



Australian Government

AURKTD102 Diagnose and repair mobile plant steering systems

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

Application

This unit describes the skills and knowledge required to diagnose and repair mobile plant steering systems. The unit involves preparing for the task, sourcing a diagnostic testing strategy, diagnosing the cause of the fault, carrying out the repair, performing post-repair testing, and completing workplace processes and documentation.

The unit applies to those working in the automotive service and repair industry. The steering systems include those in agricultural machinery or mobile plant machinery.

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

Unit Sector

Mechanical Mobile Plant Technical - Steering and Suspension

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to diagnose and repair mobile plant steering system	1.1 Identify job requirements from workplace instructions 1.2 Identify required information for diagnosis activity 1.3 Analyse diagnostic options and source testing strategy to identify cause of fault using workplace and manufacturer procedures 1.4 Identify hazards and environmental issues associated with diagnose and repair activity, assess potential risks and implement control measures in line with workplace policies and procedures 1.5 Identify tools and equipment required for testing strategy and establish serviceability according to workplace

ELEMENTS	PERFORMANCE CRITERIA
	procedures
2. Diagnose mobile plant steering system	2.1 Implement diagnostic tests set out in testing strategy according to manufacturer and workplace procedures, and workplace health and safety requirements 2.2 Identify cause of fault through analysis of diagnostic test results 2.3 Confirm and report cause of fault according to workplace procedures 2.4 Develop and report recommendations for necessary repairs according to workplace procedures
3. Repair mobile plant steering system	3.1 Identify required information for repair activity 3.2 Identify tools, equipment and materials required for repair activity and establish serviceability according to workplace procedures 3.3 Carry out repairs according to workplace and manufacturer procedures, manufacturer specifications, workplace health and safety and environmental requirements 3.4 Carry out post-repair testing according to workplace procedures, workplace health and safety and environmental requirements
4. Complete work processes	4.1 Conduct final inspection according to workplace procedures and confirm machinery is ready for use 4.2 Clear work area and dispose of or recycle materials according to workplace procedures 4.3 Complete documentation according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Learning	- Locates required sources of information efficiently - Develops a sequenced plan for a specific task.
Reading	Organises and interprets technical information from workplace procedures, manufacturer procedures and manufacturer specifications.
Oral communication	- Clarifies instructions - Obtains information from customers and supervisors.

SKILL	DESCRIPTION
Numeracy	• Measures steering system components • Uses mathematical operations • Calculates deviations and tolerances from manufacturer specifications • Interprets steering system hydraulic pressure gauges.
Planning and organising	• Plans own work requirements • Prioritises actions to achieve required outcomes • Ensures tasks are completed within workplace timeframes.
Technology	• Operates diagnostic and testing equipment.

Unit Mapping Information

Supersedes and is equivalent to AURKTD002 Diagnose and repair mobile plant steering systems.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURKTD102 Diagnose and repair mobile plant steering systems

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- diagnose and repair a fault in at least three mobile plant steering systems as follows:
 - at least one articulated steering system
 - at least two of the following systems:
 - front wheel steering
 - all wheel steering
 - differential steer
 - steering clutch and brake
- inspect and charge one accumulator according to manufacturer specifications and relevant Australian standards.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- methods to locate and interpret information required to diagnose and repair mobile plant steering systems, including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair mobile plant steering systems, including:
 - establishing serviceability of tools and equipment
 - documentation procedures
 - housekeeping procedures, including:
 - examination of tools and equipment
 - storage of equipment
 - identification, tagging and isolation of faulty equipment

- disposal of excess materials
 - recycling procedures
- workplace health and safety (WHS) requirements relating to diagnosing and repairing mobile plant steering systems, including procedures for:
 - isolating and locking articulated steering systems
 - isolating and stabilising machines
 - working with stored fluid pressures from accumulators
 - working with high pressure fluid hazards
 - using lifting, jacking and supporting equipment
- environmental requirements relating to diagnosing and repairing mobile plant steering systems, including procedures for trapping, storing and disposing of hydraulic fluid released from steering systems
- operating principles of mobile plant steering systems and associated components, including full hydraulic steering and:
 - safety protection valves in the circuits
 - hand metering units (HMUs) and flow amplifier
 - hydraulic and electrohydraulic control
 - accumulator steering circuit
- purpose and operation of mobile plant steering systems and components, including:
 - articulated steering
 - front wheel steering
 - all wheel steering
 - differential steer
 - steering clutch and brake
- identification, function and adjustment of toe-in and toe-out steering angles
- diagnostic testing procedures for mobile plant steering systems, including:
 - pressure and flow testing the system and individual components
 - accumulator tests
 - HMU and flow amplifier tests
 - testing the pressure settings on all safety protection valves in the circuit
- repair and adjustment procedures for mobile plant steering systems, including:
 - accumulator inspection and charging procedures that reflect manufacturer specifications and Australian standards
 - pressure settings and adjustment procedures for main and safety protection valves in the steering circuit
- post-repair testing procedures for mobile plant steering systems.

Assessment Conditions

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the mobile plant steering systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer mobile plant steering system specifications
- three different mobile plant steering systems specified in the performance evidence with system faults
- diagnostic equipment for mobile plant steering systems
- tools, equipment and materials appropriate for repairing and adjusting mobile plant steering systems.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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