GROUP 54A

CHASSIS ELECTRICAL

CONTENTS

DIAGNOSTIC SYSTEM

GENERAL INFORMATION

M2544100200278

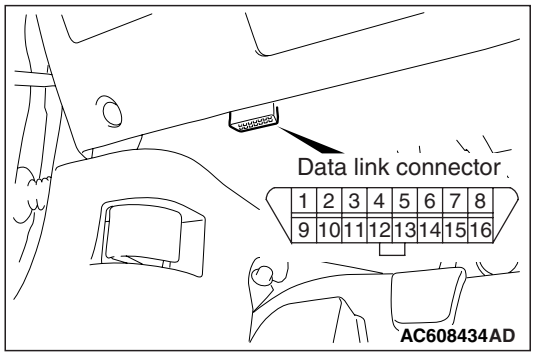
The data link connector for scan tool MB991958 inspection is installed near the driver's left leg under the in order to improve service quality.

Diagnostic function	DTC code sent	Output of service data	Actuator test	Erase DTCs using scan tool	Freeze frame data	ECU information display
ECM	●	●	●	●	●	●
TC-SST	●	●	–	●	●	●
Auto-cruise control system	–	●	–	–	–	●
ASC	●	●	●	●	●	●
AYC, ACD	●	●	–	●	●	●
SRS air bag	●	●	●	●	●	●
A/C	●	●	●	●	●	●
ETACS	●	●	–	●	●	●
Combination meter	●	●	●	●	●	●
Steering wheel sensor	–	–	–	–	–	●
AND (multivision display)	●	–	–	●	●	●
Audio	●	●	–	●	●	●
LIN	●	●	–	●	–	–
WCM	●	●	–	●	●	●
KOS	●	●	●	●	●	●
Occupant classification-ECU	●	●	–	●	●	●
Satellite radio	●	–	–	●	●	●
Hands-free module	●	●	●	●	●	●
Shift lever <TC-SST>	●	●	–	●	●	●

NOTE:

1. *● : Indicates that the diagnosis function is set.*
2. *– : Indicates that the diagnosis function is not set.*

DATA LINK CONNECTOR



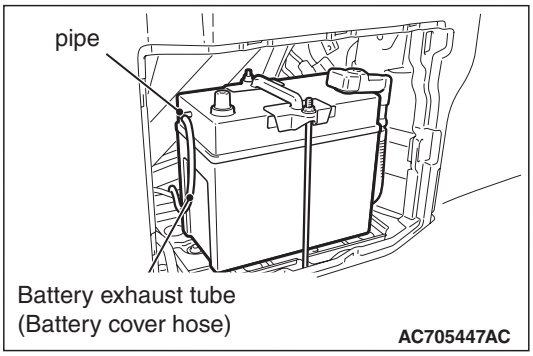
Data link connector	
Terminal No.	**Connection content**
1	Diagnosis control
2, 3	–
4	Ground
5	Ground
6	CAN communication line (CAN_H)
7	ECM
8	ECM
9	–
10	Pulse check
11 – 13	–
14	CAN communication line (CAN_L)
15	–
16	Battery power supply

BATTERY

GENERAL INFORMATION

M2544200200383

The sealed battery is installed in the trunk room. The sealed battery has a structure that uses the sealed reaction (cathodic absorption), eliminating the needs for refilling and liquid level check.



- The sealed reaction (cathodic absorption) brings the oxygen gas*, which is generated at positive pole, to the negative pole, and binds the oxygen gas with hydrogen gas generated at negative pole. As a result, the gas is transformed back to water, preventing the decrease of electrolytic solution.

*NOTE: *: The generation of oxygen gas at positive pole occurs in an earlier stage than that of hydrogen gas at negative pole.*

- Calcium alloy with superior characteristics of electrolyte decrease is used for the polar plate grille between the positive and negative poles in the battery container.

Although the sealed reaction (cathodic absorption) occurs with 100% efficiency with a normal use, the generated gas may not be absorbed completely under the statuses of overcharging, high temperature, or high voltage. Therefore, to prevent the charging of non-absorbed inflammable gas inside the trunk room, the battery exhaust tube (battery cover hose) and pipe for gas bleeding are equipped.

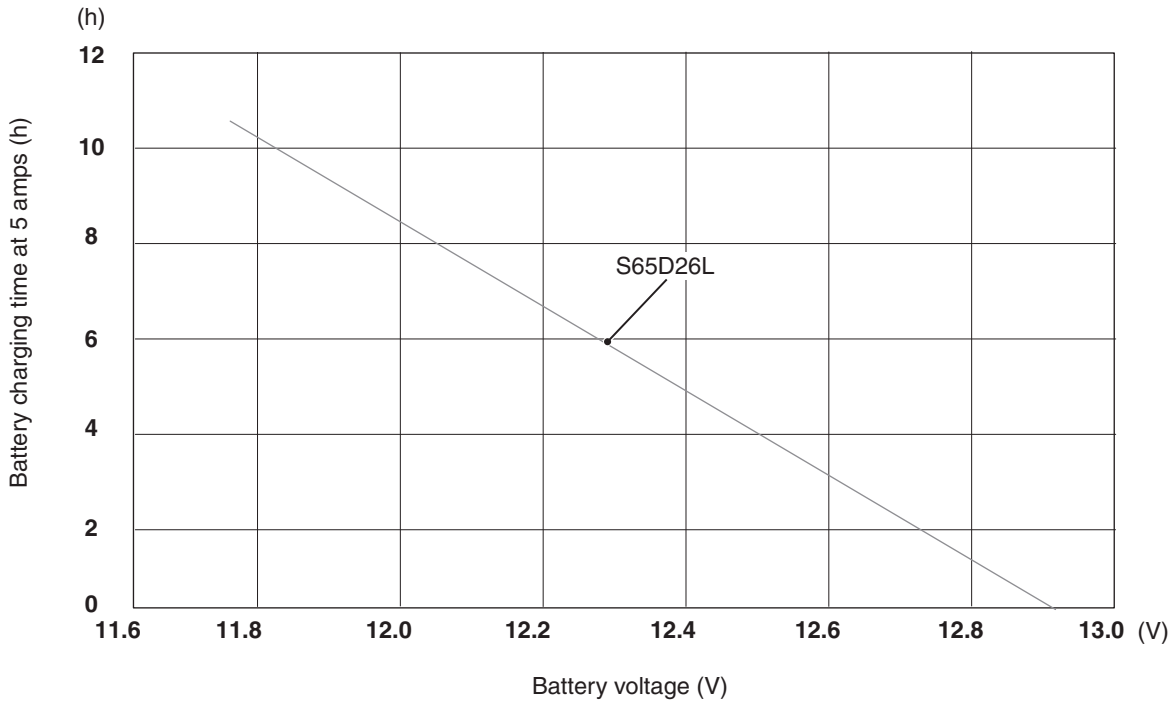
TSB Revision

⚠ CAUTION

- **When charging, always set the charging current to 5 amps or less.**
- **Always charge the battery by referencing the charging time in Graph 1.**
- **Do not remove the battery cover or label.**
- **Always securely mount the battery exhaust tube (battery cover hose) and pipe.**

Item	S65D26L
Voltage V	12
Capacity (5-hour rate) Ah	44

Graph 1



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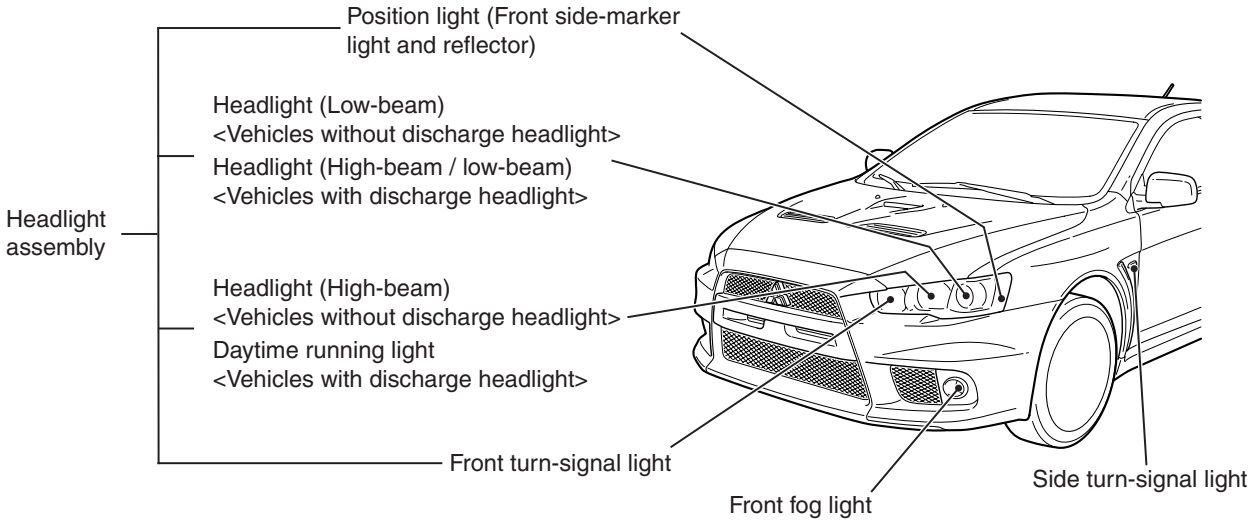
LIGHTING

EXTERIOR LIGHTS

M2544300300451

CONSTRUCTION DIAGRAM



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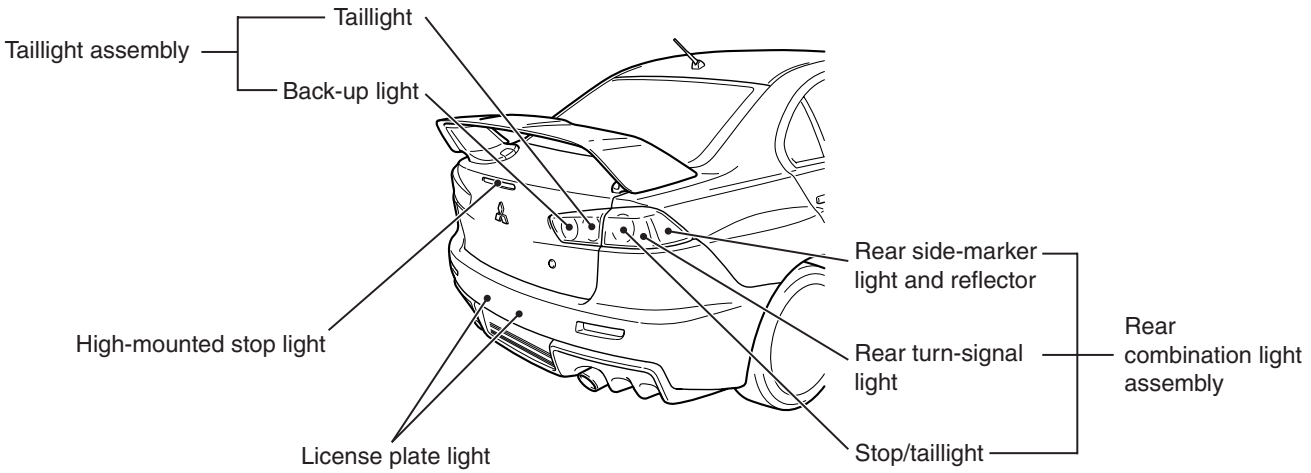

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- As for headlight assembly, a type with halogen bulbs for the high-beam and low-beam and a type with a discharge bulb for both high-beam and low-beam are established.
- The halogen bulb type headlight assembly employs the four-light type integrated with the headlight (low-beam), headlight (high-beam), front turn-signal light, and position light. The dimmed headlight (low-beam) is also used as a daytime running light. <Standard: GSR>

  NOTE: For the operation of daytime running light, refer to Function and Control by ETACS-ECU P.54A-10.
- For the discharge bulb type headlight assembly, the headlight assembly with two headlights has been adopted which incorporates the projector type headlight (low-beam/high-beam), daytime running light, front turn-signal light, and position light. Also, the headlight manual leveling system (refer to) has been adopted. The switching of headlight (low-beam/high-beam) is performed by the driving of light-shield in the projector unit using the signal from lighting switch. <Standard: MR, Option: GSR>

  NOTE: For the operation of daytime running light, refer to Function and Control by ETACS-ECU P.54A-10.

TSB Revision

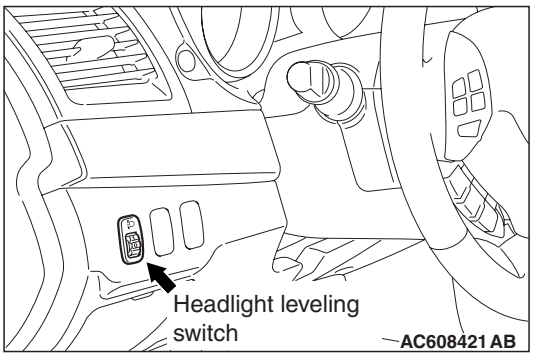
- The front fog light is mounted to the front bumper.
- The side turn-signal lights have been installed to the fender.
- The rear combination light assembly are integrated with the stop/taillight, rear turn-signal light and rear side-marker light.
- The taillight assembly are integrated with the taillight and back-up light.
- The LED type high-mounted stoplight has been integrated into the trunk lid.
- The lighting system is provided with headlight automatic-shutdown function, auto light function and daytime running light function (Refer to Function and Control by ETACS-ECU P.54A-10).
- For the flasher timer function of turn-signal, the comfort flasher function has been adopted to improve the operability when changing lanes. When the turn-signal light switch (lighting switch) is operated for a short time, this function flashes the turn-signal light of the operated direction three times (Refer to Function and Control by ETACS-ECU P.54A-10).

SPECIFICATIONS

Item		Specification
Headlight assembly <Vehicles without discharge headlight>	High-beam <Halogen bulb>	60W (9005 or HB3)
	Low-beam <Halogen bulb>	51W (9006 or HB4)
	Position light	5W (WY5W)
	Front turn-signal light	21W (WY21W)
Headlight assembly <Vehicles with discharge headlight>	High-beam / low-beam <Discharge bulb>	35W (D2S)
	Daytime running light	27W / 32cp (1156)
	Position light	5W (WY5W)
	Front turn-signal light	21W (WY21W)
Front fog light		55W (H11)
Side turn-signal light		5W
Rear combination light assembly	Stop/taillight	21 / 5W (7443)
	Rear turn-signal light	21W (7440)
	Rear side-marker light	5W (W5W)
Taillight assembly	taillight	5W (W5W)
	Back-up light	21W (7440)
High-mounted stoplight		LED type
License plate light		5W (W5W)

NOTE: The brackets ( ) show the ANSI Trade No. or bulb type.

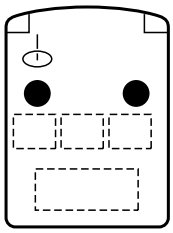
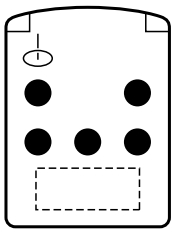
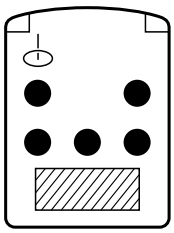
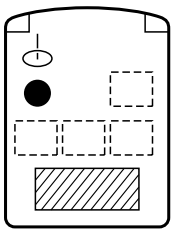
HEADLIGHT MANUAL LEVELING SYSTEM



The beam direction of the headlights changes according to the number of passengers and the amount of load. The headlight manual leveling function is a system that allows the driver to change the direction of headlight beam so that the drivers of oncoming cars are not dazzled by the headlights. The headlight leveling switch allows changing the direction in five steps: 0 to 4.

NOTE: As the position value of headlight leveling switch increases, the direction of the headlight becomes lower.

