



Australian Government

Department of Education, Employment and Workplace Relations

MEM05011C Assemble fabricated components

Release: 1

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Modification History

There are no notes for this unit.

Unit Descriptor

This unit covers assembling general fabricated components in plate, pipe and section or sheet.

Application of the Unit

Typical applications are transitions, pipeworks and structural fabrication, ductwork, general jobbing work, fired and unfired pressure vessels.

Work may be undertaken in plant or on-site, and as part of a team in many instances in cooperation with those with rigging/dogging skills where necessary.

Licensing/Regulatory Information

Pre-Requisites

Path 1

MEM05005B Carry out mechanical cutting

MEM05007C Perform manual heating and thermal cutting

MEM05012C Perform routine manual metal arc welding

MEM05015C Weld using manual metal arc welding process

MEM05051A Select welding processes

MEM05052A Apply safe welding practices

MEM09002B Interpret technical drawing

MEM12023A Perform engineering measurements

MEM18001C Use hand tools

MEM18002B Use power tools/hand held operations

Path 2

MEM05005B Carry out mechanical cutting

MEM05007C Perform manual heating and thermal cutting

MEM05019C Weld using gas tungsten arc welding process

MEM05049B Perform routine gas tungsten arc welding

MEM05051A Select welding processes

MEM05052A Apply safe welding practices

MEM09002B Interpret technical drawing

MEM12023A Perform engineering measurements

MEM18001C Use hand tools

MEM18002B Use power tools/hand held operations

Path 3

MEM05004C Perform routine oxy acetylene welding

MEM05005B Carry out mechanical cutting

MEM05007C Perform manual heating and thermal cutting

MEM05022C Perform advanced welding

	using oxy acetylene welding process
	MEM05051A Select welding processes
	MEM05052A Apply safe welding practices
	MEM09002B Interpret technical drawing
	MEM12023A Perform engineering measurements
	MEM18001C Use hand tools
	MEM18002B Use power tools/hand held operations
Path 4	MEM05005B Carry out mechanical cutting
	MEM05007C Perform manual heating and thermal cutting
	MEM05017C Weld using gas metal arc welding process
	MEM05050B Perform routine gas metal arc welding
	MEM05051A Select welding processes
	MEM05052A Apply safe welding practices
	MEM09002B Interpret technical drawing
	MEM12023A Perform engineering measurements
	MEM18001C Use hand tools
	MEM18002B Use power tools/hand held operations

Employability Skills Information

Elements and Performance Criteria Pre-Content

Elements are the essential outcomes of the unit of competency.

Together, performance criteria specify the requirements for competent performance. Text in *italics* is explained in the range statement following.

Elements and Performance Criteria

Elements and Performance Criteria

Element	Performance Criteria
1 Identify assembly method and construct jigs if required	1.1 Method is identified and jigs are constructed from engineering drawings or according to workshop practice. 1.2 Distortion prevention/control techniques are correctly applied.
2 Ensure all components for assembly are available	2.1 All components are checked against drawings and material list.
3 Select tools and fixtures for fabrication assembly	3.1 Most appropriate equipment is selected.
4 Assemble fabricated components	4.1 Material and/or fabricated components are correctly positioned. 4.2 Jigs, fixtures, tools and measuring equipment are correctly adjusted and applied. 4.3 Datum line is correctly determined if necessary. 4.4 Assembled components are checked for position including squareness, level and alignment to specification. 4.5 Fixing/joining techniques are applied as necessary according to standard operating procedures. 4.6 Assembly is checked for compliance with drawing. 4.7 Codes/standards are interpreted and applied.

Required Skills and Knowledge

Evidence Guide

The evidence guide specifies the evidence required to demonstrate achievement in the unit of competency as a whole. It must be read in conjunction with the unit descriptor, performance criteria, range statement and the assessment guidelines for the Metal and Engineering Training Package

Overview of assessment requirements

A person who demonstrates competency in this unit must be able to assemble general fabricated components in plate, pipe and section or sheet. During assessment the individual will: demonstrate safe working practices at all times; communicate information about processes, events or tasks being undertaken to ensure a safe and efficient working environment; take responsibility for the quality of their own work; plan tasks in all situations and review task requirements as appropriate; perform all tasks in accordance with standard operating procedures; perform all tasks to specification; and use accepted engineering techniques, practices, processes and workplace procedures. Tasks involved will be completed within reasonable timeframes relating to typical workplace activities.

Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Context of assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.

Interdependent assessment

This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with the

assembly of fabricated components or other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Consistency of performance

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Required skills

Look for evidence that confirms skills in:

constructing jigs where appropriate

applying distortion prevention/control techniques

positioning components in accordance with drawing/specifications

using jigs, fixtures, tools and equipment

correctly marking the datum line

checking the position of all assembled components visually and dimensionally

using appropriate fixing/joining techniques

Required knowledge

Look for evidence that confirms knowledge of:

methods for assembly of fabricated components

jigs construction

effects of distortion of fabricated components

distortion prevention techniques

drawing and material list

characteristics of relevant tools and equipment squareness, level, alignment

function of datum lines

variety of fixing/joining techniques

defects associated with the assembly of fabricated components

methods of rectification of defects by rework or adjustment

requirements of relevant codes/standards

Range Statement

The range statement provides information about the context in which the unit of competency is carried out. The variables and scope cater for different work requirements, work practices and knowledge between States, Territories and the Commonwealth, and between organisations and workplaces. The range statement relates to the unit as a whole and provides a focus for assessment. Text in **italics** in the performance criteria is explained here.

The following variables may be present and may include, but are not limited to, the examples listed under the scope. All work is undertaken to relevant legislative requirements, where applicable

Variable	Scope
Distortion prevention/control techniques	Jigs, fixtures, heat, clamps, etc.
Components	General fabricated components in either plate, pipe and section or sheet
Alignment	Typical structural alignment and levelling using planes and line straight edges, spirit levels, line levels, squares, etc.
Fixing/joining techniques	Welding, adhesives, fasteners, rivets, etc.
Codes/standards	All work carried out in accordance with legislative and regulatory requirements

Unit Sector(s)

Related units

This unit does not cover the skills for the assembly of fabricated engineering components; these skills are covered by the Unit MEM18006B (Repair and fit engineering components) Assembly using pre-constructed jigs is covered by Unit MEM03001B (Perform manual production assembly) or Unit MEM03003B (Perform sheet and plate assembly). Where welds are required to meet legislative or regulatory requirements, then appropriate welding units should also be selected. Standards for lifting equipment are defined elsewhere.

Unit Weight

8

Competency field

Fabrication

Band

A