



**Australian Government**

**MEM18007 Maintain and repair  
mechanical drives and mechanical  
transmission assemblies**

**Release: 1**

# **MEM18007 Maintain and repair mechanical drives and mechanical transmission assemblies**

## **Modification History**

Release 1. Supersedes and is equivalent to MEM18007B Maintain and repair mechanical drives and mechanical transmission assemblies

## **Application**

This unit of competency defines the skills and knowledge required to undertake maintenance, diagnose faults and repair drives and transmission assemblies, and undertake final adjustment and commissioning on industrial machinery.

Where levelling and alignment of machines and engineering components is required unit MEM18009 Perform precision levelling and alignment of machines and engineering components should also be selected.

MEM27028 Diagnose and rectify manual transmissions, MEM27014 Diagnose and rectify automatic transmissions and MEM27015 Diagnose and rectify drive line and final drives define the skills and knowledge applicable to mobile plant.

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

**Band: A**

**Unit Weight: 4**

## **Pre-requisite Unit**

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
MEM18002	Use power tools/hand held operations

MEM18003	Use tools for precision work
MEM18006	Perform precision fitting of engineering components
MEM18055	Dismantle, replace and assemble engineering components

## Competency Field

Maintenance and diagnostics

## Elements and Performance Criteria

Elements describe the essential outcomes.

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

<b>1 Determine job requirements</b>	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
<b>2 Undertake maintenance checks of mechanical drives and mechanical transmission components</b>	2.1	Apply principles of mechanical drives, mechanical transmission components and the function of the main parts of the designated mechanical drive/transmission assembly to undertake maintenance checks
	2.2	Check mechanical drive/transmission components for wear, distortion, tensions, misalignment, fatigue, lubrication, slackness, tooth wear, breakages and other related malfunctions using appropriate maintenance principles, techniques, tools and equipment
	2.3	Identify assembly requiring further diagnosis, repair or adjustment and document findings
<b>3 Adjust mechanical drives</b>	3.1	Determine a suitable adjustment method and requirements from manufacturers' instruction sheets,

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.
	<b>and transmission assemblies</b>	standard workshop manuals/procedures or similar means
		3.2 Select adjustment tools and equipment according to the type of assembly being serviced
		3.3 Tension, align, balance or adjust drives/transmission components to manufacturers' /site specifications
		3.4 Check drive/transmission assembly after adjustment for correct operation or identify for further diagnosis or repair
		3.5 Complete service report
		3.6 Action further diagnosis or repair requirements
4	<b>Diagnose faults</b>	4.1 Read service reports and undertake visual and sensory inspection of the drive/transmission assembly
		4.2 Test diagnostic equipment drive/transmission assembly to manufacturers' specifications, where applicable
		4.3 Localise faults at the component level and identify for repair or replacement
		4.4 Analyse fault causes and develop preventative measures to avoid re-occurrence, document and action by appropriate means
		4.5 Action requirements for repair or replacement
5	<b>Repair mechanical drives/ transmission assemblies</b>	5.1 Ascertain task requirements
		5.2 Select tools and equipment according to the type of assembly being serviced
		5.3 Dismantle mechanical drive/transmission using appropriate maintenance principles, techniques, tools, equipment and safe workshop practices
		5.4 Repair serviceable items to manufacturers' specifications and standard workshop practices

Elements describe the essential outcomes.

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

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|---|---|-----|--|
|   |   | 5.5 | Select and obtain standard replaceable items from appropriate resources  |
|   |   | 5.6 | Re-fit component parts to mechanical drive/transmission assembly in accordance with manufacturers'/site specifications |
| 6 | <b>Undertake final adjustment and commissioning</b> | 6.1 | Tension, balance, align or adjust drive/transmission components to suit specifications and operational requirements    |
|   |   | 6.2 | Check drive/transmission assembly after adjustment and operational performance is analysed                             |
|   |   | 6.3 | Commission assembly to specifications  |
|   |   | 6.4 | Complete service report  |

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

**Mechanical drive/transmission components include one (1) or more of the following:**

- worm and worm wheel
- line shafts
- plumber blocks
- pulleys
- sprockets
- belts
- taper bush assemblies
- roller chains

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- chain drives
- mechanical and hydraulic couplings
- compression couplings
- disc type flexible couplings
- spider type
- chain couplings
- universal joints
- bevel gearing
- rack and pinion gearing
- dog toothed clutches
- cone type clutches
- expanding shoe type clutches
- friction/plate type clutches
- centrifugal clutches
- toggle action linkages
- magnetic clutches
- sprag clutches
- band type brakes
- other associated drive components

**Sensory inspection includes one (1) or more of the following:**

- vibration
- heat
- smell
- sound
- sight

## **Unit Mapping Information**

Release 1. Supersedes and is equivalent to MEM18007B Maintain and repair mechanical drives and mechanical transmission assemblies

## **Links**

Companion Volume implementation guides are found in VETNet -

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