GROUP 54B

SMART WIRING SYSTEM (SWS) NOT USING SWS MONITOR

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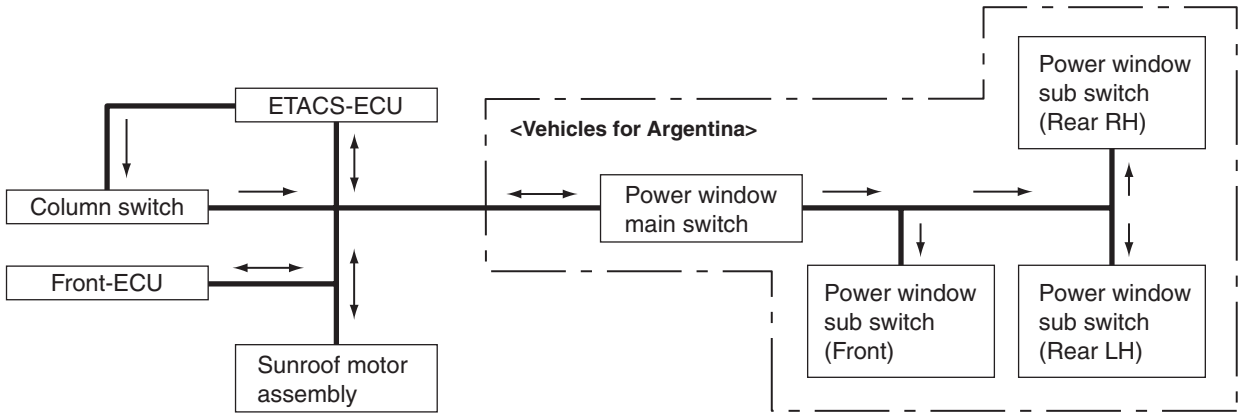
GENERAL INFORMATION

M1549000101042

COMMUNICATION METHOD

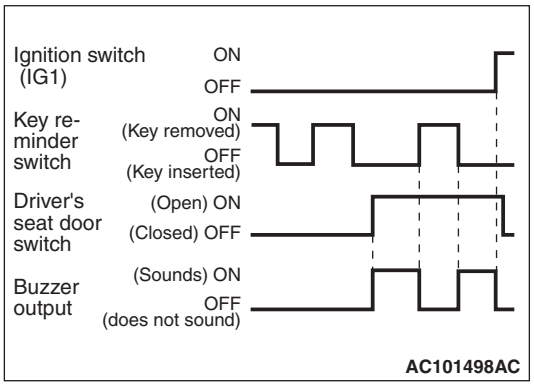
The exclusive signal lines for transmitting the multi-distribution data are connected as follows between the ETACS-ECU, column switch (incorporated inside the column-ECU), front-ECU, sunroof motor assembly (incorporated inside the sunroof-ECU), power window main switch (incorporated inside the power window-ECU), and power window sub switches (incorporated inside the power window-ECU) <Vehicles for Argentina> for internal communication.



AC212517AB

BUZZER

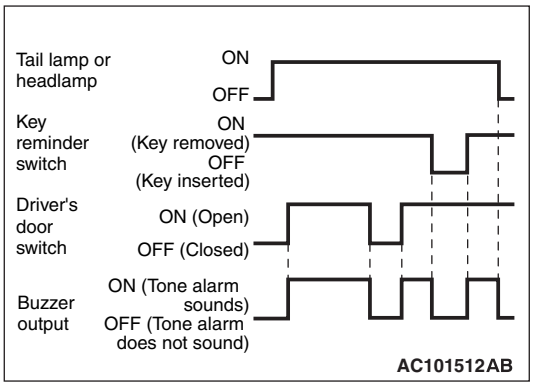
IGNITION KEY REMINDER TONE ALARM FUNCTION <VEHICLES FOR GCC>



AC101498AC

When the driver's door is opened with the ignition key inserted in the ignition key cylinder (with the ignition switch OFF), the buzzer sounds intermittently (ping sound) to alert the driver that the key is not removed.

LAMP REMINDER BUZZER FUNCTION



AC101512AB

When the ignition key is removed and then the driver's door is opened with turning ON the tail lamp or the headlamp, the buzzer sounds continuously to alert the driver that the lamp is still ON.
However, if the tail lamp or the headlamp is turned off by the headlamp automatic shutdown function <except vehicles for Australia and New Zealand>, the buzzer does not sound.

SPEED ALARM FUNCTION <VEHICLES FOR GCC>

If the vehicle speed exceeds 123 km/h, the buzzer sounds intermittently to warn the driver that the speed is too high.

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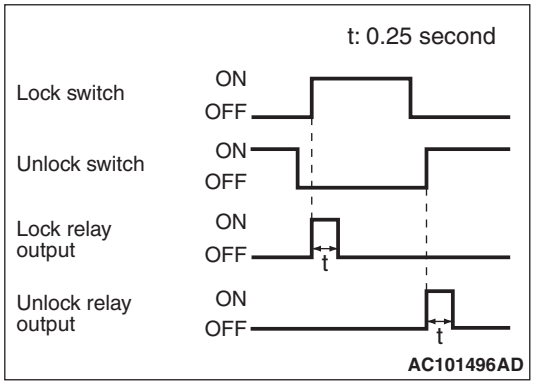
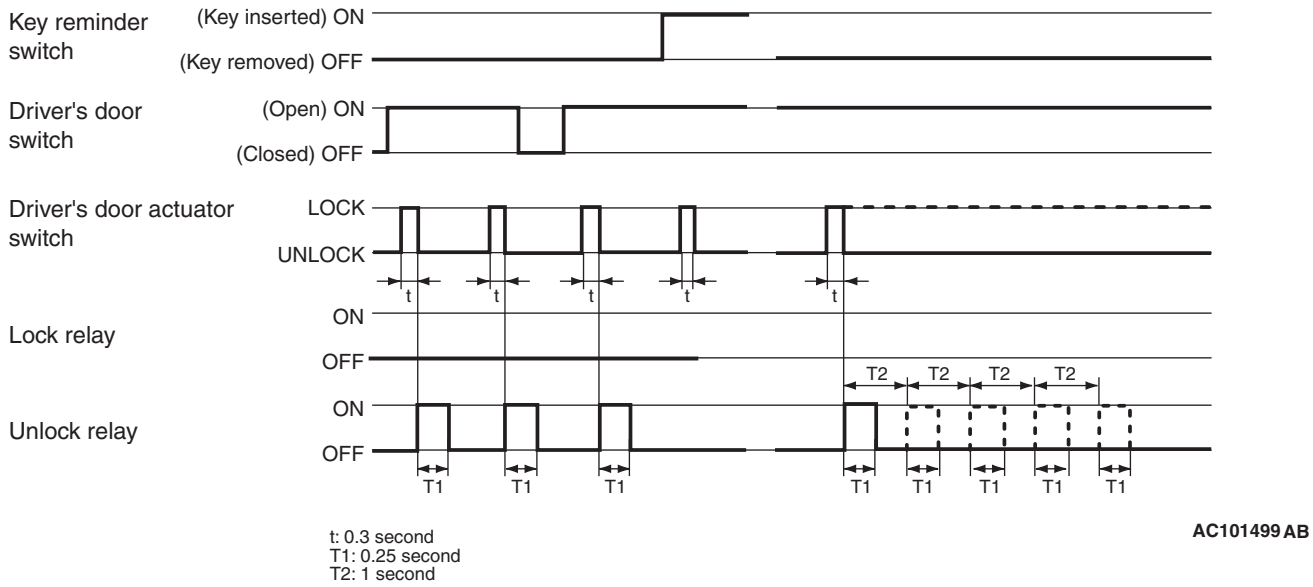
CENTRAL DOOR LOCKING SYSTEM

CENTRAL DOOR LOCKING CONTROL FUNCTION



When the driver's door is locked (when the lock switch turns ON after turning OFF the unlock switch in the driver's door lock actuator), ETACS-ECU turns ON the lock relay output for 0.25 second, and locks all doors (including the tailgate).
When the driver's door is unlocked (when the unlock switch turns ON after turning OFF the lock switch on the driver's door lock actuator), ETACS-ECU turns ON the unlock relay output for 0.25 second, and unlocks all doors (including the tailgate).

KEY REMINDER FUNCTION



t: 0.3 second
T1: 0.25 second
T2: 1 second

When the driver's door is opened with the ignition key inserted to the ignition cylinder and the door is locked (when the lock switch turns ON after turning OFF the unlock switch in the driver's door lock actuator), after approximately 0.3 second, ETACS-ECU turns ON the unlock relay output for 0.25 second to discourage the door lock operation so that the ignition key left in the ignition cylinder is prevented.

If the discouraging the door lock operation fails, the current supply will be retried. (The unlock relay output is turned ON for 0.25 second up to five times with one second interval.)

NOTE: The broken line in the graph indicates the current supply retry state if the discouraging door lock operation fails.

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DOOR UNLOCK FUNCTION WITH THE IMPACT DETECTION

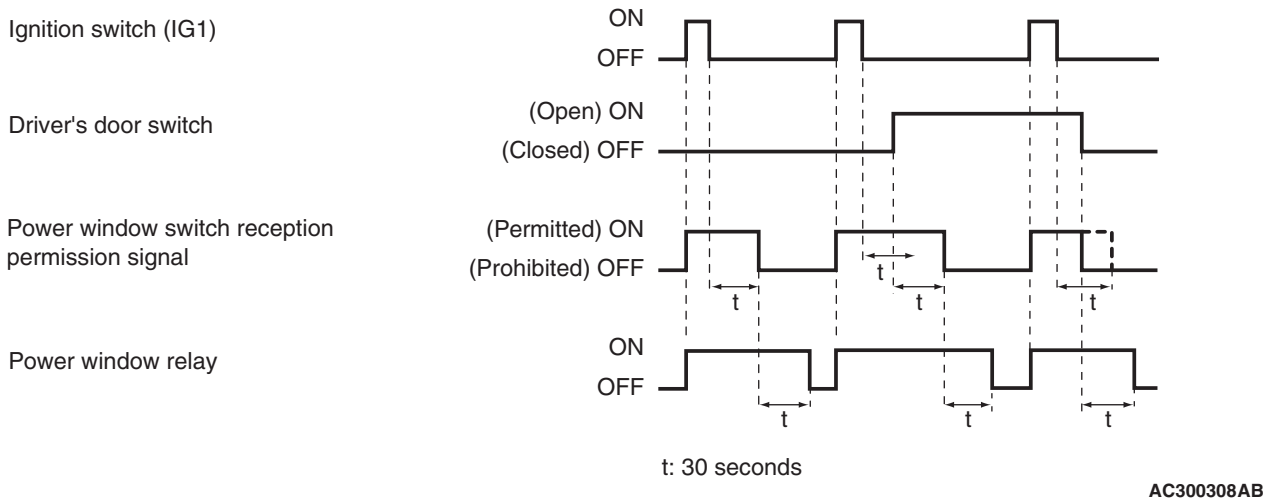
If the vehicle crashed with the ignition switch ON or 30 seconds after turning the ignition switch to LOCK (OFF), and the impact sensor detects an impact greater than the specified value, the impact sensor sends the signal to ETACS-ECU. Then, within the 0.1 second, ETACS-ECU energizes the unlock relay for one second for releasing the door lock to prevent passengers to kept inside the vehicle after the crash.

NOTE: The fail safe disables the operation under the following conditions. (Diagnosis code No. 31 or 32 is output at this time.) Turn ON the ignition switch again after turning the ignition switch to LOCK (OFF) to return from the fail safe state.

- *No. 31: When the ignition switch is ON, and the sensor shows under the short circuit detect voltage for 2.5 second*
- *No. 32: When the ignition switch is ON, and the sensor shows over the closed circuit detect voltage for 0.4 second*

POWER WINDOWS

POWER WINDOW TIMER FUNCTION <VEHICLES FOR ARGENTINA> (THE INITIAL CONDITION: WITH FUNCTION)



When the power window relay and the power window switch reception permit signal (SWS signals from ETACS) are turned ON with the ignition switch ON and the ignition switch is turned OFF, the power window switch reception permit signal is kept ON for approximately 30 seconds to enable the door window operation by the power window switch. The power window relay will be turned OFF 30 seconds after terminating the reception permit signal.

If the driver's door is opened during the timer operation, the reception permit signal is kept ON for 30 seconds from that time. However, when the driver's door is closed, the reception permit signal is turned OFF at the same time. The power window relay will be turned OFF 30 seconds after terminating the reception permit signal.

NOTE: The power window timer function can be disabled or enabled by the adjusting function.

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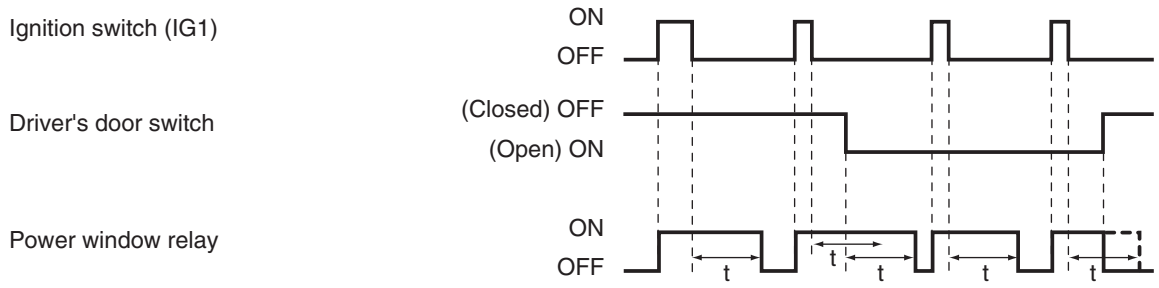
POWER WINDOW TIMER FUNCTION <EXCEPT FOR ARGENTINA, AUSTRALIA AND NEW ZEALAND> (THE INITIAL CONDITION: WITH FUNCTION)



t: 30 seconds

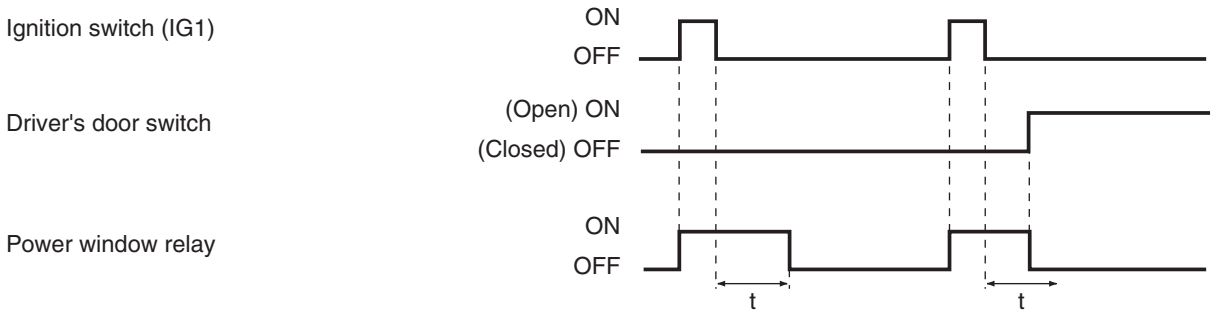
AC300309AB

When the power window relay is turned ON with the ignition switch ON, the power window relay is kept ON for 30 seconds even after the ignition switch is turned OFF, enabling the door window to be opened and closed with the power window switch.

If the driver's door is opened during the timer operation, the power window relay is kept ON for 30 seconds from that time. However, when the driver's door is closed, the power window relay is turned OFF at the same time.

NOTE: The power window timer function can be disabled or enabled by the adjusting function.

POWER WINDOW TIMER FUNCTION <VEHICLES FOR AUSTRALIA AND NEW ZEALAND> (THE INITIAL CONDITION: WITH FUNCTION)



t: 30 seconds

AC300311AB

When the power window relay is turned ON with the ignition switch ON, the power window relay is kept ON for 30 seconds even after the ignition switch is turned OFF, enabling the door window to be opened and closed with the power window switch.

If the driver's or the front passenger door is opened during timer operation, the power window relay is turned OFF at the same time.

NOTE: The power window timer function can be disabled or enabled by the adjusting function.

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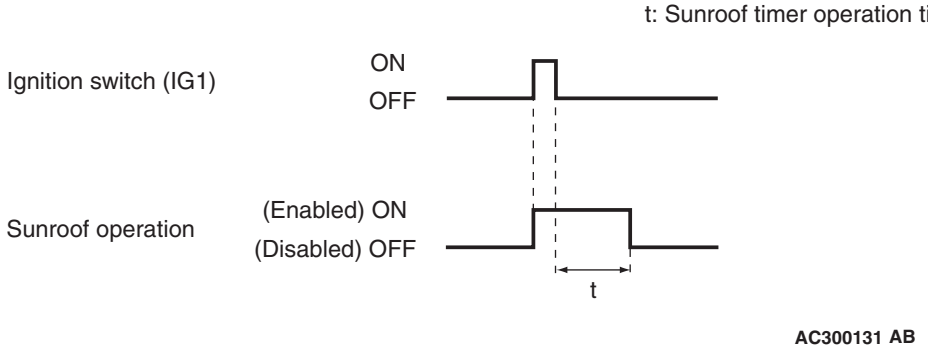
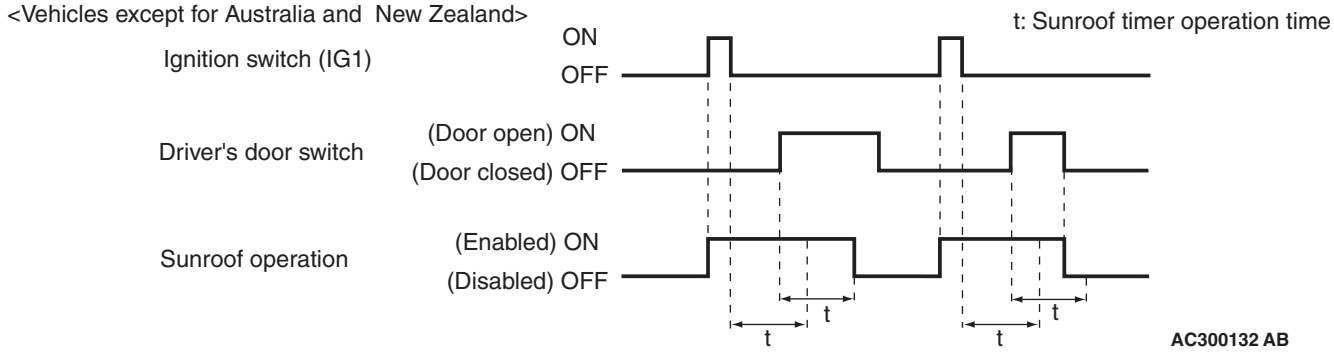
SUNROOF

SUNROOF TIMER FUNCTION <EXCEPT FOR ARGENTINA> (THE INITIAL CONDITION: 30 SECONDS)

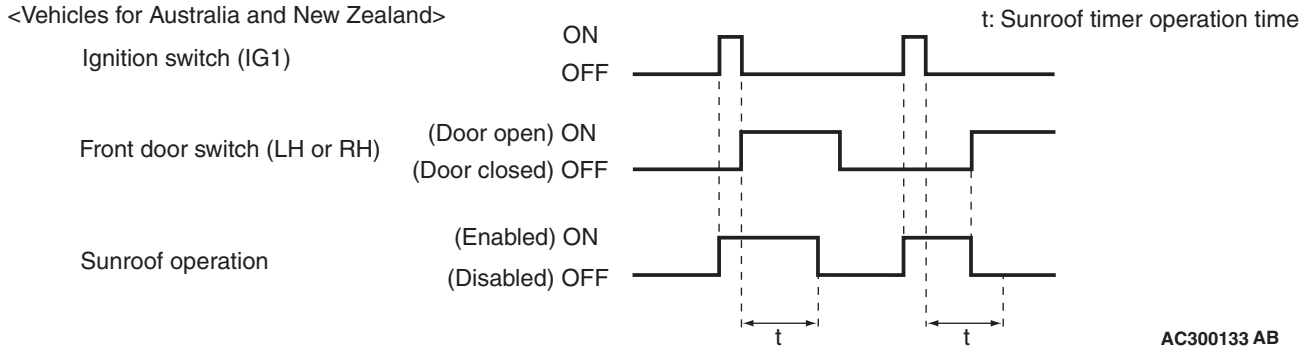


After turning OFF the ignition switch, the sunroof can be operated by the sunroof switch for approximately 30 seconds.



When the driver's door is opened during the sunroof timer operation, the sunroof timer operation will be extended for sunroof timer operation time at that time. <Except for Australia and New Zealand>

If the driver's door is closed during sunroof timer operation, the sunroof operation is canceled at the same time. <Except for Australia and New Zealand>



Opening the front door (LH or RH) during the sunroof timer operation cancels the sunroof operation.<Vehicles for Australia and New Zealand>

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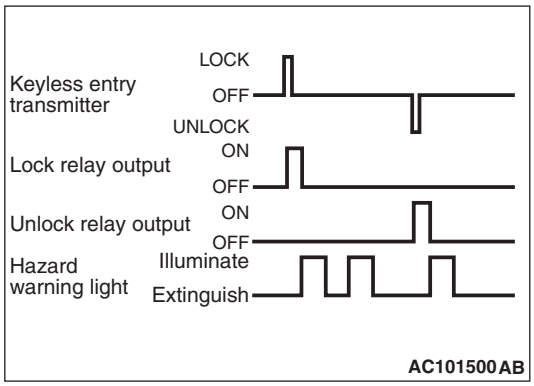
KEYLESS ENTRY SYSTEM

KEYLESS ENTRY HAZARD LAMP ANSWER BACK FUNCTION (THE INITIAL CONDITION: WITH FUNCTION OF LOCK/UNLOCK)



The hazard answer back function that allows checking the lock/unlock state of the door easily even in the daytime is installed. When the lock signal from the keyless entry transmitter is received into ETACS-ECU, all doors (including the tailgate) are closed, and the turn-signal lamp blinks twice. When the unlock signal is received, all doors (including the tailgate) are closed, and the turn-signal lamp blinks once.

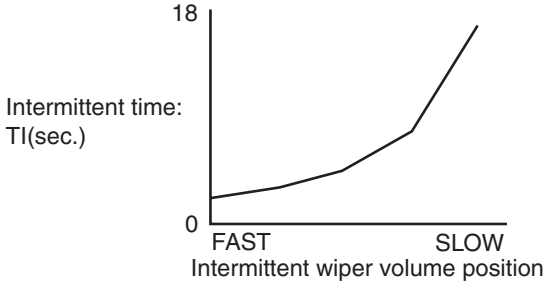
NOTE: The answer back blink time can be adjusted by the adjusting function.

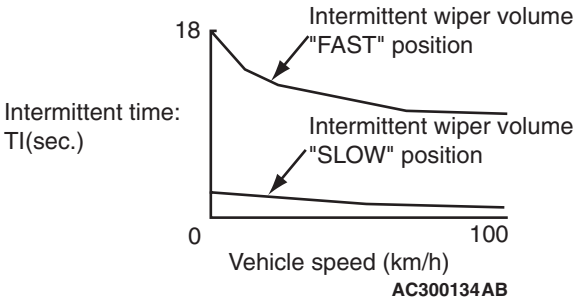
TIMED LOCKING MECHANISM)

After unlocking the doors with the keyless entry transmitter, if no doors are opened, if the ignition key is not inserted or if the locking function is not operated, the ETACS-ECU automatically locks the doors in 30 seconds.

WINDSHIELD WIPER AND WASHER

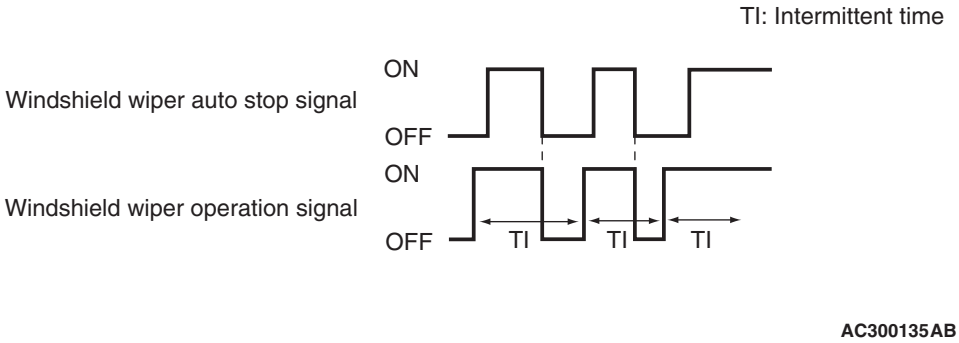
INTERMITTENT CONTROL [VEHICLE SPEED SENSING DURATION ADJUSTABLE TYPE (THE INITIAL CONDITION: WITH FUNCTION)]





ETACS-ECU calculates the intermittent time TI from the vehicle speed calculated from the windshield intermittent wiper volume of the column switch and the vehicle signals (engine-A/T-ECU), and sends it to the front ECU as SWS data.

NOTE: The vehicle speed sensing function can be invalidated by the adjusting function.



The front ECU determines the intermittent time TI from the input SWS data, and turns ON the windshield wiper drive signal. When the wiper comes to the stop position, the windshield wiper auto-stop signal is turned OFF, and the windshield wiper drive signal turns OFF.

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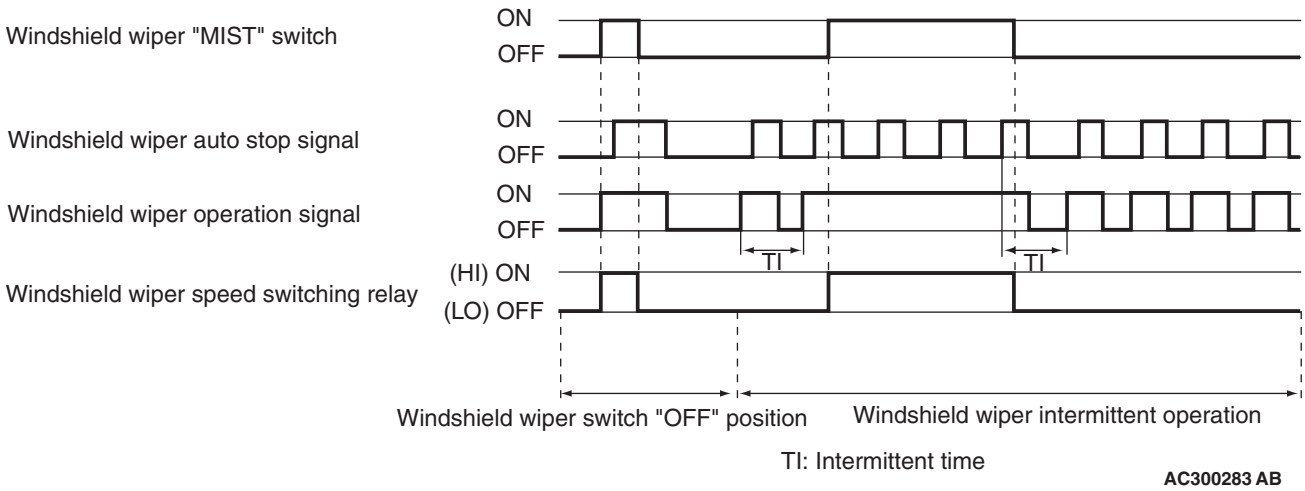
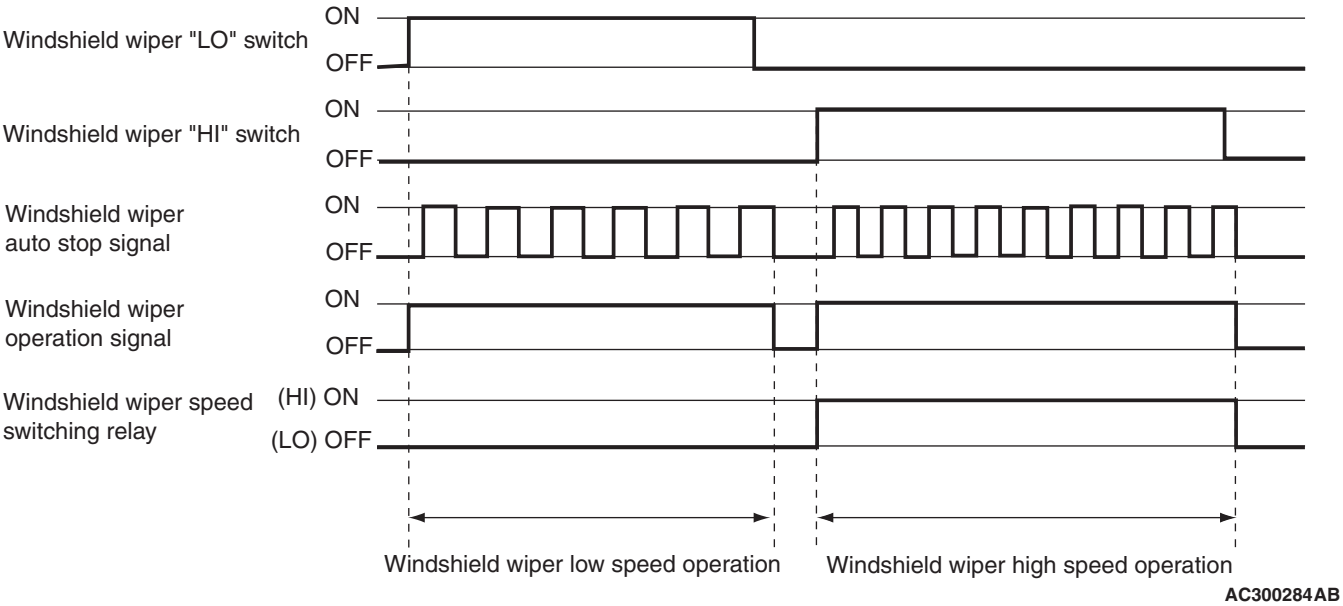
When the intermittent time TI is elapsed after being turned ON the windshield wiper drive signal, the windshield wiper drive signal is turned ON again, and the above-mentioned operation is repeated.

MIST WIPER CONTROL



When the windshield wiper mist switch of the column switch is turned ON while the ignition switch is ACC or ON, the column switch turns ON the windshield wiper drive signal. At the same time, the wiper speed switch relay turns to ON (HI). When the windshield mist wiper switch is ON, the windshield wiper operates at the high speed.

LOW SPEED WIPER AND HIGH SPEED WIPER CONTROL



When the windshield low speed wiper switch of the column switch is turned ON while the ignition switch is ACC or ON, the column switch turns ON the windshield wiper drive signal. Also, the wiper speed switch relay turns to OFF (LO), and the windshield wiper operates at the low speed.

When the windshield high speed wiper switch is turned ON, the windshield wiper drive signal turns ON. Also, the wiper speed switch relay turns ON (HI), and the windshield wiper operates at the high speed.

