections • time
Quality checks	Quality checks are against set parameters for the process or product. Examples include: • visual inspection • physical measurements • chemical tests • checks against patterns, templates and guides • processing time
Materials	Materials may include: • physical raw materials • orders, forms and other documentation • services required for undertaking an operation (e.g. power, water, compressed air and fuel)

Measure	Measure includes: those measurements which may be taken by the employee in the workplace/at their work station
Procedures	Procedures may include: - work instructions - standard operating procedures - formulas/recipes - batch sheets - temporary instructions and similar instructions provided for the operation of the plant - good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) - government regulations Procedures may be: - written, verbal, computer-based or in some other format
Indicators of production performance	Indicators of production performance may include: - number of items/production rate - delays and causes of delays (where known) - other information as specified in the procedures
Data entry/recording	Data entry/recording may include: - keyboard - written (including ticks or signs) - verbal
Sources of information/ documents	Sources of information/documents may include: - quality and Australian standards and procedures - work instructions, patterns, designs and recipes - organisation work procedures - manufacturer instructions for materials and equipment - organisational or external personnel - customer requirements
Investigate and report	Investigate and report includes: - following set procedures defined for such investigations Set procedures may include: - verbal instructions

	• documented procedures • other quality procedures as implemented within an organisation or work environment
Workplace context	Workplace context includes: • work organisation procedures and practices relating to the manufacture and quality outcomes for products • conditions of service, legislation and industrial agreements, including: • workplace agreements and awards • federal or state/territory legislation • standard work practice
Reporting/communication	Reporting/communication may include: • verbal and written communication in accordance with organisational policies and procedures • oral, written or visual communication and may include simple data
Being responsible for the maintenance of own work quality	Being responsible for the maintenance of own work quality may include: • contributing to the quality improvement of team or section output, where necessary, in accordance with workplace procedures • following safety, environmental, housekeeping and quality procedures as specified by materials/machine/equipment manufacturers, regulatory authorities and the organisation
Applicable regulations and legislation	Applicable regulations and legislation may include: • OHS legislation relevant to workplace activities • workers compensation legislation

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS402060A Use planning software systems in operations

Modification History

New unit, superseding MSACMT260A Use planning software systems in manufacturing -
Not equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to access planning software (often known as Enterprise resource Planning (ERP), Materials Resource Planning (MRP and MRPII), and often by a proprietary name, to make routine business decisions required of the person as a regular part of their job.

Application of the Unit

This unit applies to an individual in an organisation using a planning software system and who must interface with that system. The unit applies to both accessing information from the planning software system and using it as an aid to decision making. This unit requires the application of communication, planning, and problem solving associated with using planning software in own work.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Use interface	1.1	Identify terminals relevant to own work station and functions
		1.2	Use keyboards, track ball/mouse and monitor and/or other peripherals to access system
		1.3	Navigate through system and screens to find program menu and data relevant to own work
		1.4	Identify and input information on own work processes at required frequency and to required detail
		1.5	Access message section and acknowledge messages
		1.6	Identify problems and make suggestions for improvements to relevance of planning software to own work
2	Access information	2.1	Identify work processes that require information from planning software system
		2.2	Obtain relevant data and information on current operations from the planning software system
		2.3	Identify the status of items in the value stream
		2.4	Access historical data and information
		2.5	Interpret information and identify and prioritise any actions required in response to information
3	Take appropriate actions in accordance with procedures	3.1	Take actions in response to information obtained from planning software
		3.2	Follow up as appropriate to ensure anticipated results have occurred
		3.3	Record adjustments and variations according to procedures

3.4 Identify any learning needs to use planning software and seek appropriate support

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- reading and interpreting electronic and hard copy operating instructions and documents, including where used:
 - work instructions
 - standard operating procedures
 - formulas/recipes
 - production and batch sheets
 - temporary instructions
 - other provided operating instructions
- working within access control requirements of the planning software system
- identifying modules, screens, files, and so on, of software relevant to own work
- logging in and using terminals and planning software at a level of access appropriate to own work
- accurately inputting data
- searching and retrieving data
- accessing nominated assistance with planning software

Required knowledge

Required knowledge includes:

- technical knowledge needed to operate own work processes
- planning software system and operation, including:
 - terminal locations and types
 - security and access arrangements
 - range of information held in planning software relevant to own work
 - data collection methods for operations in work area
 - assistance arrangements for users of planning software
 - business activities exercised by/through the planning software system
- value created by operations for customers

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify the scope and relevance of planning software system to their own work • enter and retrieve data, including normal performance and variations • use planning software system to assist in own work • contribute suggestions for improvement to performance and relevance of planning software to own work area.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues

	(third-party reports) • portfolio of evidence In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz)

	• cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Planning software	Planning software includes: • software systems which integrate a range of business information, such as finance, logistics maintenance and production (frequently referred to as ERP, MRP, MRPII or a range of proprietary names)
Relevant data and information	Relevant data and information may include: • technical and other drawings • standard operating procedures and other work instructions • production schedules including historical data • orders and order tracking information • stock control • contact lists • occupational health and safety (OHS) information
Value stream	The value stream begins with the customer and includes all actions (both value-adding and non-value added) by both internal sections/departments and external organisations to meet a customer requirement. Depending on the operations and the customer requirement, stages where value stream actions may occur include: • sales outlet/representative • information gathering, data analysis and research • product design • raw material sourcing • intermediate processing

	• final assembler/collation/preparation • support services (e.g. accounting, finance and legal) • storage and delivery to customer • after market support
Items in the value stream	Items in the value stream refer to information held within the planning software system that contributes to creating value as determined by the customer. Depending on the organisation it may include: • physical elements of the production system, such as sites, work stations, equipment, material, including stock, work in progress and finished products • information needed to meet customer requirements, such as designs, drawings, work instructions, standard operating procedures, standards, material lists and pricing • information not directly related to current customer requirements but required by the organisation
Procedures	Procedures may include: • work instructions • standard operating procedures • formulas/recipes • batch sheets • temporary instructions and similar instructions provided for the smooth running of the plant • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) • government regulations Procedures may be: • written, verbal, computer-based or in some other format

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS402061A Use SCADA systems in operations

Modification History

New unit, superseding MSACMT261A Use SCADA systems in manufacturing - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required by an individual to interact with a System Control and Data Acquisition (SCADA) system as part of their job.

Application of the Unit

This unit applies to an individual in an organisation using a SCADA system and the individual must interface with that system. The individual will need to access this system as part of their routine and take actions based on the information they obtain from the SCADA system in accordance with procedures.

This unit requires the application of skills associated with using communication tools and technology for management of own work, planning and problem solving.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Use operator interface	1.1	Identify SCADA terminals relevant to own work station and functions
		1.2	Use keyboards, track ball, monitor and/or stand alone controllers to access/interrogate system
		1.3	Use correct level of access and find all relevant screens and information
		1.4	Access message section and acknowledge messages
		1.5	Input and output information correctly according to program and organisation requirements
2	Use information	2.1	Obtain data and information from SCADA, as required, including process, supply and product chain data
		2.2	Interpret data and information as required by own job
		2.3	Find and use relevant historical data and information
		2.4	Use manufacturer manuals or specifications, as required, to expand knowledge of SCADA system relevant to own work
		2.5	Determine and prioritise required actions
3	Make required changes in accordance with procedures	3.1	Adjust production/process in response to SCADA information
		3.2	Record adjustments and variations to specifications/schedules and report to appropriate personnel
		3.3	Seek feedback and information on adjustments to further improve procedures, where required

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- using SCADA terminals and other input devices
- reading and interpreting electronic and hard copy SCADA operating instructions and documents, including where used:
 - work instructions
 - standard operating procedures
 - temporary instructions
 - other provided operating instructions
- working within security and access control requirements of the SCADA system
- identifying modules, screens, and so on, of SCADA system relevant to own work
- accurately inputting and outputting data
- searching and retrieving data
- accessing SCADA system nominated assistance, when required

Required knowledge

Required knowledge includes:

- technical knowledge needed to operate own work processes
- hierarchy of SCADA system and operation
- information available from and controls exercised by/through the SCADA system

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify the scope and relevance of the SCADA system to their own work • access correct levels of the SCADA system • enter and retrieve data, including normal performance and variations

	• use SCADA system to assist in own work.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented ,or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as SCADA software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
SCADA	SCADA refers to: • a number of systems which automatically collect

	critical process data, perform required mathematical manipulations on it and then make control decisions and/or give required information to personnel for action In some industry sectors, the SCADA system is sometimes integrated into other sophisticated computer control systems, such as Distributed Control System (DCS). These sectors may simply refer to their SCADA as the DCS or other similar term (such as the proprietary name of the computer system). SCADA systems may provide information from outside of the process, such as stock/material levels in a customer plant and/or available supply, supply rates and pricing from a supplier plant. This information may all be accessed by the SCADA system and the employee using it in order to make production rate and other control decisions (either automatically or human assisted) about their own operations and work processes
Supply and product chains	The supply chain Includes: - all suppliers in the chain from the initial raw material up to the current step in the operations process The product chain includes: - all steps after the current step up to the final customer Competitive systems and practices organisations encompass the entire production system, beginning with the customer, and includes: - the product sale - outlet - the final assembler - product design - raw material mining and processing - all tiers of the value stream (sometimes called the supply chain) Any truly 'competitive' system is highly dependent on the demands of its customers and the reliability of its suppliers. No implementation of competitive systems and practices can reach its full potential without including the entire 'organisation' in its planning
Procedures	Procedures may include: - work instructions - standard operating procedures

	• formulas/recipes • batch sheets • temporary instructions and similar instructions provided for the smooth running of the plant • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) • government regulations Procedures may be: • written, verbal, computer-based or in some other format

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS402080 Undertake root cause analysis

Modification History

Release 1. Supersedes and is equivalent to MSS402080A Undertake root cause analysis

Application

This unit of competency covers the skills and knowledge required to undertake root cause analysis (RCA). This unit also covers the competencies needed by operators to contribute to an advanced maintenance strategy using RCA coupled with diagrams and charts.

This unit applies to individuals working in an organisation that is applying competitive systems and practices strategies. The unit applies to the formal problem solving to root cause that the individual must undertake in their own work area or where the individual contributes to problem solving to root cause as part of a team.

This unit requires an ability to seek and apply information from a variety of sources in order to inform RCAs. Initiative and enterprise is also required to identify quick fix and permanent solutions to problems.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Competitive systems and practices

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Recognise problems	1.1	Identify features or occurrences indicative of a problem.
		1.2	Use appropriate tools, techniques and charts to define the problem.
2	Implement quick fix	2.1	Recommend a quick fix within the scope of competency and authority.
		2.2	Use technology or processes relevant to the problem to implement quick fix.
3	Determine root cause	3.1	Identify a range of possible causes.
		3.2	Gather data and other information to eliminate or confirm possible causes.
		3.3	Use available data and information to link causes and effects.
		3.4	Seek assistance to obtain additional information if problem is beyond own competency/authority.
		3.5	Identify root cause.
4	Develop permanent solution	4.1	Identify a range of methods to eliminate the root cause or break the cause tree.
		4.2	Select the most appropriate solution.
		4.3	Liaise with relevant people.
		4.4	Recommend or implement solution within the limits of competency and authority.
		4.5	Monitor impact of solution and make further recommendations, as required.

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Competitive systems and practices include one or more of:

- lean operations
- agile operations
- preventative and predictive maintenance approaches
- statistical process control systems, including six sigma and three sigma
- Just in Time (JIT), kanban and other pull-related operations control systems
- supply, value, and demand chain monitoring and analysis
- 5S
- continuous improvement (kaizen)
- breakthrough improvement (kaizen blitz)
- cause/effect diagrams
- overall equipment effectiveness (OEE)
- takt time
- process mapping
- problem solving
- run charts
- standard procedures
- current reality tree.

Problems include one or more of:

- variation to normal plant or equipment operation
- unplanned or non-conforming process or operations outcomes
- out of specification products
- excess scrap
- accidents and emergencies
- regulatory breaches
- customer returns and complaints
- reduction or loss of sales.

Techniques/charts include one or more

- control charts
- Pareto charts

of:

- run charts
- flow charts
- cause and effect diagrams
- tree diagrams
- 5 Whys analysis
- organisation specified/mandated methods.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSS402080A Undertake root cause analysis

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

Assessment Requirements for MSS402080 Undertake root cause analysis

Modification History

Release 1. Supersedes and is equivalent to MSS402080A Undertake root cause analysis

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include the ability, for one (1) or more problems, to:

- undertake problem identification
- use appropriate processes to achieve root cause identification
- recommend solutions and implementation procedures to problems within own area
- monitor implementation of solutions.

Knowledge Evidence

Must provide evidence that demonstrates knowledge relevant to their job role sufficient to fulfil their job role under routine only supervision, including:

- methodology of root cause analysis, including:
 - difference between quick fix and root cause elimination
 - breaking of causal tree
- indicators of problems and variances to normal operation
- relevant analysis tools (e.g. Pareto charts, 5 Whys).

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence shall be based on a holistic assessment of the evidence.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operation of the workplace
 - will typically include a supervisor/third-party report focussing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
 - must include a root cause analysis in own workplace
 - will typically include the use of appropriate tools, equipment and safety gear requiring demonstration of preparation, operation, completion and responding to problems.

- Assessment should occur in operational workplace situations.
- Knowledge evidence may be collected concurrently with performance evidence (provided a record is kept) or through an independent process such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competency and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with an organisation providing relevant environmental monitoring, management or technology services about performing the competency being assessed within the last twelve months.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

MSS402080A Undertake root cause analysis

Modification History

New unit, superseding MSACMT280A Undertake root cause analysis - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to undertake root cause analysis (RCA) by any person. This will often be undertaken by people working in a team. This unit also covers the competencies needed by operators to contribute to an advanced maintenance strategy using RCA coupled with diagrams and charts.

Application of the Unit

This unit applies to individuals working in an organisation which is applying competitive systems and practices strategies. The unit applies to the formal problem solving to root cause that the individual must undertake in their own work area or where the individual contributes to problem solving to root cause as part of a team.

This unit requires an ability to seek and apply information from a variety of sources in order to inform RCAs. Initiative and enterprise is also required to identify quick fix and permanent solutions to problems.

