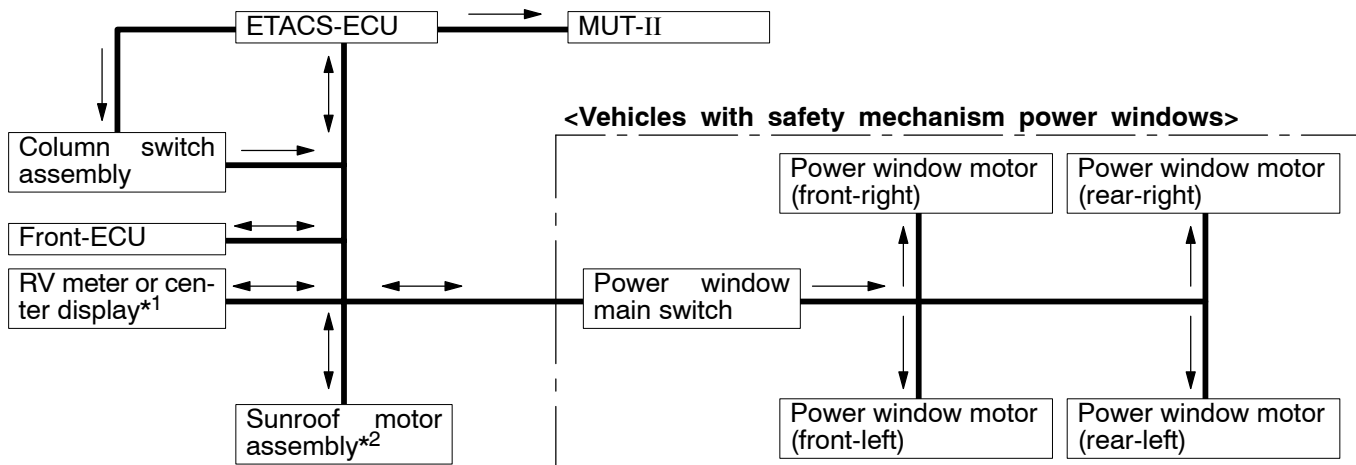


GENERAL INFORMATION

COMMUNICATION LINE

Data lines for multiplex communication are connected between the front-ECU, ETACS-ECU, column switch assembly, sunroof motor assembly, RV meter or center display, power window main switch, and power window motors as illustrated below.



NOTE

—→ : Uni-directional communication line

↔ : Bi-directional communication line

*1: Vehicles with RV meter or center display

*2: Vehicles with sunroof

OPERATION

BUZZER

Ignition Key Reminder Warning Buzzer Function <Vehicles for Taiwan, Hong Kong and GCC>

When the driver's door is opened (driver's door switch ON) without removing the ignition key [ignition switch to LOCK (OFF) or ACC position], the buzzer will sound intermittently to remind the driver that the ignition key has not been removed.

Light Reminder Warning Buzzer Function

When the driver's door is opened with lighting switch in the ON (tail lamp switch or headlamp switch) position and ignition switch in the LOCK (OFF) or ACC position, the buzzer will sound continuously to remind the driver that the lamps (tail lamps or headlamps) are ON.

This function does not work if the lighting switched off through the headlamp automatic shutdown function. In addition, the ignition key reminder warning buzzer function has a priority over this function.

Back-up Warning Buzzer Function <Vehicles for Hong Kong>

When the ignition switch is ON and the selector lever moved to R position, a buzzer starts sounding after about 0.3 seconds.

Seat Belt Warning Buzzer Function <Vehicles for Taiwan>

When the ignition switch is turned to ON position without fastening the seat belts (seat belt switch OFF), the tone alarm will sound for approximately six seconds to warn the driver to fasten the seat belts. When the seat belts are fastened, the tone alarm will stop sounding.

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.

RV Meter or Center Display Operation Annunciation Function <Vehicles with RV Meter or Center Display>

On vehicles with RV meter or center display, the buzzer (peeps) sounds when the operation switch of the audio and navigation system is pressed.

CENTRAL DOOR LOCKING SYSTEM <Vehicles with Central Door Locking System>**Central Door Locking System Operation**

- Except for Taiwan
When the lock switch is turned ON after the unlock switch on the driver's door lock actuator switch is OFF, the ETACS-ECU gives a lock output for 0.5 second. When the unlock switch is turned ON after the lock switch on the driver's door lock actuator switch is OFF, the ETACS-ECU gives an unlock output for 0.5 second.
When the front passenger's door key or back door key* is operated, the ETACS-ECU gives a lock or unlock output for 0.5 second.

NOTE

*: Operation by means of the back door key is applicable only for South Africa.

- Vehicles for Taiwan
When the driver's inside lock knob is locked, the lock relay inside the ETACS-ECU turns on the lock all doors.
With all the doors locked, turning the key inserted in the driver's door unlocks the door. Turning it again makes the door unlock relay close to send a signal for unlocking all doors. When the front passenger's door key is operated, the ETACS-ECU gives a lock or unlock output for 0.5 second.

Forgotten Key Prevention Function

- Except for Taiwan
If, with the key reminder switch OFF and the driver's door switch ON, the driver's door lock switch is turned ON after the door unlock switch in the front door lock actuator is turned OFF, the ETACS-ECU waits 0.3 second then give an unlock relay output for 0.5 second, there by preventing the doors from being locked. This operation prevents the ignition key from being locked inside the vehicle. This function takes precedence over the central door locking control function.
- Vehicles for Taiwan
If the driver's door is locked in its open position (driver's door switch turned ON) when the key is inserted in the ignition switch (key reminder switch turned OFF), the ETACS-ECU activates the door unlock relay for 0.5 second to prevent the door from being locked.
If the driver's and front passenger's doors are locked when the front passenger's door is in its open position (door switch turned ON) and the key remains inserted in the ignition switch (key reminder switch turned OFF), the ETACS-ECU prevents the doors from being locked by activating the door unlock relay for 0.5 second.

POWER WINDOWS**Power Windows Operation <Vehicles with Safety Mechanism Power Window>**

A signal line dedicated for transmission of multiplex communication data is connected between the power window main switches and the power window

motor-ECU.

Communication is uni-directional. The power window main switches have a transmitting circuit only, whereas the power window sub switches have a receiving circuit only.

Power Window Timer Function <Vehicles with Power Window>

- Vehicles with Safety Mechanism Power Window
With the ignition switch in the ON position, the power window relay and power window switch receipt permission signal (a SWS signal transmitted from the ETACS-ECU) are turned ON [the power window switch receipt permission signal remains ON for 30 seconds after the ignition switch is turned LOCK (OFF)], enabling opening and closing of the windows. The power window relay goes ON for additional 30 seconds. If the driver's door is subsequently closed during this period, the receipt permission signal goes OFF. The power window relay goes OFF 10 seconds after the receipt permission signal goes OFF.
If the driver's door is opened during timer operation, the receipt permission signal goes ON for additional 30 seconds. If the driver's door is subsequently closed during this period, the receipt permission signal goes OFF ten seconds after the receipt permission signal goes OFF.

- Vehicles without Safety Mechanism Power Window for Export (Except for Taiwan and Australia) and GCC
With the ignition switch in the ON position, the power window relay is turned ON (the power window relay is ON for 30 seconds after the ignition switch is turned OFF), enabling opening and closing of the power windows. If the driver's door is opened while the power window relay is on, the power window relay remains on for a further 30 seconds from that point. However, the timer operation discontinues if the door is closed during that period.
- Vehicles without Safety Mechanism Power Window for Taiwan and Australia
With the ignition switch in the ON position, the power window relay is turned ON. The power window timer function allows the windows to be controlled by the power window switches for a period of 30 seconds after the ignition switch has been turned to OFF. If a driver's or front passenger's door* is opened during the timer operation, the timer operation discontinues if the door is opened during that period.

NOTE

*: On vehicles for South Africa, only the driver's door is applicable.

KEYLESS ENTRY SYSTEM <Vehicles with Keyless Entry System>**Keyless Entry System Operation**

- Except for Taiwan
If the transmitter LOCK or UNLOCK switch is pressed while the ignition key is removed and all of the doors are closed, the doors can be locked or unlocked.
- Vehicles for Taiwan
If the transmitter LOCK or UNLOCK switch is pressed while the ignition key is removed, the doors can be locked or unlocked.

Keyless Entry Answerback Function

- Except for Taiwan and Hong Kong
When the doors are locked by using the transmitter, the room lamp and the hazard lamp flash twice. When unlocked, the room lamp illuminates for 15 seconds, and the hazard lamp flashes four times.
- Vehicles for Taiwan
When the doors are locked by using the transmitter, the room lamp and the hazard lamp flash twice. When unlocked, the room lamp illuminates for 15 seconds, and the hazard lamp flashes once and the horns (conventional and theft-alarm horns) sound once.

- Vehicles for Hong Kong
When the doors are locked by using the transmitter, the room lamp and the hazard lamp flash twice. When unlocked, the room lamp illuminates for 15 seconds, and the hazard lamp flashes once.

NOTE

The hazard answerback for the hazard lamps and the horns is enabled or disabled by the configuration function.

Multi-mode Keyless Entry Function <Vehicles for Hong Kong>

In addition to the door locking, the power windows, the sunroof and the door mirrors can be operated by the transmitter.

SUNROOF <Vehicles with Sunroof>**Sunroof Operation**

All of the slide open/close, tilt up/down, and stop operations can be performed by a single switch.

When the roof lid glass is tilted up, the sunshade opens approximately 98 mm in combined operation with the roof lid glass for better ventilation.

A jam preventing mechanism has been adopted. When a slide-close or tilt-down operation is blocked by an external force, the roof lid glass moves back and stops.

WINDSHIELD WIPER AND WASHER**Windshield Low-speed/High-speed Wiper Operation**

- If the windshield low-speed wiper switch is turned to the ON position with the ignition switch at the ACC or ON position, the column switch sends a low-speed wiper ON and high-speed wiper OFF signals to the front-ECU. This turns the wiper signal on and the wiper speed switching relay off (low-speed), causing the wipers to operate at low-speed.
- If the windshield high-speed wiper switch is turned to the ON position, the column switch sends a low-speed wiper OFF and high-speed wiper ON signals to the front-ECU. This turns both the wiper signal and the wiper speed switching relay on (high-speed), causing the wipers to operate at high-speed.

Windshield Intermittent Wiper Operation

The ETACS-ECU calculates the wiper operation interval according to the voltage signal sent from the column switch (On vehicles for Hong Kong, the wiper operation interval depends on not only the column switch position but also vehicle speed*). Then the ETACS-ECU sends a signal to the front-ECU. The front-ECU determines the wiper operation interval and turns on the wiper signal relay. This causes the wiper auto stop relay to turn

Sunroof Timer Function

- Except for Taiwan and Australia
When the ignition switch is turned from ON position to LOCK (OFF) or ACC position, the sunroof will be ready to work for 30 seconds. If the driver's door is opened during the timer operation, the timer operates for another 30 seconds starting from that point. However, the timer operation discontinues if the door is closed during that period.
- Vehicles for Taiwan and Australia
When the ignition switch is turned from ON position to LOCK (OFF) or ACC position, the sunroof will be ready to work for 30 seconds. If the driver's door is opened during the timer operation, timer operation discontinues if the door is opened during the period.

on. Then the wiper auto stop relay will turn off after the wipers reach the park position. This causes the wiper signal relay and then the wipers to turn off.

