



Australian Government

Department of Education, Employment and Workplace Relations

MEM07029B Perform routine sharpening/maintenance of production tools and cutters

Release: 1

MEM07029B Perform routine sharpening/maintenance of production tools and cutters

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers preparing, grinding, checking and reassembling production tooling.
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Application of the Unit

Application of the unit	<p>This unit applies to the routine sharpening and maintenance of production tools/cutters in a production machining environment. Work is performed to defined procedures using fixtures to locate production tools/cutters for sharpening and maintenance.</p> <p>General off hand grinding/sharpening of tools etc. is covered by Unit MEM18002B (Use power tools/hand held operations).</p> <p>For more advanced tool and cutter grinding operations, see Unit MEM07010B (Perform tool and cutter grinding operations).</p> <p>For machine setting see Unit MEM07003B Perform machine setting (routine)</p> <p>If interpretation of technical drawings is required, Unit MEM09002B Interpret technical drawing should also be selected.</p> <p>This unit should not be selected when Unit MEM07010B (Perform tool and cutter grinding operations) has already been selected.</p> <p>Band: A Unit Weight: 4</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM12023A	Perform engineering measurements
	MEM18001C	Use hand tools

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Obtain job instructions	1.1. Job sheets or equivalent instructions are interpreted correctly and understood.
2. Observe safety precautions	2.1. Machine guards, coolant and dust extraction devices are checked for proper operation in accordance with standard operating procedures. 2.2. Correct safety procedures are observed, and protective clothing and safety glasses are worn.
3. Disassemble production tooling in preparation for sharpening	3.1. Production tooling is disassembled as required to facilitate sharpening in accordance with standard operating procedures.
4. Set up machine	4.1. Tool and cutter grinding wheels are selected, balanced and dressed in accordance with job instructions. 4.2. Fixtures for locating tools/cutters to be sharpened are mounted in accordance with job instructions.
5. Perform tool and cutter grinding	5.1. Tools and cutters to be sharpened are mounted in predetermined fixtures. 5.2. Tools and cutters are sharpened in accordance with defined procedures.
6. Check tools/cutters for conformance to specification	6.1. Tools/cutters are visually inspected and checked, and measured for conformance to specification in accordance with job instructions.
7. Assemble/reassemble production tooling	7.1. Production tooling is reassembled, and inserts are installed in accordance with job instructions. 7.2. Assembled tooling is visually inspected and checked, and measured for conformance to specification in accordance with job instructions.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- reading and interpreting drawings and instructions

REQUIRED SKILLS AND KNOWLEDGE

- planning a sequence of operations
- selecting and using appropriate tools
- entering routine and familiar information on to proforma and standard workplace forms

Required knowledge

Look for evidence that confirms knowledge of:

- sequence of operations to be performed
- function of coolant and dust extraction devices
- hazards associated with tool and cutter grinding operations
- the standard grinding wheel shapes
- range of abrasive materials used in grinding wheels
- the 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 the full range of tool and cutter grinding accessories
- preparation requirements for tool maintenance
- requirements for checking:
 - dimensions and tolerances
 - geometry and tolerances
- surface finish
- use and application of personal protective equipment
- safe work practices and procedures

Evidence Guide

EVIDENCE GUIDE	
<p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
<p>Overview of assessment</p>	<p>A person who demonstrates competency in this unit must be able to prepare, grind, check and reassemble production tooling. Competency in this unit cannot be claimed until all prerequisites have been satisfied.</p>
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>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.</p>
<p>Context of and specific resources for assessment</p>	<p>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.</p> <p>This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with perform routine sharpening/maintenance of production tools and cutters or other units requiring the exercise of the skills and knowledge covered by this unit.</p>
<p>Method of assessment</p>	<p>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.</p>

EVIDENCE GUIDE

Guidance information for assessment	
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Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Production tooling

Production tooling	Inserted boring bars, face cutters, gear cutters, grinding machines and accessories etc.
Grinding wheels	<ul style="list-style-type: none"> • Cup, dish, diamond • Grain size of abrasive particles • Grade or strength of bond • Structure of grain spacing • Grain size of abrasive particles
Fixtures/equipment	Dedicated holding devices e.g. clamps, vices, magnetic chucks, indicator pawls

Grinding wheels

Fixtures/equipment**Unit Sector(s)**

Unit sector	
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Co-requisite units

Co-requisite units	

Competency field

Competency field	Machine and process operations
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