Where training in a wider range of problem solving techniques and tools is required the unit MSAPMSUP390A Use structured problem solving tools should be selected.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the Performance criteria describe the performance needed to

essential outcomes of a unit of competency.

demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Recognise problems	1.1	Identify features or occurrences indicative of a problem
		1.2	Use appropriate tools, techniques and charts to define the problem
2	Implement quick fix	2.1	Recommend a quick fix within the scope of competency and authority
		2.2	Use technology or processes relevant to the problem to implement quick fix
3	Determine root cause	3.1	Identify a range of possible causes
		3.2	Gather data and other information to eliminate or confirm possible causes
		3.3	Use available data and information to link causes and effects
		3.4	Seek assistance, as required
		3.5	Identify root cause
4	Develop permanent solution	4.1	Identify a range of methods to eliminate the root cause or break the cause tree
		4.2	Select the most appropriate solution
		4.3	Liaise with relevant people
		4.4	Recommend or implement solution within the limits of competency and authority

- 4.5 Monitor impact of solution and make further recommendations, as required

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- cooperating and working with others on problem solving
- assessing and recording information from a variety of sources
- defining potential problems factually, including:
 - location and extent of problem or incident
 - sequence of events where relevant
 - extent of deviation from normal operation or performance
- analysing potential problems across a range of varied activities and knowledge applications
- reading and constructing simple charts, such as cause and effect diagrams

Required knowledge

Required knowledge includes:

- RCA methodology, including difference between quick fixes and root cause elimination or breaking of causal tree
- principles and normal operation of equipment, plant and processes in own work area sufficient to undertake a RCA and propose solutions
- common variances to normal performance that are indicators of a problem
- use of relevant analysis tools (e.g. cause/effect diagrams, Pareto charts and 5 Whys)
- operations in own work area

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and	A person who demonstrates competency in this unit must

evidence required to demonstrate competency in this unit	be able to provide evidence of the ability to: • undertake problem identification • use appropriate processes to achieve root cause identification • prioritise solutions • recommend solutions and implementation procedures to problems within own area and range of technical skills and knowledge • evaluate implementation of solutions.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess response to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and

	disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree

	Competitive systems and practices should be interpreted so as to take into account: - the stage of implementation of competitive systems and practices - the size of the enterprise - the work organisation, culture, regulatory environment and the industry sector
Features or occurrences indicative of a problem	Examples of features or occurrences indicating problems include: - variation to normal plant or equipment operation - unplanned or non-conforming process or operations outcomes - out of specification products - excess scrap - accidents and emergencies - regulatory breaches - customer returns and complaints - reduction or loss of sales
Root cause	There are many possible causes of any problem. The root cause contrasts with other possible causes of a problem which when eliminated have no impact or only ameliorate the problem. Elimination of the root cause permanently eliminates the problem. There should only be one root cause for any problem and so the analysis should continue until this one cause is found.
Cause tree	The series of causes is referred to as the cause tree. Not all root causes are accessible and able to be eliminated. Breaking the cause tree is such a way that the problem cannot recur is an acceptable alternative. Not all situations can wait for the RCA and eventual elimination of the root cause as there may be serious current impacts. The quick fix will control these immediate impacts, but does not eliminate the root cause.
Quick fix	A quick fix is not a short cut or side step for a permanent solution to the root cause. It is a necessary step designed to control the immediate impacts of a problem, for example, to prevent ongoing errors or to ameliorate damage.
Appropriate techniques/charts	Appropriate techniques/charts may include: - control charts - Pareto charts

	• run charts • flow charts • cause and effect diagrams • tree diagrams • 5 Whys analysis

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS403001A Implement competitive systems and practices

Modification History

New unit, superseding MSACMS400A Implement a competitive manufacturing system - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to implement and review competitive systems and practices in a person's own work within a team or work area, including the consideration of the impact on the work of others. The unit focuses on the holistic application of competitive systems and practices to achieve improved performance in own work and in activities with others in the team or work area that contribute to improving customer benefit.

Application of the Unit

This unit applies to individuals who are applying competitive systems and practices to their own work in a way that integrates with others in the team or work area who are also implementing competitive systems and practices. Depending on the operations or processes in the team or work area the unit may also include interaction with other teams and work areas.

The unit is suitable for individuals who have formal responsibility for the work of others, such as team leaders. It is also suitable for individuals, such as technicians and tradespeople, who must integrate the application of their technical skills with the implementation of competitive systems and practices in an organisation.

The unit applies to the areas of cost, quality, delivery, safety/environment, and employee capability including continuous reviewing of performance against these five areas in liaison with other relevant people. Improvement initiatives in these five areas are usually developed and implemented with the support of technical support staff. Whereas other units may emphasise the competence to use one or more competitive practices, this unit emphasises the ability to advance on all five key areas over a moderate time period.

This unit requires the application of skills associated with problem solving and initiative and enterprise in order to identify opportunities to make improvements and maximise performance. Communication, the ability to work in a team and planning and organising skills are required to implement improvements and address any conflicts that arise. This unit also requires an ability to identify appropriate technology, and to consider and integrate feedback on how personal performance can be improved.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Contribute to the improvement of the operations system in team or work area	1.1	Identify key performance indicators for area of operations
		1.2	Implement and review competitive systems and practices to improve health, safety and environment (HSE) performance of self and others
		1.3	Implement and review competitive systems and practices to maximise quality consistency
		1.4	Implement and review competitive systems and practices and identify any skill and training issues that need to be addressed to improve capability of self and others
		1.5	Implement and review competitive systems and practices to maximise customer benefit/cost ratio
		1.6	Implement and review competitive systems and practices to reduce lead time to delivery within the scope of authority and responsibility
		1.7	Work with relevant stakeholders to resolve conflicts

			which arise from implementation of competitive systems and practices
		1.8	Select improvements which will deliver the greatest overall benefit for the resources required/available without reducing current performance on individual factors
2	Implement improvements	2.1	Implement the chosen improvement/s
		2.2	Check the selected improvements improve the system as a whole and do not result in unintended consequences
		2.3	Monitor implementation and make adjustments, as required

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- communicating with others to clarify scope of implementation of competitive systems and practices, including:
 - value stream mapping
 - 5S
 - Just in Time (JIT)
 - mistake proofing
 - process mapping
 - establishing customer pull
 - kaizen and kaizen blitz
 - setting of key performance indicators/metrics
 - identification and elimination of waste (muda)
- monitoring performance in key areas, including:
 - HSE performance
 - quality consistency
 - capability and performance by team members
 - customer benefit/cost ratio
 - reduce lead time to delivery

- contributing suggestions for improvement
- analysing operational procedures in terms of flow and contribution to customer outcomes
- planning tasks to support competitive systems and practices implementation
- identifying and implementing appropriate data gathering and analysis techniques within area of responsibility to identify change over time in indicators relating to:
 - cost
 - quality
 - delivery
 - safety/environment
 - employee capability and support for competitive systems and practices
- solving problems to root causes

Required knowledge

Required knowledge includes:

- customers and the value they derive from products and processes of the organisation or area
- cost components and their relationship to customer benefits/features
- suppliers and their capabilities
- waste (muda)
- factors causing variability in a product and how to control them
- factors that promote standardisation
- relevant competitive systems and practices tools for area and how to apply them
- factors impacting on the product, process and waste, particularly those wholly or partially under own and other immediate area employees control (and how to control them)
- good HSE practice and factors impacting on HSE performance
- own capability and how to improve it
- optimisation techniques appropriate to the organisation and the job
- application of quality standards and processes

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of their ability to: • identify key performance indicators appropriate to their own work area

	• implement and review competitive systems and practices in own work, including interaction with others in the work area in the areas of: • HSE performance • quality consistency • capability and performance by team members • customer benefit/cost ratio • reduce lead time to delivery • select improvements that deliver the greatest overall benefit • monitor the implementation of improvements and make appropriate adjustments.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning for appropriate portions • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence In all cases it is expected that practical assessment will be combined with targeted questioning to assess

	underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • JIT, kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping

	• problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Competitive systems and practices tools	Competitive systems and practices tools include: • 5S • 6 sigma • continuous improvement • cause effect diagrams
Customer	Competitive systems and practices organisations encompass the entire production system, beginning with the customer, and includes: • the product sales outlet • the final assembler • product design • raw material mining and processing • all tiers of the value stream (sometimes called the supply chain) Customer may include: • internal or external customers, and should also include the final customer as the basis for the identification of waste The unit does not require interfacing directly with the external customer, but there should be sufficient information to identify customer benefits and features
Supplier	Supplier may include: • an internal supplier • an external supplier The unit does not require interfacing directly with external suppliers, but there should be sufficient information to enable identification of supplier abilities
Waste	Waste (also known as muda in the Toyota Production

	System and its derivatives) is any activity which does not contribute to customer benefit/features in the product. Categories of waste include: • excess production and early production • delays • movement and transport • poor process design • inventory • inefficient performance of a process • making defective items • other activities which do not yield any benefit to the organisation or any benefit to the organisations customers
Operations	Operations indicate: • the holistic combination of the process, plant and equipment, procedures and practices, including the skills and work organisation of the workforce, which make up the productive organisation
Implement improvements	Implementation of improvements may be undertaken: • within own job role • as part of processes and operations in the work area or team

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS403002A Ensure process improvements are sustained

Modification History

New unit, superseding MSACMS401A Ensure process improvements are sustained - Not equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to ensure that the gains which have been made by using improved methods, processes and equipment are sustained as the new baseline/standard for an area of work and so prevent regression to former practices, or digression to less efficient practices.

Application of the Unit

This unit applies to individuals working in a team or work area who have already implemented competitive systems and practices related improvements in their own work and who must work effectively with others implementing competitive systems and practices to ensure that performance improvement gains are sustained.

The unit is also suitable for individuals who have formal or informal responsibility for the work of others, such as team leaders; individuals, such as senior operators, who must mentor others; or individuals, such as technicians and tradespeople, who must integrate the application of their technical skills with the implementation of competitive systems and practices in an organisation.

The unit can be applied to all areas of an organisation, including production, maintenance, logistics and office functions.

The unit covers the implementation of practices to ensure that process improvements are sustained and opportunities taken to suggest further improvements. If mistake proofing is used as one of the methods for ensuring that process improvements are sustained, the unit MSS403051A Mistake proof a production process should be selected.

Improvement initiatives can be made by any of any number of methods and by teams or individuals. The unit assumes that desired levels of performance or quality are known.

This unit requires the application of skills associated with problem solving, initiative and enterprise, and planning and organising in order to check and monitor the impacts of change. It also requires communication and the ability to work with others to assess the impact of change in own work and on other's work, as well as self-management and learning to adapt improvements according to new information and feedback.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Examine previous improvements	1.1	Identify impact of previous process improvements to systems, equipment, operations or products in work area
		1.2	Identify improvements that have not met objectives
2	Ensure corrective actions are implemented	2.1	Identify corrective actions that can be taken on process improvements that have not met objectives
		2.2	Liaise with relevant people associated with the anticipated corrective action
		2.3	Obtain any required approvals
		2.4	Ensure the supply of resources
		2.5	Check impacts of corrective action on occupational health and safety (OHS), quality and environmental systems in work area and take action in accordance with procedures, if required

		2.6	Check that self and others in team or work area have required skills for corrective actions
		2.7	Monitor implementation of corrective action
		2.8	Make required adjustments
3	Verify systems support improvement	3.1	Ensure procedures reflect improvements
		3.2	Check that training and assessment activities in team or work area reflect improvements
		3.3	Liaise with relevant people to ensure their support of the new or modified system/s
4	Audit the change	4.1	Determine an appropriate audit period/cycle
		4.2	Agree relevant measures/indicators for the improvement
		4.3	Measure performance at agreed times using agreed measures
		4.4	Investigate causes of under-performance
		4.5	Take appropriate corrective action to improve performance
		4.6	Re-audit the improvement on an agreed basis

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- communicating with others to clarify scope and stage of implementation of competitive systems and practices and contribute suggestions for further improvements in implementation
- examining normal operational procedures in terms of flow and contribution to customer benefit
- planning own tasks, including the impact on others to support competitive systems and

practices implementation

- implementing competitive systems and practices in own work area according to instructions
- identifying waste (muda)
- monitoring competitive systems and practices performance indicators for own work and work area

Required knowledge

Required knowledge includes:

- overall procedures for and process of operations relative to improvements being made
- appropriate measures of performance
- business performance goals sufficient to determine best measures of improved performance

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify process and operational changes as a result of implementation of competitive systems and practices • identify and assess impact of performance improvements in a work area against objectives • identify actions and resources required for further improvements • communicate and negotiate with others on improvements • apply procedures for seeking approvals and reporting non-conformances • determine appropriate period and procedures for monitoring implemented changes.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned,

	currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using some combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of

the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Improvement	Improvement may be any change aimed at reducing waste (muda). This unit is not about making the improvements, but ensuring beneficial changes remain in place
Customers	Customers may include: • internal or external customers, including final

	customers, as these should be used as the basis for the identification of value and waste The individual does not need to interface directly with the external customer, but should be able to sufficiently identify customer benefit and customer features in processes and operations of their team and their work area
Suppliers	Suppliers may be: internal or external suppliers and should be sufficiently close to the individual's work as to be easily identifiable The operator does not need to interface directly with external suppliers, but should be provided with sufficient information to enable them to identify supplier contribution to their own work and to customer benefit
Systems	Systems are used to mean any/all of the equipment, processes, procedures and work practices that are used to produce the product. A term often used in this context includes: kaizen - the philosophy of continual improvement that every process can and should be continually evaluated and improved in terms of time required, resources used, resultant quality and other aspects relevant to the process
Resources	Resources for corrective actions may include: - equipment - modifications - consumables - people - suitable work area
Procedures	Procedures may include: - work instructions - standard operating procedures - formulas/recipes - batch sheets - temporary instructions and similar instructions provided for the smooth running of the organisation - good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) and government regulations

	Procedures may be: written, verbal, computer-based or in some other format
Improvements	Improvements include: - techniques for preventing mistakes by designing the operations process, equipment and tools so that an operation literally cannot be performed incorrectly (e.g. baka-yoke) - techniques that generate warning signals were a mistake is about to be performed (poka-yoke) Improvements may be sustained by: - use of technology so that it is impossible to do the job any other way - changes to process or procedures or other changes to the operations system which, if followed, will sustain the change and this unit may be applied to all these situations
Measuring performance	Measuring improvements may include: - personally taking measurements - arranging for measurements to be taken/made by appropriate personnel

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS403011A Facilitate implementation of competitive systems and practices

Modification History

New unit, superseding MSACMC411A Lead a competitive manufacturing team - Not equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required by individuals who facilitate, lead or mentor others in competitive systems and practices implementation in a work area.

