

Title	Demonstrate knowledge of, and repair a manual starting system on a small engine		
Level	2	Credits	2

Purpose	This unit standard is for people in the automotive repair industry who are required to repair small engines. People credited with this unit standard are able to: demonstrate knowledge of manual starting systems used on small engines; inspect starting system parts; and repair and replace faulty starting system parts.
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Classification	Motor Industry > Engine Repairs
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Available grade	Achieved
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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* means industry approved tools 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.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of manual starting systems used on small engines.

Range rewind, wind-up, retractable vertical pull.

Evidence requirements

- 1.1 The components of manual starting assemblies are identified as shown in engine manufacturer's workshop manuals.
- 1.2 The mechanical layout and operation of starting assemblies are described according to engine manufacturer's workshop manuals.

- 1.3 The process of engagement with the engine is established as shown in engine manufacturer's workshop manuals.
- 1.4 The replacement procedures for components are described according to engine manufacturer's workshop manual instructions.
- Range spring, rope, engagement and clutch assemblies.

Outcome 2

Inspect starting system parts.

Evidence requirements

- 2.1 Safe working practices are observed throughout the task.
- Range personal safety; safety of others; no damage to equipment, engine, and machine.
- 2.2 The operation of the system is checked, and the nature of any faults is identified and noted.
- 2.3 Suitable tools are selected and used to enable the starting assembly to be removed.
- 2.4 The assembly is dismantled according to engine manufacturer's recommended procedure.
- 2.5 Mechanical components are inspected for wear and damage, and the need for repair and replacement is determined and reported to the supervisor.
- Range spring, rope, engagement and clutch assemblies.

Outcome 3

Repair and replace faulty starting system parts.

Evidence requirements

- 3.1 Safe working practices are observed throughout the task.
- Range personal safety; safety of others; no damage to equipment, engine, and machine.
- 3.2 Suitable tools are selected and used to enable starting system parts to be repaired and replaced.
- 3.3 The feasibility of a repair is determined based on relevant factors.
- Range type and extent of repair required, cost of repair, availability and cost of replacement, life expectancy, guarantee.

- 3.4 A recommendation to repair and replace parts is presented to the supervisor.
- 3.5 The starter assembly is reassembled in the sequence and manner prescribed by the engine manufacturer and without damage to the parts.
- 3.6 The assembled system is checked to ensure normal operation has been restored.

Replacement information	This unit standard has been replaced by unit standard 24276 and unit standard 24277.
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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
Revision	4	13 March 2001	31 December 2016
Review	5	25 January 2008	31 December 2016
Rollover	6	19 November 2010	31 December 2016
Rollover	7	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.

This unit standard is expiring