



Australian Government

Department of Education, Employment and Workplace Relations

MEM18044C Diagnose and rectify drive line and final drives

Release: 1

MEM18044C Diagnose and rectify drive line and final drives

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers assessing drive line and final drive operation, and repairing or replacing faulty components.
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Application of the Unit

Application of the unit	<p>This unit covers test and rectification activities associated with wheeled and/or tracked plant/vehicles, drive line and final drive assemblies used in conventional and all wheel drive equipment. Testing and assessment of performance would typically require operation of plant and equipment.</p> <p>Band: A</p> <p>Unit Weight: 4</p>
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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

Prerequisite units		
	MEM18055B	Dismantle, replace and assemble engineering components

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. Assess drive line and final drive operation	1.1. Universal and constant velocity joints, conventional/limited slip and locking, differential action and conventional/swing axle operating principles are understood. 1.2. Relevant information is obtained and correctly interpreted prior to any testing. 1.3. Preliminary checks are undertaken safely and to prescribed procedures. 1.4. Faults are correctly isolated to component level and appropriate corrective action is determined. 1.5. Test equipment is adapted and used correctly. 1.6. Component parts are correctly assessed for reuse or replacement.
2. Repair/replace faulty components	2.1. Component wear and clearances are correctly determined using appropriate test equipment and manufacturers' recommendations. 2.2. Replacement components are correctly selected using manufacturers' data. 2.3. Components are removed and refitted to driveline and final drive assemblies following prescribed procedures. 2.4. Adjustments are made correctly using appropriate tooling/equipment and manufacturers' data. 2.5. Test and repair/replacement activities are accurately recorded. 2.6. Drive line and final drive assemblies are free of excessive noise and operate to specification after work is carried out.

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, interpreting and following information on written job instructions,

REQUIRED SKILLS AND KNOWLEDGE

specifications, standard operating procedures, charts, lists, drawings and other applicable reference documents

- planning and sequencing operations
- checking task-related information
- checking for conformance to specification
- checking the drive line and final drive for correct operation
- using test equipment correctly
- testing the drive line and final drive components for conformance to specification
- removing and refitting components to drive line and final drive assemblies
- adjusting drive line and final drive components using appropriate tools, techniques and equipment
- recording test and work activities
- operating the drive line and final drive assembly free of excessive noise and in conformance to specifications
- undertaking calculations and numerical operations within the scope of this unit

Required knowledge

Look for evidence that confirms knowledge of:

- the principles of operation of drive lines and final drives
- the functions of universal and constant velocity joints, differentials and axles
- the procedures for checking drive lines and final drives for correct operation
- faulty drive line and final drive components
- the appropriate action to correct the faulty component(s)
- the test equipment to be used in checking/testing drive lines and final drives for correct operation
- the procedures for testing drive lines and final drives, including any necessary adaptation of test equipment
- component parts for reuse or replacement.
- the procedures for checking drive line and final drive components for wear and clearance
- the tools, techniques and equipment to be used to determine component wear and clearance
- replacement components using manufacturers' data.
- the procedures for removing and refitting drive line and final drive components
- the procedures for adjusting drive line and final drive components
- the tools, techniques and equipment to be used to maintain and repair drive line and final drive assemblies
- the effects of the adjustments on drive line and final drive operation
- the procedures for recording test and work activities
- the drive line and final drive assembly specifications
- hazards and control measures associate with diagnosing and rectifying drive line

REQUIRED SKILLS AND KNOWLEDGE

and final drives, including housekeeping

- 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 diagnose and rectify drive line and final drives. 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 testing and diagnosing drive line and final drives, 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.

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Maintenance and diagnostics
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