
GROUP 54A

CHASSIS ELECTRICAL

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GENERAL INFORMATION

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The adoption of new accessories and functions has enhanced a lineup of equipment.

FEATURES

ENHANCED RELIABILITY

1. Adoption of waterproof connector in the engine compartment.
2. Installation of fuse box and relay box.

ENHANCED VISIBILITY AND SAFETY

ENHANCED EASE-OF-USE AND
CONVENIENCE

1. Headlamps with built-in front turn signal lamps and position lamps are adopted.
2. A high mount stop lamp has been installed to the rear spoiler.
3. The combination meters feature a round speedometer and tachometer with large needle movement angle.

IMPROVEMENTS IN SERVICEABILITY

1. Installation of two diagnosis connectors for M.U.T.-II/III inspection.
2. Addition of ignition timing inspection function to the M.U.T.-II/III.
3. Adoption of Smart Wiring System (SWS) to reduce weight and complexity of harnesses.

IMPROVEMENTS IN COMMERCIAL
VALUE

1. Installation of an engine immobilizer system.
2. Addition of map lamp and front room lamp.
3. Adoption of an electronically tuned AM/FM radio and CD player. (Option)

DIAGNOSTIC SYSTEM

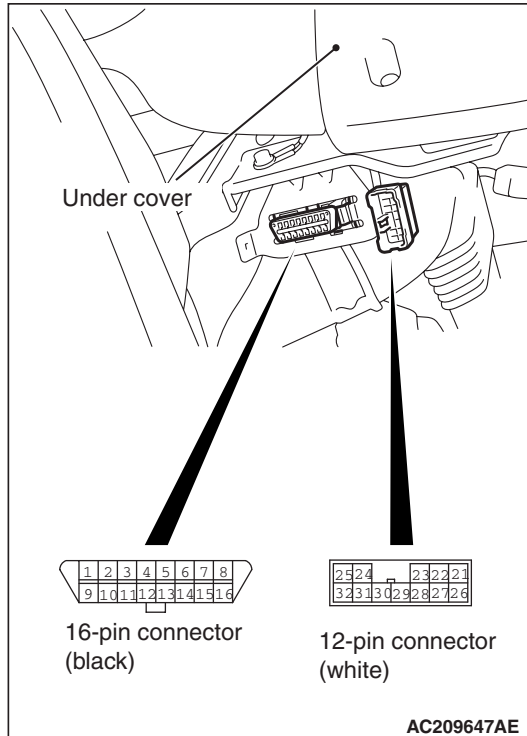
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Service quality has been improved by fitting diagnosis connectors for the M.U.T.-II/III inspection near the left knee area of the driver's seat on the instrument panel.

Diagnostic function	MPI	ABS	A/T	Immobilizer	SRS	ETACS
Diagnosis code set	×	×	×	×	×	×
Diagnosis code reading by voltmeter	—	—	—	—	—	×
Output of service data	×	×	×	—	×	—
Actuator test	×	×	×	—	—	—
Diagnosis code reading by warning lamp and indicator lamp	—	×	—	—	—	—
Diagnosis code storage (EEPROM)	×	×	×	×	×	—
Erase of diagnosis code by the M.U.T.-II/III		×	×	×	×	—
Pulse check by M.U.T.-II/III	—	—	—	—	—	×

NOTE: × indicates the diagnostic function of each ECU.

DIAGNOSIS CONNECTORS



Diagnosis connector (Black)	
1	Diagnosis control
2,3	–
4	Earth
5	Earth
6	–
7	MPI, ABS, A/T, Immobilizer, SRS
8	–
9	ETACS-ECU
10–13	–
14	Simulated vehicle speed signal
15	–
16	Battery
Diagnosis connector (White)	
21 –25	–
26	MPI
27 –30	–
31	SWS communication line
32, 33	–

BATTERY

M2540002000420

Item	55D23L
Voltage V	12
Capacity (5-hour rate) Ah	48
Electrolytic fluid specific gravity (fully charged state at 20° C)	1.280

