

<b>Title</b>	<b>Demonstrate knowledge of automotive cylinder head reconditioning practices</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 demonstrate knowledge of automotive cylinder head reconditioning practices.
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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 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 It is recommended that people first hold credit for Unit 32320, *Demonstrate knowledge of manually operated machines and tools for automotive machining*, before being assessed against this unit standard.

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### Outcomes and performance criteria

#### Outcome 1

Demonstrate knowledge of automotive cylinder head reconditioning practices.

**Performance criteria**

1.1 Cylinder head and valve mechanism machining practices are described.

Range visual inspection before removing carbon; removing carbon; checking for cracks and distortion; assessment of valves, seats, and guides; repairing cracks; corrosion repairs; straightening; align boring camshaft tunnels; fitting guides and resizing integral guides; measuring clearances; valve seat reconditioning; valve seat insert replacement; testing valve springs; valve seat and valve refacing; seat throating; seat contact; injector tube replacement; surface grinding and milling; metal removal limits; rocker gear reconditioning; head assembly procedures.

1.2 Camshaft re-grinding procedures are described.

Range determining camshaft wear and damage by visual examination and measurement, checking for straightness, cam lobe terminology, considerations when regrinding (base circle concentricity, concentricity of bearing journals, phasing of ramps, taper on cam lobes, compatible finish, cam follower radius), straightening and centring a camshaft, re-grinding of journals, setting up a camshaft for grinding with appropriate master cam and index plate, grinding cam lobe profiles, increasing lift, building up lobes using hard facing deposits, phosphate treatment.

1.3 Engine gasket and seal requirements are described.

Range gasket materials, construction of cylinder head gaskets, gasket fitting procedures, oil seal design, seal fitting procedures.

<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 the 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.