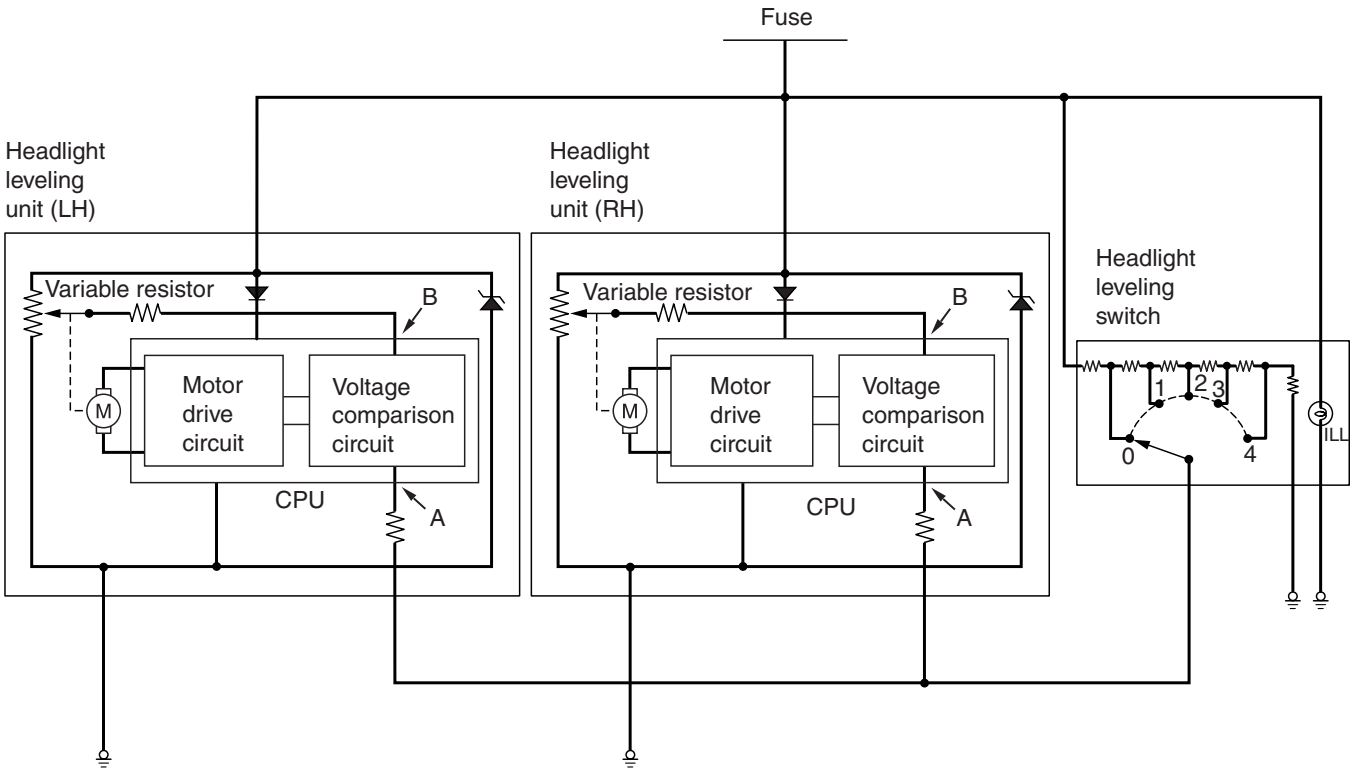
RELATIONSHIP BETWEEN THE SWITCH POSITIONS AND THE NUMBER OF PASSENGERS/LOADS

Passenger and load	 AC508573	 AC508574	 AC508591	 AC508592
	One or two passengers	Five passengers	Five passengers and heavy loads	Driver and heavy loads
Switch position	0	1	2	2

NOTE:

- *Each switch position is for reference. In each switch position, when the headlight direction is still too high, turn the switch to a position that is one-level higher.*
- *Before the adjustment of beam height, set the switch to the 0 position (beam direction is at the uppermost position).*
- *After unloading passengers or luggage, always return the switch to the 0 position.*

OPERATION



AC314086AB

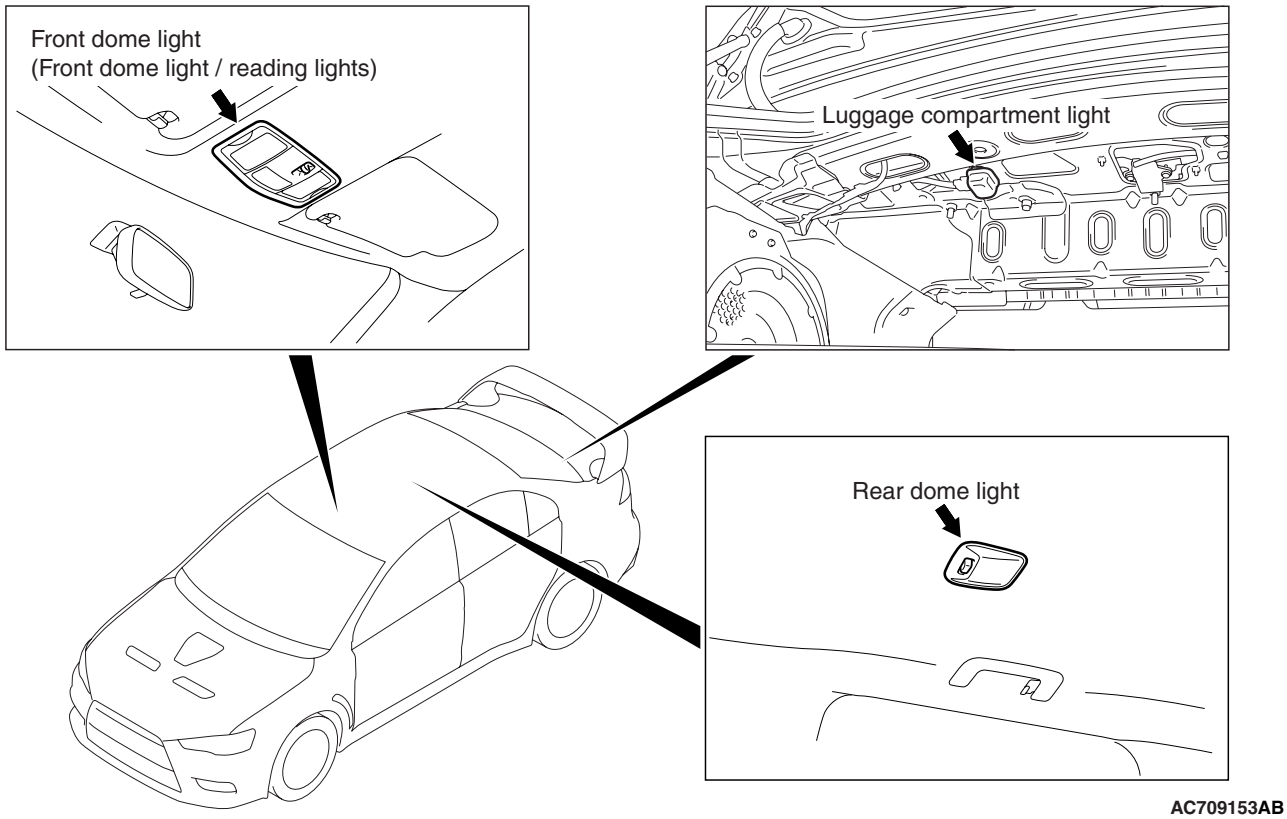
1. The headlight leveling switch increases the resistance as it is turned from 0 to 4. Turning the headlight leveling switch changes the voltage at point A. When the headlight leveling switch is turned from 0 to 4, the voltage at point A decreases. Upon detection of this voltage change, the headlight leveling unit turns the motor to lower the beam direction. At this time, the resistance of the variable resistor in the headlight assembly changes, and the voltage at point B decreases gradually. When the voltages at points A and B become equal, the headlight leveling unit stops the motor.
2. Turning the headlight leveling switch from 4 to 0 increases the voltage at point A, and then the headlight leveling unit turns the motor in the direction opposite to that mentioned in Item 1, increasing the voltage at point B. When the voltages at points A and B become equal, the headlight leveling unit stops the motor.
3. The headlight leveling unit detects voltage changes caused by headlight leveling switch operation, and turns the motor to change the directions of the headlight reflectors for the adjustment of the headlight beam direction.

TSB Revision

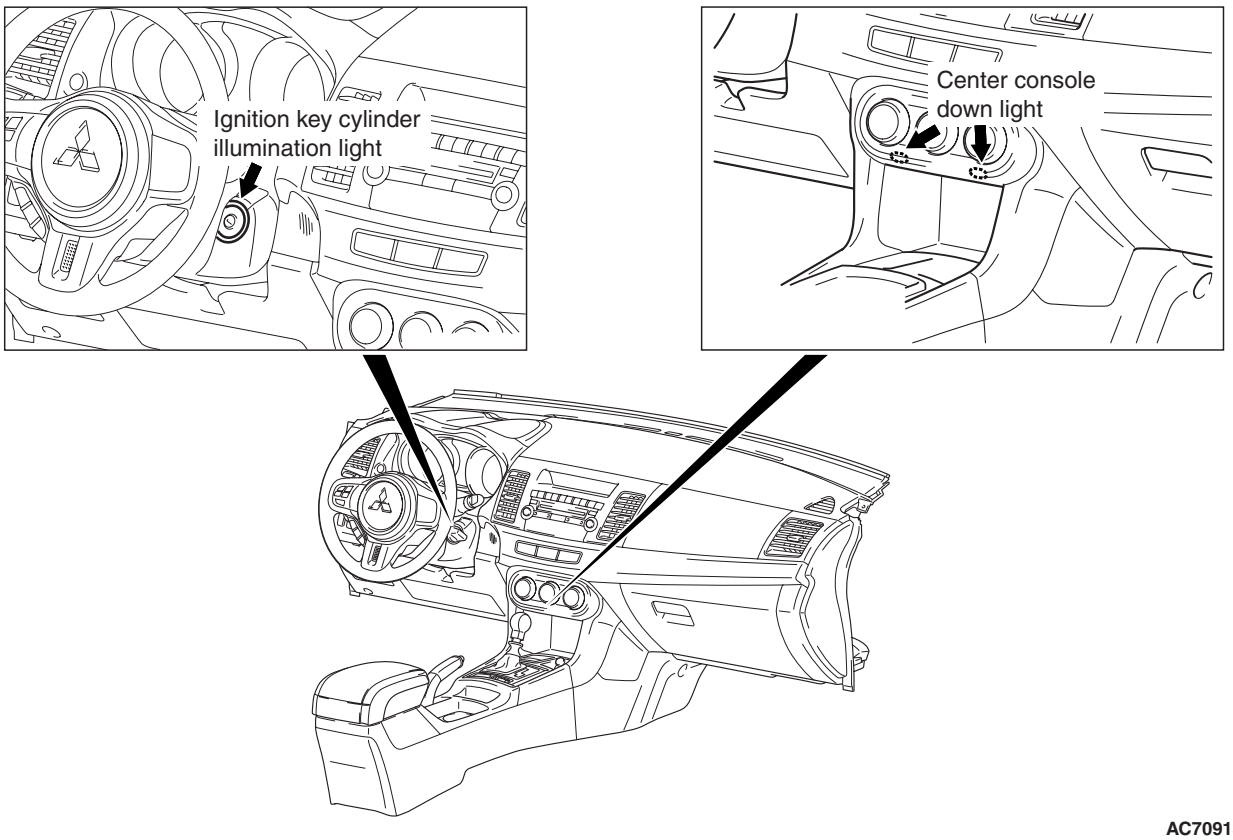
INTERIOR LIGHT

M2544300400351

CONSTRUCTION DIAGRAM



AC709153AB



AC709131AB

TSB Revision

- A front dome light, installed to the front part of the roof, has been equipped with the lens-push type front dome light / reading light which can be operated easily from the driver's and front passenger's seat, offering excellent operability for turning on and off the light.
- The rear dome light, which illuminates the rear passenger's seat, is installed above the rear seat. <Vehicle without sunroof>
- The luggage compartment light is installed to the upper part of the luggage compartment.
- An ignition key cylinder light has been added to the ignition key cylinder. <Vehicle without KOS>
- The center console down light has been installed to the upper surface of the center lower box.
- The dimmer interior light control function and ignition key cylinder illumination light control function have been adopted for the interior light (Refer to Function and Control by ETACS-ECU P.54A-10).

SPECIFICATIONS

Item	Specification
Front dome light (front dome light / reading light) W × quantity	8 × 2
Rear dome light W	8
Luggage compartment light W	5
Ignition key cylinder illumination light W	1.5
Center console down light	LED type

FUNCTION AND CONTROL BY ETACS-ECU.

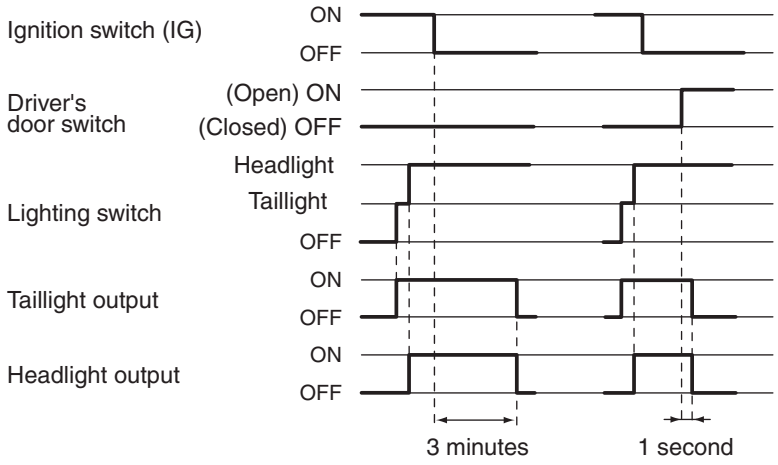
M2544300600377

Following functions are controlled by ETACS-ECU.

Function		Function description
Headlight	Headlight automatic-shutdown function	P.54A-11
	Auto light function <Vehicles with lighting control sensor>	P.54A-11
Flasher timer function	Turn-signal light	P.54A-12
	Comfort flasher function	P.54A-12
	Hazard warning light	P.54A-12
Daytime running light	Daytime running light function	P.54A-13
Fog light	Front fog light function	P.54A-14
Interior light	Interior light dimmer control function	P.54A-15
	Interior light automatic-shutoff function	P.54A-15
	Ignition key cylinder illumination light control function	P.54A-16

HEADLIGHT

HEADLIGHT AUTOMATIC-SHUTDOWN FUNCTION THE INITIAL CONDITION: WITH FUNCTION (SPECIFICATION C: WHEN THE IGNITION SWITCH IS IN OFF POSITION IS TURNED ON, THE HEADLIGHTS ARE NOT TURNED OFF AUTOMATICALLY.)>



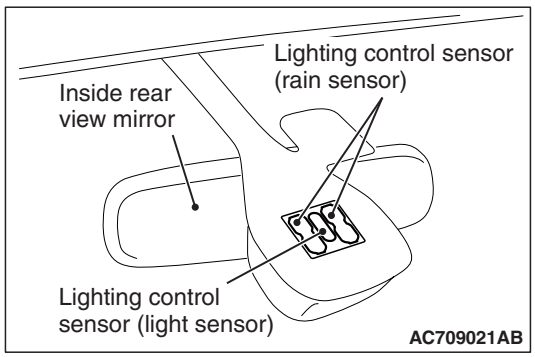
Even when the lighting switch (taillight switch or headlight switch) is ON, the headlight (including the taillights) turns off automatically under any of the following conditions to prevent the battery discharge caused by unattended operation.

- If the ignition switch is turned OFF with the lighting switch ON, the light turns off automatically after 3 minutes. If the driver's door is opened during the 3 minutes, the light turns off after one second (One seconds before turning off, the light reminder tone alarm sounds. However, if the driver's door is opened with the ignition key inserted, the key reminder alarm tone alarm operates in the first priority).
- If the lighting switch is turned to the taillight position from OFF with the ignition switch OFF, the lights do not turn off automatically.

After this function is activated, when the lighting switch is turned OFF and then ON or the ignition switch is turned ON, the headlights illuminate again.

NOTE: This function can be cancelled through customization (Refer to Customization Function P.54A-17).

AUTO LIGHT FUNCTION <VEHICLES WITH LIGHTING CONTROL SENSOR> (INITIAL SETTING: LIGHTING CONTROL SENSOR SENSITIVITY: LEVEL 3)



- Auto light function automatically turns ON/OFF the headlight and taillight according to the signal from the lighting control sensor (light sensor) attached to the windshield when the lighting switch is in the AUTO position.
- The light sensor and the rain sensor are incorporated into the lighting control sensor. The light sensor is used for the auto light function, and the rain sensor for the rain sensitive wiper function *.

*NOTE: *: For the rain sensitive wiper function, refer to GROUP 51, Windshield Wiper and Washer P.51-6.*

TSB Revision

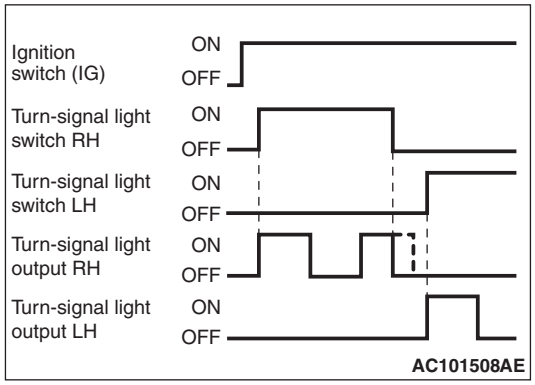
- The lighting control sensor (light sensor) detects the front and surrounding brightness of the vehicle. With this detection, it is judged that the vehicle enters a tunnel or just drives under a bridge. When it is judged that the vehicle drives through a tunnel, the headlight and taillight are automatically turned ON. When it is judged that the vehicle drives under a bridge, the headlight and taillight are not turned ON automatically. When the vehicle surroundings get dark in case such as evening, the headlight and taillight are automatically turned ON.
- The timing that the headlight and taillight are automatically turned ON when the vehicle surroundings get dark in case such as evening can be adjusted by the customize function. (Refer to Customization Function P.54A-17.)

