



Australian Government

Department of Education, Employment and Workplace Relations

MEM18055B Dismantle, replace and assemble engineering components

Release: 1

MEM18055B Dismantle, replace and assemble engineering components

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers dismantling and identifying faulty components, selecting replacements, and assembling engineering components into assemblies or sub-assemblies in accordance with standard operating procedures.
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Application of the Unit

Application of the unit	This unit involves dismantling, checking, replacing and assembling engineering components in accordance with standard operating procedures. All specifications are interpreted from manufacturers' manuals, engineering drawings, detailed/technical sketches and associated data sheets. Tasks are undertaken utilising engineering principles, designated procedures, appropriate tools, equipment and safe workshop practices. Work is undertaken autonomously or in a team environment using predetermined standards of quality, safety and workshop procedures. Where fitting techniques and principles are required to assess component condition, and/or modify components to achieve precision fits, unit MEM18006C (Repair and fit engineering components) should also be selected. Where precision mechanical measurement is required, then Unit MEM12003B (Perform precision mechanical measurement) should also be selected. Band: A Unit Weight: 3
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM09002B	Interpret technical drawing
	MEM12023A	Perform engineering measurements
	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations

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. Dismantle engineering components	1.1. Engineering components are inspected and task requirements are analysed. 1.2. Appropriate tools and equipment are selected and component/s are prepared for dismantling. 1.3. Component is dismantled using standard operating procedures, tools and equipment. 1.4. Engineering components are clearly marked to aid reassembly.
2. Identify faulty components	2.1. Specifications for components are obtained from appropriate source and are interpreted and understood. 2.2. Damaged or faulty components are assessed against specifications according to standard operating procedures. 2.3. Faulty components are identified for repair, replacement or adjustment according to standard operating procedures.
3. Select replacement components	3.1. Where applicable, replacement and/or repaired parts are selected for reassembly according to standard operating procedures.
4. Assemble engineering components into assemblies or sub-assemblies	4.1. Appropriate techniques are applied in the preparation, assembly and adjustment of components using fastening equipment and methods which ensure conformance to specifications, operational performance, quality and safety of the completed assembly according to standard operating procedures. 4.2. Correct lubrication, packing, sealing materials are selected and applied correctly in conformance to job specifications. 4.3. Final component assembly is inspected, tested and adjusted as necessary for compliance with operational specifications and returned to use according to standard operating procedures.

Required Skills and Knowledge

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:

- obtaining and interpreting all relevant instructions, standard operating procedures, drawings and specifications
- preparing component for dismantling
- dismantling components using appropriate techniques, tools and equipment
- marking component parts appropriately for identification purposes
- checking components visually and dimensionally for conformance to specification
- where appropriate, marking faulty parts for repair, replacement or adjustment
- selecting and confirming replacement parts to specifications
- obtaining and using all relevant supplier catalogues
- preparing and assembling components using appropriate techniques in accordance with standard operating procedures
- where appropriate, applying lubricants correctly to the assembly in accordance with specifications and standard operating procedures
- where appropriate, applying packing and/or sealing materials in accordance with specifications and standard operating procedures
- inspecting and checking the final assembly for conformance to specification
- where appropriate, returning the final assembly to use

Required knowledge

Look for evidence that confirms knowledge of:

- tasks to be performed in accordance with standard operating procedures
- procedures for dismantling the assembly
- tools and equipment to be used to dismantle the components
- procedures and required equipment for checking components for conformance to specification
- specifications of the components to be replaced
- features and/or dimensions upon which replacement parts are to be selected
- process of identifying replacement parts from "third party" suppliers' catalogues
- procedures for assembling components
- requirements of the assembly in terms of specifications, operational performance, quality and safety
- procedures for lubricating the assembly
- materials
- checks to be undertaken during inspection of the final assembly
- procedures for returning components/assemblies into use
- hazards and control measures associated with dismantling, replacing and

REQUIRED SKILLS AND KNOWLEDGE

- assembling engineering components, including housekeeping
- safe work practices and procedures

Evidence Guide

EVIDENCE GUIDE

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.

Overview of assessment

A person who demonstrates competency in this unit must be able to dismantle, replace and assemble engineering components. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

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.

Context of and specific resources for assessment

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.

This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with dismantling, replacing and assembling engineering components or other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment

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.

EVIDENCE GUIDE**Guidance information for assessment****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.

Engineering components

Includes a range of component parts found in equipment or product assemblies, sub-assemblies, e.g. couplings, universal joints, pumps etc. employing shafts, pre-manufactured bearings and seals, lubricants, fasteners, gaskets etc.

Appropriate tools and equipment

Includes a range of hand and power tools, bearing pullers, special purpose dismantling and assembly tools etc.

Selected

Replacement parts are selected from manufacturers' catalogues, etc.

Appropriate techniques

Are in accordance with standard operating procedures and may include the straightforward removal and replacement of pre-manufactured bearings and seals

Unit Sector(s)**Unit sector**

Co-requisite units

Co-requisite units		

Competency field

Competency field	Maintenance and diagnostics
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