



Australian Government

AURNTB101 Diagnose and repair forklift hydraulic braking 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 faults in the hydraulic braking systems of forklift machinery. 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 who work in the automotive service and repair industry.

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

Unit Sector

Mechanical – Lifting Equipment Technical – Brakes

Elements and Performance Criteria

ELEMENT	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 forklift hydraulic braking 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

ELEMENT	PERFORMANCE CRITERIA
	and establish serviceability according to workplace procedures
2. Diagnose forklift hydraulic braking 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 forklift hydraulic braking 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 vehicle 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

SKILL	DESCRIPTION
	Obtains information from customers and supervisors
Numeracy	- Measures hydraulic braking system components - Uses mathematical operations - Calculates deviations and tolerances from manufacturer specifications
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 - Conducts performance testing of components, systems and equipment

Unit Mapping Information

Supersedes and is equivalent to AURNTB001 Diagnose and repair forklift hydraulic braking 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 AURNTB101 Diagnose and repair forklift hydraulic braking 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 two of the following types of forklift hydraulic braking systems:
 - drum brake system
 - dry disc brake system
 - wet multi-plate disc brake system.

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 forklift hydraulic braking systems, including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair forklift hydraulic braking 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 forklift hydraulic braking systems, including procedures for:

- working with brake dust and hydraulic oil hazards
- using lifting, jacking and supporting equipment
- environmental requirements relating to diagnosing and repairing forklift hydraulic braking systems, including procedures for trapping, storing and disposing of brake dust and brake fluid released from hydraulic braking systems
- operating principles of forklift hydraulic braking systems, including:
 - levers
 - friction
 - hydraulics, including the relationship between force, pressure and area
 - properties of brake fluids, including:
 - Department of Transportation (DOT) classification
 - synthetic and non-synthetic
 - compatibility of fluid types
- purpose and operation of forklift hydraulic braking systems and components, including:
 - power assisted systems, including:
 - drum brake systems
 - dry disc brake systems
 - wet multi-plate disc systems
 - parking brake systems
 - master cylinders
 - braking system valves and switches
 - brake boosting systems
 - full hydraulic systems, including:
 - wet multi-plate disc systems
 - parking brake systems
 - braking system valves and switches
 - oil pump and cooler
- diagnostic testing procedures for forklift hydraulic braking systems, including procedures for:
 - checking brake pedal
 - operational tests of brake booster
 - operational tests of master cylinder
 - testing brake fluid
 - parking brake operational tests
 - drum, dry disc and wet multi-plate disc brake operational tests
 - measuring and evaluating brake drums, shoes, discs and pads
- repair procedures for forklift hydraulic braking systems, including procedures for removing, replacing and adjusting:
 - hydraulic system components
 - braking system components

- post-repair testing procedures for forklift hydraulic braking 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 forklift hydraulic braking 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 forklift hydraulic braking system specifications
- operational forklifts with faults in two different braking systems
- diagnostic equipment for forklift hydraulic braking systems
- tools, equipment and materials appropriate for repairing and adjusting forklift hydraulic braking systems.

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

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