FLASHER TIMER FUNCTION

TURN-SIGNAL LIGHT (INITIAL SETTING: TURN SIGNAL LIGHT CAN BE OPERATED WHEN THE IGNITION SWITCH IS IN THE ON POSITION)

When the turn-signal light switch is ON (LH or RH) with the ignition switch ON, the turn-signal light output (flash signal) is turned ON.
If the light bulb of the front or rear turn-signal light has burned out, the flashing speed becomes faster to alert the driver that the light bulb has burned out.

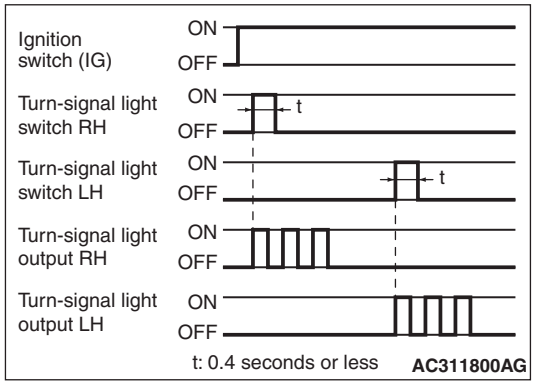
NOTE: Using a customization function, this function becomes available even when the ignition switch is in the ACC position. For more information about the Customization Function, refer to P.54A-17.

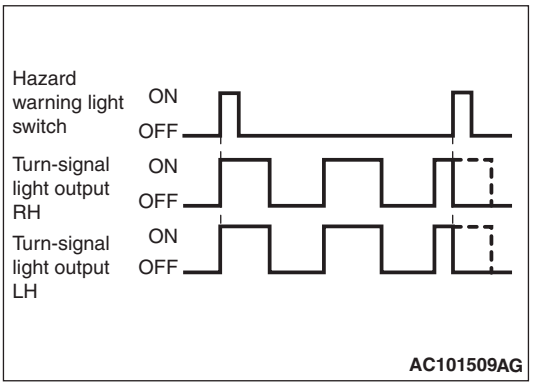


COMFORT FLASHER FUNCTION (THE INITIAL CONDITION: WITH FUNCTION)

With the ignition switch in the ON position, when the turn signal switch is turned ON momentarily (0.4 second or less), ETACS-ECU turns ON the turn signal light output, and flashes the turn signal light three times.

NOTE: Using the customization function, "with function/without function" of the comfort flasher function and the switch acceptance time can be set. For more information about the Customization Function, refer to P.54A-17.





HAZARD WARNING LIGHT

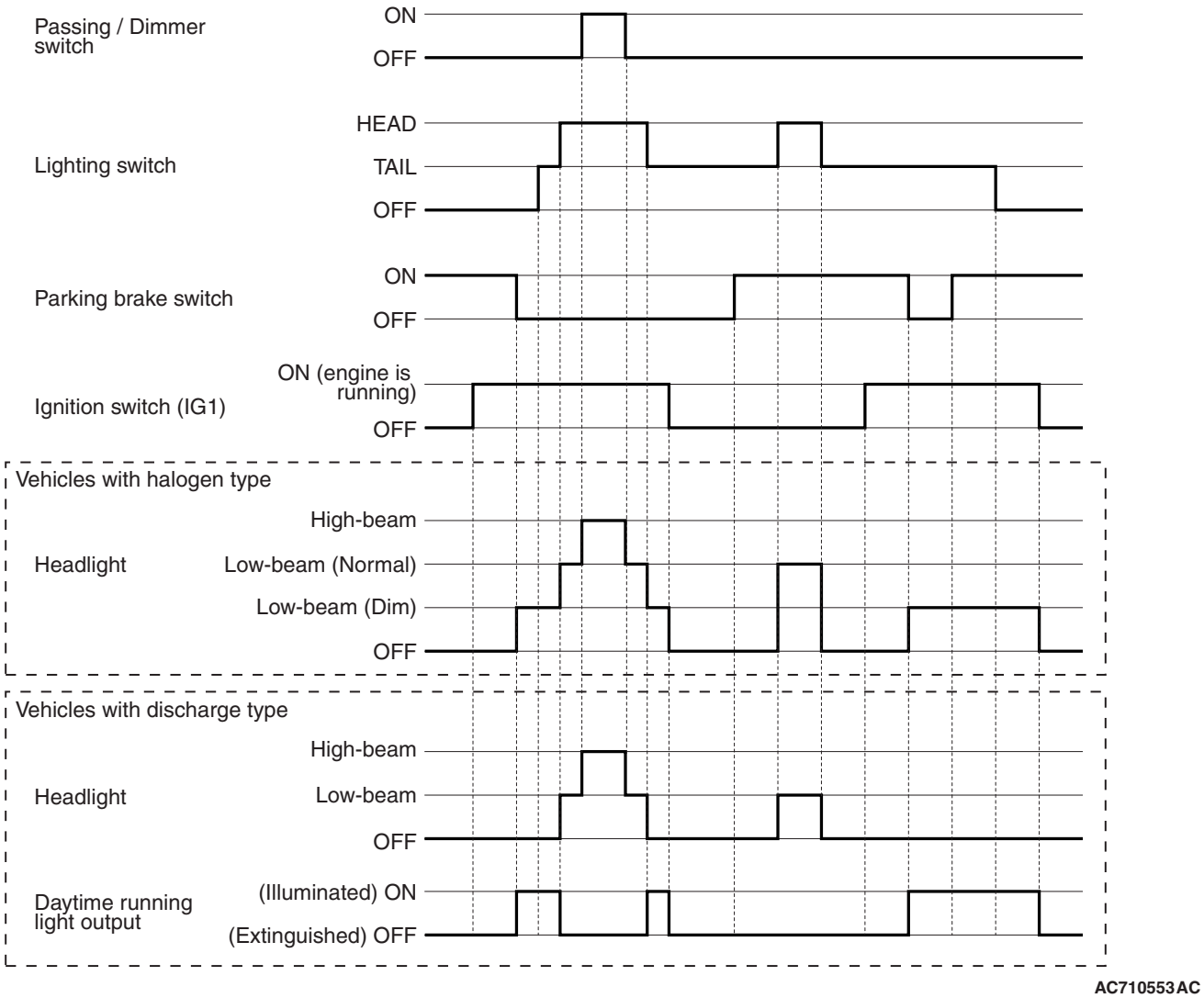
ETACS-ECU detects the signal that changes the hazard warning light switch from OFF to ON, and reverses the flashing state by the signal (to the flashing state when the hazard warning light is not flashing, and to the turned OFF state when flashing).

NOTE:

1. *The push-return switch has been adopted for the hazard warning light switch.*
2. *Even if the light bulb has burned out, the flashing speed of the hazard warning light is not changed.*

DAYTIME RUNNING LIGHT

DAYTIME RUNNING LIGHT FUNCTION



ETACS-ECU controls the daytime running light function as described below.

TSB Revision

Illumination condition

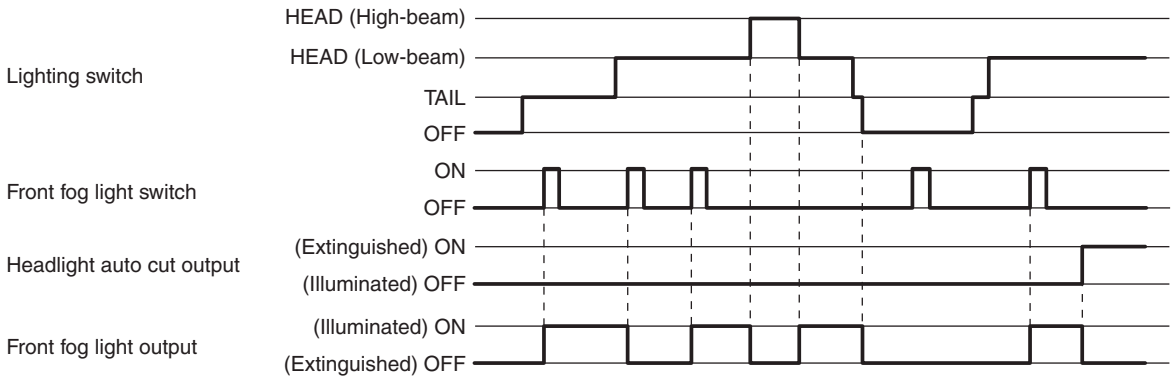
- When all the conditions of ignition switch at ON position (engine is running), parking brake released (parking brake switch: OFF), and lighting switch at OFF or TAIL position are satisfied, the low-beam brightness is dimmed with the halogen type vehicles and the daytime running light is illuminated with the discharge type vehicles.

Turning off condition

- The light is turned off when the ignition switch is in the OFF position, lighting switch is in the position other than OFF or TAIL.

FOG LIGHT

FRONT FOG LIGHT FUNCTION



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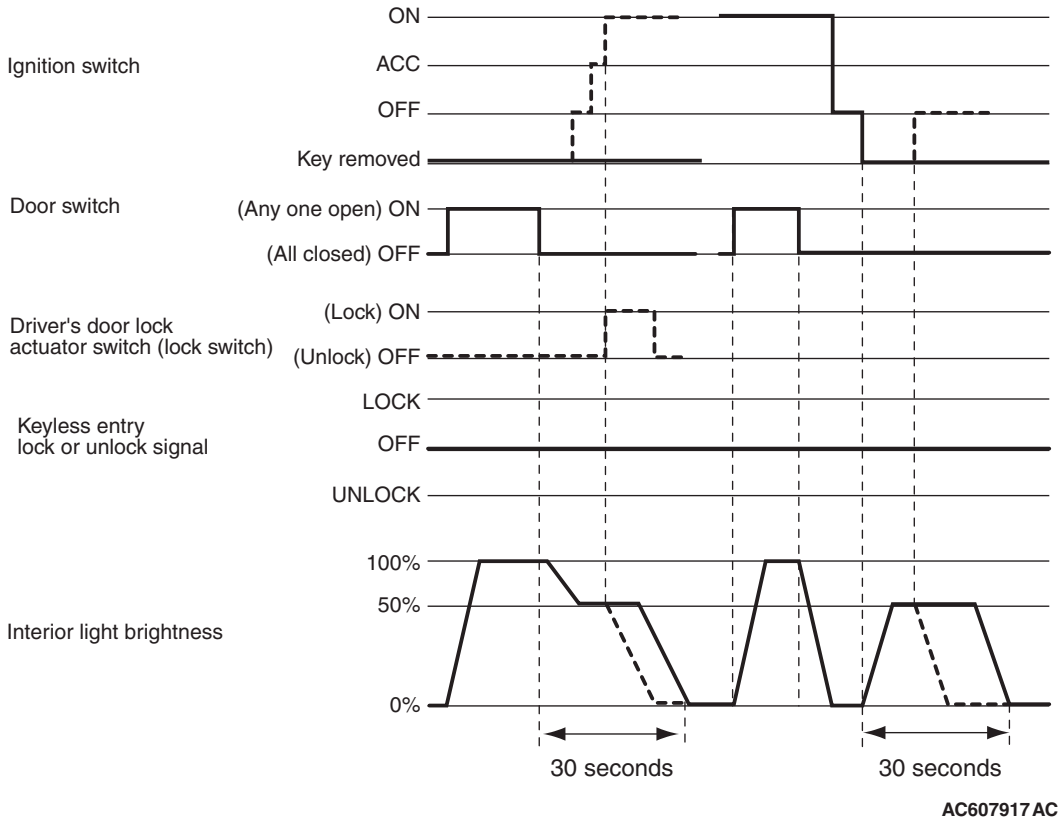
When the front fog light switch is turned to ON with the taillights or the headlights lit (the taillight switch or the headlight switch is ON), the ETACS-ECU illuminates the front fog lights.

If the taillight or the headlight is turned off with the lighting switch OFF while the front fog lights lit, the front fog lights turn off at the same time to prevent unattended operation.

INTERIOR LIGHT

INTERIOR LIGHT DIMMER CONTROL FUNCTION (THE INITIAL CONDITION: 30 SECONDS)



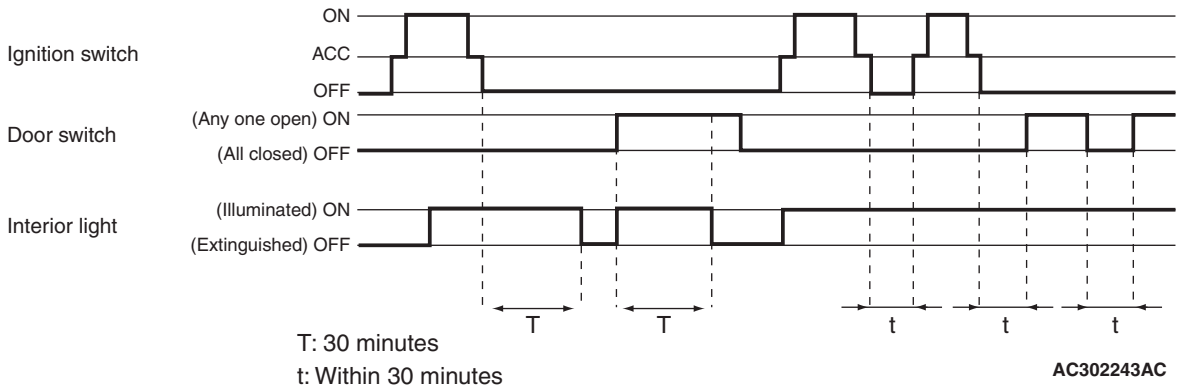
When the interior light switch is set to the DOOR position, ETACS-ECU controls the interior light as follows.

1. When the ignition switch is OFF:
   By opening any door, the light turns ON (100%), and dims (50%) when the door is closed, then and turns off after 30 seconds.
   However, when the ignition switch is turned ON or the door lock is operated, the lights turn off at that time.
2. When the ignition switch is ON:
   By opening any door, the light (100%) turns ON and OFF when the door is closed.
3. When all doors are closed, and the ignition key is removed*:
   By removing the ignition key with all doors closed, the light turns ON 50%, and turns off after 30 seconds. However, for the vehicles with TC-SST, the light is not illuminated if the ignition key is removed before the engine stops running (approximately 1 second) since the ignition switch was turned to the OFF position.
   By inserting the ignition key again or operating the door lock with the light lit, the lights turns off.

NOTE:

- **: For the vehicles with KOS, it is operated the same way when the IG knob is turned to OFF or when the emergency key is removed from the key cylinder. However, for vehicles with TC-SST, the light is turned off after approximately 1 second (after engine stops running) since the IG knob was turned OFF.*
- *For the vehicles with the keyless entry system, the delayed light-off time and the operation times of the keyless entry interior light answer back can be changed by the Customization Function (Refer to P.54A-17).*

INTERIOR LIGHT AUTOMATIC-SHUTOFF FUNCTION (THE INITIAL CONDITION: 30 MINUTES)

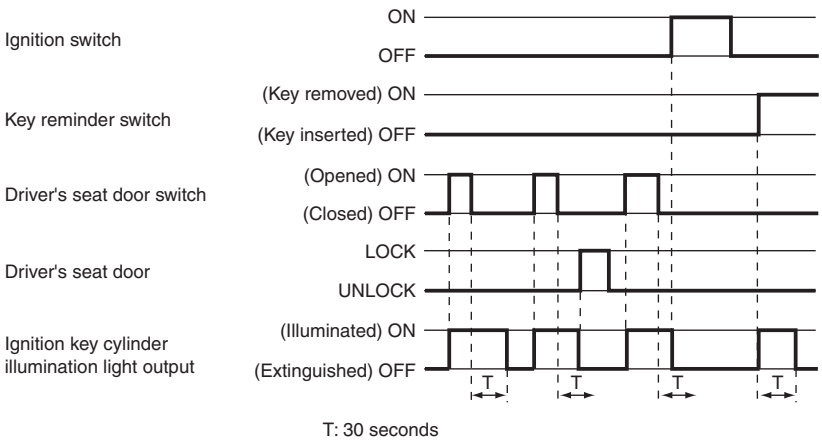


When an interior light such as the dome light [all interior lights connecting to the dome light fuse (the front dome light, the rear dome light, and the ignition key cylinder illumination lights)] is lit, but either one of the conditions is met, the interior light is turned off automatically for preventing the battery discharge caused by the unattended operation or the door-ajar.

- After 30 minutes with the interior light lit while the ignition switch is OFF, the light turns off automatically.
- After 30 minutes with any door opened while the ignition switch is OFF, the light turns off automatically.
- After the auto-turn OFF, the interior light returns to the illumination state when the doors are opened/closed, keyless entry transmitter switch is operated, or ignition switch is turned to ACC position. After returning, the light turns OFF after 30 minutes, when the interior light auto turn off condition is met.

