



Australian Government

Assessment Requirements for AURTTF105

Diagnose and repair engine forced-induction 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

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 turbocharger fault in an engine forced-induction system
- diagnose and repair a fault in at least two of the following components of engine forced-induction systems:
 - variable turbocharger
 - compound turbocharger
 - waste-gate actuator
 - intercooler
 - supercharger.

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 engine forced-induction systems, including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair engine forced-induction 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 engine forced-induction systems, including procedures for working with high temperature exhaust and intake system components
- environmental requirements relating to diagnosing and repairing engine forced-induction systems, including those relevant to exhaust gases such as hydrocarbons
- purpose and operation of engine forced-induction systems, including procedures for testing:
 - turbochargers, including:
 - twin scroll
 - twin turbocharger
 - turbo compounding
 - variable geometry turbocharger
 - waste-gate operation
 - lubrication and cooling
 - intercooler operation, including air to air and water to air
 - supercharger operation
- diagnostic testing procedures for engine forced-induction systems, including:
 - intake manifold pressure and vacuum testing
 - intake and exhaust system leak testing
 - turbo boost air pressure
 - intercooler pressure and temperature checks, types include air to air and air to water
 - oil supply
 - oil return to sump
 - turbocharger waste-gate testing
 - visual inspection for oil leakage
 - turbine rotating assembly end float and axial movement
- repair procedures for engine forced-induction systems, including procedures for:
 - removing and replacing turbochargers
 - testing, removing, replacing and adjusting waste-gates
- post-repair testing procedures for engine forced-induction 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 engine forced-induction 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 engine forced-induction system specifications
- one vehicle or machinery with engine forced-induction systems and a fault in turbocharger
- diagnostic equipment for engine forced-induction systems, including dial indicator, vacuum and pressure gauges, and temperature gauges
- tools, equipment and materials appropriate for repairing engine forced-induction systems.

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

Links

Companion Volume Implementation Guide is found on VETNet -

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