Australian Government

AURMTF002 Analyse and repair performance fuel injection systems

Release: 1

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Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to analyse and repair performance fuel injection systems and associated components. It involves identifying, evaluating, selecting, justifying and documenting the most appropriate rectification method or variation to the rectification method. It also involves developing and modifying performance improvement strategies in fuel injection systems and associated components. The unit includes the analysis of multi-system and intermittent faults which may be caused by operating in adverse conditions.

It applies to those working in the motor sport industry.

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

Competency Field

Motor Sport

Unit Sector

Technical - Fuel Systems

Elements and Performance Criteria

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm effects of faults in fuel	1.1 Objective of analysis and evaluation is determined from workplace instructions

Elements Elements describe the essential outcomes.	**Performance Criteria** Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
injection system	1.2 Specifications for fuel injection system are accessed and interpreted 1.3 Details of fault are examined and available preliminary information is documented 1.4 System faults, deficiencies or discrepancies are identified and confirmed from direct and indirect evidence 1.5 Hazards associated with the work are identified and risks are managed according to ***safety and environmental requirements***
2. Prepare for fault analysis	2.1 Evaluative criteria are developed or adopted to meet the objective of analysis and evaluation 2.2 ***Analytical and evaluative methodology*** are developed or identified from technical information 2.3 Testing equipment is prepared according to manufacturer and workplace procedures 2.4 Tools and materials required to support diagnostic procedure are selected and checked for serviceability 2.5 Possible causes of fault are identified from analysis of technical support information and available on-board diagnostic systems
3. Carry out analysis and determine repair and performance enhancement strategies	3.1 Selected analytical and evaluative methodology is followed according to manufacturer and workplace procedures 3.2 Tests are carried out according to manufacturer and workplace procedures and safety and environmental requirements 3.3 Analytical and other diagnostic findings are verified, as required, by using reliable alternative or optional processes 3.4 Analytical findings and results are assessed against evaluative criteria 3.5 Valid conclusions are drawn from available evidence and documented according to workplace requirements 3.6 Options for responding to analysis and evaluation objective are determined from further research of technical support information 3.7 ***Repair or modification method*** is selected and documented
4. Conduct repairs and implement performance improvement strategies	4.1 Repair tools and materials are selected and prepared 4.2 Repairs and component replacements and adjustments are carried out according to manufacturer specifications, team requirements and safety and environmental requirements, and without causing damage to other components or systems 4.3 Post-repair testing and vehicle start-up are carried out to ensure performance and operation are to team requirements

Elements Elements describe the essential outcomes.	**Performance Criteria** Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
5. Complete work processes	5.1 Tools and equipment are cleaned, maintained and prepared for future use, and stored according to manufacturer specifications and team requirements 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored and problems reported to appropriate personnel according to team requirements 5.4 Workplace documentation is processed according to team requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	**Description**
Learning skills to:	• locate appropriate sources of information efficiently.
Reading skills to:	• interpret controlling body rules, category rules, and supplementary regulations • interpret information from manufacturer and workshop literature when seeking fuel injection system specifications and procedures.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting analysis findings.
Numeracy skills to:	• measure fuel system components and use basic mathematical operations, including addition and subtraction, to calculate tolerances and deviations from manufacturer specifications • interpret units of measurement of pressure and flow.
Planning and organising skills to:	• plan own work requirements and prioritise and sequence actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Self-management skills to:	• work efficiently with minimal supervision.
Technology skills to:	• use precision measuring equipment, such as fuel pressure and flow rate gauges • use specialised fuel system diagnostic equipment, such as scan

Skills	Description
	tools and data loggers.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Safety and environmental requirements must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for working with petrol fuel systems • environmental requirements, including procedures for trapping, storing and disposing of petrol fuel released during repair or testing.
Analytical and evaluative methodology must include:	• diagnostic process • sequence of process • tests • testing equipment.
Repair or modification method must suit:	• operating conditions • controlling body rules, category rules and supplementary regulations • financial implications.

Unit Mapping Information

Equivalent to AURMTF4002 Analyse and repair performance fuel injection systems

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1