IMMOBILIZER SYSTEM

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The engine immobilizer system prevents the engine from starting and immobilizes the vehicle if a key other than the key registered for that vehicle is used in an attempt to start the engine after forced entry. The engine immobilizer system consists of the ignition key with a transponder, the immobilizer-ECU, and the engine-ECU <M/T> or engine-A/T-ECU <A/T>. It works in the following way and has these functions:

1. When the immobilizer-ECU receives the control signal from the engine-ECU <M/T> or engine-A/T-ECU <A/T>, the immobilizer-ECU supplies a current and sends random number data to the transponder in the ignition key.
2. The transponder uses the random number data to derive an encrypted code, which is sent to the immobilizer-ECU.
3. The immobilizer-ECU compares the encrypted code that was sent with pre-registered encrypted codes, and if it matches, a control signal approving ignition is sent to the engine-ECU <M/T> or engine-A/T-ECU <A/T>. If the encrypted code

does not match (in the case of counterfeit ignition keys, for example), the immobilizer-ECU sends a control signal denying ignition to the engine-ECU <M/T> or engine-A/T-ECU <A/T>, preventing the engine from starting.

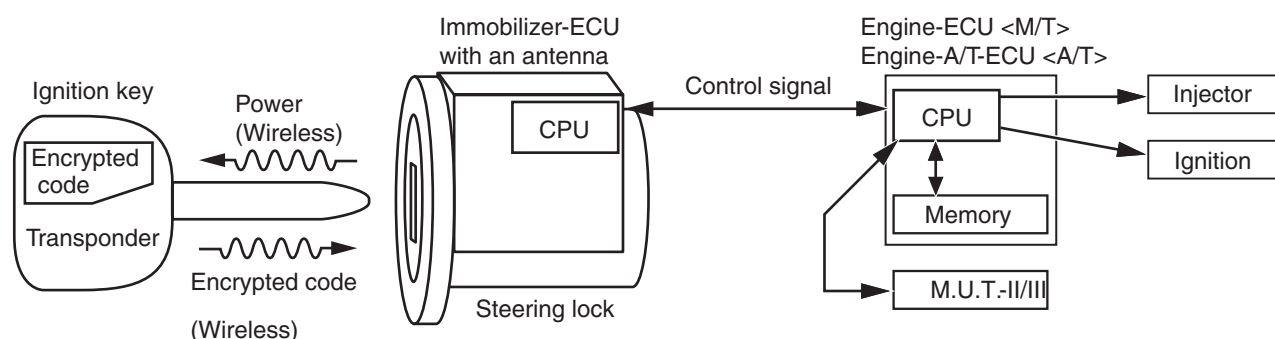
4. The system is designed to be maintenance-free because the power source for the transponder is supplied by the immobilizer-ECU. Two ignition keys are provided, and up to eight keys can be registered to one vehicle (one receiver) as needed. There are 4 billion possible combinations for the registered encrypted codes, and in addition, one part of the code is changed each time the key is switched on, which improves security by preventing theft using a copied encrypted code.

NOTE: If the immobilizer-ECU is replaced or if the ignition key is lost or additional keys are requested, the M.U.T.-II/III must be used to reset all transponder encrypted codes. During the resetting process, all transponders must be re-registered because the registered encrypted codes will be erased.

DIAGNOSIS CODE TABLE

Diagnosis code No.	Diagnosis item
11	Transponder communication system or radio interference of encrypted code
12	Encrypted codes are not the same or are not registered

CONSTRUCTION DIAGRAM



AC304482 AB

MAIN COMPONENTS

Component name	Outline of function
Immobilizer-ECU with an antenna	<ul style="list-style-type: none"> Supplies electrical power to the transponder integrated in the ignition key, and transmits random number data. Verifies the encrypted code which is sent from the transponder. If the code is correct, it sends an engine mobilization signal to the engine-ECU <M/T> or engine-A/T-ECU <A/T>.
Transponder	Is power-supplied by the immobilizer-ECU. When the transponder receives random number data, it processes it and the encrypted code. Then it transmits the process result to the immobilizer-ECU.
Engine-ECU <M/T>, Engine-A/T-ECU <A/T>	Starts the engine, and then continues the engine running if an engine mobilization signal is confirmed. If an engine immobilization signal is confirmed, the ECU cancels the engine control and stops the engine.

