



Australian Government

AURTTZ102 Diagnose and repair exhaust 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 exhaust systems of vehicles. The systems used vary based on the work context. 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 exhaust systems include those in agricultural machinery, heavy commercial vehicles, light vehicles, marine vessels, mobile plant machinery, motorcycles or outdoor power equipment.

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

Unit Sector

Mechanical Miscellaneous Technical – Emission and Exhaust

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 exhaust system	1.1 Identify job requirements from workplace instructions 1.2 Identify required information for diagnosis activity 1.3 Select 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

ELEMENTS	PERFORMANCE CRITERIA
	1.5 Identify tools and equipment required for testing strategy and establish serviceability according to workplace procedures
2. Diagnose exhaust 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 Identify and report recommendations for necessary repairs according to workplace procedures
3. Repair exhaust 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.

SKILL	DESCRIPTION
Oral communication	• Clarifies instructions • Obtains information from customers and supervisors.
Numeracy	• Measures exhaust system components • Uses mathematical operations • Calculates distances, areas, volumes and tolerances • Calculates deviations 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 diagnostic equipment.

Unit Mapping Information

Supersedes and is equivalent to AURTTZ002 Diagnose and repair exhaust 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 AURTTZ102 Diagnose and repair exhaust 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 two different vehicles, in which the fault for each must involve a different exhaust system component from among the following:
 - exhaust manifold or extractor pipes
 - manifold gasket fitted to a vehicle
 - catalytic converter
 - muffler or resonator
 - exhaust pipe.

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 exhaust systems, including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair exhaust 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 exhaust systems, including procedures for working with hot components and exhaust systems producing toxic gases
- environmental requirements relating to diagnosing and repairing exhaust systems
- operating principles of exhaust systems, including:
 - scavenging
 - back pressure
- purpose and operation of exhaust systems and components, including:
 - mufflers
 - extractor pipes
 - catalytic converters
 - diesel particulate filters
- diagnostic testing procedures for exhaust systems, including procedures for:
 - exhaust leak testing
 - vibration and noise locating procedures
 - back pressure testing
- repair procedures for exhaust systems, including procedures for removing, replacing and aligning components
- post-repair testing procedures for exhaust 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 emission 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 emission control system specifications
- two different vehicles or machinery with exhaust systems requiring servicing
- equipment, tools and materials appropriate for inspecting and servicing exhaust 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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