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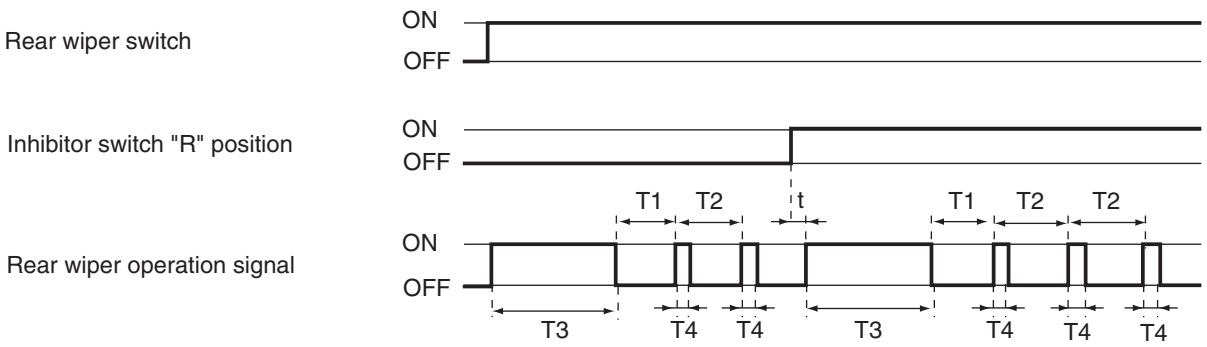
REAR WIPER AND WASHER

REAR WIPER CONTROL [THE INITIAL CONDITION: 8 SECONDS (WITHOUT SUCCESSIVE OPERATIONS)]



t: 1.0 second
T1: 7.4 seconds
T2: 8.0 seconds
T3: 3.0 seconds
T4: 0.6 second

AC300286 AB

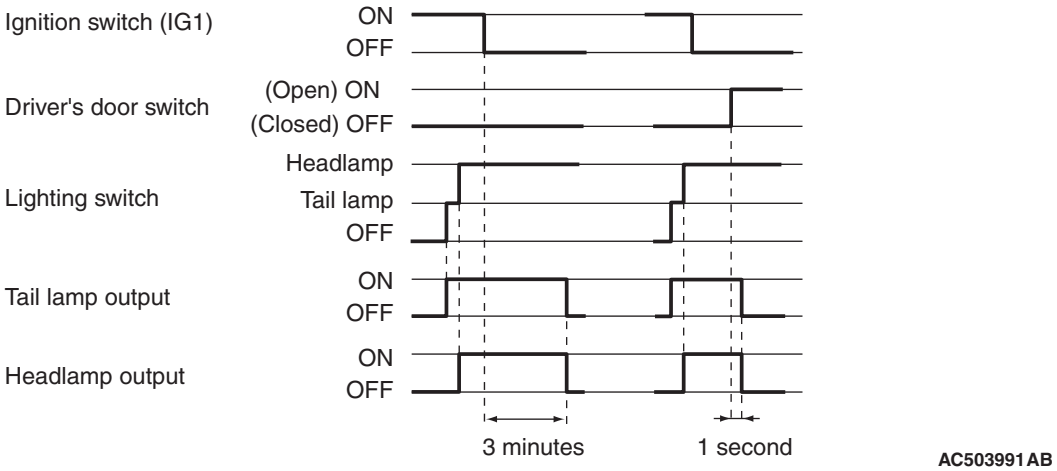
1. When the rear wiper switch on the column switch is turned ON with the ignition switch at the ACC or ON position, ETACS-ECU turns ON the rear wiper drive signal for 3 seconds (approximately 2 operations) and performs the intermittent action at 8-second intervals.

When the selector lever is moved to R (reverse) position during the rear wiper operation, the inhibitor switch R (reverse) turns ON one second after that, ETACS-ECU sends the rear wiper drive signal for 3 seconds (approximately 2 operations), and operates the intermittent action in 8 seconds interval.

2. By the special operation of the rear wiper switch on the column switch (successive 2-time operations), the rear wiper operates continuously regardless of the set intermittent time.

HEADLAMP

HEADLAMP AUTOMATIC SHUTDOWN FUNCTION <EXCEPT FOR AUSTRALIA AND NEW ZEALAND> (THE INITIAL CONDITION: WITH FUNCTION)



AC503991 AB

Even when the lighting switch (tail lamp switch or headlamp) is ON, the headlamp (including the tail lamps) turns off automatically with any of the following conditions to prevent the battery discharge caused by unattended operation.

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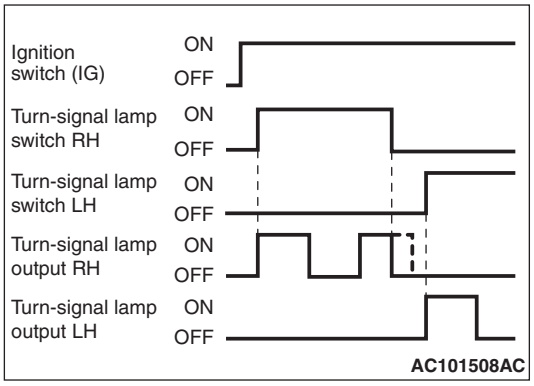
1. If the ignition switch is turned OFF with the ignition switch ON, the lamp turns off automatically after 3 minutes. If the driver's door is opened during the 3 minutes, the lamp turns off after one second. (One seconds before turning off, the lamp remainder buzzer sounds. However, if the driver's door is opened with the ignition key inserted, the key remainder alarm buzzer operates in the first priority.)

NOTE: For vehicles with the keyless entry system, this function can be invalidated by the adjusting function.

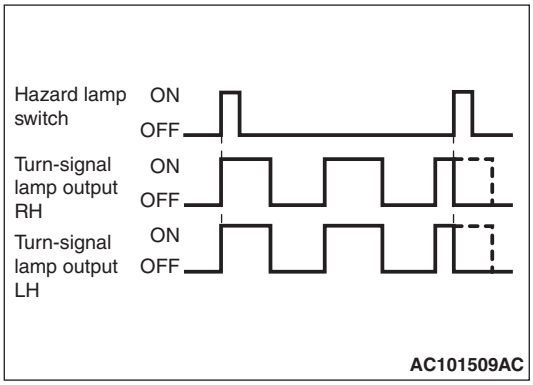
FLASHER TIMER FUNCTION

TURN-SIGNAL LAMP



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

HAZARD WARNING LAMP



When the hazard lamp switch input signal turning from OFF to ON is detected, the flashing states turns over by the signal. (When the hazard lamp is not blinking, it blinks. If it is blinking, it turns off.)

NOTE:

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

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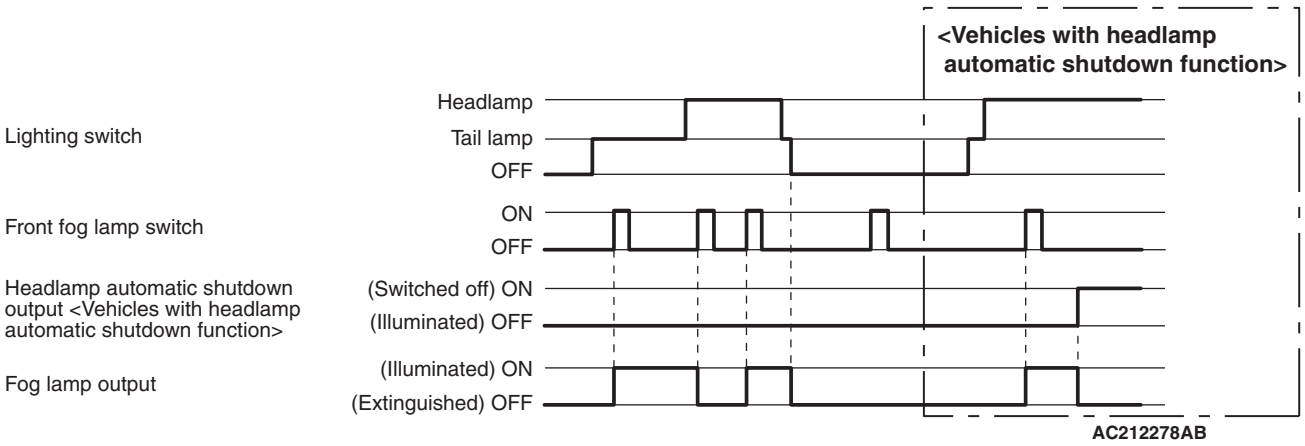
FOG LAMP

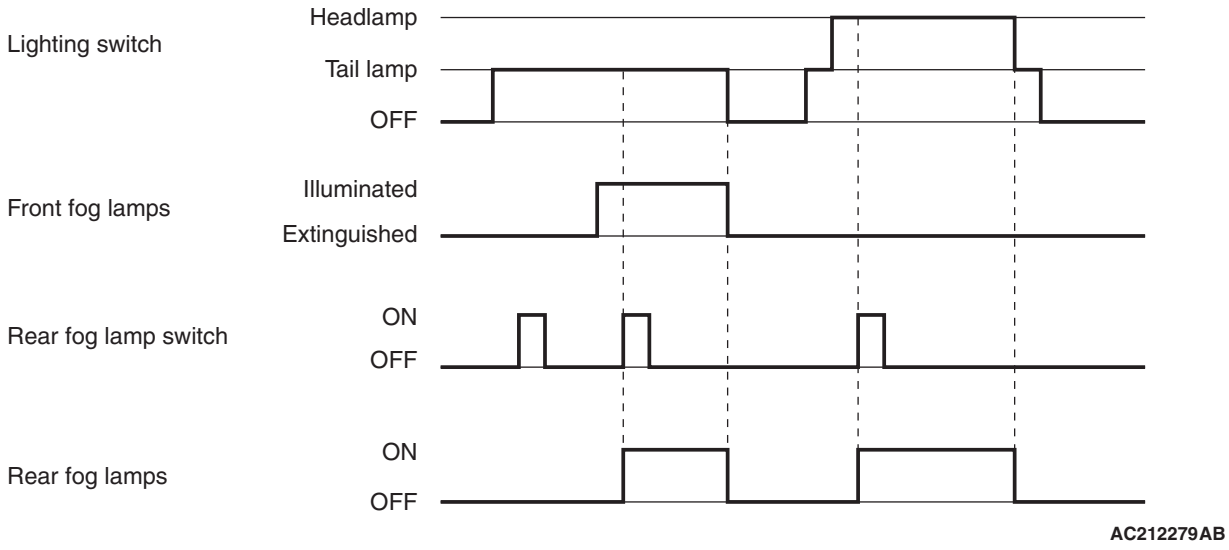
FRONT FOG LAMP CONTROL FUNCTION <VEHICLES WITH FRONT FOG LAMP>



When the fog lamp switch is turned to ON with the tail lamp or the headlamp lit (the tail lamp switch or the headlamp switch is ON), the fog lamp relay turns ON, and the fog lamps light.
If the tale lamp or the headlamp is turned off with the lighting switch OFF while the fog lamps lit, the fog lamps turn off the same time to prevent unattended operation.

If the tail lamp is turned off by the headlamp auto-turn off function, the fog lamps turn off at the same time. However, if the tail lamps light again, the fog lamps do not.

REAR FOG LAMP CONTROL FUNCTION <VEHICLES WITH REAR FOG LAMP>



If the rear fog lamp switch is turned ON when the headlamp or the front fog lamp is turned ON, the rear fog lamp is switched ON and OFF alternatively.

If the headlamp and the front fog lamp, the rear fog lamp is turned OFF at the same time.

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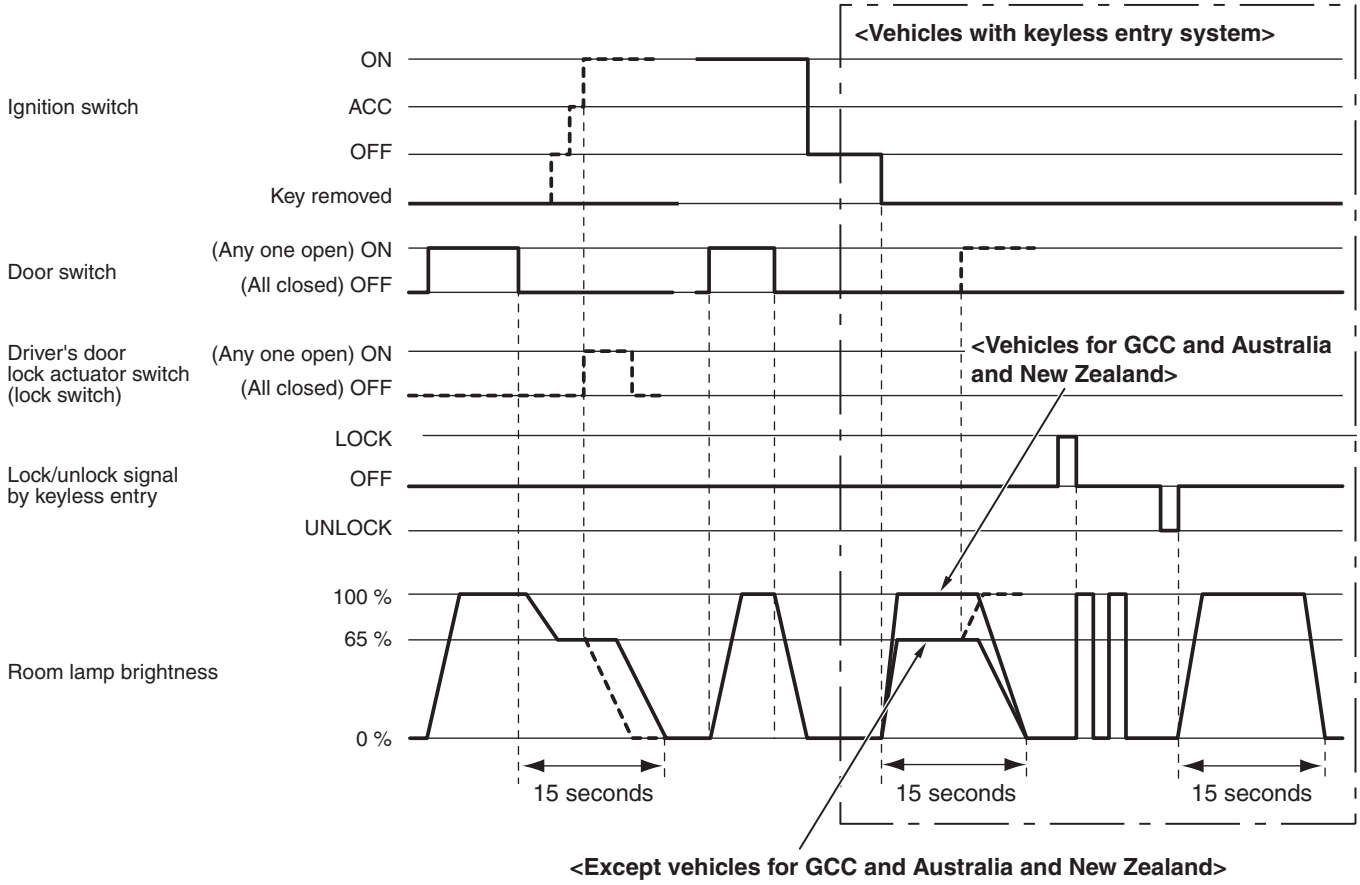
INTERIOR LAMP

DIMMER INTERIOR LAMP CONTROL FUNCTION (THE INITIAL CONDITION: 15 SECONDS)



AC212382AB

When the interior lamp switch is on the door position, ETACS-ECU controls the interior lamp lights as follows.

1. When the ignition switch is OFF:

By opening any door or tailgate lamps, the lamp turns ON (100%), and dims (65%) when the door or tailgate is closed, then and turns off after 15 seconds.

However, when the ignition switch is turned ON or the door lock is operated curing the timer operation, the lamps turn off at that time.

2. When the ignition switch is ON:

By opening any door or tailgate lamps, the lamp (100%) turns ON and OFF when the door or tail gate is closed.

3. When all doors and the tailgate are closed, and the ignition key is removed <Vehicles with keyless entry system>

By removing the ignition key with all doors and the tailgate closed, the lamp turns ON 100% <vehicles for GCC and Australia> or 65% <except vehicles for GCC and Australia>, and turns off after 15 seconds.

By inserting the ignition key again or operating the door lock with the lamp lit, the lamps turns off.

4. Keyless entry room lamp answer back <Vehicles with keyless entry system>

The room lamp blinks two times while locking the door for easy checking the keyless entry function. When the door is unlocked, the lamp lights on for 15 seconds (100%), and turns off.

NOTE: For the vehicles with the keyless entry system, the delayed interior lamp turning off duration and the operation times of the keyless entry interior lamp answer back can be changed by the adjusting function.

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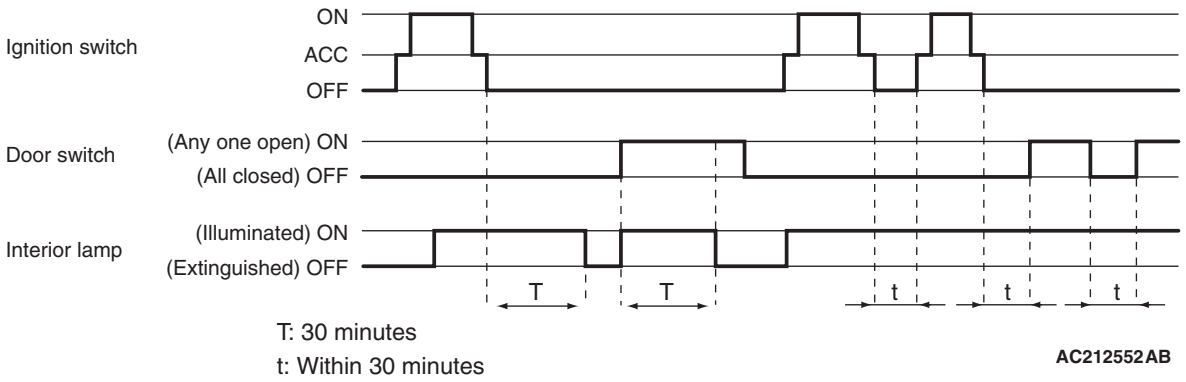
INTERIOR LAMP AUTOMATIC SHUTOFF FUNCTION <VEHICLES WITH KEYLESS ENTRY SYSTEM> (THE INITIAL CONDITION: WITH FUNCTION)



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

- After 30 minutes with the interior lamp lit while the ignition switch is OFF, the lamp turns off automatically.
- After 30 minutes with any door switches opened while the ignition switch is OFF, the lamp turns off automatically.

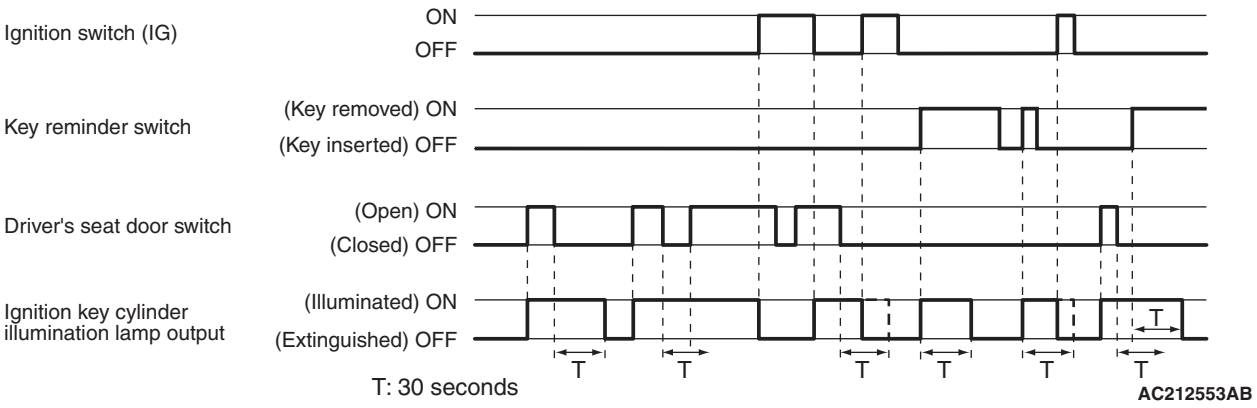
After auto-turn off function, the interior lamp turns ON when any of the following condition is met.

- Open and close doors.
- Operate the keyless entry transmitter.
- Turn the ignition switch to ACC or ON.

NOTE:

1. *The interior automatic shutdown function can be disabled or enabled by the adjusting function.*
2. *After returning, the lamp turns off after 30 minutes, when the interior auto turn off function is met.*

IGNITION KEY CYLINDER ILLUMINATION LAMP CONTROL FUNCTION



The ignition key cylinder illumination lamp lights for 30 seconds when the driver's door is opened/closed with the ignition switch OFF. Also when the ignition key is removed from the ignition key cylinder, the lamp lights for 30 seconds. In any cases, the ignition key cylinder illumination lamp turns ON when the ignition switch is turned to ON.

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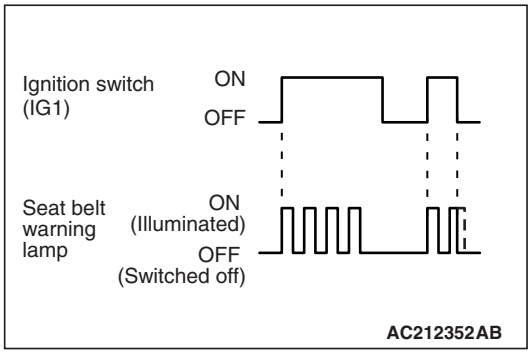
SEAT BELT WARNING LAMP

SEAT BELT WARNING LAMP FUNCTION <VEHICLES FOR AUSTRALIA AND NEW ZEALAND>



When the ignition switch is turned to ON, the seat belt warning lamp flashes 4 times (over 6 seconds).

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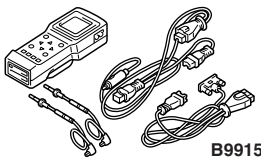
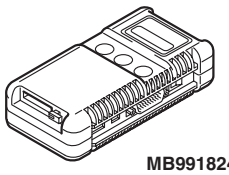
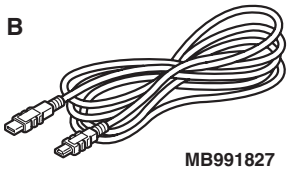
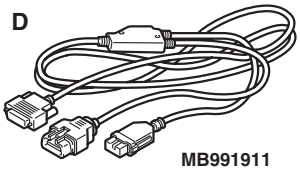
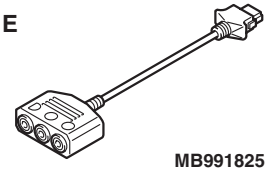
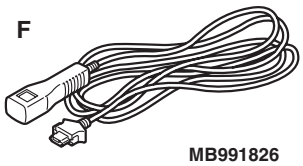
SPECIAL TOOLS

M1549000301392

Tool	Number	Name	Use
 B991502	MB991502	M.U.T.-II sub assembly	Check the SWS (The M.U.T.-II displays DTCs and input signals)
A  MB991824 B  MB991827 C DO NOT USE MB991910 D  MB991911 E  MB991825 F  MB991826 MB991955	MB991955 A: MB991824 B: MB991827 C: MB991910 D: MB991911 E: MB991825 F: MB991826	M.U.T.-III sub-assembly A: Vehicle Communication Interface (V. C. I.) B: M.U.T.-III USB cable C: M.U.T.-III main harness A (Vehicles with CAN communication system) D: M.U.T.-III main harness B (Vehicles without CAN communication system) E: M.U.T.-III measurement adapter F: M.U.T.-III trigger harness	SWS communication line check (ECU check and service data) ⚠ CAUTION **M.U.T.-III main harness B (MB991911) should be used. M.U.T.-III main harness A should not be used for this vehicle.**

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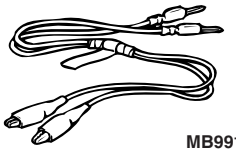
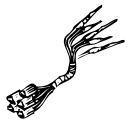
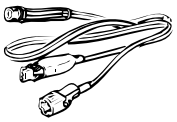
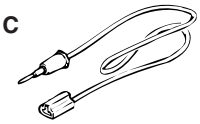
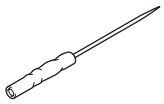
Tool	Number	Name	Use
 MB991529	MB991529	Diagnosis code check harness	Input signal check by using a voltmeter
A  B  C  D MB991223AZ	MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222	Harness set A: Test harness B: LED harness C: LED harness adapter D: Probe	Continuity check and voltage measurement at harness wire or connector A: For checking connector pin contact pressure B: For checking power supply circuit C: For checking power supply circuit D: For connecting a locally sourced tester
 MB992006	MB992006	Extra fine probe	Continuity check and voltage measurement at harness wire or connector

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TROUBLESHOOTING

PRIOR TO TROUBLESHOOTING

M1549014700840

Before carrying out troubleshooting, check the following two items.

- Make sure that the ETACS-ECU, the junction block (J/B), the front-ECU and the engine compartment relay box are connected securely.
- Check that the system fuses and fusible links are not burned out.

STANDARD FLOW OF DIAGNOSIS TROUBLESHOOTING

M1549000501040

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5.

DIAGNOSIS FUNCTION

M1549028900319

HOW TO READ DIAGNOSIS CODE

Use the M.U.T.-II/III to read diagnosis code (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

NOTE: Connect the M.U.T.-II/III to the 16-pin diagnosis connector (black).

NOTE: A diagnosis code can not be read when the ETACS-ECU is defective or the power supply voltage has risen. In this case, refer to Inspection Procedure A-1 "Communication with the M.U.T.-II/III is not possible P.54B-32."

HOW TO CHECK INPUT SIGNALS

1. Use the M.U.T.-II/III or a voltmeter to check input signals (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).
2. The input signals below can be checked by connecting the M.U.T.-II/III or a voltmeter to the diagnosis connector.

NOTE: If a fault is found at the input signal check, refer to trouble symptom chart P.54B-29.

SWITCHES WHICH ARE APPLICABLE TO INPUT SIGNAL CHECK, AND THEIR CHECK CONDITIONS

Input signals	Requirements for sounding buzzer
Ignition switch (ACC)	When turned from the LOCK (OFF) position to the ACC position
Ignition switch (IG1)	When turned from ACC to ON
Key reminder switch <Vehicles with keyless entry system>	When the inserted ignition key is pulled out
Inhibitor switch ("R" position)	When the ignition switch is turned ON and the selector lever is moved to the R position
Hazard warning lamp switch	When the switch is turned from off to on
Front fog lamp switch	
Rear fog lamp switch	
Driver's door switch	When the door is opened
Passenger’s door switch <Vehicles for Australia>	
All of the door switches	A door is opened when all the doors are closed
Driver's door lock actuator	When the driver's key cylinder or inside lock knob is unlocked or locked
Passenger’s door lock key cylinder switch	Turn the key to the lock or unlock position
Vehicle speed signal (engine-A/T-ECU) <Except vehicles for GCC>	When the vehicle speed has reached 10 km/h or more

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Input signals		Requirements for sounding buzzer
Column switch	Tail lamp switch	When the lighting switch is moved from the automatic lamp position to the tail lamp position
	Headlamp switch	When the lighting switch is moved from the tail lamp position to the automatic lamp position
	Dimmer switch	When the switch is turned from off to on
	Passing lamp switch	
	Turn-signal lamp switch (LH)	
	Turn-signal lamp switch (RH)	
	Wind shield mist wiper switch	
	Windshield intermittent wiper switch	
	Windshield low-speed wiper switch	
	Windshield high-speed wiper switch	
	Headlamp washer switch	
	Windshield intermittent wiper volume	When the windshield intermittent wiper volume is rotated from "FAST" to "SLOW" (a pulse is sent around the volume middle position)
	Windshield washer switch	When the switch is turned from off to on
	Rear wiper switch	
	Rear washer switch	
Keyless entry transmitter	Switches	When the switch is turned from off to on
Sunroof	Switches	When the switch is turned from off to on
Interior lamp loaded signal		When a load is applied through multi-purpose fuse No.22

DIAGNOSIS CODE CHART

M1549000700579

Code No.	Diagnosis Detail	Reference page
11	Trouble related to the ETACS-ECU	P.54B-19
12	Trouble related to the column switch or improper connection to the ETACS-ECU	P.54B-19
13	Trouble related to the front-ECU or improper connection to the ETACS-ECU	P.54B-20
21	Short circuit in SWS communication line	P.54B-22
31	Open circuit in the signal line between the SRS-ECU and the ETACS-ECU (impact detection signal)	P.54B-23
32	Short circuit in the signal line between the SRS-ECU and the ETACS-ECU (impact detection signal)	

DIAGNOSTIC TROUBLE CODE PROCEDURES

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Diagnosis code 11: Trouble related to the ETACS-ECU

COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU monitors the data, which the ECU itself sends. If errors occur consecutively 15 times (for 0.6 seconds), a diagnosis code will be set. Then, if the data does not contain any errors consecutively 15 times (for 0.6 seconds), the ECU will stop sending the diagnosis code.

POSSIBLE CAUSE

- Malfunction of the ETACS-ECU

DIAGNOSIS PROCEDURE

Check whether the diagnosis code is reset.
(1) Erase the diagnosis code.
(2) Again check that diagnosis code No.11 is set.

Q: Is diagnosis code No.11 set?
YES : Replace the ETACS-ECU.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

Diagnosis code 12: Trouble related to the column switch or improper connection with the ETACS-ECU

⚠ CAUTION
Whenever the ECU is replaced, ensure that the power supply circuit, the grounding circuit and the communication circuit are normal.

COMMENTS ON TROUBLE SYMPTOM

If the column switch ignores the data request signal sent by the ETACS-ECU (three times or more for one second), this diagnosis code will be set. Then, when the column switch observes the request signal for one second, the ECU will stop sending the diagnosis code.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Use the M.U.T.-II/III to confirm a diagnosis code. (M.U.T.-II/III diagnosis code)
(1) Ignition switch: ON
(2) On completion, check that diagnosis code No.12 is not reset.

Q: Is diagnosis code No.12 set?
YES : Go to Step 5.
NO : Go to Step 2.

Step 2. Connector check: C-310 column switch connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Measure the voltage at C-310 column switch connector.
(1) Remove the column switch connector, and measure at the wiring harness side.
(2) Voltage between C-310 column switch connector terminal No.1 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Replace the column switch.
NO : Go to Step 4.

Step 4. Check the wiring harness between C-310 column switch connector terminal No.1 and the battery.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-116, joint connector C-02 and junction block connector C-202 <RH drive vehicles>, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

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Step 5. Measure the resistance at the C-310 column switch connector.
(1) Remove the column switch, and measure at the wiring harness side.
(2) Resistance between C-310 column switch connector terminal No.4 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

Step 6. Check the wiring harness between C-310 column switch connector terminal No.4 and the body earth.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 7. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the defective connector.

Step 8. Check the wiring harness from C-219 ETACS-ECU connector terminal Nos.59 and 68 to C-310 column switch connector terminal Nos.3 and 2.

NOTE: Prior to the wiring harness inspection, check joint connector C-02, and repair if necessary.
- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the wiring harness.

Step 9. Check whether the diagnosis code is reset.
Replace the column switch, and then check that the diagnosis code is not reset.
(1) Replace the column switch.
(2) Ignition switch: ON
(3) On completion, check that diagnosis code No.12 is not reset.

Q: Is diagnosis code No.12 set?
YES : Replace the ETACS-ECU.
NO : The procedure is complete.