If the wiper signal relay remains off for the wiper operation interval, the relay turns on again, causing the wipers to operate in intermittent mode.

NOTE

*: Can be disabled by the configuration function (Refer to P.54B-78).

Windshield Mist Wiper Operation

- If the windshield mist wiper switch of the column switch is turned to the ON position with the ignition switch at ACC or ON position, the mist wiper high-speed operation signal is sent to the front-ECU. This signal turns on the wiper speed switching relay, causing the wipers to work at high-speed while the mist switch is on.
- While the windshield mist wiper switch remains turned on when the intermittent mode is still working, the wipers work as the mist wiper. However, the wipers return to the intermittent mode again when the wiper auto stop signal turns on after the mist wiper switch is turned off.

Windshield Washer Operation

If the windshield washer switch of the column switch is turned to the ON position with the ignition switch at ACC or ON position, the windshield washer ON signal is sent to the front-ECU, causing the windshield wiper signal to turn on after 0.3 seconds. After the windshield washer switch signal turns off,

the windshield wiper signal turns off in three seconds.

If the windshield wiper switch is turned to the ON position while the windshield wiper is at intermittent mode, the windshield washer works for that period when the windshield washer switch remains on. Then the wipers return to the intermittent mode.

REAR WIPER AND WASHER <Vehicles with Rear Wiper and Washer>**Rear Wiper Operation**

If the rear wiper switch is turned to the ON position with the ignition switch at ACC or ON position, the ETACS-ECU turns ON the rear wiper drive signal for three seconds (approx. two operations). 7.4 seconds later, the wiper begins the intermittent operation with 8 seconds' cycle.

If the shift lever <M/T> selector lever <A/T> is moved to the R position when the rear wiper switch is turned to the ON position and the ignition switch at ACC or ON position, back-up lamp switch <M/T> or inhibitor switch R <A/T> turns ON. One second later, the ETACS-ECU turns ON the rear wiper drive signal for three seconds (approx. two operations) to clear the rear field of view. 7.4 seconds later, the wiper returns to the intermittent operation with 8 seconds' cycle.

Rear Washer Operation

If the rear washer switch is turned to the ON position with the ignition switch at ACC or ON position, the rear washer ON signal is sent to the ETACS-ECU, causing the rear wiper signal to turn on after 0.3 seconds. After the rear washer switch signal turns off, the rear wiper signal turns off in three seconds. If the rear wiper is in intermittent operation when the rear washer switch is turned ON, the rear wiper again continues the intermittent operation with 8 seconds' cycle from 7.4 seconds later since the rear drive signal is turned OFF.

HEADLAMP WASHER <Vehicles with Headlamp Washer>

If the headlamp washer switch at the steering column is placed in the ON position when the ignition switch is in the ACC or ON position and the

headlamp switch is in the ON position, the headlamp washer drive signal is turned ON for 0.5 second.

ELECTRIC RETRACTABLE REMOTE CONTROLLED MIRROR <Vehicles for Hong Kong>**Electric Retractable Remote Controlled Mirror Timer Function**

When the mirror retracting switch is turned on while the ignition switch is in the ACC or ON position, one of the mirror retracting relays (for retracting and returning to normal position) is energized for 16 seconds, allowing the outside mirrors to retract or return to the normal position. Then the mirror retracting switch can be operated for approx. 30 seconds after the ignition switch is turned to the LOCK (OFF) position.

Furthermore, when the mirror retracting switch is turned on while one of the mirror retracting relays is operating, the other relay is turned on after approx. 0.1 seconds.

NOTE

The ETACS-ECU stores which of the relays is turned on the last time in its memory (i.e., the outside mirrors are in the retracted position or the normal position). Therefore, if the outside mirrors are moved by hand, the retracting switch may not work.

Automatic return function

If the outside mirrors are in the retract position when the ignition switch is in the ON position and the vehicle speed is 30 km/h or more (for at least two seconds), the ETACS-ECU energizes the mirror retracting relay, allowing the outside mirrors to return to the normal position. However, if the mirror retracting switch is operated after the ignition switch is turned from the LOCK (OFF) to the ON position, the outside mirrors do not return to the normal position automatically.

NOTE

1. The ETACS-ECU stores which of the relays is turned on the last time in its memory (i.e., the outside mirrors are in the retracted position or the normal position). Therefore, if the outside mirrors are moved by hand, the outside mirrors do not return to the normal position automatically.
2. This function is enabled or disabled by the configuration function (Refer to P.54B-78).

SEAT BELT WARNING LAMP <Vehicles for Taiwan and Australia>

- **Vehicles for Taiwan**
If the driver turns the ignition switch to ON position without wearing the seat belt, the seat belt warning lamp illuminate to alert the driver to wear the seat belt.
- **Vehicles for Australia**
When the ignition switch is turned to ON, the seat belt warning lamp flashes 4 times (over 6 seconds) to remind the driver to fasten the seat belt.

IGNITION KEY HOLE ILLUMINATION LAMP

When the ignition switch is turned to LOCK (OFF) or ACC position with the driver's door opened, the ignition key hole illumination lamp is illuminated.

If the door is closed in that state, the lamp goes out after 30 seconds. Vehicles with keyless entry system, it illuminates for 30 seconds after the ignition key is removed. In either case the lamp goes out when the ignition switch is turned to ON position.

HEADLAMP**Headlamp Automatic Shutdown Function <Except for Australia>**

- **Except for Taiwan and Hong Kong**
If the ignition switch is turned to LOCK (OFF) or ACC position, when the headlamps are on, the headlamps will be switched off in three minutes. If the driver's door is opened within that three-minute period, the headlamps will be switched off automatically. This prevents the battery from discharged.
In addition, if the headlamps are turned on when the ignition switch is at LOCK (OFF) or ACC position, the headlamps will not be switched off.
- **Vehicles for Taiwan**
If the ignition switch is turned to LOCK (OFF) or ACC position, when the headlamps or tail lamps are on, the headlamps and tail lamps will be switched off in three minutes. If the driver's door is opened within that three-minute period, the headlamps and tail lamps will be switched off automatically. This prevents the battery from discharged.
In addition, if the headlamps are turned on when the ignition switch is at LOCK (OFF) or ACC position, the headlamps will not be switched off.

NOTE

This function is enabled or disabled by the configuration function (Refer to P.54B-78).

- **Vehicles for Hong Kong**
If the ignition switch is turned to LOCK (OFF) or ACC position, when the headlamps or tail lamps are on, the headlamps and tail lamps will be switched off in three minutes. If the driver's door is opened within that three-minute period, the headlamps and tail lamps will be switched off automatically. This prevents the battery from discharged.
If the headlamp switch is turned on when the ignition switch is in the LOCK (OFF) position, the headlamps will extinguish automatically after 3 minutes. If the driver's door is opened or closed within that 3-minute period, the headlamps will extinguish automatically after 30 seconds.
In addition, if the headlamps are turned on when the ignition switch is at LOCK (OFF) or ACC position, the headlamps will not be switched off.

NOTE

This function is enabled or disabled by the configuration function (Refer to P.54B-78).

Headlamp Dimmer Switch Automatic Reset Function

This function allows the dimmer switch to be reset to the low-beam position whenever the headlamp switch is turned ON.

Automatic Lighting Function <Vehicles for Hong Kong>

If the automatic lighting switch is turned on when the ignition switch is in the ON position, the headlamps and the tail lamps will illuminate or extinguish automatically according to the voltage signal, which the automatic lighting sensor sends to the ETACS-ECU. The voltage signal changes in proportion to the outside brightness.

- If the voltage signal reduces to a predetermined value (Tail lamp "ON" value), the tail lamps will illuminate after three seconds or 50-meter driving distance.
- If the voltage signal reduces to a predetermined value (Headlamp "ON" value), the tail lamps and the headlamps will illuminate immediately.

- If the voltage signal exceeds a predetermined value (Headlamp "OFF" value), the headlamps will extinguish after three seconds.
- If the voltage signal exceeds a predetermined value (Tail lamp "OFF" value), the tail lamps will extinguish after three seconds or 30-meter driving distance.
- Once the tail lamps and/or headlamps are turned on, they will remain on for three seconds.

NOTE

The sensitivity of the automatic lighting switch can be adjusted by the configuration function (Refer to P.54B-78).

FLASHER TIMER

Turn-signal Lamp

When the ignition switch is turned to ON position and turn-signal lamp switch is placed in the ON position for right or left turn signaling, the system generates turn-signal lamp drive signals (flashing signals).

The system also notifies of a blown turn-signal lamp bulb by shortening the flashing intervals of the corresponding indicator lamp.

Hazard Warning Lamp

The system detects a change from ON to OFF of the hazard lamp input signal and activates the hazard lamps if they are not in operation or deactivates the lamps if they are operating (reversal of state between activation and deactivation).

FRONT FOG LAMP <Vehicles with Front Fog Lamp>

- Except for Taiwan
If the front fog lamp switch is turned ON when the headlamps or the tail lamp remain ON (including the case that the lamps are turned on by the automatic lighting function), the front fog lamp is turned ON.
Whenever the tail lamps are turned on at the next time, the front fog lamps will always be off regardless of the switch positions. Furthermore, if the automatic lighting system turns on the tail lamps on or off, the front fog lamps will also be turned on or off.

- Vehicles for Taiwan
The front fog lamp switch becomes active only when the headlamps are at the low-beam mode. Therefore, if the headlamps are turned off, the front fog lamps will also be switch off. Whenever the headlamps are turned on at the next time, the front fog lamps will always be off regardless of the switch positions.

REAR FOG LAMP <Vehicles with Rear Fog Lamp>

If the 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 are turned OFF during lighting of the rear fog lamp, the rear fog lamp is turned OFF at the same time.

ROOM LAMP <Vehicles with Keyless Entry System>

With the room lamp switch in the DOOR position, the ETACS-ECU controls the room lamp operation as follows:

- When a door is opened from outside or inside [with the ignition switch turned to LOCK (OFF) position]:
When a door is opened, the ETACS-ECU causes the room lamp to be illuminated at the 100% intensity. When the door is closed, it dims out the room lamp to 65% intensity and approx. 30 seconds later, turns out the lamp completely. During this period (timer controlled period), the room lamp goes out if the ignition switch is turned to ON position or the doors are locked.
- When a door is opened or closed with the ignition switch in the ON position:
The room lamp illuminates at 100% intensity when a door is opened and turned out when it is closed.
- When no door is opened and the ignition key is removed:
When the ignition key is removed with all the doors closed, the room lamp is illuminated at an intensity of 65% <Except for Taiwan and

South Africa> or 100% <Vehicles for Taiwan and South Africa> and turned out approx. 30 seconds later. During that time (timer-controlled period), the room lamp goes out if the ignition key is inserted and turned to ON position or the door locking system is activated.

