



**Australian Government**

# **MEMPE003A Use oxy-acetylene and soldering equipment**

**Release 1**

# MEMPE003A Use oxy-acetylene and soldering equipment

## Modification History

New unit - Release 1

## Unit Descriptor

This unit of competency covers the use of an oxy-acetylene torch to cut low carbon/mild steels and to heat the steel to enable bending. It also covers basic silver soldering and brazing.

The settings for the oxy-acetylene and heating equipment as well as the materials will be supplied to the learner. No assembly of the oxy-acetylene hoses and gauges will be required.

## Application of the Unit

This unit is designed for use in a pre-employment skills introduction program and is suitable for use in institutional-based vocational programs. Skills development will take place under direct supervision.

This unit is not to be used in a traineeship or apprenticeship training program or associated qualifications. It is only to be used in pre-employment programs and carries no credit towards apprenticeship/trade and other qualification types in manufacturing and engineering.

This unit should be integrated with the work in the project unit *MEMPE006A Undertake a basic engineering project*, and skills developed when required by the project.

## Licensing/Regulatory Information

Not applicable.

## Pre-Requisites

Not applicable.

## Employability Skills Information

This unit contains employability skills.

## 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.

## Elements and Performance Criteria

1	Identify cutting and heating requirements	1.1	Identify cutting and <i>heating requirements</i> in consultation with an instructor/teacher/trainer
		1.2	Identify location of heat application in accordance with job requirements
		1.3	Confirm application of heat locations with instructor
2	Perform cutting and heating	2.1	Use and wear appropriate personal protective equipment
		2.2	Start equipment following given instructions
		2.3	Set equipment following given instructions
		2.4	Cut and heat materials to pre-determined specifications
		2.5	Follow safe working practices
		2.6	Store and/or dispose of work materials as instructed
3	Identify silver soldering/brazing requirements	3.1	Identify silver soldering/brazing requirements in consultation with an instructor/teacher/trainer
		3.2	Identify location of silver soldering/brazing in accordance with job requirements
		3.3	Confirm silver soldering/brazing locations with

instructor

- |   |                                      |     |                                                                                                            |
|---|--------------------------------------|-----|------------------------------------------------------------------------------------------------------------|
| 4 | Prepare for silver soldering/brazing | 4.1 | Clean and prepare low and mild carbon steel and copper, or similar, ready for silver soldering and brazing |
|   |                                      | 4.2 | Set up heating equipment according to given instructions                                                   |
| 5 | Perform silver soldering and brazing | 5.1 | Use and wear appropriate personal protective equipment.                                                    |
|   |                                      | 5.2 | Apply <i>safe silver soldering and brazing practices</i>                                                   |
|   |                                      | 5.3 | Silver solder and braze materials to job requirements                                                      |
|   |                                      | 5.4 | Clean welds safely                                                                                         |
|   |                                      | 5.5 | Store and/or dispose of work materials as instructed                                                       |
| 6 | Complete work requirements           | 6.1 | Clear work area of waste and clean according to requirements                                               |
|   |                                      | 6.2 | Maintain and/or store machines, tools and equipment according to instructions                              |

## Required Skills and Knowledge

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

### Required skills

Required skills include:

- preparing materials
- setting up oxy-acetylene/heating equipment according to given instructions
- using oxy-acetylene equipment to heat, braze and cut metal
- silver soldering
- reading and interpreting routine information on written job instructions
- using measuring skills as required
- applying safe working practices
- using and applying personal protective equipment

### Required knowledge

Required knowledge includes:

- safe equipment operation practices
- material and equipment preparation requirements
- basic marking out techniques
- use and care of measuring tools
- heating and cutting processes
- post-heating and cutting treatments
- safe working practices
- use and application of personal protective equipment

## 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

<p><b>Overview of assessment</b></p>	<p>A person who demonstrates competency in this unit must be able to prepare materials and use oxy-acetylene and soldering equipment as instructed.</p>
<p><b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b></p>	<p>Assessors must be satisfied that the candidate can</p> <ul style="list-style-type: none"> <li>• work safely</li> <li>• prepare materials</li> <li>• set oxy-acetylene/heating equipment according to given instructions</li> <li>• use oxy-acetylene equipment to heat, braze and cut metal</li> <li>• silver solder</li> <li>• read and interpret routine information on written job instructions</li> <li>• use measuring equipment as required</li> <li>• clean and store equipment as instructed.</li> </ul>
<p><b>Context of and specific resources for assessment</b></p>	<ul style="list-style-type: none"> <li>• This unit must be assessed in a learning institution.</li> <li>• Assessment must cover the successful use of oxy-acetylene and soldering equipment.</li> <li>• The skills covered by this unit would be demonstrated by an individual working alone under direct supervision.</li> <li>• The assessment environment should not disadvantage the candidate.</li> <li>• This unit may be assessed in conjunction with any other units addressing the safety, quality, communication, hand tools, machine operation, recording and reporting associated with using oxy-acetylene and soldering equipment.</li> </ul>
<p><b>Method of assessment</b></p>	<ul style="list-style-type: none"> <li>• Assessment must satisfy the endorsed Assessment Guidelines of the MEM05 Metal and Engineering Training Package.</li> <li>• Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure correct interpretation and</li> </ul>

	<p>application.</p> <ul style="list-style-type: none"><li>• Assessment must confirm a reasonable inference that competency is not only able to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.</li><li>• Assessment should be in conjunction with assessment of the project unit and other units integrated into the project.</li></ul>
<b>Guidance information for assessment</b>	<p>Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.</p>

## 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>Heating requirements</b>	Heating requirements may include the use of but are not limited heating equipment such as: <ul style="list-style-type: none"> <li>• oxy-acetylene equipment</li> <li>• LP gas equipment</li> <li>• electrically heated equipment/soldering irons</li> </ul>
<b>Safe silver soldering and brazing practices</b>	Safe silver soldering and brazing practices include but are not limited to ensuring the solder being used has no known health risks.

## Unit Sector(s)

**Competency field** Pre-employment

**Unit sector**

## Custom Content Section

Not applicable.