Diagnosis code 13: Trouble related to the front-ECU or improper connection with the ETACS-ECU

⚠ CAUTION
Whenever the ECU is replaced, ensure that the power supply circuit, the grounding circuit and the communication circuit are normal.

COMMENTS ON TROUBLE SYMPTOM

If the front-ECU has sent abnormal signal to the ETACS-ECU for consecutively 15 communication cycles (0.6 second), the diagnosis code will be set. If the front-ECU has sent normal signal to the ETACS-ECU for consecutively 15 communication cycles (0.6 second), the ETACS-ECU will stop sending the diagnosis code.

POSSIBLE CAUSES

- Malfunction of the front-ECU
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Use the M.U.T.-II/III to confirm a diagnosis code. (M.U.T.-II/III diagnosis code)
(1) Ignition switch: ON
(2) On completion, check that diagnosis code No.13 is not reset.

Q: Is diagnosis code No.13 set?
YES : Go to Step 5.
NO : Go to Step 2.

Step 2. Connector check: A-11X front-ECU connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

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Step 3. Measure the voltage at A-11X front-ECU connector.

(1) Remove the front-ECU, and measure at the relay box side.
(2) Voltage between A-11X front-ECU connector terminal No.5 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Replace the front-ECU.
NO : Go to Step 4.

Step 4. Check the wiring harness between A-11X front-ECU connector terminal No.5 and the battery.

NOTE: <RH drive vehicles> Prior to the wiring harness inspection, check junction block connector C-202, intermediate connectors A-14 and joint connector C-02, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: A-12X front-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Measure the resistance at A-12X front-ECU connector.

(1) Remove the front-ECU, and measure at the relay box side.
(2) Resistance between A-12X front-ECU connector terminal No.21 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 8.
NO : Go to Step 7.

Step 7. Check the wiring harness between A-12X front-ECU connector terminal No.21 and the body earth.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 8. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the defective connector.

Step 9. Check the wiring harness between C-219 ETACS-ECU connector terminal No.59 and A-12X front-ECU connector terminal No.30.

NOTE: Prior to the wiring harness inspection, check joint connector C-02 and intermediate connector C-116, and repair if necessary.

- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 10.
NO : Repair the wiring harness.

Step 10. Check whether the diagnosis code is reset.

Replace the column switch, and then check that the diagnosis code is not reset.
(1) Replace the column switch.
(2) Ignition switch: ON
(3) On completion, check that diagnosis code No.13 is not reset.

Q: Is diagnosis code No.13 set?
YES : Replace the ETACS-ECU.
NO : The procedure is complete.

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Diagnosis code 21: Short circuit in SWS communication line

⚠ CAUTION
Whenever the ECU is replaced, ensure that the communication circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

If the SWS communication line voltage is kept at low level for 0.3 second, the diagnosis code will be set. If the ETACS-ECU data line voltage is kept at high level for 0.3 second, or the ETACS-ECU has received normal signal from the other ECUs or switches, the ETACS-ECU will stop sending the diagnosis code. While this code is set, the other codes will not be set.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the front-ECU
- Malfunction of the sunroof motor assembly
- Malfunction of the power window main switch <vehicles for Argentina>
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: A-11X front-ECU connector, C-203 column switch connector, C-228 ETACS-ECU connector, D-09 sunroof motor assembly connector, and E-05 power window main switch connector <vehicles for Argentina>

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the wiring harness from each of A-12X front-ECU connector terminal No.30, C-310 column switch connector terminal No.3, D-09 sunroof motor assembly connector terminal No.10 and E-05 power window main switch connector terminal No.4 <vehicles for Argentina> to C-219 ETACS-ECU connector terminal No.59.

NOTE: Prior to the wiring harness inspection, check joint connector C-02, intermediate connectors C-116, C-118 <vehicles for Argentina>, C-218 and E-12 <vehicles for Argentina>, and repair if necessary.

- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the wiring harness.

Step 3. Check the wiring harness between C-310 column switch connector terminal No.2 and C-219 ETACS-ECU connector terminal No.68.

- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the wiring harness.

Step 4. Check whether the diagnosis code is reset.

When A-11X front-ECU connector is disconnected, check that diagnosis code No.21 is not reset. However, diagnosis code No.13 will be set at this time.

Q: Is diagnosis code No.21 set?
YES : Replace the front-ECU.
NO : Go to Step 5.

Step 5. Check whether the diagnosis code is reset.

When D-25 sunroof motor assembly connector is disconnected, check that diagnosis code No.21 is not reset.

Q: Is diagnosis code No.21 set?
YES (no DTCs are set) : Replace the sunroof motor assembly.
NO (except for Argentina) : Go to Step 7.
NO (vehicles for Argentina) : Go to Step 6.

Step 6. Check whether the diagnosis code is reset.

When E-05 power window main switch connector is disconnected, check that diagnosis code No.21 is not reset.

Q: Is diagnosis code No.21 set?
YES : Replace the power window main switch.
NO : Go to Step 7.

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Step 7. Check that the hazard warning lamps illuminate.
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

Q: Is the check result normal?
YES : Refer to diagnosis code No.12 "Column switch fault or improper connection P.54B-19."
NO : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."

Diagnosis code 31: Open circuit in signal line between the SRS-ECU and the ETACS-ECU (impact detection signal)
Diagnosis code 32: Short circuit in signal line between the SRS-ECU and the ETACS-ECU (impact detection signal)

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

If the voltage in the signal line between the SRS-ECU and the ETACS-ECU has exceeded 4.6 V for 40 milliseconds or more, the ETACS-ECU will set diagnosis code No.31 as an open circuit. If the signal line voltage has reached 1.5 V or less for at least 2.5 seconds, the ETACS-ECU will set diagnosis code No.32 as a short circuit. If the ignition switch is turned off, the ETACS-ECU will stop sending the diagnosis code.

POSSIBLE CAUSES

- Malfunction of the SRS-ECU
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Use the M.U.T.-II/III to confirm a diagnosis code. (M.U.T.-II/III diagnosis code)
Check that the SRS-ECU sets a diagnosis code.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to GROUP 52B – Troubleshooting P.52B-9.

Step 2. Connector check: C-115 SRS-ECU connector and C-220 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Measure the resistance at the C-115 SRS-ECU connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between C-115 SRS-ECU connector terminal No.15 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness between C-115 SRS-ECU connector terminal No.15 and body earth.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

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Step 5. Check the wiring harness between C-220 SRS-ECU connector terminal No.29 and C-115 SRS-ECU connector terminal No.14.

- Check the communication lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the wiring harness.

Step 6. Check whether the diagnosis code is reset.

Replace the ETACS-ECU, and then check that the diagnosis code is not reset.

(1) Replace the ETACS-ECU.
(2) Ignition switch: ON
(3) Check that diagnosis code No.31 or 32 is not reset.

Q: Is diagnosis code No.31 or 32 set?

YES : Replace the SRS-ECU.

NO : The procedure is complete.

TROUBLE SYMPTOM CHART

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M1549000801397

Symptom	Inspection procedure number	Reference page
Communication with the M.U.T.-II/III is not possible.	A-1	P.54B-32
When the ignition switch is at the LOCK (OFF) position, the functions do not work normally.	A-2	P.54B-33
Check the ETACS-ECU battery power supply circuit.		

<FUNCTION SYSTEM>

Symptom			Inspection procedure number	Reference page
Alarm Functions	Ignition key reminder buzzer function does not work. <Vehicles for GCC only>		B-1	P.54B-34
	Lamp reminder buzzer function does not work normally.		B-2	P.54B-35
Central door locking	Central door locking system does not work.	LH drive vehicles	C-1	P.54B-36
		RH drive vehicles		P.54B-37
	A door or a tailgate can not be locked or unlocked by the central door locking system.	LH drive vehicles	C-2	P.54B-38
		RH drive vehicles		P.54B-40
	The central door locking system can not be operated by means of the front passenger's door key cylinder.		C-3	P.54B-42
	The ignition key reminder buzzer function does not work normally.		C-4	P.54B-43
	The impact detection door unlock function does not function.		C-5	P.54B-44

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Symptom			Inspection procedure number	Reference page
Power window	Power windows do not work at all.	Except vehicles for Argentina	D-1	P.54B-45
		Vehicles for Argentina		P.54B-48
	Driver's power window does not work by means of the power window main switch.	Except vehicles for Argentina	D-2	P.54B-50
		Vehicles for Argentina		P.54B-52
	Relevant power window(s) do not work by means of the front and rear passenger's power window sub switches.	LH drive vehicles except for Argentina	D-3	P.54B-53
		LH drive vehicles for Argentina		P.54B-56
		RH drive vehicles		P.54B-61
	Front and/or rear passenger's power window(s) do not work by means of the power window main switch.	LH drive vehicles except for Argentina	D-4	P.54B-64
		LH drive vehicles for Argentina		P.54B-66
		RH drive vehicles		P.54B-67
	The power window timer function does not work normally.	Except vehicles for Argentina	D-5	P.54B-69
		Vehicles for Argentina		P.54B-70
	The window glass lowers automatically while it is rising.		D-6	P.54B-71
	Power window anti-trap function does not work normally. <Vehicles for Argentina>		D-7	P.54B-72
Keyless entry system	Keyless entry system does not work.		E-1	P.54B-75
	Keyless entry hazard warning lamp answerback function or the room lamp answerback function does not work normally.		E-2	P.54B-77
	Encrypted code cannot be registered.		E-3	P.54B-77
	The timer lock function does not work after the doors have been unlocked by the keyless entry system.		E-4	P.54B-78
Sunroof	The sunroof does not work at all.		F-1	P.54B-79
	Any of the sunroof switch positions is defective.		F-2	P.54B-80
	Sunroof timer function does not work normally.	Except vehicles for Australia	F-3	P.54B-81
		Vehicles for Australia		P.54B-82
	Sunroof anti-trap function does not work normally.		F-4	P.54B-83

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Symptom		Inspection procedure number	Reference page
Windshield wiper and washer	The windshield wipers do not work at all.	G-1	P.54B-84
	The windshield wipers does not work when the wiper switch is at "INT", "WASHER" or "MIST" position. However, the wipers work at low speed when the switch is at "LO" and "HI" position.	G-2	P.54B-86
	The windshield wipers do not stop at the specified park position.	G-3	P.54B-87
	The windshield wipers does not work normally.	G-4	P.54B-88
	The intermittent wiper interval can not be adjusted by operating the windshield intermittent wiper volume control.	G-5	P.54B-90
	The intermittent wiper interval is not changed according to the vehicle speed. <Except vehicles for GCC>	G-6	P.54B-90
	The windshield washer does not work.	G-7	P.54B-91
Rear wiper and washer	The rear wiper does not work at all.	H-1	P.54B-93
	The rear wiper does not stop at the specified park position.	H-2	P.54B-94
	When the selector lever is moved to "R" position during the rear wiper operation, the rear wiper does not operate at the continuous mode.	H-3	P.54B-95
	The rear washer does not work.	H-4	P.54B-96
Headlamp washer	The headlamp washer does not work.	I-1	P.54B-98
Ignition key cylinder illumination lamp	The ignition key cylinder illumination lamp does not illuminate/extinguish normally.	J-1	P.54B-100
Seat belt warning lamp <Vehicles for Australia only>	The seat belt warning lamp does not flash normally.	K-1	P.54B-101
Headlamp and tail lamp	The tail lamps do not illuminate normally.	L-1	P.54B-103
	The low-beam headlamps do not illuminate normally.	L-2	P.54B-104
	The high-beam headlamps do not illuminate normally.	L-3	P.54B-105
	The high-beam and low-beam headlamps do not illuminate when the passing switch is operated.	L-4	P.54B-105
	The headlamp automatic shutdown function does not work normally. <Except vehicles for Australia>	L-5	P.54B-106
	Any of tail lamps, position lamps or licence plate lamp does not illuminate.	L-6	P.54B-107
	The headlamp(s) do not illuminate. <including high-beam indicator>	L-7	P.54B-109
Flasher timer	The turn-signal lamps do not illuminate.	M-1	P.54B-110
	The hazard warning lamps do not illuminate.	M-2	P.54B-111
	Any of the turn-signal lamps does not illuminate.	M-3	P.54B-112

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Symptom		Inspection procedure number	Reference page
Fog lamp	The front fog lamps do not illuminate normally.	N-1	P.54B-114
	The rear fog lamps do not illuminate normally. <Vehicles for Argentina>	N-2	P.54B-116
	Any of the front fog lamps does not illuminate.	N-3	P.54B-117
	Any of the rear fog lamps does not illuminate. <Vehicles for Argentina>	N-4	P.54B-119
Interior lamp	The front or rear room lamp does not illuminate or extinguish normally. <Vehicles without keyless entry system>	O-1	P.54B-120
	The front and rear room lamp does not illuminate or extinguish normally. <Vehicles with keyless entry system>	O-2	P.54B-121
	Interior lamp automatic shutoff function does not work normally. <Vehicles with keyless entry system>	O-3	P.54B-123
	The door-ajar warning lamp does not illuminate/extinguish normally.	O-4	P.54B-124

CHECK TROUBLE BY USING THE INPUT SIGNAL CHECK.

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<PULSE CHECK>

If a problem is found in the Service Data inspection, observe the table below.

Symptom		Inspection procedure number	Reference page
The ignition switch (ACC) signal is not received.		P-1	P.54B-126
The ignition switch (IG1) signal is not received.		P-2	P.54B-127
The inhibitor switch (reverse position) signal is not received.		P-3	P.54B-127
The driver's door switch signal is not received.	LH drive vehicles	P-4	P.54B-128
	RH drive vehicles		P.54B-129
Column switch (lighting and turn-signal lamp switch)	The tail lamp switch signal is not received.	P-5	P.54B-130
	The headlamp switch signal is not received.		
	The dimmer switch signal is not received.		
	The passing switch signal is not received.		
	The turn-signal lamp switch (LH) signal is not received.		
	The turn-signal lamp switch (RH) signal is not received.		
Column switch (windshield wiper/washer and rear wiper/washer switch)	The windshield mist wiper switch signal is not received.	P-6	P.54B-131
	The windshield intermittent wiper switch signal is not received.		
	The windshield low-speed wiper switch signal is not received.		
	The windshield high-speed wiper switch signal is not received.		
	The windshield washer switch signal is not received.		
	The rear wiper switch signal is not received.		
	The rear washer switch signal is not received.		
	The windshield intermittent wiper volume signal is not received.	P-7	P.54B-131
Power window main switch <vehicles for Argentina>	When the power window main switch is operated, the switch signals are not received.	P-8	P.54B-132
Sunroof	When the sunroof switch is operated, the switch signals are not received.	P-9	P.54B-133

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Symptom		Inspection procedure number	Reference page
The key reminder switch signal is not received.		P-10	P.54B-135
The hazard warning lamp switch signal is not received.		P-11	P.54B-136
All the door switch signals are not received.	LH drive vehicles	P-12	P.54B-137
	RH drive vehicles		P.54B-138
The driver's door lock actuator switch signal is not received.	LH drive vehicles	P-13	P.54B-139
	RH drive vehicles		P.54B-140
The vehicle speed signal is not received. <Except vehicles for GCC>		P-14	P.54B-141
Each switch signal of the keyless entry transmitter is not received.		P-15	P.54B-141
The front fog lamp switch signal is not received.		P-16	P.54B-142
The rear fog lamp switch signal is not received. <Vehicles for Argentina>		P-17	P.54B-143
The interior lamp loaded signal is not detected.		P-18	P.54B-144
The front passenger’s door lock key cylinder switch signal is not detected.	LH drive vehicles	P-19	P.54B-145
	RH drive vehicles		P.54B-146
The passenger’s door switch signal is not received. <Vehicles for Australia>		P-20	P.54B-147

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OPERATION AND FUNCTION QUICK-REFERENCE TABLE FOR INPUT SIGNAL INSPECTION PROCEDURES

M1549020300562

If troubles have occurred in the functions which use the SWS simultaneously, observe the table below to check input signals.

(This table shows only the input signals which will cause troubles in at least two functions simultaneously).

Function	P-1	P-2	P-4	P-5	P-6	P-10	P-12	P-13	P-18
Ignition key reminder buzzer function <Vehicles for GCC only>	–	×	×	–	–	×	–	–	–
Lamp reminder function	–	×	×	×	–	–	–	–	–
Control of central door locking	–	–	–	–	–	–	–	×	–
Key reminder function	–	–	×	–	–	×	–	×	–
Door locking released due to impact detection.	–	–	–	–	–	–	–	–	–
Keyless entry system	–	–	×	–	–	×	×	×	–
Keyless entry hazard warning lamp answerback	–	–	–	–	–	–	–	–	–
Power window control	–	×	–	–	–	–	–	–	–
Power window timer	–	×	×	–	–	–	–	–	–
Sunroof control	–	–	×	–	–	–	–	–	–
Sunroof timer	–	×	×	–	–	–	–	–	–
Control of windshield wiper/washer	×	–	–	–	×	–	–	–	–
Rear wiper/washer control	×	–	–	–	×	–	–	–	–
Ignition key cylinder illumination lamp function	–	×	×	–	–	×	–	–	×
Seat belt warning lamp control	–	×	–	–	–	–	–	–	–
Headlamp control	–	×	–	×	–	–	–	–	–
Tail lamp control	–	×	–	×	–	–	–	–	–
Headlamp automatic shutdown function <Except vehicles for Australia>	–	×	×	×	–	–	–	–	–
Fog lamp control	–	–	–	×	–	–	–	–	–
Turn-signal lamp control	–	×	–	×	–	–	–	–	–
Room lamp control	–	×	×	–	–	×	×	×	×
Interior lamp automatic shutdown function	×	–	–	–	–	–	–	–	×
Door-ajar indicator lamp	–	–	×	–	–	–	×	–	–

SYMPTOM PROCEDURES

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INSPECTION PROCEDURE A-1: Communication with the M.U.T.-II/III is not possible.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the power supply circuit, the grounding circuit and the communication circuit are normal.

COMMENTS ON TROUBLE SYMPTOM

It is suspected that the power supply circuit to the ETACS-ECU is defective, or the wiring harness between the diagnosis connector and the ETACS-ECU or their connector(s) is damaged.

NOTE: If the wiring harness between the ETACS-ECU and body earth is defective, also check C-217 ETACS-ECU connector terminal No.3, and repair if necessary.

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check that the M.U.T.-II/III communicates with the other systems.
Use the M.U.T.-II/III to confirm that it communicates with the engine-A/T-ECU.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Diagnose the engine control system by referring to P.13A-107 <4G64> or P.13B-249 <4G69>.

Step 2. Check that the M.U.T.-II/III can communicate with the system.
When the ignition switch is turned ON, check if the M.U.T.-II/III can communicate with the system.

Q: Is the check result normal?
YES : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."
NO : Go to Step 3.

Step 3. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the defective connector.

Step 4. Measure the resistance at the C-219 ETACS-ECU connector.
(1) Disconnect the connector, and measure at the junction block side.
(2) Resistance between C-219 ETACS-ECU connector terminal No.56 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 6.
NO : Go to Step 5.

Step 5. Check the wiring harness between C-219 ETACS-ECU connector terminal No.56 and body earth.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 6. Connector check: C-24 diagnosis connector

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the defective connector.

Step 7. Check the wiring harness from C-219 ETACS-ECU connector terminal Nos.51 and 67 to diagnosis connector terminal Nos.9 and 1.
- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the wiring harness.

Step 8. Retest the system.
Check whether the communication with the M.U.T.-II/III is possible.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE A-2: When the ignition switch is at the LOCK (OFF) position, the functions do not work normally. Check the ETACS-ECU battery power supply circuit.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the power supply circuit and the grounding circuit are normal.

COMMENTS ON TROUBLE SYMPTOM

If this circuit is defective and the ignition switch is at the LOCK (OFF) position, the ETACS-ECU does not work. In this case, the functions below will be suspended.

- Ignition key reminder function
- Lamp reminder function
- Power window timer function
- Keyless entry system
- Sunroof timer function
- Ignition key cylinder illumination lamp
- Headlamp automatic shutdown function

However, when the ignition switch is at the ON position, the functions below will work.

- Reading diagnosis code and checking input signal by M.U.T.-II/III.
- Central door locking
- Headlamp and tail lamp
- Hazard warning lamp
- Room lamps

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Measure the voltage at the C-217 ETACS-ECU connector.

(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Voltage between C-217 ETACS-ECU connector terminal No.20 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 4.
NO : Go to Step 3.

Step 3. Check the wiring harness between C-217 ETACS-ECU connector terminal No.20 and battery.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-116, joint connector C-02 and junction block connector C-202, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 4. Measure the resistance at the C-217 ETACS-ECU connector.

(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Continuity between C-217 ETACS-ECU connector terminal No.3 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 6.
NO : Go to Step 5.

Step 5. Check the wiring harness between C-217 ETACS-ECU connector terminal No.3 and body earth.

NOTE: Prior to the wiring harness inspection, check junction block connector C-205, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 6. Retest the system.

Check that the battery power supply circuit to the ETACS-ECU is normal.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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BUZZER

INSPECTION PROCEDURE B-1: Ignition key reminder buzzer function does not work. <Vehicles for GCC only>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.
- Ignition switch (IG1)
- Key reminder switch
- Driver's door switch

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the driver's door switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power supply circuit.
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."

Step 2. Pulse check
Check the input signals below, which are related to the ignition key reminder function.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
Key reminder switch	When the inserted ignition key is pulled out
Driver's door switch	When the driver's door is opened

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
The key reminder switch signal is not received. : Refer to Inspection Procedure P-10 "The key reminder switch signal is not received P.54B-135."
The driver's door switch signal is not received. : Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <LH drive vehicles>P.54B-128." Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <RH drive vehicles>P.54B-129."

Step 3. Retest the system.
The ignition key reminder buzzer function should work normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE B-2: Lamp reminder buzzer function does not work normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.
- Ignition switch (IG1)
- Driver's door switch
- Tail lamp switch
- Headlamp switch

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the driver's door switch
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power supply circuit.
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."

Step 2. Pulse check
Check the input signals below, which are related to the lamp reminder buzzer function.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
Driver's door switch	When the driver's door is opened
Tail lamp switch	When the lighting switch is turned to the TAIL position
Headlamp switch	When the lighting switch is turned to the HEADLAMP position

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
The driver's door switch signal is not received. : Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <LH drive vehicles>P.54B-128." Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <RH drive vehicles>P.54B-129."
The tail lamp switch signal is not received. : Refer to Inspection Procedure P-5 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-130."
The headlamp switch signal is not received. : Refer to Inspection Procedure P-5 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-130."

Step 3. Retest the system.
The lamp reminder buzzer function should work normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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CENTRAL DOOR LOCKING SYSTEM

INSPECTION PROCEDURE C-1: Central door locking system does not work. <LH driver vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the central door locking system does not work at all, the driver's door lock actuator or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power supply circuit.
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."

Step 2. Pulse check
Check the input signal from the driver's door lock actuator switch.

System switch	Check condition
Driver's door lock actuator switch	When the driver's key cylinder or inside lock knob is unlocked or locked

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure P-13 "The driver's door lock actuator signal is not received P.54B-139."

Step 3. Connector check: E-11 driver's door lock actuator connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the defective connector.

Step 4. Driver's door lock actuator check
Check that the driver's door lock actuator works normally. Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the driver's door lock actuator.

Step 5. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness between C-217 ETACS-ECU connector terminal No.20 and fusible link (1).

NOTE: Prior to the wiring harness inspection, check intermediate connector C-116 and junction block connector C-204, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the central door locking system works normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE C-1: Central door locking system does not work. <RH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the central door locking system does not work at all, the driver's door lock actuator or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power supply circuit.
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."

Step 2. Pulse check
Check the input signal from the driver's door lock actuator switch.

System switch	Check condition
Driver's door lock actuator switch	When the driver's key cylinder or inside lock knob is unlocked or locked

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure P-13 "The driver's door lock actuator signal is not received P.54B-140."

Step 3. Connector check: E-25 driver's door lock actuator connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the defective connector.

Step 4. Driver's door lock actuator check
Check that the driver's door lock actuator works normally. Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the driver's door lock actuator.

Step 5. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness between C-217 ETACS-ECU connector terminal No.20 and fusible link (1).

NOTE: Prior to the wiring harness inspection, check intermediate connectors A-14, C-125 and junction block connector C-204, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the central door locking system works normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE C-2: A door or a tailgate can not be locked or unlocked by the central door locking system. <LH drive vehicles>

COMMENTS ON TROUBLE SYMPTOM

If a door or the tailgate can to be locked or unlocked by the central door locking system, the door lock actuator or the tailgate lock actuator may be defective.

POSSIBLE CAUSES

- Malfunction of the door lock actuator
- Malfunction of the tailgate lock actuator
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Confirm which door lock actuator is defective.

Q: Which door fails to lock correctly?
Driver's door : Go to Step 2.
Front passenger's door : Go to Step 6.
Rear right door : Go to Step 10.
Rear left door : Go to Step 14.
Tailgate : Go to Step 18.

Step 2. Connector check: E-11 driver's door lock actuator connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Driver's door lock actuator check

Check that the driver's door lock actuator works normally. Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the driver's door lock actuator.

Step 4. Connector check: C-217, C-220 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the defective connector.

Step 5. Check the wiring harness from C-217 ETACS-ECU connector terminal No.12 and C-220 ETACS-ECU connector No.22 to E-11 driver's door lock actuator connector terminal Nos.6 and 4.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-118 and junction block connector C-205, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 6. Connector check: E-25 front passenger's door lock actuator connector

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the defective connector.

Step 7. Check the front passenger's door lock actuator.

Check that the front passenger's door lock actuator works normally. Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Replace the front passenger's door lock actuator.

Step 8. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the defective connector.

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Step 9. Check the wiring harness from C-217 ETACS-ECU connector terminal Nos.12 and 13 to E-25 front passenger's door lock actuator connector terminal Nos.4 and 6.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-15 and junction block connector C-205, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 10. Connector check: E-28 rear door lock actuator (RH) connector

Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the defective connector.

Step 11. Check the rear door lock actuator (RH).
Check that the rear door lock actuator (RH) is in good condition. Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 12.
NO : Replace the rear door lock actuator (RH).

Step 12. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the defective connector.

Step 13. Check the wiring harness from C-217 ETACS-ECU connector terminal Nos.12 and 13 to E-28 rear door lock actuator (RH) connector terminal Nos.2 and 3.

NOTE: Prior to the wiring harness inspection, check D-02 <vehicles except for Argentina>, D-01 <Vehicles for Argentina>, D-31 intermediate connectors and C-209 junction block connector, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 14. Connector check: E-08 rear door lock actuator (LH) connector

Q: Is the check result normal?
YES : Go to Step 15.
NO : Repair the defective connector.

Step 15. Check the rear door lock actuator (LH).
Check that the rear door lock actuator (LH) is in good condition. Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 16.
NO : Replace the rear door lock actuator (LH).

Step 16. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 17.
NO : Repair the defective connector.

Step 17. Check the wiring harness from C-217 ETACS-ECU connector terminal Nos.12 and 13 to E-08 rear door lock actuator (LH) connector terminal Nos.3 and 2.

NOTE: Prior to the wiring harness inspection, check D-26 <vehicles except for Argentina>, D-25 <Vehicles for Argentina> intermediate connectors and C-209 junction block connector, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 18. Connector check: F-06 tailgate lock actuator connector

Q: Is the check result normal?
YES : Go to Step 19.
NO : Repair the defective connector.

Step 19. Check the tailgate lock actuator.
Check that the tailgate lock actuator is in good condition. Refer to GROUP 42 – Tailgate P.42-52.

Q: Is the check result normal?
YES : Go to Step 20.
NO : Replace the tailgate lock actuator.

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Step 20. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 21.
NO : Repair the defective connector.

Step 21. Check the wiring harness from C-217 ETACS-ECU connector terminal Nos.12 and 13 to F-06 tailgate lock actuator connector terminal Nos.2 and 3.

NOTE: Prior to the wiring harness inspection, check intermediate connector F-05 and junction block connector C-209, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

INSPECTION PROCEDURE C-2: A door or a tailgate can not be locked or unlocked by the central door locking system. <RH drive vehicles>

COMMENTS ON TROUBLE SYMPTOM

If a door or the tailgate can to be locked or unlocked by the central door locking system, the door lock actuator or the tailgate lock actuator may be defective.

POSSIBLE CAUSES

- Malfunction of the door lock actuator
- Malfunction of the tailgate lock actuator
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Confirm which door lock actuator is defective.

Q: Which door fails to lock correctly?
Driver's door : Go to Step 2.
Front passenger's door : Go to Step 6.
Rear right door : Go to Step 10.
Rear left door : Go to Step 14.
Tailgate : Go to Step 18.

Step 2. Connector check: E-25 driver's door lock actuator connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Driver's door lock actuator check

Check that the driver's door lock actuator works normally. Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the driver's door lock actuator.

Step 4. Connector check: C-217, C-220 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the defective connector.

Step 5. Check the wiring harness from C-217 ETACS-ECU connector terminal No.12 and C-220 ETACS-ECU connector No.22 to E-25 driver's door lock actuator connector terminal Nos.4 and 6.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-15 and junction block connector C-205, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

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Step 6. Connector check: E-11 front passenger's door lock actuator connector

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the defective connector.

Step 7. Check the front passenger's door lock actuator.
Check that the front passenger's door lock actuator works normally. Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Replace the front passenger's door lock actuator.

Step 8. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the defective connector.

Step 9. Check the wiring harness from C-217 ETACS-ECU connector terminal Nos.12 and 13 to E-11 front passenger's door lock actuator connector terminal Nos.6 and 4.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-34 and junction block connector C-205, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 10. Connector check: E-28 rear door lock actuator (RH) connector

Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the defective connector.

Step 11. Check the rear door lock actuator (RH).
Check that the rear door lock actuator (RH) is in good condition. Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 12.
NO : Replace the rear door lock actuator (RH).

Step 12. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the defective connector.

Step 13. Check the wiring harness from C-217 ETACS-ECU connector terminal Nos.12 and 13 to E-28 rear door lock actuator (RH) connector terminal Nos.2 and 3.

NOTE: Prior to the wiring harness inspection, check D-01 intermediate connector and C-221 junction block connector, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 14. Connector check: E-08 rear door lock actuator (LH) connector

Q: Is the check result normal?
YES : Go to Step 15.
NO : Repair the defective connector.

Step 15. Check the rear door lock actuator (LH).
Check that the rear door lock actuator (LH) is in good condition. Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 16.
NO : Replace the rear door lock actuator (LH).

Step 16. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 17.
NO : Repair the defective connector.

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Step 17. Check the wiring harness from C-217 ETACS-ECU connector terminal Nos.12 and 13 to E-08 rear door lock actuator (LH) connector terminal Nos.3 and 2.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-117 and D-26 and junction block connector C-205, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Repair the wiring harness.

Step 18. Connector check: F-06 tailgate lock actuator connector

Q: Is the check result normal?

YES : Go to Step 19.

NO : Repair the defective connector.

Step 19. Check the tailgate lock actuator.

Check that the tailgate lock actuator is in good condition. Refer to GROUP 42 – Tailgate P.42-52.

Q: Is the check result normal?

YES : Go to Step 20.

NO : Replace the tailgate lock actuator.

Step 20. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?

YES : Go to Step 21.

NO : Repair the defective connector.