- Room lamp's answerback operation in response to door lock control by keyless entry system:

To allow the driver to ascertain the result of the door locking/unlocking control action by the use of the keyless entry system, the ETACS-ECU causes the room lamp to blink twice when the doors are locked through the system and to illuminate for approx. 15 seconds when the doors are locked.

The room lamp's answerback operation in response to a keyless entry system control action is accompanied by operation of the hazard warning lamps.

NOTE

The time delay, which elapses until the room lamp extinguishes, can be adjusted by the configuration function (Refer to P.54B-78).

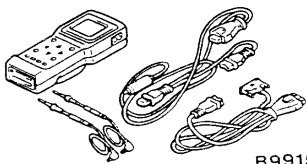
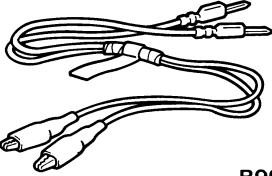
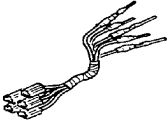
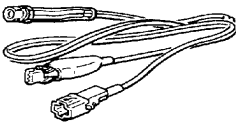
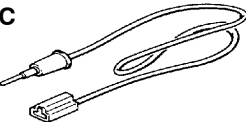

THEFT-ALARM SYSTEM <Vehicles for Taiwan>**Theft-alarm System Operation**

When the theft-alarm system has been armed if a door or hood is opened, the horn (horn and theft-alarm horn) will sound and headlamps flash (high-beam) intermittently for a period of 180 seconds.

Panic Alarm Function

With the theft-alarm function armed, pressing the panic button on the keyless entry system transmitter causes the theft-alarm horn (horn and theft-alarm horn) to sound for about 180 seconds in an attempt to prevent theft. The alarm is turned off by pressing any switch on the transmitter.

SPECIAL TOOLS

| Tool | Number | Name | Use |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>B991502</p> | MB991502 | MUT-II sub assembly | Checking of the SWS (Diagnosis code display and input check with the MUT-II) |
|  <p>B991529</p> | MB991529 | Diagnosis code check harness | Simple diagnosis |
| <p>A</p>  <p>B</p>  <p>C</p>  <p>D</p>  <p>C991223</p> | MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222 | Harness set A: Test harness B: LED harness C: LED harness adapter D: Probe | Measurement of terminal voltage at ECUs A: Connector pin contact pressure inspection B: Power circuit inspection C: Power circuit inspection D: Commercial tester connection |

TROUBLESHOOTING

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

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

DIAGNOSTIC FUNCTION

DIAGNOSIS CODES CHECK

Use the MUT-II to check a diagnosis code.

(Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.)

NOTE

Connect the MUT-II to the 16-pin diagnosis connector (black).

INPUT SIGNAL CHECK

1. Use the MUT-II to check a input signal.
(Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.)
2. In this condition, the following input switches can be checked.
3. If an abnormality is found during the input signal check, carry out troubleshooting while referring to the Trouble Symptom Check page.

Input Signal Check Function

| | |
|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Input signal | Buzzer operation condition |
| Ignition switch (ACC) | Turned from LOCK (OFF) to ACC |
| Ignition switch (IG1) | Turned from ACC to ON |
| Key reminder switch <Vehicles with ignition key reminder warning buzzer function or keyless entry system> | Ignition key removed from ignition key cylinder (from inserted position) |
| Hazard warning lamp switch | Turned from OFF to ON |
| Front fog lamp switch <Vehicles with front fog lamp> | |
| Rear fog lamp switch <Vehicles with rear fog lamp> | |
| Back-up lamp switch <M/T, vehicles with rear wiper and washer> | Shift lever moved to R position |
| Inhibitor switch (reverse) <A/T, vehicles with rear wiper and washer> | Selector lever moved to R position |
| Rear wiper motor auto-stop signal <Vehicles with rear wiper and washer> | Rear wiper begins to operate (The input signal is sent before the rear wiper begins to operate) |
| Mirror retracting switch <Vehicles with electric retractable remote controlled mirror> | Turned from OFF to ON |

| | | |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Input signal | | Buzzer operation condition |
| Driver's seat belt switch <Vehicles with seat belt warning buzzer function> | | Remove the seat belt tongue from the seat belt buckle with the ignition key ON position |
| Driver's door switch | | Driver's door opened from closed condition |
| Front passenger's door switch <Vehicles with theft-alarm system or vehicles for Australia> | | Front passenger's door opened from closed condition |
| Door switches | | All doors closed to any door opened |
| Driver's door lock key cylinder switch <Vehicles with theft-alarm system> | | Turn the key to the locked or unlock |
| Front passenger's door lock key cylinder switch <Vehicles with central door locking system> | | |
| Back door lock key cylinder switch <Vehicles with central door locking system for South Africa, vehicles with theft-alarm system> | | |
| Driver's door lock actuator switch <Vehicles with central door locking system> | | Driver's door lock knob moved from lock position to unlock position or vice versa |
| Front passenger's, rear and back door lock actuator switch <Vehicles with theft-alarm system> | | Door lock knob moved from lock position o unlock position |
| Hood switch <Vehicles with theft-alarm system> | | Open the hood |
| Speed sensor <Vehicles for Taiwan and GCC> | | The vehicle speed changes from less than 10 km/h to 10 km/h or more. |
| Automatic lighting sensor <Vehicles with automatic lighting function> | | It becomes dark around the sensor. |
| Column switch | Automatic lighting switch <Vehicles with automatic lighting function> | Turned from OFF to ON |
| | Tail lamp switch | Turned the lighting switch from OFF or automatic lighting position to tail lamp position |
| | Headlamp switch | Turn the lighting switch from tail lamp position to headlamp position |
| | Dimmer switch | Turned from OFF to ON |
| | Passing switch | |
| | Turn-signal lamp switch | |

| Input signal | | Buzzer operation condition |
|----------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Column switch | Windshield mist wiper switch | Turned from OFF to ON |
| | Windshield intermittent wiper switch | |
| | Windshield low-speed wiper switch | |
| | Windshield high-speed wiper switch | |
| | Windshield intermittent wiper interval adjusting knob | Rotate the windshield intermittent wiper interval adjusting knob from FAST to SLOW when the ignition switch is in ON position (The ETACS-ECU sends a signal around the medium knob position) |
| | Windshield washer switch | Turned from OFF to ON |
| | Rear wiper switch <Vehicles with rear wiper and washer> | |
| | Rear washer switch <Vehicles with rear wiper and washer> | |
| | Headlamp washer switch <Vehicles with headlamp washer> | |
| Power window main switch | Any switch <Vehicles with safety mechanism power windows> | Turned from OFF to ON |
| Transmitter | Any switch <vehicles with keyless entry system> | Turned from OFF to ON |
| Sunroof switch | Any switch <Vehicles with sunroof> | Turned from OFF to ON |
| RV meter or center display | Any switch <vehicles with RV meter or center display> | Turned from OFF to ON |

DIAGNOSIS CODE CHART

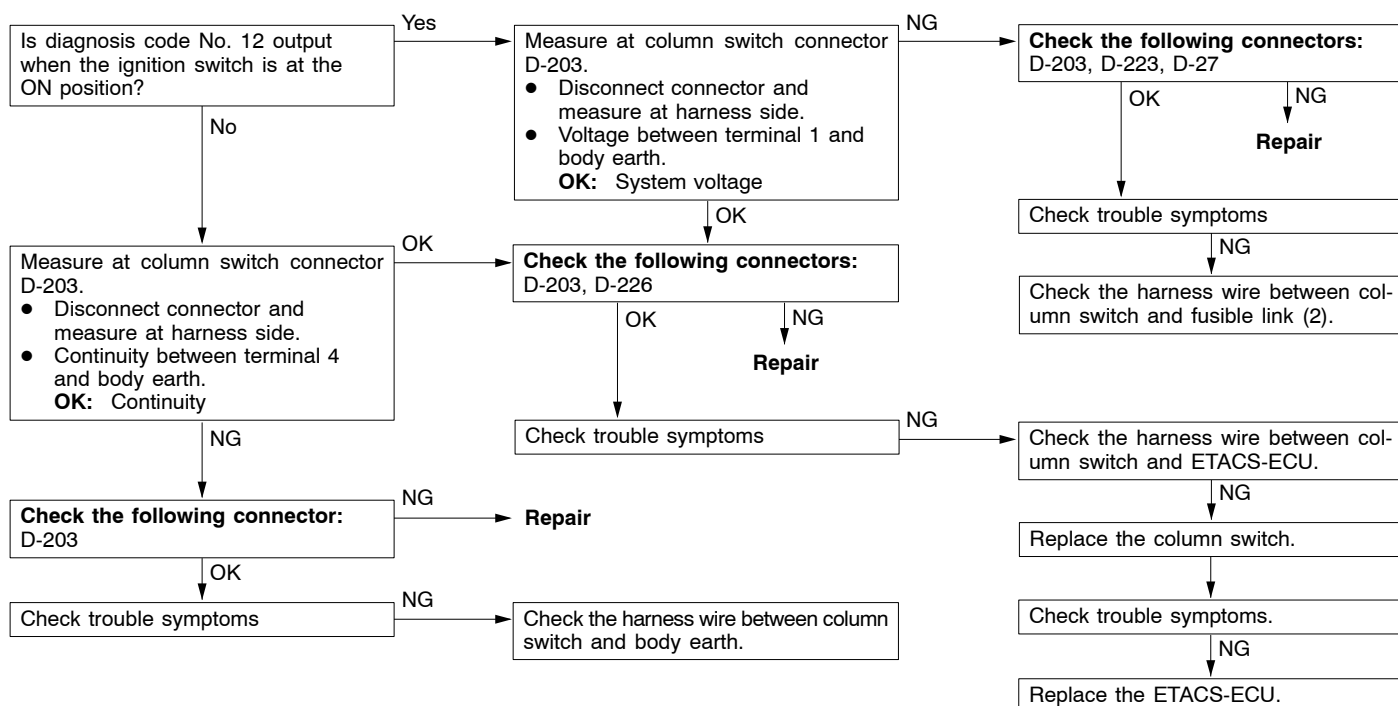
| Code No. | Diagnosis item | Reference page |
|----------|--------------------------------------------------------------------------------|----------------|
| 11 | Failure concerning the ETACS-ECU | 54B-14 |
| 12 | Failure concerning the column switch or improper connecting with the ETACS-ECU | 54B-14 |
| 13 | Failure concerning the front-ECU | 54B-15 |
| 21 | Short circuit in communication line | 54B-16 |

