

Title	Describe engine disassembly, inspection and reassembly		
Level	3	Credits	3

Purpose	People credited with this unit standard are able to describe: engine cylinder head removal, inspection and refitting; and engine cylinder block disassembly, inspection and reassembly.
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Classification	Motor Industry > Engines
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Available grade	Achieved
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Guidance Information

- 1 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.
- 2 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.
- 3 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.
- 4 Machines may include – forklifts, earth moving equipment, grader equipment, loaders, dozers, tractors, agricultural equipment, dump trucks, prime movers; electric machines including – forklift, walk-behind pallet, ride-on pallet, reach truck, order picker, counterbalance truck, turret truck.

Outcomes and performance criteria

Outcome 1

Describe engine cylinder head removal, inspection and refitting.

Performance criteria

- 1.1 Cylinder head removal is described.
- Range cylinder head bolt removal sequence, preventing damage to valves, pistons, and surrounding components.
- 1.2 Inspection of a cylinder head is described.
- Range cleaning prior to inspection, condition of machined surfaces, cracks, damage, flatness, wear, cylinder head bolt serviceability.
- 1.3 Refitting a cylinder head is described.
- Range cleanliness, surface preparation, torque settings, head gasket suitability, head bolt tightening sequence, lubrication of rotating parts, valve timing, liner protrusion.

Outcome 2

Describe engine cylinder block disassembly, inspection and reassembly.

Performance criteria

- 2.1 Cylinder block disassembly is described.
- Range bolt removal sequence, recording original location of components
- 2.2 Inspection of a cylinder block is described.
- Range cleaning prior to inspection, condition of machined surfaces, cracks, damage, flatness, wear.
- 2.3 Reassembly of a cylinder block is described.
- Range bearing clearances, cleanliness, crankshaft end float, piston ring end gap, piston ring end gap positioning, torque settings.

Planned review date	31 December 2022
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 January 2018	N/A

Consent and Moderation Requirements (CMR) reference	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 if you wish to suggest changes to the content of this unit standard.