



**Australian Government**

# **AURTTW2001 Carry out soft soldering techniques**

**Release 1**

## AURTTW2001 Carry out soft soldering techniques

### Modification History

Release	Comment
Release 1	Replaces AURV223808A Carry out soft soldering techniques Unit code updated to meet policy requirements Reference to OHS legislation replaced with new WHS legislation Licensing statement added to unit descriptor

### Unit Descriptor

<b>Unit descriptor</b>	<p>This unit of competency covers the skills and knowledge required to required carry out soft soldering processes, including the preparation of materials and equipment.</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

<b>Application of the unit</b>	<p>This unit applies to retail, service and repair streams.</p> <p>Work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling and lifting equipment procedures and organisation insurance requirements.</p> <p>Work requires individuals to demonstrate some discretion, judgement and problem-solving skills in lifting, safety equipment, soft soldering techniques, environmental issues, repair procedures and vehicle operational requirements.</p>
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## Licensing/Regulatory Information

Not applicable.

## Pre-Requisites

Not applicable.

## Employability Skills Information

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

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>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.</p>
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work	1.1. Work instructions are used to determine job requirements, including job sheets, quality and quantity of materials. 1.2. Job specifications are read and interpreted. 1.3. Workplace health and safety requirements, including personal protection needs, are observed throughout the work. 1.4. Materials for repairs and replacements are selected and inspected for quality. 1.5. Correct hand, power tools and safety equipment are selected for safe use. 1.6. Products are determined to minimise waste materials. 1.7. Procedures are identified for maximising energy efficiency whilst completing the job.
2. Prepare components, tools and equipment for soft soldering	2.1. Preparing components, tools and equipment for soft soldering is completed without causing damage to any vehicle or component. 2.2. Correct information is accessed and interpreted from appropriate manufacture specifications. 2.3. Materials/components to be joined are cleaned and appropriate flux added. 2.4. Soldering equipment is prepared/cleaned and appropriate flux added. 2.5. All preparation activities are carried out according to a standard that meets industry regulations/guidelines, workplace health and safety (WHS) legislation, statutory legislation and enterprise procedures/policies.
3. Carry out soft soldering of components/materials	3.1. Soft soldering is completed without causing damage to any vehicle or component. 3.2. Correct information is accessed and interpreted from appropriate manufacturer's specifications. 3.3. Soldering joint is tested prior to placing into service. 3.4. Soldering activities are carried out according to a standard that meets industry regulations/guidelines, WHS legislation, statutory legislation and enterprise policy/procedures.
4. Clean up work area	4.1. Material that can be reused is collected and stored.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
and maintain equipment	<p>4.2. Waste and scrap is removed following workplace procedures.</p> <p>4.3. Equipment and work area are cleaned and inspected for serviceable conditions in accordance with workplace procedures.</p> <p>4.4. Unserviceable equipment is tagged and faults identified in accordance with workplace.</p> <p>4.5. Operator maintenance is completed in accordance with manufacturer specifications and site procedures.</p> <p>4.6. Tooling is maintained in accordance with workplace procedures.</p>

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

#### Required skills

Required skills include:

- reading and interpreting job specifications
- using tools and equipment safely
- accessing relevant workplace information
- maintaining a clean work environment

#### Required knowledge

Required knowledge includes:

- WHS regulations/requirements
- soldering procedures
- fluxes and their application
- types of material that can be soldered
- personal safety requirements
- equipment safety requirements
- planing of soft soldering processes and techniques
- workplace safety policies and procedures
- workplace guidelines regarding acceptable tolerance levels to be considered as per job sheet and manufacturer's specification
- procedures for reporting faults and material defects

## Evidence Guide

<b>EVIDENCE GUIDE</b>	
<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>	
<b>Overview of assessment</b>	
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>Assessors must be satisfied that the candidate can competently and consistently:</p> <ul style="list-style-type: none"> <li>• interpret work order and locate and apply relevant information</li> <li>• apply safe handling requirements for equipment, products and materials, including use of personal protective equipment</li> <li>• read and interpret communication procedural information from job sheets to prepare for work</li> <li>• identify materials used in the work process</li> <li>• follow work instructions, operating procedures and inspection processes to:               <ul style="list-style-type: none"> <li>• minimise the risk of injury to self or others</li> <li>• prevent damage and wastage of goods, equipment and products</li> <li>• maintain required production output and product quality</li> </ul> </li> <li>• identify, set up, operate and maintain heating equipment, hand tools, lifting and measuring equipment.</li> </ul>
<b>Context of, and specific resources for assessment</b>	<ul style="list-style-type: none"> <li>• The underpinning knowledge and skills may be assessed on or off the job.</li> <li>• The assessment of practical skills must take place only after a period of supervised practice and repetitive experience. If workplace conditions are not available, assessment in simulated workplace conditions is acceptable.</li> <li>• The prescribed outcome must be able to be achieved without direct supervision.</li> <li>• The competency should be assessed within the context of the qualification being sought.</li> <li>• Access to vehicle and manufacturer specifications as identified in the Range Statement, standard operating procedures.</li> </ul>

<b>EVIDENCE GUIDE</b>	
<b>Method of assessment</b>	<ul style="list-style-type: none"> <li>• Assessment methods must confirm consistency of performance over time and in a range of workplace relevant contexts.</li> <li>• Assessment should be by direct observation of tasks, questioning on underpinning knowledge and achievement of the soft soldering task outcomes.</li> <li>• Assessment should be conducted over time and may be in conjunction with assessment of other units of competency.</li> <li>• Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role.</li> </ul>
<b>Guidance information for assessment</b>	

## Range Statement

<b>RANGE STATEMENT</b>	
<p>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.</p>	
<b>Methods</b>	<p>Methods include:</p> <ul style="list-style-type: none"> <li>• application of soft solder to radiation applications/cooling system repairs and fuel tanks</li> </ul>
<b>Work practices</b>	<p>Work practices must abide by workplace health and safety requirements, and include:</p> <ul style="list-style-type: none"> <li>• WHS legislation</li> <li>• material safety management systems</li> <li>• hazardous substances and dangerous goods code</li> <li>• local safe operating procedures</li> <li>• Australian Design Rules regulations</li> </ul>
<b>Resources</b>	<p>Resources may include:</p>



<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>• hand tools, various fluxes, different types of soft solder</li> <li>• power tools, gas</li> <li>• soldering equipment including electric and flame heated irons, gas fired torches</li> <li>• cleaning components, heating, tinning and/or soldering</li> </ul>
<b>Personal protective equipment</b>	Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices
<b>Information/documents</b>	<p>Sources of information/documents may include:</p> <ul style="list-style-type: none"> <li>• workplace procedures relating to the use of tools and equipment</li> <li>• work instructions, including: <ul style="list-style-type: none"> <li>• job sheets</li> <li>• vehicle manufacturer's specifications</li> <li>• enterprise operating procedures</li> <li>• component manufacture specifications</li> <li>• customer requirements</li> </ul> </li> <li>• workplace procedures relating to reporting and communication</li> <li>• manufacturer specifications and operational procedures</li> </ul>

## Unit Sector(s)

<b>Unit sector</b>	Mechanical Miscellaneous
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## Co-requisite units

Not applicable.

## Competency field

<b>Competency field</b>	Technical - Welding, Grinding, Machining and Soldering
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