DIAGNOSIS CODE INSPECTION PROCEDURES

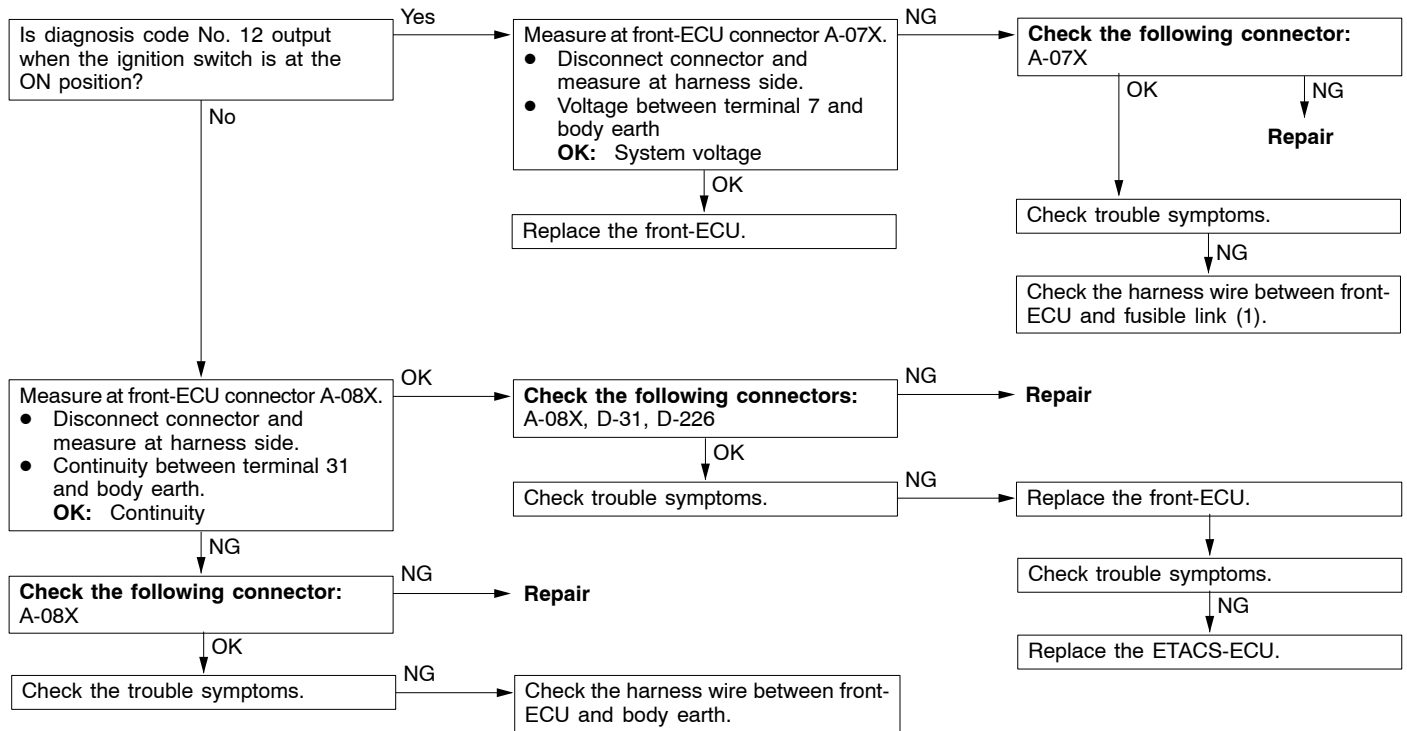
| Code No.11 Failure concerning the ETACS-ECU | Probable cause |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| The ETACS-ECU monitors its own communication data, and sends a diagnosis code when an error takes place consecutive fifteen times in 0.6 second. The diagnosis code will be erased when the ETACS-ECU determines that its own communication data is sent consecutive 15 times in 0.6 second. | <ul style="list-style-type: none"> • Malfunction of ETACS-ECU |

Replace the ETACS-ECU.

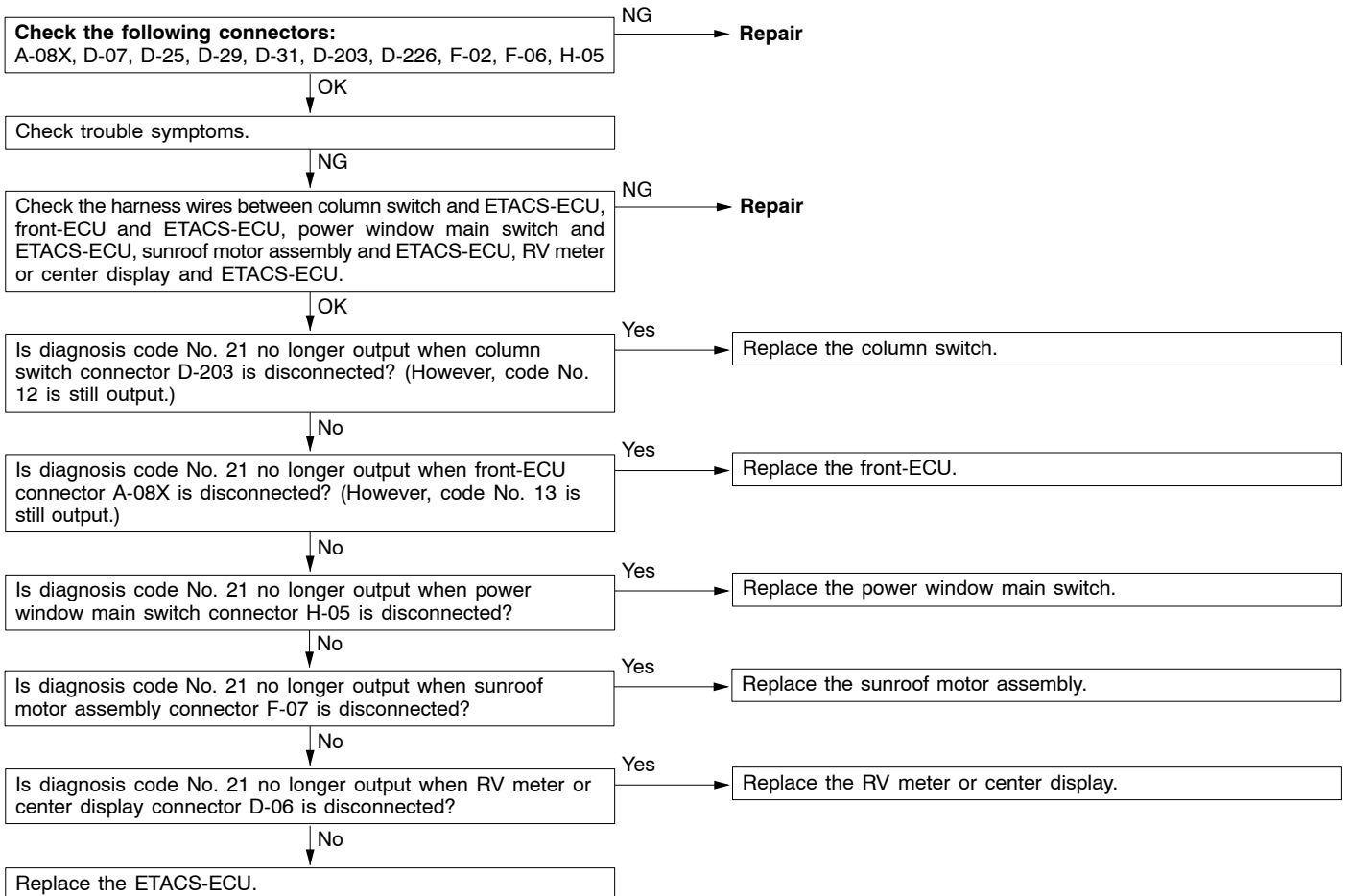
| Code No.12 Failure concerning the column switch or improper connection with the ETACS-ECU | Probable cause |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| This diagnosis code is displayed when the column switch sends a signal regardless of the transmission request signal from the ETACS-ECU (three times or more in one second). The diagnosis code is erased when the column switch continues to send a signal according to the transmission request signal from the ETACS-ECU for one second. | <ul style="list-style-type: none"> • Malfunction of column switch • Malfunction of ETACS-ECU • Malfunction of wiring harness or connector |



| Code No.13 Failure concerning the front-ECU | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>This diagnosis code is displayed when the signals that the front-ECU sends to the ETACS-ECU are errors consecutive fifteen times in 0.6 second.</p> <p>The diagnosis code will be erased when the front-ECU sends normal signals to the ETACS-ECU consecutive 15 times in 0.6 second.</p> | <ul style="list-style-type: none"> • Malfunction of front-ECU • Malfunction of ETACS-ECU • Malfunction of wiring harness or connector |



| Code No.21 Short circuit in communication lines | Probable cause |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| This diagnosis code is displayed when the SWS communication line voltage reaches the LO level for 0.3 second. The diagnosis code is erased when voltage in the ETACS-ECU data line reaches the HI level for 0.3 second, or the ETACS-ECU receives a normal signal from other ECUs or switches. While this code is displayed, other codes are not displayed. | <ul style="list-style-type: none"> • Malfunction of column switch • Malfunction of front-ECU • Malfunction of power window main switch <vehicles with safety mechanism power windows> • Malfunction of sunroof motor assembly <vehicles with sunroof> • Malfunction of RV meter or center display <vehicles with RV meter or center display> • Malfunction of ETACS-ECU • Malfunction of wiring harness or connector |