Encrypted code registration criteria table

The ignition key contains a transponder (small transmitter), which retains an unique encrypted code. Under any of the conditions below, the encrypted code must be registered in the immobilizer-ECU again. The immobilizer-ECU can retain maximum eight different encrypted codes. This means that maximum eight ignition keys can be registered.

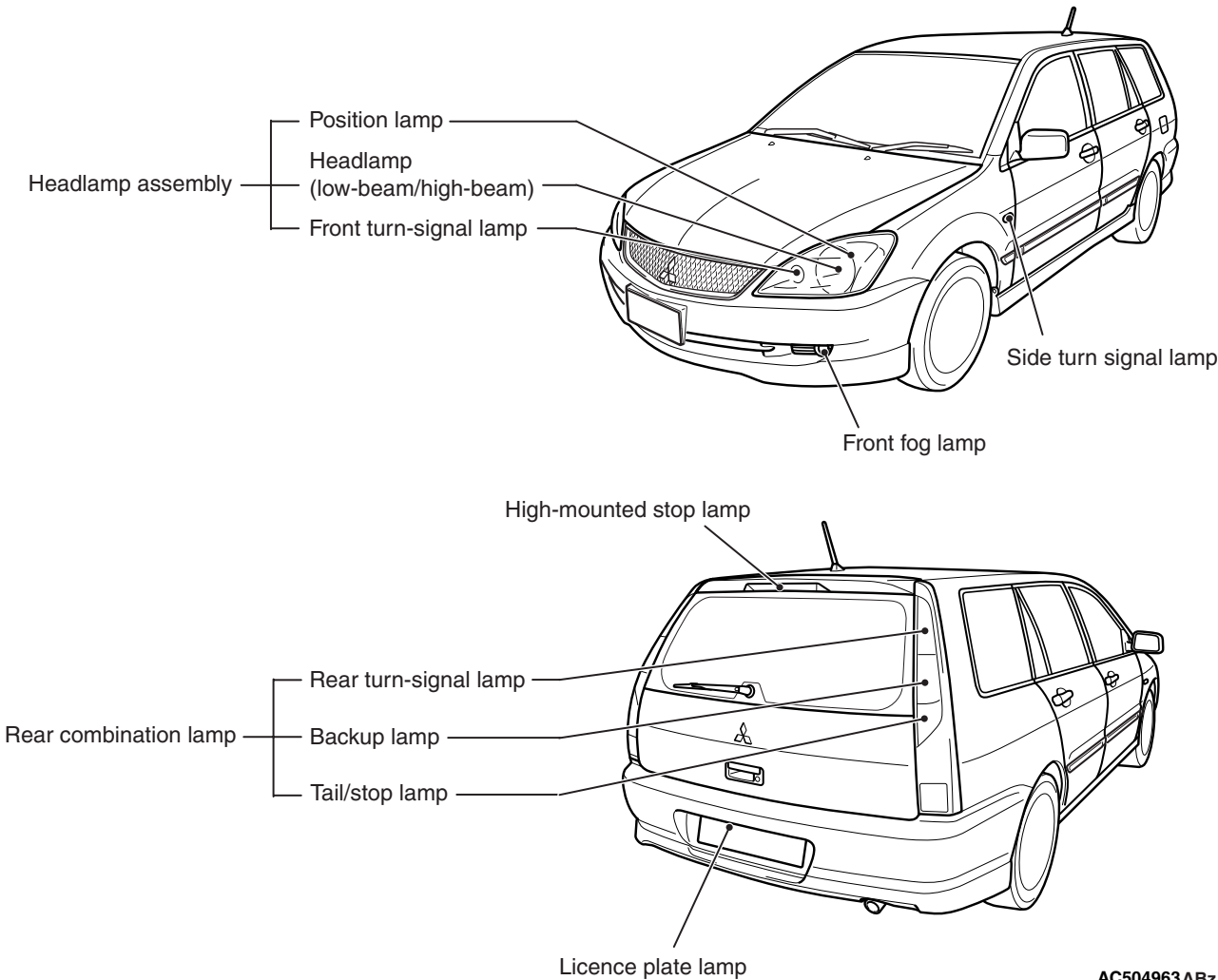
Component to be replaced	Engine-ECU <M/T> or engine-A/T-ECU <A/T>	Immobilizer-ECU	Ignition key
When engine-ECU <M/T> or engine-A/T-ECU <A/T> is replaced	—	Must be replaced.	Must not be replaced. All ignition keys must be registered.
When engine-ECU <M/T> or engine-A/T-ECU <A/T> is overwritten*	—	Must be replaced.	Must not be replaced. All ignition keys must be registered.
When immobilizer-ECU is replaced	Must not be replaced.	—	Must not be replaced. All ignition keys must re-registered again.
When ignition key is added	Must not be replaced.	Must not be replaced.	<ul style="list-style-type: none"> Additional ignition key must be registered All ignition keys must be registered again
When ignition key is lost	Must not be replaced.	Must not be replaced.	All the ignition keys other than the lost one must be registered again

