



Australian Government

AURTTF4007 Overhaul petrol fuel system components

Release 1

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Modification History

Release	Comment
Release 1	Replaces AURT403145B Overhaul petrol fuel system components Unit code updated to meet policy requirements Reference to OHS legislation replaced with new WHS legislation Licensing statement added to unit descriptor

Unit Descriptor

Unit descriptor	<p>This unit covers the competence required to overhaul mechanical and/or electric carburettor petrol and basic electronic fuel system components, such as carburettors, mechanical and electrical fuel pumps, and petrol fuel injectors.</p> <p>Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.</p>
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Application of the Unit

Application of the unit	<p>The unit includes identification and confirmation of work requirement, preparation for work, testing, analysis and overhaul of the system, and completion of work finalisation processes, including clean-up and documentation.</p> <p>This unit of competence should be contextualised to the qualification it is being applied.</p> <p>Work requires individuals to demonstrate discretion, judgement and problem-solving skills in managing own work activities and contributing to a productive team environment.</p>
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

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. 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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to overhaul petrol fuel system components	1.1. Nature and scope of work requirements are identified and confirmed 1.2. WHS requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work 1.3. Procedures and information such as workshop manuals, specifications and tooling, are sourced 1.4. Method options are analysed and those most appropriate to the circumstances are selected and prepared 1.5. Technical and/or calibration requirements for overhaul are sourced and support equipment is identified and prepared 1.6. Warnings in relation to working with petrol are observed
2. Test petrol fuel system components and analyse results	2.1. Methods for conduct of the system test are implemented in accordance with workplace procedures and manufacturer/component supplier specifications 2.2. Results are compared with manufacturer/component supplier specifications to indicate compliance or non-compliance 2.3. Results are documented with evidence and supporting information and recommendations made 2.4. Report is forwarded to appropriate persons for action in accordance with workplace procedures
3. Overhaul petrol fuel system components	3.1. Information is accessed and interpreted from manufacturer/component supplier specifications 3.2. Overhaul of fuel system components is carried out in accordance with manufacturer/component supplier specifications 3.3. Petrol fuel system component overhaul is completed without causing damage to any component or system
4. Prepare fuel system for normal service	4.1. Overhaul work schedule documentation is completed 4.2. Final inspection is made to ensure work is to workplace expectations 4.3. Job card is processed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- apply research and interpretive skills sufficient to locate, interpret and apply manufacturer/component supplier procedures, workplace policies and procedures
- apply analytical skills required for identification and analysis of technical information
- apply plain English literacy and communication skills in relation to dealing with customers and team members
- apply questioning and active listening skills for example when obtaining information from customers
- apply oral communication skills sufficient to convey information and concepts to customers
- apply planning and organising skills to work activities, including making good use of time and resources, sorting out priorities and monitoring own performance
- interact effectively with other persons both on a one-to-one basis and in groups, including understanding and responding to the needs of a customer and working effectively as a member of a team to achieve a shared goal
- establish safe and effective work processes which anticipate and/or resolve problems and downtime, to systematically develop solutions to avoid or minimise reworking and avoid wastage
- use mathematical ideas and techniques to calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to overhaul of petrol fuel system components, including use of specialist tooling and equipment, measuring equipment, computerised technology and communication devices and reporting/documenting of results

Required knowledge

A working knowledge of:

- WHS regulations/requirements, equipment, material and personal safety requirements
- dangers of working with petrol
- operating principles of carburettors and fuel pumps
- types and layout of service/repair manuals (hard copy and electronic)
- overhaul procedures
- test procedures
- Australian Design Rules
- enterprise quality procedures

REQUIRED SKILLS AND KNOWLEDGE

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| <ul style="list-style-type: none">• work organisation and planning processes |
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Evidence Guide

EVIDENCE GUIDE	
<p>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.</p>	
Overview of assessment	
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>It is essential that competence in this unit signifies ability to transfer competence to changing circumstances and to respond to unusual circumstances in the critical aspects of:</p> <ul style="list-style-type: none"> • observing safety procedures and requirements • communicating effectively with others involved in or affected by the work • selecting methods and techniques appropriate to the circumstances • completing preparatory activity in a systematic manner • interpreting test results/readings • conducting the overhaul of a range of petrol fuel system components in accordance with workplace and manufacturer/component supplier requirements • completing overhaul of fuel system components within workplace timeframes • fuel system presentation in compliance with workplace requirements
<p>Context of, and specific resources for assessment</p>	<p>Application of competence is to be assessed in the workplace or simulated worksite</p> <p>Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints</p> <p>Assessment is to comply with regulatory requirements, including Australian Standards</p> <p>The following resources should be made available:</p> <ul style="list-style-type: none"> • workplace location or simulated workplace • materials relevant to the overhaul of petrol fuel system components • equipment, hand and power tooling appropriate to the overhaul of petrol fuel system components • activities covering the mandatory task requirements • specifications and work instructions

EVIDENCE GUIDE**Method of assessment**

Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training Package

Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge

Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies

Assessment may be applied under project related conditions (real or simulated) and require evidence of process

Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances

It is preferable assessment reflects a process rather than an event and occurs over a period of time to cover the varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other appropriate persons subject to agreed authentication arrangements

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**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	
Petrol fuel systems	Petrol fuel systems may be in light vehicles, heavy vehicles, motorcycles, marine engines, small engines and outdoor power equipment
Systems	Systems may be two-stroke and/or four-stroke and spark ignition fuel systems
Fuel system components	Fuel system components are to include basic EFI components and/or carburettors (all positions, electronic, fixed venturi, variable venturi), fuel pumps, mechanical and electrical, and engine shutdown systems
Overhaul methods and sequences	Overhaul methods and sequences are to include the complete dismantling of component parts, measuring and evaluation of wear, the replacement, repair, rebuilding or reconditioning of parts comparable to original parts, the assembly of parts, performance of functional testing and the completion of records
WHS	WHS requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and site visitors
Emergency procedures	Emergency procedures related to this unit are to include, but are not limited to emergency shutdown and stopping of equipment,

RANGE STATEMENT	
	extinguishing fires, enterprise first aid requirements and site evacuation
Environmental requirements	Environmental requirements are to include but are not limited to waste management, noise, dust and cleanup management
Quality requirements	Quality requirements are to include, but are not limited to regulations, including Australian Standards, internal company quality policy and standards and enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include Federal, State/Territory and local authorities administering the acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include hand tooling, power tooling, specialist tooling for disassembly/assembly and adjustment, and testing equipment, including hand held meters, computer testers, engine analysers, fuel pump testers and pressure testers
Materials	Materials may include spare parts, fuel and cleaning materials
Communications	Communications are to include, but are not limited to verbal and visual instructions and fault reporting and may include site specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers
Information/documents	Sources of information/documents may include: <ul style="list-style-type: none"> • verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches • safe work procedures related to the overhaul of petrol fuel system components • regulatory/legislative requirements pertaining to the automotive industry, including Australian Design Rules • engineer's design specifications and

RANGE STATEMENT

	<p>instructions</p> <ul style="list-style-type: none">• organisation work specifications and requirements• instructions issued by authorised enterprise or external persons• Australian Standards
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Unit Sector(s)

Unit sector	Mechanical Miscellaneous
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Co-requisite units

Not applicable.

Competency field

Competency field	Technical - Fuel Systems
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