Application of the Unit

This unit applies to people responsible for facilitating others in implementing competitive systems and practices in their work. It may apply to formally designated team leaders or people given special roles in the implementation process that go beyond their own work and which involve guiding, facilitating or mentoring others. The unit applies to competitive systems and practices implementation activities at the work area or section level.

The unit requires an individual to integrate a range of competitive systems and practices knowledge and skills as part of their role. The unit covers assisting others to understand and apply a holistic view of their job and their role within an organisation, including the objectives that must be met as part of competitive systems and practices used by the organisation.

This unit requires the application of skills associated with communication, teamwork, problem solving, initiative and enterprise, planning and organising, and self-management. This unit has a strong emphasis on planning and implementation, and also requires an ability to learn from experience and feed new information back into strategies to improve own performance and that of others.

For implementation of competitive systems and practices techniques in an office, the specialist unit *MSS403006A Facilitate implementation of competitive systems and practices in an office*, should be selected instead of this unit.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Facilitate the development of process and competitive systems and practices knowledge	1.1	Ensure necessary technical documentation and information about the process and competitive systems and practices is available
		1.2	Assist and mentor others in accessing information
		1.3	Identify work activities which may inhibit the ongoing development of competitive systems and practices skills and knowledge of others
		1.4	Arrange for the provision of workforce development and training for self and others, as appropriate
		1.5	Encourage others to apply technical knowledge to the improvement process
2	Facilitate commitment to efficiency improvements	2.1	Ensure budgets, operating procedures and other related documentation is available
		2.2	Assist others to apply this information to their work responsibilities

- 2.3 Encourage the identification of waste
 - 2.4 Encourage an environment where efficiency improvements are recommended by fellow employees
- 3 Encourage a competitive systems and practices approach to work
 - 3.1 Encourage and, where necessary, develop communications between specialists and work group members
 - 3.2 Lead development of strategies to monitor and deal with identified waste issues
 - 3.3 Resource and encourage other employees to identify and take appropriate action on potential problems
 - 3.4 Arrange for workforce development and training for self and others, as required, in relevant competitive systems and practice procedures and techniques
 - 3.5 Guide others in relating identified problems to the maintenance strategy, and developing any required changes, to ensure awareness, learning and commitment
- 4 Implement process and organisation improvements
 - 4.1 Plan the implementation of work group suggestions and externally suggested improvements
 - 4.2 Facilitate commitment to, and involvement in, the implementation planning of improvements and to follow improvements to their conclusion
 - 4.3 Encourage the application of the 'plan, do, measure, improve, control' approach to the job
 - 4.4 Arrange for workforce development and training, as required, to facilitate continued involvement by others in improvement processes
 - 4.5 Involve work group and other key personnel in identification of skill needs and means of skills acquisition to fill any identified gaps

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- facilitating goals, activities, communications and access to resources, including process mapping
- solving problems
- identifying waste (muda)
- data gathering and analysis
- explaining and leading others in implementation at the work group level of:
 - value stream mapping
 - 5S
 - Just in Time (JIT)
 - mistake proofing
 - process mapping
 - establishing customer pull
 - kaizen and kaizen blitz
 - setting of key performance indicators (KPIs)/metrics
 - identification and elimination of waste (muda)
- communicating effectively to conduct informal and formal meetings, and to relate to personnel at all levels
- providing effective feedback
- effectively encouraging team spirit and morale
- transferring knowledge and skills through informal one-on-one mentoring

Required knowledge

Required knowledge includes:

- information technology systems used in the organisation
- principles of competitive systems and practices and their application to the organisation, including:
 - value stream mapping
 - 5S
 - JIT
 - mistake proofing
 - process mapping
 - establishing customer pull
 - kaizen and kaizen blitz

- setting of KPIs/metrics
- identification and elimination of waste (muda)
- monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP), and proprietary systems, which may be used within the organisation
- methods of gathering data against KPIs, such as:
 - waste walk
 - document tagging
 - tracking/log sheets
 - spaghetti diagrams
 - existing information technology and enterprise resource systems (e.g. SCADA, ERP and MRP)
- facilitation techniques to encourage team development and improvement
- organisational policies, plans and procedures

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify processes and products of their organisation and work area • analyse current and future skill development needs of team • act as an effective communication link between team and internal and external competitive systems and practices specialists and managers • lead team in identifying efficiency improvements and elimination of waste.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to

	the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are

	not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as SCADA software, ERP systems, MRP and proprietary systems • statistical process control systems, including six sigma and three sigma • JIT, kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Budgets	Budgets include: • financial • time • materials/products • other business plans which are relevant to the team and the work area
Waste	Waste (also known as muda in the Toyota Production System and its derivatives) is any activity which does not contribute to customer benefit/features in the product. Categories of waste include:

	• excess production and early production • delays • movement and transport • poor process design • inventory • inefficient performance of a process • making defective items • activities which do not yield any benefit to the organisation or any benefit to the organisations customers
Key reliability issues	Key reliability issues include those which are most likely to lead to failure, such as: • cleanliness • poor lubrication • incorrect adjustment • poor training and instructions for employees

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS403021A Facilitate a Just in Time system

Modification History

New unit, superseding MSACMT421A Facilitate a Just in Time (JIT) system - Equivalent

Unit Descriptor

This unit of competency covers skills and knowledge required to facilitate the implementation/operation of a Just in Time (JIT)/kanban system in a team or work area.

Application of the Unit

This unit applies to a person who needs to monitor the operation of a JIT system and facilitate its working in a team or work area. This will involve liaison with stakeholders as well as examining the data generated. They will need to be alert to potential problems and areas for improvement.

This unit requires the application of skills associated with gathering, analysing and communicating information to facilitate implementation of the JIT system. It requires planning and organising skills and has a strong emphasis on communication and teamwork skills to ensure the JIT system is being effectively implemented. This unit also requires the ability to problem solve and take the initiative to consider performance issues and learn from experience to improve future performance.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills

unit of competency. and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Monitor the operation of the JIT system	1.1	Track value of key measures
		1.2	Recognise indicators of poor performance
		1.3	Take appropriate quick fix action
2	Liaise with relevant stakeholders	2.1	Regularly communicate with team or work group members regarding the operation of the JIT system
		2.2	Review JIT key performance indicators (KPIs) with team or work group members
		2.3	Communicate with relevant personnel up and down the value stream regarding the operation of the JIT system
		2.4	Identify issues with stakeholders and take appropriate quick fix action
3	Improve the JIT system	3.1	Identify areas requiring improvement in the JIT system
		3.2	Identify root cause of JIT-related problems
		3.3	Review value of key measures
		3.4	Recognise skill gaps in team members and other stakeholders
		3.5	Determine any other issues in team or work group, other stakeholders and JIT system leading to poor performance indicators
		3.6	Develop appropriate improvement solutions
		3.7	Liaise with relevant people regarding improvement solutions

3.8 Implement and/or assist with the implementation of the solutions

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- identifying KPIs for JIT system in team or area of responsibility
- analysing the JIT/kanban implementation in the team or area and the relevant sections of the internal and external value stream, including identifying people-related needs and issues
- identifying and implementing quick fix to JIT problems
- using formal problem solving procedures (e.g. root cause analysis (RCA))
- developing formal and informal communication procedures with others in work area, team leaders, other employees and value stream members relevant to JIT implementation
- establishing sources of assistance in the organisation for people experiencing difficulty with competitive systems and practices changes
- interpreting procedures and instructions relevant to own expertise for others
- establishing KPIs for own work

Required knowledge

Required knowledge includes:

- JIT principles relevant to operations and processes in own area or team and in the organisation generally
- procedures for making/recommending improvements
- typical reasons for delays/storages/inventories in the team or area of responsibility and methods of reducing/eliminating them
- skill gap analysis and methods of filling skill gaps
- principles of the operations process relevant to the section/team
- production data generated by the process and its application to JIT

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	Evidence should be available of the person's facilitation of the operation of the JIT system and their making of recommendations for/making improvements.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify the JIT system and practices used in their team or area of responsibility • identify and monitor JIT key measures • solve JIT-related problems to root cause • implement and monitor JIT-related changes to operations and practices.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge.

	Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • JIT, kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving

	• run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
JIT	JIT refers to: • a production scheduling concept that calls for any item needed at a production operation (whether raw material, finished item, or anything in between) to be produced and available precisely when needed, neither a moment earlier nor a moment later
Kanban	Kanban is a card or sheet used to authorise production or movement of an item; when fully implemented, kanban operates according to the following rules: • all production and movement of parts and material take place only as required by a downstream operation (i.e. all operations and procurement are ultimately driven by the requirements of final assembly or the equivalent) • the specific tool which authorises production or movement is called a kanban. The word literally means card or sign, but it can legitimately refer to a container or other authorising device. Kanban have various formats and content as appropriate for their usage (e.g. a kanban for a vendor is different than a kanban for an internal machining operation) Kanban is typically applied to batch type operation and the production is measured in units produced. In continuous processing organisations, production is measured in terms of production rate (e.g. kg/h, tonne/day) and rate is increased/decreased according to the flow authorisation which may be a kanban (e.g. ticket, order from a supplier) or may be a SCADA signal from a remote facility (e.g. customer tank) saying that resupply is required or similar
SCADA	SCADA refers to: • a number of systems which automatically collect critical process data, perform required mathematical

	manipulations on it and then make control decisions and/or give required information to personnel for action
Key measures	Key measures may include: • inventory levels • lead time • In Full, On Time and In Specification (IFOTIS) delivery • productivity/production rate • other measures of pull through the value stream • quality
Quick fix	Quick fix refers to: • action taken to immediately and cheaply control a problem, prevent it getting worse and/or ameliorate its impact, but which does not necessarily solve it long term
Pull system	Pull refers to: • a system of making to demand rather than for stock or to a forecast
Value stream	The value stream begins with the customer and includes all actions (both value-adding and non-value added) by both internal sections/departments and external organisations to meet a customer requirement. Depending on the operations and the customer requirement, stages where value stream actions may occur include: • sales outlet/representative • information gathering, data analysis and research • product design • raw material sourcing • intermediate processing • final assembler/collation/preparation • support services (e.g. accounting, finance and legal) • storage and delivery to customer • after market support

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS403030A Improve cost factors in work practices

Modification History

New unit, superseding MSACMT430A Improve cost factors in work practices - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to evaluate the product or process outcomes of a team in terms of their cost components and to be able to determine, in general terms, the cost impacts of alternative actions.

Application of the Unit

This unit applies to a person who is required to assess the relative costs of alternatives and use this as one of the key factors in decision making. Typical decisions include the efficient organisation of own work and that of others in a work area or within a team and the improvement of throughput and cycle times.

Decisions are made within the scope of the authority of the individual and other employees in the area or team and according to procedures.

This unit primarily requires the application of skills associated with communication and information gathering, teamwork and problem solving to analyse the cost components of work processes. Initiative and enterprise, and planning and organising are also required to identify opportunities for improved cost-efficiency. This unit also requires a degree of self-management and learning to effectively operate and maintain skills and performance.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Analyse cost components of work area or team function	1.1	Identify cost components in the product or process
		1.2	Identify costs factors under control of area or employees in the team
		1.3	Identify causes of variability in costs
		1.4	Analyse impact of costs on production or process activities undertaken
2	Improve cost-efficiency of processes and procedures	2.1	Identify methods of improving productivity and/or reducing costs within area or team's responsibility
		2.2	Determine cost/benefit ratio of alternative methods of improving productivity and/or reducing costs
		2.3	Consult with all relevant stakeholders regarding possible changes
		2.4	Recommend changes which will increase productivity and reduce cost and variability
		2.5	Implement recommended changes in consultation with relevant stakeholders

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- identifying fixed and variable costs in products or processes
- analysing costs and determining those that can be controlled by the individuals in an area or team
- analysing costs over time and identifying variability in cost components
- determining cost/benefit ratios
- communicating and negotiating with others on changes using a variety of mediums

Required knowledge

Required knowledge includes:

- cost components of products made
- costs concepts, such as expense, income and cost/benefit
- major cost contributors to product (e.g. energy, materials, labour and distribution, and so on) depending on the product and process)
- the difference between internally and externally controlled costs
- difference between overhead, labour and consumables

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify the scope of their own work and the team or area work and relate it to the overall flow of work in the organisation • express cost factors in specific terms (e.g. cost per item, process and task) • identify and express cost factors in basic financial terms • analyse variability in costs and recommend improvements • use cost/benefit to select preferred improvement strategies.
Context of and specific resources	Assessment of performance must be undertaken in a

for assessment	workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace project(• suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices, • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Cost components	Cost components may include:

	- fixed and variable costs, such as power/energy, materials, plant and equipment, salary and wages, and office expenses (e.g. telephone) - government taxes and charges
Variability in costs	Variability in costs should be assessed over a suitable time. The time should be sufficient to identify: - fluctuations in variable costs related to different volumes of sales, production or operations - abnormal cost fluctuations due to poor design of product or process, poor scheduling, faults, breakdowns and other waste
Process	Process includes all functions that go to meet customer requirements as well as other required functions (e.g. regulatory related functions). Examples include: - design - production - maintenance - logistics - office processes
Procedures	Procedures may include: - work instructions - standard operating procedures - drawings and specifications - manuals - formulas/recipes - batch sheets - temporary instructions and similar instructions provided for the smooth running of the organisation - good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) - government regulations Procedures may be: - written, verbal, computer based or in some other format
Benefits	Benefits should include: positive benefits as well as negative benefits, such as quality, safety, reliability and similar issues which may be impacted by a cost saving

Unit Sector(s)

Unit sector Competitive systems and practices

Custom Content Section

Not applicable.

MSS403032A Analyse manual handling processes

Modification History

New unit, superseding MSACMT432A Analyse manual handling processes - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to analyse manual handling in terms of its efficiency and safety.

Application of the Unit

This unit applies to an individual who is required to examine the manual handling component of a job and improve it in terms of safety, effort required and efficiency. This may be conducted for a job performed by others or it may be for the person's own job.