Step 21. Check the wiring harness from C-217 ETACS-ECU connector terminal Nos.12 and 13 to F-06 tailgate lock actuator connector terminal Nos.2 and 3.

NOTE: Prior to the wiring harness inspection, check intermediate connector F-05 and junction block connector C-221, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Repair the wiring harness.

INSPECTION PROCEDURE C-3: The central door locking system can not be operated by means of the front passenger's door key cylinder.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENT ON TROUBLE SYMPTOM

If the central door locking system does not work by means of the front passenger's door key cylinder, the front passenger's door key cylinder or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the front passenger's door key cylinder
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation of the central door locking system.

Check that the central door locking system works normally by means of the driver's door key cylinder and inside lock knob.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure C-1 "Central door locking system does not work <LH drive vehicles>P.54B-36 ." Refer to Inspection Procedure C-1 "Central door locking system does not work <RH drive vehicles>P.54B-37 ."

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Step 2. Pulse check
Check the input signal from the front passenger's door lock key cylinder switch.

System switch	Check condition
Passenger's door lock key cylinder switch	Turn the key to the lock or unlock position

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure P-19 "The front passenger's door lock key cylinder switch signal is not detected <LH drive vehicles>P.54B-145 ." Refer to Inspection Procedure P-19 "The front passenger's door lock key cylinder switch signal is not detected <RH drive vehicles>P.54B-146 ."

Step 3. Retest the system.
Check that the central door locking system works normally by means of the front passenger's door key cylinder.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE C-4: The ignition key reminder buzzer function does not work normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM
If the key reminder buzzer function does not work normally, the input signal circuits below or the ETACS-ECU may be defective.
- Key reminder switch
- Driver's door switch
- Driver's door lock actuator

POSSIBLE CAUSES
- Malfunction of the key reminder switch
- Malfunction of the driver's door switch
- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power supply circuit.
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

Q: Is the check result normal?
YES : . Go to Step 2.
NO : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply

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Step 2. Pulse check
Check the input signals belows which are related to the key reminder function.

System switch	Check condition
Driver's door switch	When the driver's door is opened
Key reminder switch	When the inserted ignition key is pulled out
Driver's door lock actuator switch	When the driver's key cylinder or inside lock knob is unlocked or locked

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The driver's door switch signal is not received. : Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <LH drive vehicles>P.54B-128." Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <RH drive vehicles>P.54B-129."
The key reminder switch signal is not received. : Refer to Inspection Procedure P-10 "The key reminder switch signal is not received P.54B-135."
The driver's door lock actuator switch signal is not received. : Refer to Inspection Procedure P-13 "The driver's door lock actuator signal is not received <LH drive vehicles>P.54B-139." Refer to Inspection Procedure P-13 "The driver's door lock actuator signal is not received <RH drive vehicles>P.54B-140."

Step 3. Retest the system.

Q: Does the ignition key reminder buzzer function work normally?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE C-5: The impact detection door unlock function does not function.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM
If the impact detection door unlock function does not work normally, the input signal circuit from the impact detection sensor, the SRS-ECU or the ETACS-ECU may be defective.

POSSIBLE CAUSES
- Malfunction of the SRS-ECU
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Use the M.U.T.-II/III to confirm a diagnosis code. (M.U.T.-II/III diagnosis code)
Check whether the ETACS-ECU sets diagnosis code No.31 or 32.

Q: Is the diagnosis code set?
YES : Refer to P.54B-23.
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE D-1: Power windows do not work at all. <except vehicles for Argentina>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the power windows do not work at all, the power window relay, the power window main switch or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the power window relay
- Malfunction of the power window main switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the connector.

Step 2. Check the power window relay.
Refer to GROUP 42 – Door – On-vehicle Service P.42-28.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the power window relay.

Step 3. Connector check: E-05 power window main switch connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the connector.

Step 4. Check the power window main switch.
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES <RH drive vehicles> : Go to Step 5.
YES <LH drive vehicles> : Go to Step 15.
NO : Replace the power window main switch.

Step 5. Measure the voltage at the E-05 power window main switch connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 13 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 9.
NO : Go to Step 6.

Step 6. Check the wiring harness between C-208 power window relay connector terminal No.4 and E-05 power window main switch connector terminal No.13.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-15, E-29 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the harness wire, and then go to Step 7.

Step 7. Measure the voltage at C-208 power window relay connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 5 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 9.
NO : Go to Step 8.

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Step 8. Check the wiring harness between C-208 power window relay connector terminal No.5 and fusible link (5).

NOTE: Prior to the wiring harness inspection, check intermediate connectors A-14, C-126 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 9. Measure the resistance at the E-05 power window main switch connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between terminal 12 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 11.
NO : Go to Step 10.

Step 10. Check the wiring harness between E-05 power window main switch connector terminal No.12 and body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-15 and E-29, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 11. Measure the resistance at C-208 power window relay connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between terminal 3 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 13.
NO : Go to Step 12.

Step 12. Check the wiring harness between C-208 power window relay connector terminal No.3 and body earth.

NOTE: Prior to the wiring harness inspection, check junction block connector C-205, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 13. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 14.
NO : Repair the connector.

Step 14. Retest the system.

Check that the all the power windows work.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

Step 15. Measure the voltage at the E-05 power window main switch connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 13 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 19.
NO : Go to Step 16.

Step 16. Check the wiring harness between C-208 power window relay connector terminal No.4 and E-05 power window main switch connector terminal No.13.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-118, E-12 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : Go to Step 19.
NO : Repair the harness wire, and then go to Step 17.

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Step 17. Measure the voltage at C-208 power window relay connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 5 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 19.
NO : Go to Step 18.

Step 18. Check the wiring harness between C-208 power window relay connector terminal No.5 and fusible link (5).

NOTE: Prior to the wiring harness inspection, check intermediate connector C-116 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 19. Measure the resistance at the E-05 power window main switch connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between terminal 12 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 21.
NO : Go to Step 20.

Step 20. Check the wiring harness between E-05 power window main switch connector terminal No.12 and body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-118 and E-12, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 21. Measure the resistance at C-208 power window relay connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between terminal 3 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 23.
NO : Go to Step 22.

Step 22. Check the wiring harness between C-208 power window relay connector terminal No.3 and body earth.

NOTE: Prior to the wiring harness inspection, check junction block connector C-205, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 23. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 24.
NO : Repair the connector.

Step 24. Retest the system.

Check that the all the power windows work.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE D-1: Power windows do not work at all. <vehicles for Argentina>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the power windows do not work at all, the power window relay, the power window main switch or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the power window relay
- Malfunction of the power window main switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Pulse check
Check the input signal from the ignition switch.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure P-2 "The Ignition switch (IG1) signal is not received. P.54B-127."

Step 2. Connector check: C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the connector.

Step 3. Check the power window relay.
Refer to GROUP 42 – Door – On-vehicle Service P.42-28.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the power window relay.

Step 4. Connector check: E-05 power window main switch connector

Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the connector.

Step 5. Measure the voltage at the E-05 power window main switch connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 6 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 9.
NO : Go to Step 6.

Step 6. Check the wiring harness between C-208 power window relay connector terminal No.4 and E-05 power window main switch connector terminal No.6.
NOTE: Prior to the wiring harness inspection, check intermediate connectors C-118, E-12 and junction block connector C-203, and repair if necessary.
- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the harness wire, and then go to Step 7.

Step 7. Measure the voltage at C-208 power window relay connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 5 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 9.
NO : Go to Step 8.

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Step 8. Check the wiring harness between C-208 power window relay connector terminal No.5 and fusible link (5).

NOTE: Prior to the wiring harness inspection, check intermediate connector C-116 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 9. Measure the resistance at C-208 power window relay connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between terminal 3 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 11.
NO : Go to Step 10.

Step 10. Check the wiring harness between C-208 power window relay connector terminal No.3 and body earth.

NOTE: Prior to the wiring harness inspection, check junction block connector C-205, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 11. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 12.
NO : Repair the connector.

Step 12. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the connector.

Step 13. Check the wiring harness between C-219 ETACS-ECU connector terminal No.59 and E-05 power window main switch connector terminal No.4.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-118, E-12 and joint connector C-02, and repair if necessary.

- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 14.
NO : Repair the wiring harness.

Step 14. Retest the system.

After the power window main switch is replaced, check that all the power windows work.
(1) Replace the power window main switch.
(2) Check that the all the power windows work.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE D-2: Driver's power window does not work by means of the power window main switch. <except vehicles for Argentina>

COMMENTS ON TROUBLE SYMPTOM

If the driver's power window does not work by means of the power window main switch, the power window main switch or the driver's door power window motor may be defective.

POSSIBLE CAUSES

- Malfunction of the power window main switch
- Malfunction of the power window motor (front RH) <RH drive vehicles>
- Malfunction of the power window motor (front LH) <LH drive vehicles>
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power window main switch.

Check that all of the front passenger's and rear door power windows can operate by means of the power window main switch.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure D-1 "Power windows do not work at all <except vehicles for Argentina>P.54B-45."

Step 2. Connector check: E-05 power window main switch connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the connector.

Step 3. Check the power window main switch.

Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES <RH drive vehicles> : Go to Step 4.
YES <LH drive vehicles> : Go to Step 12.
NO : Replace the power window main switch.

Step 4. Measure the voltage at the E-05 power window main switch connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 13 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 5.

Step 5. Connector check: C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the connector.

Step 6. Check the wiring harness between C-208 power window relay connector terminal No.4 and E-05 power window main switch connector terminal No.13.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-15, E-29 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 7. Connector check: E-23 power window motor (front RH) connector

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the connector.

Step 8. Check the power window motor (front RH).

Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 9.
NO : Replace the power window motor (front RH).

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Step 9. Check the wiring harness from E-23 power window motor (front RH) connector terminal Nos.1 and 4 to E-05 power window main switch connector terminal Nos.8 and 9.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-29, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 10. Measure the voltage at the E-05 power window main switch connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 13 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 13.
NO : Go to Step 11.

Step 11. Connector check: C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 12.
NO : Repair the connector.

Step 12. Check the wiring harness between C-208 power window relay connector terminal No.4 and E-05 power window main switch connector terminal No.13.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-118, E-12 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 13. Connector check: E-13 power window motor (front LH) connector

Q: Is the check result normal?
YES : Go to Step 14.
NO : Repair the connector.

Step 14. Check the power window motor (front LH).

Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 15.
NO : Replace the power window motor (front LH).

Step 15. Check the wiring harness from E-13 power window motor (front LH) connector terminal Nos.1 and 4 to E-05 power window main switch connector terminal Nos.8 and 9.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-12, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

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INSPECTION PROCEDURE D-2: Driver's power window does not work by means of the power window main switch. <vehicles for Argentina>

COMMENTS ON TROUBLE SYMPTOM

If the driver's power window does not work by means of the power window main switch, the power window main switch or the driver's door power window motor may be defective.

POSSIBLE CAUSES

- Malfunction of the power window main switch
- Malfunction of the power window motor (front LH)
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power window main switch.

Check that all of the front passenger's and rear door power windows can operate by means of the power window main switch.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure D-1 "Power windows do not work at all <vehicles for Argentina>P.54B-48."

Step 2. Connector check: E-05 power window main switch connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the connector.

Step 3. Measure the resistance at the E-05 power window main switch connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between terminal 2 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness between E-05 power window main switch connector terminal No.2 and body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-118 and E-12, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Measure the voltage at the E-05 power window main switch connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 6 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 8.
NO : Go to Step 6.

Step 6. Connector check: C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the connector.

Step 7. Check the wiring harness between C-208 power window relay connector terminal No.4 and E-05 power window main switch connector terminal No.6.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-118, E-12 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

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Step 8. Connector check: E-13 power window motor (front LH) connector

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the connector.

Step 9. Check the wiring harness from E-13 power window motor (front LH) connector terminal Nos.1 and 3 to E-05 power window main switch connector terminal Nos.7 and 1.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-12, and repair if necessary.

- Check the input and output lines for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 10.
NO : Repair the wiring harness.

Step 10. Retest the system.

After the power window main switch is replaced, check that the driver's door power window can be operated by the power window main switch.
(1) Replace the power window main switch.
(2) Check that the driver's power window works by means of the power window main switch.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the power window motor assembly (front LH).

INSPECTION PROCEDURE D-3: Relevant power window(s) do not work by means of the front and rear passenger's power window sub switches. <LH drive vehicles except for Argentina>

COMMENTS ON TROUBLE SYMPTOM

If the front passenger's or rear power window does not work by means of the respective power window sub switch, the power window sub switch or the power window motor may be defective.

POSSIBLE CAUSES

- Malfunction of the power window sub switch (front LH), power window sub switch (rear RH) or power window sub switch (rear LH)
- Malfunction of the power window sub switch (front LH), power window motor (rear RH) or power window motor (rear LH)
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power window main switch.

Check that the power window lock switch is turned off.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Turn off the power window lock switch.

Step 2. Connector check: E-05 power window main switch connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the connector.

Step 3. Check the power window main switch.

Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the power window main switch.

Step 4. Determine a trouble spot.

Q: Which power window does not work?
Front passenger's door : Go to Step 5.
Rear right door : Go to Step 14.
Rear left door : Go to Step 23.

Step 5. Connector check: E-17 power window sub switch (front RH) connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the connector.

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Step 6. Check the power window sub switch (front RH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Replace the power window sub switch (front RH).

Step 7. Measure the voltage at E-17 power window sub switch (front RH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 5 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 10.
NO : Go to Step 8.

Step 8. Connector check: C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the connector.

Step 9. Check the wiring harness from E-17 power window sub switch (front RH) connector terminal No.5 to C-208 power window connector terminal No.4.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-15, E-24 and junction block connector C-203, and repair if necessary.
- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 10. Connector check: E-23 power window motor (front RH) connector

Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the connector.

Step 11. Check the power window motor (front RH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 12.
NO : Replace the power window motor (front RH).

Step 12. Check the wiring harness from E-23 power window motor (front RH) connector terminal Nos.1 and 4 to E-17 power window sub switch (front RH) connector terminal Nos.7 and 6.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-24, and repair if necessary.
- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the wiring harness.

Step 13. Check the wiring harness from E-17 power window sub switch (front RH) connector terminals 4 and 8 to E-05 power window main switch connector terminals 3 and 11.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-15, C-118, E-12 and E-24, and repair if necessary.
- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 14. Connector check: E-21 power window sub switch (rear RH) connector

Q: Is the check result normal?
YES : Go to Step 15.
NO : Repair the connector.

Step 15. Check the power window sub switch (rear RH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 16.
NO : Replace the power window sub switch (rear RH).

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Step 16. Measure the voltage at E-21 power window sub switch (rear RH) connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 5 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 19.
NO : Go to Step 17.

Step 17. Connector check: C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 18.
NO : Repair the connector.

Step 18. Check the wiring harness from E-21 power window sub switch (rear RH) connector terminal No.5 to C-208 power window connector terminal No.4.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-13, D-01, E-27 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 19. Connector check: E-19 power window motor (rear RH) connector

Q: Is the check result normal?
YES : Go to Step 20.
NO : Repair the connector.

Step 20. Check the power window motor (rear RH).

Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 21.
NO : Replace the power window motor (rear RH).

Step 21. Check the wiring harness from E-19 power window motor (rear RH) connector terminal Nos.1 and 2 to E-21 power window sub switch (rear RH) connector terminal Nos.7 and 6.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-27, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : Go to Step 22.
NO : Repair the wiring harness.

Step 22. Check the wiring harness from E-21 power window sub switch (rear LH) connector terminals 4 and 8 to E-05 power window main switch connector terminals 14 and 6.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-13, C-118, D-01, E-12 and E-27, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 23. Connector check: E-01 power window sub switch (rear LH) connector

Q: Is the check result normal?
YES : Go to Step 24.
NO : Repair the connector.

Step 24. Check the power window sub switch (rear, LH).

Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 25.
NO : Replace the power window sub switch (rear LH).

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Step 25. Measure the voltage at E-01 power window sub switch (rear LH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 5 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 28.
NO : Go to Step 26.

Step 26. C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 27.
NO : Repair the connector.

Step 27. Check the wiring harness from E-01 power window sub switch (rear LH) connector terminal No.5 to C-208 power window connector terminal No.4.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-117, D-25, E-09 and junction block connector C-203, and repair if necessary.
- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 28. Connector check: E-02 power window motor (rear LH) connector

Q: Is the check result normal?
YES : Go to Step 29.
NO : Repair the connector.

Step 29. Check the power window motor (rear LH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 30.
NO : Replace the power window motor (rear LH).

Step 30. Check the wiring harness from E-02 power window motor (rear LH) connector terminal Nos.1 and 2 to E-01 power window sub switch (rear LH) connector terminal Nos.7 and 6.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-09, and repair if necessary.
- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : Go to Step 31.
NO : Repair the wiring harness.

Step 31. Check the wiring harness from E-01 power window sub switch (rear LH) connector terminals 4 and 8 to E-05 power window main switch connector terminals 1 and 2.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-117, C-118, D-25, E-09 and E-12, and repair if necessary.
- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

INSPECTION PROCEDURE D-3: Relevant power window(s) do not work by means of the front and rear passenger's power window sub switches. <LH drive vehicles for Argentina>

COMMENTS ON TROUBLE SYMPTOM

If the front passenger's or rear power window does not work by means of the respective power window sub switch, the power window sub switch or the power window motor may be defective.

POSSIBLE CAUSES

- Malfunction of the power window sub switch (front RH), power window sub switch (rear RH) or power window sub switch (rear LH)
- Malfunction of the power window motor (front RH), power window motor (rear, RH) or power window motor (rear LH)
- Damaged harness wires and connectors

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DIAGNOSIS PROCEDURE

Step 1. Check the power window main switch.
Check that the power window lock switch is turned off.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Turn off the power window lock switch.

Step 2. Determine a trouble spot.

Q: Which power window does not work?
Front passenger's door : Go to Step 3.
Rear right door : Go to Step 14.
Rear left door : Go to Step 25.

Step 3. Connector check: E-17 power window sub switch (front RH) connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the connector.

Step 4. Measure the resistance at E-17 power window sub switch (front RH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between terminal 1 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 6.
NO : Go to Step 5.

Step 5. Check the wiring harness from E-17 power window sub switch (front RH) connector terminal No.1 to body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-15, E-24 and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 6. Measure the voltage at E-17 power window sub switch (front RH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 4 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 9.
NO : Go to Step 7.

Step 7. Connector check: C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the connector.

Step 8. Check the wiring harness from E-17 power window sub switch (front LH) connector terminal No.4 to C-208 power window connector terminal No.4.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-15, E-24 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 9. Connector check: E-23 power window motor (front RH) connector

Q: Is the check result normal?
YES : Go to Step 10.
NO : Repair the connector.

Step 10. Measure the resistance at E-23 power window motor (front RH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Resistance between terminal 5 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 12.
NO : Go to Step 11.

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Step 11. Check the wiring harness from E-23 power window motor (front RH) connector terminal No.5 to body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-15, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 12. Check the wiring harness from E-23 power window motor (front RH) connector terminal Nos.1 and 3 to E-17 power window sub switch (front LH) connector terminal Nos.5 and 7.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-24, and repair if necessary.

- Check the input and output lines for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the wiring harness.

Step 13. Retest the system.

After the power window sub switch (front RH) is replaced, check that the front passenger's door power window can be operated by the power window sub switch (front RH).
(1) Replace the power window sub switch (front RH).
(2) Check that the front passenger's door power window can be operated by the power window sub switch (front RH).

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the power window motor assembly (front RH).

Step 14. Connector check: E-21 power window sub switch (rear RH) connector

Q: Is the check result normal?
YES : Go to Step 15.
NO : Repair the connector.

Step 15. Measure the resistance at E-21 power window sub switch (rear RH) connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between terminal 1 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 17.
NO : Go to Step 16.

Step 16. Check the wiring harness from E-21 power window sub switch (rear RH) connector terminal No.1 to body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connectors E-27 and D-02, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 17. Measure the voltage at E-21 power window sub switch (rear RH) connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 4 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 20.
NO : Go to Step 18.

Step 18. Connector check: C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 19.
NO : Repair the connector.

Step 19. Check the wiring harness from E-21 power window sub switch (rear RH) connector terminal No.4 to C-208 power window connector terminal No.4.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-13, D-02, E-27 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

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Step 20. Connector check: E-20 power window motor (rear RH) connector

Q: Is the check result normal?
YES : Go to Step 21.
NO : Repair the connector.

Step 21. Measure the resistance at E-20 power window motor (rear RH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Resistance between terminal 5 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 23.
NO : Go to Step 22.

Step 22. Check the wiring harness from E-20 power window motor (rear RH) connector terminal No.5 to body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector D-02, and repair if necessary.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 23. Check the wiring harness from E-20 power window motor (rear RH) connector terminal Nos.1 and 3 to E-21 power window sub switch (rear RH) connector terminal Nos.7 and 5.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-27, and repair if necessary.
- Check the input and output lines for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 24.
NO : Repair the wiring harness.

Step 24. Retest the system.
After the power window sub switch (rear RH) is replaced, check that the rear right door power window can be operated by the power window sub switch (rear RH).
(1) Replace the power window sub switch (rear RH).
(2) Check that the rear right door power window can be operated by the power window sub switch (rear RH).

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the power window motor assembly (rear RH).

Step 25. Connector check: E-01 power window sub switch (rear LH) connector

Q: Is the check result normal?
YES : Go to Step 26.
NO : Repair the connector.

Step 26. Measure the resistance at E-01 power window sub switch (rear LH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between terminal 1 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 28.
NO : Go to Step 27.

Step 27. Check the wiring harness from E-01 power window sub switch (rear LH) connector terminal No.1 to body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connectors E-09 and D-26, and repair if necessary.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

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Step 28. Measure the voltage at E-01 power window sub switch (rear LH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 4 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 31.
NO : Go to Step 29.

Step 29. C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 30.
NO : Repair the connector.

Step 30. Check the wiring harness from E-01 power window sub switch (rear LH) connector terminal No.4 to C-208 power window connector terminal No.4.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-117, D-26, E-09 and junction block connector C-203, and repair if necessary.
- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 31. Connector check: E-03 power window motor (rear LH) connector

Q: Is the check result normal?
YES : Go to Step 32.
NO : Repair the connector.

Step 32. Measure the resistance at E-03 power window motor (rear LH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Resistance between terminal 5 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : . Go to Step 34.
NO : . Go to Step 33.

Step 33. Check the wiring harness from E-03 power window motor (rear LH) connector terminal No.5 to body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector D-26, and repair if necessary.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 34. Check the wiring harness from E-03 power window motor (rear LH) connector terminal Nos.1 and 3 to E-01 power window sub switch (rear LH) connector terminal Nos.7 and 5.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-09, and repair if necessary.
- Check the input and output lines for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 35.
NO : Repair the wiring harness.

Step 35. Retest the system.
After the power window sub switch (rear LH) is replaced, check that the rear left door power window can be operated by the power window sub switch (rear LH).
(1) Replace the power window sub switch (rear LH).
(2) Check that the rear left door power window can be operated by the power window sub switch (rear LH).

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the power window motor assembly (rear LH).

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INSPECTION PROCEDURE D-3: Relevant power window(s) do not work by means of the front and rear passenger's power window sub switches. <RH drive vehicles>

COMMENTS ON TROUBLE SYMPTOM

If the front passenger's or rear power window does not work by means of the respective power window sub switch, the power window sub switch or the power window motor may be defective.

POSSIBLE CAUSES

- Malfunction of the power window sub switch (front LH), power window sub switch (rear RH) or power window sub switch (rear LH)
- Malfunction of the power window sub switch (front LH), power window motor (rear RH) or power window motor (rear LH)
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power window main switch.
Check that the power window lock switch is turned off.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Turn off the power window lock switch.

Step 2. Connector check: E-05 power window main switch connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the connector.

Step 3. Check the power window main switch.
Refer to GROUP 42 – Door P.42-27.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the power window main switch.

Step 4. Determine a trouble spot.

Q: Which power window does not work?
Front passenger's door : Go to Step 5.
Rear right door : Go to Step 14.
Rear left door : Go to Step 23.

Step 5. Connector check: E-31 power window sub switch (front LH) connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the connector.

Step 6. Check the power window sub switch (front LH).
Refer to GROUP 42 – Door P.42-27.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Replace the power window sub switch (front LH).

Step 7. Measure the voltage at E-31 power window sub switch (front LH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 5 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 10.
NO : Go to Step 8.

Step 8. Connector check: C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the connector.

Step 9. Check the wiring harness from E-31 power window sub switch (front LH) connector terminal No.5 to C-208 power window relay connector terminal No.4.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-34, E-30 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 10. Connector check: E-13 power window motor (front LH) connector

Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the connector.

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Step 11. Check the power window motor (front LH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 12.
NO : Replace the power window motor (front LH).

Step 12. Check the wiring harness from E-13 power window motor (front LH) connector terminal Nos.1 and 4 to E-31 power window sub switch (front LH) connector terminal Nos.7 and 6.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-30, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the wiring harness.

Step 13. Check the wiring harness from E-31 power window sub switch (front LH) connector terminals 4 and 8 to E-05 power window main switch connector terminals 3 and 11.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-15, C-34, E-29 and E-30, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 14. Connector check: E-21 power window sub switch (rear RH) connector

Q: Is the check result normal?
YES : Go to Step 15.
NO : Repair the connector.

Step 15. Check the power window sub switch (rear RH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 16.
NO : Replace the power window sub switch (rear RH).

Step 16. Measure the voltage at E-21 power window sub switch (rear RH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 5 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 19.
NO : Go to Step 17.

Step 17. Connector check: C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 18.
NO : Repair the connector.

Step 18. Check the wiring harness from E-21 power window sub switch (rear RH) connector terminal No.5 to C-208 power window relay connector terminal No.4.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-13, D-01, E-27 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 19. Connector check: E-19 power window motor (rear RH) connector

Q: Is the check result normal?
YES : Go to Step 20.
NO : Repair the connector.

Step 20. Check the power window motor (rear RH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 21.
NO : Replace the power window motor (rear RH).

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Step 21. Check the wiring harness from E-19 power window motor (rear RH) connector terminal Nos.1 and 2 to E-21 power window sub switch (rear RH) connector terminal Nos.7 and 6.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-27, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : Go to Step 22.
NO : Repair the wiring harness.

Step 22. Check the wiring harness from E-21 power window sub switch (rear LH) connector terminals 4 and 8 to E-05 power window main switch connector terminals 14 and 6.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-13, C-15, D-01, E-27 and E-29, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 23. Connector check: E-01 power window sub switch (rear LH) connector

Q: Is the check result normal?
YES : Go to Step 24.
NO : Repair the connector.

Step 24. Check the power window sub switch (rear LH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 25.
NO : Replace the power window sub switch (rear LH).

Step 25. Measure the voltage at E-01 power window sub switch (rear LH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Voltage between terminal 5 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 28.
NO : Go to Step 26.

Step 26. C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 27.
NO : Repair the connector.

Step 27. Check the wiring harness from E-01 power window sub switch (rear LH) connector terminal No.5 to C-208 power window relay connector terminal No.4.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-117, D-25, E-09 and junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 28. Connector check: E-02 power window motor (rear LH) connector

Q: Is the check result normal?
YES : Go to Step 29.
NO : Repair the connector.

Step 29. Check the power window motor (rear LH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 30.
NO : Replace the power window motor (rear LH).

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Step 30. Check the wiring harness from E-02 power window motor (rear LH) connector terminal Nos.1 and 2 to E-01 power window sub switch (rear RH) connector terminal Nos.7 and 6.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-09, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : Go to Step 31.
NO : Repair the wiring harness.

Step 31. Check the wiring harness from E-01 power window sub switch (rear LH) connector terminals 4 and 8 to E-05 power window main switch connector terminals 1 and 2.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-15, C-117, D-25, E-09 and E-29, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

INSPECTION PROCEDURE D-4: Front and/or rear passenger's power window(s) do not work by means of the power window main switch. <LH drive vehicles except for Argentina>

COMMENTS ON TROUBLE SYMPTOM

If the passenger's and/or rear power window does not work by means of the power window main switch, the power window main switch or the respective power window sub switch(es) may be defective.

POSSIBLE CAUSES

- Malfunction of the power window main switch
- Malfunction of the power window sub switch (front RH), power window sub switch (rear RH) or power window sub switch (rear LH)
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power window main switch.
Check that the driver's power window works by means of the power window main switch.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure D-2 "Driver's power window does not work by means of the power window main switch <Except vehicles for Argentina>P.54B-50."

Step 2. Check the power window sub switch.
Check that each power window works by means of the respective power window sub switch when the power window lock switch is turned off.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure D-3 "Relevant power window(s) do not work by means of the front and rear passenger's power window sub switches <LH drive vehicles except for Argentina>P.54B-53."

Step 3. Connector check: E-05 power window main switch connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the connector.

Step 4. Check the power window main switch.
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the power window main switch.

Step 5. Determine a trouble spot.

Q: Which power window does not work when the power window main switch is operated?
Front passenger's door : Go to Step 6.
Rear right door : Go to Step 9.
Rear left door : Go to Step 12.

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Step 6. Connector check: E-17 power window sub switch (front RH) connector

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the connector.

Step 7. Check the power window sub switch (front RH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Replace the power window sub switch (front RH).

Step 8. Check the wiring harness from E-17 power window sub switch (front RH) connector terminals 4 and 8 to E-05 power window main switch connector terminals 3 and 11.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-15, C-118, E-12 and E-24, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 9. Connector check: E-21 power window sub switch (rear RH) connector

Q: Is the check result normal?
YES : Go to Step 10.
NO : Repair the connector.

Step 10. Check the power window sub switch (rear RH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 11.
NO : Replace the power window sub switch (rear RH).

Step 11. Check the wiring harness from E-21 power window sub switch (rear RH) connector terminals 4 and 8 to E-05 power window main switch connector terminals 14 and 6.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-13, C-118, D-01, E-12 and E-27, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 12. Connector check: E-01 power window sub switch (rear LH) connector

Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the connector.

Step 13. Check the power window sub switch (rear, LH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 14.
NO : Replace the power window sub switch (rear LH).

Step 14. Check the wiring harness from E-01 power window sub switch (rear LH) connector terminals 4 and 8 to E-05 power window main switch connector terminals 1 and 2.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-117, C-118, D-25, E-09 and E-12, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

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INSPECTION PROCEDURE D-4: Front and/or rear passenger's power window(s) do not work by means of the power window main switch. <LH drive vehicles for Argentina>

COMMENTS ON TROUBLE SYMPTOM

If the passenger's and/or rear power window does not work by means of the power window main switch, the power window main switch or the respective power window sub switch(es) may be defective.

POSSIBLE CAUSES

- Malfunction of the power window main switch
- Malfunction of the power window sub switch (front RH), power window sub switch (rear RH) or power window sub switch (rear LH)
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power window main switch.

Check that the driver's power window works by means of the power window main switch.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure D-2 "Driver's power window does not work by means of the power window main switch <Vehicles for Argentina>P.54B-52."

Step 2. Check the power window sub switch.

