



Australian Government

MEM07010 Perform tool and cutter grinding operations

Release: 2

MEM07010 Perform tool and cutter grinding operations

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM07010 Perform tool and cutter grinding operations (Release 1).

Release 1. Supersedes and is equivalent to MEM07010B Perform tool and cutter grinding operations.

Application

This unit of competency defines the skills and knowledge required to perform a range of tool and cutter grinding operations, including the use of precision measuring instruments.

Where the selection and use of power tools/hand held operations is required unit MEM18002 Use power tools/hand held operations should also be selected.

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

Band: A

Unit Weight: 4

Pre-requisite Unit

MEM07005	Perform general machining
MEM07008	Perform grinding operations
MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12003	Perform precision mechanical measurement
MEM12023	Perform engineering measurements
MEM12024	Perform computations
MEM13015	Work safely and effectively in manufacturing and engineering
MEM14006	Plan work activities
MEM16006	Organise and communicate information
MEM18001	Use hand tools

Competency Field

Machine and process operations

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, job sheets or work instructions |
| | | | |
| 2 | Prepare to undertake work | 2.1 | Determine sequence of operations |
| | | 2.2 | Check machine guards, coolant and dust extraction devices |
| | | 2.3 | Select, balance and dress tool and cutter grinding wheels based on shape and grit/bond composition |
| | | 2.4 | Select accessories to facilitate production to specification |
| | | | |
| 3 | Perform tool and cutter grinding | 3.1 | Operate universal tool and cutter grinding machines to sharpen and shape tools and cutters |
| | | 3.2 | Carry out parallel internal and/or external grinding |
| | | 3.3 | Carry out internal and/or external taper grinding to drawing specifications |
| | | 3.4 | Check components for conformance to specification using appropriate techniques, tools and equipment |

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, accessibility of the item, and local industry and regional contexts) are included.

- Tools and cutters include one (1) or more of the following:**
- side and face cutters
 - end mill
 - form relieved milling cutters
 - flat
 - vee and circular form tools and hobs
 - slitting saws
 - drills

Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM07010 Perform tool and cutter grinding operations (Release 1).

Release 1. Supersedes and is equivalent to MEM07010B Perform tool and cutter grinding operations.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM07010 Perform tool and cutter grinding operations

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM07010 Perform tool and cutter grinding operations (Release 1).

Release 1. Supersedes and is equivalent to MEM07010B Perform tool and cutter grinding operations.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting drawings and job specifications to determine required tool and cutting grinding requirements
- selecting suitable equipment and tools to carry out the cutting and grinding operation
- operating the cutting and grinding machines to ensure the job is completed to specifications using appropriate testing and measuring techniques.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- reasons for selecting the chosen sequence of cutting and grinding operations
- function of coolant and dust extraction devices
- criteria for grinding wheel selection, including:
 - grain size of abrasive particles
 - grade or strength of bond
 - bond material
- grinding wheel dressing procedures and wheel dressing tools
- sources of data on tool geometry for the full range of tools and cutters, including the terminology used to describe the tool geometry
- procedures to be followed when parallel grinding on a tool and cutter grinder
- procedures to be followed when grinding tapers on a tool and cutter grinder
- tools, techniques and equipment used to check ground components for conformance with the following specifications:
 - dimensions and tolerances
 - geometry and tolerances

- surface finish.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing tool and cutter grinding operations at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015 or its replacement* and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring State as the case requires
- Assessment must occur in a functioning workplace. Where assessment in the workplace would be unsafe, impractical or threatens the environment, assessment must occur in a sufficiently rigorous simulated environment that reflects the circumstances that would be experienced in a functioning workplace. Assessment must cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>