



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **AURT303166B Repair petrol fuel systems**

**Release: 1**

## AURT303166B Repair petrol fuel systems

### Modification History

Not Applicable

### Unit Descriptor

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|------------------------|---|
| <b>Unit descriptor</b> | This unit covers the competence required to repair mechanical and basic electric/electronic petrol fuel systems/components. |
|------------------------|---|

### Application of the Unit

|                                |  |
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| <b>Application of the unit</b> | <p>The unit includes identification and confirmation of work requirement, preparation for work, testing of systems and analysis of test results, repair of petrol fuel system components and completion of work finalisation processes, including clean-up and documentation.</p> <p>This unit of competence should be contextualised to the qualification to which it is being applied.</p> <p>The unit covers repair procedures appropriate to two stroke and/or four stroke, spark ignition fuel systems in light vehicle, heavy vehicles, motorcycles, marine craft and outdoor power equipment.</p> <p>Work requires individuals to demonstrate judgement and problem-solving skills in managing own work activities and contributing to a productive team environment.</p> <p>Work is carried out in accordance with award provisions.</p> |
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### Licensing/Regulatory Information

Not Applicable

## Pre-Requisites

|                           |  |  |
|---------------------------|--|--|
| <b>Prerequisite units</b> |  |  |
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## Employability Skills Information

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| <b>Employability skills</b> | This unit contains employability skills. |
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## Elements and Performance Criteria Pre-Content

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| 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 undertake petrol fuel system repair | 1.1. Nature and scope of work requirements are identified and confirmed<br>1.2. OH&S requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work<br>1.3. Procedures and information such as workshop manuals and specifications, and tooling, are sourced<br>1.4. Method options are analysed and those most appropriate to the circumstances are selected and prepared<br>1.5. Technical and/or calibration requirements for repairs are sourced and support equipment is identified and prepared<br>1.6. Warnings in relation to working with petrol are observed |
| 2. Test fuel systems and analyse results          | 2.1. Methods for conducting tests are implemented in accordance with workplace procedures and manufacturer/ component supplier specifications<br>2.2. Component test results are compared with manufacturer/ component supplier specifications to indicate compliance or non-compliance<br>2.3. Results are documented with evidence and supporting information and recommendation(s) made<br>2.4. Report is forwarded to persons for action in accordance with workplace procedures  |
| 3. Repair petrol fuel system components           | 3.1. Correct information is accessed and interpreted from manufacturer/component supplier specifications<br>3.2. Repairs and adjustments of fuel system/components are carried out in accordance with manufacturer/component supplier specifications<br>3.3. Petrol fuel system component repairs are completed without causing damage to any component or system<br>3.4. Adjustments made during the repair are in accordance with manufacturer/component supplier specifications<br>3.5. Engine is run and fuel system tested for correct operation   |
| 4. Prepare fuel system for normal operation       | 4.1. Repair is documented<br>4.2. Final inspection is made to ensure work is completed to workplace expectations  |

| ELEMENT | PERFORMANCE CRITERIA  |
|---------|---|
|         | 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 analytical skills 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 own 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 correctly calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to the repair of petrol fuel systems, including the use of measuring equipment, computerised technology and communication devices and the documenting/recording of results

#### Required knowledge

A working knowledge of:

- OH&S regulations/requirements, equipment, material and personal safety requirements
- dangers of working with petrol
- petrol pump and carburettor construction and operation
- types and layout of service/repair manuals (hard copy and electronic)
- repair procedures

**REQUIRED SKILLS AND KNOWLEDGE**

- testing and adjusting procedures
- Australian Design Rules
- enterprise quality procedures
- work organisation and planning processes

## 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

It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the critical aspects of:

- 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
- conducting repair, involving a range of system components, in accordance with workplace and manufacturer/component supplier requirements
- presentation of work to customer in compliance with workplace requirements
- completing workplace records

##### Context of, and specific resources for assessment

The following resources should be made available:

- workplace location or simulated workplace
- material relevant to the repair of petrol fuel systems
- equipment, hand and power tooling appropriate to the repair of petrol fuel systems
- activities covering mandatory task requirements
- specifications and work instructions

##### 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

**EVIDENCE GUIDE**

|  |  |
|--|--|
|  | <p>reinforce the integration of key competencies</p> <p>Assessment may be applied under project related conditions and require evidence of process</p> <p>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</p> <p>Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role</p> |
| <b>Guidance information for assessment</b> |  |

**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.

|                               |  |
|-------------------------------|--|
| <b>Fuel system components</b> | Fuel system components are to include basic EFI and/or carburettors (all positions, electronic, fixed venturi, variable venturi), mechanical and/or electrical fuel pumps, engine shutdown systems and electronic/mechanical fuel injectors and associated basic fuel injection components |
| <b>Repair methods</b>         | Repair methods are to include aural, visual and functional assessments (including damage, corrosion, fluid levels, leaks, wear and safety aspects)   |
| <b>OH&amp;S</b>               | OH&S 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  |



| <b>RANGE STATEMENT</b>                  |   |
|---|---|
|   | environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances   |
| <b>Personal protective equipment</b>    | Personal protective equipment is to include that prescribed under legislation/regulation/codes of practice and workplace policies and practices   |
| <b>Safe operating procedures</b>        | Safe operating procedures are to include, but are not limited to 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 |
| <b>Emergency procedures</b>             | Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation   |
| <b>Environmental requirements</b>       | Environmental requirements are to include but are not limited to waste management, noise, dust and clean-up management  |
| <b>Quality requirements</b>             | 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   |
| <b>Statutory/regulatory authorities</b> | Statutory/regulatory authorities may include Federal, State/Territory and local authorities administering acts, regulations and codes of practice   |
| <b>Tooling and equipment</b>            | Tooling and equipment may include hand tooling, power tooling, specialist tooling for removal/replacement, adjustment and testing equipment, including hand-held meters, engine analysers, exhaust gas analysers, fuel pump testers, emission testers and pressure testers  |
| <b>Materials</b>                        | Materials may include fuels, spare parts and  |

| <b>RANGE STATEMENT</b>       |  |
|------------------------------|--|
|                              | cleaning materials   |
| <b>Communications</b>        | Communications are to include, but are not limited to verbal and visual instructions and fault documenting and may include site specific instructions, written instructions, plans or instructions related to job/task, telephones and pagers  |
| <b>Information/documents</b> | <p>Sources of information/documents may include:</p> <ul style="list-style-type: none"> <li>• verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches</li> <li>• safe work procedures related to repairing petrol fuel systems</li> <li>• regulatory/legislative requirements pertaining to automotive industry, including Australian Design Rules</li> <li>• engineer's design specifications and instructions</li> <li>• organisation work specifications and requirements</li> <li>• instructions issued by authorised enterprise or external persons</li> <li>• Australian Standards</li> </ul> |

## Unit Sector(s)

|                    |           |
|--------------------|-----------|
| <b>Unit sector</b> | Technical |
|--------------------|-----------|

## Co-requisite units

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|---------------------------|--|
| <b>Co-requisite units</b> |  |
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## Competency field

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|------------------|--|
| Competency field |  |
|------------------|--|