



Australian Government

AURTTW001 Carry out soft soldering techniques

Release: 1

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Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to carry out soft soldering of vehicle components. It involves preparing for the task, carrying out soft soldering procedures, performing post-repair testing, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The components to be soft soldered include ferrous or non-ferrous materials in vehicles from all sectors of the industry, including vehicle radiators or fuel tanks.

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

Competency Field

Mechanical Miscellaneous

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 and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to carry out soft soldering	1.1 Job requirements are determined from workplace instructions 1.2 Soft soldering procedures and information are sourced and interpreted 1.3 Repair options are analysed and those most appropriate to the circumstances are selected

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.
	1.4 Hazards associated with the work are identified and risks are managed 1.5 Materials, tools and equipment are selected and checked for serviceability 1.6 Personal protective equipment (PPE) is chosen and prepared according to workplace procedures and safety requirements 1.7 Components and materials to be soft soldered are cleaned and prepared according to workplace and safety requirements
2. Carry out soft soldering	2.1 Soldering is carried out using correct and appropriate techniques, including appropriate use of flux, according to manufacturer specifications, workplace procedures, and <i>safety and environmental requirements</i> , and without causing damage to components, systems or equipment 2.2 Soldered joint is tested using appropriate techniques and equipment to ensure compliance with manufacturer specifications
3. Complete work processes	3.1 Final inspection is made to ensure work is to workplace expectations and component or 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 safe operating procedures for soft soldering equipment from workplace and manufacturer literature - interpret information from manufacturer and workshop literature when seeking component specifications.

Skills	Description
Writing skills to:	legibly and accurately fill out workplace documentation when recording parts and material used.
Oral communication skills to:	clarify instructions.
Numeracy skills to:	measure components and use basic mathematical operations 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.

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: - cleaning and heating equipment - corrosive fluxes - volatile liquids and fumes - environmental requirements, including trapping, storing and disposing of waste produced during soft soldering process.
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Unit Mapping Information

Equivalent to AURTTW2001 Carry out soft soldering procedures

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 AURTTW001 Carry out soft soldering techniques

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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 soft soldering to repair:
 - a radiator or fuel tank using a soldering iron
 - a radiator using a direct flame.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to soft soldering, including procedures for working with:
 - cleaning and heating equipment
 - corrosive fluxes
 - volatile liquids and fumes
- environmental requirements, including procedures for trapping, storing and disposing of waste produced during soft soldering process
- soft soldering procedures, including:
 - component cleaning and preparation
 - types and applications of fluxes
 - methods of applying heat, including:
 - soldering irons
 - direct flame
- soft soldering testing procedures, including pressure 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 soft soldering work they have completed, 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
- components as specified in the performance evidence requiring soft soldering repair or assembly
- tools, equipment and materials appropriate for soft soldering components, including:
 - required fluxes
 - required heating equipment, including:
 - soldering iron
 - direct flame equipment.

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