TROUBLE SYMPTOM CHART

| Trouble symptom | | Inspection procedure | Reference page |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------|--------------------|
| Communication with the MUT-II is impossible. | | A-1 | 54B-22 |
| Buzzer | Ignition key reminder warning buzzer function does not work normally. | B-1 | 54B-22 |
| | Light reminder warning buzzer function does not work normally. | B-2 | 54B-23 |
| | Back-up warning buzzer function does not work normally. | B-3 | 54B-23 |
| | Seat belt warning buzzer function does not work normally. | B-4 | 54B-23 |
| | Speed alarm function does not work normally. | B-5 | 54B-24 |
| | RV meter or center display operation annunciation function does not work normally. | B-6 | 54B-24 |
| Central door locking system | Central door locking system does not work normally. | C-1 | 54B-24 |
| | Some doors does not lock or unlock. | C-2 | 54B-25 |
| | Some functions of central locking system do not work. | C-3 | 54B-25 |
| | Forgotten key prevention function does not work. | C-4 | 54B-26 |
| power windows <Vehicles without safety mechanism power windows> | Power windows do not work at all. | D-1 | 54B-26 |
| | Some windows do not work. | – | GROUP 42 – Door |
| | Power window timer function does not work normally. | D-2 | 54B-27 |
| power windows <Vehicles with safety mechanism power windows> | Power windows do not work at all. | D-3 | 54B-27 |
| | Power window main switch can not operate driver's window. | D-4 | 54B-28 |
| | Power window sub switch can not operate front passenger's or rear window. | D-5 | 54B-29 |
| | Power window main switch can not operate front passenger's or rear window. | D-6 | 54B-30 |
| | Power window timer function does not work normally. | D-7 | 54B-30 |
| | When the glass is raised, it then lowers automatically. | D-8 | 54B-31 |
| | Safety mechanism does not function. | D-9 | 54B-31 |
| | When the glass is fully raised, it then lowers automatically. | D-10 | 54B-31 |

| Trouble symptom | | Inspection procedure | Reference page |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Keyless entry system | Keyless entry system does not operate. | E-1 | 54B-32 |
| | The room lamp, hazard warning lamps and horn do not operate through the answerback function. | E-2 | 54B-32 |
| | The encrypted code cannot be registered. | E-3 | 54B-33 |
| | Multi-mode keyless entry function does not work normally. | E-4 | 54B-33 |
| Sunroof | Sunroof does not work at all. | F-1 | 54B-34 |
| | Sunroof timer function does not work normally. | F-2 | 54B-35 |
| | Safety mechanism does not function. | F-3 | 54B-35 |
| Windshield wiper and washer | Windshield wiper does not operate. | G-1 | 54B-36 |
| | Windshield wiper does not stop at the predetermined park position. | G-2 | 54B-37 |
| | Any of the windshield wiper switch positions is defective. | G-3 | 54B-37 |
| | Windshield intermittent wiper interval cannot be adjusted. | G-4 | 54B-38 |
| | Windshield washer does not work. | G-5 | 54B-39 |
| Rear wiper and washer | Rear wiper does not work at all. | H-1 | 54B-40 |
| | Rear wiper does not stop at the predetermined park position. | H-2 | 54B-40 |
| | When the shift lever <M/T> or selector lever <A/T> is moved to R position during the rear wiper operation, the rear wiper does not operate at the continuous mode. | H-3 | 54B-41 |
| | Rear washer does not work. | H-4 | 54B-41 |
| Headlamp washer | Headlamp washer does not work. | I-1 | 54B-42 |
| Electric retractable remote controlled mirror | Electric retractable remote controlled mirror does not work at all. | J-1 | 54B-43 |
| | Electric retractable remote controlled mirror timer function does not work normally. | J-2 | 54B-43 |
| | The outside mirrors do not return to the normal position automatically. | J-3 | 54B-44 |
| Seat belt warning lamp | Seat belt warning lamp does not work normally. | K-1 | 54B-44 |
| Ignition key hole illumination lamp | Ignition key hole illumination lamp does not work normally. | L-1 | 54B-45 |

| Trouble symptom | | Inspection procedure | Reference page |
|----------------------------|------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------|
| Headlamp, tail lamp | Tail lamp do not illuminate. | M-1 | 54B-46 |
| | Headlamps (low-beam) do not illuminate. | M-2 | 54B-46 |
| | Headlamps (high-beam) do not illuminate. | M-3 | 54B-47 |
| | Headlamps do not illuminate when the passing switch is operated. | M-4 | 54B-47 |
| | The headlamp automatic shutdown function does not work normally. | M-5 | 54B-47 |
| | Headlamp dimmer switch automatic reset function does not work normally. | M-6 | 54B-48 |
| | Automatic lighting function does not work normally. | M-7 | 54B-48 |
| Flasher timer | Turn-signal lamp do not flash when the turn-signal lamp switch is turned on. | N-1 | 54B-49 |
| | Hazard warning lamps do not flash when the hazard warning lamp switch is turned on. | N-2 | 54B-49 |
| Front fog lamp | Front fog lamps do not illuminate when the front fog lamp switch is turned on. | O-1 | 54B-50 |
| | Front fog lamp do not go out when the tail lamps are turned off while the front fog lamps are on. | O-2 | 54B-51 |
| Rear fog lamp | Rear fog lamp do not illuminate when the rear fog lamp switch is turned on. | P-1 | 54B-51 |
| | Rear fog lamp do not go out when the headlamps and front fog lamps are turned off while the rear fog lamp is on. | P-2 | 54B-52 |
| Room lamp | Room lamp does not illuminate. | Q-1 | 54B-52 |
| | Room lamp dimming function does not work normally. | Q-2 | 54B-53 |
| Theft-alarm system | Theft-alarm system is not armed. (Theft-alarm indicator light does not illuminate.) | R-1 | 54B-54 |
| | Horn does not sound when the theft-alarm system is triggered. | R-2 | 54B-55 |
| | Headlamps (high-beam) does not flash when the theft-alarm system is triggered. | R-3 | 54B-56 |
| | Panic alarm function does not work. | R-4 | 54B-56 |
| RV meter or center display | RV meter or center display does not work normally. | — | GROUP 54A – RV Meter or GROUP 54A – Center Display. |

DEFECTS FOUND BY INPUT SIGNAL CHECK

If the input signal check finds a defect, follow the table below to check.

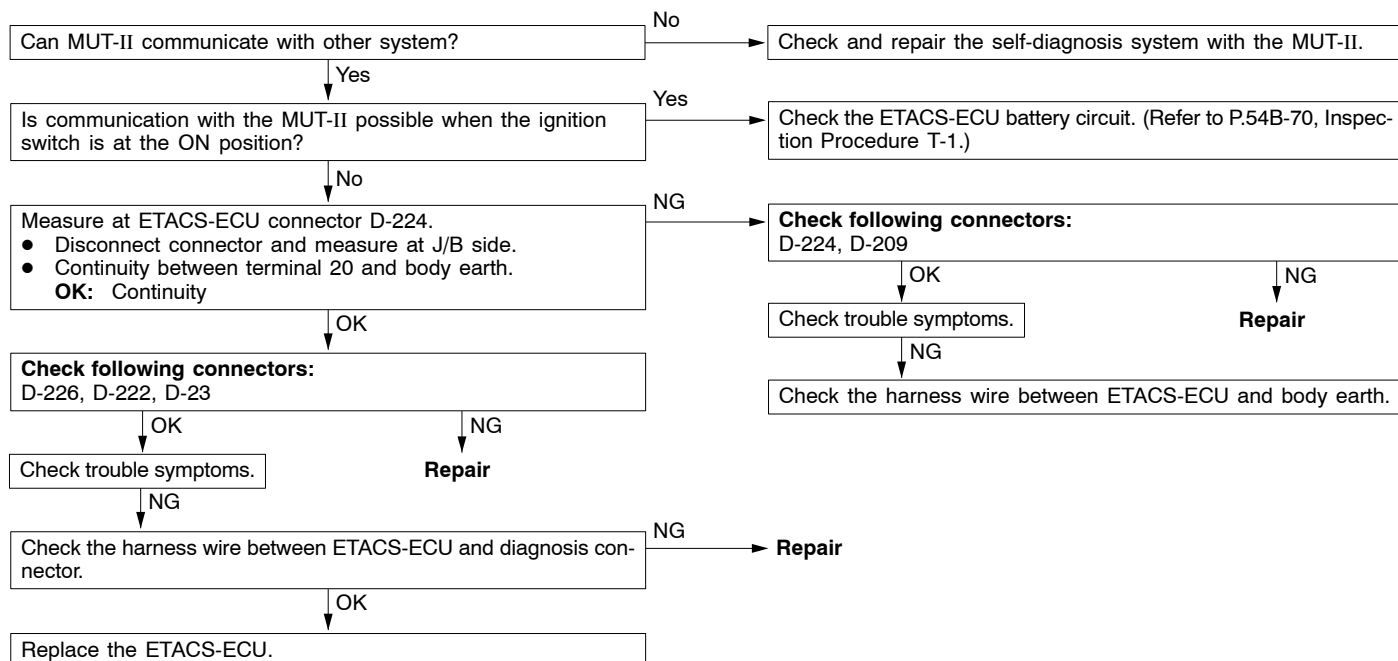
| Trouble symptom | Inspection procedure | Reference page |
|------------------------------------------------------------------------------------------------|----------------------|----------------|
| Ignition switch (ACC) signal is not sent to the ETACS-ECU. | S-1 | 54B-56 |
| Ignition switch (IG1) signal is not sent to the ETACS-ECU. | S-2 | 54B-57 |
| Key reminder switch signal is not sent to the ETACS-ECU. | S-3 | 54B-57 |
| Hazard warning lamp switch signal is not sent to the ETACS-ECU. | S-4 | 54B-58 |
| Front fog lamp switch signal is not sent to the ETACS-ECU. | S-5 | 54B-58 |
| Rear fog lamp switch signal is not sent to the ETACS-ECU. | S-6 | 54B-59 |
| Back-up lamp switch signal is not sent to the ETACS-ECU. <M/T> | S-7 | 54B-59 |
| Inhibitor switch (reverse) signal is not sent to the ETACS-ECU. <A/T> | S-8 | 54B-60 |
| Rear wiper motor auto-stop signal is not sent to the ETACS-ECU. | S-9 | 54B-60 |
| Mirror retracting switch signal is not sent to the ETACS-ECU. | S-10 | 54B-61 |
| Driver's seat belt switch signal is not sent to the ETACS-ECU. | S-11 | 54B-61 |
| Driver's door switch signal is not sent to the ETACS-ECU. | S-12 | 54B-62 |
| Front passenger's door switch signal is not sent to the ETACS-ECU. | | |
| Door switches signal is not sent to the ETACS-ECU. | | |
| Driver's door lock key cylinder switch signal is not sent to the ETACS-ECU. | S-13 | 54B-63 |
| Front passenger's door lock key cylinder switch signal is not sent to the ETACS-ECU. | | |
| Back door lock key cylinder switch signal is not sent to the ETACS-ECU. | | |
| Driver's door lock actuator switch signal is not sent to the ETACS-ECU. | S-14 | 54B-63 |
| Front passenger's, rear or back door lock actuator switch signal is not sent to the ETACS-ECU. | | |
| Hood switch signal is not sent to the ETACS-ECU. | S-15 | 54B-64 |
| Speed sensor signal is not sent to the ETACS-ECU. | S-16 | 54B-65 |
| Automatic lighting sensor signal is not sent to the ETACS-ECU. | S-17 | 54B-65 |

| Trouble symptom | | Inspection procedure | Reference page |
|----------------------------|--------------------------------------------------------------------------------------------|----------------------|----------------|
| Column switch | Automatic lighting switch signal is not sent to the ETACS-ECU. | S-18 | 54B-66 |
| | Tail lamp switch signal is not sent to the ETACS-ECU. | | |
| | Headlamp switch signal is not sent to the ETACS-ECU. | | |
| | Dimmer switch signal is not sent to the ETACS-ECU. | | |
| | Passing switch signal is not sent to the ETACS-ECU. | | |
| | Turn-signal lamp switch signal is not sent to the ETACS-ECU. | | |
| | Windshield mist wiper switch signal is not sent to the ETACS-ECU. | S-19 | 54B-67 |
| | Windshield intermittent wiper switch signal is not sent to the ETACS-ECU. | | |
| | Windshield low-speed wiper switch signal is not sent to the ETACS-ECU. | | |
| | Windshield high-speed wiper switch signal is not sent to the ETACS-ECU. | | |
| | Windshield intermittent wiper interval adjusting knob signal is not sent to the ETACS-ECU. | S-20 | 54B-67 |
| | Windshield washer switch signal is not sent to the ETACS-ECU. | S-19 | 54B-67 |
| | Rear wiper switch signal is not sent to the ETACS-ECU. | | |
| | Rear washer switch signal is not sent to the ETACS-ECU. | | |
| | Headlamp washer switch signal is not sent to the ETACS-ECU. | S-18 | 54B-66 |
| Power window main switch | No switch signal is sent to the ETACS-ECU. | S-21 | 54B-68 |
| Transmitter | No switch signal is sent to the ETACS-ECU. | S-22 | 54B-69 |
| Sunroof switch | No switch signal is sent to the ETACS-ECU. | S-23 | 54B-69 |
| RV meter or center display | No switch signal is sent to the ETACS-ECU. | S-24 | 54B-70 |

INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

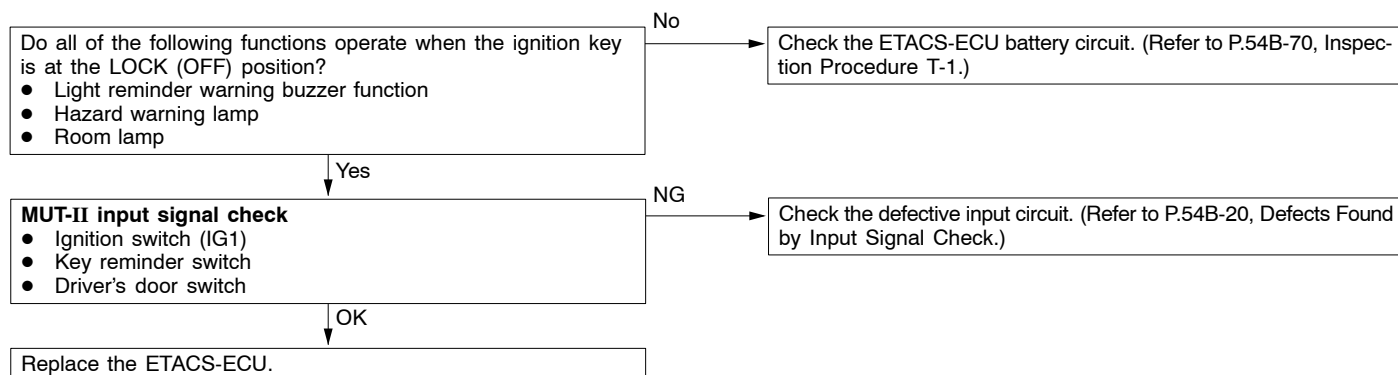
Inspection Procedure A-1

| Communication with the MUT-II is impossible. | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| The harness wires between the ETACS-ECU power supply line or the ETACS-ECU and the diagnosis connector may be defective. | <ul style="list-style-type: none"> • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



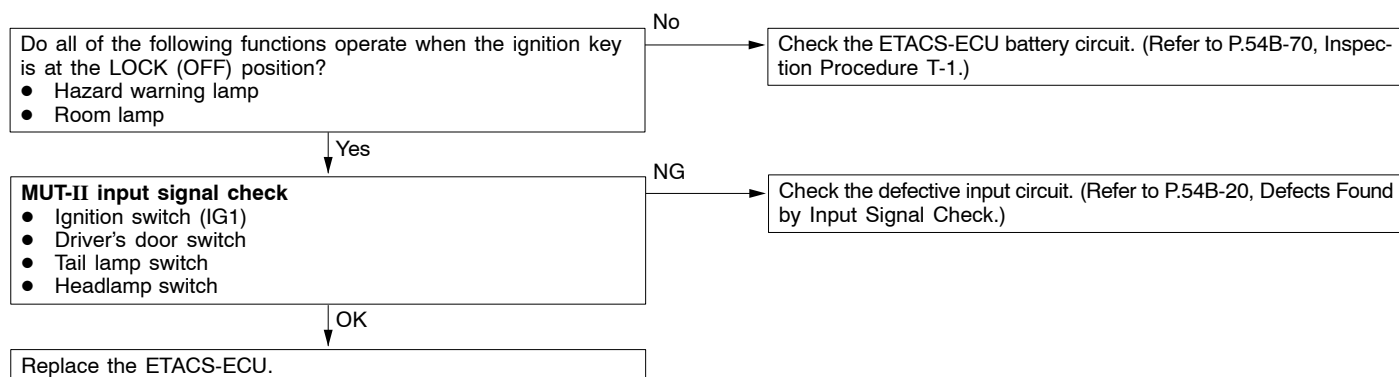
Inspection Procedure B-1

| Buzzer: Ignition key reminder warning buzzer function does not work normally. | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the ignition key reminder warning buzzer function, based on input signals from the following switches:</p> <ul style="list-style-type: none"> • Ignition switch (IG1) • Key reminder switch • Driver's door switch <p>If the function does not work normally, a defect on the relevant circuit or the ETACS-ECU may be suspected.</p> | <ul style="list-style-type: none"> • Malfunction of key reminder switch • Malfunction of driver's door switch • Malfunction of column switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



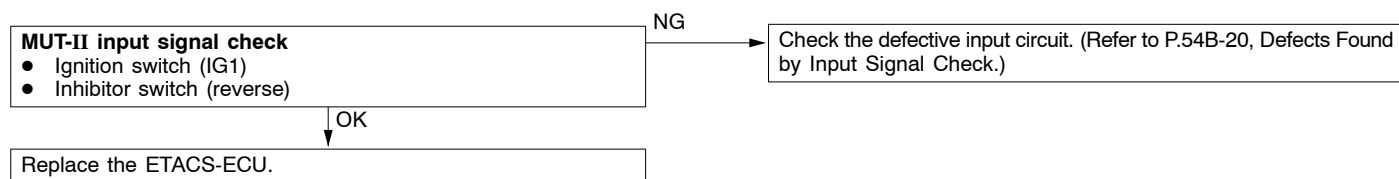
Inspection Procedure B-2

| Buzzer: Light reminder warning buzzer function does not work normally. | Probable cause |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the light reminder warning buzzer function, based on input signals from the following switches:</p> <ul style="list-style-type: none"> • Ignition switch (IG1) • Driver's door switch • Tail lamp switch • Headlamp switch <p>If the function does not work normally, a defect on the relevant circuit or the ETACS-ECU may be suspected.</p> | <ul style="list-style-type: none"> • Malfunction of driver's door switch • Malfunction of column switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



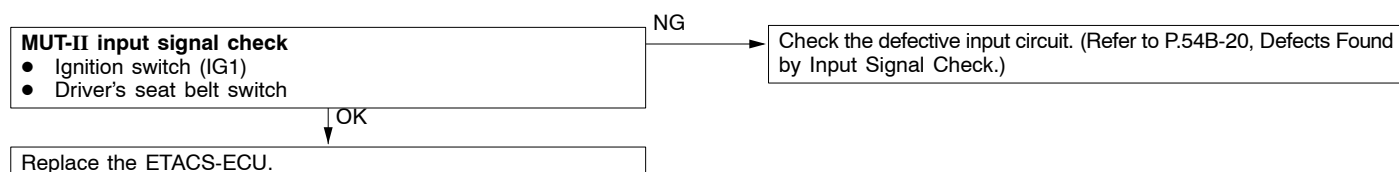
Inspection Procedure B-3

| Buzzer: Back-up warning buzzer function does not work normally. | Probable cause |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the back-up warning buzzer function, based on input signals from the following switches:</p> <ul style="list-style-type: none"> • Ignition switch (IG1) • Inhibitor switch (reverse) <p>If the function does not work normally, a defect on the relevant circuit or the ETACS-ECU may be suspected.</p> | <ul style="list-style-type: none"> • Malfunction of inhibitor switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



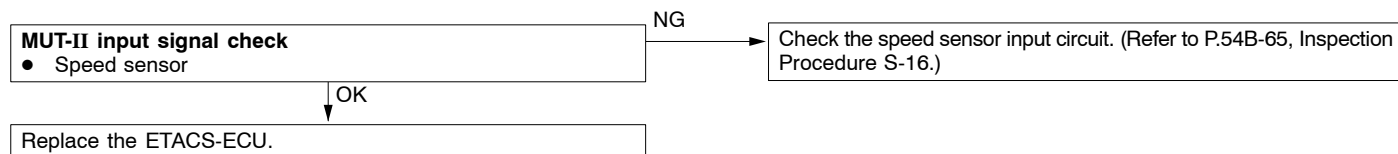
Inspection Procedure B-4

| Buzzer: Seat belt warning buzzer function does not work normally. | Probable cause |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the Seat belt warning buzzer function, based on input signals from the following switches:</p> <ul style="list-style-type: none"> • Ignition switch (IG1) • Driver's seat belt switch <p>If the function does not work normally, a defect on the relevant circuit or the ETACS-ECU may be suspected.</p> | <ul style="list-style-type: none"> • Malfunction of driver's seat belt switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



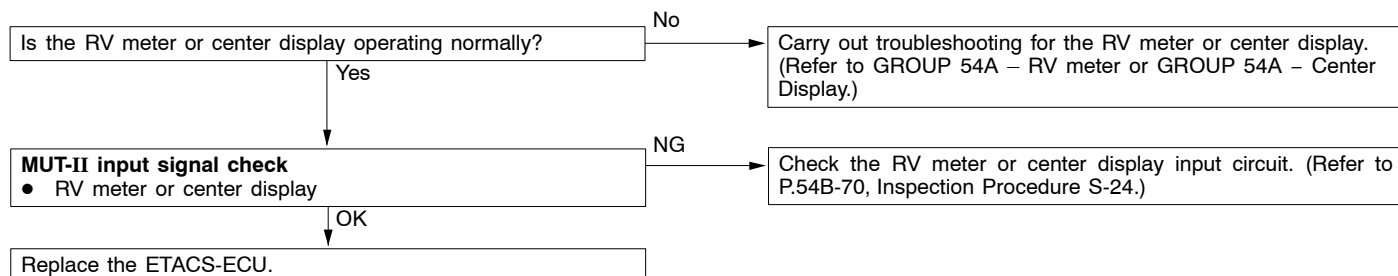
Inspection Procedure B-5

| Buzzer: Speed alarm function does not work normally. | Probable cause |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The ETACS-ECU operates the speed alarm function, based on input signal from the speed sensor. If the function does not work normally, a defect on the speed sensor input circuit or the ETACS-ECU may be suspected. | <ul style="list-style-type: none"> • Malfunction of speed sensor • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