NOTE: *:When the engine-ECU <M/T> or engine-A/T-ECU <A/T> other than immobilizer system is rewritten, it is not necessary to replace and register the immobilizer-ECU and the ignition key.

LIGHTING

M2540004000501

EXTERIOR LAMPS
CONSTRUCTION DIAGRAM



AC504963ABz

- Two headlamps of clear lens type with built-in front turn-signal lamps and position lamps are adopted.
- A headlamp levelling function is adopted.
- The appearance has been improved by featuring a no-cut lens for the front fog lamp.
- The appearance of the rear combination lamp has been improved by featuring a no-cut lens and vacuum evaporating the aluminium on the inner area of the lamp.
- Integrating the rear reflector with the tail/stop lamp has improved visibility and safety.
- A high-mounted stop lamp has been installed to the rear spoiler.

SPECIFICATIONS

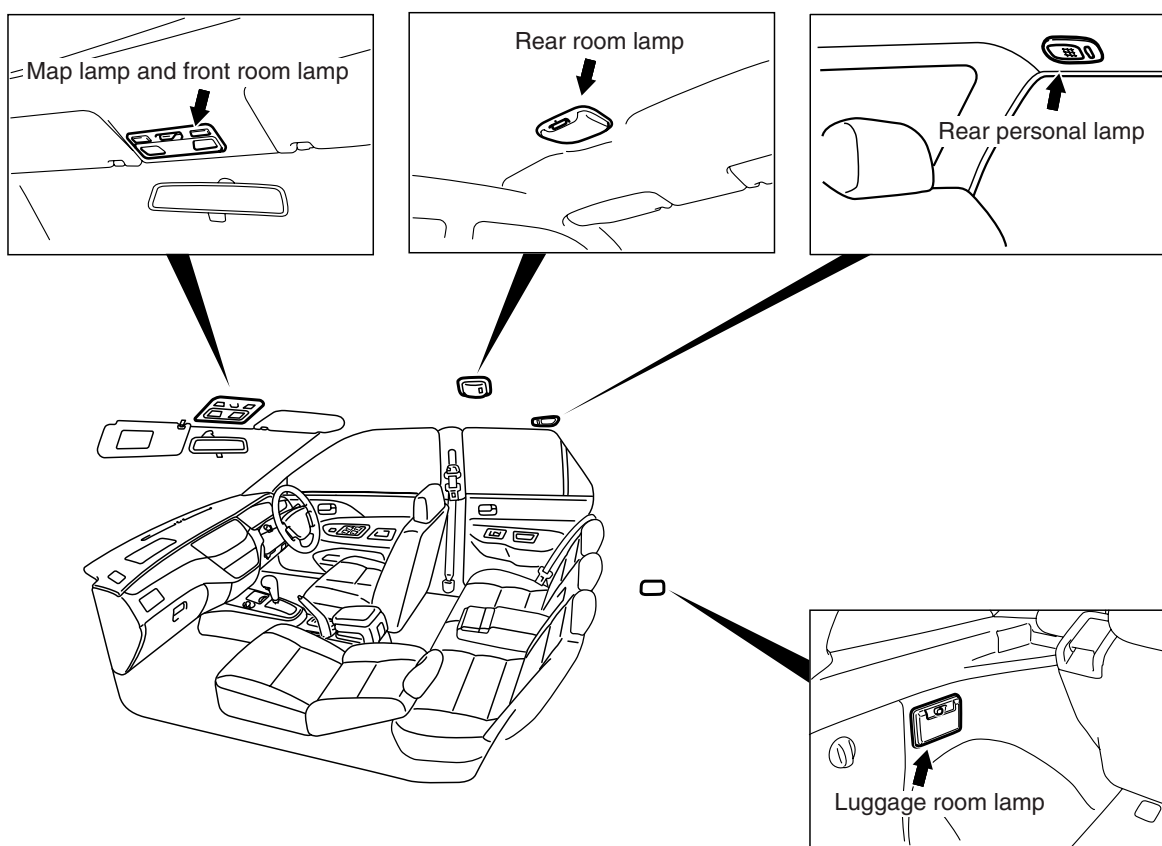
Item		Specification
Headlamp assembly	High-beam/low-beam W/W (Halogen bulb)	60/55 (H4)* ¹
	Position lamp W	5
	Front turn-signal lamp W	21
Front fog lamp W (Halogen bulb)		55 (H3)* ¹