Check that each power window works by means of the respective power window sub switch when the power window lock switch is turned off.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure D-3 "Relevant power window(s) do not work by means of the front and rear passenger's power window sub switches <LH drive vehicles for Argentina>P.54B-56."

Step 3. Determine a trouble spot.

Q: Which power window does not work when the power window main switch is operated?
Front passenger's door : Go to Step 4.
Rear right door : Go to Step 7.
Rear left door : Go to Step 10.

Step 4. Connector check: E-05 power window main switch connector and E-17 power window sub switch (front RH) connector

Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the connector.

Step 5. Check the wiring harness between E-05 power window main switch connector terminal No.11 and E-17 power window sub switch (front LH) connector terminal No.6.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-15, C-118, E-12 and E-24, and repair if necessary.

- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the wiring harness.

Step 6. Retest the system.

After the power window sub switch (front LH) is replaced, check that the front passenger's door power window can be operated by the power window sub switch.
(1) Replace the power window sub switch (front LH).
(2) Check that the front passenger's power window works by means of the power window main switch.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the power window main switch.

Step 7. Connector check: E-05 power window main switch connector and E-21 power window sub switch (rear RH) connector

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the connector.

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Step 8. Check the wiring harness between E-05 power window main switch connector terminal No.11 and E-21 power window sub switch (rear RH) connector terminal No.6.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-13, C-118, D-02, E-12 and E-27, and repair if necessary.

- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the wiring harness.

Step 9. Retest the system.

After the power window sub switch (rear RH) is replaced, check that the rear right door power window can be operated by the power window sub switch.

(1) Replace the power window sub switch (rear RH).
(2) Check that the rear right power window works by means of the power window main switch.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the power window main switch.

Step 10. Connector check: E-05 power window main switch connector and E-01 power window sub switch (rear LH) connector

Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the connector.

Step 11. Check the wiring harness between E-05 power window main switch connector terminal No.11 and E-01 power window sub switch (rear LH) connector terminal No.6.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-117, C-118, D-26, E-09 and E-12, and repair if necessary.

- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 12.
NO : Repair the wiring harness.

Step 12. Retest the system.

After the power window sub switch (rear LH) is replaced, check that the rear left door power window can be operated by the power window sub switch.

(1) Replace the power window sub switch (rear LH).
(2) Check that the rear left power window works by means of the power window main switch.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the power window main switch.

INSPECTION PROCEDURE D-4: Front and/or rear passenger's power window(s) do not work by means of the power window main switch. <RH drive vehicles>

COMMENTS ON TROUBLE SYMPTOM

If the passenger's and/or rear power window does not work by means of the power window main switch, the power window main switch or the respective power window sub switch(es) may be defective.

POSSIBLE CAUSES

- Malfunction of the power window main switch
- Malfunction of the power window sub switch (front LH), power window sub switch (rear RH) or power window sub switch (rear LH)
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power window main switch.

Check that the driver's power window works by means of the power window main switch.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure D-2 "Driver's power window does not work by means of the power window main switch <Except vehicles for Argentina>P.54B-50 ."

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Step 2. Check the power window sub switch.
Check that each power window works by means of the respective power window sub switch when the power window lock switch is turned off.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure D-3 "Relevant power window(s) do not work by means of the front and rear passenger's power window sub switches <RH drive vehicles>P.54B-61 ."

Step 3. Connector check: E-05 power window main switch connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the connector.

Step 4. Check the power window main switch.
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the power window main switch.

Step 5. Determine a trouble spot.

Q: Which power window does not work when the power window main switch is operated?
Front passenger's door : Go to Step 6.
Rear right door : Go to Step 9.
Rear left door : Go to Step 12.

Step 6. Connector check: E-31 power window sub switch (front LH) connector

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the connector.

Step 7. Check the power window sub switch (front LH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Replace the power window sub switch (front LH).

Step 8. Check the wiring harness from E-31 power window sub switch (front LH) connector terminals 4 and 8 to E-05 power window main switch connector terminals 3 and 11.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-15, C-34, E-29 and E-30, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 9. Connector check: E-21 power window sub switch (rear RH) connector

Q: Is the check result normal?
YES : Go to Step 10.
NO : Repair the connector.

Step 10. Check the power window sub switch (rear RH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 11.
NO : Replace the power window sub switch (rear RH).

Step 11. Check the wiring harness from E-21 power window sub switch (rear RH) connector terminals 4 and 8 to E-05 power window main switch connector terminals 14 and 6.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-13, C-15, D-01, E-27 and E-29, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 12. Connector check: E-01 power window sub switch (rear LH) connector

Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the connector.

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Step 13. Check the power window sub switch (rear LH).
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 14.
NO : Replace the power window sub switch (rear LH).

Step 14. Check the wiring harness from E-21 power window sub switch (rear LH) connector terminals 4 and 8 to E-05 power window main switch connector terminals 1 and 2.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-15, C-117, D-25, E-09 and E-29, and repair if necessary.

- Check the power window operation line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

INSPECTION PROCEDURE D-5: The power window timer function does not work normally. <except vehicles for Argentina>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

OPERATION

The ETACS-ECU operates this function in accordance with the input signals below.

- Ignition switch (IG1)
- Driver's door switch
- Passenger's door switch <vehicles for Australia>

COMMENTS ON TROUBLE SYMPTOM

If the power window timer function does not work normally, these input signal circuit(s), the power window main switch or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the front door switch (RH)
- Malfunction of the front door switch (LH)
- Malfunction of the power window main switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power supply circuit.
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."

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Step 2. Pulse check
Check the input signals below, which are related to the power window timer function.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
Driver's door switch	When the driver's door is opened
Passenger's door switch <vehicles for Australia>	When the Passenger's door is opened

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
The driver's door switch signals are not received. : Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <LH drive vehicles>P.54B-128." Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <RH drive vehicles>P.54B-129."
The passenger's door switch signals are not received. : Refer to Inspection Procedure P-20 "The passenger's door switch signal is not received P.54B-147. <vehicles for Australia>"

Step 3. Connector check: E-05 power window main switch connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the connector.

Step 4. Check the power window main switch.
Refer to GROUP 42 – Door P.42-35.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the power window main switch.

Step 5. Retest the system.
Check that the power window timer function works normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE D-5: The power window timer function does not work normally. <Vehicles for Argentina>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

OPERATION
The ETACS-ECU operates this function in accordance with the input signals below.
- Ignition switch (IG1)
- Driver's door switch

COMMENTS ON TROUBLE SYMPTOM
If the power window timer function does not work normally, these input signal circuit(s), the power window main switch or the ETACS-ECU may be defective.

POSSIBLE CAUSES
- Malfunction of the front door switch (LH)
- Malfunction of the power window main switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

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DIAGNOSIS PROCEDURE

Step 1. Check the power supply circuit.
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."

Step 2. Pulse check
Check the input signals below, which are related to the power window timer function.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
Driver's door switch	When the driver's door is opened

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : . Go to Step 3.
The ignition switch (IG1) signal is not received. : . Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
The driver's door switch signals are not received. : . Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <LH drive vehicles>P.54B-128.

Step 3. Retest the system.
After the power window main switch is replaced, check that the power window timer function works normally.
(1) Replace the power window main switch.
(2) Check that the power window timer function works normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE D-6: The window glass lowers automatically while it is rising.

COMMENTS ON TROUBLE SYMPTOM
If the sliding resistance is too great when the window is being raised or the window glass encounters an object, the window glass will lower by approximately 150 mm.

POSSIBLE CAUSES
- Improper adjusted door window glass
- Incorrectly installed or warped glass slider
- Malfunction of the power window motor
- Malfunction of the window regulator

DIAGNOSIS PROCEDURE

Step 1. Check the power window anti-trap function. <vehicles for Argentina>
Check that the power window anti-trap function works. Refer to GROUP 42 – Door – On-vehicle Service P.42-27.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure D-7 "Power window anti-trap function does not work normally <vehicles for Argentina>P.54B-72."

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Step 2. Check the power window operating current.
Check that the power window operating current is normal. (Refer to GROUP 42 – Door – On-vehicle Service P.42-28.)

Q: Is the check result normal?
YES : Adjust the door window glass (Refer to GROUP 42 – Door – On-vehicle service P.42-27), and then go to Step 3.
NO : Replace the defective power window motor assembly which operating current are abnormal.

Step 3. Check that the door window glasses are installed correctly.
Check that the door window glasses are installed correctly. Refer to GROUP 42 – Door – On-vehicle Service P.42-27.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Adjust the door window glass (Refer to GROUP 42 – Door – On-vehicle service P.42-27).

Step 4. Retest the system.
Check that the power window does not lower automatically while it is being raised.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the power window motor assembly of the defective window.

INSPECTION PROCEDURE D-7: Power window anti-trap function does not work normally. <vehicles for Argentina>

COMMENTS ON TROUBLE SYMPTOM
The revolution detection sensor, which is incorporated in the power window motor, may be defective.

POSSIBLE CAUSES
- Malfunction of the power window motor

DIAGNOSIS PROCEDURE

Step 1. Check the power window operating current.
Check that the power window operating current is normal. (Refer to GROUP 42 – Door – On-vehicle Service P.42-28.)

Q: Is the check result normal?
YES : Adjust the door window glass (Refer to GROUP 42 – Door – On-vehicle service P.42-27), and then go to Step 2.
NO : Replace the defective power window motor assembly which operating current are abnormal.

Step 2. Confirm the power window learning function.
Check that the power window switch has learned the fully closed position of the windows (Refer to GROUP 42 – Door P.42-37).

Q: Is the check result normal?
YES : Go to Step 3.
NO : Make the power window switch learn the fully closed position of the windows. (Refer to GROUP 42 – Door P.42-37.)

Step 3. Determine a trouble spot.

Q: Which door does the power window anti-trap function fail on?
Driver's door : Go to Step 4.
Front passenger's door : Go to Step 7.
Rear right door : Go to Step 13.
Rear left door : Go to Step 19.

Step 4. Connector check: E-05 power window main switch connector and E-13 power window motor (front LH) connector

Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the defective connector.

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Step 5. Check the wiring harness from E-05 power window main switch connector terminal Nos.8, 9, 10 and 12 to E-13 power window motor (front RH) connector terminal Nos.5, 4, 6 and 2.

- Check the input and output lines to the revolution detection sensor for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the wiring harness.

Step 6. Retest the system.
After the power window main switch is replaced, check that the driver's power window anti-trap function works.
(1) Replace the power window main switch.
(2) Check that the driver's power window anti-trap function works.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the power window motor assembly (front LH).

Step 7. Connector check: E-23 power window motor (front RH) connector

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the defective connector.

Step 8. Measure the resistance at E-23 power window motor (front RH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between E-23 power window motor (front RH) connector terminal No.5 and body earth.

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 10.
NO : Go to Step 9.

Step 9. Check the wiring harness from E-23 power window motor (front RH) connector terminal No.5 to body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-15, and repair if necessary.

- Check the input and output lines to the revolution detection sensor for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 10.
NO : Repair the wiring harness.

Step 10. Connector check: E-17 power window sub switch (front RH) connector

Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the defective connector.

Step 11. Check the wiring harness from E-17 power window sub switch (front RH) connector terminal Nos.2, 8 and 3 to E-23 power window motor (front LH) connector terminal Nos.6, 4 and 2.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-24, and repair if necessary.

- Check the input and output lines to the revolution detection sensor for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 12.
NO : Repair the wiring harness.

Step 12. Retest the system.
After the power window sub switch (front LH) is replaced, check that the front passenger's anti-trap function can be operated by the power window sub switch.
(1) Replace the power window sub switch (front LH).
(2) Check that the front passenger's power window anti-trap function works.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the power window motor assembly (front LH).

Step 13. Connector check: E-20 power window motor (rear RH) connector

Q: Is the check result normal?
YES : Go to Step 14.
NO : Repair the defective connector.

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Step 14. Measure the resistance at E-20 power window motor (rear RH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between E-20 power window motor (rear RH) connector terminal No.5 and body earth.

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 16.
NO : Go to Step 15.

Step 15. Check the wiring harness from E-20 power window motor (rear RH) connector terminal No.5 to body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector D-02, and repair if necessary.
- Check the input and output lines to the revolution detection sensor for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 16.
NO : Repair the wiring harness.

Step 16. Connector check: E-21 power window sub switch (rear RH) connector

Q: Is the check result normal?
YES : Go to Step 17.
NO : Repair the defective connector.

Step 17. Check the wiring harness from E-21 power window sub switch (rear RH) connector terminal Nos.2, 8 and 3 to E-20 power window motor (rear RH) connector terminal Nos.6, 4 and 2.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-27, and repair if necessary.
- Check the input and output lines to the revolution detection sensor for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 18.
NO : Repair the wiring harness.

Step 18. Retest the system.
After the power window sub switch (rear RH) is replaced, check that the rear right door anti-trap function can be operated by the power window sub switch.
(1) Replace the power window sub switch (rear RH).
(2) Check that the rear right power window anti-trap function works.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the power window motor assembly (rear RH).

Step 19. Connector check: E-03 power window motor (rear LH) connector

Q: Is the check result normal?
YES : Go to Step 20.
NO : Repair the defective connector.

Step 20. Measure the resistance at E-03 power window motor (rear LH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between E-03 power window motor (rear LH) connector terminal No.5 and body earth.

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 22.
NO : Go to Step 21.

Step 21. Check the wiring harness from E-03 power window motor (rear LH) connector terminal No.5 to body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector D-26, and repair if necessary.
- Check the input and output lines to the revolution detection sensor for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 22.
NO : Repair the wiring harness.

Step 22. Connector check: E-01 power window sub switch (rear LH) connector

Q: Is the check result normal?
YES : Go to Step 23.
NO : Repair the defective connector.

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Step 23. Check the wiring harness from E-01 power window sub switch (rear LH) connector terminal Nos.8, 2 and 3 to E-03 power window motor (rear LH) connector terminal Nos.6, 4 and 2.

NOTE: Prior to the wiring harness inspection, check intermediate connector E-09, and repair if necessary.

- Check the input and output lines to the revolution detection sensor for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 24.
NO : Repair the wiring harness.

Step 24. Retest the system.
After the power window sub switch (rear LH) is replaced, check that the rear left door anti-trap function can be operated by the power window sub switch.
(1) Replace the power window sub switch (rear LH).
(2) Check that the rear left power window anti-trap function works.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the power window motor assembly (rear LH).

KEYLESS ENTRY SYSTEM

INSPECTION PROCEDURE E-1: Keyless entry system does not work.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the keyless entry system does not work normally, the input signal circuits to the components below or the ETACS-ECU may be defective.

- Key reminder switch
- All of the door switches
- Keyless entry transmitter
- Driver's door lock actuator

POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the door switches
- Malfunction of the keyless entry transmitter
- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power supply circuit.
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."

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Step 2. Pulse check

Check the input signals below which are related to the keyless entry system.

System switch	Check condition
Key reminder switch	When the inserted ignition key is pulled out
All of the door switches	A door is opened when all the doors are closed
Driver's door lock actuator switch	When the driver's key cylinder or inside lock knob is unlocked or locked
Keyless entry transmitter switch	When the switch is turned from off to on

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?

All the signals are received normally. : Go to Step 3.

The key reminder switch signal is not received. : Refer to Inspection Procedure P-10 "The key reminder switch signal is not received P.54B-135."

All the door switch signals are not received. : Refer to Inspection Procedure P-12 "All the door switch signals are not received <LH drive vehicles>P.54B-137." Refer to Inspection Procedure P-12 "All the door switch signals are not received <RH drive vehicles>P.54B-138."

The driver's door lock actuator switch signal is not received. : Refer to Inspection Procedure P-13 "The driver's door lock actuator signal is not received <LH drive vehicles>P.54B-139." Refer to Inspection Procedure P-13 "The driver's door lock actuator signal is not received <RH drive vehicles>P.54B-140."

The keyless entry transmitter switch signal is not received. : Refer to Inspection Procedure P-15 "Each switch signal of the keyless entry transmitter is not received P.54B-141."

Step 3. Retest the system.

Check the keyless entry system works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE E-2: Keyless entry hazard warning lamp answerback function or the room lamp answerback function does not work normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the hazard warning lamp and the room lamp work normally, the ETACS-ECU may be defective. Alternatively, it is possible that the keyless entry hazard warning lamp answerback function was disabled by the adjustment function.

POSSIBLE CAUSES

- Defective turn-signal lamp
- Malfunction of the room lamp
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the adjustment function.
Check that the keyless entry hazard warning lamp answerback function has been enabled by using the adjustment function.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Enable the keyless entry hazard warning lamp answerback function by using the adjustment function. (Refer to P.54B-155).

Step 2. Check the operation of the hazard warning lamp.
Check that the hazard warning lamps illuminate normally.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure M-2 "The hazard warning lamps do not illuminate P.54B-111".

Step 3. Check the operation of the room lamps.
Check that the room lamps illuminate normally.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Refer to Inspection Procedure O-2 "The front or rear room lamp does not illuminate/extinguish P.54B-121."

Step 4. Retest the system.
Check that the keyless entry hazard warning lamp answerback function or the room lamp answerback function work normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE E-3: Encrypted code cannot be registered.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the encrypted code registration mode is not entered, the key reminder switch, the hazard warning lamp switch or the ETACS-ECU may be defective. If the registration is not possible although the registration mode is not entered, the keyless entry transmitter or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the hazard warning lamp switch
- Malfunction of the keyless entry transmitter
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the encrypted code registration mode.
Check that the encrypted code registration mode is entered.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Go to Step 2.

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Step 2. Pulse check
Check the input signals below which are related to the encrypted code of the keyless entry transmitter.

System switch	Check condition
Key reminder switch	When the inserted ignition key is pulled out
Hazard warning lamp switch	When the switch is turned from off to on
Keyless entry transmitter switch	When the switch is turned from off to on

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The key reminder switch signal is not received. : Refer to Inspection Procedure P-10 "The key reminder switch signal is not received P.54B-135."
The hazard warning lamp switch signal is not received. : Refer to Inspection Procedure P-11 "The hazard warning lamp switch signal is not received P.54B-136."
The keyless entry transmitter switch signal is not received. : Refer to Inspection Procedure P-15 "Each switch signal of the keyless entry transmitter is not received P.54B-141."

Step 3. Retest the system.
Check that the encrypted code can be registered.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE E-4: The timer lock function does not work after the doors have been unlocked by the keyless entry system.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM
If the keyless entry timer lock does not work normally, the input signal circuit(s) to the keyless entry transmitter or the ETACS-ECU may be defective.

POSSIBLE CAUSES
- Malfunction of the keyless entry transmitter
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation of the keyless entry system.
Check that the keyless entry system works normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure E-1 "Keyless entry system does not work P.54B-75."

Step 2. Retest the system.
Check that the timer lock works normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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SUNROOF

INSPECTION PROCEDURE F-1: The sunroof does not work at all.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the sunroof does not work at all, these power supply circuit(s), these earth circuit(s), sunroof switch or the sunroof motor assembly (sunroof-ECU) may be defective.

POSSIBLE CAUSES

- Malfunction of the sunroof switch
- Malfunction of the sunroof motor assembly (sunroof-ECU)
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Pulse check
Check the input signal from the ignition switch (IG1).

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."

Step 2. Connector check: D-06 sunroof switch connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the connector.

Step 3. Check the sunroof switch.
Refer to GROUP 42 – Sunroof P.42-64.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the sunroof switch.

Step 4. Measure the resistance at the D-06 sunroof switch connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Continuity between D-06 sunroof switch connector terminal No.4 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 6.
NO : Go to Step 5.

Step 5. Check the wiring harness between D-06 sunroof switch connector terminal No.4 and body earth.
NOTE: Prior to the wiring harness inspection, check intermediate connector C-218, and repair if necessary.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 6. Connector check: D-09 sunroof motor assembly connector

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the connector.

Step 7. Measure the voltage at the D-09 sunroof motor assembly connector.
(1) Disconnect the sunroof motor assembly connector, and measure at the harness side.
(2) Check the voltage between the D-09 sunroof motor assembly connector terminal No.1 and body earth.

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 9.
NO : Go to Step 8.

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Step 8. Check the wiring harness between D-09 sunroof motor assembly connector terminal No.1 and the battery.

- Check the power supply line to the battery for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 9. Measure the voltage at the D-09 sunroof motor assembly connector.

(1) Disconnect the sunroof motor assembly connector, and measure at the harness side.
(2) Ignition switch: ON
(3) Check the voltage between the D-09 sunroof motor assembly connector terminal No.2 and body earth.

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 11.
NO : Go to Step 10.

Step 10. Check the wiring harness between D-09 sunroof motor assembly connector terminal No.2 and the ignition switch (IG2).

NOTE: Prior to the wiring harness inspection, check junction block connectors C-210 and C-203, and repair if necessary.

- Check the power supply line to the ignition switch (IG2) for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 11. Measure the resistance at the D-09 sunroof motor assembly connector.

(1) Disconnect the sunroof motor assembly connector, and measure at the harness side.
(2) Check the resistance between D-09 sunroof motor assembly connector terminal No.5 and body earth.

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 13.
NO : Go to Step 12.

Step 12. Check the wiring harness between D-09 sunroof motor assembly connector terminal No.5 and body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-218, and repair if necessary.

- Check body earth line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 13. Retest the system.

The sunroof assembly should now work normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the sunroof motor assembly.

INSPECTION PROCEDURE F-2: Any of the sunroof switch positions is defective.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If any of the sunroof switch positions is defective, the communication line between the sunroof switch and the sunroof motor assembly (sunroof-ECU) may be defective.

POSSIBLE CAUSES

- Malfunction of the sunroof switch
- Malfunction of the sunroof motor assembly (sunroof-ECU)
- Damaged harness wires and connectors

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DIAGNOSIS PROCEDURE

Step 1. Connector check: D-06 sunroof switch connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the connector.

Step 2. Check the sunroof switch.
Refer to GROUP 42 – Sunroof P.42-64.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the sunroof switch.

Step 3. Connector check: D-09 sunroof motor assembly connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the connector.

Step 4. Check the wiring harness between D-09 sunroof motor assembly connector terminal No.6, 7 and 8 and D-06 sunroof switch connector terminal No.6, 3 and 5.
- Check the communication line for open circuit.

Q: Is the check result normal?
YES : Replace the sunroof motor assembly.
NO : Repair the wiring harness.

INSPECTION PROCEDURE F-3: Sunroof timer function does not work normally. <except vehicles for Australia>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the sunroof timer function does not work, the input circuit from the ignition switch (IG1) or the driver's door switch, the communication lines between the ETACS-ECU and the sunroof motor assembly (sunroof-ECU), the sunroof motor assembly (sunroof-ECU) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of ETACS-ECU
- Malfunction of the sunroof motor assembly (sunroof-ECU)
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Pulse check
Check the input signals from the ignition switch (IG1) and the driver's door switch.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
Driver’s door switch	When the driver’s door is opened

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 2.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
The driver’s door switch signal is not received. : Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <LH drive vehicles>P.54B-128." Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <RH drive vehicles>P.54B-129."

Step 2. Connector check: D-09 sunroof motor assembly connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the connector.

Step 3. Measure the voltage at the D-09 sunroof motor assembly connector.
(1) Disconnect the sunroof motor assembly connector, and measure at the harness side.
(2) Check the voltage between D-09 sunroof motor assembly connector terminal No.2 and body earth.

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

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Step 4. Check the wiring harness between D-09 sunroof motor assembly connector terminal No.2 and the battery.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the connector.

Step 6. Check the wiring harness between D-09 sunroof motor assembly connector terminal No.10 and C-219 ETACS-ECU connector terminal No.59.

NOTE: Prior to the wiring harness inspection, check joint connector C-02 and intermediate connector C-218, and repair if necessary.

- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the sunroof timer function work normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the sunroof motor assembly.

INSPECTION PROCEDURE F-3: Sunroof timer function does not work normally. <Vehicles for Australia>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the sunroof timer function does not work, the input circuit from the ignition switch (IG1) or all the door switches, the communication lines between the ETACS-ECU and the sunroof motor assembly (sunroof-ECU), the sunroof motor assembly (sunroof-ECU) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of ETACS-ECU
- Malfunction of the door switch
- Malfunction of the sunroof motor assembly (sunroof-ECU)
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Pulse check
Check the input signals from the ignition switch (IG1) and all the door switches.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
All of the door switches	A door is opened when all the doors are closed

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 2.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
All the door switch signals are not received. : Refer to Inspection Procedure P-12 "All the door switch signals are not received. <RH drive vehicles>P.54B-138"

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Step 2. Connector check: D-09 sunroof motor assembly connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the connector.

Step 3. Measure the voltage at the D-09 sunroof motor assembly connector.
(1) Disconnect the sunroof motor assembly connector, and measure at the harness side.
(2) Check the voltage between D-09 sunroof motor assembly connector terminal No.2 and body earth.

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness between D-09 sunroof motor assembly connector terminal No.2 and the battery.
- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the connector.

Step 6. Check the wiring harness between D-09 sunroof motor assembly connector terminal No.10 and C-219 ETACS-ECU connector terminal No.59.

NOTE: Prior to the wiring harness inspection, check joint connector C-02 and intermediate connector C-218, and repair if necessary.
- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the sunroof timer function work normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the sunroof motor assembly.

INSPECTION PROCEDURE F-4: Sunroof anti-trap function does not work normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the sunroof anti-trap function does not work, the sunroof motor assembly (sunroof-ECU) may be defective.

POSSIBLE CAUSES

- Malfunction of the sunroof motor assembly (sunroof-ECU)

DIAGNOSIS PROCEDURE

Retest the system.
Check that the sunroof anti-trap function work normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the sunroof motor assembly.

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WINDSHIELD WIPER AND WASHER

INSPECTION PROCEDURE G-1: The windshield wipers does not work at all.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM
The windshield wiper motor, the column switch or the front-ECU may be defective.

POSSIBLE CAUSES
- Malfunction of the windshield wiper motor
- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the diagnosis code.
When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

Q: Is the diagnosis code set?
YES : Refer to diagnosis code chart P.54B-18.
NO : Go to Step 2.

Step 2. Pulse check
Check the input signals below which are related to the windshield wiper.

System switch	Check condition
Ignition switch (ACC)	When turned from the LOCK (OFF) position to the ACC position.
Windshield mist wiper switch	When the switch is turned from off to on.

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally : Go to Step 3.
The ignition switch (ACC) signal is not received. : Refer to Inspection Procedure P-1 "The ignition switch (ACC) signal is not received P.54B-126."
Windshield mist wiper switch signal is not received. : Refer to Inspection Procedure P-6 "The column switch (windshield wiper/washer and rear wiper/washer switch) signal is not received P.54B-131."

Step 3. Connector check: B-07 windshield wiper motor connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the connector.

Step 4. Check the windshield wiper motor assembly.
Refer to GROUP 51 – Windshield wiperP.51-32.

Q: Is the check result normal?
YES : Go to Step 5
NO : Replace the windshield wiper motor assembly.

Step 5. Measure the resistance at the B-07 windshield wiper motor connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Continuity between B-07 windshield wiper motor connector terminal No.4 <RH drive vehicles> or No.5 <LH drive vehicles> and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

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Step 6. Check the wiring harness between B-07 windshield wiper motor connector terminal No.4 and body earth.

NOTE: Prior to the wiring harness inspection, check the junction connector C-17 <LH drive vehicles>, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 7. Connector check: A-12X front-ECU connector

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the connector.

Step 8. Measure the voltage at the A-12X front-ECU connector.

(1) Remove the front-ECU, and measure at the junction block side.
(2) Ignition switch: ACC
(3) Check the voltage between the A-12X front-ECU connector terminal No.28 and body earth.

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 10.
NO : Go to Step 9.

Step 9. Check the wiring harness between A-12X front-ECU connector terminal No.28 and the ignition switch (ACC).

NOTE: Prior to the wiring harness inspection, check the junction block connectors C-202, C-203 and intermediate connectors C-116 and repair if necessary.

- Check the power supply line to the ignition switch (ACC) for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 10. Connector check: C-310 column switch connector

Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the connector.

Step 11. Check the wiring harness between C-310 column switch connector terminal No.8 and A-12X front-ECU connector terminal No.26.

NOTE: Prior to the wiring harness inspection, check the intermediate connector C-116 and repair if necessary.

- Check the wiper backup circuit.

Q: Is the check result normal?
YES : Go to Step 12.
NO : Repair the wiring harness.

Step 12. Retest the system.

The windshield wiper should now work normally at all.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front-ECU.

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INSPECTION PROCEDURE G-2: The windshield wipers does not work when the wiper switch is at "INT", "WASHER" or "MIST" position. However, the wipers work at low speed when the switch is at "LO" and "HI" position.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

The system may be at fail-safe mode as the SWS communication line is defective. If the front-ECU does not receive the ignition switch (ACC) signal due to an open circuit in the SWS communication lines or other reasons when the ignition switch is at the ACC position, the system will enter the fail-safe mode.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-II/III diagnosis code.
When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

Q: Is the diagnosis code set?
YES : Refer to diagnosis code chart P.54B-18.
NO : Go to Step 2.

Step 2. Pulse check
Check the input signals below which are related to the windshield wiper.

System switch	Check condition
Ignition switch (ACC)	When turned from the LOCK (OFF) position to the ACC position.
Windshield mist wiper switch	When the switch is turned from off to on.

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally : Go to Step 3.
The ignition switch (ACC) signal is not received. : Refer to Inspection Procedure P-1 "The ignition switch (ACC) signal is not received P.54B-126."
Windshield mist wiper switch signal is not received. : Refer to Inspection Procedure P-6 "The column switch (windshield wiper/washer and rear wiper/washer switch) signal is not received P.54B-131."

Step 3. Retest the system.
The windshield wiper should now work normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front-ECU.

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INSPECTION PROCEDURE G-3: The windshield wipers do not stop at the specified park position

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

The windshield wiper motor or the front-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the windshield wiper motor
- Malfunction of the front-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: B-07 windshield wiper motor connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the connector.

Step 2. Check the windshield wiper motor assembly.

Refer to GROUP 51 – Windshield wiper P.51-32.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the windshield wiper motor assembly.

Step 3. Measure the voltage at the B-07 windshield wiper motor connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: ACC
(3) Check the voltage between the B-07 windshield wiper motor connector terminal No.2 and body earth.

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness between B-07 windshield wiper motor connector terminal No.2 and ignition switch (ACC).

NOTE: Prior to the wiring harness inspection, check the junction connectors C-202, C-203 and the intermediate connector C-106 <RH drive vehicles> or C-104 <LH drive vehicles> and repair if necessary.

- Check the power supply line to ignition switch (ACC) for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: A-12X front-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the connector.

Step 6. Check the wiring harness between B-07 windshield wiper motor connector terminal No.1 <RH drive vehicles> or No.3 <LH drive vehicles> and A-12X front-ECU connector terminal No.29.

NOTE: Prior to the wiring harness inspection, check the intermediate connector A-14 and repair if necessary.

- Check the input signal lines.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.

Check that the windshield wipers stop at the specified park position.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front-ECU.

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INSPECTION PROCEDURE G-4: The windshield wipers does not work normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM
The windshield wiper motor, the column switch or the front-ECU may be defective.

POSSIBLE CAUSES
- Malfunction of the windshield wiper motor
- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Pulse check
Check the input signals below which are related to the windshield wiper.

