Title	**Install an automotive air conditioning system**		
Level	**3**	**Credits**	**3**

Purpose	This unit standard is intended for people in the automotive repair industry. People credited with this unit standard are able to: install air conditioning cabin components into a vehicle; install air conditioning engine bay components; and charge and performance test the air conditioning system.

Classification	Motor Industry > Automotive Heating, Ventilation, and Air Conditioning

Available grade	Achieved

Guidance Information

1 It is recommended that people hold credit for Unit 24445, *Remove and replace automotive air conditioning components in the passenger compartment and engine bay,* and Unit 24448, *Demonstrate knowledge of servicing automotive air conditioning systems* before being assessed against this unit standard.

2 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.

3 Performance of the outcomes of this unit standard must comply with the following:
Health and Safety at Work Act 2015;
Health and Safety at Work (Hazardous Substances) Regulations 2017;
Ozone Layer Protection Act 1996;
Australia and New Zealand Refrigerant handling code of practice 2007
https://www.irhace.org.nz/publications-2/code-of-practice/.

4 Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

5 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 refers to technical information for a vehicle, machine, or product detailing operation; installation and servicing procedures; manufacturer instructions; technical terms and descriptions; and detailed illustrations.
Suitable tools and equipment refer to 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.

6 For this unit standard, it is essential that the practical assessment evidence is obtained in the workplace under normal workplace conditions.

7 Should the air conditioning system require recovering, evacuating and/or recharging of refrigerant, this work must be completed by the holder of an Approved Filler Certificate issued under the under the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Outcomes and performance criteria

Outcome 1

Install air conditioning cabin components into a vehicle.

Performance criteria

1.1 Trim panels, ducts, and blanking caps are removed without damage.

1.2 The installation of the evaporator, drain tube, air conditioning switch, and electrical connections is completed.

1.3 The trim panels are replaced with new ones supplied with the kit, to restore appearance before commencement of work.

Outcome 2

Install air conditioning engine bay components.

Performance criteria

2.1 Components are removed or loosened without damage.

Range radiator, grille, headlamps, drive belt(s), pulleys, belt tensioners.

2.2 Kit components are installed in a neat and functional manner, and parts are protected from chaffing, fracturing, and vibrating during use.

Range condenser, receiver-drier, additional fan, compressor, pipes and hoses, relay(s), idle-up system, air conditioning wiring harness, replacement drive belt, pulleys.

Outcome 3

Charge and performance test the air conditioning system.

Performance criteria

3.1 Precautions are observed throughout the task.

Range cleanliness; ventilation; eye protection, gloves, protective clothing; working with a pressurised system; running the engine; awareness of moving parts; heating components and smoking; using air conditioning equipment; recovery and storage of refrigerant.

3.2 The system is charged and commissioned.

Range may include but is not limited to – vacuum pump, electronic scales, gauges, digital thermometer.

3.3 The test equipment is connected to the air conditioning system.

3.4 The system is evacuated to the manufacturer's specified vacuum reading and time interval, and any vacuum leaks are detected and noted.

3.5 Any leaks apparent when evacuating the system are located and sealed.

3.6 The system is evacuated and then charged to the specified level with a refrigerant and compressor oil.

3.7 A performance test is conducted to confirm the system is operating correctly, and the results are recorded for future servicing requirements.

Planned review date	31 December 2025

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	9 November 1993	31 December 2022
Review	2	4 October 1996	31 December 2022
Review	3	26 February 1999	31 December 2022
Review	4	25 January 2008	31 December 2022
Review	5	29 April 2021	N/A

Consent and Moderation Requirements (CMR) reference	0014

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

Comments on this unit standard

Please contact MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.