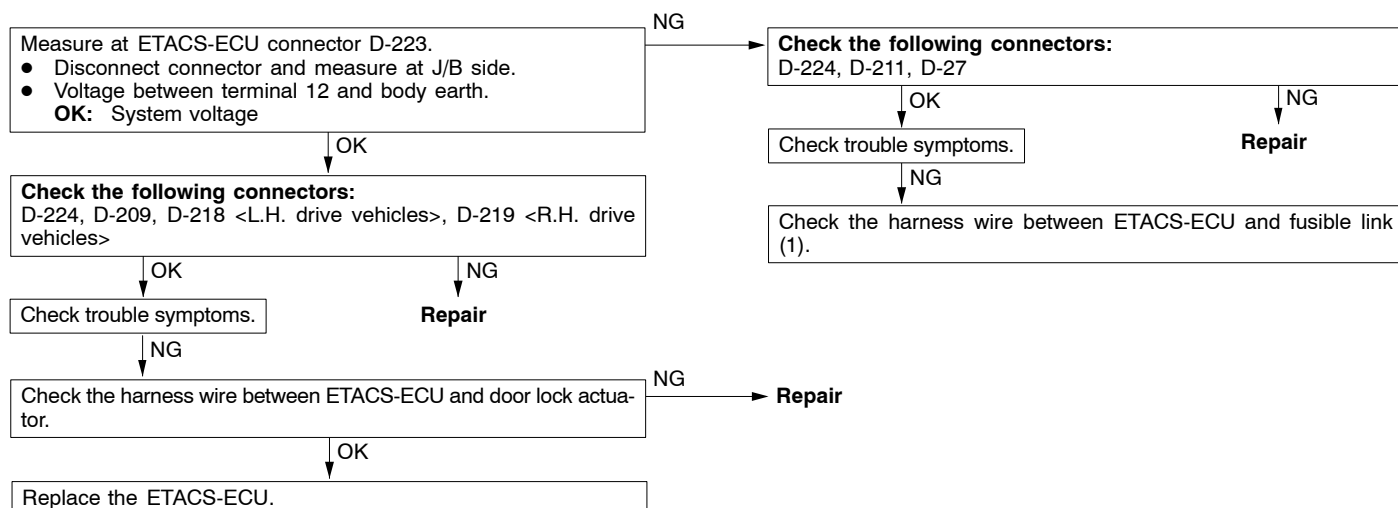
Inspection Procedure B-6

| Buzzer: RV meter or center display operation annunciation function does not work normally. | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If the RV meter or center display is operating normally, the cause is probably a malfunction in the harness between the RV meter or center display and the ETACS-ECU or in the ETACS-ECU itself. | <ul style="list-style-type: none"> • Malfunction of RV meter or center display • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



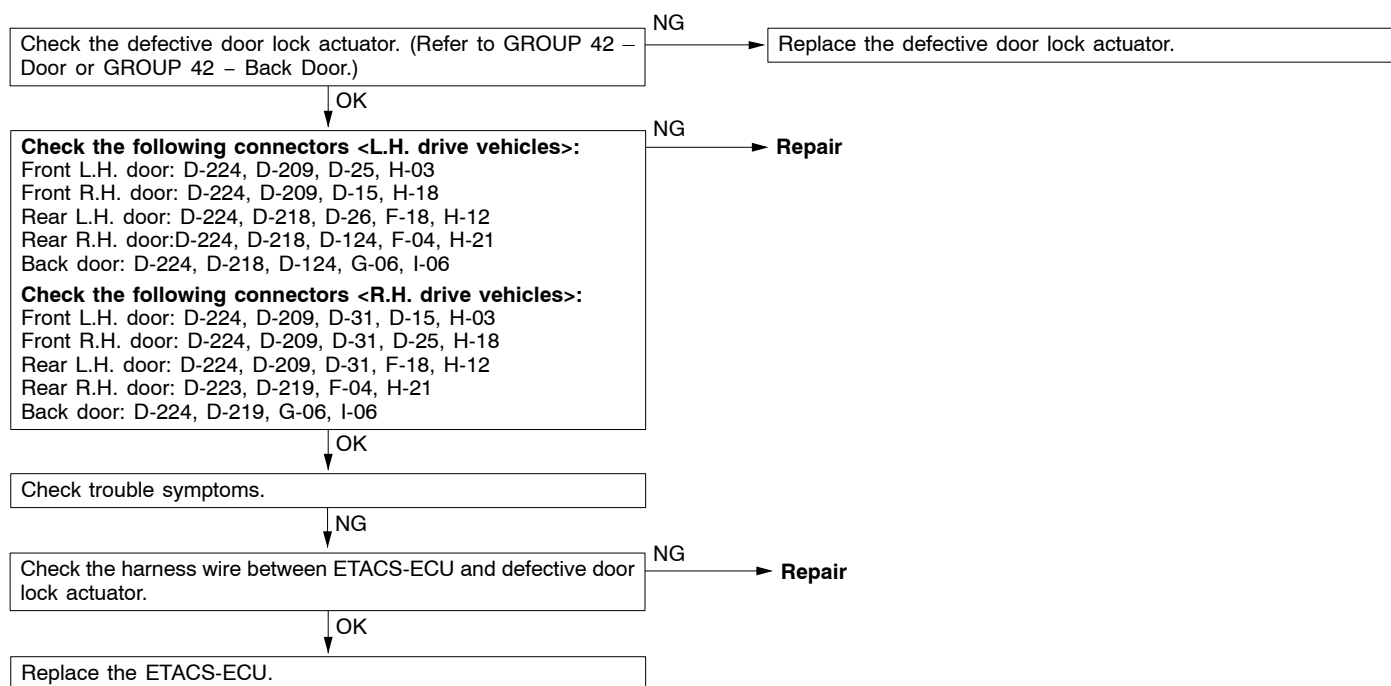
Inspection Procedure C-1

| Central door locking system: Central door locking system does not work normally. | Probable cause |
|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| The power supply circuit, the circuit shared by door lock actuators, or the ETACS-ECU may be defective. | <ul style="list-style-type: none"> • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



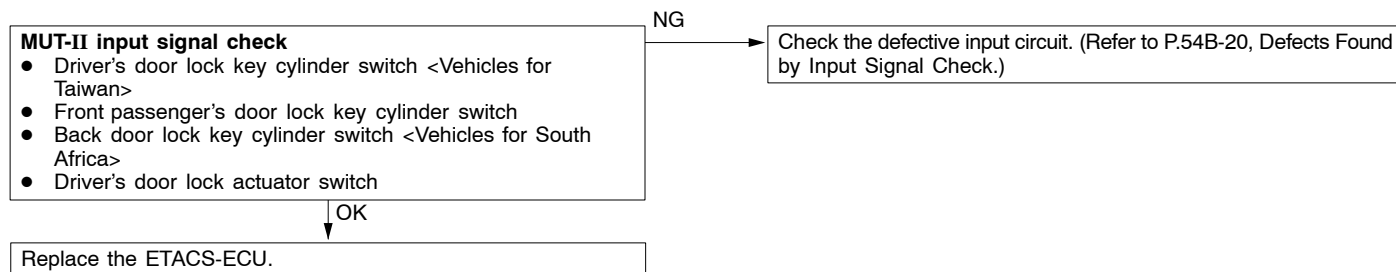
Inspection Procedure C-2

| Central door locking system: Some doors do not lock or unlock. | Probable cause |
|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The door lock actuator, or the harness wire between ETACS-ECU and the door lock actuator may be defective. | <ul style="list-style-type: none"> • Malfunction of driver's, front passenger's, rear or back door lock actuator • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



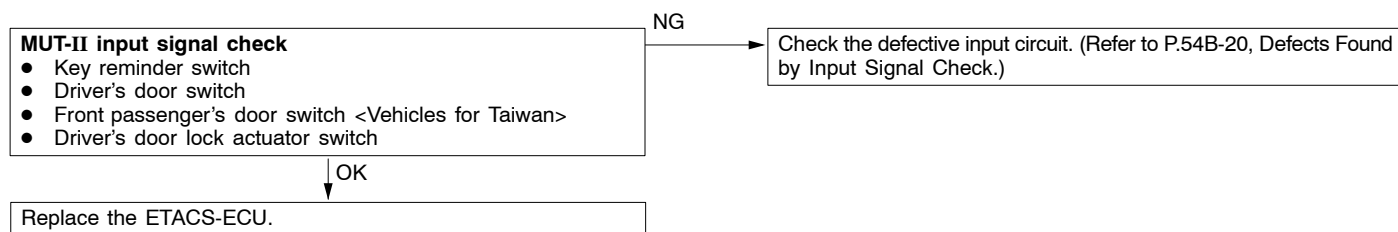
Inspection Procedure C-3

| Central door locking system: Some functions of central locking system do not work. | Probable cause |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the central door locking system, based on input signals from the following switches:</p> <ul style="list-style-type: none"> • Driver's door lock key cylinder switch <Vehicles for Taiwan> • Front passenger's door lock key cylinder switch • Back door lock key cylinder switch <Vehicles for South Africa> • Driver's door lock actuator switch <p>If the system does not work normally, a defect on the relevant circuit or the ETACS-ECU may be suspected.</p> | <ul style="list-style-type: none"> • Malfunction of driver's door lock key cylinder switch <Vehicles for Taiwan> • Malfunction of front passenger's door lock key cylinder switch • Malfunction of back door lock key cylinder switch <Vehicles for South Africa> • Malfunction of driver's door lock actuator switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



