

Title	Carry out general repairs to and assemble an engine short block		
Level	3	Credits	5

Purpose	This unit standard is for people in the automotive repair industry. People credited with this unit standard are able to: disassemble and inspect an engine short block; rectify engine short block faults that do not require machining skills other than deglazing; and assemble an engine short block.
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Classification	Motor Industry > Engine Repairs
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Available grade	Achieved
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Entry information	
Critical health and safety prerequisites	Unit 244, <i>Disassemble and assemble a four stroke engine</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.

This unit standard is expiring

Outcomes and evidence requirements

Outcome 1

Disassemble and inspect an engine short block.

Evidence requirements

- 1.1 Safe working practices are observed throughout the task.
Range personal safety, safety of others, no damage to equipment.
- 1.2 Suitable tools and equipment are selected and used to enable the short block to be dismantled and inspected.
- 1.3 The cylinder block is disassembled in the manner and sequence prescribed by the manufacturer.
- 1.4 The component parts are cleaned of oil, dirt, and carbon to reveal their condition.
- 1.5 The pistons and rings are inspected for damage, wear, and for the fit of the gudgeon pin into the piston, and the results are noted.
- 1.6 The connecting rods and crankshaft are inspected for bend, bow, twist, bearing and journal wear, and their condition is noted.
- 1.7 The timing gears, water pump, and oil pump are inspected for damage and wear, and their condition is noted.
- 1.8 The cylinder block is inspected for bore wear, flatness and damage to machined surfaces, corrosion and erosion of water jacket, and the condition is noted.
- 1.9 The core plugs are inspected for signs of leakage, and their condition is noted.
- 1.10 Studs and threaded holes are inspected for damage, clogging, and breakage, and their condition is noted.
- 1.11 A decision as to repair or replace the short block and components is made.
Range extent of damage, cost, availability of parts, warranty.

Outcome 2

Rectify engine short block faults.

Range faults that do not require machining skills other than deglazing.

Evidence requirements

- 2.1 Safe working practices are observed throughout the task.
- Range personal safety, safety of others, no damage to equipment.
- 2.2 The cylinder bores are deglazed according to manufacturer's specifications.
- Range bores suitable and recommended by the manufacturer for deglazing, glazing equipment selected, feed and speed, lubrication, cross hatch pattern, measuring, tolerances, cleaning.
- 2.3 Pistons and rings that have faults are replaced to meet manufacturer's specifications and to match the size of the cylinder bores.
- 2.4 Faulty connecting rods, bearings, and the crankshaft are replaced to meet manufacturer's specifications.
- 2.5 Faulty timing gears, water pump, and oil pump are replaced to meet manufacturer's specifications.
- 2.6 Leaking core plugs are removed and replaced according to manufacturer's instructions.
- 2.7 Clogged threads are cleaned out, and broken studs are replaced to meet manufacturer's specifications.

Outcome 3

Assemble an engine short block.

Evidence requirements

- 3.1 Safe working practices are observed throughout the task.
- Range personal safety, safety of others, no damage to equipment.
- 3.2 Suitable tools and equipment are selected and used to enable the short block to be assembled.
- 3.3 The engine short block 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 piston ring clearances, bearing clearances, end float, torque settings.

Replacement information	This unit standard has been replaced by unit standard 24275 and unit standard 24306.
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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

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>.

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.