



Australian Government

MEM27013 Maintain steering systems

Release: 1

MEM27013 Maintain steering systems

Modification History

Release 1. Supersedes and is equivalent to MEM18041B Maintain steering systems

Application

This unit of competency defines the skills and knowledge required to assess steering system operation, and repair or replace faulty components on steering systems for vehicles, mobile plant and equipment.

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
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM18001	Use hand tools
MEM18002	Use power tools/hand held operations
MEM18055	Dismantle, replace and assemble engineering components

Competency Field

Fixed and mobile plant

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	Assess steering system operation	2.1	Obtain relevant information and interpret prior to any testing
		2.2	Undertake performance tests on primary and/or emergency steering systems in accordance with prescribed procedures
		2.3	Determine and record flows and pressures angles using appropriate test equipment
		2.4	Identify available wheel and axle adjustments and specifications
		2.5	Isolate faults to component level and determine appropriate corrective action
		2.6	Repair or replace faulty components and component parts
		2.7	Apply power steering component functions, adjustment principles, terminology and applications when assessing steering system operation
3	Repair/replace faulty components	3.1	Determine component wear and clearances using appropriate test equipment and manufacturer recommendations
		3.2	Select replacement components using manufacturers' data
		3.3	Remove components and refit using appropriate tools, equipment and techniques

Elements describe the essential outcomes.

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

- 3.4 Undertake wheel and axle adjustments to comply with alignment specifications
- 3.5 Make adjustments to primary and/or emergency steering systems that makes the system compliant with specifications
- 3.6 Record all test and rectification activities

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.

- Steering system includes one (1) or more of the following:**
- manual
 - hydraulically assisted
 - full hydraulic
 - articulated and track type systems, including:
 - hydrostatic
 - clutch and differential steering

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM18041B Maintain steering systems

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 MEM27013 Maintain steering systems

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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
- identifying and interpreting specifications, charts, lists, drawings and other applicable reference documents to maintain steering systems
- checking and testing steering system for compliance to specifications using appropriate tools, test equipment and techniques
- recording all test results and measurements in accordance with SOPs
- measuring steering system components using appropriate tools, equipment and techniques
- undertaking calculations and numerical operations associated with maintaining steering systems
- removing/refitting steering system components and selecting replacement parts using manufacturer catalogues and data
- aligning wheels and axles and adjusting steering system to specifications
- recording/reporting all service/work activities in accordance with SOPs.

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)
- operation of the steering system and its components
- procedures for:
 - testing steering system performance and tests to be undertaken
 - checking components for wear and clearance
 - removing and refitting steering system components and precautions to be taken
 - adjusting the alignment of wheels and axles if available on the equipment
 - recording test and rectification activities
 - adjusting primary and emergency steering systems and the effect this causes on the steering system specifications
- tools, techniques and equipment necessary to maintain and rectify steering systems and reasons for selection

- precautions to be taken when testing steering systems and procedures for recording test results
- identification of faulty components and reasons for the corrective action to be taken
- parameter determining suitability of repair or replacement of components and component parts
- operation of power and power assisted steering systems
- effects of toe in and other available wheel/axle alignments on steering system operation
- measuring equipment to be used.

Assessment Conditions

- Assessors must:
 - have vocational competency in maintaining steering systems 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.

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