System switch	Check condition
Ignition switch (ACC)	When turned from the LOCK (OFF) position to the ACC position.
Windshield mist wiper switch	When the switch is turned from off to on.
Windshield intermittent wiper switch	When the switch is turned from off to on.
Windshield low-speed wiper switch	When the switch is turned from off to on.
Windshield high-speed wiper switch	When the switch is turned from off to on.

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally : Go to Step 2.
The ignition switch (ACC) signal is not received. : Refer to Inspection Procedure P-1 "The ignition switch (ACC) signal is not received P.54B-126."
Windshield mist wiper switch signal is not received. : Refer to Inspection Procedure P-6 "The column switch (windshield wiper/washer and rear wiper/washer switch) signal is not received P.54B-131."
Windshield intermittent wiper switch signal is not received. : Refer to Inspection Procedure P-6 "The column switch (windshield wiper/washer and rear wiper/washer switch) signal is not received P.54B-131."
Windshield low-speed wiper switch signal is not received. : Refer to Inspection Procedure P-6 "The column switch (windshield wiper/washer and rear wiper/washer switch) signal is not received P.54B-131."
Windshield high-speed wiper switch signal is not received. : Refer to Inspection Procedure P-6 "The column switch (windshield wiper/washer and rear wiper/washer switch) signal is not received P.54B-131."

Step 2. Check the operation of the windshield wipers.
Check that the windshield wipers work at high speed and the mist mode.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Go to Step 9.

Step 3. Connector check: B-07 windshield wiper motor connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the defective connector.

Step 4. Measure the voltage at the B-07 windshield wiper motor connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: ON
(3) Windshield wiper switch: LO

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(4) Check the voltage between the B-07 windshield wiper motor connector terminal No.3 <RH drive vehicles> or No.4 <LH drive vehicles> and body earth.

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 6.

Step 5. Retest the system.
Check that the windshield wipers work normally by moving the switch to each position.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the windshield wiper motor.

Step 6. Connector check: A-12X front-ECU connector

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the defective connector.

Step 7. Check the wiring harness between B-07 windshield wiper motor connector terminal No.4 and body earth.

NOTE: Prior to the wiring harness inspection, check the intermediate connector A-14, and repair if necessary.

- Check the power supply line to front-ECU for open circuit.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Replace the front-ECU.

Step 8. Retest the system.
Check that the windshield wipers work normally by moving the switch to each position.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the windshield wiper motor.

Step 9. Connector check: B-07 windshield wiper motor connector

Q: Is the check result normal?
YES : Go to Step 10.
NO : Repair the defective connector.

Step 10. Measure the voltage at the B-07 windshield wiper motor connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: ON
(3) Windshield wiper switch: HI
(4) Check the voltage between the B-07 windshield wiper motor connector terminal No.5 <RH drive vehicles> or No.1 <LH drive vehicles> and body earth.

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 11.
NO : Go to Step 12.

Step 11. Retest the system.
Check that the windshield wipers work normally by moving the switch to each position.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the windshield wiper motor.

Step 12. Connector check: A-12X front-ECU connector

Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the defective connector.

Step 13. Check the wiring harness between B-07 windshield wiper motor connector terminal No.4 and body earth.

NOTE: Prior to the wiring harness inspection, check the intermediate connector A-14, and repair if necessary.

- Check the power supply line to front-ECU for open circuit.

Q: Is the check result normal?
YES : Go to Step 14.
NO : Replace the front-ECU.

Step 14. Retest the system.
Check that the windshield wipers work normally by moving the switch to each position.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the windshield wiper motor.

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INSPECTION PROCEDURE G-5: The intermittent wiper interval can not be adjusted by operating the windshield intermittent wiper volume control.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM
The column switch or the front-ECU may be defective.

POSSIBLE CAUSES
- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Pulse check
Check the input signals below which are related to the windshield intermittent wiper function.

System switch	Check condition
Ignition switch (ACC)	When turned from LOCK (OFF) position to the ACC position
Windshield intermittent wiper volume	When the windshield intermittent wiper volume is rotated from "FAST" to "SLOW" (a pulse is sent around the volume middle position)

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 2.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-1 "The ignition switch (ACC) signal is not received P.54B-126."
The windshield intermittent wiper volume signal is not received. : Refer to Inspection Procedure P-7 "The windshield intermittent wiper volume signal is not received P.54B-131."

Step 2. Retest the system.
Check that the windshield intermittent wiper interval can be adjusted by operating the windshield intermittent wiper volume control.

OK: The intermittent wiper interval is changed as the intermittent wiper volume is rotated.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front-ECU

INSPECTION PROCEDURE G-6: The intermittent wiper interval is not changed according to the vehicle speed. <Except vehicles for GCC>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM
The ETACS-ECU calculates the intermittent wiper interval according to the vehicle speed signal which is sent by the engine-A/T-ECU.

If the intermittent wiper interval does not depend on the vehicle speed, the input circuit of the vehicle speed signal and the ETACS-ECU may be defective.

POSSIBLE CAUSES
- Malfunction of the vehicle speed signal (engine-A/T-ECU)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

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DIAGNOSIS PROCEDURE

Step 1. Check the adjustment function.
Check that the interior lamp automatic shutdown function has been enabled by using the adjustment function.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Enable the interior lamp automatic shutdown function by using the adjustment function. Refer to P.54B-155.

Step 2. Retest the system.
Check that the windshield intermittent wiper interval can be adjusted by operating the windshield intermittent wiper volume control.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure G-5 "The intermittent wiper interval can not be adjusted by operating the windshield intermittent wiper volume control P.54B-90."

Step 3. Pulse check
Check the input signals below which are related to the vehicle speed-dependent intermittent wiper.

System switch	Check condition
Ignition switch (ACC)	When turned from LOCK (OFF) position to the ACC position
Vehicle speed signal (engine-A/T-ECU)	When the vehicle speed has reached 10 km/h or more

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 4.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-1 "The ignition switch (ACC) signal is not received P.54B-126."
The vehicle speed signal (engine-A/T-ECU) is not received. : Refer to Inspection Procedure P-14 "The vehicle speed signal is not received P.54B-141."

Step 4. Retest the system.
Check that the intermittent wiper interval depends on the vehicle speed.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE G-7: The windshield washer does not work.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM
The windshield washer motor, the column switch or the front-ECU may be defective.

POSSIBLE CAUSES
- Malfunction of the windshield washer motor
- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation of the windshield wipers.
Check that the windshield wipers work normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure G-1 "The windshield wipers does not work at allP.54B-84."

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Step 2. Pulse check
Check the input signals below which are related to the windshield wiper.

System switch	Check condition
Ignition switch (ACC)	When turned from the LOCK (OFF) position to the ACC position.
Windshield washer switch	When the switch is turned from off to on.

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally : Go to Step 3.
The ignition switch (ACC) signal is not received. : Refer to Inspection Procedure P-1 "The ignition switch (ACC) signal is not received P.54B-126."
Windshield washer switch signal is not received. : Refer to Inspection Procedure P-6 "The column switch (windshield wiper/washer and rear wiper/washer switch) signal is not received P.54B-131."

Step 3. Connector check: A-26 windshield washer motor connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the connector.

Step 4. Check the windshield washer motor assembly.
Refer to GROUP 51 – Windshield washerP.51-36.

Q: Is the check result normal?
YES : Go to Step 5
NO : Replace the windshield washer motor.

Step 5. Measure the resistance at the A-26 windshield washer motor connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Continuity between A-26 windshield washer motor connector terminal No.1 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

Step 6. Check the wiring harness between A-26 windshield washer motor connector terminal No.1 and body earth.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 7. Connector check: A-12X front-ECU connector

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the connector.

Step 8. Check the wiring harness between A-26 windshield washer motor connector terminal No.2 and A-12X front-ECU connector terminal No.31.
- Check the power supply line to the ignition switch (ACC) for open circuit.

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the wiring harness.

Step 9. Retest the system.
The windshield washer should now work normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front-ECU.

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REAR WIPER AND WASHER

INSPECTION PROCEDURE H-1: The rear wiper does not work at all.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the rear wiper does not work normally, the input signal circuits to the components below, the rear wiper motor or the ETACS-ECU may be defective.

- Ignition switch (ACC)
- Rear wiper switch

POSSIBLE CAUSES

- Malfunction of the rear wiper motor
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-II/III diagnosis code.
Check that the ETACS-ECU sets a diagnosis code.

Q: Is the check result normal?
YES : Refer to diagnosis code chart P.54B-18.
NO : Go to Step 2.

Step 2. Pulse check
Check the input signals below which are related to the rear wiper.

System switch	Check condition
Ignition switch (ACC)	When turned from the LOCK (OFF) position to the ACC position
Column switch (rear wiper switch)	When the switch is turned from off to on

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The ignition switch (ACC) signal is not received. : Refer to Inspection Procedure P-1 "The ignition switch (ACC) signal is not received P.54B-126."
The column switch (rear wiper switch) signal is not received. : Refer to Inspection Procedure P-6 "The column switch (windshield wiper/washer and rear wiper/washer switch) signal is not received P.54B-131."

Step 3. Connector check: F-02 rear wiper motor connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the connector.

Step 4. Check the rear wiper motor.
Refer to GROUP 51 – Rear wiper and washer P.51-40.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the rear wiper motor.

Step 5. Measure the resistance at the F-02 rear wiper motor connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between F-02 rear wiper motor connector terminal No.1 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

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Step 6. Check the wiring harness between F-02 rear wiper motor connector terminal No.1 and body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector F-05 and repair if necessary.

- Check the earth line for open or short circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Repair the wiring harness.

Step 7. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?

YES : Go to Step 8.

NO : Repair the connector.

Step 8. Check the wiring harness between C-217 ETACS-ECU connector terminal No.16 and F-02 rear wiper motor connector terminal No.2.

NOTE: Prior to the wiring harness inspection, check intermediate connector F-05 and junction block connectors C-209 <LH drive vehicles>, C-221 <RH drive vehicles> and repair if necessary.

- Check the power supply line for open or short circuit.

Q: 1Is the check result normal?

YES : Go to Step 9.

NO : Repair the wiring harness.

Step 9. Retest the system.

Check that the rear wiper works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE H-2: The rear wiper does not stop at the specified park position.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the rear wiper does not stop normally within the predetermined range, the rear wiper motor or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the rear wiper motor
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: F-02 rear wiper motor connector

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the connector.

Step 2. Check the rear wiper motor.

Refer to GROUP 51 – Rear wiper and washer P.51-40.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Replace the rear wiper motor.

Step 3. Measure the voltage at the F-02 rear wiper motor connector.

(1) Disconnect the connector, and measure at the wiring harness side.

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Step 4. Check the wiring harness between ignition switch (ACC) and F-02 rear wiper motor connector terminal No.4.

NOTE: Prior to the wiring harness inspection, check intermediate connector F-05 and junction block connectors C-203, C-209 <LH drive vehicles>, C-221 <RH drive vehicles> and repair if necessary.

- Check the power supply line for open or short circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the connector.

Step 6. Check the wiring harness between C-217 ETACS-ECU connector terminal No.17 and F-02 rear wiper motor connector terminal No.3.

NOTE: Prior to the wiring harness inspection, check intermediate connector F-05 and junction block connectors C-209 <LH drive vehicles>, C-221 <RH drive vehicles> and repair if necessary.

- Check the power supply line for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the rear wiper auto stop function works normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE H-3: When the selector lever is moved to "R" position during the rear wiper operation, the rear wiper does not operate at the continuous mode.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the rear wiper does not operate consecutively when the selector lever is moved to the R position during the rear wiper operation, the input signal circuit to the inhibitor switch ("R" position) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the inhibitor switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Confirm the operation of the rear wiper.
Check that the rear wiper work normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure H-1 "The rear wiper does not work at all P.54B-93."

Step 2. Pulse check
Check the input signal, which are related to the R (reverse) gear-linked rear wiper operation.

System switch	Check condition
Inhibitor switch ("R" position)	When the ignition switch is turned ON and the selector lever is moved to the R position.

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure P-3 "The inhibitor switch (reverse position) signal is not received P.54B-127."

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Step 3. Retest the system.
Check that the rear wiper operates consecutively when the selector lever is moved to the R position during the rear wiper operation.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE H-4: The rear washer does not work.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM
If the rear washer does not work normally, the input signal circuits to the rear washer switch, rear washer motor or the ETACS-ECU may be defective.

POSSIBLE CAUSES
- Malfunction of the rear washer motor
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Confirm the operation of the rear wiper.
Check that the rear wiper work normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure H-1 "The rear wiper does not work at all P.54B-93."

Step 2. Pulse check
Check the input signals below which are related to the rear washer.
- Ignition switch: ACC

System switch	Check condition
Column switch (rear washer switch)	When the switch is turned from off to on

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure P-6 "The column switch (windshield wiper/washer and rear wiper/washer switch) signal is not received P.54B-131."

Step 3. Connector check: A-27 rear washer motor connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the connector.

Step 4. Check the rear washer motor.
Refer to GROUP 51 – Rear wiper and washer P.51-40.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the rear washer motor.

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Step 5. Measure the resistance at the A-27 rear washer motor connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between A-27 rear washer motor connector terminal No.1 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

Step 6. Check the wiring harness between A-27 rear washer motor connector terminal No.1 and body earth.

- Check the earth line for open or short circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 7. Connector check: C-220 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the connector.

Step 8. Check the wiring harness between C-220 ETACS-ECU connector terminal No.23 and A-27 rear washer motor connector terminal No.2.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-116 and repair if necessary.

- Check the power supply line for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the wiring harness.

Step 9. Retest the system.

Check that the rear washer works normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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HEADLAMP WASHER

INSPECTION PROCEDURE I-1: The headlamp washer does not work.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

The headlamp washer motor, the column switch or the front-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the headlamp washer motor
- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-II/III diagnosis code.
When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

Q: Is the diagnosis code set?
YES : Refer to diagnosis code chart P.54B-18.
NO : Go to Step 2.

Step 2. Pulse check
Check the input signals below which are related to the windshield wiper.

System switch	Check condition
Ignition switch (ACC)	When turned from the LOCK (OFF) position to the ACC position.
Headlamp washer switch	When the switch is turned from off to on.

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally : Go to Step 3.
The ignition switch (ACC) signal is not received. : Refer to Inspection Procedure P-1 "The ignition switch (ACC) signal is not received P.54B-126."
Headlamp washer switch signal is not received. : Refer to Inspection Procedure P-5 "The column switch (windshield wiper/washer and rear wiper/washer switch) signal is not received P.54B-130."

Step 3. Connector check: A-25 headlamp washer motor connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the connector.

Step 4. Check the headlamp washer motor assembly.
Refer to GROUP 51 – Headlamp washer P.51-44.

Q: Is the check result normal?
YES : Go to Step 5
NO : Replace the headlamp washer motor.

Step 5. Measure the resistance at the A-25 headlamp washer motor connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Continuity between A-25 headlamp washer motor connector terminal No.2 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

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Step 6. Check the wiring harness between A-25 headlamp washer motor connector terminal No.2 and body earth.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 7. Connector check: A-11X front-ECU connector

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the connector.

Step 8. Measure the voltage at the A-11X front-ECU connector.

(1) Remove the front-ECU, and measure at the junction block side.
(2) Ignition switch: ACC
(3) Check the voltage between the A-11X front-ECU connector terminal No.3 and body earth.

OK: System voltage

Q: Is the check result normal?
YES : Go to Step 10.
NO : Go to Step 9.

Step 9. Check the wiring harness between A-11X front-ECU connector terminal No.3 and the fusible link (5).

- Check the power supply line from the fusible link (5) for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 10. Check the wiring harness between A-25 headlamp washer motor connector terminal No.1 and A-11X front-ECU connector terminal No.1.

- Check the output line to headlamp washer motor for open circuit.

Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the wiring harness.

Step 11. Retest the system.

The headlamp washer should now work normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front-ECU.

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IGNITION KEY CYLINDER ILLUMINATION LAMP

INSPECTION PROCEDURE J-1: The ignition key cylinder illumination lamp does not illuminate/extinguish normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.

<Vehicles without keyless entry system>
- Ignition switch (IG1)
- Driver's door switch

<Vehicles with keyless entry system>
- Ignition switch (IG1)
- Key reminder switch
- Driver's door switch
- Interior lamp loaded signal

If this function does not work normally, these input signal circuit(s), the ignition key cylinder illumination lamp or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the driver's door switch
- Malfunction of the ignition key cylinder illumination lamp
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation of the room lamp.
Check that the room lamps illuminate and extinguish normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure O-1 "The front or rear room lamp does not illuminate or extinguish <vehicles without keyless entry system>P.54B-120 ." Or refer to Inspection Procedure O-2 "The front or rear room lamp does not illuminate or extinguish <vehicles with keyless entry system>P.54B-121 ."

Step 2. Pulse check
Check the input signals below, which are related to the ignition key cylinder illumination lamp.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
Key reminder switch*	When the inserted ignition key is pulled out
Driver's door switch	When the driver's door is opened

*NOTE: *: Vehicles with keyless entry system*

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
The key reminder switch signal is not received. : Refer to Inspection Procedure P-10 "The key reminder switch signal is not received P.54B-135."
The driver's door switch signal is not received. : Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <LH drive vehicles>P.54B-128 ." Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <RH drive vehicles>P.54B-129 ."

Step 3. Connector check: C-304 key reminder switch connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the defective connector.

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Step 4. Check the bulb of the ignition key cylinder illumination lamp.
Check the bulb of the ignition key cylinder illumination lamp.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the bulb of the ignition key cylinder illumination lamp.

Step 5. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from C-219 ETACS-ECU connector terminal Nos.69 and 71 to C-304 ignition key cylinder illumination lamp connector terminal Nos.1 and 2.
- Check the input and output lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the ignition key cylinder illumination lamp illuminates/extinguishes normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

SEAT BELT WARNING LAMP <VEHICLES FOR AUSTRALIA>

INSPECTION PROCEDURE K-1: The seat belt warning lamp does not flash normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU flashes the seat belt warning lamp in accordance with the input signal from the ignition switch (IG1).
If it does not flash normally, these input signal circuit(s) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Pulse check
Check the input signals, which are related to the seat belt warning lamp.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."

Step 2. Connector check: C-04 and C-05 combination meter connectors

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

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Step 3. Check the seat belt warning lamp.

(1) Disconnect the C-04 and C-05 combination meter connectors, and check at the equipment side.
(2) When a battery is connected between C-04 combination meter connector terminal No.42 and C-05 combination meter connector terminal No.5, check that the seat belt warning lamp illuminates.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the combination meter.

Step 4. Measure the voltage at the C-04 combination meter connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Voltage between C-04 combination meter connector No.42 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 6.
NO : Go to Step 5.

Step 5. Check the wiring harness between C-04 combination meter connector terminal No.42 and the ignition switch (IG1).

NOTE: Prior to the wiring harness inspection, check junction block connectors C-203 and C-205, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 6. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the defective connector.

Step 7. Check the wiring harness between C-05 combination meter connector terminal No.5 and C-219 ETACS-ECU connector terminal No.73.

- Check the input and output lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the wiring harness.

Step 8. Retest the system.

Check that the seat belt warning lamp flashes normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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HEADLAMP AND TAIL LAMP

INSPECTION PROCEDURE L-1: The tail lamps do not illuminate normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If all the tail lamps do not illuminate, the tail lamp switch input circuit or the front-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-II/III diagnosis code
When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

Q: Is the diagnosis code set?
YES : Refer to diagnosis code chart P.54B-18.
NO : Go to Step 2.

Step 2. Pulse check
Check the input signals below, which are related to the tail lamps.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
Tail lamp switch	When the lighting switch is turned to the TAIL position

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
The tail lamp switch signal is not received. : Refer to Inspection Procedure P-5 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-130."

Step 3. Connector check: A-11X front-ECU connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the defective connector.

Step 4. Measure the voltage at A-11X front-ECU connector.
(1) Remove the front-ECU, and measure at the relay box side.
(2) Voltage between A-11X front-ECU connector terminal No.7 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 6.
NO : Go to Step 5.

Step 5. Check the wiring harness between A-11X front-ECU connector terminal No.7 and the battery.
- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 6. Retest the system.
Check that the tail lamps illuminate normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front-ECU.

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INSPECTION PROCEDURE L-2: The low-beam headlamps do not illuminate normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the low-beam headlamps do not illuminate, the headlamp switch input circuit or the front-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-II/III diagnosis code

When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

Q: Is the diagnosis code set?
YES : Refer to diagnosis code chart P.54B-33.
NO : Go to Step 2.

Step 2. Pulse check

Check the input signals below, which are related to the low-beam headlamps.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
Headlamp switch	When the lighting switch is turned to the HEADLAMP position

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
The headlamp switch signal is not received. : Refer to Inspection Procedure P-5 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-130."

Step 3. Connector check: A-11X front-ECU connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the defective connector.

Step 4. Measure the voltage at A-11X front-ECU connector.

(1) Remove the front-ECU, and measure at the relay box side.
(2) Voltage between A-11X front-ECU connector terminal Nos.8, 9 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 6.
NO : Go to Step 5.

Step 5. Check the wiring harness between A-11X front-ECU connector terminal Nos.8, 9 and the battery.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 6. Retest the system.

Check that the low-beam headlamps illuminate normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front-ECU.

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INSPECTION PROCEDURE L-3: The high-beam headlamps do not illuminate normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the high-beam headlamps do not illuminate, the dimmer switch input circuit or the front-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check that the headlamps operate.
Check that the low-beam headlamps illuminate and extinguish normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure L-2 "The low-beam headlamps do not illuminate normally P.54B-104."

Step 2. Pulse check
Check the input signals below, which are related to the high-beam headlamps.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
Dimmer switch	When the dimmer switch is turned from off to on

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
The dimmer switch signal is not received. : Refer to Inspection Procedure P-5 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-130."

Step 3. Retest the system.
Check that the high-beam headlamps illuminate normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front-ECU.

INSPECTION PROCEDURE L-4: The high-beam and low-beam headlamps do not illuminate when the passing switch is operated.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the low-beam and high-beam headlamps are normal, the passing switch input signal circuit or the front-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check that the headlamps operate.
Check that the low-beam and high-beam headlamps work normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the headlamps. Refer to trouble symptom chart P.54B-25.

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Step 2. Pulse check
Check the input signal from the passing switch.

System switch	Check condition
Passing lamp switch	When the passing switch is turned from off to on

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure P-5 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-130."

Step 3. Retest the system.
When the passing switch is turned on, check if the headlamps illuminate normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front-ECU.

INSPECTION PROCEDURE L-5: The headlamp automatic shutdown function does not work normally. <Except vehicles for Australia>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.
- Ignition switch (IG1)
- Driver's door switch
- Tail lamp switch
- Headlamp switch

If this function does not work normally, these input signal circuit(s), the front-ECU or the ETACS-ECU may be defective. Note that this function can be disabled/enabled by the adjustment function (default setting; enabled).

POSSIBLE CAUSES

- Malfunction of the driver's door switch
- Malfunction of the front-ECU
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the adjustment function.
Check that the headlamp automatic shutdown function has been enabled by using the adjustment function.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Enable the headlamp automatic shutdown function by using the adjustment function. Refer to P.54B-155.

Step 2. Check that the headlamps operate.
Check that the low-beam and high-beam headlamps work normally.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the headlamps. Refer to trouble symptom chart P.54B-25.

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Step 3. Pulse check

Check the input signals below, which are related to the headlamp automatic shutdown function.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
Driver's door switch	When the driver's door is opened
Tail lamp switch	When the lighting switch is turned to the TAIL position

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?

All the signals are received normally. : Go to Step 4.

The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."

The driver's door switch signal is not received. : Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <LH drive vehicles>P.54B-128." Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <RH drive vehicles>P.54B-129."

The tail lamp switch signal is not received. : Refer to Inspection Procedure P-5 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-130."

Step 4. Retest the system.

Replace the ETACS-ECU, and then check that the headlamp automatic shutdown function works normally.

(1) Replace the ETACS-ECU.
(2) Check that the headlamp automatic shutdown function works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the front-ECU.

INSPECTION PROCEDURE L-6: Any of tail lamps, position lamps or licence plate lamp does not illuminate.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the tail lamps, the position lamps or the licence plate lamps do not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

POSSIBLE CAUSES

- Burned-out bulb
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: D-14 <right tail lamp> or D-19 <left tail lamp> rear combination lamp connector, A-29 <right position lamp> or A-16 <left position lamp> headlamp assembly connector, F-08 <right licence plate lamp> or F-10 <left licence plate lamp> licence plate lamp connector

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the defective connector.

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Step 2. Check the bulbs of the tail lamps, the position lamp or the licence plate lamp.
Check the bulb of the lamp which does not illuminate.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the bulb of the lamp which does not illuminate.

Step 3. Measure the resistance at D-14 <right tail lamp> or D-19 <left tail lamp> rear combination lamp connector, A-29 <right position lamp> or A-16 <left position lamp> headlamp assembly connector, F-08 <right licence plate lamp> or F-10 <left licence plate lamp> licence plate lamp connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Check the resistance between the lamp connector and body earth.
- Resistance between D-14 <right tail lamp> rear combination lamp connector terminal No.3 and body earth
- Resistance between D-19 <left tail lamp> rear combination lamp connector terminal No.3 and body earth
- Resistance between A-29 <right position lamp> headlamp assembly connector terminal No.1 and body earth
- Resistance between A-16 <left position lamp> headlamp assembly connector terminal No.1 and body earth
- Resistance between F-08 <right licence plate lamp> licence plate lamp connector terminal No.1 and body earth
- Resistance between F-10 <left licence plate lamp> licence plate lamp connector terminal No.1 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness from D-14 <right tail lamp> or D-19 <left tail lamp> rear combination lamp connector terminal No.3, A-29 <right position lamp> or A-16 <left position lamp> headlamp assembly connector terminal No.1 or F-08 <right licence plate lamp> or F-10 <left licence plate lamp> licence plate lamp connector terminal No.1 to body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector F-09 <licence plate lamp>, and repair if necessary.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 5. Connector check: A-11X front-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from D-14 <right tail lamp> or D-19 <left tail lamp> rear combination lamp connector terminal No.2, A-29 <right position lamp> or A-16 <left position lamp> headlamp assembly connector terminal No.2, F-08 <right licence plate lamp> or F-10 < left licence plate lamp> licence plate lamp connector terminal No.2 to A-11X front-ECU connector terminal No.4.

NOTE: Prior to the wiring harness inspection, check joint connector C-01 <right tail lamp (LH drive vehicles)>, intermediate connector C-116 <tail lamp and licence plate lamp>, C-117 <left tail lamp and licence plate lamp>, D-31 <right tail lamp (LH drive vehicles)>, F-09 <licence plate lamp>, junction block connector C-202 <right tail lamp>, C-209 <right tail lamp (LH drive vehicles)> and C-221 <right tail lamp (RH drive vehicles)>, and repair if necessary.
- Check the output lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the tail lamps, the position lamps and the licence plate lamps illuminate normally.

Q: Is the check result normal?
The lamps illuminate normally at both high and low beams. : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
When the tail lamps do not illuminate : Replace the rear combination lamp socket assembly.
When the position lamps do not illuminate : Replace the position lamp socket.
When the licence plate lamps do not illuminate : Replace the licence plate lamp socket.

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INSPECTION PROCEDURE L-7: The headlamp(s) do not illuminate. <including high-beam indicator>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If any of the headlamps or the high-beam indicator does not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

POSSIBLE CAUSES

- Malfunction of the headlamp bulbs
- Malfunction of the high-beam indicator bulb
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: A-30 <low-beam, RH>, A-43 <high-beam, RH>, A-15 <low-beam, LH> or A-39 <high-beam, LH> headlamp connector or C-05 <high-beam indicator> combination meter connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the bulb(s) of the headlamps or the high-beam indicator lamp.
Check the bulb(s) of the defective lamp.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the bulb(s) of the defective lamp.

Step 3. Measure the resistance at A-30 <low-beam, RH>, A-43 <high-beam, RH>, A-15 <low-beam, LH> or A-39 <high-beam, LH> headlamp connector or C-05 <high-beam indicator> combination meter connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Check the resistance between the lamp connector and body earth.
- Resistance between A-15 <low-beam, left> headlamp connector terminal No.3 and body earth
- Resistance between A-39 <high-beam, left> headlamp connector terminal No.2 and body earth
- Resistance between A-30 <low-beam, right> headlamp connector terminal No.3 and body earth
- Resistance between A-43 <high-beam, right> headlamp connector terminal No.2 and body earth
- Resistance between C-05 <high-beam indicator lamp> combination meter connector terminal No.8 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness from A-30 <low-beam, RH>, A-15 <low-beam, LH> headlamp connector terminal No.3 or A-43 <high-beam, RH>, A-39 <high-beam, LH> headlamp connector terminal No.2 or C-05 combination meter connector terminal No.8 <high-beam indicator lamp> to body earth.
NOTE: Prior to the wiring harness inspection, check intermediate connector C-116 <high-beam indicator [2400 (4G64) or 2400 (4G69-vehicles for Argentina)]>, and repair if necessary.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 5. Connector check: A-11X front-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

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Step 6. Check the wiring harness from A-30 <low-beam, RH>, A-15 <low-beam,low-beam,low-beam, LH> headlamp connector terminal No.2 or A-43 <high-beam, RH>, A-39 <high-beam, LH> headlamp connector terminal No.1 or C-05 combination meter connector terminal No.9 <high-beam indicator lamp> to A-11X front-ECU connector terminal No.6 <low-beam> or No.10 <high-beam or high-beam indicator lamp>.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-116 <high-beam indicator>, and repair if necessary.

- Check the output lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the headlamps and the high-beam indicator lamp illuminate/extinguish normally.

Q: Is the check result normal?
The lamps illuminate normally at both high and low beams. : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
When the headlamps do not illuminate : Replace the headlamp socket.
When the high-beam indicator lamp does not illuminate : Replace the combination meter.

FLASHER TIMER

INSPECTION PROCEDURE M-1: The turn-signal lamps do not illuminate.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If all the turn-signal lamps do not illuminate, the ignition switch (IG1), the turn-signal lamp switch input circuit or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check that the hazard warning lamps operate.
Check that the hazard warning lamps illuminate normally.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Go to Step 2.

Step 2. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Measure the voltage at the C-217 ETACS-ECU connector.
(1) Remove the ETACS-ECU, and measure at the

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Step 4. Check the wiring harness between C-217 ETACS-ECU connector terminal No.11 and the battery.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-116 and junction block connector C-202, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Repair the wiring harness.

Step 5. Retest the system.

Check that the turn-signal lamps illuminate normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

Step 6. Pulse check

Check the input signals below, which are related to the turn-signal lamp illumination.

System switch	Check condition
Turn-signal lamp switch (RH)	When the turn-signal lamp switch (RH) is turned from off to on
Turn-signal lamp switch (LH)	When the turn-signal lamp switch (LH) is turned from off to on

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?

All the signals are received normally. : Go to Step 7.

The turn-signal lamp switch (RH) signal is not received. : Refer to Inspection Procedure P-5 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-130."