This unit primarily requires the application of skills associated with problem solving, initiative and enterprise to identify safe and efficient manual handling, and planning and organising to ensure processes are implemented. This unit also requires communication with, and involvement of, others to ensure they understand the approach and to facilitate training.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Assess manual handling risks	1.1	Identify manual handling hazards in work area
		1.2	Assess risks arising from manual handling hazards
2	Analyse physical effort requirements of job	2.1	Determine basic manual handling requirements of job
		2.2	Analyse requirements in terms of components, such as lift, move, place and hold
		2.3	Analyse items to be handled in terms such as weight, size, shape or other hazards
3	Determine time/effort components of physical effort	3.1	Break required movement pattern down into movement components
		3.2	Determine time and effort requirements for movements
		3.3	Develop alternative movement patterns
		3.4	Determine time and effort requirements for alternative movements
		3.5	Determine handling aids required to assist movement
		3.6	Determine preferred movement pattern
4	Analyse the ergonomics of physical effort	4.1	Analyse the ergonomics of the preferred movement pattern
		4.2	Develop substitute movements for any movement which is not ergonomically sound
		4.3	Determine handling aids required to improve ergonomics of required movements
5	Optimise	5.1	Select movement patterns which are ergonomically

application of physical effort		sound and time and effort efficient
	5.2	Ensure all relevant people are trained to use these methods
	5.3	Ensure procedures and practices reflect the optimum methods
	5.4	Communicate with team members and involve them in development of alternatives to ensure awareness and facilitate learning

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- communicating with others about work processes and jobs
- identifying ergonomically sound and unsound movements both at a general level and related to individual capability
- analysing manual handling processes
- working cooperatively with others
- demonstrating or arranging to have demonstrated ergonomically correct movements
- applying basic mathematics
- solving problems

Required knowledge

Required knowledge includes:

- relevant occupational health and safety (OHS) Acts and regulations as applied to manual handling
- principles of job and work method design as applied to efficient and safe movement
- principles of work analysis
- principles of ergonomics/safe movement
- aids that can assist with or substitute for manual handling

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of their ability to: • analyse manual handling requirements and risks in jobs • distinguish between ergonomically sound and unsound movement • analyse manual handling movements and risks for an individual • relate manual handling requirements to job efficiency.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using some combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence.

	In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE)

	• takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Procedures	Procedures may include: • work instructions • standard operating procedures • formulas/recipes • batch sheets • temporary instructions and similar instructions provided for the smooth running of the plant • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and Responsible Care) • government regulations Procedures may be: • written, verbal, computer-based or in some other format
Manual handling hazards	Manual handling hazards may include: • loads that pose a risk of injury • ergonomically unsound movements • hazard requirements as defined by relevant OHS Acts and regulations, industry standards and best practice
Ergonomically unsound movements	Ergonomically unsound movements may include: • awkward and repetitive movements • carrying, pushing, pulling or lifting of heavy loads • carrying or movement against hard, sharp, slippery or other difficult to grasp loads Ergonomically unsound movements should be assessed against the capabilities of individual workers as what is a sound movement for one worker may be unsound for

	others depending on physique and individual condition
Ergonomically sound movements	Ergonomically sound movements are movements which decrease the risk of injury. Sound movements will vary according to the load and individual. Examples include: • keeping loads close to the body and near the person's centre of gravity • using diagonal foot positions for lifting • moving loads at waist height rather than directly from the floor

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS403035A Implement the visual workplace

Modification History

New unit

Unit Descriptor

This unit of competency covers the skills and knowledge required to implement improvements to an existing visual workplace or undertake initial implementation of a visual workplace.

Application of the Unit

This unit applies to an individual who, as part of their work role, will implement a visual workplace, either their own workplace or another's workplace. The implementation will usually occur in conjunction with the implementation of other competitive systems and practices. It applies to manufacturing, office, logistics or other service environments along any part of the value stream. It includes the development of the visual concepts and the implementation of the visual workplace. The unit does not cover the generation of the content to be included in visual devices or displays.

The person will typically be a team leader, manager, senior operator or other person who has this role. They will work with others in the development of the visual workplace either as part of a formal team or otherwise. They will liaise and communicate with these others as required.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Determine needs of visual workplace	1.1	Identify information needs of personnel in each visual workplace area
		1.2	Identify relevant procedures and standards
		1.3	Identify directions required in workplace
		1.4	Determine controls required in the workplace
		1.5	Draft a statement of needs for the workplace
2	Determine possible locations of visual devices	2.1	Analyse sight lines for personnel in the workplace
		2.2	Identify primary and secondary locations for possible visual devices
		2.3	Identify constraints on deploying visual devices
		2.4	Take reasonable actions to allow appropriate deployment of required visual devices
3	Develop visual devices in liaison with workplace personnel	3.1	Identify possible visual displays and devices for items on statement of needs
		3.2	Try out possible visual displays and devices in the workplace
		3.3	Select appropriate display types for items on statement of needs
		3.4	Allocate visual devices to an appropriate location

4	Facilitate implementation of visual workplace	4.1	Arrange for agreed visual devices to be implemented
		4.2	Arrange for feedback on visual workplace
		4.3	Analyse relevant metrics on workplace performance
		4.4	Promote benefits of visual workplace
		4.5	Make changes to improve visual workplace

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- locating and using information
- communicating with relevant people and asking leading questions about their information requirements
- visualising information and instructions
- analysing advantages and disadvantages of particular visual displays and devices

Required knowledge

Required knowledge includes:

- key variables leading to success in the workplace
- range of visual devices which may be deployed
- infrastructure required for different visual devices
- preferred locations for visual devices
- methods of converting data into easily interpreted visual displays
- methods of mocking up a visual display to allow for trying out
- updating needs, techniques and costs (including personnel time) for visual devices

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the

performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • develop and locate appropriate visual displays • facilitate the use of visual workplace • analyse feedback and data from visual workplace and make improvements.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using some combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenario, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and

	disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree

	Competitive systems and practices should be interpreted so as to take into account: - the stage of implementation of competitive systems and practices - the size of the enterprise - the work organisation, culture, regulatory environment and the industry sector
Information needs	Information needs include anything which needs to be known in order to complete the job in full, on time and to the agreed standard and may include, but are not limited to: - workplace metrics - quality metrics - scheduling/priority information - procedures/aide memoir
Procedures	Procedures may include: - work instructions - standard operating procedures - work manuals - operating protocols - formulas/ recipes - batch sheets - temporary instructions and similar instructions provided for the smooth running of the operation or process - good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) - government regulations Procedures may be: - written, verbal, computer-based or in some other format
Directions	Directions include: all communication aimed at telling workplace personnel what to do and when to do it
Controls	Controls includes all feedback which may be provided by any means and typically is feedback related to, but not limited to: - timeliness/timelines - volume/number required

	• quality/specification/standard to be met
Statement of needs	Statement of needs includes everything which it is desirable to display visually in the workplace and may include, but is not limited to: • information • procedures and standards • directions • controls
Primary and secondary locations	A primary location is: • a location where workplace personnel have easy and direct line of sight and where they can easily observe what the visual device is displaying A secondary location is: • a location where the visual access is not as convenient and so should not be used for displaying key items
Visual devices	A visual device is any device which provides information, direction, and so on, without the use of an aural communication channel and may include, but is not limited to: • graphs • diagrams • photos • colour codes • lines and zones • tape • markings • flags • andon lights • charts • words and numbers A visual device may be: • a static display • a manually updated display • an automatically updated display

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS403040A Facilitate and improve implementation of 5S

Modification History

New unit, superseding MSACMT440A Lead 5S in a manufacturing environment - Not equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to facilitate the implementation and improvement of the 5S by self and others in a team or work area.

Application of the Unit

This unit applies to individuals who facilitate 5S in a team or work area, including implementation, monitoring and improvement. The facilitation may be undertaken by formally designated supervisory staff, such as team leaders or other individuals in a competitive systems and practices implementation role, who need to provide support and encouragement to others to facilitate the achievement of 5S outcomes in the workplace.

This unit requires the application of skills associated with communication, teamwork, problem solving, initiative and enterprise, planning and organising, and self-management in order to provide leadership in a 5S environment. This unit has a strong emphasis on planning and change management, but also requires an ability to learn from experience and feed new information back into strategies to improve performance.

For planning, implementing and leading the application of 5S in an office environment see unit *MSS403039A Facilitate and improve 5S in an office*.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Facilitate the set-up of 5S	1.1	Assist others to determine what are necessary and unnecessary items in the work area
		1.2	Assist others to determine optimum assigned location for all necessary items
		1.3	Liaise with relevant production and occupational health and safety (OHS) personnel in determining optimum locations
		1.4	Assist others to determine optimum location for unnecessary items
		1.5	Assist others to determine 5S schedule
		1.6	Ensure procedures reflect 5S practices
		1.7	Assist others to achieve the required level of skill
2	Facilitate the implementation of 5S	2.1	Ensure procedures reflect 5S practices
		2.2	Assess skill base of team or work group members in 5S and arrange for any required training
		2.3	Ensure that any damage and/or safety risks reported by the team or work group are addressed through correct mechanisms
3	Monitor 5S	3.1	Check work area for 5S implementation as part of normal routine

	3.2	Identify non-conformances
	3.3	Negotiate solutions to non-conformances
4	Improve 5S	
	4.1	Work with others to find areas for improvement
	4.2	Assist others to develop improvement solutions
	4.3	Facilitate the availability of resources required for the improvement solution
	4.4	Facilitate the implementation of the improvement solution

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- communicating with other employees and managers to engender commitment to achieving 5S outcomes, conduct formal and informal meetings and to explain 5S and related concepts
- facilitating team or work area goals, activities and communications and accessing resources
- visualising normal operational procedures in terms of flow and contribution to customer outcomes
- planning and prioritising activities
- problem solving to determine potential improvements to the 5S system
- reading and interpreting the application of operating procedures for jobs within team or target work area
- analysing work practices, procedures and 5S principles to facilitate setting up the 5S system and to identify improvements
- identifying gaps in skills and/or knowledge and options to address them

Required knowledge

Required knowledge includes:

- principles and purpose of 5S
- methods of identifying waste in the work area, such as:
 - waste walk
 - document tagging
 - tracking/log sheets
 - spaghetti diagrams
- existing information technology and enterprise resource systems (e.g. Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems
- organisational policies, plans and procedures
- processes for identifying and addressing skill gaps
- ways of encouraging team members to find and suggest areas for improvement
- methods of identifying and evaluating options and making/recommending improvements
- methods of accessing required resources
- OHS requirements relevant to team and work area

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify the scope of the services and/or functions supplied to and by the team or work area and the deliverables expected by customers, including the ultimate customer • facilitate a systematic approach to implementing 5S • lead and motivate others in achieving 5S outcomes and making improvements to the 5S systems • set up systems for monitoring and improving 5S implementation • manage non-conformances in implementation of 5S.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to:

	• workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with

training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as SCADA software, ERP systems MRP and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Procedures	Procedures may include: • work instructions • standard operating procedures • formulas/recipes • batch sheets • temporary instructions and similar instructions provided for the smooth running of the plant

	• good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and Responsible Care) • government regulations Procedures may be: • written, verbal, computer-based or in some other format
5S	5S is a system of work organisation originally developed in Japan based around a close translation of the five stages in the housekeeping approach is: • sort • set in order • shine • standardise • sustain
Sort	Sort involves keeping only what is absolutely necessary for the work processes that comprise the job and includes: • clearing the work area of all non-essential items Non-essential items are items not required to either produce product, conduct process or operations or make required adjustments to equipment during process or operations
Set in order	Set in order includes: • assigning required equipment and materials appropriate locations in the work area
Shine	Shine includes: • keeping the work area clean at all times. This should be carried out to a regular daily schedule against allowed time, usually at the end of the day or of a particular process Cleaning includes: • noting any signs of wear, damage, leakage, safety risks or other issues that require immediate attention
Standardise	Standardising includes: • activities that help maintain the order and the housekeeping standards • using procedures and checklists developed from a procedure

Sustain	Sustain includes: • making sure that daily activities are completed every day regardless of circumstance • undertaking inspections, including: • informal inspections that should be carried out often, at least weekly • generating continuous improvement actions from daily activities • formal inspections that should be carried out at least monthly
Items in work area	Items in work area may include: • tools • jigs/fixtures • materials/components • plant and equipment • manuals • personal items (e.g. bags, lunch boxes and posters) • safety equipment and personal protective equipment • other items which happen to be in the work area
Team	The term team is used to apply to all individuals in the target work area who are involved in the implementation of 5S. The team may or may not be a formally designated team working to a team leader
Work area	The work area includes: • all areas where aspects of the job are performed and that are under the direct control of the employee. In a team environment 5S should be applied to all work areas under the control of the team
Target work area	The target work area may be identified as a physical and/or virtual work space: • used by a person, a team or a cross-functional group • common to part/s of a process or value stream (already defined) • shared by people who undertake a defined procedure or set of procedures • needed to support a particular function
Appropriate place	Appropriate places may include areas designated for: • recycling • rubbish removal

	• staff room/lunch room/kitchen • storage • holding area until status is confirmed
Optimum assigned location	The optimum assigned location may include: • making changes to the layout of furniture, equipment and personnel in order to facilitate the smooth and continuous flow of work through process steps taking into account OHS considerations
Non-conformance	Non-conformance includes: • incorrect or incomplete application of 5S procedures, including any daily tasks, scheduled inspections and continuous improvement procedures

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS403041A Facilitate breakthrough improvements

Modification History

New unit, superseding MSACMT441A Facilitate continuous improvement in manufacturing - Not equivalent

Unit Descriptor

This unit of competency covers the knowledge and skills required to facilitate implementation of discrete targeted improvement activities to achieve breakthrough improvements in selected processes, operations or products. Typically this approach is used for improvements in areas of waste identified through value stream mapping.

Application of the Unit

This unit applies to team leaders and others who are providing guidance and support to assist a team of employees to identify improvements that can be implemented to operations, processes or products in a brief intensive project.

The unit also covers ensuring that the improvements are sustained. The process of achieving breakthrough improvements is often called kaizen blitz in lean terminology.

This unit assumes that one or more processes and operations have been mapped.

MSS403033A Map an operational process may also need to be selected if this is not the case.