Item		Specification
Side turn-signal lamp W		5
Rear combination lamp	Tail/stop lamp W	5/21
	Rear turn-signal lamp W	21
	Backup lamp W	16 (W16W) or 18 (921)
High-mounted stop lamp		LED type
Licence plate lamp W × quantity		5 × 2

NOTE: *1: The brackets () show the bulb type.

INTERIOR LAMPS

CONSTRUCTION DIAGRAM



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- A map lamp serving also as front room lamp which can be used at both the driver's seat and passenger seat is provided.
- A rear room lamp and luggage room lamp are provided.

SPECIFICATIONS

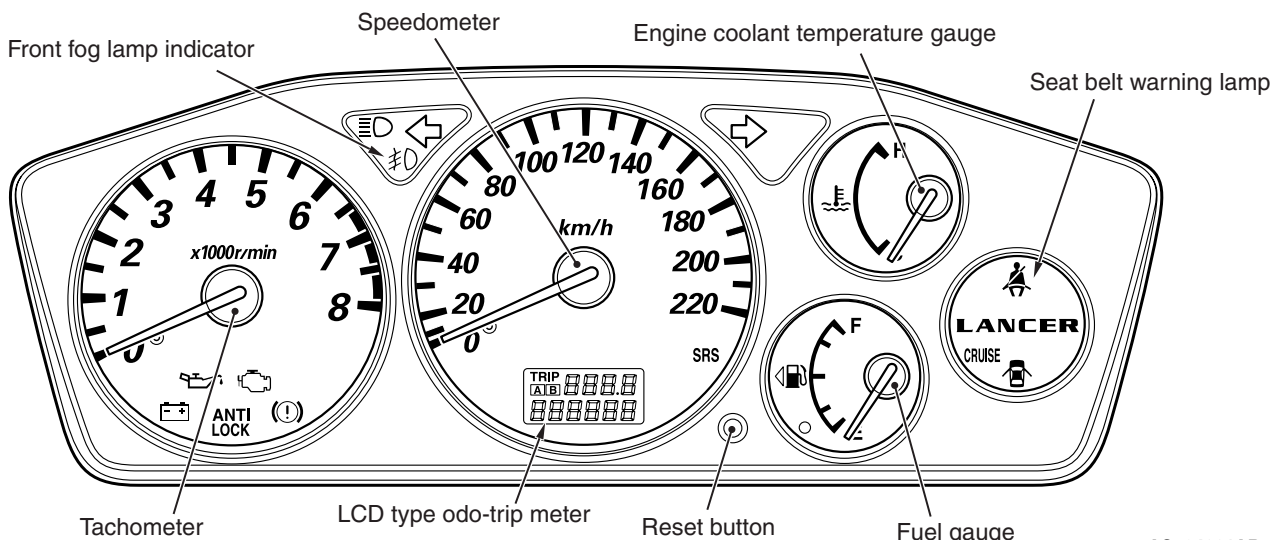
Item		Specification
Map lamp and front room lamp	Map lamp W × quantity	7.5 × 2
	Front room lamp W	7.5
Rear room lamp W		8
Rear personal lamp W		8
Luggage room lamp W		8

