

<b>Title</b>	<b>Determine the cause of engine component failure and reflect on own diagnostic procedures</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>10</b>

<b>Purpose</b>	People credited with this unit standard are able to: determine the cause of engine component failure; and demonstrate knowledge of own learning experience in response to diagnosing engine component failure.
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<b>Classification</b>	Motor Industry > Engines
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<b>Available grade</b>	Achieved
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### Guidance Information

- Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable service information, and company requirements and legislative requirements. This includes the knowledge and use of suitable tools and equipment.
- Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the current version of the Health and Safety at Work Act 2015; and any subsequent amendments and replacements.
- Definitions  
*Company requirements* refer to instructions to staff on policy and procedures that are available in the workplace. These requirements may include – company policies and procedures, work instructions, product quality specifications and legislative requirements.  
*Service information* may include – technical information for a vehicle, machine, or product detailing operation; installation and servicing procedures; manufacturer instructions; technical terms and descriptions; and detailed illustrations.
- This unit standard refers to any type of two or four stroke petrol, diesel, or alternative fuelled engine installed in running condition.

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### Outcomes and performance criteria

#### Outcome 1

Determine the cause of engine component failure.

Range evidence of three failed components is required.

**Performance criteria**

1.1 Factors causing component failure are analysed and determined.

Range may include – overheating, over-cooling, incorrectly specified coolant, incorrectly specified oil (oil analysis), lack of oil, excessive oil level, oil contamination, incorrect oil pressure, abnormal combustion (detonation, pre-ignition, run-on), combustion gas leakage, incorrect ignition timing, incorrect valve timing, incorrect component clearances and fit, misalignment, fatigue, corrosion, fuel wash, over-revving, wear (abrasive, scuffing, hammering, corrosion, erosion, cavitation, electrolysis), seal failure, incorrect crankcase ventilation, unbalanced components, distortion (mechanical and thermal), faulty air filtration, faulty assembly procedure and practice, general wear and tear, general abuse and lack of service, parts fitted; incorrect, damaged, or defective.

1.2 Component failure is explained.

Range explanation must include – diagnostic testing, testing of any related systems.

**Outcome 2**

Demonstrate knowledge of own learning experience in response to diagnosing engine component failure.

**Performance criteria**

2.1 Own experience diagnosing engine components failure is reflected on and described in relation to knowledge and analytical skills acquired.

2.2 Improvements to own future diagnostic procedures are identified based on own reflection.

<b>Planned review date</b>	31 December 2025
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	25 February 2021	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0014
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

**Comments on this unit standard**

Please contact MITO New Zealand Incorporated [info@mito.org.nz](mailto:info@mito.org.nz) if you wish to suggest changes to the content of this unit standard.