Australian Government

MEM18014 Manufacture press tools and gauges

Release: 2

MEM18014 Manufacture press tools and gauges

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM18014 Manufacture press tools and gauges (Release 1).

Release 1. Supersedes and is equivalent to MEM18014B Manufacture press tools and gauges.

Application

This unit of competency defines the skills and knowledge required to manufacture and trial press tools and gauges.

Manufacture of the tooling includes preparing to manufacture including assembly of the tooling components and trialling all types of production tooling.

Where brazing skills are required unit MEM05006 Perform brazing and/or silver soldering should also be selected.

Where manufacture of cavity dies is required unit MEM18097 Manufacture cavity dies should also be selected.

This unit does not cover any welding that may be associated with manufacturing press tools and gauges. If welding skills are required, appropriate welding units must also be selected.

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

Band: A

Unit Weight: 8

Pre-requisite Unit

MEM06007	Perform basic incidental heat/quenching, tempering and annealing
MEM07005	Perform general machining
MEM07006	Perform lathe operations
MEM07007	Perform milling operations
MEM07008	Perform grinding operations
MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12003	Perform precision mechanical measurement

MEM12006	Mark off/out (general engineering)
MEM12023	Perform engineering measurements
MEM12024	Perform computations
MEM12026	Perform advanced trade calculations in a manufacturing, engineering or related environment
MEM13015	Work safely and effectively in manufacturing and engineering
MEM14006	Plan work activities
MEM16006	Organise and communicate information
MEM18001	Use hand tools
MEM18002	Use power tools/hand held operations
MEM18003	Use tools for precision work
MEM18006	Perform precision fitting of engineering components
MEM18015	Maintain tools and dies
MEM18055	Dismantle, replace and assemble engineering components

Competency Field

Maintenance and diagnostics

Elements and Performance Criteria

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.
1	**Determine job requirements**	1.1 Follow standard operating procedures (SOPs)
		1.2 Comply with work health and safety (WHS) requirements at all times
		1.3 Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4 Identify job requirements from specifications, drawings, prints, job sheets, work instructions or sample component

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
2	**Prepare to manufacture tool or gauge**	2.1	Plan and develop tooling type and design with reference to customer's specifications (written or verbal) for numbers, finish, quality and material
		2.2	Assess production machine to be used to produce components and consider in tooling design
		2.3	Determine selected production machine mounting requirements to ensure any special or additional provisions are incorporated in tooling design
3	**Manufacture tooling**	3.1	Select and obtain appropriate materials to meet tooling requirements for strength, durability, component finish, heat treatment qualities, where necessary, and account for materials availability
		3.2	Test selected material for hardness, as appropriate to aid selection of machine tools, hand tools and hand held power tools to be used to fashion or shape tooling components
		3.3	Develop a plan to sequence and stage manufacturing process, including establishing datum, mark out, rough out (machine or fashion), stress relieve/heat treat, finish size, fashion and fit, and assemble componentry
4	**Perform machining operations**	4.1	Select appropriate machines and machining process from a range of standard tool room machines to shape/produce tooling components to specifications
5	**Use hand and hand held power tools**	5.1	Select a range of hand and hand held power tools and use to fashion/manufacture tooling components to specification
		5.2	Produce components sample or section for testing, where practical

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
6 **Assemble tooling components and trial tooling**	6.1 Check components and fit/assemble to specifications using acceptable tool making techniques and procedures
	6.2 Check first-off component with precision instruments against specification
	6.3 Modify tooling to produce components to specification, as necessary
	6.4 Re-trial modified tooling and produce component
	6.5 Verify compliance to specification and report according to SOPs
	6.6 Record all deviations or modifications to original tooling design, prints or plans and report

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different 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.

Tooling includes one (1) or more of the following:	• press tools • jigs • fixtures • gauges • special purpose machines and equipment
Standard tool room machines include one (1) or more of the	• lathes • mills • copy/duplicator • grinders

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following:

- electrical discharge machining (EDM) and wire cut equipment
- precision measurement machines and equipment

Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM18014 Manufacture press tools and gauges (Release 1).

Release 1. Supersedes and is equivalent to MEM18014B Manufacture press tools and gauges.

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2