



Australian Government

MEMPE002A Use electric welding machines

Release 1

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Modification History

New unit - Release 1

Unit Descriptor

The unit of competency covers the use of manual metal arc, gas metal arc and gas tungsten arc welding machines depending on their availability in the learning institution.

The welding is not required to meet any Australian Standard. Fillet and butt welds would typically be performed on low carbon/mild steels and aluminium if required. The basic settings for the welding machine and the welding materials will be supplied to the learner.

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 weld requirements	1.1	Identify <i>weld requirements</i> in consultation with an instructor/teacher/trainer
		1.2	Identify which <i>type of welding</i> is suitable for the job
		1.3	Identify location of welds in accordance with job requirements
		1.4	Confirm weld locations with instructor
2	Prepare for welding	2.1	Clean and prepare low and mild carbon steel or similar ready for welding
		2.2	Set up welding equipment according to given instructions
3	Perform welding	3.1	Use and wear appropriate personal protective equipment
		3.2	Follow safe welding practices
		3.3	Weld materials to job requirements
		3.4	Clean welds safely
		3.5	Store completed work as instructed

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| 4 | Complete work requirements | 4.1 | Clear work area of waste and clean according to requirements |
| | | 4.2 | 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 welding equipment according to given instructions
- using electric welding machines to weld metal pieces together
- reading and interpreting routine information on written job instructions
- using measuring skills as required
- applying safe working and welding practices
- using and applying personal protective equipment

Required knowledge

Required knowledge includes:

- safe machine operation procedures
- material and equipment preparation requirements
- basic marking out techniques
- use and care of measuring tools
- behaviour of metals under heat
- welding processes and properties
- post-welding treatments
- safe working and welding 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.

Overview of assessment	A person who demonstrates competency in this unit must be able to prepare welding materials and equipment and weld metal materials.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can: • work safely • prepare materials • set welding equipment according to given instructions • use electric welding machines to weld metal pieces together • read and interpret routine information on written job instructions • use measuring equipment as required • clean and store equipment as instructed.
Context of and specific resources for assessment	• This unit must be assessed in a learning institution. • Assessment must cover the successful use of one or more electric welding machines. • The skills covered by this unit would be demonstrated by an individual working alone under direct supervision. • The assessment environment should not disadvantage the candidate. • 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 electric welding machines.
Method of assessment	• Assessment must satisfy the endorsed Assessment Guidelines of the MEM05 Metal and Engineering Training Package. • Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure correct interpretation and application.

	• 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. • Assessment should be in conjunction with assessment of the project unit and other units integrated into the project.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.

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.

Weld requirements	Weld requirements may be identified from, but are not limited to: • drawings • sketches • job instructions • schematics • diagrams • technical manuals
Type of welding	Welding involves the use of electric welding machines and may include any or all of the following welding processes: • manual metal arc welding • gas metal arc welding • tungsten metal arc welding

Unit Sector(s)

Competency field Pre-employment

Unit sector

Custom Content Section

Not applicable.