NOTE: The interior light automatic shut-off time can be adjusted by the Customization Function (Refer to P.54A-17).

IGNITION KEY CYLINDER ILLUMINATION LIGHT CONTROL FUNCTION



The ETACS-ECU controls the ignition key cylinder illumination light as described below.

- With the ignition switch OFF, the light is illuminated when the driver's door is opened, and it is turned off 30 seconds after the driver's door is closed. However, the light is turned off if the ignition switch is turned ON or doors are locked within 30 seconds.

TSB Revision

- When the ignition key is removed from the ignition key cylinder, the light illuminates for 30 seconds.* However, for the vehicles with TC-SST, the light is not illuminated if the ignition key is removed before the engine stops running (approximately 1 second) since the ignition switch was turned to the OFF position.

*NOTE: *: For the vehicles with KOS, it is operated the same way when the steering lock is locked or when the emergency key is removed from the key cylinder.*

CUSTOMIZATION FUNCTION

M2544300700374

By operating the ETACS system or MMCS of scan tool MB991958, the following functions can be programmed. The programmed information is held even when the battery is disconnected.

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting content
ACC power auto cut	Time to ACC power cut-off when the ignition switch is in the ACC position	Disable	No function (default)
		30 min	30 minutes
		60 min	60 minutes
Turn power source	Adjustment of turn-signal light operation condition	ACC or IG1	Operable with ACC or ON position
		IG1	Operable with ON position (default)
Comfort flasher	With/without comfort flasher function	Disable	No function
		Enable	With function (default)
Comfort flasher switch time	Switch operation time to activate the comfort flasher function	Normal	0.4 seconds (default)
		Long	0.8 seconds
Hazard answer back	Adjustment of the number of keyless hazard warning light answer back flashes	Lock:1, Unlock:2	LOCK: Flashes once, UNLOCK: Flashes twice (default)
		Lock:1, Unlock:0	LOCK: Flashes once, UNLOCK: No flash
		Lock:0, Unlock:2	LOCK: No flash, UNLOCK: Flash twice
		Lock:2, Unlock:1	LOCK: Flash twice, UNLOCK: Flash once
		Lock:2, Unlock:0	LOCK: Flash twice, UNLOCK: No flash
		Lock:0, Unlock:1	LOCK: No flash, UNLOCK: Flash once
		Lock:0, Unlock:0	No function
Sensitivity for auto light	Lighting control sensor sensitivity (illumination intensity) <vehicles with auto light>	Level 1(+)bright	High-high ambient brightness
		Level 2	High ambient brightness
		Level 3	Standard ambient brightness (default)
		Level 4(–)dark	Low ambient brightness
		Level 5(–)dark	Low-low ambient brightness

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting content
Dome light delay timer with door	Adjustment of interior light delay shutdown time	0 sec	0 second (no delay shutdown time)
		7.5 sec	7.5 seconds
		15 sec	15 seconds
		30 sec	30 seconds (default)
		60 sec	60 seconds
		120 sec	120 seconds
		180 sec	180 seconds
Headlight auto cut customize	Adjustment of headlight automatic shutdown function	Disable	No function
		Enable (C-spec.)	With function (default)
Interior light auto cut timer	Adjustment of interior light automatic shutdown function operation time	Disable	No function
		3 min	3 minutes
		30 min	30 minutes (default)
		60 min	60 minutes

COMBINATION METER

GENERAL INFORMATION

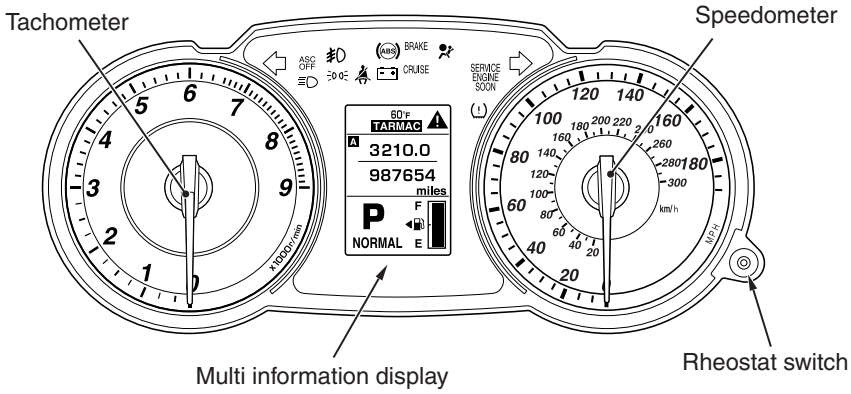
M2545500200428

The combination meter offers the following advantages.

- Speedometer and tachometer are arranged separately on the cylindrical shaped panel, achieving a sporty layout with which the zero position of needle indicator is arranged directly downward. Also, white is adopted for the needle color to improve visibility.
- New font style that offers good visibility and sporty feel has been adopted, and the color is made to bright white that offers a good contrast with the background matt black, securing excellent visibility suitable for any driving condition encountered during daytime and nighttime.
- With the tachometer, the needle movement is made highly responsive to the engine speed.
- Multi information display has been adopted which displays various information, such as the S-AWC control level display, by the operation of multi information meter switch.
- By switching the display color of multi information display to red or yellow, the warning level is indicated.
- The service reminder function has been adopted which notifies the users of the next periodic inspection timing using the driving distance and elapsed time.
- By operating the rheostat switch, the brightness of the meter and illumination can be adjusted in eight steps.
- The layout has been simplified by displaying what is required to meet the legislative requirements with the indicator, and by displaying other things with multi information display.
- A tone alarm is integrated in the combination meter so that the alarm contents or the operation status of switches can be checked with the tone alarm sound.
- To assure the LCD display responsiveness and brightness even under a low-temperature condition, the LCD heater has been adopted.

CONSTRUCTION DIAGRAM

<Vehicles for USA>



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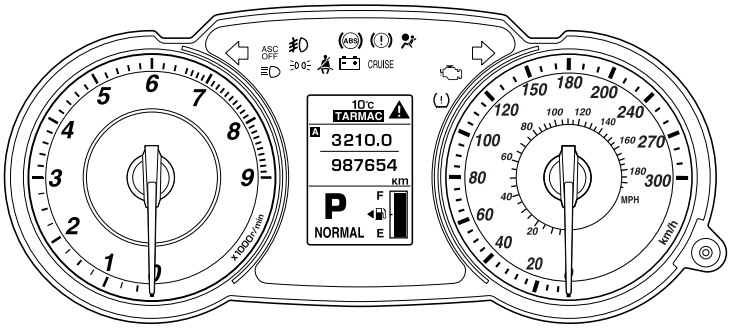

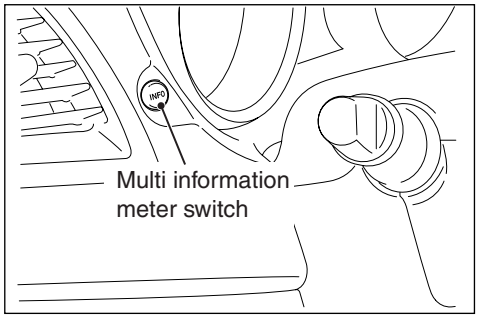

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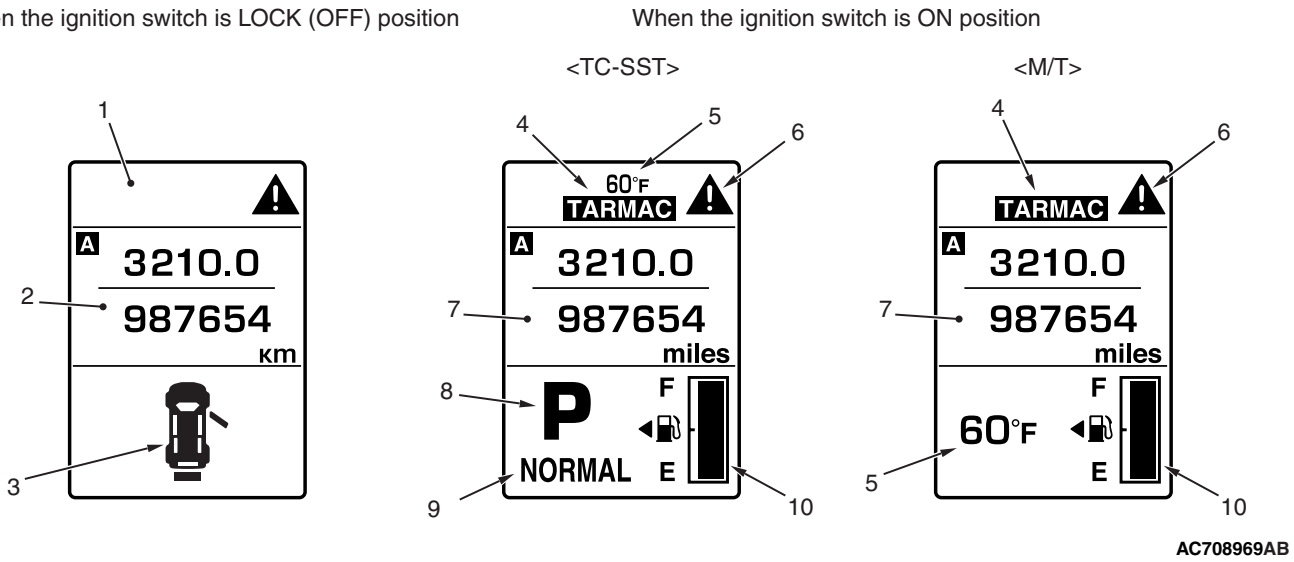
MULTI INFORMATION DISPLAY

M2545500500195

The multi information display can display the following items: Warnings, odometer and trip meter, service reminder information, engine coolant temperature, remaining fuel amount, ambient temperature, TC-SST control mode <TC-SST>, S-AWC or ACD control mode, shift lever position <TC-SST>, average and instantaneous fuel consumption, possible cruising distance, average vehicle speed, S-AWC control level display, meter illuminance, and others. Displayed contents can be switched by operating the multi information meter switch. Also, the displayed language or unit on the multi information display can be changed from the function setting screen.



WHEN THE IGNITION SWITCH IS LOCK (OFF) POSITION (DISPLAYED WHEN ANY OF THE DOORS IS OPENED OR WHEN THE MULTI INFORMATION METER SWITCH IS OPERATED.)

Item		Content
1	Caution mark display screen	When warnings are displayed on the interrupt display screen, pressing the meter information switch turns off the warning display and displays the caution mark. Caution mark is displayed also when two or more alarms occur simultaneously.
2	Information screen/interrupt display screen	The odometer and trip meter or service reminder information will be displayed. Also, appropriate contents are displayed when a warning is issued.
3	Door-ajar warning display screen	Displays the door or trunk lid that is open.

WHEN THE IGNITION SWITCH IS ON POSITION

Item		Content
4	S-AWC control mode/ACD control mode display screen	Displays the S-AWC or ACD control mode.
5	Outside temperature display screen	Displays the ambient temperature.
6	Caution mark display screen	When warnings are displayed on the information screen, pressing the meter information switch turns off the warning display and displays the caution mark. Caution mark is displayed also when two or more alarms occur simultaneously.
7	Information screen/interrupt display screen	• A screen changes in following order by operating multi information meter switch. 1. Odometer/trip odometer A (Trip meter is reset when the switch is pressed and held.) 2. Odometer/trip odometer B (Trip meter is reset when the switch is pressed and held.) 3. Service reminder (when service reminder function is effective) 4. Engine coolant temperature display 5. Possible cruising distance display 6. Average fuel efficiency, average vehicle speed, instantaneous fuel consumption 7. S-AWC control level display 8. Function setting screen (Screen shifts to the setting screen when the switch is pressed and held.) 9. Redisplay of a warning display screen (When warning is issued.) • Also, appropriate contents are displayed when a warning is issued.
8	Shift lever position display screen	Displays the shift lever and gear position.<TC-SST>
9	TC-SST control mode display screen	Displays the TC-SST control mode operating status.<TC-SST>
10	Fuel remaining display screen	Displays the remaining fuel amount.

SERVICE REMINDER FUNCTION

Displays the periodic inspection timing based on the predetermined schedule. With the inspection timing coming up (warning start point of the warning criteria is achieved), when the ignition switch is turned to ON position, the service reminder function displays "PERIODIC INSPECTION" for 4 seconds to inform the inspection timing. When the "PERIODIC INSPECTION" achieves the warning end point of warning criteria, it will be turned off by the scan tool MB991958 special function or the multi information meter switch special operation*.

NOTE: The service reminder function is disabled at shipment. If any of the following conditions is met, the function becomes available. When delivering the vehicle to the customer, enable the service reminder function, and check that the schedule is "NAS 20".

- *The ignition switch is turned to "ON" while pressing the multi information meter switch.*
- *The driving distance of the odometer reaches 100 km or 60 miles.*

NOTE: Using the scan tool MB991958 special functions or the multi information meter switch special operation, the schedule can be changed and the service reminder function can be made unavailable.*

*NOTE: *: For details about the multi information meter switch special operation, refer to the Service Manual.*

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SCHEDULE TABLE

Schedule	Contents of schedule	
NAS 10	Elapsed time (month)	Every 6 elapsed months
	Driving distance (miles)	Every 7,500 miles of driving distance
	Driving distance (km)	Every 12,000 km of driving distance
NAS 11	Elapsed time (month)	Every 3 elapsed months
	Driving distance (miles)	Every 3,750 miles of driving distance
	Driving distance (km)	Every 6,000 km of driving distance
NAS 20 (initial setting)	Elapsed time (month)	Every 5 elapsed months
	Driving distance (miles)	Every 5,000 miles of driving distance
	Driving distance (km)	Every 8,000 km of driving distance
NAS 21	Elapsed time (month)	Every 4 elapsed months
	Driving distance (miles)	Every 3,750 miles of driving distance
	Driving distance (km)	Every 6,000 km of driving distance
Optional INT	The optional schedule can be set. (Only scan tool can be set.)	
OFF Display	Without function. "OFF" is displayed on the odometer/tripmeter.	
Function OFF	Without function (Only scan tool can be set.)	

NOTE: For schedule, "JPN", "GCC", "EU" and "AUS" can also be selected. However, the using shall be for "NAS" only.

WARNING CRITERIA (WARNING START AND END POINTS)

Elapsed time		Driving distance (km)		Driving distance (miles)	
Warning start point	**Warning end point**	**Warning start point**	**Warning end point**	**Warning start point**	**Warning end point**
– 15 days	+15 days	– 500 km	+500 km	– 300 miles	+300 miles

TONE ALARM

M2545500600181

Using its own signal or signal sent via CAN communication, the combination meter sounds the integrated tone alarm.

Item	Relating ECU
Seat belt reminder function	Combination meter
Paddle shift cancel prohibition tone alarm <TC-SST>	TC-SST-ECU
Theft-alarm function	ETACS-ECU
Keyless operation key reminder tone alarm function <vehicles with KOS>	KOS-ECU
Ignition key reminder tone alarm function	ETACS-ECU
Light reminder tone alarm function	ETACS-ECU
Door-ajar warning tone alarm function	ETACS-ECU
Freeze warning tone alarm	ETACS-ECU
Parking brake reminder tone alarm function	Combination meter
Multi information display interrupt display tone alarm	Combination meter
ETACS-ECU customization function tone alarm	ETACS-ECU
A/C operation tone alarm	A/C-ECU
Audio operation tone alarm	Radio and CD player or audio visual navigation unit
Multi information meter switch operation tone alarm	Combination meter
Turn-signal light tone alarm function	ETACS-ECU

SEAT BELT REMINDER FUNCTION

When the driver's seat belt is released

1. When the ignition switch is turned ON, the driver's seat belt indicator illuminates and the alarm sounds for 6 seconds.
2. 60 seconds after the ignition switch is turned ON, if the vehicle speed exceeds 5 mph (8 km/h), the driver's seat belt indicator illuminates and blinks for 90 seconds. The alarm sounds simultaneously with the blinks of the indicator.
3. On Step 2 completion, if the seat belt is not fastened when the vehicle speed changes from 2 mph (3 km/h) to 5 mph (8 km/h), the indicator illuminates and blinks again and the alarm sounds again.

When the front passenger's seat belt is released

1. When the ignition switch is turned ON, the front passenger's seat belt indicator illuminates for 6 seconds, regardless of whether the front passenger's seat belt is fastened or released. The alarm does not sound.
2. 60 seconds after the ignition switch is turned ON, the front passenger's seat belt reminder operates the same manner as for the driver's seat belt that is released, but the alarm does not sound.

PADDLE SHIFT CANCEL PROHIBITION TONE ALARM <TC-SST>

When the paddle shift switch is operated, the tone alarm sounds.