COMBINATION METER

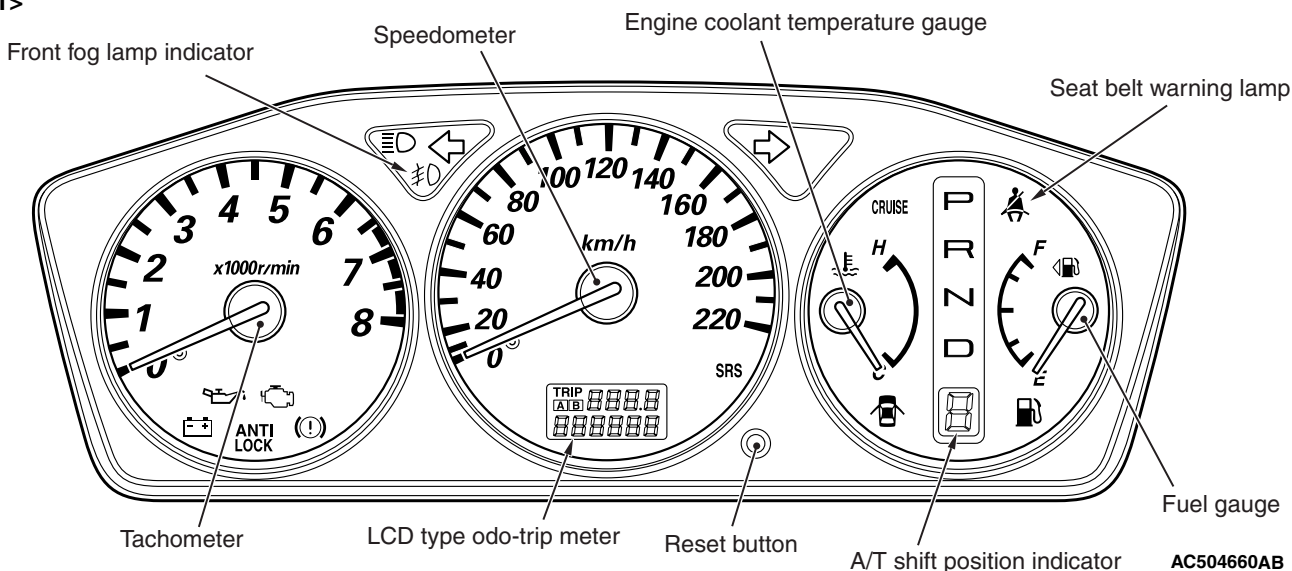
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CONSTRUCTION DIAGRAM

<M/T>



<A/T>



The combination meter features large, clearly visible analogue indicators. Designed to be easy-to-distinguish by drivers, the gauges are arranged with the speedometer in the middle, the tachometer at left, and the fuel and coolant temperature gauges at right.

- The speedometer is an electrical type, which works according to the vehicle speed sent by the engine-A/T-ECU. <A/T>
- The speedometer is an electronic type speedometer which operates by the pulse signal generated by the vehicle speed sensor. <M/T>
- A large and clear LCD* type odo-trip meter is provided. The odometer continuously displays values while the trip meter adopts a twin-trip (trip A, trip B) function which is switched by a reset button.