For facilitation of breakthrough improvements in an office see unit *MSS403043A Facilitate breakthrough improvements in an office*.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Prepare for improvement event	1.1	Engage team members in the improvement event
		1.2	Identify process or processes to be targeted in the improvement event
		1.3	Assist team members to identify how their own roles contribute to value to the customer
		1.4	Assist team to identify the boundaries of the event, including any imposed exclusions
		1.5	Identify key process indicators and other information required for improvement event
		1.6	Identify skill needs for personnel engaged in breakthrough improvement event and arrange for any required training
		1.7	Establish communication processes with sponsor and stakeholders
2	Identify improvements	2.1	Assist team to review current processes, operations or products and identify options for radical improvements
		2.2	Facilitate team activities and other relevant personnel to evaluate the options and agree on improvements to be made
		2.3	Encourage and assist team and others to plan the activities and identify metrics to be monitored
		2.4	Facilitate allocation of resources and strategies to manage impact on routine work

3	Facilitate the event	3.1	Assist team to gather baseline data on the selected metrics
		3.2	Assist team to identify and address barriers to making the improvements
		3.3	Monitor team dynamics and facilitate team focus and cooperation
		3.4	Liaise with sponsor to communicate progress and maintain their support
4	Evaluate improvements	4.1	Assist team to gather and interpret data on the metrics
		4.2	Facilitate team activities to evaluate the outcomes of the event
		4.3	Identify causes for areas of poor performance from changes and identify any additional changes to address them
		4.4	Report to sponsor and other stakeholders on the outcomes of the event
5	Embed improvements	5.1	Establish mechanisms to ensure new systems and/or practices are communicated to relevant personnel
		5.2	Motivate team to apply the new systems and/or practices and sustain improvements
		5.3	Ensure the new systems and/or practices are reflected in relevant procedures

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- facilitating groups of people who may not normally work together
- analysing information and data to identify variation and evaluate improvements
- measuring and calculating performance variables
- facilitating team goals, activities, communications and accessing resources
- planning and prioritising team activities
- solving problems to root cause
- identifying waste (muda)
- communicating with personnel at all levels in relation to team activities and improvement projects
- visualising normal operations and procedures in terms of flow and contribution to customer value
- contributing to procedure review and/or development
- identifying gaps in skills and/or knowledge and options to address them

Required knowledge

Required knowledge includes:

- team and organisation deliverables and processes used to achieve them
- how organisation operations and processes contribute to the value stream
- types of waste (muda) and imposed exclusions
- organisational policies, plans and procedures
- methods of identifying and evaluating options
- occupational health and safety (OHS) requirements relevant to the target work areas

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • interpret operations, processes and products in terms of value to the customer • identify, analyse and evaluate information from a variety of sources to identify opportunities for breakthrough improvements • lead and motivate others in planning, implementing and sustaining improvements.
Context of and specific resources	Assessment of performance must be undertaken in a

for assessment	workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Team	Team for the purposes of this unit means any group of employees engaged in a breakthrough improvement

	event. Examples include: • a permanent formally identified team • a sub-group of a team • a specially established group for the breakthrough event (e.g. a combined production/administration/logistics group convened for a breakthrough event addressing delivery issues)
Scope and benefit statements	Scope and benefit statements of improvement project may include: • description of the business • the target work process • what key stakeholders seek from the improvement project • a mission for the event • a set of goals • a statement of the do's and don'ts for the improvement project
Boundaries	Boundaries define the extent and limits of the breakthrough improvement event. Typically they define: • the start and end point of the process being targeted • the steps of the process to be included and excluded • specific job roles or related processes to be included or excluded • timeframe for the event
Sponsor	Sponsor includes: • a person who is committed to achieving improvements and who has the authority to approve and allocate resources to support the activities and ensuing changes. Typically the sponsor will be a middle or senior manager in the organisation or the business owner
Breakthrough improvement	A breakthrough improvement (also known as kaizen blitz) is one that delivers a better ratio of value-add to non-value add from the customer perspective. It is characterised by: • using a formal process • being a discrete targeted activity that is achieved in a relatively short timeframe • delivering significant level of improvement
Mechanisms	Mechanisms to communicate and sustain improvements may include:

	• scheduled audits • regular monitoring and/or reporting activities • use of visual aids, such as targets and progress boards, process charts and procedure posters • communications, such as standing items for team meetings, email reminders or updates
Imposed exclusions	Imposed exclusions are wastes (muda) that are required but do not add value. They should be formally identified as muda in the competitive systems implementation. Examples include: • equipment excluded from efficiency or layout review because of budget constraints • regulatory requirements that do not add value • organisation requirements, policies or procedures beyond the influence of the team
Key process indicators	Key process indicators may include: • statistical process control data/charts • orders • lost time, injury and other OHS records • equipment reliability charts
Team	Team includes: • formally designated teams • informal groups of employees • other stakeholders who may be brought together for a breakthrough improvement event

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS403051A Mistake proof an operational process

Modification History

New unit, superseding MSACMT451A Mistake proof a production process - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to make changes to own and others work in a work area which prevents errors and/or backsliding to a pre-improvement level of practice.

Application of the Unit

This unit applies to a person who needs to analyse a process that a team is responsible for and determine methods of mistake proofing it (e.g. ensuring it only produces product within an acceptable range or error-free transport and storage of goods). The person will typically be a technical expert, team leader or be in a role where they have sufficient technical understanding of processes in their own work and that of others to be able to mistake proof the production process in their area. After improvement activities have been undertaken these improvements need to be sustained.

This unit requires the application of skills associated information gathering and analysis. Initiative, enterprise and problem solving are also required to identify mistakes and determine strategies for eliminating them. This unit also requires communication and teamwork skills to ensure mistake proofing strategies are implemented and self-management and learning skills to continually reflect on and integrate feedback about the effectiveness of strategies.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Analyse process	1.1	Identify sources of variability/non-conformance in the process
		1.2	Identify critical control points in process
		1.3	Analyse causes of variability/non-conformance
2	Develop preventative techniques/systems	2.1	Liaise with team members and other people to develop mistake proof options for performing operation
		2.2	Test and validate mistake proofing options
3	Implement permanent fix	3.1	Liaise with relevant people to have systems/procedures changed to implement solution
		3.2	Liaise with relevant people to implement the solution
		3.3	Liaise with relevant people to ensure self and others in the team or work area have an appropriate skills set
		3.4	Follow through to ensure implementation occurs
4	Monitor implementation	4.1	Critically observe the implementation
		4.2	Compare the results of the implementation against the expected outcomes
		4.3	Modify solution to improve outcomes

		4.4	Ensure procedures reflect change
		4.5	Ensure training/assessment reflects change
		4.6	Audit change at agreed period/cycle
		4.7	Take action on any observed deviation
5	Seek improvements	5.1	Observe changes
		5.2	Analyse process again, if required, to ensure improvements are sustained

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- communicating with team or work group members, technical support personnel and other relevant staff
- explaining mistake proofing and related concepts
- facilitating input of others and encouraging acceptance of changes
- analysing and visualising operations in terms of flow and contribution to customer outcomes
- solving problems to determine root cause of errors and possible solutions
- analysing and interpreting information about errors and mistake proofing options in terms of cost, feasibility, regulations and value to the customer
- suggesting design changes to operations and products that eliminate the potential for errors
- suggesting mechanisms or procedures that warn of errors where operations cannot be designed to eliminate errors,

Required knowledge

Required knowledge includes:

- mistake proofing concepts, including, in priority order:
 - eliminate the possibility of the error via changes to the process
 - prevent the error from occurring via physical or virtual barriers
 - reduce likelihood of the error by encouraging correct action

- mitigate the impact of the error if it does occur
- understanding of processes undertaken by team
- factors in the processes which may cause variability
- methods of controlling the variability in the process
- mistake proofing methods relevant to the process/product

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • analyse variability and non-conformances • identify, analyse and evaluate information from a variety of sources to identify errors and options for mistake proofing • facilitate implementation of mistake proofing activities that reduce waste • facilitate sustaining the mistake proofing activities.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace

	• workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related

	operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Mistake proofing	Mistake proofing is based on the concept of zero defects. The first priority is to eliminate the possibility of an error occurring. However, where this is not feasible mistake proofing can be used to reduce the occurrence of errors and/or to minimise their impact. Mistake proofing should target an error in the following priority order: • eliminate the possibility of the error via changes to the process • prevent the error from occurring via physical or virtual barriers, • reduce likelihood of the error by encouraging correct action (e.g. through warning systems) • mitigate the impact of the error if it does occur Mistake proofing is also called error proofing or baka-yoke or poka-yoke
Options for mistake proofing	Factors to consider when prioritising options for mistake proofing will vary according to the process and may include: • success rate in eliminating errors

	• feasibility • skills required by employees • cost • capacity to reduce waste
Procedures	Procedures may include: • all work instructions • standard operating procedures • formulas/recipes • batch sheet • temporary instructions and similar instructions provided for the operation of the plant • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) • government regulations Procedures may be: • written, verbal, computer-based or in some other format

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS404050A Undertake process capability improvements

Modification History

New unit, superseding MSACMT450A Undertake process capability improvements* - Equivalent

* New prerequisite *MSS404052A Apply statistics to operational processes* superseding MSACMT452A Apply statistics to processes in manufacturing

Unit Descriptor

This unit of competency covers the skills and knowledge required to make process capability improvements, including analysing data from the process, developing improvements to eliminate variation due to assignable causes, and then implementing actions.

Application of the Unit

This unit applies to a person who reviews a range of process capability data and information, makes/arranges for changes to be made to procedures, equipment or process and then recalculates the process capability and monitors resulting improvement actions. The person will typically be a technical expert, team leader or be in a role where they have sufficient technical understanding of processes in their own work and that of others to be able to suggest and justify process capability improvements.

Process capability may have been determined using either a six sigma or three sigma processes. This unit applies to the application of statistical methods and the determination of capability based on those methods. Other related units may be *MSS404052A Apply statistics to operational processes* and *MSS404053A Use six sigma techniques*

This unit primarily requires the application of skills associated with communication, information gathering and analysis. Initiative, enterprise and problem solving are also required to identify opportunities to improve process capacity. This unit also requires aspects of self-management and learning to validate own analysis.

For a qualitative approach to improvement (one not using statistics) see *MSS403051A Mistake proof an operational process*.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MSS404052A Apply statistics to operational processes

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Obtain required data	1.1	Identify process for study
		1.2	Obtain/organise process to obtain required data/information
2	Analyse information	2.1	Analyse data and determine assignable causes
		2.2	Develop possible improvements to eliminate assignable causes
		2.3	Incorporate own experience and learning into proposed process improvement proposals
		2.4	Develop process improvement proposals
3	Improve process capability	3.1	Obtain required authorities to implement improvements
		3.2	Liaise with relevant people to implement improvements
		3.3	Obtain/organise required data for improved process

- 3.4 Recalculate process capability
- 3.5 Implement revised data collection/processing and new capability information
- 3.6 Monitor improvement actions and make adjustments, as necessary

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- performing relevant mathematical operations
- identifying and using relevant statistical methods
- communicating and explaining data- related changes and procedures to individuals and groups
- negotiating with other employees and managers on proposed improvement actions
- analysing procedures and data to establish variation
- solving problems to root cause where assignable cause of variation is not obvious
- working in a team
- using computer software relevant to required analyses and process

Required knowledge

Required knowledge includes:

- data collection methods
- data processing techniques required
- variability and normal distribution
- three sigma or six sigma processes, as relevant
- random and non-random results (recognition of assignable causes)
- causes of different types of non-random results
- causes of random variation
- process understanding sufficient to translate the data into variations in the process and determine methods of controlling them

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • analyse process information • calculate process capability/trial limits • improve process capability (or organise for it to be improved) • analyse revised process information and recalculate process capability.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence In all cases it is expected that practical assessment will

	be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time

	• process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Process capability	Process capability is: • the measurable ability of a process to reliably produce within calculated limits (the limits depend on the variation of the process)
Variation	All processes have variation. The approach in this unit is to separate random variation (no assignable cause) from non-random variation (which has an assignable cause). By finding and eliminating assignable causes, total variation is reduced and process capability will be improved
Six sigma	Six sigma refers to: • a statistical tool for recording defects and determining capability. Six sigma limits equate to 3.4 defects per million opportunities for each product or service transaction. Six sigma is also used as a general term covering a competitive systems and practices approach. Six sigma training typically covers several units of competency in this Training Package
Three sigma	Three sigma refers to: • a traditional statistical process control. Three sigma limits equate to 3 defects per thousand opportunities for each product or service transaction
Required data	The calculation of three sigma or six sigma limits requires process data. The data required depends on the nature of the limits being calculated
Assignable cause	Any non-random variation is said to have an ‘assignable cause’. The methods of data analysis common to statistical capability analysis as well as other methods of

	root cause analysis should be used to determine the cause of this non-random variation
Improved process capability	Improvements to process capability result from eliminating the causes of non-random variation. The improvements made may be: • as a result of continuous improvement with the process capability being recalculated periodically • as a result of an improvement project with the process capability recalculated as part of that project
Procedures	Procedures may include: • work instructions • standard operating procedures • formulas/recipes • batch sheets • temporary instructions and similar instructions provided for the smooth running of the plant • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) • government regulations Procedures may be: • written, verbal, computer-based or in some other format

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS404052A Apply statistics to operational processes

Modification History

New unit, superseding MSACMT452A Apply statistics to processes in manufacturing - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to apply statistical theory and principles to the analysis and control of processes and operations.

Application of the Unit

This unit applies to a person working in an organisation applying statistical process control on processes or operations. The statistical process control will usually be used to monitor the processes or operations and determine when action needs to be taken. The appropriate action will then be taken in accordance with standard procedures.

The unit includes applying knowledge of frequency distribution and variation to the data/chart to distinguish between random and non-random variation and assumes understanding of the process and/or equipment to help interpret those results.