THEFT-ALARM FUNCTION

When the theft-alarm function is activated, the tone alarm sounds.

KEYLESS OPERATION KEY REMINDER TONE ALARM FUNCTION <VEHICLES WITH KOS>/IGNITION KEY REMINDER TONE ALARM FUNCTION

With the ignition switch in the LOCK (OFF) position, when the driver's door is opened with the ignition key inserted into the ignition key cylinder or the keyless operation key left in the vehicle, the tone alarm sounds.

LIGHT REMINDER TONE ALARM FUNCTION

With the ignition switch in the LOCK (OFF) position, when the driver's door is opened with the tail light switch remaining ON, the tone alarm sounds.

DOOR-AJAR WARNING TONE ALARM FUNCTION

With the ignition switch in the ON position, when any of the doors (except trunk) is opened and the vehicle speed information sent via the CAN communication is 5 mph (8 km/h) or more, the tone alarm sounds.

FREEZE WARNING TONE ALARM

When the ignition switch is in the ON position, if the ambient temperature is at 37°F (3°C) or below, the tone alarm sounds.

PARKING BRAKE REMINDER TONE ALARM FUNCTION

With the ignition switch in the ON position, if the parking brake has not been reset (parking brake switch: ON), and when the vehicle speed information transmitted via CAN communication is 5 mph (8 km/h) or more, the tone alarm sounds.

MULTI INFORMATION DISPLAY INTERRUPT DISPLAY TONE ALARM

When the interrupt display is displayed on the multi information display because of alarms, the tone alarm sounds.

ETACS-ECU CUSTOMIZATION FUNCTION TONE ALARM

When entering into the customize mode of ETACS-ECU functions or when the customization is executed, the tone alarm sounds in each case.

A/C OPERATION TONE ALARM, AUDIO OPERATION TONE ALARM

According to the tone alarm sounding request signal which is received when the A/C, radio and CD player or MMCS is operated, the tone alarm sounds.

METER INFORMATION SWITCH OPERATION TONE ALARM

When the meter information switch or rheostat switch is operated, the tone alarm sounds.

TURN-SIGNAL LIGHT TONE ALARM FUNCTION

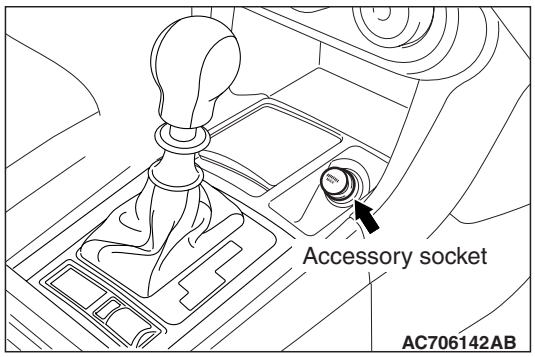
The tone alarm sounds in synchronization with the turn signal light operation.

ACCESSORY SOCKET

GENERAL INFORMATION

M2544400200365

The plug-in type accessory socket has been installed for the convenient use of accessories. This accessory socket can be replaced to the cigar lighter as an option.
Accessory socket has been added to the front floor console.
The maximum load is 120 W when a single accessory socket is used



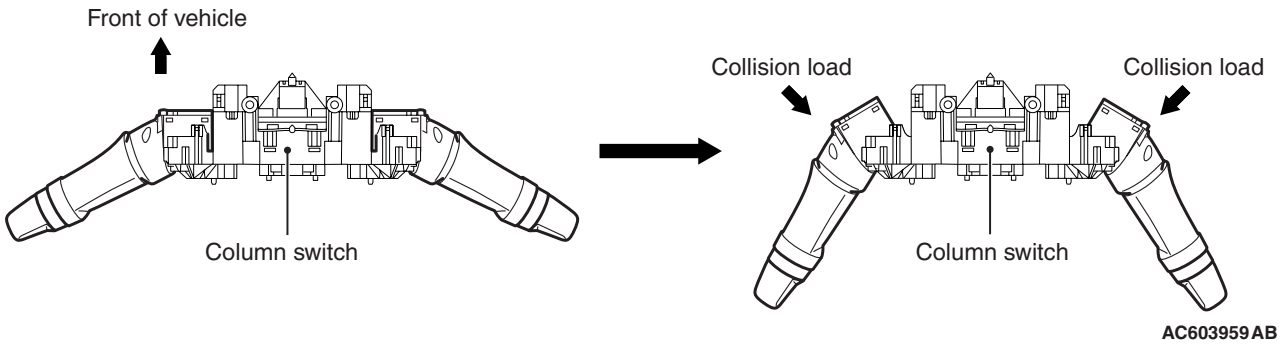
COLUMN SWITCH

GENERAL INFORMATION

M2546100200058

Column switch has a function to ensure the driver's safety during frontal collision of vehicle.

FUNCTION



If the column switch is moved to the front of the vehicle and hit on the instrument panel or meter bezel by the frontal collision of vehicle, the steering wheel is moved to the front of the vehicle because the right and left levers fall down, ensuring the driver's safety. In addition, the column switch secures the rigidity that the levers do not fall down by the normal operation, however, it cannot be reused after the deformation.

AUDIO AND NAVIGATION SYSTEM

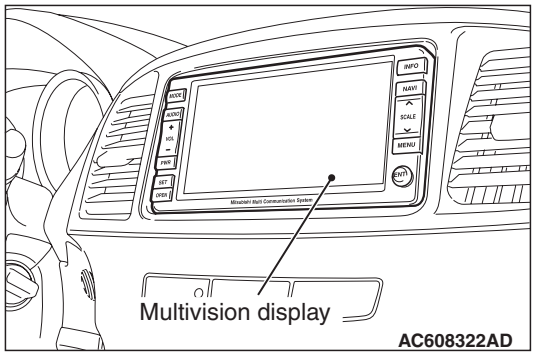
GENERAL INFORMATION

M2547000100079

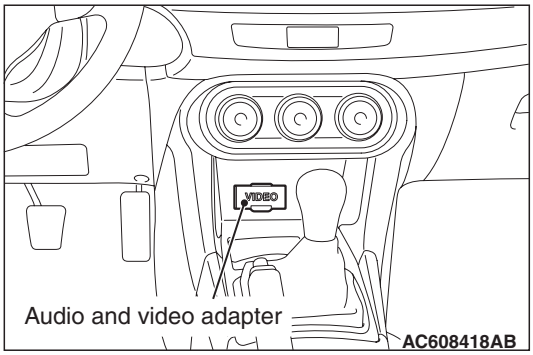
- For Mitsubishi multi-communication system (MMCS), the multivision display (7-inch liquid crystal display of wide 2 DIN size) with hard disk drive (30 gigabyte) is established.
  - The audio and video adapter which allows connection of audio-visual devices has been established to the center tray.
- Two types of radio and CD player, or CD changer built-in type radio and CD player have been established.
- On the steering wheel spoke, the steering wheel voice control switch and steering wheel audio remote control switch are established.
- When the satellite radio tuner is equipped, the SIRIUS™ satellite radio broadcast becomes available for listening.
- The hands-free cellular phone system has been established.
- Using the combination of audio amplifier and 9-speaker 7-position system, Rockford Fosgate® premium sound system has been adopted.
- For vehicles with 9-speaker 7-position system, seven speakers (4 speakers, 2 tweeters, 1 sub-woofer) are arranged at optimum positions.
- The pole antenna has been adopted for the radio.

MITSUBISHI MULTI COMMUNICATION SYSYEM

M2544800100128



For Mitsubishi multi-communication system (MMCS), the multi-vision display (7-inch liquid crystal display of wide 2 DIN size) with hard disk drive (30 GB) and the CD/DVD drive is established.



The audio and video adapter has been established to the center tray in order to connect visual equipment such as game machine and video player.

Display (function)	Content
Navigation	Displays the navigation functions including the map display, search, guidance, information search. Also, calculates Carpool/HOV lane.
Vehicle position information	Displays the position information of current location. (Longitude and latitude, GPS reception status)
CD/DVD	Plays the CD or DVD inserted to the drive (for MP3/WMA)
Music server	Plays back the music data on hard disk drive, and records the music CD.
Radio	Displays the receiving station information. Also, the operation of receiving channel can be performed.
Drive information	Displays the average fuel consumption, instantaneous fuel consumption, possible cruising distance, driving time, and lap time.
Drive information	Displays the average fuel consumption, instantaneous fuel consumption, possible cruising distance, driving time, and lap time.
Environmental data	Displays the atmospheric pressure, altitude and ambient temperature.
Maintenance information	Displays the maintenance information for engine oil, oil filter, tire rotation, clean air filer, and brake system.
A/C information	Displays the A/C information.
ETACS function customization	Function for ETACS-ECU customization
Calendar	Displays the calendar.

- The storage of very large map data is now possible, and the following contents have been adopted.
  - Map type navigation
  - NAVTEQ map database
  - Map data stored in hard disc drive

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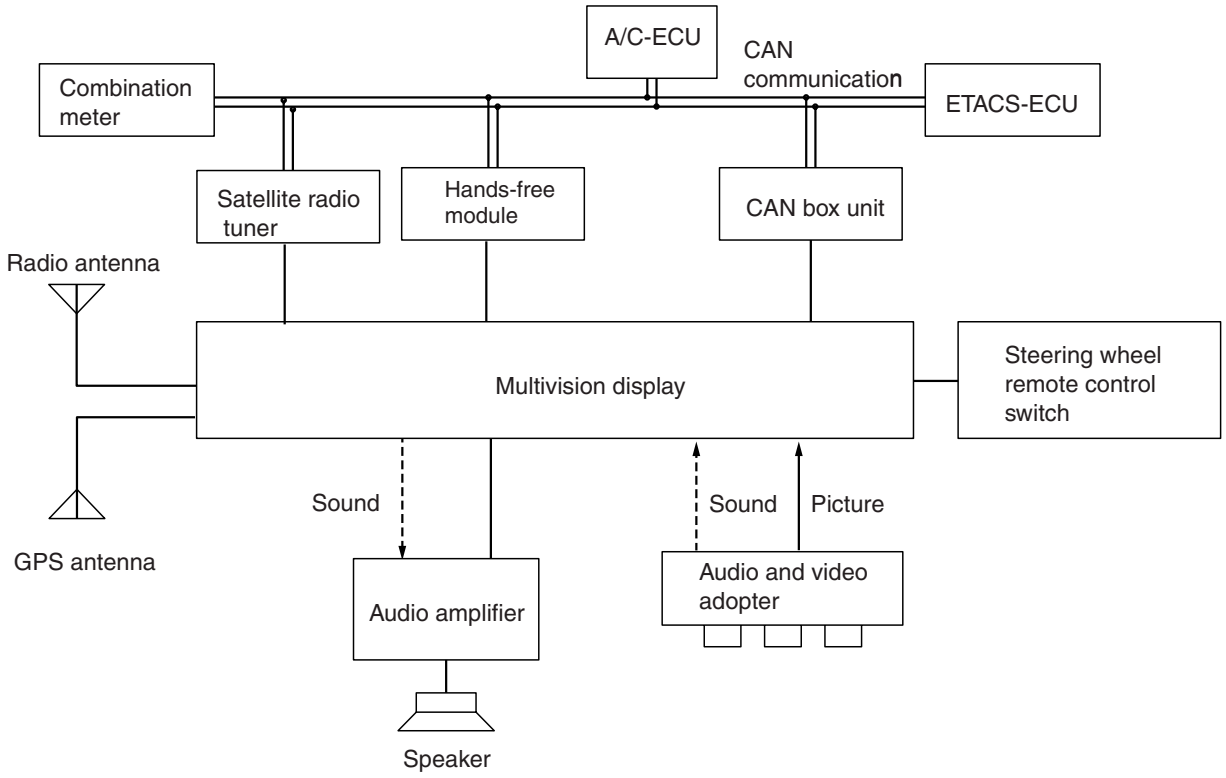
- Most sophisticated LSI has been used as one for car navigation system.

  *NOTE: *LSI stands for Large Scale Integration, and is a large-scale integrated circuit (IC) containing between 1,000 and 100,000 circuit elements.*

- U.S. English, French, and Spanish are available to select.
- By attaching the hands free module, the hands free cellular phone system becomes available.
- By attaching the satellite radio tuner, the SIRIUS™ satellite radio broadcasting becomes available.

SYSTEM BLOCK DIAGRAM



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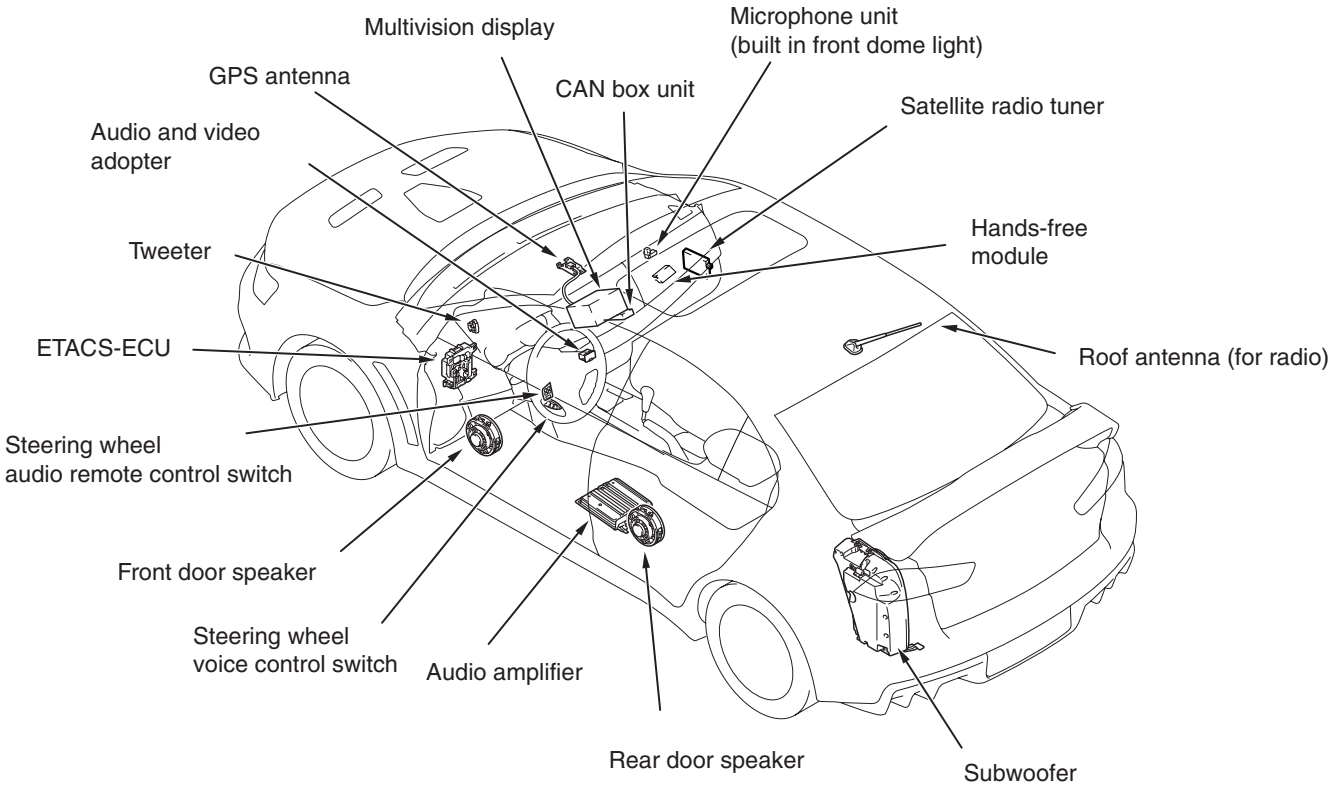
CONSTRUCTION DIAGRAM



ETACS FUNCTION CUSTOMIZATION FUNCTION

The following ETACS functions can be customized by selecting "Equipment" on the "Settings" screen of the multivision display.

