



Australian Government

MEM07029 Perform routine sharpening and maintenance of production tools and cutters

Release: 1

MEM07029 Perform routine sharpening and maintenance of production tools and cutters

Modification History

Release 1. Supersedes and is equivalent to MEM07029B Perform routine sharpening/maintenance of production tools and cutters

Application

This unit of competency defines the skills and knowledge required to prepare, grind, check and reassemble production tooling and applies to the routine sharpening and maintenance of production tools/cutters in a production machining environment.

Where machine setting is required unit MEM07003 Perform routine machine setting should also be selected.

Where more advanced tool and cutter grinding operations is required unit MEM07010 Perform tool and cutter grinding operations should be selected.

Where the interpretation of technical drawings is required unit MEM09002 Interpret technical drawing 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.

This unit should not be selected when unit MEM07010 Perform tool and cutter grinding operations has already been selected.

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

Band: A

Unit Weight: 4

Pre-requisite Unit

MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM13015	Work safely and effectively in manufacturing and engineering
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, job sheets or work instructions
2	Prepare for tool and cutter grinding	2.1	Disassemble production tooling, as required to facilitate sharpening in accordance with SOPs
		2.2	Select tool and cutter grinding wheels, balance and dress in accordance with job instructions
		2.3	Mount fixtures or locating tools/cutters to be sharpened in accordance with procedures
3	Set up machine and perform tool and cutter grinding	3.1	Mount tools and cutters to be sharpened in predetermined fixtures
		3.2	Sharpen tools and cutters in accordance with defined procedures
4	Check tools/cutters for conformance to specification	4.1	Inspect, check and measure tools/cutters for conformance to specifications
		4.2	Inspect, check and measure assembled tooling for conformance to specifications
		4.3	Reassemble production tooling and install inserts in accordance with job instructions

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.

Production tooling includes one (1) or more of the following:

- inserted boring bars
- face cutters
- gear cutters
- grinding machines and accessories

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

- cup, dish and diamond
- grain size of abrasive particles
- grade or strength of bond
- structure of grain spacing

Fixtures/equipment include one (1) or more of the following:

- clamps
- vices
- magnetic chucks
- indicator pawls

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM07029B Perform routine sharpening/maintenance of production tools and cutters

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 MEM07029 Perform routine sharpening and maintenance of production tools and cutters

Modification History

Release 1. Supersedes and is equivalent to MEM07029B Perform routine sharpening/maintenance of production tools and cutters

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 tool and cutter sharpening and maintenance job instructions
- selecting and mounting appropriate grinding equipment and cutters to perform the sharpening task
- undertaking the sharpening and maintenance of tools and cutters checking that the finished work meets specifications
- reassembling the sharpened/maintained tooling and inspecting for conformance to specifications.

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)
- sequence of tooling sharpening and maintenance operations to be performed
- function of coolant and dust extraction devices
- standard grinding wheel shapes
- range of abrasive materials used in grinding wheels
- effect of the following grinding wheel features on wheel selection and application:
 - grain size of abrasive particles
 - grade or strength of bond material
 - structure of grain spacing and dressing processes
- function and application of grinding accessories used for routine sharpening of production tools and cutters
- preparation requirements for tool maintenance
- requirements for checking:
 - dimensions and tolerances
 - geometry and tolerances
- surface finish specifications.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing routine sharpening and maintenance of production tools and cutters 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
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, 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>