This unit primarily requires the application of skills associated with gathering and analysing data and communicating statistical information to others. This unit also has a strong emphasis on problem solving, initiative and enterprise, planning and organising, and self-management to solve problems and manage processes.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Collect process data	1.1	Interpret sampling scheme
		1.2	Obtain measurements in accordance with standard procedures
		1.3	Handle data, as required
2	Interpret data	2.1	Plot data on appropriate control chart
		2.2	Distinguish between random and non-random patterns of results
		2.3	Identify results outside the control limits
		2.4	Recognise situations requiring action
		2.5	Take appropriate action in accordance with standard procedures
		2.6	Determine cost of non-conformance
3	Calculate control limits	3.1	Consult relevant stakeholders to determine appropriate limits
		3.2	Use relevant methods to calculate/revise control limits
		3.3	Plot limits on control chart
		3.4	Explain impact of limit to relevant stakeholders

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- applying a range of sampling procedures
- analysing samples and data for variation, relevance, reliability and representativeness
- problem solving the causes of variation in a process
- communicating with other employees to obtain samples/data and to explain results and limits
- plotting or documenting results
- undertaking calculations, including:
 - basic arithmetic functions
 - mean, range, mean of means, standard deviation (using appropriate calculation aids)
- using statistics to support process and operations control

Required knowledge

Required knowledge includes:

- sampling techniques
- purpose of sampling and measurement
- random, systematic and stratified sampling
- purpose of replication of data for statistical control
- samples, populations, finite and infinite populations and the differences
- methods of calculating means, standard deviations and the like and their purpose in statistical control
- the meaning of broad/narrow frequency distributions/range/standard deviations and skewed distributions in process terms
- concept of limits, including:
 - 1 sigma warning limits
 - 2 sigma warning limits
 - 3 sigma control limits
 - 6 sigma limits
- types of control charts and their applications to different types of process/product and for different purposes
- process causes of variation and typical cause types of non-random variation
- non-process (e.g. measurement) causes of variation
- recognition of stable and unstable processes
- causes of stability/instability in the process

- calculation of control limits/process capability and the applications of different control limits
- the standard distribution curve and confidence limits

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • follow sampling procedures • apply basic statistical processes • analyse data to identify variations and non-conformances • plot or document results.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning

	• reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen)

	- breakthrough improvement (kaizen blitz) - cause/effect diagrams - overall equipment effectiveness (OEE) - takt time - process mapping - problem solving - run charts - standard procedures - current reality tree Competitive systems and practices should be interpreted so as to take into account: - the stage of implementation of competitive systems and practices - the size of the enterprise - the work organisation, culture, regulatory environment and the industry sector
Sampling scheme	Sampling scheme may include: - sampling for attributes or sampling for variables - batch, continuous or custom made products - number of items/samples - size of sample - timing of sampling - location of sampling points - type of sample - number/type of measurements to be done on each sample - sampling equipment - measurement/testing equipment/methods
Procedures	Procedures may include: - work instructions - standard operating procedures - formulas/ recipes - batch sheets - temporary instructions and similar instructions provided for the smooth running of the plant - good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) - government regulations Procedures may be: - written, verbal, computer-based or in some other

	format
Handle data	Handle data may include: • calculating means, ranges, mean of means and standard deviations (using appropriate calculation aids) • entering data into a software package • recording data either in writing or electronically • other required manipulations of the data
Control chart	Control charts may include: • run • tally • mean/range • attributes • other relevant charts
Random	Random variation is the term used in statistical control to refer to those variations for which no cause can be found
Non-random	Non-random (also called identifiable cause, assignable cause or special cause) are those variations for which a cause can be found and so the cause of the variation eliminated. Non-random variation may also be used to predict possible breaches of the control limits
Control limits	Control limits (also referred to as process capability) are those limits within which the process will operate if it is 'under control'
Cost of non-conformance	Cost of non-conformance includes: • reprocessing/rework • expediting • unplanned service • excess inventory • complaint handline • downtime • returns • scrap • labour costs • material costs • infrastructure costs/overhead • utility costs
Appropriate limits	Appropriate limits may include:

	• 1 sigma warning limits • 2 sigma warning limits • 3 sigma control limits • 6 sigma limits

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS404053A Use six sigma techniques

Modification History

New unit, superseding MSACMT453A Use six sigma techniques* - Equivalent

* *New prerequisite MSS404052A Apply statistics to operational processes* superseding MSACMT452A Apply statistics to processes in manufacturing

Unit Descriptor

This unit of competency covers the skills and knowledge required to apply six sigma techniques to improve quality, cost and delivery in operations and other supporting processes in the workplace

Application of the Unit

This unit applies where a statistical-based strategy, such as six sigma will be used to establish current quality, cost and delivery performance and then to investigate and improve all or part of a process. This will be undertaken with other members of the process team.

This unit requires the application of skills associated with using information, problem solving, initiative, enterprise, planning and organising in order to identify an area requiring improvement and develop a measured process to make improvements. The unit covers the application of the Define, Measure, Analyse, Improve, and Control and standardise (DMAIC) process.

Depending on the scale of six sigma implementation in the organisation the following units may also be relevant:

- *MSS404050A Undertake process capability improvements*
- *MSS403002A Ensure process improvements are sustained*
- MSS403010A Facilitate change in an organisation implementing competitive systems and practices
- *MSAPMSUP390A Use structured problem solving tools.*
-

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MSS404052A Apply statistics to operational processes

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Identify an area requiring improvement	1.1	Identify customer needs from process
		1.2	Identify customer benefits delivered by process
		1.3	Identify areas requiring improvement
2	Apply DMAIC process	2.1	Define improvement project
		2.2	Acquire required measurements/data
		2.3	Analyse data and determine possible process improvements
		2.4	Develop and test improvement solutions
		2.5	Control and standardise the improvement
3	Review and confirm improvement	3.1	Determine and document benefits
		3.2	Ensure procedures and other relevant documentation is updated for improved procedure
		3.3	Review process data after an appropriate period and

confirm the improvement

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- interpreting charts and diagrams
- identifying data relevant to improvement project from a variety of sources
- analysing data using statistical methods
- solving problems to root causes
- communicating with other employees to obtain samples/data and to explain processes, results and limits
- determining extent of benefits gained from improvement projects
- identifying relevant documentation for improvement projects and updating, as required

Required knowledge

Required knowledge includes:

- charting methods and formats, such as Pareto charts, fishbone diagrams
- statistical principles and techniques
- acceptance criteria/confidence levels and other relevant limits and criteria for improvement project
- DMAIC methods
- six sigma principles

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify current and target customer needs and

	benefits for an area and improvement project • use DMAIC process for an area related improvement project a project • propose test and document improvement solutions • add to or edit organisation documents using standard procedures.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for	Assessment processes and techniques must be culturally

assessment	appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems ,including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account:

	- the stage of implementation of competitive systems and practices - the size of the enterprise - the work organisation, culture, regulatory environment and the industry sector
DMAIC	DMAIC is a structured improvement process involving the following stages: - define - measure - analyse - improve - control and standardise
Define	Definition of the project to include: 'as is' process map - defining benefits from the project - problem statement - goal statement - project scope
Measurements	Measurements may include: - identification of key measures/attributes - sampling schedule for project - variations and limits
Analyse	Analyse may include: - statistical analysis of data - root cause analysis - use of various problem solving/analysis tools
Improvement	Improvement may include: - generation and testing of improvements - selection of appropriate improvements
Control and standardise	Control and standardise may include: - documenting - transferring ownership of improved process

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS404060A Facilitate the use of planning software systems in a work area or team

Modification History

New unit, superseding MSACMT460A Facilitate the use of planning software systems in manufacturing* - Not equivalent

* Prerequisite *MSACMT260A Use planning software systems in manufacturing* - removed

Unit Descriptor

This unit of competency covers the skills and knowledge required to facilitate the use of planning software in an organisation in a person's work area or team. These systems are known by various generic names, such as Enterprise Resource Planning (ERP), Materials Resource Planning (MRPII, MRP III etc.) or by proprietary names.

Application of the Unit

This unit applies to a person who will access the planning software system for their own work, but will also need to provide support and organise skill development programs for their team or work group members. The person will typically be a technical expert, team leader or be in a role where they have sufficient technical understanding of processes in their own work and that of others to be able to facilitate the use of the planning software system.

The planning software system will be used routinely in the work of the team or work group.

This unit primarily requires the application of skills associated with using communication technology and supporting team use of planning software. Problem solving, initiative and enterprise, and planning and organisational skills are required to ensure that planning software is used efficiently. This requires aspects of learning and self-management to ensure own performance and that of the team.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Identify scope of planning software	1.1	Identify categories of information held by planning software
		1.2	Identify information categories relevant to team and area processes
		1.3	Identify range of information able to be provided to planning software by team or work group
		1.4	Identify range of information able to be provided to team or work group by planning software
2	Communicate using the planning software system	2.1	Send and receive information using planning software
		2.2	Send and receive messages using planning software
3	Make decisions using planning software	3.1	Interrogate the planning software system to find required current, historical or predicted information
		3.2	Take actions appropriate to the information in accordance with procedures
4	Monitor the use of	4.1	Routinely monitor planning software information

	planning software	4.2	Review performance and use of planning software with team
5	Support others to use planning software	5.1	Regularly communicate with team or other work group members, both using planning software and face to face
		5.2	Identify improvements required
		5.3	Take appropriate actions to implement improvements

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- entering and receiving information via planning software terminals
- communicating with team and organisation planning software support personnel
- engaging and motivating team in use of planning software
- identifying team or work group area information requirements
- identifying scope of information relevant to team and area available in planning software by categories
- planning and organising improvements in team's use of planning software

Required knowledge

Required knowledge includes:

- hierarchy of planning software system and operation
- information available from/through the planning software system
- query facilities and information analysis capabilities offered by planning software
- support/training/skill development mechanisms available for access by team members

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the

performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify team or work group area information requirements and relate to planning software categories • lead and motivate others in using planning software • ensure information sent to planning software is accurate and appropriate • obtain regular and one-off information from planning software • make decisions using planning software generated information.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence.

	In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, ERP systems, MRP and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time

	• process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Planning software	Planning software is a general term applied to a number of software systems which integrate a range of business information, such as: • sales/order taking • finance/accounting • logistics • maintenance • human resources • production It is frequently referred to by names such as ERP or MRP/MRP II. In some cases it can be integrated with engineering applications, such as SCADA systems. In such cases the unit MSS402061A Use SCADA systems in operations may also be required
Information and messages	Information and messages able to be sent and received via the planning software will vary between programs and organisations. This unit assumes that a range of discretion is available to the team leader over the information and messages that can be sent or received. Examples of information and message categories include: • orders • production/operations processes • scheduling (e.g. daily/weekly) • finance and accounting • human resources (e.g. rosters, reserves, training completed and scheduled) • quality requirements • customers • suppliers

Value stream	The value stream begins with the customer and includes all actions (both value-adding and non-value added) by both internal sections/departments and external organisations to meet a customer requirement. Depending on the operations and the customer requirement stages where value stream actions may occur include: • sales outlet/representative • information gathering, data analysis and research • product design • raw material sourcing • intermediate processing • final assembler/collation/preparation • support services (e.g. accounting, finance and legal) • storage and delivery to customer • after market support

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

MSS404082A Assist in implementing a proactive maintenance strategy

Modification History

New unit, superseding MSACMT482A Assist in implementing a proactive maintenance strategy - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required by a maintenance person to assist in the implementation of a proactive maintenance strategy in an organisation. This unit includes the interaction between a maintenance worker and operators, as appropriate.

Application of the Unit

This unit applies to a maintenance person in an organisation that has adopted or is implementing total preventative/productive maintenance (TPM), reliability centred maintenance (RCM) or similar strategies. As part of this, the maintenance person is expected to assist in the implementation by determining appropriate maintenance related schedules and also by providing maintenance related assistance to non-maintenance personnel, such as assisting production personnel to fulfil their role in the TPM/RCM strategy.

This unit requires the application of skills associated with problem solving and initiative and enterprise in order to analyse maintenance requirements. Communication, teamwork and planning and organising skills will be required to implement reliability strategies. This requires aspects of self-management to ensure improvement of own performance and learning.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Develop components of reliability strategy for a work/plant area	1.1	Determine manufacturer's recommended inspection, servicing and related schedules for relevant plant
		1.2	Consult with relevant people with regard to appropriate inspections, services and schedules
		1.3	Discuss any conflicts with relevant people and seek resolution of conflicts
		1.4	Develop schedules in liaison with relevant people
		1.5	Identify inspections and servicing which may be done by operations personnel in liaison with relevant stakeholders
2	Assess current practice for maintenance implications	2.1	Identify the overall equipment effectiveness (OEE) or other organisation targets for equipment/plant
		2.2	Evaluate procedures for plant/equipment reliability implications
		2.3	Discuss current practices with relevant people to determine any plant/equipment reliability implications
		2.4	Recommend changes to improve plant/equipment reliability in accordance with procedures
3	Assist in implementing the reliability strategy	3.1	Arrange for schedules to be incorporated in relevant work plans
		3.2	Identify training needs in discussion with relevant

personnel

- 3.3 Assist personnel to develop required skills for inspections/servicing within scope of authority
- 3.4 Collect data/information as required by own work plan
- 3.5 Compare data/information with performance indicators
- 3.6 Recommend improvements to reliability strategy in accordance with procedures

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- explaining concepts and processes of chosen proactive maintenance strategy used by the organisation and distinguishing from traditional (breakdown) maintenance strategies
- communicating with operators, other maintenance personnel, team leaders and technical experts in a variety of situations and using different media
- adapting personal communication strategy to different levels of operator and team leader literacy and numeracy
- working in formal and ad-hoc teams to implement proactive maintenance
- solving problems to root cause
- planning proactive maintenance tasks to fit in with maintenance and production schedules and the needs of other staff
- assessing the ability of operations personnel with regard to inspections and servicing of equipment
- reading and interpreting charts and diagrams, manufacturer manuals and specifications and operating procedures

Required knowledge

Required knowledge includes:

- requirements of the proactive maintenance strategy being implemented
- operating principles and procedures for equipment/plant subject to proactive maintenance strategy
- purpose and processes for data collection in proactive maintenance strategies
- procedures relevant to own job and organisation implementation of proactive maintenance

- methods of making/recommending improvements

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • source information from manuals and other technical documentation or software • effectively communicate with users on equipment operational and maintenance history • develop schedules for maintenance activities including seeking technical assistance, where appropriate • differentiate between proactive and traditional maintenance strategies.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation

	• case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and

	analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • OEE • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise, the work organisation, culture • regulatory environment and the industry sector
TPM	TPM is an application of total quality management to maintenance with the intention of increasing reliability, getting it right first time and increasing OEE
RCM	RCM moves maintenance from reactive, or even planned/programmed, towards a focus on uptime and OEE
Similar strategies	Similar strategies may include: • mean time between failure (MTBF) which is one key measure of the effectiveness of a maintenance procedure, and is an indicator as to whether root causes are being found and resolved. If MTBF is reducing, then it is an indicator that the maintenance regime is failing • failure mode and effects analysis (FMEA) which is a systematic approach that identifies potential failure modes in a system, product, or equipment based operations caused by either design or operation/process deficiencies. It also identifies critical or significant design or process characteristics that require special controls to prevent or detect failure modes. FMEA is a tool used to prevent problems from occurring • industry sectors have highly adapted forms of FMEA

	and which may practice traditional FMEA in say their routine maintenance while using another technique, such as Hazard and Operability Studies (HAZOP) for design and modification. HAZOP is a form of FMEA which has been practiced by the process industries for over 30 years and examines the implications of changes in process conditions to process stability condition monitoring which often involves quite sophisticated monitoring of equipment, including such things as vibration monitoring, instrumental analysis of lubricating oil, and so on, to determine the current state of the equipment, monitor the change in this condition and predict when it needs servicing/maintenance to maintain reliability.
OEE	OEE is the combination of the main factors causing loss of productive capacity from equipment/plant and is: $OEE = \text{availability} \times \text{performance} \times \text{quality rate}$ where: - availability takes into account losses due to breakdown, set-up and adjustments - performance takes into account losses due to minor stoppages, reduced speed and idling - quality rate takes into account the losses due to rejects, reworks and start-up waste
Uptime	Uptime refers to the overall availability of the plant (it is the inverse of downtime) or the unavailability of the plant. Ideal uptime is 100%
Inspection	Inspection may include: - reading dials, gauges and meters - observations, including those using sight, hearing, smell and feel - observations of product quality/faults/rejects
Servicing	Servicing may include: - cleaning - lubricating - topping up - adjusting
Procedures	Procedures may include: - work instructions - standard operating procedures

	• formulas/recipes • batch sheets • temporary instructions and similar instructions provided for the smooth running of the plant • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) • government regulations Procedures may be: • written, verbal, computer based or in some other format

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.