Group name	Setting item	Setting value
Keyless Entry System	Turn Signal Lights Answerback	Lock:Once Unlock:Twice (default)
		Lock:Once Unlock:Off
		Lock:Off Unlock:Twice
		Lock:Twice Unlock:Once
		Lock:Off Unlock:Once
		Lock:Twice Unlock:Off
		Lock:Off Unlock:Off
	Horn Answerback Sounds at Keyless Entry Lock <Vehicles without auto light>	Off
		One Button Push
		Two Button Pushes (default)
	Horn Answerback Sounds at Keyless Entry Lock <Vehicles with auto light>	Off
		One Button Push
		One Button Push at Daytime
		Two Button Pushes at Daytime (default)
	Duration of Horn Answerback Sounds	Short (default)
		Long

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Group name	Setting item	Setting value
Keyless Operation System	Turn Signal Lights Answerback	Lock:Once Unlock:Twice (default)
		Lock:Once Unlock:Off
		Lock:Off Unlock:Twice
		Lock:Twice Unlock:Once
		Lock:Off Unlock:Once
		Lock:Twice Unlock:Off
		Lock:Off Unlock:Off
	Horn Answerback Sounds at Keyless Entry Lock <Vehicles without auto light>	Off
		One Button Push
		Two Button Pushes (default)
	Horn Answerback Sounds at Keyless Entry Lock <Vehicles with auto light>	Off
		One Button Push
		One Button Push at Daytime
		Two Button Pushes at Daytime (default)
	Duration of Horn Answerback Sounds	Short (default)
		Long
	Door Entry and Engine Start Function	Both Function On (default)
		Door Entry Function On
		Engine Start Function On
		Both Function Off
	Keyless Operation Answerback Beep Sounds	Off
		Sound at Keyless Operation (default)
		Sound at Keyless Entry
		Sound at both Keyless Entry and Keyless Operation
	Keyless Operation Auto Lock when Leaving	On (default)
		Off
	Time for Remote Unlock Inactivation after Locking	Off
		3 seconds (default)
		5 seconds
Wipers	Windshield Wipers Intermittent Operation <Vehicles without auto light >	4 seconds
		Variable
		Variable & Speed Sensitive (default)
	Windshield Wipers Intermittent Operation <Vehicles with auto light >	4 seconds
		Variable
		Variable & Speed Sensitive
		Variable & Rain Sensitive (default)
	Wipers Linked to Washer	Off
		On (default)

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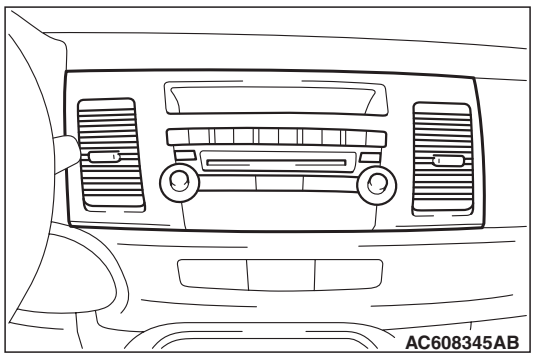
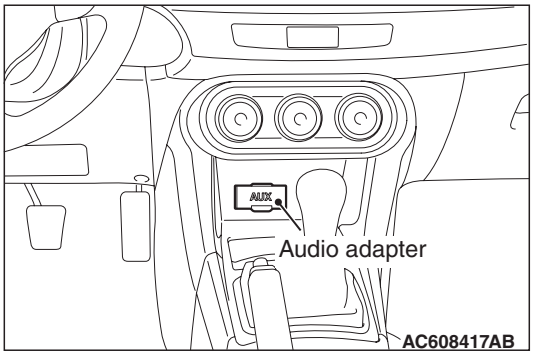
Group name	Setting item	Setting value
Exterior Lights/Interior Lights	Headlight Auto-cutout Function	Off
		On (default)
	Sensitivity for Auto Light	Early
		Somewhat Early
		Normal (default)
		Somewhat Late
		Late
	Interior Light Auto-cutout Time	Off
		3 minutes
		30 minutes (default)
		60 minutes
	Duration Dome Light Remains In after Door is Closed	0 seconds
		7.5 seconds
		15 seconds
		30 seconds (default)
		60 seconds
		120 seconds
		180 seconds
Theft Alarm	Panic Alarm	Off
		On (default)
Turn Signal	Operation in Key Position	Ignition Switch On or Accessory
		Ignition Switch On (default)
	Lane-change Signals (Flash Three Times with 1 Touch)	Off
		On (default)
Power Door Locks	Automatic Relocking after Unlocked by Remote	30 seconds (default)
		60 seconds
		120 seconds
		180 seconds
	Unlock Operation	All Doors
		Only Driver Door (default)
	Automatic Unlock when Transmission Shifted to Park <Vehicles with TC-SST>	Off (default)
		On
Others	Auto Cut of ACC Power	No Auto Cut (default)
		Auto Cut after 30 minutes
		Auto Cut after 60 minutes

RADIO AND CD PLAYER

M2544900400160



- Two types of radio and CD player, or CD changer built-in type radio and CD player have been established. The radio and CD player was designed to create a uniformity impression with the instrument panel. Also, a new function automatically corrects the sound quality and volume during driving.



- For the vehicles with Rockford Fosgate ® premium sound system, the audio adapter has been established onto the center tray. With this modification, portable music player can be connected.

Item	Radio and CD player	CD changer built-in type radio and CD player
Electronic tuning radio	Equipped	Equipped
SIRIUS satellite radio	–	Equipped (Only the vehicles with the satellite radio tuner)
Hands free cellular phone system	Equipped (Only the vehicles with the hands free module)	Equipped (Only the vehicles with the hands free module)
CD player*1 (compatible with MP3*2)	Equipped	Equipped
6-disk CD autochanger*1 (compatible with MP3*2)	–	Equipped
Audio integrated 4-ch power amplifier and digital signal processor (DSP)	General 140 W	General 140 W
Audio amplifier-integrated 8-ch power amplifier and digital signal processor (DSP) <Rockford Fosgate® premium sound system>	–	General 650 W (maximum)

NOTE:

- **1: CD-R/CD-RW may not be played.*
- **2: Some may not be played.*

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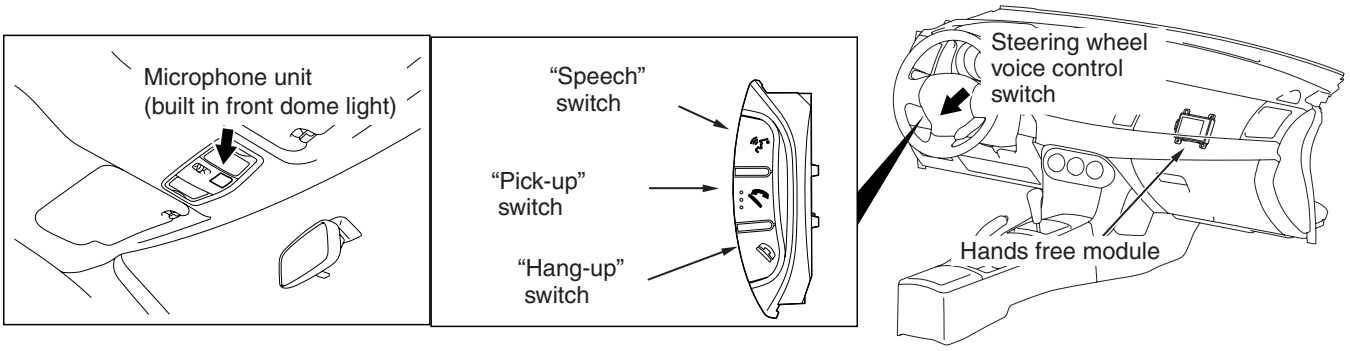
HANDS FREE CELLULAR PHONE SYSTEM

M2546400100030

With the hands free cellular phone system by registering a cellular phone for Bluetooth™* with voice recognition to the hands free module, the telephone function becomes available without operating the cellular phone directly. The hands free cellular phone system can be used without connecting the cellular phone to the vehicle via wiring cable.

*NOTE: *: Bluetooth™ is the short-distance digital wireless communication technology using 2.45 GHz frequency band. The communication effective area is within 10 m, and the feature is that the communication can be achieved even when an obstacle is present between the communicating devices.*

CONSTRUCTION DIAGRAM



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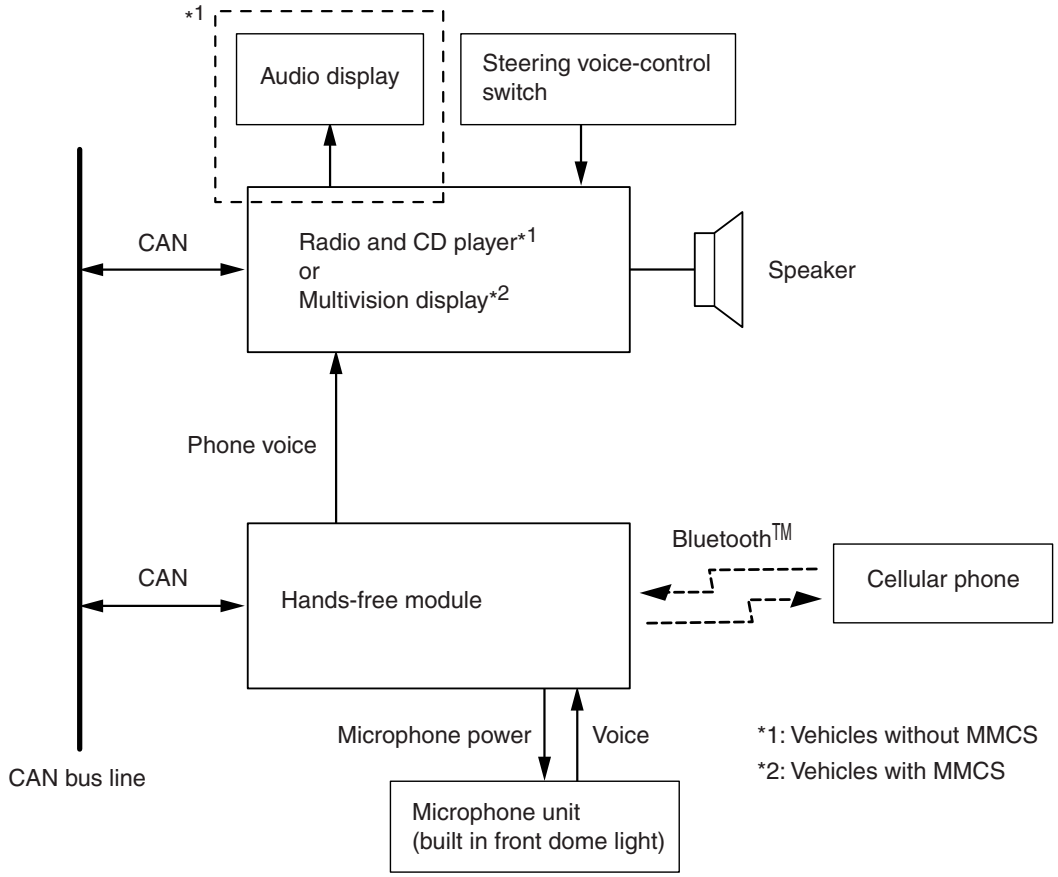
When the registered cellular phone is inside the vehicle, the hands free cellular phone system operates as follows.

NOTE: The owner's manual contains details on pairing a cellular phone with the Bluetooth system, speaker enrollment, and other functions.

- When the cellular phone receives a call, the occupant can start conversation by pressing "Pick-up" in the steering voice control switches on the steering wheel. When the conversation ends, the occupant can finish the call by pressing "Hang-up" in the steering voice-control switches.
- To make a call, press "Speech" in the steering voice control switches on the steering wheel, call up the registered receiver's information in the voice input mode, press "Pick-up". Then, the transmission starts to call the receiver. Also, when the conversation ends, the occupant can finish the call by pressing "Hang-up" in the steering voice control switches.
- The communication directly via a cellular phone can be switched to the communication via a handsfree device. Also, the communication via a handsfree device can be switched to the communication directly via a cellular phone.
- The voice input mode corresponds to the following languages: English, American Spanish, Canadian French.
- The voice of occupant is picked up by the microphone unit incorporated in the front dome light, and then transmitted to the cellular phone via hands free module. Also, the receiver's voice is transmitted from the cellular phone to radio and CD player <vehicles without MMCS> or Multivision display <vehicles with MMCS> via hands free module, and then output from the vehicle-mounted speaker.
- Using the steering audio remote control switch, the volume can be adjusted.
- The reception state of the cellular phone is indicated on the display section of radio and CD player <vehicles without MMCS> or Multivision display <vehicles with MMCS>.

SYSTEM BLOCK DIAGRAM

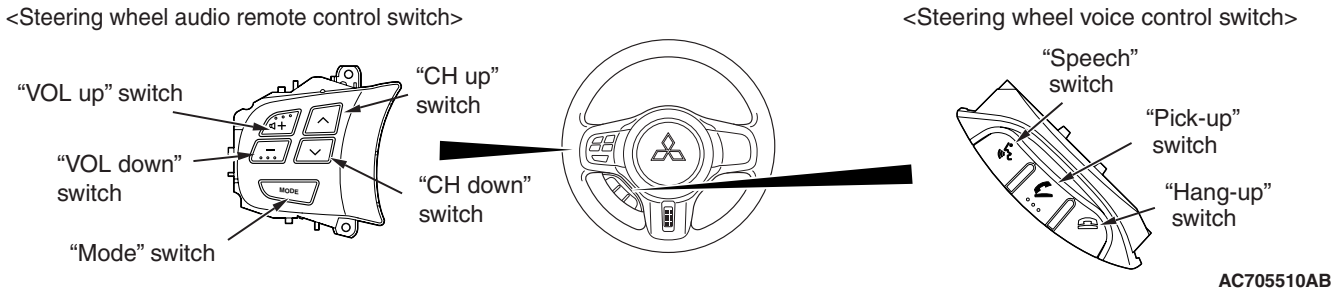


AC613221AH

STEERING WHEEL REMOTE CONTROL SWITCH

M2546500000029

On the steering wheel spoke, the steering wheel audio remote control switch and steering wheel voice control switch have been established.



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STEERING WHEEL AUDIO REMOTE CONTROL SWITCH

With the steering wheel audio remote control switch, the sound volume adjustment, mode changeover, CD track up/down and other operation of multivision display, radio, and CD player are available.

STEERING WHEEL VOICE CONTROL SWITCH

With the steering wheel voice control switch, the hands free cellular phone system can be operated.(Refer to P.54A-33.)

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SATELLITE RADIO

M2543800000021

The satellite radio is a broadcast technology that offers a clear digital sound directly by using satellites.

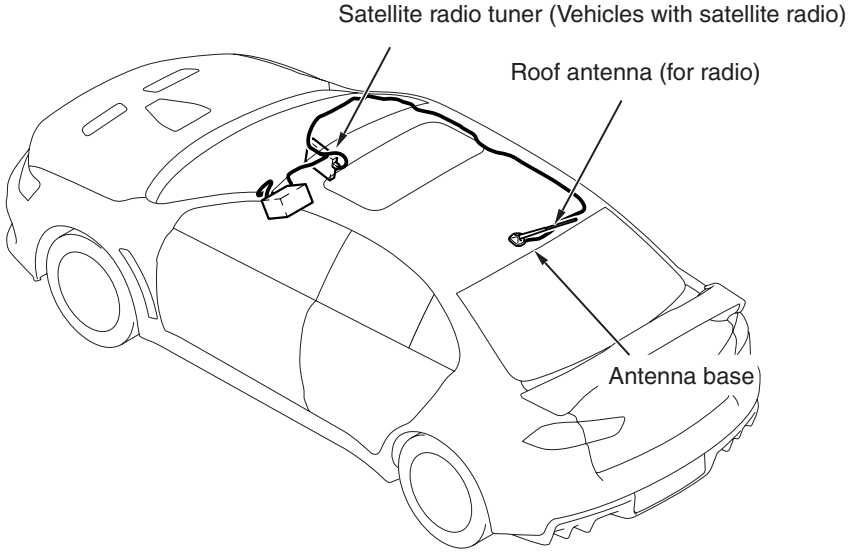
- The registered service provider is SIRIUS™ satellite radio.
- This service offers listeners more than 100 programs such as news, sports, music, and entertainment.

ANTENNA

M2545100100133

The roof antenna has been adopted for the radio. The antenna base incorporates the radio amplifier. When the satellite radio tuner is installed, the antenna base that also corresponds to the satellite radio is installed.

CONSTRUCTION DIAGRAM



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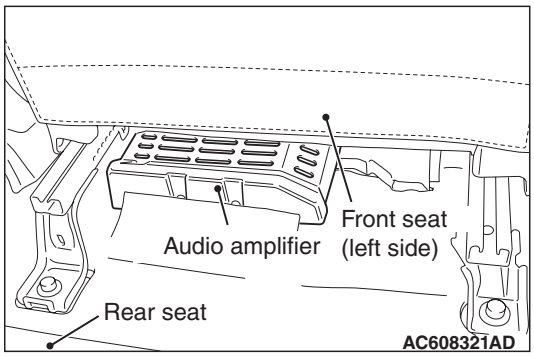
AUDIO AMPLIFIER

M2547000200043



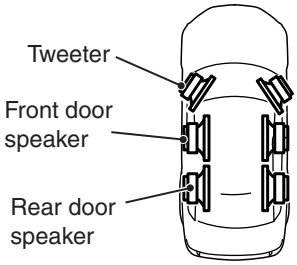
The 8-ch high-power audio amplifier with integrated DSP (total maximum output of 650 W) equipped with the front seat (left side) has been combined with the 9-speaker 7-position system, adopting the Rockford Fosgate ® premium sound system. The audio amplifier offers the clear treble without distortion.

