

Title	Test, recore and rectify faults in bolt-on industrial and heavy vehicle and machine cooling equipment		
Level	3	Credits	8

Purpose	This unit standard is for people who work in the radiator repair industry. People credited with this unit standard are able to: test industrial and heavy vehicle radiators; remove faulty bolted on core; rectify radiator component faults and fit a new core; and rectify faults in industrial and heavy vehicle cooling equipment.
----------------	--

Classification	Motor Industry > Automotive Radiator Repair
-----------------------	---

Available grade	Achieved
------------------------	----------

Guidance Information

- 1 Legislation relevant to this unit standard includes but is not limited to – Health and Safety in Employment Act 1992, Resource Management Act 1991, Lead Process Regulations 1950.
- 2 Definitions

Company requirements refer to instructions to staff on policy and procedures which are documented in memo or manual format and are available in the workplace. These requirements include but are not limited to – company specifications and procedures, work instructions, manufacturer specifications, product quality specifications, and legislative requirements.

Customer requirements are those instructions given and authorised by the customer and documented on the company work order or booking-in form.

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 in a professional and competent manner with due regard to safe working practices.
- 3 Range

This unit standard includes the following industrial and heavy vehicle cooling equipment – downflow, crossflow, and low-flow radiators; oil coolers; intercoolers.
- 4 Recommended entry information: Unit 7002, *Recore a brass tank vehicle or machine radiator*.

Outcomes and performance criteria

Outcome 1

Test industrial and heavy vehicle radiators.

Performance criteria

- 1.1 Suitable tools and equipment are selected and used to enable the radiator to be tested in accordance with company requirements.
- Range pressure test equipment, hand tools.
- 1.2 Radiator is inspected, and defects noted in accordance with company requirements.
- Range tanks, side bands, mounts, overflow pipe, core, filler neck, drain, inlet pipe, outlet pipe, cap, oil cooler, reservoir, gaskets and fixings;
accident damage, stone damage, corrosion, wear and tear.
- 1.3 Oil cooler connections, if fitted, are identified and protected in accordance with company requirements.
- 1.4 Radiator is pressure tested, and any leaks and blockages are identified, in accordance with company requirements.
- 1.5 The viability of repairing and replacing parts is determined in accordance with company requirements.
- 1.6 Safe working practices are observed throughout the task in accordance with legislative requirements.
- Range personal safety, safety of others, vehicle or machine safety, workshop safety, environmental safety, tools and equipment safety.

Outcome 2

Remove faulty bolted on core.

Performance criteria

- 2.1 Suitable tools and equipment are selected and used to enable the core to be removed in accordance with company requirements.
- 2.2 Positions and angles of components are marked in accordance with company requirements.

2.3 Radiator is dismantled, and parts cleaned and stored securely, in accordance with company requirements.

Range tanks, side bands, overflow pipe, bolts, labelled parts, gaskets, fixings.

2.4 Safe working practices are observed throughout the task in accordance with legislative requirements.

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

Outcome 3

Rectify radiator component faults and fit a new core.

Performance criteria

3.1 Suitable tools and equipment are selected and used that will enable the core to be replaced in accordance with company requirements.

3.2 Radiator components are identified, checked for defects, and any defective parts are rectified in accordance with company requirements.

Range tanks, side bands, overflow pipe, bolts, labelled parts, gaskets, fixings;
corrosion, accident damage, worn parts;
repaired, replaced.

3.3 Replacement radiator core, as specified by the manufacturer, is identified prepared and checked in accordance with company requirements.

3.4 Radiator is reassembled and tested, and operates in accordance with company requirements.

Range pressure tested; no leaks, blockages, or contamination in the radiator.

3.5 Radiator is prepared and painted in accordance with company requirements.

3.6 Tools, materials and equipment are cleaned and put away in their places, and the work area is clean in accordance with company requirements.

3.7 Safe working practices are observed throughout the task in accordance with legislative requirements.

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

Outcome 4

Rectify faults in industrial and heavy vehicle cooling equipment.

Performance criteria

- 4.1 Suitable tools and equipment are selected and used in accordance with company requirements.
- 4.2 Equipment is dismantled, and parts stored securely, as necessary in accordance with company requirements.
- Range tanks, side bands, overflow pipe, gaskets, fixings or fastenings, labelled parts.
- 4.3 Components are identified and checked for damage, and any damaged components are rectified in accordance with company requirements.
- Range corrosion, accident, fin and tube damage, stone damage, fastenings, gaskets, core; repaired, replaced.
- 4.4 Equipment is cleaned, as necessary, in accordance with customer and company requirements.
- 4.5 Blockages in the cooling equipment are identified and cleared in accordance with company requirements until no blockages remain.
- Range flushed, rod out, compressed air.
- 4.6 Leaks in cooling tubes are identified and soldered in accordance with company requirements.
- 4.7 Leaks in tanks are identified and repaired in accordance with company requirements.
- Range soldered, brazed, welded, new gaskets and fasteners, header plate removed, re-tinned and replaced, solder floated to header plate.
- 4.8 Cooling equipment is reassembled and tested, and confirmed as operating in accordance with company requirements.
- Range new gaskets; pressure tested; no leaks, blockages, or contamination in the system.
- 4.9 Cooling equipment is prepared and painted in accordance with company requirements.
- 4.10 Tools, materials, and equipment are cleaned and put away in their places, and the work area is clean in accordance with company requirements.

- 4.11 Safe working practices are observed throughout the task in accordance with legislative requirements.

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

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 May 1996	31 December 2020
Revision	2	14 November 2000	31 December 2020
Revision	3	16 October 2003	31 December 2020
Review	4	25 January 2008	31 December 2020
Review	5	26 April 2018	31 December 2020

Consent and Moderation Requirements (CMR) reference

0014

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.