

<b>Title</b>	<b>Carry out general repairs to a cylinder head</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>4</b>

<b>Purpose</b>	This unit standard is for people in the automotive repair industry. People credited with this unit standard are able to: remove, dismantle, and inspect a cylinder head; rectify cylinder head faults that do not require machining; and assemble a cylinder head.
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<b>Classification</b>	Motor Industry > Engine Repairs
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<b>Available grade</b>	Achieved
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<b>Entry information</b>	
<b>Critical health and safety prerequisites</b>	Unit 231, <i>Explain the operation of two and four stroke petrol and diesel engines</i> , or demonstrate equivalent knowledge and skills.

### Explanatory notes

- 1 The following legislation and amendments are required to be consulted and followed where applicable:
  - Health and Safety in Employment Act, 1992.
- 2 Reference to *suitable tools and equipment* means industry approved tools and equipment that are recognised within the industry as being the most suited to complete the task to a professional and competent manner with due regard to safe working practices.
- 3 Because of the particular nature of this unit standard, it is essential that the practical assessment evidence is obtained from commercial jobs in the workplace under normal workplace conditions.

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## Outcomes and evidence requirements

### Outcome 1

Remove, dismantle, and inspect a cylinder head.

#### Evidence requirements

- 1.1 Safe working practices are observed throughout the task.
- Range personal safety, safety of others, no damage to equipment, vehicle and machine safety.
- 1.2 Suitable tools and equipment are selected and used to enable the cylinder head to be removed, dismantled, and inspected.
- 1.3 The cylinder head is removed from the engine in the manner and sequence specified by the engine or vehicle manufacturer.
- 1.4 The cylinder head is dismantled in the manner and sequence specified by the manufacturer.
- 1.5 The component parts are cleaned of oil, dirt, and carbon to reveal their condition.
- 1.6 The core plugs are inspected for signs of leakage, and their condition is noted.
- 1.7 Components are inspected for wear, and their condition is noted.
- Range camshaft, bearings and rockers, rocker shaft, rockers, hydraulic lifters, lash adjusters.
- 1.8 Machined faces are checked for damage and flatness, and their condition is noted.
- 1.9 Studs and threaded holes are inspected for faults, and their condition is noted.
- Range damage, clogging, breakage.

### Outcome 2

Rectify cylinder head faults that do not require machining.

#### Evidence requirements

- 2.1 Safe working practices are observed throughout the task.
- Range personal safety, safety of others, no damage to equipment.

- 2.2 Core plugs that show signs of leakage are removed and replaced according to manufacturer's instructions.
- 2.3 Camshaft, bearings, rockers, and rocker shaft faults are rectified to meet manufacturer's specifications.
- 2.4 Clogged threads are cleaned out, and broken studs are replaced to meet manufacturer's specifications.
- 2.5 A damaged cylinder head is reported to the supervisor.
  - Range damaged threads, damage to the machined surfaces, warped surfaces.
- 2.6 A decision as to repair or replace the cylinder head and components is made.
  - Range extent of damage, cost, availability of parts, warranty.

**Outcome 3**

Assemble a cylinder head.

**Evidence requirements**

- 3.1 Safe working practices are observed throughout the task.
  - Range personal safety, safety of others, no damage to equipment, vehicle and machine safety.
- 3.2 Suitable tools and equipment are selected and used to enable the cylinder head to be assembled.
- 3.3 The cylinder head is assembled in the sequence and manner prescribed by the manufacturer to restore full serviceability.
- 3.4 Adjustments are carried out in the manner and sequence prescribed by the manufacturer, and to manufacturer's specifications.
  - Range valve clearances, bearing clearances, camshaft end float.

<b>Replacement information</b>	This unit standard and unit standard 15440 have been replaced by unit standard 24807 and unit standard 24274.
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**This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.**

**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	29 October 1993	31 December 2016
Review	2	4 October 1996	31 December 2016
Review	3	26 February 1999	31 December 2016
Review	4	25 January 2008	31 December 2016
Rollover	5	19 November 2010	31 December 2016
Rollover	6	18 February 2016	31 December 2020

<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>.

**Please note**

Providers must be granted consent to assess against standards (accredited) by NZQA, or an inter-institutional body with delegated authority for quality assurance, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Consent requirements and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

This unit standard is expiring