

Title	Prepare to test, test and diagnose faults in an automotive air conditioning system		
Level	4	Credits	5

Purpose	<p>This unit standard is intended for people in the automotive repair industry.</p> <p>People credited with this unit standard are able to prepare to test an automotive air conditioning system for operation, and test and diagnose faults in an automotive air conditioning system.</p>
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Classification	Motor Industry > Automotive Heating, Ventilation, and Air Conditioning
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Available grade	Achieved
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Guidance Information

- 1 It is recommended that people hold credit for Unit 24446, *Demonstrate knowledge of preparing to test, and testing for faults in an automotive air conditioning system* 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 Health and Safety at Work (Hazardous Substances) Regulations 2017.

Outcomes and performance criteria

Outcome 1

Prepare to test an automotive air conditioning system for operation.

Performance criteria

- 1.1 Customer or job card is consulted to help identify the nature of the fault.

Range includes but is not limited to – insufficient or no cooling, engine overheating, insufficient cooling on hot days, system non-operational;
vehicle history, workplace personnel.
- 1.2 A visual inspection of air conditioning and associated components is carried out. Any signs of damage, leaks and corrosion are reported to the supervisor.

Outcome 2

Test and diagnose faults in an automotive air conditioning system.

Performance criteria

- 2.1 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; using air conditioning equipment; recovery and storage of refrigerant.
- 2.2 Test gauges are connected.
- 2.3 Level of refrigerant charge is determined and recorded, after operating the system at maximum cooling for the recommended time.

Range may include but is not limited to – coil, dye, retro-fitting.

- 2.4 Blockages, leaks, external faults influencing operation, and other malfunctions are identified and located with the aid of diagnostic charts, tables and gauges, and results are recorded.
- 2.5 The efficiency of the system is determined by measuring and comparing evaporator air inlet and outlet temperatures and humidity levels, and results are recorded.
- 2.6 The driver controls are tested to ensure full serviceability of the system. Any defects are recorded for future reference.
- Range may include but is not limited to – switches, flaps, doors, vents.
- 2.7 A report on the system condition, based on the testing and diagnosis results, and a repair recommendation consistent with manufacturer stated procedures is given to the supervisor.

Replacement information	This unit standard and unit standard 24444 replaced unit standard 881.
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Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 January 2008	31 December 2022
Review	2	29 April 2021	N/A

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>.

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.