The turn-signal lamp switch (LH) signal is not received. : Refer to Inspection Procedure P-5 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-130."

Step 7. Retest the system.

Check that the turn-signal lamps illuminate.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE M-2: The hazard warning lamps do not illuminate.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the hazard warning lamps do not illuminate, the hazard warning lamp input signal circuit or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the hazard warning lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check that the turn-signal lamps operate.

Check that the turn-signal lamps illuminate normally.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure M-1 "The turn-signal lamps do not illuminate P.54B-110".

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Step 2. Check the power supply circuit.
When the ignition switch is at the LOCK (OFF) position, check that the functions below work normally.

- Ignition key reminder buzzer function <Vehicles for GCC only>
- Light reminder function
- Central door locking system
- Room lamp (excluding interior lamp automatic shutdown function)

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."

Step 3. Pulse check
Check the input signal from the hazard warning lamp switch.

System switch	Check condition
Hazard warning lamp switch	When the hazard warning lamp switch is turned from off to on

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
The signal is received normally. : Go to Step 4.
The hazard warning lamp switch signal is not received. : Refer to Inspection Procedure P-11 "The hazard warning lamp switch signal is not received P.54B-136."

Step 4. Retest the system.
Check that the hazard warning lamps illuminate.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE M-3: Any of the turn-signal lamps does not illuminate.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM
If any of the turn-signal lamp does not illuminate normally, wiring harness connector(s) or the bulb may be defective.

POSSIBLE CAUSES
- Defective turn-signal lamp bulb
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: A-29 <front RH> or A-16 <front LH> headlamp assembly connector, A-01 <side RH> or A-04 <side LH> side turn-signal lamp connector, D-14 <rear RH> or D-19 <rear LH> rear combination lamp connector, C-05 <turn-signal indicator lamp> and C-04 <turn-signal indicator lamp (LH)> combination meter connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the bulb(s) of the turn-signal lamps or the turn-signal indicator lamps.
Check the bulb(s) of the defective lamp.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the bulb(s) of the defective lamp.

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Step 3. Measure the resistance at A-29 <front RH> or A-16 <front LH> headlamp assembly connector, A-01 <side RH> or A-04 <side LH> side turn-signal lamp connector, D-14 <rear RH> or D-19 <rear LH> rear combination lamp connector, C-05 <turn-signal indicator lamp> and C-04 <turn-signal indicator lamp (LH)> combination meter connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the resistance between the defective lamp connector terminal and body earth.
- Resistance between A-29 <front RH> headlamp assembly connector terminal No.1 and body earth
- Resistance between A-16 <front LH> headlamp assembly connector terminal No.1 and body earth
- Resistance between A-01 <side RH> side turn-signal lamp connector terminal No.1 and body earth
- Resistance between A-04 <side LH> side turn-signal lamp connector terminal No.1 and body earth
- Resistance between D-14 <rear RH> rear combination lamp connector terminal No.3 and body earth
- Resistance between D-19 <rear LH> rear combination lamp connector terminal No.3 and body earth
- Resistance between C-05 <turn-signal indicator lamp> combination meter terminal No.12 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness from A-29 <front RH> or A-16 <front LH> headlamp assembly connector terminal No.1, A-01 <side RH> or A-04 <side LH> side turn-signal lamp connector terminal No.1, D-14 <rear RH> or D-19 <rear LH> rear combination lamp connector terminal No.3, or C-05 <turn-signal indicator lamp> combination meter connector terminal No.12 to body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-14 <side RH>, and repair if necessary.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from A-29 <front RH> or A-16 <front LH> headlamp assembly connector terminal No.3, A-01 <side RH> or A-04 <side LH> side turn-signal lamp connector terminal No.2, D-14 <rear RH> or D-19 <rear LH> rear combination lamp connector terminal No.6, C-05 <turn-signal indicator lamp RH> combination meter connector terminal No.10 or C-04 <turn-signal indicator lamp LH> combination lamp connector terminal No.31 to C-217 ETACS-ECU connector terminal No.9 <RH> or 14 <LH>.

NOTE: LH drive vehicles; prior to the wiring harness inspection, check intermediate connector C-14 <side RH>, C-116 <front or side LH> or D-31 <rear LH> and junction block connector C-202 <front and side>, C-209 <rear> or C-205 <turn-signal indicator lamp>, and repair if necessary.

NOTE: RH drive vehicles; prior to the wiring harness inspection, check intermediate connector C-14 <side RH>, C-116 <front or side LH> or C-117 <rear LH> and junction block connector C-202 <front, side and rear LH>, C-221 <rear RH> or C-205 <turn-signal indicator lamp>, and repair if necessary.
- Check the output lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

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Step 7. Retest the system.
Check that the turn-signal lamps and the indicator lamps illuminate normally.

Q: Is the check result normal?
The lamps illuminate normally at both high and low beams. : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
The headlamp assembly connectors do not illuminate. : Replace the socket.
The side turn-signal lamps do not illuminate. : Replace the socket.
The rear turn-signal lamps do not illuminate. : Replace the socket assembly.
The turn-signal indicator lamps do not illuminate. : Replace the combination meter.

FOG LAMP

INSPECTION PROCEDURE N-1: The front fog lamps do not illuminate normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

OPERATION

The ETACS-ECU operates this function in accordance with the input signals below.
- Tail lamp switch
- Headlamp switch
- Front fog lamp switch

If the front fog lamps do not illuminate normally, these input signal circuit(s) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the front fog lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check that the tail lamps and headlamps operate.
Check that the tail lamps and headlamps illuminate normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Check the tail lamps and the headlamps (Refer to trouble symptom chart P.54B-25).

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Step 2. Pulse check

Check the input signals below, which are related to the front fog lamps.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
Tail lamp switch	When the lighting switch is turned to the TAIL position
Headlamp switch	When the lighting switch is turned to the HEADLAMP position
Front fog lamp switch	When the front fog lamp switch is turned from off to on

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?

All the signals are received normally. : Go to Step 3.

The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."

The tail lamp switch signal is not received. : Refer to Inspection Procedure P-5 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-130."

The headlamp switch signal is not received. : Refer to Inspection Procedure P-5 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-130."

The front fog lamp switch signal is not received. : Refer to Inspection Procedure P-16 "The front fog lamp switch signal is not received P.54B-142."

Step 3. Connector check: A-05X front fog lamp relay connector

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the defective connector.

Step 4. Check the front fog lamp relay.

Refer to GROUP 54A – Front fog lamp P.54A-55.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace the front fog lamp relay.

Step 5. Measure the voltage at the A-05X front fog lamp relay connector.

(1) Remove the front fog lamp relay, and measure at the relay box side.

(2) Check the voltage between the front fog lamp relay connector and body earth.

- Voltage between A-05X front fog lamp relay connector terminal No.1 and body earth
- Voltage between A-05X front fog lamp relay connector terminal No.2 and body earth

OK: Battery positive voltage

Q: Is the check result normal?

YES : Go to Step 7.

NO : Go to Step 6.

Step 6. Check the wiring harness between A-05X front fog lamp relay connector (terminal Nos.1 and 2) and the battery.

- Check the power supply line for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Repair the wiring harness.

Step 7. Connector check: A-11X front-ECU connector

Q: Is the check result normal?

YES : Go to Step 8.

NO : Repair the defective connector.

Step 8. Check the wiring harness between A-05X front fog lamp relay connector terminal No.3 and A-11X front-ECU connector terminal No.11.

- Check the output lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 9.

NO : Repair the wiring harness.

Step 9. Retest the system.

Check that the front fog lamps illuminate normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE N-2: The rear fog lamps do not illuminate normally. <vehicles for Argentina>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

OPERATION

The ETACS-ECU operates this function in accordance with the input signals below.
- Tail lamp switch
- Headlamp switch
- Rear fog lamp switch

If the rear fog lamps do not illuminate normally, these input signal circuit(s) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the fog lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check that the tail lamps and headlamps operate.
Check that the tail lamps and headlamps illuminate normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Check the tail lamps and the headlamps (Refer to trouble symptom chart P.54B-25).

Step 2. Pulse check
Check the input signals below, which are related to the rear fog lamps.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
Tail lamp switch	When the lighting switch is turned to the TAIL position
Headlamp switch	When the lighting switch is turned to the HEADLAMP position
Rear fog lamp switch	When the rear fog lamp switch is turned from off to on

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
The tail lamp switch signal is not received. : Refer to Inspection Procedure P-5 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-130."
The headlamp switch signal is not received. : Refer to Inspection Procedure P-5 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-130."
The rear fog lamp switch signal is not received. : Refer to Inspection Procedure P-17 "The rear fog lamp switch signal is not received P.54B-143."

Step 3. Connector check: C-212 rear fog lamp relay connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the defective connector.

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Step 4. Check the rear fog lamp relay.
Refer to GROUP 54A – Rear fog lamp P.54A-57.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the rear fog lamp relay.

Step 5. Measure the voltage at the C-212 rear fog lamp relay connector.
(1) Remove the rear fog lamp relay, and measure at the relay box side.
(2) Check the voltage between the rear fog lamp relay connector and body earth.
- Voltage between C-212 rear fog lamp relay connector terminal No.3 and body earth
- Voltage between C-212 rear fog lamp relay connector terminal No.4 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

Step 6. Check the wiring harness between C-212 rear fog lamp relay connector (terminal Nos.3 and 4) and the battery.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-116 and junction block connectors C-201, C-204 and C-205, and repair if necessary.
- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 7. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the defective connector.

Step 8. Check the wiring harness between C-212 rear fog lamp relay connector terminal No.2 and C-219 ETACS-ECU connector terminal No.74.

NOTE: Prior to the wiring harness inspection, check junction block connector C-201, and repair if necessary.
- Check the output lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the wiring harness.

Step 9. Retest the system.
Check that the rear fog lamps illuminate normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE N-3: Any of the front fog lamps does not illuminate.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If any of the front fog lamps do not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

POSSIBLE CAUSES

- Burned-out front fog lamp bulb
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: A-24 <RH> or A-19 <LH> front fog lamp connector, or C-05 <front fog lamp indicator lamp> combination meter connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

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Step 2. Check the bulbs of the front fog lamps or the front fog lamp indicator lamp.
Check the bulb(s) of the defective lamp.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the bulb(s) of the defective lamp.

Step 3. Measure the resistance at A-24 <RH> or A-19 <LH> front fog lamp connector, or C-05 <front fog lamp indicator lamp> combination meter connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Check the resistance between the lamp connector and body earth.
- Resistance between A-24 <RH> front fog lamp connector terminal No.2 and body earth
- Resistance between A-19 <LH> front fog lamp connector terminal No.2 and body earth
- Resistance between C-05 <front fog lamp indicator lamp> combination meter connector terminal No.12 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness from A-24 <RH> or A-19 <LH> front fog lamp connector terminal No.2 or C-05 <front fog lamp indicator lamp> combination meter connector terminal No.12 to body earth.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: A-05X fog lamp relay connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from A-24 <RH> or A-19 <LH> front fog lamp connector terminal No.1 or C-05 <front fog lamp indicator lamp> combination meter connector terminal No.7 to A-05X fog lamp relay connector terminal No.4.
NOTE: Prior to the wiring harness inspection, check intermediate connector C-116 <front fog lamp indicator lamp>, and repair if necessary.
- Check the output lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the fog lamp and the front fog lamp indicator lamp illuminate normally.

Q: Is the check result normal?
The lamps illuminate normally at both high and low beams. : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
The fog lamps do not illuminate. : Go to Step 8.
The front fog lamp indicator lamp does not illuminate. : Replace the combination meter.

Step 8. Connector check: A-24-1 <RH> or A-19-1 <LH> front fog lamp connector

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the defective connector.

Step 9. Check the wiring harness from A-24 <RH> or A-19 <LH> front fog lamp connector terminal No.1 to A-24-1 <RH> or A-19-1 <LH> front fog lamp connector terminal No.1.
- Check the output lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 10.
NO : Repair the wiring harness.

Step 10. Check the wiring harness from A-24 <RH> or A-19 <LH> front fog lamp connector terminal No.2 to A-24-1 <RH> or A-19-1 <LH> front fog lamp connector terminal No.2.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : Replace the fog lamp(s).
NO : Repair the wiring harness.

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INSPECTION PROCEDURE N-4: Any of the rear fog lamps does not illuminate. <vehicles for Argentina>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If any of the rear fog lamps do not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

POSSIBLE CAUSES

- Burned-out rear fog lamp bulb
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: F-12 rear fog lamp connector or C-05 <rear fog lamp indicator lamp> combination meter connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the bulbs of the rear fog lamps or the rear fog lamp indicator lamp.

Check the bulb(s) of the defective lamp.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the bulb(s) of the defective lamp.

Step 3. Measure the resistance at the F-12 rear fog lamp connector or C-05 <fog lamp indicator lamp> combination meter connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Check the resistance between the lamp connector and body earth.
- Resistance between F-12 rear fog lamp relay connector terminal No.1 and body earth
- Resistance between C-05 <rear fog lamp indicator lamp> combination meter connector terminal No.12 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness from F-12 rear fog lamp connector terminal No.1, C-05 <rear fog lamp indicator lamp> combination meter connector terminal No.12 to body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector F-09 <rear fog lamp>, and repair if necessary.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: C-212 rear fog lamp relay connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from F-12 rear fog lamp connector terminal No.2, C-05 <rear fog lamp indicator lamp> combination meter connector terminal No.16 to C-212 rear fog lamp relay connector terminal No.1.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-117 <rear fog lamp>, F-09 <rear fog lamp> and junction block connector C-201 <rear fog lamp and rear fog lamp indicator lamp>, and repair if necessary.
- Check the output lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.

Check that the rear fog lamp and the rear fog lamp indicator lamp illuminate normally.

Q: Is the check result normal?
The lamps illuminate normally at both high and low beams. : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
The rear fog lamps do not illuminate. : Replace the rear fog lamp(s).
The rear fog lamp indicator lamp does not illuminate. : Replace the combination meter.

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INTERIOR LAMP

INSPECTION PROCEDURE O-1: The front or rear room lamp does not illuminate or extinguish normally. <Vehicles without keyless entry system>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.
- Ignition switch (IG1)
- All of the door switches
- Driver's door lock actuator

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the door switches
- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power supply circuit.
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."

Step 2. Pulse check
Check the input signals below, which are related to the front and rear room lamps.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
All of the door switches	A door is opened when all the doors are closed
Driver's door lock actuator switch	When the driver's door is unlocked or locked

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
All the door switch signals are not received. : Refer to Inspection Procedure P-12 "All the door switch signals are not received <LH drive vehicles>P.54B-137." Refer to Inspection Procedure P-12 "All the door switch signals are not received <RH drive vehicles>P.54B-138."
The driver's door lock actuator switch signal is not received. : Refer to Inspection Procedure P-13 "The driver's door lock actuator switch signal is not received <LH drive vehicles>P.54B-139." Refer to Inspection Procedure P-13 "The driver's door lock actuator switch signal is not received <RH drive vehicles>P.54B-140."

Step 3. Connector check: D-05 front room lamp connector, D-11 rear room lamp connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the defective connector.

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Step 4. Check the bulbs of the front or rear room lamps.
Check that the front or rear room lamp bulbs are not burned out.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the front or rear room lamp bulb.

Step 5. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from C-217 ETACS-ECU connector terminal Nos.5 and 6 to D-05 front room lamp connector terminal Nos.2 and 1.

NOTE: Prior to the wiring harness inspection, check junction block connector C-210, and repair if necessary.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Check the wiring harness from C-217 ETACS-ECU connector terminal Nos.5 and 6 to D-11 rear room lamp connector terminal Nos.2 and 1.

NOTE: Prior to the wiring harness inspection, check junction block connector C-210, and repair if necessary.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the wiring harness.

Step 8. Retest the system.
Check that the front or rear room lamp illuminates and extinguishes normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE O-2: The front and rear room lamp do not illuminate or extinguish normally. <Vehicles with keyless entry system>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.
- Ignition switch (IG1)
- Key reminder switch
- All of the door switches
- Driver's door lock actuator
- Interior lamp loaded signal

If this function does not work normally, these input signal circuit(s), the interior lamp automatic shutdown function or the ETACS-ECU may be defective. The delay-off setting of this function can be changed by the adjustment function (default setting; 15 seconds).

POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the door switches
- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the adjustment function.
Check that the room lamp delay-off time has been set to other than "0 second" by the adjustment function.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Use the adjustment function to set the room lamp delay-off time to other than "0 second." Refer to P.54B-155.

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Step 2. Check the power supply circuit.
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."

Step 3. Pulse check
Check the input signals below, which are related to the front and rear room lamps.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
All of the door switches	A door is opened when all the doors are closed
Driver's door lock actuator switch	When the driver's door is unlocked or locked
Interior lamp loaded signal	When a load is applied through multi-purpose fuse No.18

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 4.
The ignition switch (IG1) signal is not received. : Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
All the door switch signals are not received. : Refer to Inspection Procedure P-12 "All the door switch signals are not received <LH drive vehicles>P.54B-137." Refer to Inspection Procedure P-12 "All the door switch signals are not received <RH drive vehicles>P.54B-138."
The driver's door lock actuator switch signal is not received. : Refer to Inspection Procedure P-13 "The driver's door lock actuator switch signal is not received <LH drive vehicles>P.54B-139." Refer to Inspection Procedure P-13 "The driver's door lock actuator switch signal is not received <RH drive vehicles>P.54B-140."
Interior lamp loaded signal is not detected. : Refer to Inspection Procedure P-18 "The interior lamp loaded signal is not detected P.54B-144."

Step 4. Connector check: D-05 front room lamp connector, D-11 rear room lamp connector

Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the defective connector.

Step 5. Check the bulbs of the front or rear room lamps.
Check that the front or rear room lamp bulbs are not burned out.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Replace the front or rear room lamp bulb.

Step 6. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the defective connector.

Step 7. Check the wiring harness from C-217 ETACS-ECU connector terminal Nos.5 and 6 to D-05 front room lamp connector terminal Nos.2 and 1.

NOTE: Prior to the wiring harness inspection, check junction block connector C-210, and repair if necessary.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the wiring harness.

Step 8. Check the wiring harness from C-217 ETACS-ECU connector terminal Nos.5 and 6 to D-11 rear room lamp connector terminal Nos.2 and 1.

NOTE: Prior to the wiring harness inspection, check junction block connector C-210, and repair if necessary.

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the wiring harness.

Step 9. Retest the system.
Check that the front or rear room lamp illuminates and extinguishes normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE O-3: Interior lamp automatic shutoff function does not work normally. <Vehicles with keyless entry system>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates the interior lamp automatic shutdown function in accordance with the input signals below.

- Ignition switch (ACC)
- Ignition switch (IG1)
- Driver's door switch
- All of the door switches
- Interior lamp loaded signal

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective. Note that this function can be disabled/enabled by the adjustment function (default setting; enabled).

POSSIBLE CAUSES

- Malfunction of the door switches
- Malfunction of the room lamp
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the adjustment function.
Check that the interior lamp automatic shutdown function has been enabled by using the adjustment function.

Q: Is the check result normal?
YES : . Go to Step 2.
NO : . Enable the interior lamp automatic shutdown function by using the adjustment function. Refer to P.54B-155.

Step 2. Check the power supply circuit.
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

Q: Is the check result normal?
YES : . Go to Step 3.
NO : . Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."

Step 3. Pulse check
Check the input signals below, which are related to the front and rear room lamps.

System switch	Check condition
Ignition switch (ACC)	When turned from the LOCK (OFF) position to the ACC position
Ignition switch (IG1)	When turned from ACC to ON
Driver's door switch	Driver's door is opened while all the other doors are closed.
All of the door switches	A door is opened when all the doors are closed
Interior lamp loaded signal	When a load is applied through multi-purpose fuse No.18

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : . Go to Step 4.
The ignition switch (ACC) signal is not received. : . Refer to Inspection Procedure P-1 "The ignition switch (ACC) signal is not received P.54B-126."
The ignition switch (IG1) signal is not received. : . Refer to Inspection Procedure P-2 "The ignition switch (IG1) signal is not received P.54B-127."
The driver's door switch signal is not received. : . Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <LH drive vehicles>P.54B-128." Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <RH drive vehicles>P.54B-129."
All the door switch signals are not received. : . Refer to Inspection Procedure P-12 "All the door switch signals are not received <LH drive vehicles>P.54B-137." Refer to Inspection Procedure P-12 "All the door switch signals are not received <RH drive vehicles>P.54B-138."
Interior lamp loaded signal is not detected : . Refer to Inspection Procedure P-18 "The interior lamp loaded signal is not detected P.54B-144."

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Step 4. Retest the system.
Check that the interior lamp automatic shutdown function works normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE O-4: The door-ajar warning lamp does not illuminate/extinguish normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM
If the door-ajar warning lamp does not work normally, the input signal circuits from all the door switches or the ETACS-ECU may be defective.

POSSIBLE CAUSES
- All the door switches are defective.
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation of the room lamp.
Check that the room lamps illuminate and extinguish normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure O-1 "The front or rear room lamp does not illuminate or extinguish <vehicles without keyless entry system>P.54B-120 ." Or refer to Inspection Procedure O-2 "The front or rear room lamp does not illuminate or extinguish <vehicles with keyless entry system>P.54B-121."

Step 2. Pulse check
Check the input signals below, which are related to the door-ajar warning lamp.

System switch	Check condition
Driver's door switch	Driver's door is opened while all the other doors are closed.
All of the door switches	A door is opened when all the doors are closed

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The driver's door switch signal is not received. : Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <LH drive vehicles>P.54B-128." Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <RH drive vehicles>P.54B-129."
All the door switch signals are not received. : Refer to Inspection Procedure P-12 "All the door switch signals are not received <LH drive vehicles>P.54B-137." Refer to Inspection Procedure P-12 "All the door switch signals are not received <RH drive vehicles>P.54B-138."

Step 3. Connector check: C-05 combination meter connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the defective connector.

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Step 4. Check the door-ajar warning lamp bulb.
Check the door-ajar warning lamp bulb.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the door-ajar warning lamp bulb.

Step 5. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from C-219 ETACS-ECU connector terminal Nos.53 and 71 to C-05 combination meter connector terminal Nos.21 and 22.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Replace the ETACS-ECU, and then check that the door-ajar warning lamp illuminates/extinguishes normally.
(1) Replace the ETACS-ECU.
(2) Check that the door-ajar warning lamp illuminates/extinguishes normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the combination meter.

INPUT SIGNAL PROCEDURES

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INSPECTION PROCEDURE P-1: The ignition switch (ACC) signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the ignition switch (ACC) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Windshield wiper and washer
- Rear wiper and washer
- Interior lamp automatic shutdown function

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Measure the voltage at the C-217 ETACS-ECU connector.

(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Ignition switch: ACC position
(3) Voltage between C-217 ETACS-ECU connector terminal No.18 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : . Go to Step 4.
NO : . Go to Step 3.

Step 3. Check the wiring harness between C-217 ETACS-ECU connector terminal No.18 and the ignition switch (ACC).

NOTE: Prior to the wiring harness inspection, check junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 4. Retest the system.

Check that the ignition switch (ACC) signal is received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-2: The ignition switch (IG1) signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the ignition switch (IG1) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Ignition key reminder buzzer function <Vehicles for GCC only>
- Lamp reminder function
- Power window timer function
- Sunroof timer function
- Ignition key cylinder illumination lamp
- Seat belt warning lamp <Vehicles for Australia only>
- Headlamp automatic shutdown function
- Turn-signal lamp
- Room lamps

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Measure the voltage at the C-217 ETACS-ECU connector.

(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Voltage between C-217 ETACS-ECU connector terminal No.8 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 4.
NO : Go to Step 3.

Step 3. Check the wiring harness between C-217 ETACS-ECU connector terminal No.8 and the ignition switch (IG1).

NOTE: Prior to the wiring harness inspection, check junction block connector C-203, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 4. Retest the system.

Check that the ignition switch (IG1) signal is received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-3: The inhibitor switch (reverse position) signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the inhibitor switch (reverse position) is used to operate the rear wiper. If the signal is abnormal, the rear wiper will not work normally.

POSSIBLE CAUSES

- Malfunction of the inhibitor switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: B-22 inhibitor switch connector and C-220 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

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Step 2. Check the inhibitor switch
Check the inhibitor switch (Refer to GROUP 23 – On-vehicle Service P.23A-116).

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the inhibitor switch.

Step 3. Measure the voltage at the C-220 ETACS-ECU connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: ON
(3) Shift position: R position
(4) Voltage between C-220 ETACS-ECU connector terminal No.39 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Replace the ETACS-ECU.
NO : Go to Step 4.

Step 4. Measure the voltage at the B-22 inhibitor switch connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: ON
(3) Voltage between B-22 inhibitor switch connector terminal No.8 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 6.

Step 5. Check the wiring harness between B-22 inhibitor switch connector terminal No.7 and C-220 ETACS-ECU connector terminal No.39.
NOTE: Prior to the wiring harness inspection, check joint connector C-02 and intermediate connector C-105, and repair if necessary.
- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 6. Check the wiring harness between B-22 inhibitor switch connector terminal No.8 and the ignition switch (IG1).
NOTE: Prior to the wiring harness inspection, check intermediate connector C-106, joint connector C-16 and junction block connectors C-202 and C-203, and repair if necessary.
- Check the power supply line to the ignition switch (IG1) for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the inhibitor switch (reverse position) signal is received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-4: The driver's door switch signal is not received. <LH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM
Input signal from the driver's door switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.
- Ignition key reminder buzzer function <Vehicles for GCC only>
- Lamp reminder function
- Key reminder function
- Power window timer function
- Sunroof timer function
- Ignition key cylinder illumination lamp
- Headlamp automatic shutdown function
- Room lamps

POSSIBLE CAUSES
- Malfunction of the driver's door switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

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DIAGNOSIS PROCEDURE

Step 1. Check the installation condition.
Check that the door switch (front, LH) is installed on the body correctly.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Correct the installation condition.

Step 2. Connector check: D-28 door switch (front, LH) connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Check the door switch (front, LH).
Refer to GROUP 42 – Door P.42-32.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the door switch (front, LH).

Step 4. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the defective connector.

Step 5. Check the wiring harness between D-28 door switch (front, LH) connector terminal No.3 and C-217 ETACS-ECU connector terminal No.10.

NOTE: Prior to the wiring harness inspection, check joint connector C-209, and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the wiring harness.

Step 6. Retest the system.
Check that the driver's door switch signal is received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-4: The driver's door switch signal is not received. <RH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the driver's door switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Ignition key reminder buzzer function <Vehicles for GCC only>
- Lamp reminder function
- Key reminder function
- Power window timer function
- Sunroof timer function
- Ignition key cylinder illumination lamp
- Headlamp automatic shutdown function
- Room lamps

POSSIBLE CAUSES

- Malfunction of the driver's door switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the installation condition.
Check that the door switch (front, RH) is installed on the body correctly.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Correct the installation condition.

Step 2. Connector check: D-42 door switch (front, RH) connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Check the door switch (front, RH).
Refer to GROUP 42 – Door P.42-32.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the door switch (front, RH).

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Step 4. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the defective connector.

Step 5. Check the wiring harness between D-42 door switch (front, RH) connector terminal No.3 and C-217 ETACS-ECU connector terminal No.10.

NOTE: Prior to the wiring harness inspection, check joint connector C-221, and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the wiring harness.

Step 6. Retest the system.
Check that the driver's door switch signal is received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-5: The column switch (lighting and turn-signal lamp switch) signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the column switch (lighting switch) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Lamp reminder function
- Headlamp and tail lamp
- Fog lamp
- Turn-signal lamp

POSSIBLE CAUSES

- Malfunction of the column switch
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the column switch connector.
Check that the wiper and washer switch connector, the lighting switch connector and the switch body connector are in good condition.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the column switch (lighting switch and switch body).
Refer to GROUP 54A – Column switch P.54A-107.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the column switch.

Step 3. M.U.T.-II/III diagnosis code.
Check that the ETACS-ECU sets a diagnosis code.

Q: Is the diagnosis code set?
YES : Refer to diagnosis code chart P.00-5.
NO : Go to Step 4.

Step 4. Retest the system.
Replace the column switch, and check if the column switch (lighting and turn-signal switch) sends signal.
(1) Replace the column switch.
(2) Check if the column switch (lighting and turn-signal switch) sends signal.

Q: Is the check result normal?
YES : The procedure is complete.
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE P-6: The column switch (windshield wiper/washer and rear wiper/washer switch) signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the column switch (wiper switch) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Windshield wiper and washer
- Rear wiper and washer

POSSIBLE CAUSES

- Malfunction of the column switch
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-II/III diagnosis code.
Check that the ETACS-ECU sets a diagnosis code.

Q: Is the diagnosis code set?
YES : Refer to diagnosis code chart P.00-5.
NO : Go to Step 2.

Step 2. Retest the system.
Replace the column switch, and check if the column switch (windshield wiper/washer and rear wiper/washer switch) sends signal.
(1) Replace the column switch.
(2) Check if the column switch (windshield wiper/washer and rear wiper/washer switch) sends signal.

Q: Is the check result normal?
YES : The procedure is complete.
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-7: The windshield intermittent wiper volume signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

The intermittent wiper interval is calculated in accordance with the input signal from the windshield intermittent wiper volume. If this signal is abnormal, the wiper interval can not be adjusted.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: C-310 column switch connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Measure the resistance at the C-310 column switch connector.
(1) Disconnect the connector, and measure at the column switch side.
(2) Resistance between C-310 column switch connector terminal No.6 and body earth

OK: The resistance should rise from 0 to 1 kΩ when the windshield intermittent wiper volume is rotated from "Fast" to "Slow".

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the column switch.

Step 3. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the defective connector.

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Step 4. Check the wiring harness between C-310 column switch connector terminal No.6 and C-219 ETACS-ECU connector terminal No.66.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the wiring harness.

Step 5. Retest the system.
Check that the windshield intermittent wiper volume is sending a correct signal.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-8: When the power window main switch is operated, the switch signals are not received. <Vehicles for Argentina>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the power window main switch is used in order to check the power window main switch and confirm how the system is communicating with the ETACS-ECU. If the communication line is defective, the power windows will not work normally.

POSSIBLE CAUSES

- Malfunction of the power window main switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation by using the power window main switch.
Check if each window can be operated by means of the power window main switch.

Q: Can each power window be operated by means of the power window main switch?
YES : Go to Step 2.
NO : Go to Step 5.

Step 2. Connector check: C-219 ETACS-ECU connector and E-05 power window main switch connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Check the wiring harness between C-219 ETACS-ECU connector terminal No.59 and E-05 power window main switch connector terminal No.4.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-118, E-12 and joint connector C-02, and repair if necessary.

- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the wiring harness.

Step 4. Replace the power window main switch, and then retest the system.
Replace the power window main switch, and check that the power window main switch signal is received.
(1) Replace the power window main switch.
(2) Check that the power window main switch signal is received.

Q: Is the check result normal?
YES : The procedure is complete.
NO : Replace the ETACS-ECU.

