



Australian Government

AURJTB101 Diagnose and repair motorcycle 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 braking systems of motorcycles. 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 braking systems include those in motorcycles or all-terrain vehicles (ATVs).

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

Unit Sector

Mechanical Motorcycle Technical - Brakes

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 motorcycle 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 and establish serviceability according to workplace

ELEMENTS	PERFORMANCE CRITERIA
	procedures
2. Diagnose motorcycle 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 motorcycle 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 - Obtains information from customers and supervisors.

SKILL	DESCRIPTION
Numeracy	• Measures 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	• Uses measuring diagnostic equipment.

Unit Mapping Information

Supersedes and is equivalent to AURJTB001 Diagnose and repair motorcycle 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 AURJTB101 Diagnose and repair motorcycle 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 the following two braking systems of at least two different motorcycles, each time repairing a different system from the following:
 - at least one hydraulically-operated two-wheel disc braking system, in which the work must involve:
 - removing, bleeding and adjusting hand brake lever and brake pedal, master cylinder, brake hose, brake callipers, brake pads and brake rotors
 - refitting or replacing them
 - at least one mechanically-operated drum braking system, in which the work must involve:
 - removing and adjusting hand brake lever and brake pedal, cables and rods, brake drums and shoes, and actuating mechanisms
 - refitting or replacing them.

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 motorcycle braking systems, including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair motorcycle 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 motorcycle braking systems, including procedures for:
 - lifting and supporting motorcycles
 - handling and controlling brake dust and brake fluids
- environmental requirements relating to diagnosing and repairing motorcycle braking systems, including procedures for trapping, storing and disposing of brake dust and brake fluid released from motorcycle braking systems
- operating principles of motorcycle 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 motorcycle braking systems and components, including:
 - master cylinders
 - brake fluids
 - disc brake systems, including:
 - types of brake discs
 - disc pads
 - self-adjustment of disc pads
 - fixed, floating and multi-piston brake callipers
 - drum brake systems, including:
 - self-energising, servo effect
 - mechanically operated systems
 - hydraulically operated systems
 - manual and self-adjustment systems
 - combined braking systems
- diagnostic testing procedures for motorcycle braking systems, including procedures for:
 - operational tests of master cylinder
 - testing brake fluid
 - operational tests of hand brake
 - operational tests of drum and disc brakes
 - measuring and evaluating brake drums, shoes, discs and pads

- repair procedures for motorcycle braking systems, including procedures for:
 - removing, replacing and adjusting braking system components, including master cylinder, switches, brake hoses and lines, rods and cables, disc callipers and disc pads, brake drums, brake shoes and wheel cylinders
 - removing, replacing and adjusting braking system components, including brake lever, rods and cables, brake drums and brake shoes
 - bleeding brakes
- post-repair testing procedures for motorcycle braking systems, including procedures for road testing and bedding in brakes.

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 motorcycle 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:

- motorcycle repair workplace or simulated workplace
- workplace instructions
- manufacturer motorcycle braking system specifications
- two different motorcycles with faults in the braking systems specified in the performance evidence
- diagnostic equipment for motorcycle braking systems
- tools, equipment and materials appropriate for repairing motorcycle 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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