SPEAKER

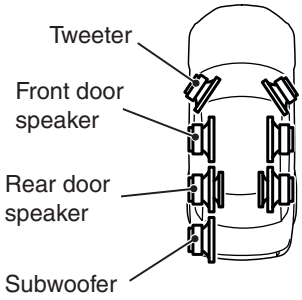
M2545000100136

The following two types of speakers are available.

<6 speakers>



<9 speakers 7 position system>



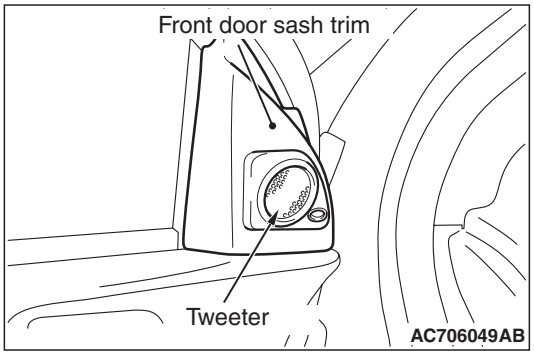
AC705512AB

- 6 speakers (tweeter: 3.5 cm, front door: 16 cm, rear door: 16 cm)
- 9 speakers 7 position system (tweeter: 3.5 cm, front door: 16 cm, rear door: 2-way coaxial 16 cm, subwoofer: 25 cm) <Rockford Fosgate® premium sound system>

SPECIFICATION

Item	<Vehicles with 6 speakers>		<Vehicles with 9 speakers 7 position system>	
	Allowable input power	Rated input power	Allowable input power	Rated input power
Front tweeter	25W	3W	50W	25W
Front door speaker	35W	15W	75W	50W
Rear door speaker	35W	15W	50W	25W
Subwoofer	–	–	150W/150W	75W/75W

TWEETER



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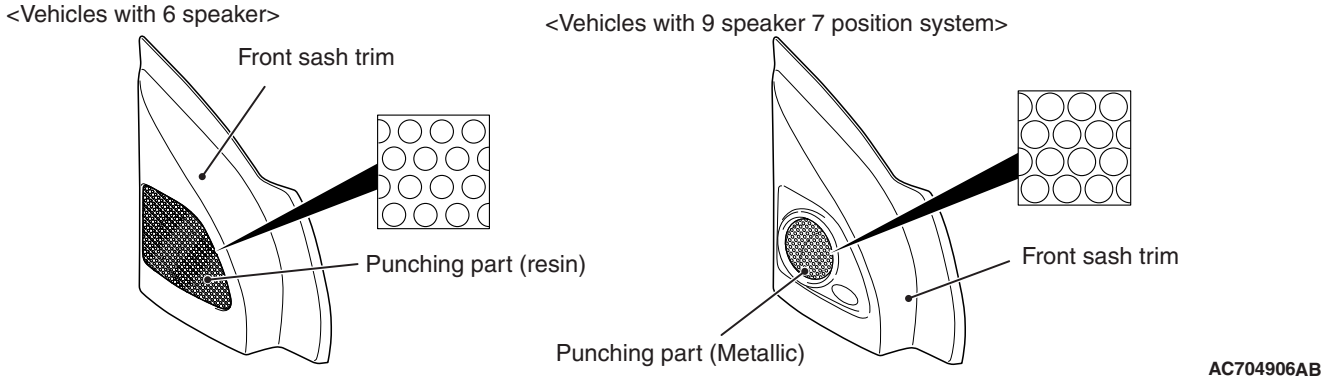
For the front door sash trim, two types of tweeters, the balance dome tweeter <Vehicles with 6 speakers> and soft dome tweeter <Vehicles with 9 speakers 7 position system>, have been established. The soft dome tweeter can play clearer treble with less distortion compared to the balance dome tweeter.



Also, two types of front sash trim, a resin type <vehicles with 6 speakers> and punching metal type <vehicles with 9 speaker 7 position system>, are available. With the punching metal type, the metal is adopted for the punching part to enlarge the punching opening, enabling the playback of cleaner treble.

DOOR SPEAKER

Front door speaker

- For vehicles with 6-speaker, the 16-cm paper cone speaker has been established.
- For vehicles with 9-speaker 7-position system, the 16-cm PP (polypropylene) cone speaker has been established.

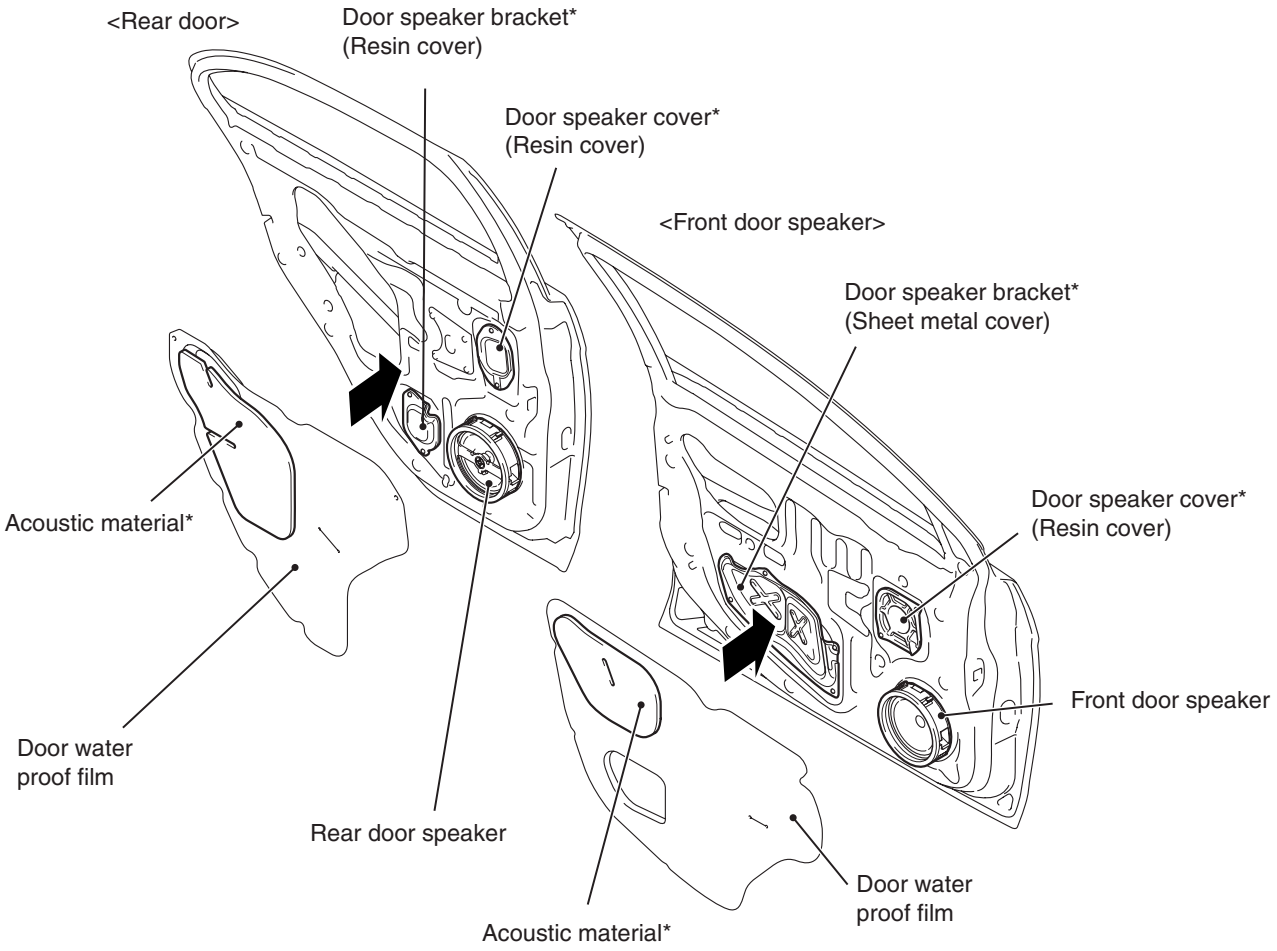
Compared to the paper cone speakers, the PP (polypropylene) cone speakers can playback crisper bass.

Rear door speaker

- For vehicles with 6-speaker, the 16-cm paper cone speaker has been established.
- For vehicles with 9-speaker 7-position system, the 16-cm PP (polypropylene) cone 2-way coaxial speaker has been established.

As for the PP (polypropylene) cone 2-way coaxial speaker, high/low-pitched speakers have been arranged on the same axle, corresponding to the well-balanced and wide pitch ranges.

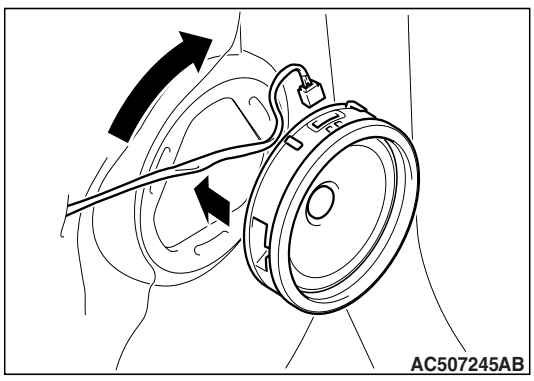
Door speaker box



NOTE: The parts with "" are installed exclusively to the vehicles with 9 speaker 7 position system (Rockford Fosgate premium sound system).*

For vehicles with 9-speaker 7-position system, the door opening of the vehicle has been blocked by the door speaker bracket (front: sheet metal cover, rear: resin cover), door speaker cover (resin cover), and acoustic material of door water proof film to make the door into a speaker box, thus improving the sound quality. As an advantage of the door speaker bracket (sheet metal cover), the rigidity of the areas around the speaker has been increased, and the higher sound pressure, suppression of high harmonic, and suppression of dumping are achieved to improve sound quality.

Serviceability



The one-touch installable speaker (with 3 tabs, fixed by rotating) has been adopted to improve service-ability.

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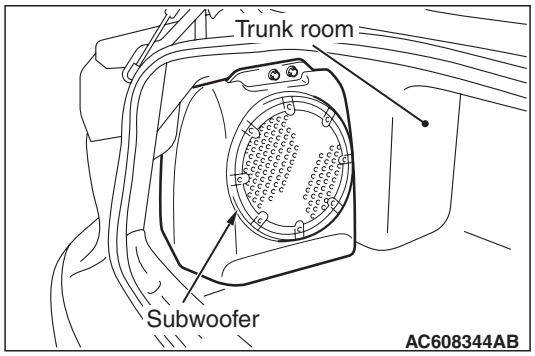
SUBWOOFER <VEHICLES WITH 9 SPEAKER 7 POSITION SYSTEM>



To the trunk room, a 25-cm dual voice coil subwoofer and a 20-liter subwoofer sealed box are installed. The punched sound with dynamic deep bass and rhythm can be played back.

ETACS

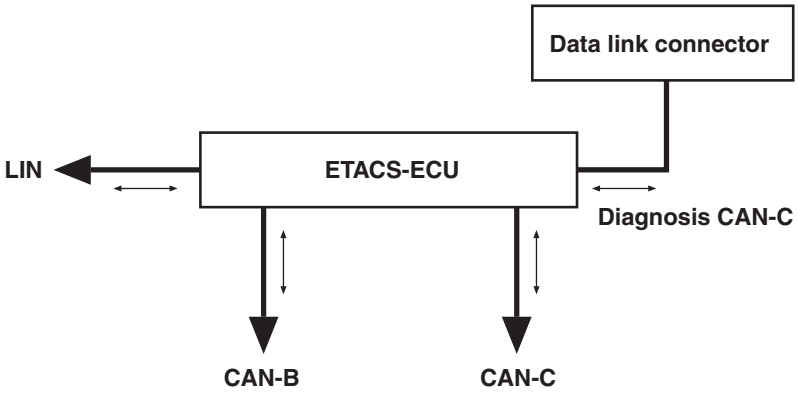
GENERAL INFORMATION

M2545400200357

ETACS*-ECU has three main functions (gateway function, coding function and body electrical equipment control function).

*NOTE: *: ETACS (Electronic Time and Alarm Control System)*

GATEWAY FUNCTION



As a central ECU for the on-vehicle communication network system established in the vehicle, the gateway function is integrated into ETACS-ECU. The gateway function offers the following functions:

- Data transfer among four networks*1
  Transfers the data flowing in a network to another network in real time.
  *NOTE: *1: CAN*2*-C (power train network), CAN*2*-B (middle-speed body network), LIN *3*(low-speed body network), diagnosis CAN-C (diagnosis exclusive network)*
  *NOTE: *2: For details of CAN, refer to GROUP 54C, Controller Area Network (CAN) P.54C-2.*
  *NOTE: *3: For details of LIN, refer to GROUP 54B, Local Interconnect Network (LIN) P.54B-2.*
- Diagnosis of each network communication line
  Detects and stores an open circuit and short circuit of communication line.
- Communication error diagnosis of network ECUs
  Detects and stores the ECU that is not properly transmitting data.

CODING FUNCTION

By writing the coding data such as vehicle model, destination, and equipment level to ECUs, the functions of ECUs can be changed. There are two types of coding method, the local coding and global coding.

BODY ELECTRICAL EQUIPMENT CONTROL FUNCTION

This function controls the following electrical equipment.

- Exterior lights
- Wiper, washer
- Central door locking system
- Interior light
- Keyless entry, keyless operation system
- Theft alarm system
- Power supply control
- Fan control

FUNCTION AND CONTROL BY ETACS-ECU.

M2545400300235

POWER SUPPLY CONTROL

ACC POWER CUT-OFF FUNCTION (THE INITIAL CONDITION: WITHOUT FUNCTION)

The function has been added that the ACC power supply is cut-off when 30 or 60 minutes has elapsed with the ignition switch in the ACC position. This can improve the function to avoid battery drain together with the headlight automatic shutdown function and interior light automatic shutdown function.

NOTE: Using a customize function, the availability of ACC power cut-off function and its time to ACC power cut-off can be set. (Refer to Customization Function P.54A-40).

ENGINE CONTROL <VEHICLES WITH TC-SST>

After the ignition switch is turned to the LOCK (OFF) position and the engine stops running, it takes approximately 1 second until the power of the vehicle is turned off. During the period until engine is stopped, the gear engagement in TC-SST is released in order to start the engine smoothly at the next startup.

FAN CONTROL

Even after the engine is stopped, if the temperature in engine compartment is high, the engine compartment temperature is lowered by the operation of cooling fan for a specified period.

CUSTOMIZATION FUNCTION

M2545400400340

By operating the ETACS system or MMCS of scan tool MB991958, the following functions can be programmed. The programmed information is held even when the battery is disconnected.