TLIA3017A Identify products and store to specifications

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to apply product knowledge to the organisation of work operations including identifying and categorising products, matching products to locations based on specified criteria, and assisting individuals to solve stock identification and location problems. Licensing, legislative, regulatory or certification requirements may be applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the relevant regulations and workplace requirements concerning the identification, handling and storage of various categories of products/stock.

Work is performed under some supervision generally within a team environment. It involves the application of product knowledge and an understanding of relevant regulatory requirements to the organisation of work operations in the warehousing, distribution and/or storage industries.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

1 Identify and categorise products	1.1 Products are identified and categorised in terms of specified criteria in accordance with workplace procedures
2 Match products to locations based on specified criteria	2.1 Locations for products are determined based on specified criteria 2.2 Labels, inventory systems and other information sources are used to assist in the identification of products, handling and storage requirements
3 Assist individuals to solve stock identification and location problems	3.1 New stock items are identified and particular product information is brought to the attention of relevant personnel 3.2 Stock queries are predicted and team members are assisted to locate and assimilate information relevant to these products 3.3 Personnel are assisted with routine and non-routine stock enquiries with actions taken to update information of products for relevant personnel 3.4 Personnel are encouraged to maintain and build product knowledge through accessing product information and the application of problem solving and information analysis skills
4 Identify appropriate transfer and handling requirements	4.1 Resources used to transfer different products through the storage zones are identified and evaluated 4.2 Work in receipt and despatch areas is supported by identification and reporting of variances 4.3 Stock re-ordering is informed by knowledge of product source, frequency of pick destination (or seasonality) of products and potential for supply problems 4.4 Relevant documentation is completed in accordance with workplace procedures

ELEMENT**PERFORMANCE CRITERIA****5 Contribute to continuous improvement**

- 5.1 Knowledge of customer requirements is used to determine work design
- 5.2 Potential problems are predicted and notified to appropriate personnel
- 5.3 Opportunities for improvements to own work organisation are identified

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Australian codes and regulations relevant to the workplace activities
- Relevant OH&S and environmental protection procedures and guidelines
- Workplace procedures and policies relevant to the application of product knowledge to the organisation of workplace operations
- Focus of operation of work systems, equipment, management and site operating systems
- Information on various categories or groups of products including their key characteristics and hazards and the special handling, stacking and storage requirements for each
- Product sources, destinations and potential problems
- Re-ordering procedures and just-in-time planning principles
- Requirements for workplace documentation, inventory systems and records
- Sources of product information
- Strategies to seek out sources of knowledge of products and use this information to inform work
- Types of equipment and storage areas appropriate for different types of goods including perishable, fragile, dangerous, composition/state goods
- Documentation requirements including reports and records concerning damaged or contaminated goods
- Housekeeping standards procedures required in the workplace
- Site layout and obstacles

Required skills:

- Communicate effectively with others when organising workplace activities

Required skills:

- Access, read and interpret product information, policies and regulatory requirements relevant to workplace operations
- Complete documentation related to the organisation of work activities
- Work collaboratively with others when organising workplace activities
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems that may arise when organising workplace activities in accordance with regulatory requirements and workplace procedures
- Use information on products/stock to determine, plan and organise processes used for receipt, storage, goods movement, despatch, stock levels, re-ordering processes
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in products and services in accordance with standard operating procedures
- Organise and monitor the use of personal protective equipment conforming to industry and OH&S standards
- Select and use relevant communication, computing and office equipment when organising workplace activities

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
 - the underpinning knowledge and skills
 - relevant legislation and workplace procedures

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
 - a range of relevant exercises, case studies and/or

EVIDENCE GUIDE

	other simulated practical and knowledge assessment, and/or access to an appropriate range of relevant operational situations in the workplace
	- In both real and simulated environments, access is required to: - relevant and appropriate materials and equipment, and - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals
Method of assessment	- As a minimum, assessment of knowledge must be conducted through appropriate assessments using written/practical/oral assessments - Practical assessment must occur: - through activities in an appropriately simulated environment , and/or - in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Work may be conducted:	- in a range of work environments - by day or night
Customers may be:	internal or external
Workplaces may comprise:	large, medium or small worksites
Workplace activities being organised may include but are not limited to:	- receival - storage - goods/stock movement - despatch - stock levels - re-ordering processes
Work may be conducted in:	- restricted spaces - exposed conditions

RANGE STATEMENT

Goods may involve:	• controlled or open environments • special handling, location, storage and/or packaging requirements, including temperature controlled goods and dangerous goods
Modes of transfer may be:	• manual or motorised
Storage types may include but are not limited to:	• bin/binning systems • rack refrigeration/freezers/cold rooms • marked floor space • containers • racks and racking systems • block/stacks • pallets
Inventory systems may be:	• automated • manual • paper-based • computerised • microfiche
Categories or groups of products/stock may include:	• small parts • perishable goods • overseas export • dangerous goods • refrigerated products • temperature controlled stock • fragile goods
The characteristics of products/stock may include:	• small parts • toxicity • flammability • form • weight • size • state • perishability • fragility • security risk
Labelling systems may include but are not limited to:	• batch code • bar code • identification numbering systems • serial numbers • symbols for safe handling

RANGE STATEMENT

Hazards in the work area may include:

- ADG and HAZCHEM Codes
- chemicals
- dangerous or hazardous substances
- movements of equipment, goods and materials
- oil or water on floor
- a fire or explosion
- damaged packaging or pallets
- debris on floor
- faulty racking
- poorly stacked pallets
- faulty equipment

Communication in the work area may include:

- phone
- electronic data interchange (EDI)
- fax
- email
- internet
- RF systems
- oral, aural or signed communications

Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:

- company procedures
- enterprise procedures
- organisational procedures
- established procedures

Personal protective equipment may include:

- gloves
- safety headwear and footwear
- safety glasses
- two-way radios
- high visibility clothing

Consultative processes may involve:

- other employees and supervisors
- suppliers, customers and clients
- relevant authorities and institutions
- management and union representatives
- industrial relations and OH&S specialists
- other maintenance, professional or technical staff

Information/documents may include:

- goods identification numbers and codes
- manifests, picking slips, merchandise transfers, stock requisitions and bar codes, and container identification/serial number
- codes of practice and regulations relevant to workplace operations
- Australian and international regulations and codes of

RANGE STATEMENT

Applicable regulations and legislation may include:

- practice for the handling, stacking and transport of dangerous goods and hazardous substances
- operations manuals, job specifications and induction documentation
- manufacturers specifications for equipment
- workplace procedures and policies
- supplier and/or client instructions
- dangerous goods declarations and material safety data sheets (where applicable)
- award, enterprise bargaining agreement, other industrial arrangements
- relevant Australian standards and certification requirements
- quality assurance procedures
- emergency procedures
- relevant codes and regulations for the packaging of goods
- Australian and international regulations and codes of practice for the handling and transport of dangerous goods and hazardous substances, including:
 - Australian and International Dangerous Goods Codes
 - Australian and International Explosives Codes
- licence, patent or copyright arrangements
- water and road use and licence arrangements
- export/import/quarantine/bond requirements
- marine orders
- relevant state/territory OH&S and environmental protection legislation
- workplace relations regulations
- workers compensation regulations

Unit Sector(s)

Not Applicable

Competency Field

Competency Field

A - Handling Cargo/Stock

TLIA3023A Coordinate stocktakes

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to coordinate stocktakes in accordance with workplace requirements including planning stocktakes, coordinating stocktake activities, identifying stock discrepancies, and adjusting documentation in accordance with workplace procedures and relevant regulatory requirements. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the relevant regulations and workplace requirements when coordinating stocktakes.

Work is performed under some supervision generally within a team environment. It involves the application of product knowledge and an understanding of relevant workplace procedures and regulatory requirements when coordinating stocktakes as part of work activities in the warehousing, distribution and/or storage industries.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

1 Plan stocktake

- 1.1 Goods to be counted and appropriate inventory systems are identified
- 1.2 Required resources including equipment, record keeping systems and personnel are identified
- 1.3 Members of the team are instructed and assisted
- 1.4 Team members are allocated to particular tasks and zones and given clear directions for work requirements
- 1.5 Sequence and operations of the stocktake are planned in a time effective manner

2 Coordinate stocktake

- 2.1 Stocktaking and cyclical counts are coordinated in accordance with workplace policies and procedures
- 2.2 Inventory data is interpreted
- 2.3 Inventory data is confirmed to match stock
- 2.4 Stock levels are accurately counted and documented

3 Identify stock discrepancies

- 3.1 Discrepancies in type, number and quality of stock are accurately recorded and documented
- 3.2 Possible reasons for discrepancies are identified
- 3.3 Products stored in inappropriate storage locations are relocated and stock records are adjusted in accordance with workplace procedures

4 Adjust documentation

- 4.1 Inventory data is reconciled to match warehouse stock in accordance with regulations, workplace practices, policies and procedures
- 4.2 Information is reconciled with audit requirements
- 4.3 Workplace documentation is completed

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Australian codes and regulations relevant to the coordination of stocktakes
- Relevant OH&S and environmental protection procedures and guidelines
- Workplace procedures and policies for the coordination of stocktakes
- Focus of operation of work systems, equipment, management and site operating systems for the conduct of stocktakes
- Workplace processes for records management and the production of stocktake reports
- Principles and functions of stocktakes
- Problems that may occur when coordinating a stocktake and appropriate action that can be taken
- Computer records and documentation requirements for the coordination of stocktakes
- Housekeeping standards procedures required in the workplace
- Site layout

Required skills:

- Communicate effectively with others when coordinating stocktakes
- Read and comprehend simple statements in English
- Read and interpret instructions, procedures and labels relevant to the coordination of stocktakes
- Complete documentation related to the coordination of stocktakes
- Work collaboratively with others when coordinating stocktakes
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems that may occur when coordinating stocktakes in accordance with regulatory requirements and workplace procedures
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or

Required skills:

damage to goods or equipment

- Operate and adapt to differences in stock and equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Select and use relevant communications, computing and office equipment when coordinating stocktakes

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
 - the underpinning knowledge and skills
 - relevant legislation and workplace procedures
 - other relevant aspects of the range statement

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
 - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
 - access to an appropriate range of relevant operational situations in the workplace
- In both real and simulated environments, access is required to:
 - relevant and appropriate materials and equipment, and
 - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- Assessment of this unit must be undertaken by a registered training organisation

EVIDENCE GUIDE

- As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
- Practical assessment must occur:
 - through activities in an appropriately simulated environment at the registered training organisation, and/or
 - in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Work may be conducted:	• in a range of work environments • by day or night
Customers may be:	• internal or external
Workplaces may comprise:	• large, medium or small worksites
Work may be conducted in:	• restricted spaces • exposed conditions • controlled or open environments
Equipment used in stocktaking may include:	• calculators • scanners • hand-held computers
Inventory systems may be:	• automated • manual • paper-based • computerised • microfiche
Categories or groups of products/stock may include:	• small parts • perishable goods • overseas export • dangerous goods • refrigerated products • temperature controlled stock • fragile goods

RANGE STATEMENT

The characteristics of products/stock may include:

- small parts
- toxicity
- flammability
- form
- weight
- size
- state
- perishability
- fragility
- security risk

Labelling systems may include:

- batch code
- bar code
- identification numbering systems
- serial numbers
- symbols for safe handling
- ADG and HAZCHEM Codes

Hazards in the work area may include:

- chemicals
- dangerous or hazardous substances
- movements of equipment, goods and materials
- oil or water on floor
- a fire or explosion
- damaged packaging or pallets
- debris on floor
- faulty racking
- poorly stacked pallets
- faulty equipment

Communication in the work area may include:

- phone
- electronic data interchange (EDI)
- fax
- email
- internet
- RF systems
- oral, aural or signed communications

Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:

- company procedures
- enterprise procedures
- organisational procedures
- established procedures

Personal protective equipment may include:

- gloves
- safety headwear and footwear

RANGE STATEMENT

Consultative processes may involve:

- safety glasses
- two-way radios
- high visibility clothing
- other employees and supervisors
- suppliers, customers and clients
- relevant authorities and institutions
- management and union representatives
- industrial relations and OH&S specialists
- other maintenance, professional or technical staff

Information/documents may include:

- goods identification numbers and codes
- manifests, picking slips, merchandise transfers, stock requisitions and bar codes
- codes of practice and regulations relevant to the identification, handling and stacking of goods
- Australian and international regulations and codes of practice for the handling, stacking and transport of dangerous goods and hazardous substances
- operations manuals, job specifications and induction documentation
- manufacturers specifications for equipment
- workplace procedures and policies
- supplier and/or client instructions
- dangerous goods declarations and material safety data sheets (where applicable)
- award, enterprise bargaining agreement, other industrial arrangements
- relevant Australian standards and certification requirements
- quality assurance procedures
- emergency procedures

Applicable regulations and legislation may include:

- relevant codes and regulations for the packaging of goods
- Australian and international regulations and codes of practice for the handling and transport of dangerous goods and hazardous substances, including:
 - Australian and International Dangerous Goods Codes
 - Australian and International Explosives Codes
- licence, patent or copyright arrangements
- water and road use and licence arrangements
- export/import/quarantine/bond requirements
- relevant state/territory OH&S and environmental protection legislation

RANGE STATEMENT

- workplace relations regulations
- workers compensation regulations

Unit Sector(s)

Not Applicable

Competency Field

Competency Field A - Handling Cargo/Stock

TLIA4028A Assess and monitor optimum stock levels

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to assess and monitor optimum stock levels in accordance with workplace requirements including assessing projected demand, assessing variables that impact upon optimum stock levels, determining optimum inventory levels, and monitoring optimum inventory levels. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the relevant regulations and workplace requirements concerning stock control operations.

