



Australian Government

AURJTR104 Diagnose and repair motorcycle dynamic control 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 motorcycle dynamic control systems. These systems include the functions of a motorcycle electronic braking control module (EBCM), such as anti-lock braking, traction control, anti-dive control and front wheel lift control. 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 dynamic control 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 - Electrical and Electronic

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 dynamic control 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

ELEMENTS	PERFORMANCE CRITERIA
	and procedures 1.5 Identify tools and equipment required for testing strategy and establish serviceability according to workplace procedures
2. Diagnose motorcycle dynamic control 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 dynamic control 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 motorcycle 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

SKILL	DESCRIPTION
	- manufacturer specifications - Interprets text, symbols and wiring diagrams in information relating to electrical system testing and repair equipment from manufacturer specifications and workplace instructions and procedures.
Oral communication	- Clarifies instructions - Obtains information from customers and supervisors.
Numeracy	- Matches electrical components and part identification numbers to workplace instructions, motorcycle, machinery and component part lists, and manufacturer specifications - Interprets motorcycle electrical measurements and readings - Measures voltage, current and resistance and 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 specialised diagnostic equipment.

Unit Mapping Information

New Unit.

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 AURJTR104 Diagnose and repair motorcycle dynamic control 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 dynamic control systems of:
 - at least one motorcycle with an anti-lock braking system (ABS)
 - at least one motorcycle with a traction control system (TCS).

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 dynamic control systems, including:
 - information provided by customer and supervisors
 - motorcycle dynamic control systems manufacturer specifications
- workplace procedures required to diagnose and repair motorcycle dynamic control systems, including:
 - establishing the 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
 - safe disposal of materials
 - recycling procedures
- workplace health and safety (WHS) requirements relating to diagnosing and repairing motorcycle dynamic control systems, including procedures for:
 - using specialised tools and equipment
 - using appropriate personal protective equipment (PPE)

- identifying hazards and controlling risks associated with:
 - working on motorcycle high voltage ignition systems
 - wearing jewellery while working around high current wiring systems
- operating principles of motorcycle dynamic control systems and associated components, including:
 - anti-lock braking
 - brake assist
 - traction control
- purpose and operation of motorcycle dynamic control systems and components, including:
 - ABS, including system inputs, electronic control unit (ECU), ABS modulator, and system outputs
 - TCS, including system inputs, ECU, and system outputs, including associated throttle and braking system controls
 - electronic stability control (ESC), including system inputs, steering angle sensors, and ECU and system outputs, including associated throttle and braking system controls
- diagnostic testing procedures for motorcycle dynamic control systems, including:
 - accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs)
 - live data
 - waveforms
 - using diagnostic flow charts
 - testing electrical systems, including procedures for:
 - accessing electrical terminals and using test probes without damaging connectors, fuse holders or wiring
 - determining damage to system wiring and connectors
- repair procedures for motorcycle dynamic control systems, including:
 - connector removal and replacement procedures
 - removal and replacement procedures for motorcycle dynamic control system components
- post-repair testing procedures for motorcycle dynamic control systems, including:
 - DTC clearing procedures
 - checking for electrical connector mating.

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 dynamic control 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 motorcycle dynamic control system specifications
- two different motorcycles with faults in their dynamic control systems
- diagnostic equipment for motorcycle dynamic control systems
- tools, equipment and materials appropriate for repairing motorcycle dynamic control 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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