

Title	Install entertainment systems in vehicles and test and rectify installation faults		
Level	4	Credits	4

Purpose	People credited with this unit standard are able to: procure an entertainment system for installation; install the entertainment system in the vehicle; test the entertainment system and its circuits for faults; rectify entertainment system installation faults; and locate and rectify causes of radio frequency interference (RFI).
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Classification	Motor Industry > Automotive Electrical and Electronics
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Available grade	Achieved
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Prerequisites	Appropriate driver licence for the vehicle being road tested.
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Guidance Information

- 1 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.
- 2 Performance of the outcomes of this unit standard must comply with the following:
Health and Safety at Work Act 2015;
Land Transport Rule: Interior Impact 2001;
Land Transport Rule: Vehicle Equipment 2004;
Land Transport Rule: Vehicle Standards Compliance 2002.
- 3 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.
- 4 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 may include – 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 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.

5 Range

This unit standard may include but is not limited to – radio, stereo sound systems, CD players, in-car cinema (DVD/VHS), computer plug-in, television, portable music players and personal devices, head units, gaming machines, wireless communication (including Bluetooth applications);

evidence is required of two installations, one of which must be an audio entertainment system.

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

7 If an audio or visual entertainment system is governed by a security code, then this code must be obtained and recorded before any installation work is carried out.

Outcomes and performance criteria

Outcome 1

Procure an entertainment system for installation.

Performance criteria

- 1.1 An entertainment system that is suitable for the vehicle and meets the customer requirements is procured, and accessory certification procured.
- 1.2 If the requested equipment is not available or unsuitable, an alternative is recommended to the customer.
- 1.3 Additional parts and materials that are required but not included in the kit or already installed on the vehicle are determined and procured.

Outcome 2

Install the entertainment system in the vehicle.

Performance criteria

- 2.1 The position of any necessary holes is determined, so that the entertainment system components will be correctly positioned, securely held, and the structural strength of the body will not be impaired.

Range	correct position – no unnecessary exposure of components to sun, dust, dirt or water; acceptable appearance; controls operable by driver; speakers acoustically placed; aerial positioned for best reception or to customer requirements; no damage caused by drilling holes and projecting screws.
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- 2.2 Trim panels are removed where necessary to gain access, without damaging the panels.
- 2.3 The minimum number of holes necessary are cut in the predetermined locations to the diameters specified in the installation instructions, and any necessary anti-corrosive treatment is carried out.
- 2.4 The wiring is positioned and secured as specified, and where fitted, the factory installed wiring is located and identified.
- 2.5 The entertainment system, and any other components are connected to the wiring, and installed in the manner and position prescribed by the manufacturer and customer to give the best reception and performance.
- 2.6 The circuit is connected to the supply, with suitable circuit protection, and is tested to ensure optimum operation when the vehicle is being driven and when stationary.

Outcome 3

Test the entertainment system and its circuits for faults.

Performance criteria

- 3.1 The system is operated, and the symptoms of any faults established.
- 3.2 Tests are carried out in a manner which ensures that any faults are identified and located.

Outcome 4

Rectify entertainment system installation faults.

Performance criteria

- 4.1 A decision is made whether to repair or replace a faulty part, based on the practical and economic viability of a repair.
- 4.2 An entertainment system with internal faults is removed without causing damage to the appliance or the vehicle.
- 4.3 Installation faults are rectified to restore full serviceability of the system.

Range aerial; mountings; fit, location, and appearance of components; leads; trim; connections and wiring; tuning adjustments.
- 4.4 Treatment is applied to repaired parts to inhibit corrosion and restore original colour and appearance.
- 4.5 Non-repairable faulty components are replaced with new parts of at least equivalent specification, to restore full serviceability and original appearance.

Outcome 5

Locate and rectify causes of RFI.

Performance criteria

- 5.1 Information is obtained from the customer regarding circumstances and conditions when the RFI occurs.
- 5.2 The system is operated while the vehicle is driven under the described conditions, and the source of the interference is identified.
- 5.3 Electrical sources of RFI are suppressed.
- 5.4 Mechanical sources of RFI are rectified, and the transmission of the frequencies is prevented by bonding (grounding).

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	29 October 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	25 March 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.