



Australian Government

Department of Education, Employment and Workplace Relations

AURM340204B Assemble and prepare a competition vehicle

Release: 1

AURM340204B Assemble and prepare a competition vehicle

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency describes the skills and knowledge required to assemble and prepare a competition vehicle. It requires the ability to use technical skills to prepare components, install sub-assemblies and systems, and set vehicle baseline configuration in accordance with team requirements, supplementary regulations and component supplier specifications. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.
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Application of the Unit

Application of the unit	This unit applies to individuals who undertake the assembly and preparation of a competition vehicle in a motorsports environment. A competition vehicle can be described as any vehicle which competes in any event of a competitive nature under one of the following categories: race, speed, rally road, off road, auto test and timed event.
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		
	AURM341051A	Perform torquing and fastening

Prerequisite units		
	AURM340550A	Conduct non-destructive testing
	AURTL317108A	Carry out wheel alignment operations (light vehicle)

Employability Skills Information

Employability skills	This unit contains employability skills.
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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. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Collect information and analyse assembly requirements	1.1. Use team instructions, supplementary regulations and component supplier specifications to clarify job requirements, including design, quality, material, equipment and quantities 1.2. Check specifications for required operating conditions and seek clarification of specifications, where required 1.3. Observe occupational health and safety (OHS) requirements, including equipment and system isolation requirements and personal protection needs, throughout the work 1.4. Clarify steps and stages in the process 1.5. Make proposals for modifications or adaptation of equipment 1.6. List and communicate component requirements to appropriate persons 1.7. Locate procedures for minimising waste material
2. Prepare work area and equipment	2.1. Locate tooling and equipment and check for safe and effective operation 2.2. Clean and lay out work area for job requirements 2.3. Report problems with the work area or the operation of the equipment to appropriate persons
3. Prepare components for assembly	3.1. Clean components to facilitate pre-assembly inspection 3.2. Take precautions to avoid component damage 3.3. Inspect and organise components for function and quality to ensure optimum use of resources 3.4. Report problems with the components to appropriate persons
4. Install sub-assemblies	4.1. Inspect sub-assemblies for quality and readiness for installation 4.2. Use installation sequences and techniques 4.3. Install sub-assemblies and tension fasteners to team/component supplier specifications 4.4. Make checks during and after installation to ensure accurate and complete fitting 4.5. Report problems with sub-assemblies to appropriate persons
5. Install ancillary	5.1. Locate critical components on the basis of function,

ELEMENT	PERFORMANCE CRITERIA
systems	susceptibility to damage and ease of maintenance 5.2. Install critical components and tension fasteners to team/component supplier specifications 5.3. Confirm optimum layout for wiring loom, connectors, hoses, hard lines and ancillary components 5.4. Install wiring loom, connectors, hoses, hard lines and ancillary components and tension fasteners to team/component supplier specifications 5.5. Secure entire installation and shield to maximise reliability and minimise susceptibility to damage 5.6. Make checks during and after installation to ensure accurate and complete fitting 5.7. Report problems with the components to appropriate persons
6. Conduct post-assembly checks	6.1. Check fluids and top up, as required 6.2. Remove temporary bungs and covers 6.3. Conduct engine pre-start checks 6.4. Check pressures, temperatures, noises and leaks 6.5. Check sub-assembly and systems operation
7. Set vehicle baseline configuration	7.1. Use team instructions, category regulations and component supplier specifications are used to clarify vehicle baseline settings 7.2. Establish a level surface to place vehicle on for set-up 7.3. Install springs and dampers 7.4. Measure and adjust ride height, if necessary 7.5. Measure and adjust corner weight, if necessary 7.6. Measure and adjust steering angles, if necessary 7.7. Report potential or existing problems in accordance with enterprise procedures
8. Clean up work area and maintain records	8.1. Maintain tooling and return to storage 8.2. Tag and shelve/store surplus components/consumables 8.3. Remove all surplus material from work area 8.4. Clean up spillage from work area and vehicle 8.5. Complete team/component supplier documentation

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- technical skills to the level required to use workplace technology related to torquing and fastening, including tooling, equipment, calculators and measuring devices
- communication skills to the level required to communicate ideas and information to enable clarification of requirements, coordination of work with supervisors and other team members, and to report work outcomes and problems
- literacy skills to the level required collect, organise and understand information related to competition vehicle assembly and preparation, team requirements, manufacturer/component supplier specifications, plans and safety procedures
- numeracy skills to the level required to use mathematical ideas and techniques to correctly complete measurements and calculations required during assembly of a competition vehicle
- problem-solving skills to the level required to use pre-checking and inspection techniques to anticipate assembly problems in order to work efficiently and effectively
- team skills to the level required to work with others to foster the team by recognising dependencies and using cooperative approaches to optimise workflow and productivity within strict timeframes
- planning skills to the level required to plan and organise activities, including preparation and layout of the work area, and the coordination of equipment, systems and material to avoid backtracking, workflow interruptions or wastage

Required knowledge

Required knowledge includes:

