



Australian Government

MEM07008 Perform grinding operations

Release: 2

MEM07008 Perform grinding operations

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM07008 Perform grinding operations (Release 1).

Release 1. Supersedes and is equivalent to MEM07008D Perform grinding operations.

Application

This unit of competency has been developed for Engineering Tradesperson - Mechanical apprenticeship training and the recognition of trad- level skills in performing grinding operations and checking finished components for conformance to specifications.

Skills covered by this unit are generally applied in occupational and work situations associated with trade-level fitting and machining work.

Where the selection and use of precision mechanical measurement is required unit MEM12003 Perform precision mechanical measurement should also be selected.

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
MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
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.

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|---|---|-----|--|
| 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 to meet job specifications |
| | | 2.2 | Select and apply appropriate holding devices |
| | | 2.3 | Check machine guards, coolant and dust extraction devices |
| 3 | Select grinding wheels and accessories | 3.1 | Select and dress wheels based on knowledge of grinding wheel structure and application |
| | | 3.2 | Select accessories to facilitate production to job specifications |
| 4 | Perform grinding operations | 4.1 | Set up grinding machine and adjust in accordance with defined procedures |
| | | 4.2 | Ensure work is securely held to avoid damage to product, and meet safety requirements |
| | | 4.3 | Perform grinding operations to specifications |

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

5 Check components

5.1 Check components for compliance with specifications

5.2 Rectify non-compliant product in accordance with SOPs

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.

Grinding machines include one (1) or more of the following:

- surface
- cylindrical
- centreless

Specifications include one (1) or more of the following:

- dimensions and tolerances
- geometry and tolerances
- surface finish

Holding devices include one (1) or more of the following:

- vices
- clamps
- magnetic chucks
- face plates
- collets
- $\frac{3}{4}$ jaw chuck

Wheels include one (1) or more of the following:

- shape
- grit/bond composition

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.

Balanced includes the following: • static and dynamic balancing

Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM07008 Perform grinding operations (Release 1).

Release 1. Supersedes and is equivalent to MEM07008D Perform 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 MEM07008 Perform grinding operations

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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
- determining requirements for grinding job, including quantity, material, measurements and tolerances
- planning a job, including identifying required measuring instruments and equipment, safety equipment, holding devices, grinding wheels, accessories and sequence of operations
- identifying guard, coolant and dust extraction requirements and checking equipment and coolant before grinding operation
- securely hold job for grinding operations
- performing grinding operation to specifications
- checking components for conformance to specifications
- rectifying non-compliant product.

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 grinding operations
- application of a range of holding devices/accessories
- reasons for selecting specific work holding devices, tools, techniques and equipment
- coolant selection and function
- standard grinding wheel shapes
- range of abrasive materials used in grinding wheels
- factors impacting grinding wheel selection, including:
 - grain size of abrasive particles
 - grade or strength of bond
 - bond material

- grinding wheel dressing tools and their application
- internal/external cylindrical grinding process
- principles of effective clamping
- grinding operations and procedures
- function of grinding accessories
- tools, techniques and equipment for checking components for conformance to specifications and rectifying non-compliant components.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing 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/territory 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.

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