Step 5. Connector check: E-05 power window main switch connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

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Step 6. Measure the voltage at the E-05 power window main switch connector.
(1) Remove the power window main switch, and measure at the wiring harness side.
(2) Voltage between E-05 power window main switch connector terminal No.6 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 9.
NO : Go to Step 7.

Step 7. Connector check: C-208 power window relay connector

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the defective connector.

Step 8. Check the wiring harness between C-208 power window relay connector terminal No.4 and E-05 power window main switch connector terminal No.6.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-118, E-12 and junction block connector C-203, and repair if necessary.
- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 9. Measure the resistance at the E-05 power window main switch connector.
(1) Remove the power window main switch, and measure at the wiring harness side.
(2) Continuity between E-05 power window main switch connector terminal No.2 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 11.
NO : Go to Step 10.

Step 10. Check the wiring harness between E-05 power window main switch connector terminal No.2 and body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connectors C-118 and E-12, and repair if necessary.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 11. Retest the system.
Check that each switch signal is received by operating the power window main switch.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the power window main switch.

INSPECTION PROCEDURE P-9: When the sunroof switch is operated, the switch signals are not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

If the input signal from the sunroof switch is abnormal, the sunroof input check response signal will not be sent to the SWS communication line.

POSSIBLE CAUSES

- Malfunction of the sunroof motor assembly
- Malfunction of the sunroof switch
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation condition of the sunroof.
Check that the sunroof works normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure F-1 "Sunroof does not work at all P.54B-79."

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Step 2. Connector check: D-06 sunroof switch connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Check the sunroof switch.
Check the sunroof switch (Refer to GROUP 42 – Sunroof P.42-64).

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the sunroof switch.

Step 4. Measure the resistance at the D-06 sunroof switch connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Continuity between terminal 4 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 6.
NO : Go to Step 5.

Step 5. Check the wiring harness between D-06 sunroof motor switch connector terminal No.4 and body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-218, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 6. Connector check: D-09 sunroof motor assembly connector

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the defective connector.

Step 7. Check the wiring harness from D-09 sunroof motor assembly connector terminal Nos.6, 7 and 8 to D-06 sunroof switch connector terminal Nos.6, 3 and 5.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the wiring harness.

Step 8. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the defective connector.

Step 9. Check the wiring harness between D-09 sunroof motor assembly connector terminal No.10 and C-219 ETACS-ECU connector terminal No.59.

NOTE: Prior to the wiring harness inspection, check joint connector C-02 and intermediate connector C-218, and repair if necessary.

- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 10.
NO : Repair the wiring harness.

Step 10. Retest the system.
Check that each switch signal is received by operating the sunroof switch.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the sunroof motor assembly.

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INSPECTION PROCEDURE P-10: The key reminder switch signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the key reminder switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Ignition key reminder buzzer function <Vehicles for GCC only>
- Key reminder function
- Keyless entry system
- Ignition key cylinder illumination lamp
- Room lamps

POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: C-304 key reminder switch connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the key reminder switch.
Refer to GROUP 54A – Ignition switch P.54A-107.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the key reminder switch.

Step 3. Measure the resistance at the C-304 key reminder switch connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between C-304 key reminder switch connector terminal No.4 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : . Go to Step 5.
NO : . Go to Step 4.

Step 4. Check the wiring harness between C-304 key reminder switch connector terminal No.4 and the body earth.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: C-220 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness between C-304 key reminder switch connector terminal No.6 and C-220 ETACS-ECU connector terminal No.30.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the key reminder switch signal is received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE P-11: The hazard warning lamp switch signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the hazard warning lamp switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Keyless entry system (encrypted code registration)
- Hazard warning lamp

POSSIBLE CAUSES

- Malfunction of the hazard warning lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: C-22 hazard warning lamp switch connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the hazard warning lamp switch.
Refer to GROUP 54A – Hazard warning lamp switch P.54A-64.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the hazard warning lamp switch.

Step 3. Measure the resistance at the C-22 hazard warning lamp switch connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between C-22 hazard warning lamp switch connector terminal No.2 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : . Go to Step 5.
NO : . Go to Step 4.

Step 4. Check the wiring harness between C-22 hazard warning lamp switch connector terminal No.2 and the body earth.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness between C-219 ETACS-ECU connector terminal No.55 and C-22 hazard warning lamp switch connector terminal No.1.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the hazard warning lamp switch signal is received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE P-12: All the door switch signals are not received. <LH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signals from all the door switches are used to operate the functions below. If the signal(s) are abnormal, these functions will not work normally.

- Keyless entry system
- Room lamps

POSSIBLE CAUSES

- Malfunction of the door switches
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Pulse check
Check the input signal from the driver's door switch.

System switch	Check condition
Driver's door switch	When the driver's door is opened

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <LH drive vehicles>P.54B-128."

Step 2. Connector check: D-28 <front, LH>, D-42 <front, RH>, D-10 <rear, RH> or D-20 <rear, LH> door switch connectors or F-07 <tailgate> tailgate switch connector, and C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Check the installation condition.
Check that the door switch is installed on the body correctly.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Correct the installation condition.

Step 4. Check the door switch.
Refer to GROUP 42 – Door P.42-32.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the door switch.

Step 5. Check the wiring harness from terminal No.2 of the D-28 <front, LH>, D-42 <front, RH>, D-10 <rear, RH> or D-20 <rear LH> door switch connector or terminal No.1 of the F-07 <tailgate> tailgate switch connector to terminal No.7 of the C-217 ETACS-ECU connector.

NOTE: Prior to the wiring harness inspection, check intermediate connector F-05 <tailgate> or C-13 <RH> and junction block connector C-205 <RH> or C-209 <LH and tailgate>, and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the wiring harness between each of the door switches and the ETACS-ECU.

Step 6. Retest the system.
Check that all the driver's door switch signals are received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE P-12: All the door switch signals are not received. <RH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signals from all the door switches are used to operate the functions below. If the signal(s) are abnormal, these functions will not work normally.

- Keyless entry system
- Room lamps

POSSIBLE CAUSES

- Malfunction of the door switches
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Pulse check
Check the input signal from the driver's door switch.

System switch	Check condition
Driver's door switch	When the driver's door is opened

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure P-4 "The driver's door switch signal is not received <RH drive vehicles>P.54B-129."

Step 2. Connector check: D-42 <front, RH>, D-28 <front, LH>, D-10 <rear, RH> or D-20 <rear, LH> door switch connectors or F-07 <tailgate> tailgate switch connector, and C-217 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Check the installation condition.
Check that the door switch is installed on the body correctly.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Correct the installation condition.

Step 4. Check the door switch.
Refer to GROUP 42 – Door P.42-32.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the door switch.

Step 5. Check the wiring harness from terminal No.2 of the D-42 <front, RH>, D-28 <front, LH>, D-10 <rear, RH> or D-20 <rear LH> door switch connector or terminal No.1 of the F-07 <tailgate> tailgate switch connector to terminal No.7 of the C-217 ETACS-ECU connector.

NOTE: Prior to the wiring harness inspection, check intermediate connector F-05 <tailgate> or C-117 <LH> and junction block connector C-205 <LH> or C-221 <RH and tailgate>, and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the wiring harness between each of the door switches and the ETACS-ECU.

Step 6. Retest the system.
Check that all the driver's door switch signals are received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE P-13: The driver's door lock actuator switch signal is not received. <LH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the driver's door lock actuator is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Key reminder function
- Central door locking
- Keyless entry system
- Room lamps

POSSIBLE CAUSES

- Malfunction of the front door lock actuator (LH)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: E-11 front door lock actuator (LH) connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the front door lock actuator (LH).
Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the front door lock actuator (RH).

Step 3. Measure the resistance at the E-11 front door lock actuator (LH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between E-11 front door lock actuator (LH) connector terminal No.1 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness between E-11 front door lock actuator (LH) connector terminal No.1 and body earth

NOTE: Prior to the wiring harness inspection, check intermediate connector C-118, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: C-220 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness between E-11 front door lock actuator (LH) connector terminal Nos.2 and 3 and C-220 ETACS-ECU connector terminal Nos.35 and 36.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-118, and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the driver's door lock actuator switch signal is received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE P-13: The driver's door lock actuator switch signal is not received. <RH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the driver's door lock actuator is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Key reminder function
- Central door locking
- Keyless entry system
- Room lamps

POSSIBLE CAUSES

- Malfunction of the front door lock actuator (RH)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: E-25 front door lock actuator (RH) connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the front door lock actuator (RH).
Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the front door lock actuator (RH).

Step 3. Measure the resistance at the E-25 front door lock actuator (RH) connector.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between E-25 front door lock actuator (RH) connector terminal No.3 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness between E-25 front door lock actuator (RH) connector terminal No.3 and body earth

NOTE: Prior to the wiring harness inspection, check intermediate connector C-30, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: C-220 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from E-25 front door lock actuator (RH) connector terminal Nos.1 and 2 to C-220 ETACS-ECU connector terminal Nos.35 and 36.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-30, and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the driver's door lock actuator switch signal is received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

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INSPECTION PROCEDURE P-14: The vehicle speed signal is not received. <Except vehicles for GCC>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

The vehicle speed signal is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Windshield wiper and washer (vehicle speed-dependent wiper function)

POSSIBLE CAUSES

- Malfunction of the engine-A/T-ECU
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check if the A/T related diagnosis code is set.

Q: Is the diagnosis code set?
YES : Diagnose the automatic transmission control system. (Refer to GROUP 23 – Troubleshooting P.23A-21 <2400-4G64> or P.23A-22 <2400-4G69>)
NO : Go to Step 2.

Step 2. Connector check: C-110 engine-A/T-ECU connector and C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Check the wiring harness between C-110 engine-A/T-ECU connector terminal No.80 and C-219 ETACS-ECU connector terminal No.63.

NOTE: Prior to the wiring harness inspection, check joint connector C-02 <LH drive vehicles> and intermediate connector C-105, and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the wiring harness.

Step 4. Check the speedometer.
Check that the speedometer works normally.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the engine-A/T-ECU.

Step 5. Retest the system.
Check that the vehicle speed signal is received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-15: Each switch signal of the keyless entry transmitter is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the keyless entry transmitter is used to operate the keyless entry system. If the signal is abnormal, the keyless entry system will not work normally.

POSSIBLE CAUSES

- Malfunction of the keyless entry transmitter
- Defective battery of the keyless entry transmitter
- Malfunction of the ETACS-ECU

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DIAGNOSIS PROCEDURE

Step 1. Pulse check
Check whether the ETACS-ECU receives signal from a transmitter or not. For this check, you should use the 2-button-type transmitter (integrated with a key), which cover screw is silver and has already been registered.

NOTE: For how to register the keyless entry transmitter encrypted code, refer to GROUP 42 – On-vehicle Service P.42-56.

System switch	Check condition
Keyless entry transmitter "LOCK/UNLOCK" switch	When the switch is turned from off to on

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Go to Step 4.

Step 2. Check the transmitter battery.
Refer to GROUP 42 – Keyless entry system P.42-60.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the keyless entry transmitter battery.

Step 3. Register the encrypted code, and then retest the system.
(1) Register the keyless entry transmitter again.
(2) Check that each signal is received from the keyless entry transmitter.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the keyless entry transmitter.

Step 4. Retest the system.
Check that each signal is received from the keyless entry transmitter.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-16: The front fog lamp switch signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the front fog lamp switch is used to operate the front fog lamps. If the signal is abnormal, the front fog lamps will not illuminate and extinguish normally.

POSSIBLE CAUSES

- Malfunction of the fog lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: C-03 fog lamp switch connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the front fog lamp switch.
Refer to GROUP 54A – Front fog lamp P.54A-55.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the fog lamp switch.

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Step 3. Measure the resistance at the C-03 fog lamp switch connector.
(1) Remove the fog lamp switch, and measure at the wiring harness side.
(2) Continuity between C-03 fog lamp switch connector terminal No.2 <LH drive vehicles> or 6 <RH drive vehicles or vehicles with rear fog lamps> and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness from C-03 fog lamp switch connector terminal No.2 <LH drive vehicles> or 6 <RH drive vehicles or vehicles with rear fog lamps> to body earth.
- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from C-219 ETACS-ECU connector No.54 to C-03 fog lamp switch connector terminal No.1 <LH drive vehicles> or 5 <RH drive vehicles or vehicles with rear fog lamps>.
- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the front fog lamp switch signal is received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-17: The rear fog lamp switch signal is not received. <Vehicles for Argentina>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM
Input signal from the rear fog lamp switch is used to operate the rear fog lamps. If the signal is abnormal, the rear fog lamps will not illuminate and extinguish normally.

POSSIBLE CAUSES
- Malfunction of the fog lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: C-03 fog lamp switch connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the rear fog lamp switch.
Refer to GROUP 54A – Rear fog lamp P.54A-57.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the fog lamp switch.

Step 3. Measure the resistance at the C-03 fog lamp switch connector.
(1) Remove the fog lamp switch, and measure at the wiring harness side.
(2) Continuity between C-03 fog lamp switch connector terminal No.2 and body earth

OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

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Step 4. Check the wiring harness between C-03 fog lamp switch connector terminal No.2 and body earth.

- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Repair the wiring harness.

Step 5. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the defective connector.

Step 6. Check the wiring harness between C-219 ETACS-ECU connector terminal No.21 and C-03 fog lamp switch connector terminal No.1.

- Check the input line for open circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Step 7. Retest the system.

Check that the rear fog lamp switch signal is received normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-18: The interior lamp loaded signal is not detected.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

The interior lamp automatic shutdown function operates in accordance with the interior lamp loaded signal. If this signal is abnormal, the functions below will not work normally.

- Ignition key cylinder illumination lamp
- Room lamps

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged wiring harness or connector(s)

DIAGNOSIS PROCEDURE

Step 1. Check the power supply circuit.

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-33."

Step 2. Connector check: C-217 ETACS-ECU connector

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the defective connector.

Step 3. Measure the voltage at the C-217 ETACS-ECU connector.

(1) Remove the ETACS-ECU, and measure at the

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Step 4. Check the wiring harness between C-217 ETACS-ECU connector terminal No.8 and the ignition switch (IG1).

NOTE: Prior to the wiring harness inspection, check junction block connector C-203, and repair if necessary.

- Check the power supply line to the ignition switch (IG1) for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Measure the voltage at the C-217 ETACS-ECU connector.

(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Turn the ignition switch to the ACC position.
(3) Voltage between terminal 4 and body earth

OK: Battery positive voltage

Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

Step 6. Check the wiring harness between C-217 ETACS-ECU connector terminal No.4 and the ignition switch (ACC).

NOTE: Prior to the wiring harness inspection, check junction block connector C-202 <LH drive vehicles>, C-203 <RH drive vehicles> or intermediate connector C-116 <LH drive vehicles>, and repair if necessary.

- Check the power supply line to the ignition switch (ACC) for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 7. Retest the system.

Check that the interior lamp loaded signal is received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-19: The front passenger's door lock key cylinder switch signal is not detected. <LH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the front passenger's door lock key cylinder switch is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

POSSIBLE CAUSES

- Malfunction of the front passenger's door lock key cylinder switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: E-18 door lock key cylinder switch (RH) connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the door lock key cylinder switch (RH).

Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the door lock key cylinder switch (RH).

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Step 3. Measure the resistance at the E-18 door lock key cylinder switch (RH) connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between E-18 door lock key cylinder switch (RH) connector terminal No.2 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness between E-18 door lock key cylinder switch (RH) connector terminal No.2 and body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-15, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : Intermittent malfunction. (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).)
NO : Repair the wiring harness.

Step 5. Connector check: C-220 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from E-18 door lock key cylinder switch (RH) connector terminal Nos.1 and 3 to C-220 ETACS-ECU connector terminal Nos.28 and 27.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-15, and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.

Check that the passenger's door lock key cylinder switch signal is received normally.

Q: Is the check result normal?
YES : Intermittent malfunction. (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).)
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-19: The front passenger's door lock key cylinder switch signal is not detected. <RH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the front passenger's door lock key cylinder switch is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

POSSIBLE CAUSES

- Malfunction of the front passenger's door lock key cylinder switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: E-04 door lock key cylinder switch (LH) connector

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the door lock key cylinder switch (LH).

Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the door lock key cylinder switch (LH).

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Step 3. Measure the resistance at the E-04 door lock key cylinder switch (LH) connector.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance between E-04 door lock key cylinder switch (LH) connector terminal No.2 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness between E-04 door lock key cylinder switch (LH) connector terminal No.2 and body earth.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-34, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : Intermittent malfunction. (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: C-220 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from E-04 door lock key cylinder switch (LH) connector terminal Nos.1 and 3 to C-220 ETACS-ECU connector terminal Nos.27 and 28.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-34, and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.

Check that the passenger's door lock key cylinder switch signal is received normally.

Q: Is the check result normal?
YES : Intermittent malfunction. (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE P-20: The passenger’s door switch signal is not received. <Vehicles for Australia>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

COMMENTS ON TROUBLE SYMPTOM

Input signal from the passenger’s door switch is used to operate the power window timer function. If the signal is abnormal, the power window timer function will not work normally.

POSSIBLE CAUSES

- Malfunction of the passenger’s door switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the installation condition.

Check that the door switch (front, LH) is installed on the body correctly.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Correct the installation condition.

Step 2. Connector check: D-28 door switch (front, LH) connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

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Step 3. Check the door switch (front, LH).
Refer to GROUP 42 – Door P.42-32.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the door switch (front, LH).

Step 4. Connector check: C-219 ETACS-ECU connector

Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the defective connector.

Step 5. Check the wiring harness between D-28 door switch (front, LH) connector terminal No.3 and C-219 ETACS-ECU connector terminal No.65.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-117, and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the wiring harness.

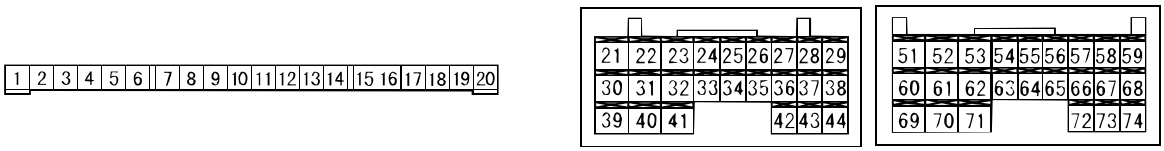
Step 6. Retest the system.
Check that the passenger's door switch signal is received normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

CHECK AT ECU TERMINAL

M1549001201149

ETACS-ECU



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NOTE: Terminal numbers 1 to 20 can not be measured as the ETACS-ECU is mounted on the junction block directly. The values are for reference only.

Terminal No.	Check item	Check condition	Normal condition
1	Output to the power window relay	When the power windows are operative	Battery positive voltage
2	Power supply to the central door locking system (battery positive voltage)	Always	Battery positive voltage
3	Earth (for ECU)	Always	0 V
4	Ignition switch (ACC)	Ignition switch: ACC	Battery positive voltage
5	Output to room lamp	When the room lamp is on	2 V or less
6	Power supply to interior lamp (battery positive voltage)	Always (when the interior lamp off function is off)	Battery positive voltage
7	Input from all the door switches	One of the door switches: ON (door open)	0 V
8	Power supply from ignition switch (IG1)	Ignition switch: ON	Battery positive voltage
9	Output to right turn-signal lamps	When right turn-signal lamps are on	Battery positive voltage
10	Input from driver's door switch	Driver's door switch: ON (door open)	0 V
11	Power supply to hazard warning lamp (battery positive voltage)	Always	Battery positive voltage
12	Output to central door locking (for locking the doors)	When the door lock actuators lock the doors	Battery positive voltage
13	Output to central door locking (for unlocking the doors other than the driver's door)	When the door lock actuators unlock the doors	Battery positive voltage
14	Output to left turn-signal lamps	When the left turn-signal lamps are on	Battery positive voltage
15	–	–	–
16	Output to rear wiper	When rear wiper is operating	Battery positive voltage
17	Input of rear wiper automatic stop signal	When rear wiper is operating	Battery positive voltage

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Terminal No.	Check item	Check condition	Normal condition
18	Power supply from ignition switch (ACC)	Ignition switch: ACC	Battery positive voltage
19	–	–	–
20	Battery power supply (for ECU)	Always	Battery positive voltage
21	Input from rear fog lamp switch	Rear fog lamp switch: ON	0 V
22	Output to central door locking (for unlocking the driver's door)	When the door lock actuators unlock the doors	Battery positive voltage
23	Rear washer output	When rear washer is operating	Battery positive voltage
24 to 28	–	–	–
29	Input of collision signal	–	–
30	Input to key reminder switch	Key reminder switch: ON (ignition key removed)	0 V
31 to 34	–	–	–
35	Input to driver's door lock actuator (lock switch)	Driver's door lock: Locked	0 V
36	Input to driver's door lock actuator (unlock switch)	Driver's door lock: Unlocked	0 V
37, 38	–	–	–
39	Input to inhibitor switch ("R" position)	Selector lever: R Ignition switch: ON	Battery positive voltage
40 to 44	–	–	–
51	Setting diagnosis code or sending input check signal	When diagnosis code is set (the M.U.T.-II/III is connected or the diagnosis connector No.1 is grounded)	0 to 12 V (pulse signal)
		When input check signal is sent	0 V, 12 V (input signal is fluctuating)
52	–	–	–
53	Output to door-ajar indicator lamp	When door-ajar indicator lamp is on	0 V
54	Input from front fog lamp switch	Front fog lamp switch: ON	0 V
55	Input from hazard warning lamp switch	Hazard warning lamp switch: ON	0 V
56	Earth (for sensor)	Always	0 V
57, 58	–	–	–
59	SWS communication line	Always	0 to 12 V (pulse signal)
60 to 62	–	–	–
63	Input of vehicle speed signal <Except vehicles for GCC>	When the vehicle is being driven	0 to 12 V (pulse signal)
64	–	–	–

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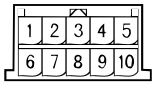
Terminal No.	Check item	Check condition	Normal condition
65	Input from passenger's door switch	Passenger's door switch: ON (door open)	0 V
66	Input from windshield intermittent wiper volume	Turn the ignition switch to the ACC position, and move the wiper volume from "Fast" to "Slow."	0 to 2.5 V
67	Input from diagnosis control	When M.U.T.-II/III is connected	0 V
68	Input of SWS request signal	Always	0 to 12 V (pulse signal)
69	Output to ignition key cylinder illumination lamp	When ignition key cylinder illumination is on	2 V or less
70	–	–	–
71	Power supply to interior lamp	Always (when the interior lamp off function is off)	Battery positive voltage
72	–	–	–
73	Output to seat belt warning lamp	When seat belt warning lamp is on	0 V
74	Output to rear fog lamp	When rear fog lamp is on	Battery positive voltage

COLUMN SWITCH



AC005555AB

Terminal No.	Check item	Check condition	Normal condition
1	Battery positive voltage	Always	Battery positive voltage
2	Input of SWS request signal	Always	0 to 12 V (pulse signal)
3	SWS communication line	Always	0 to 12 V (pulse signal)
4	Earth	Always	0 V
5	–	–	–
6	Output to windshield intermittent wiper volume	Ignition switch: ACC Move the wiper volume from "Fast" to "Slow."	0 to 2.5 V
7	–	–	–
8	Back-up output to windshield wiper switch	Windshield low-speed wiper switch or windshield high-speed wiper switch: ON	0 V
9	Power supply from ignition switch (IG1)	Ignition switch: ON	Battery positive voltage
10	Back-up output to headlamp switch	Headlamp switch: ON	0 V

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FRONT-ECU

AC103263AB

NOTE: Measurement is not possible as the front-ECU is mounted on the relay box directly. The values are for reference only.

Terminal No.	Check item	Check condition	Normal condition
1 to 3	–	–	–
4	Output to tail lamps	When the tail lamps are on	Battery positive voltage
5	Battery power supply (for ECU)	Always	Battery positive voltage
6	Output to low-beam headlamps	When low-beam headlamps are on	Battery positive voltage
7	Battery power supply (for tail lamps)	Always	Battery positive voltage
8, 9	Battery power supply (for headlamps)	Always	Battery positive voltage
10	Output to high-beam headlamps	When high-beam headlamps are on	Battery positive voltage
11	Output to front fog lamps	When front fog lamps are on	Battery positive voltage
21	Earth	Always	0 V
22	Power supply to the ignition switch (IG2)	Ignition switch: ON	Battery positive voltage
23	–	–	–
24	Output to windshield wiper (high speed operation)	When windshield wipers are operating at high speed	Battery positive voltage
25	Output to windshield wiper (low speed operation)	When windshield wipers are operating at low speed	Battery positive voltage
26	Back-up input from windshield wiper switch	Windshield low-speed wiper switch or windshield high-speed wiper switch: ON	0 V
27	Back-up input from headlamp switch	Headlamp switch: ON	0 V
28	Power supply from ignition switch (ACC)	Ignition switch: ACC	Battery positive voltage
29	Input of windshield wiper automatic stop signal	When windshield wipers are operating	Battery positive voltage
30	SWS communication line	Always	0 to 12 V (pulse signal)
31	Output to windshield washer	When windshield washer is operating	Battery positive voltage

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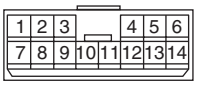
POWER WINDOW MAIN SWITCH



AC103264AE

Terminal No.	Check item	Check condition	Normal condition
1	Output to power window motor	–	–
2	Earth	Always	0 V
3	–	–	–
4	SWS communication line (to ETACS-ECU)	Always	0 to 12 V (pulse signal)
5	–	–	–
6	Power supply	Power window relay: ON	Battery positive voltage
7	Output to power window motor	–	–
8	Input from power window motor (pulse sensor earth)	–	0 V
9	Input from power window motor (pulse sensor signal)	When the power windows are operating	0 to 5 V (pulse signal)
10	Input from power window motor (pulse sensor signal)	When the power windows are operating	0 to 5 V (pulse signal)
11	SWS communication line (power window sub switch)	Power window relay: ON	0 to 12 V (pulse signal)
12	Input from power window motor (power supply to pulse sensor)	When the power windows are operating	5 V
13, 14	–	–	–

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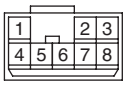
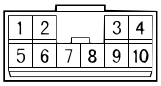
POWER WINDOW SUB SWITCH



AC103265AE

Terminal No.	Check item	Check condition	Normal condition
1	Earth	Always	0 V
2	Input from power window motor	–	–
3	Input from power window motor	–	–
4	Power supply	Power window relay: ON	Battery positive voltage
5	Output to power window motor	–	–
6	SWS communication line	Power window relay: ON	0 to 12 V (pulse signal)
7	Output to power window motor	–	–
8	Input from power window motor	–	–

SUNROOF MOTOR ASSEMBLY



AC005559AC

Terminal No.	Check item	Check condition	Normal condition
1	Battery power supply (for motor)	Always	Battery positive voltage
2	Power supply to the ignition switch (IG2)	Ignition switch: ON	Battery positive voltage
3, 4	–	–	–
5	Earth	Always	0 V
6	Input from sunroof switch (close or open)	Sunroof switch: Close/open	0 V
7	Input from sunroof switch (tilt-up)	Sunroof switch: Tilt up	0 V
8	Input from sunroof switch (open)	Sunroof switch: Open	0 V
9	–	–	–
10	SWS communication line	Always	0 to 12 V (pulse signal)

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ON-VEHICLE SERVICE

ADJUSTMENT FUNCTION <VEHICLES WITH KEYLESS ENTRY SYSTEM>

M1549002500991

According to the adjustment mode entry conditions of the input switch, the following functions can be adjusted. The data on adjustment will be memorized even if the battery is removed.

- Keyless entry system hazard answerback function
- Vehicle speed-dependent wiper function
- Headlamp automatic-shutoff function
- Dimmer interior lamp control function
- Interior lamp automatic-shutdown function
- Initialization of all functions (Returns to initial settings)

1. Conditions for entering the adjustment mode
   i. Set each switch to the following state.
      - Hazard lamp switch: OFF
      - Diagnosis control: ON (Connect the M.U.T.-II/III or earth pin one of the diagnosis connector.)
      - Key reminder switch: OFF (Insert the ignition key)
      - Ignition switch: "LOCK" (OFF) position
      - Driver's door switch: OFF (driver's door closed)

   ii. When the windshield washer switch is ON for more than ten seconds, the tone alarm in the ETACS-ECU sounds for three seconds, and the adjustment mode will be set.
2. Conditions for exiting the adjustment mode
   - Diagnosis control: OFF (Disconnect the M.U.T.-II/III or the earth of Pin one of the diagnosis connector.)
   - Key reminder switch: ON (Remove the ignition key)
   - Ignition switch: Turning to any position other than "LOCK" (OFF) position
   - Driver's door switch: ON (driver's door opened)
   - When three minutes pass without adjustments performed
   - When the other warning tone alarm output is generated
3. Adjustments of various functions

Function	Adjustment procedure
Keyless entry system hazard answerback function	When the lock button of the transmitter is pressed twice continuously within two seconds, the hazard answerback function during the lock state will be switched between available or unavailable. • Function available: Tone alarm sounds once. (Initial state) • Function not available: Tone alarm sounds twice. When the unlock button of the transmitter is pressed twice continuously within two seconds, the hazard answerback function during the unlock state will be switched between available or unavailable. • Function available: Tone alarm sounds once. (Initial state) • Function not available: Tone alarm sounds twice.
Vehicle speed-dependent wiper function	When the windshield wiper mist switch is turned ON for more than two seconds, the vehicle speed-dependent wiper function is switched between available or unavailable. • Function available: Tone alarm sounds once. (Initial state) • Function not available: Tone alarm sounds twice.
Headlamp automatic-shutdown function	When the passing switch is turned ON for more than two seconds with the headlamp switch ON and the turn-signal lamp switch turned to RH, the headlamp automatic-shutdown function is switched between available or unavailable. • Function not available: Tone alarm sounds twice. • Function available: (when the tail lamp illuminates with the ignition switch turned to the "LOCK" (OFF) position, it is not automatically turned off): Tone alarm sounds three times. (Initial state)

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Function	Adjustment procedure
Dimmer interior lamp control function	When the turn-signal lamp switch is set in the order of RH to LH to RH to LH within three seconds from the LH position, the delayed lamp-off time switches (Returns to a after e, and repeats from a in order.) a. 30 seconds: Tone alarm sounds once. (Initial state) b. 10 seconds: Tone alarm sounds twice. c. 0 seconds (No delay time): Tone alarm sounds three times. d. 15 seconds: Tone alarm sounds four times. e. 7.5 seconds: Tone alarm sounds five times.
Interior lamp automatic-shutoff function	When the hazard lamp switch is turned ON for more than two seconds, the interior lamp automatic shutoff function switches in the following order. (a and b switches alternately) a. Function available: Tone alarm sounds once. (Initial state) b. Function not available: Tone alarm sounds twice.
Initialization of all functions	When the windshield washer switch is ON for more than 20 seconds continuously, the tone alarm sounds twice, and all functions will be initialized. (Settings are returned to their initial states.) The adjustment mode entry tone alarm sounds after 10 seconds, however to initialize all functions, the ON state will continue for 20 seconds. When the windshield washer switch is ON for more than 20 seconds continuously without the adjustment mode set, the adjustment mode will be set after 10 seconds without the initialization of all functions.