- controlling body rules, category rules, supplementary regulations, component supplier specifications and team requirements/job specifications
- work area and component layout
- component cleaning methods and precautions
- sub-assembly and system installation sequence and techniques
- critical components location selection
- optimum layout for conduits and ancillary components
- types of securing devices and securing methods
- types of shielding devices and shielding methods
- vehicle baseline configuration
- record keeping techniques

REQUIRED SKILLS AND KNOWLEDGE

- procedures for reporting equipment faults and component defects
- workplace guidelines regarding acceptable tolerance levels
- OHS policies and procedures
- applicable commonwealth, state or territory legislation, regulations, standards and codes of practice, including OHS, personal safety and environment, relevant to assembling and preparing a competition vehicle

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 must be satisfied that the candidate can competently and consistently:

- interpret and apply team requirements, controlling body and category rules and supplementary regulations
- correctly apply and use safety equipment and personal protective equipment
- follow task instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self and others
 - prevent damage to competition vehicle or equipment
 - achieve required outcomes within team time and quality standards
- correctly assemble and prepare a minimum of two (2) competition vehicles covering each of the following:
 - install electrical/electronic systems
 - install fluid/pneumatic/fire systems
 - conduct post-assembly checks
 - set vehicle baseline configuration
- work effectively with others
- modify activities to cater for variations in workplace context and environment.

Context of, and specific resources for assessment

- The application of competency is to be assessed in the workplace or a simulated environment that reflects as far as possible the actual working environment.
- Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints.
- Assessment is to comply with relevant regulatory requirements, including specified Australian standards.
- Where applicable, reasonable adjustment must be made to work environments and training situations to

EVIDENCE GUIDE	
	accommodate ethnicity, age, gender, demographics and disability. - The following resources should be made available: - work instructions and deadlines - computing, operational and inventory support systems - material, equipment and work specifications information - customer requirements - organisational procedures - safety procedures and regulations - quality standards.
Method of assessment	- Assessment must satisfy the endorsed Assessment Guidelines of this Training Package. - Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of Required Skills and Knowledge. - Assessment methods must be by direct observation of tasks and include questioning on Required Skills and Knowledge to ensure its correct interpretation and application. - Assessment may be applied under project-related conditions (real or simulated) and require evidence of process. - Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. - Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.
Guidance information for assessment	Assessment processes and techniques must be culturally sensitive and appropriate to the language and literacy capacity of the candidate and the work being performed.

Range Statement

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. 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.	
Competition vehicles	Competition vehicles may include: • motorcycles • cars • trucks • watercraft (modified or built specifically for competition)
Ancillary systems	Ancillary systems may include: • pneumatic • fluid • communications • electrical/electronic • fire systems
Critical components	Critical components may include: • electronic control units • data acquisition system components • communication equipment • circuit breakers, relays and isolation switches • fuel tank/cell • pumps and reservoirs • fire bottles and controller
Securing methods	Securing methods may include: • tie wraps • spiral wrap/heat shrink • line clamps
Shielding	Shielding may include protection from: • heat • vibration • radio frequency interference • impact
Cleaning methods	Cleaning methods may include: • solvent baths

RANGE STATEMENT	
	• chemical cleaning • pressure cleaning • ultrasonic cleaning • bead blasting
OHS requirements	OHS requirements are to be in accordance with applicable commonwealth, state or territory legislation and regulations, and organisational safety policies and procedures, and may include: • personal protective equipment and clothing, including closed shoes, long trousers, fire-retardant gloves, crash helmets and other equipment • safety equipment • first aid equipment • hazard and risk control • elimination of hazardous materials and substances • manual handling, including shifting, lifting and carrying • emergency procedures • team insurance requirements • material safety management systems • controlling body requirements • manufacturer specifications • local safe operating procedures
Legislative requirements	Legislative requirements are to be in accordance with applicable commonwealth, state or territory legislation, regulations, certification requirements and codes of practice, and may include: • award and enterprise agreements • industrial relations • Australian standards • Australian Design Rules • confidentiality and privacy • OHS • the environment • equal opportunity • anti-discrimination • duty of care
Tooling and equipment	Tooling and equipment must include component

RANGE STATEMENT	
	supplier specified tooling and may include: • non-destructive testing equipment • measuring devices • hand and power tooling
Information and procedures	Information and procedures may include: • controlling body rules, category rules and supplementary regulations • team procedures and standards relating to: • assembling and preparing competition vehicles reporting and communication • use of tooling and equipment • emergency service contacts and team persons emergency contacts • team emergency and event procedures for accidents or injury • work instructions, including worksheets, material safety data sheets (MSDS), assembly procedures, plans, drawings, designs and checklists • manufacturer/component supplier specifications and application procedures for test equipment and material • Australian Design Rules (where applicable) • safety body publications • environmental, hazardous chemicals and dangerous goods legislation and local requirements relating to the disposal and use of fuels, lubricants, coolants and cleaning agents

Unit Sector(s)

Unit sector	Motorsport
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Co-requisite units

Co-requisite units	
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Co-requisite units		

Competency field

Competency field	
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