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting content
ACC power auto cut	Time to ACC power cut-off when the ignition switch is in the ACC position	Disable	No function (default)
		30 min	30 minutes
		60 min	60 minutes
Turn power source	Adjustment of turn-signal light operation condition	ACC or IG1	Operable with ACC or ON position
		IG1	Operable with ON position (default)
Comfort flasher	With/without comfort flasher function	Disable	No function
		Enable	With function (default)
Comfort flasher switch time	Switch operation time to activate the comfort flasher function	Normal	0.4 seconds (default)
		Long	0.8 seconds

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting content
Hazard answer back	Adjustment of the number of keyless hazard warning light answer back flashes	Lock:1, Unlock:2	LOCK: Flashes once, UNLOCK: Flashes twice (default)
		Lock:1, Unlock:0	LOCK: Flashes once, UNLOCK: No flash
		Lock:0, Unlock:2	LOCK: No flash, UNLOCK: Flash twice
		Lock:2, Unlock:1	LOCK: Flash twice, UNLOCK: Flash once
		Lock:2, Unlock:0	LOCK: Flash twice, UNLOCK: No flash
		Lock:0, Unlock:1	LOCK: No flash, UNLOCK: Flash once
		Lock:0, Unlock:0	No function
Front wiper operation	Adjustment of the intermittent windshield wiper operation <vehicles without auto light>	Normal INT	Intermittent wiper interval is fixed to 4 seconds.
		Variable INT	Intermittent wiper interval is calculated only by the wiper volume control.
		Speed Sensitive	Intermittent wiper interval is calculated according to the intermittent wiper volume control and vehicle speed (default).
	Adjustment of the intermittent windshield wiper operation <vehicles with auto light>	Normal INT	Intermittent wiper interval is fixed to 4 seconds.
		Variable INT	Intermittent wiper interval is calculated only by the wiper volume control.
		Speed Sensitive	Intermittent wiper interval is calculated according to the intermittent wiper volume control and vehicle speed.
		Rain Sensitive	Intermittent wiper interval is calculated according to the intermittent wiper volume control and lighting control sensor (default).
Front wiper washer	Disabling or enabling washer-linked wiper function	Only washer	No function
		Washer&wiper	With function (default)
Sensitivity for auto light	Lighting control sensor sensitivity (illumination intensity) <vehicles with auto light>	Level 1(+)bright	High-high ambient brightness
		Level 2	High ambient brightness
		Level 3	Standard ambient brightness (default)
		Level 4(–)dark	Low ambient brightness
		Level 5(–)dark	Low-low ambient brightness

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting content
Dome light delay timer with door	Adjustment of interior light delay shutdown time	0 sec	0 second (no delay shutdown time)
		7.5 sec	7.5 seconds
		15 sec	15 seconds
		30 sec	30 seconds (default)
		60 sec	60 seconds
		120 sec	120 seconds
		180 sec	180 seconds
Headlight auto cut customize	Adjustment of headlight automatic shutdown function	Disable	No function
		Enable (C-spec.)	With function (default)
Interior light auto cut timer	Adjustment of interior light automatic shutdown function operation time	Disable	No function
		3 min	3 minutes
		30 min	30 minutes (default)
		60 min	60 minutes
Door unlock mode	Door lock system	All doors unlock	All the doors are unlocked when the driver's side door is unlocked.
		Dr door unlock	Only the driver's side door is unlocked when the driver's side door is unlocked. (default)
Auto door unlock by P position	Auto door unlock by P position function <Vehicles with TC-SST>	Disable	No function (default)
		Always enabled	Always with function
Duration of horn chirp	Horn sounding time during horn answer back	Short	0.01 second (default)
		Long	0.02 second
Horn chirp by keyless	Horn chirp by keyless entry system <vehicles without auto light>	Not sound horn	No horn answerback function
		Lock any time	The horn sounds when the lock button of keyless entry transmitter is pressed once.
		W lock any time	The horn sounds when the lock button of keyless entry transmitter is pressed twice. (default)
	Horn chirp by keyless entry system <vehicles with auto light>	Not sound horn	No horn answerback function
		Lock any time	The horn sounds when the lock button of keyless entry transmitter is pressed once.
		Lock/auto ON	During daytime, while the lighting switch is in the AUTO position, the horn sounds once when the lock is pressed once.
		W lock any time	The horn sounds when the lock button of keyless entry transmitter is pressed twice. (default)

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting content
Tone alarm answer back <Vehicles with KOS>	Adjusts the tone alarm answer back function	Not sound tone alarm	No function
		At keyless	Sounds when the keyless entry system is activated.
		At F.A.S.T.	Sounds when KOS is activated (default).
		At Both	Sounds when the keyless entry system or KOS is activated.
Timer lock timer	Timer lock period adjustment	30 sec	30 seconds (default)
		60 sec	60 seconds
		120 sec	120 seconds
		180 sec	180 seconds
Panic alarm switch	With/without panic alarm function	Disable	No function
		Enable	With function (default)
F.A.S.T. key out of car	With/without KOS key exterior detection function	Enable	No function
		Disable	With function (default)
F.A.S.T. feature	KOS function adjustment	Both enable	All KOS functions are enabled (default).
		DoorEntry enable	Only door entry function is enabled.
		ENG strt enable	Only engine starting function is enabled.
		Both disabled	All KOS functions are disabled.
F.A.S.T. unlock disable time	Adjusts the door unlock inhibition period after door lock is activated	0 sec	0 seconds
		3 sec	3 seconds (default)
		5 sec	5 seconds

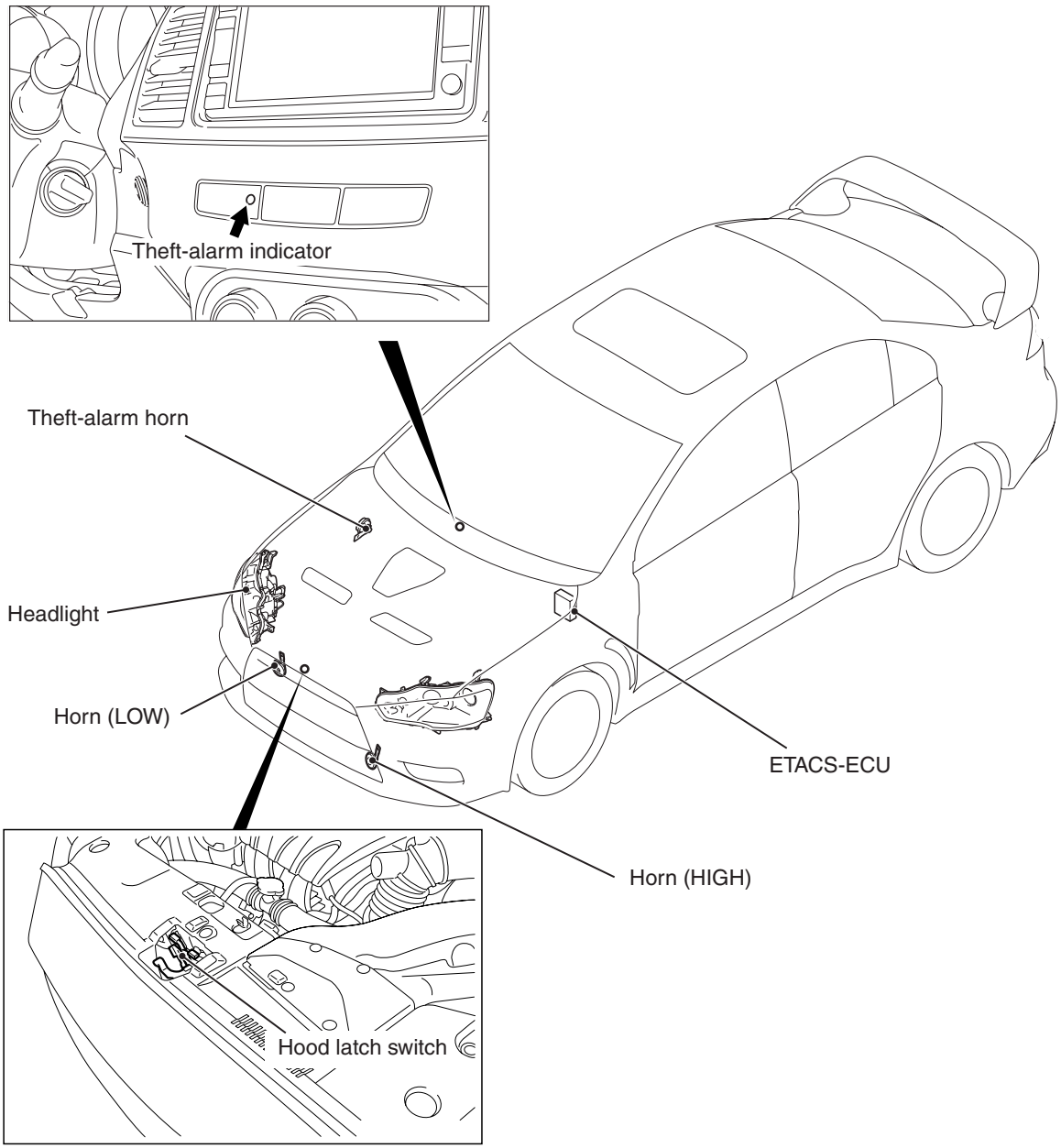
THEFT-ALARM SYSTEM

GENERAL INFORMATION

M2545700200176

When the doors are locked using the keyless entry function or KOS (except when locked by using the key cylinder or door lock switch), the improper opening of door or trunk causes the ETACS-ECU function and control to give off an alarm with the flashing of headlights and the intermittent sounding of horns. Also, the ETACS-ECU warns that the theft-alarm system is being set by flashing the theft-alarm indicator.

CONSTRUCTION DIAGRAM



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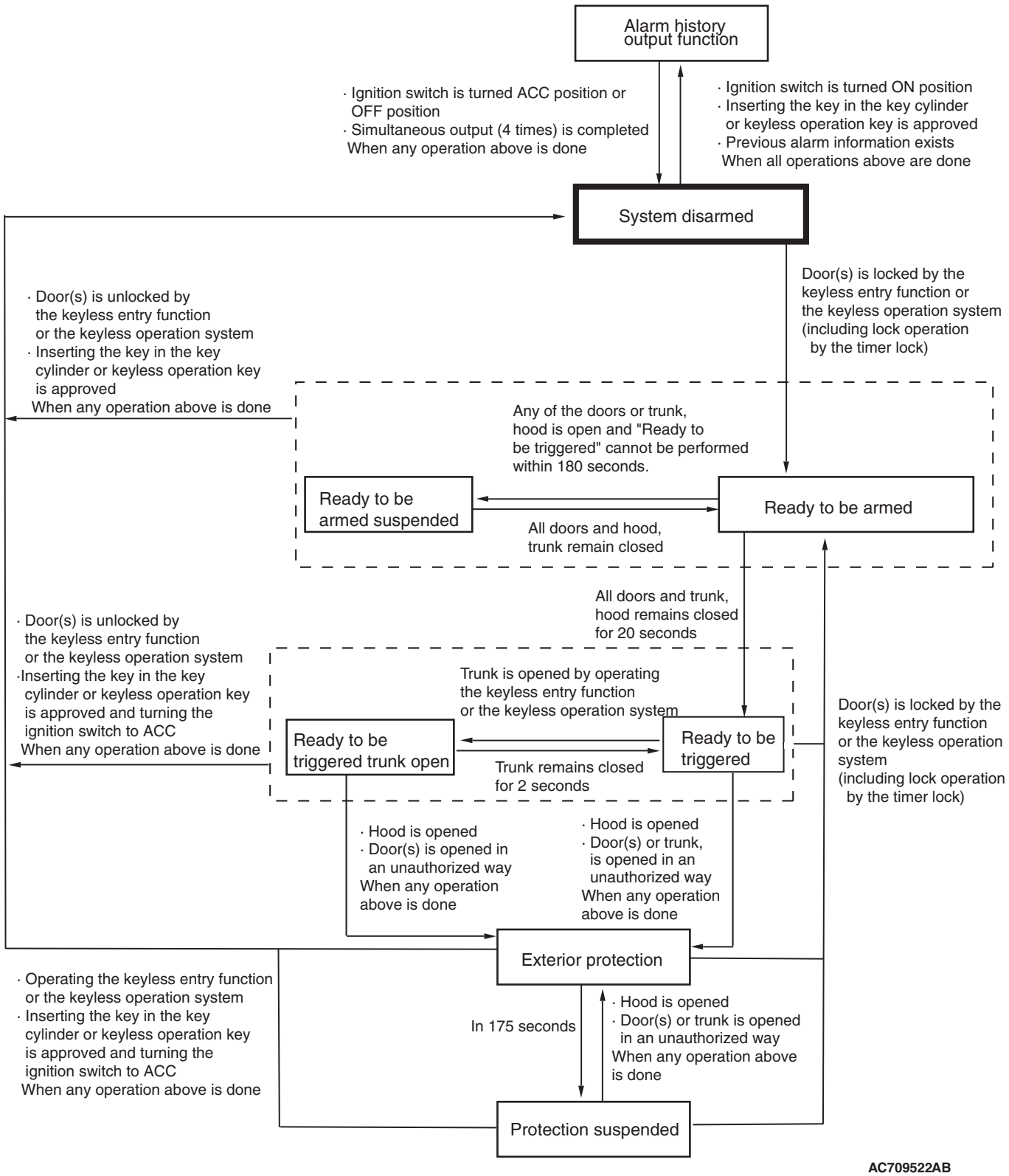
THEFT-ALARM FUNCTION



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Operating the door lock with the keyless entry function or keyless operation key (except for operating the door lock with the key cylinder) makes the vehicle ready for the alarm, and "ping" tone starts. After 20 seconds, the incorrect door/trunk/hood opening (opening door or trunk without unlocking by the keyless entry function or keyless operation key) sounds the room alarm with "Beep" tone under for the alarm state. In addition, the headlights blink, and the horns sound intermittently for 175 seconds to execute exterior protection

ALARM HISTORY OUTPUT FUNCTION

If the exterior protection is activated between the last OFF operation and the next ON operation of the ignition switch, this function informs the driver by flashing the security indicator.

PANIC ALARM SYSTEM

GENERAL INFORMATION

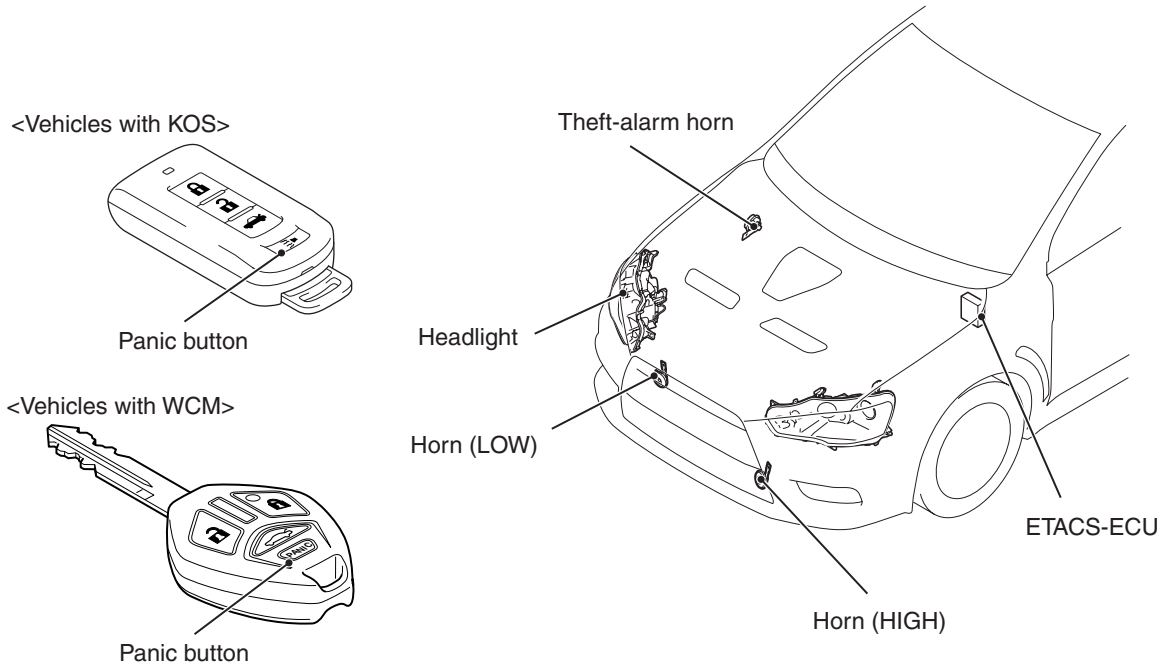
M2540000100830

If danger is perceived near the vehicle and if the ignition switch is in the OFF position or the key has been removed, press the panic button on the ignition key or the keyless operation key for one second, then the headlights flash and the horn sounds for approximately 3 minutes.

PANIC ALARM SYSTEM OPERATION TABLE

Operation of keyless operation key or ignition key		System operation
Panic button	Press once (press and hold for 1 second)	Starts the panic alarm (headlights flash and horn honks for abut three minutes)
Lock button, Unlock button, Trunk button, Panic button	Press again	Stops the panic alarm in progress

CONSTRUCTION DIAGRAM



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CUSTOMIZATION FUNCTION

By operating the ETACS system or MMCS of scan tool MB991958, the following functions can be programmed. The programmed information is held even when the battery is disconnected.

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting content
Panic alarm switch	With/without panic alarm function	Disable	Without function
		Enable	With function (default)

TSB Revision

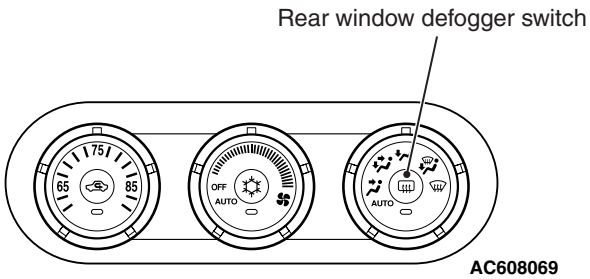
REAR WINDOW DEFOGGER

GENERAL INFORMATION

M2546600100023

The rear window defogger has been established to the rear window glass. To prevent battery discharge, A/C-ECU controls the rear window defogger to be automatically turned off 20 minutes after the rear window defogger switch is turned ON. (Only when engine is running)

<Vehicles for USA>



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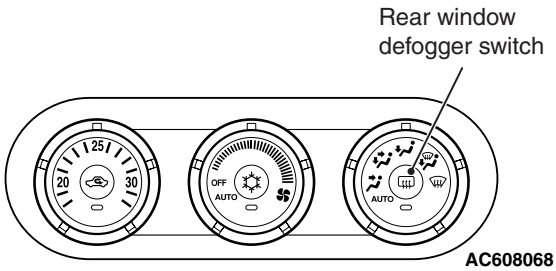
<Vehicles for CANADA>



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