Work is performed under general guidance on progress and outcomes of work. It requires the exercise of discretion and judgement for self and others in planning and using resources, services and processes to achieve required outcomes within organisational policy and procedures. A range of opportunities may be used to develop the work area and to support the development of work systems and innovative strategies to deal with contingencies and to encourage the achievement of the organisation's goals and key performance objectives.

Work involves the application of product knowledge and an understanding of relevant workplace procedures and regulatory requirements when assessing and monitoring optimum stock levels as part of work activities in the warehousing, distribution and/or storage industries.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Assess projected demand	1.1 Information/data from sales plan or stock movement is analysed 1.2 Projected high and low volume periods are determined from the analysis of sales plan and/or stock movement data 1.3 Seasonal nature of stock demand is determined from the analysis of sales plan and/or stock movement data 1.4 Required inventory levels at different production and sales cycle stages are determined from the analysis of sales plan and/or stock movement data
2 Assess variables that impact upon optimum stock levels	2.1 Stock manufacturing/supply and consignment delivery lead times are determined 2.2 Internal processing and distribution times are determined 2.3 Spoilage and obsolescence times are calculated (where applicable) 2.4 Maximum stock carrying capacity is assessed 2.5 Physical and human resources are assessed in relation to projected required stock levels 2.6 Contingencies are developed for abnormal distribution

ELEMENT	PERFORMANCE CRITERIA
	stoppages/slow-downs to supply chain
3 Determine optimum inventory levels	3.1 Production and sales cycle stages are correlated to stock manufacturing supply and distribution lead times 3.2 Safety stock levels are calculated 3.3 Optimum inventory levels are identified
4 Monitor optimum inventory levels	4.1 Inventory benchmarks are continually compared to current and known future sales turnover/production requirements 4.2 Adjustments to inventory levels are undertaken in accordance with reassessed sales turnover/production requirements, workplace procurement processes and within scope of authority 4.3 Changes and/or requests for adjustments to inventory levels are documented in accordance with workplace policies 4.4 Resources are assembled in accordance with identified optimum inventory levels

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Australian codes and regulations relevant to the optimisation of stock levels
- Relevant OH&S and environmental protection procedures and guidelines
- Workplace procedures and policies for the assessment and monitoring of optimum stock levels
- Focus of operation of supply arrangements, resources, management and workplace operating systems
- Purpose and use of key information required when optimising stock levels, including supply requirements, supplier information, enterprise contract procedures, sales plan, and distribution times
- Workplace business policies and plans including procedures for maintenance of confidentiality
- Computer records/documentation requirements when assessing and monitoring optimum stock levels
- Problems that may occur when assessing and monitoring optimum stock levels and appropriate action that can be taken to resolve the problems
- Worksite layout and organisational structure

Required skills:

- Communicate effectively with others when assessing and monitoring optimum stock levels
- Read and interpret instructions, procedures, policies, procedures and instructions relevant to the assessment and monitoring of optimum stock levels
- Complete documentation related to the assessment and monitoring of optimum stock levels
- Work collaboratively with others when assessing and monitoring optimum stock levels
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions when assessing and monitoring optimum stock levels in accordance with regulatory requirements and workplace procedures
- Plan and organise resource availability including the competencies of individuals in a team or group
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Select and apply relevant technology, information systems and procedures when assessing and monitoring optimum stock levels

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
 - the underpinning knowledge and skills
 - relevant legislation and workplace procedures
 - other relevant aspects of the range statement

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
 - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment,

EVIDENCE GUIDE

	and/or
	access to an appropriate range of relevant operational situations in the workplace
	- In both real and simulated environments, access is required to: - relevant and appropriate materials and equipment, and - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals
Method of assessment	- Assessment of this unit must be undertaken by a registered training organisation - As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests - Practical assessment must occur: - through activities in an appropriately simulated environment at the registered training organisation, and/or - in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Work may involve:	- twenty-four hour operation - in a range of work environments - by day or night
Customers may be:	internal or external
Workplaces may comprise:	large, medium or small worksites
Work may be conducted in:	- limited or restricted spaces - exposed conditions - controlled or open environments
Work:	- applies to predominantly manual operations - does not include a total computer generated purchasing system operation

RANGE STATEMENT

Inventory benchmarks may be:	• periodic, monthly or annual
Lead times may vary in accordance with:	• type of transport mode(s) • processing time • regulatory requirements • freight disputations • customs regulations • scarcity of resource
Information used when assessing and monitoring optimum stock levels may include:	• supply requirements • supplier information • workplace contract procedures • sales plan • distribution times
Consultative processes may involve:	• other employees and supervisors • suppliers, customers and clients • relevant authorities and institutions • management and union representatives • industrial relations and OH&S specialists • other maintenance, professional or technical staff
Communication in the work area may include:	• phone • electronic data interchange (EDI) • fax • email • internet • RF systems • oral, aural or signed communications
Inventory systems may be:	• automated • manual • paper-based • computerised • microfiche
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Information/documents may include:	• relevant workplace quality specifications, policies and procedures • Australian regulations and codes of practice relevant to stock management • manufacturers specifications and/or suppliers handling and

RANGE STATEMENT

Applicable regulations and legislation may include:	- storage advice • supplier and/or client instructions • workplace business policies and plans including procedures for maintenance of confidentiality • operations manuals, job specifications and induction documentation • ADG Code and associated regulations • material safety data sheets • relevant Australian standards and certification requirements • conditions of service, legislation and industrial agreements including award details, enterprise bargaining agreement, other industrial arrangements • emergency procedures • codes and regulations relevant to the optimisation of stock levels including the ADG Code • relevant state/territory OH&S and environmental protection legislation • licence, patent or copyright arrangements • water and road use and licence arrangements • export/import/quarantine/bond requirements • workplace relations regulations • workers compensation regulations

Unit Sector(s)

Not Applicable

Competency Field

Competency Field A - Handling Cargo/Stock

TLID3036 Lift and move load using a mobile crane

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit involves the skills and knowledge required to lift and move a load using a non-slewing mobile crane or a slewing mobile crane, in a variety of operational contexts.

It includes operating mobile crane to complete job requirements, monitoring lift conditions, implementing shut-down procedures, packing up crane after operations and completing all required job records.

People achieving competence in this unit will need to fulfil the applicable state/territory legislated high risk work licence requirements and to comply with relevant codes of practice and/or guidelines for mobile crane operations.

Work is performed with limited supervision and duty of care responsibility for self and others, in achieving the prescribed outcomes.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

D – Load Handling

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Operate mobile crane

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1 Job hazards are identified and required action is taken to minimise, control or eliminate identified hazards
- 1.2 In ascent and descent to/from crane, correct use is made of means provided, in accordance with relevant codes of practice and workplace procedures
- 1.3 Required signals are correctly given, interpreted and followed in accordance with appropriate workplace procedures
- 1.4 Boom is positioned to ensure load to be lifted is plumbed under hook
- 1.5 Load is hoisted and lowered into position using crane movements, in accordance with appropriate workplace procedures
- 1.6 Crane controls are operated smoothly
- 1.7 Crane is shut down and secured during periods of non-operation, in accordance with manufacturer specifications and workplace procedures
- 2.1 Load is constantly monitored to ensure load and structural stability
- 2.2 Conditions that may affect continuing stability of crane are identified and monitored
- 2.3 Unplanned situations are responded to in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- 2.4 Dogger is advised of new information that affects lift
- 2.5 Necessary changes to job plan are discussed and confirmed with rest of crew
- 2.6 Advice is sought from supervisor where there is doubt about correct response to unanticipated conditions, or conflict with customer request

2 Monitor lift conditions

	2.7	Supervisor/allocator is advised of concerns about completing job within timeframe
3 Implement shut-down procedures	3.1	Relevant motion locks and brakes are applied
	3.2	Crane is shut down using correct sequence of procedures in accordance with manufacturer specifications and workplace procedures
	3.3	Routine post-operational equipment checks are carried out in accordance with manufacturer specifications
4 Pack up crane	4.1	Crane is de-rigged with other crane personnel in accordance with manufacturer instructions
	4.2	All lifting equipment and crane components are checked in consultation with crane personnel for signs of deterioration or damage in accordance with appropriate Australian Standard
	4.3	Damaged or worn equipment is segregated and reported to authorised person for testing/repair/destruction
	4.4	Crane and equipment are correctly stowed and secured in accordance with manufacturer instructions and appropriate Australian Standard
5 Complete job records	5.1	Customer feedback is sought about satisfaction with completed job, and areas of concern are reported in accordance with workplace procedures
	5.2	Customer signature on job completion documentation is obtained
	5.3	Required workplace records are updated accurately and promptly, and processed in accordance with workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions can be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLID3036A Lift and move load using a mobile crane.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLID3036 Lift and move load using a mobile crane

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and include:

- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant high risk work legislation and workplace procedures
- applying risk assessment and management procedures
- calculating safe working load (SWL) and working load limit (WLL)
- communicating and working effectively with others
- completing relevant documentation
- effectively completing pre-operational checks, positioning, stabilising, set-up, post-operational checks of mobile crane
- modifying activities depending on operational contingencies, risk situations and environments
- monitoring performance of equipment
- monitoring work activities in terms of planned schedule
- operating and adapting to differences in equipment in accordance with workplace operating procedures
- operating crane, including all functions to their maximum extension, in lifting and moving a load
- reading and interpreting relevant instructions, procedures, information and signs
- reporting and/or rectifying identified problems, faults or malfunctions promptly, in accordance with regulatory requirements and workplace procedures
- servicing equipment in terms of maintenance schedule and standard operating procedures
- using load charts to determine crane limitations and/or required crane set-up
- using mathematical procedures to determine load weight and lifting equipment required for lift.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- communications systems used during a lift
- hazard management, using the principle of hierarchy of control
- high risk work licence requirements
- mobile crane applications, capacities, configurations, safety hazards and control mechanisms
- operational work systems and equipment
- problems that may occur during a lift, and associated action that can be taken to address these problems
- relevant road rules, regulations, permit and licence requirements for mobile crane operation
- relevant work health and safety (WHS)/occupational health and safety (OHS) and environmental procedures and regulations
- risks and hazards involved in mobile crane operations, and associated action that can be taken to eliminate or minimise the risk
- workplace procedures for operating a mobile crane at a worksite.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment include:

- a range of relevant exercises, case studies and/or simulations
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals
- mobile crane, of the type currently used in industry
- relevant materials, tools, equipment and personal protective equipment currently used in industry.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

AUM Automotive Manufacturing

Modification History

Release	Comments
Release 2.1	The following AUM components have been deleted as directed by the AISC. The training products below were identified as having zero enrolments over the last three years. Units of competency 19 units of competency were deleted from the <i>AUM Automotive Manufacturing Training Package</i> Version 2.0: • AUMATK001 Use and maintain tools and equipment • AUMATS001 Stamp and press vehicle parts • AUMFBK001 Receive and dispatch vehicle components • AUMGTW006 Machine Parts Qualifications Minor updates were made to three qualifications from the <i>AUM Automotive Manufacturing Training Package</i> Version 2.0 which contained at least one of the units of competency listed above: • AUM20118 Certificate II in Automotive Manufacturing Production - Passenger Motor Vehicle • AUM20218 Certificate II in Automotive Manufacturing Production - Bus, truck, trailer • AUM30218 Certificate III in Automotive Manufacturing Technical Operations - Bus, Truck and Trailer Three qualifications were deleted from the <i>AUM Automotive Manufacturing Training Package</i> Version 2.0: • AUM10113 Certificate I in Automotive Manufacturing
Release 2	Three revised qualifications: AUM20118 Certificate II in Automotive Manufacturing Production – Passenger Motor Vehicle AUM20218 Certificate II in Automotive Manufacturing Production – Bus, Truck and Trailer AUM30218 Certificate III in Automotive Manufacturing Technical Operations – Bus, Truck and Trailer

	7 revised units of competency AUMABA012 Operate load shifting equipment AUMASA011 Apply safe work practices in the automotive manufacturing environment AUMATK013 Monitor and maintain automotive equipment AUMGLM011 Apply heavy vehicle standards AUMGTA011 Read and interpret work orders and working drawings AUMGTB011 Assemble, install and test braking system kits AUMGTM013 Install or replace mechanical units and assemblies Minor updates to 14 units of competency AUMAMA002 Work effectively in teams AUMATK002 Prepare and operate tools, equipment and machinery AUMGCA001 Provide customer service AUMGMA001 Participate in workplace productivity improvement processes AUMGQA001 Apply workplace technical quality standards AUMGTA002 Service vehicle after assembly AUMGTD001 Perform wheel alignment operations AUMGTG001 Install fixed and moveable glass components on vehicles AUMGTM002 Assemble vehicle frames and axles AUMGTM004 Install and fit out components AUMGTM005 Read and interpret engineering drawings and determine requirements AUMGTM006 Assemble, install and test hydraulic system kits AUMGTW001 Perform basic welding, thermal cutting, heating and gouging AUMGTW002 Perform mechanical cutting Minor updates to 4 qualifications AUM10113 Certificate I in Automotive Manufacturing AUM30113 Certificate III in Automotive Manufacturing Technical Operations - Passenger Motor Vehicle AUM40113 Certificate IV in Automotive Manufacturing AUM50113 Diploma of Automotive Manufacturing
Release 1	Primary release

Credit Arrangements

Credit Arrangements for AUM Automotive Manufacturing Training Package (Release 2.1)

At the time of endorsement of this Training Package no national credit arrangements exist.

Link s	Companion Volume Implementation Guide: https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>