

<b>Title</b>	<b>Demonstrate knowledge of disassembling, inspecting, and reassembling an engine cylinder head</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>2</b>

<b>Purpose</b>	<p>This theory-based unit standard is intended for people in the automotive repair industry.</p> <p>People credited with this unit standard are able to demonstrate knowledge of: disassembling and inspecting an engine cylinder head; and reassembling an engine cylinder head.</p>
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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

- 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 Performance of the outcomes of this unit standard must comply with the following:  
Health and Safety at Work Act 2015;  
Land Transport Rule: Vehicle Repair 1998.
- 3 Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.
- 4 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* refers to technical information for a vehicle, machine, or product detailing operation; installation and servicing procedures; manufacturer instructions; technical terms and descriptions; and detailed illustrations.

*Suitable tools and equipment* refer to industry approved tools and equipment that are recognised within the industry as being the most suited to complete the task in a professional and competent manner with due regard to safe working practices.

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## Outcomes and performance criteria

### Outcome 1

Demonstrate knowledge of disassembling and inspecting an engine cylinder head.

#### Performance criteria

1.1 Precautions to be observed when disassembling and inspecting an engine cylinder head are identified.

Range personal safety, safety of others, vehicle or machine safety, workshop safety, environmental safety, tools and equipment safety.

1.2 Suitable tools and equipment for disassembling and inspecting the cylinder head are identified.

1.3 Procedures for disassembling the cylinder head and cleaning components prior to inspection are described.

1.4 Procedures for inspecting the cylinder head components are described.

Range includes but is not limited to – valves; seats (wear, damage, protrusion, and seating); valve guides and springs; camshaft; camshaft and timing drives; valve operating mechanism; head gasket and seals; retaining bolts, washers, and seats.

1.5 Procedures for inspecting the cylinder head are described.

Range procedures for inspecting for includes but is not limited to – hardness; wear, flatness, and damage to machined surfaces; corrosion, erosion, electrolysis, and cavitation of water passages and components; camshaft tunnel alignment and bearing condition; combustion chambers; inlet and exhaust ports cracking.

1.6 Inspection of core plugs, studs, and threaded holes for signs of leakage, damage, clogging, and/or breakage are described.

### Outcome 2

Demonstrate knowledge of reassembling an engine cylinder head.

#### Performance criteria

2.1 Methods of reassembling valves and associated components are described.

2.2 Methods of reassembling the cylinder head on to the engine block are described.

Range includes but is not limited to – head and block preparation and cleanliness, head gasket preparation, reusing head studs, torquing to correct sequence and specification, assembling camshaft and lifter mechanisms, checking and fitting valve timing drive (belt, chain), assembling manifolds, initial adjustments.

2.3 Final running adjustments made once the cylinder head has been fitted are described.

<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 January 2008	31 December 2022
Review	2	29 April 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.