- Comes with a front fog lamp indicator lamp to let the driver know that the fog lamp is on.
- The fuel gauge is provided with a triangular mark indicating the location of the fuel filler door to clearly show that the fuel filler door is on the left side of the car.
- The A/T indicator contains a digital shift position indicator, which displays 1st to 4th gears, at its lower part. <A/T>
- The pearl white meters are adopted so that patterns appear at certain view angles.

NOTE: LCD*: liquid crystal display

RADIO, CD PLAYER, SPEAKER, ANTENNA

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RADIO AND CD PLAYER

The electronically tuned AM/FM radio and CD player incorporating 1 DIN-size power amplifier (25W × 4) is available as an option.

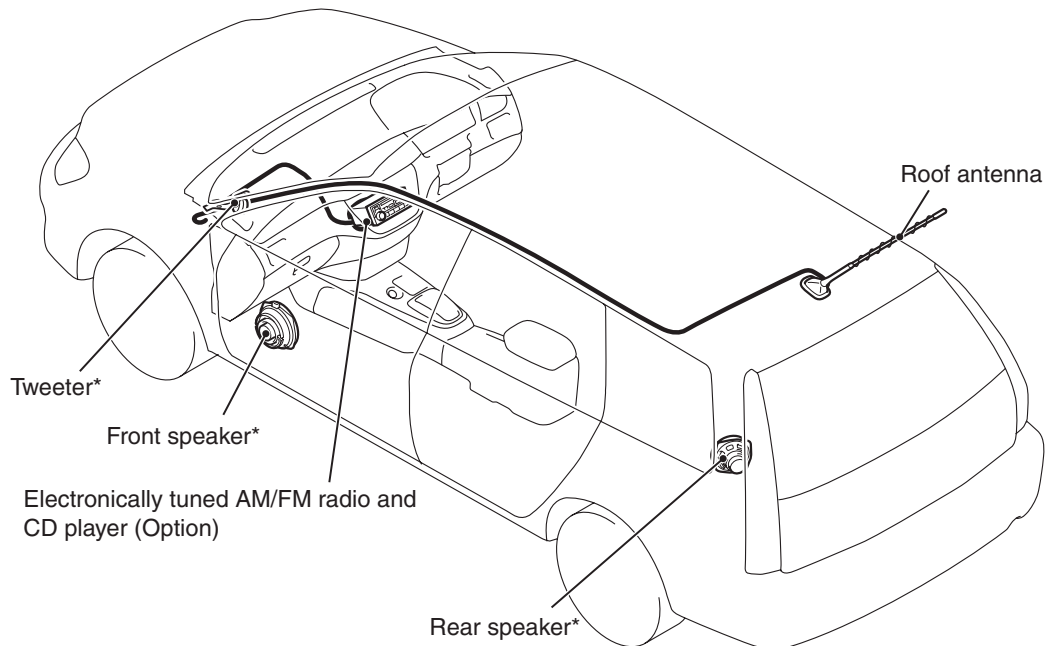
SPEAKER

Location	Item	Specification
Front door	Tweeter	3.5 cm
	Front speaker	Dual cone full range –16 cm
Rear gate pillar	Rear speaker	Full range –13 cm

ANTENNA

Featuring a roof antenna.

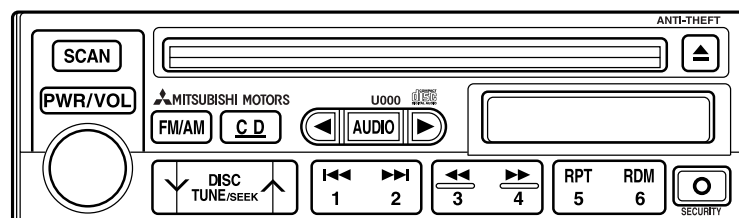
CONSTRUCTION DIAGRAM



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NOTE: The * indicates equipped on the left and right sides.

Electromically tuned AM/FM radio and CD player (Option)



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