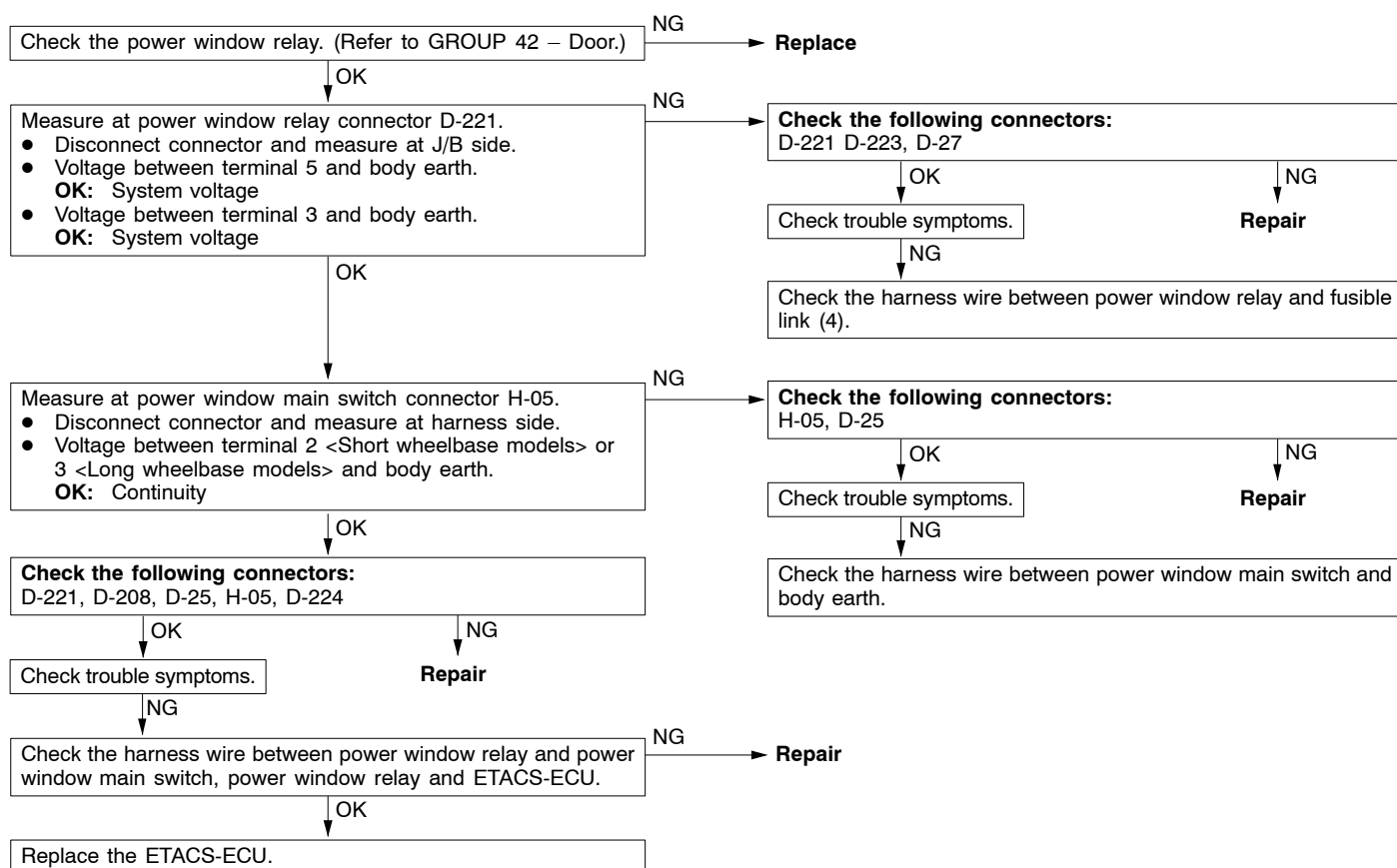
Inspection Procedure C-4

| Central door locking system: Forgotten key prevention function does not work. | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the forgotten key prevention function, based on the input signals from the following switches:</p> <ul style="list-style-type: none"> • Key reminder switch • Driver's door switch • Front passenger's door switch <Vehicles for Taiwan> • Driver's door lock actuator switch <p>If the function does not work normally, a defect on the relevant circuit or the ETACS-ECU may be suspected.</p> | <ul style="list-style-type: none"> • Malfunction of key reminder switch • Malfunction of driver's door switch • Malfunction of front passenger's door switch <Vehicles for Taiwan> • Malfunction of driver's door lock actuator • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



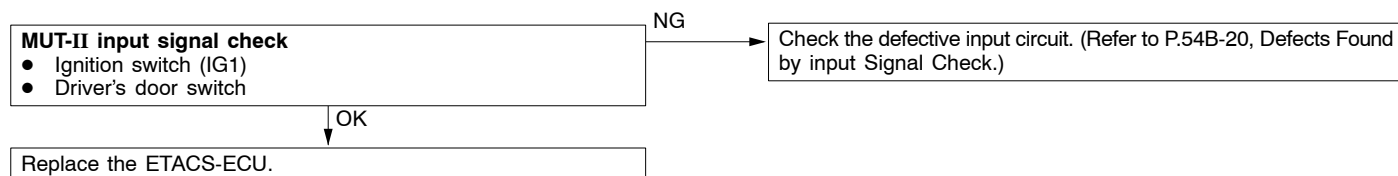
Inspection Procedure D-1

| Power windows <Vehicles without safety mechanism power windows>: Power windows do not work at all. | Probable cause |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The power window relay or the ETACS-ECU may be defective. | <ul style="list-style-type: none"> • Malfunction of power window relay • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



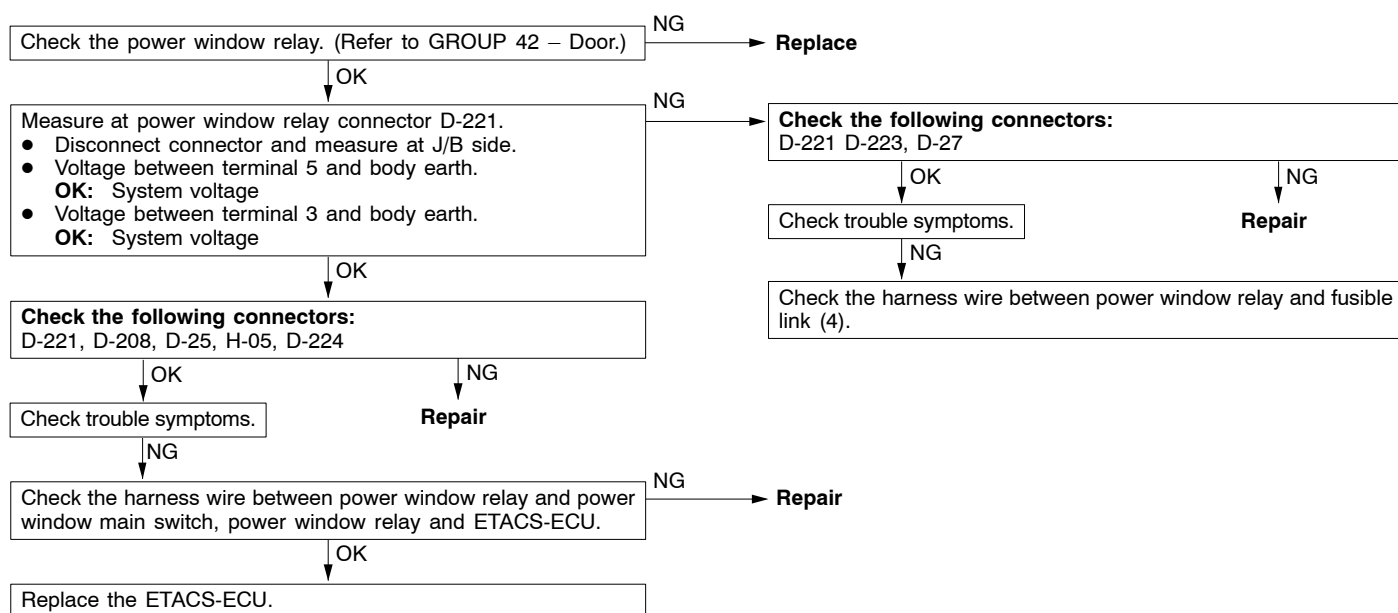
Inspection Procedure D-2

| Power windows <Vehicles without safety mechanism power windows>: Power window timer function does not work normally. | Probable cause |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the power window timer function, based on the input signals from the following switches:</p> <ul style="list-style-type: none"> • Ignition switch (IG1) • Driver's door switch <p>If the function does not work normally, a defect on the relevant circuit or the ETACS-ECU may be suspected.</p> | <ul style="list-style-type: none"> • Malfunction of driver's door switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



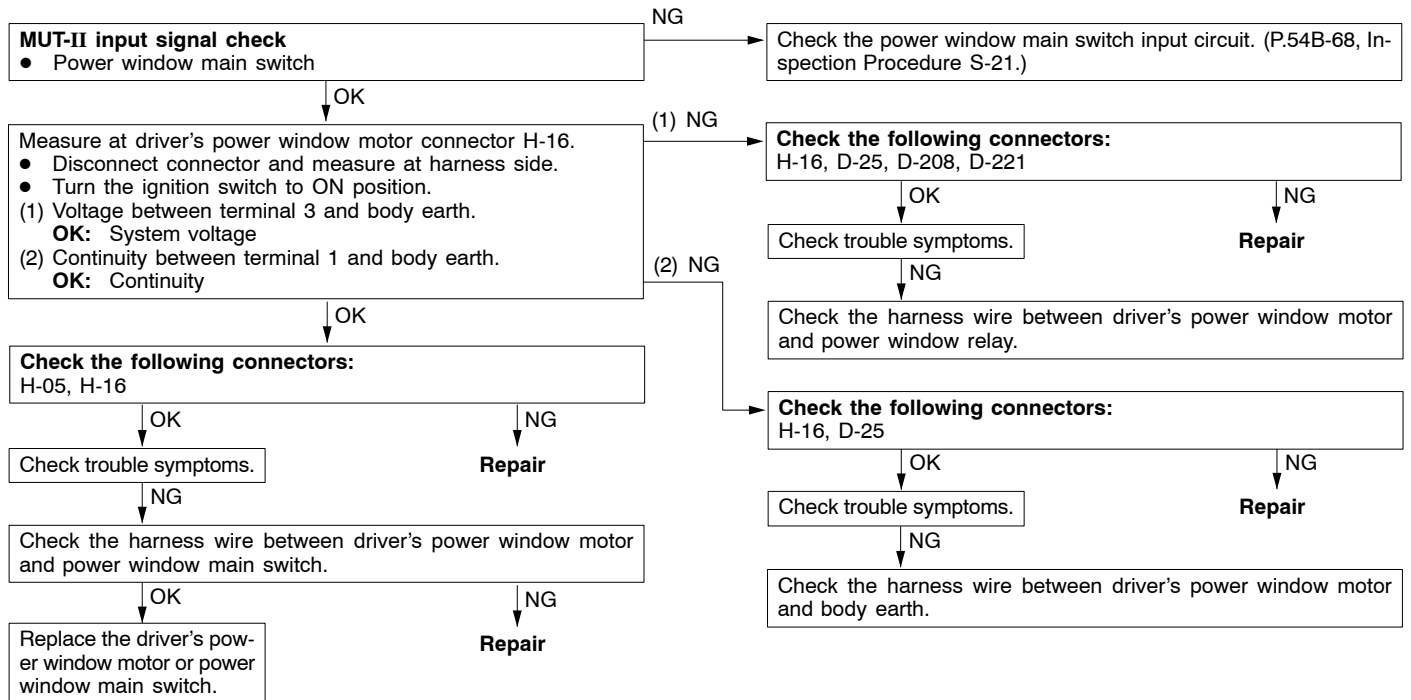
Inspection Procedure D-3

| Power windows <Vehicles with safety mechanism power windows>: Power windows do not work at all. | Probable cause |
|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The power window relay or the ETACS-ECU may be defective.</p> | <ul style="list-style-type: none"> • Malfunction of power window relay • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



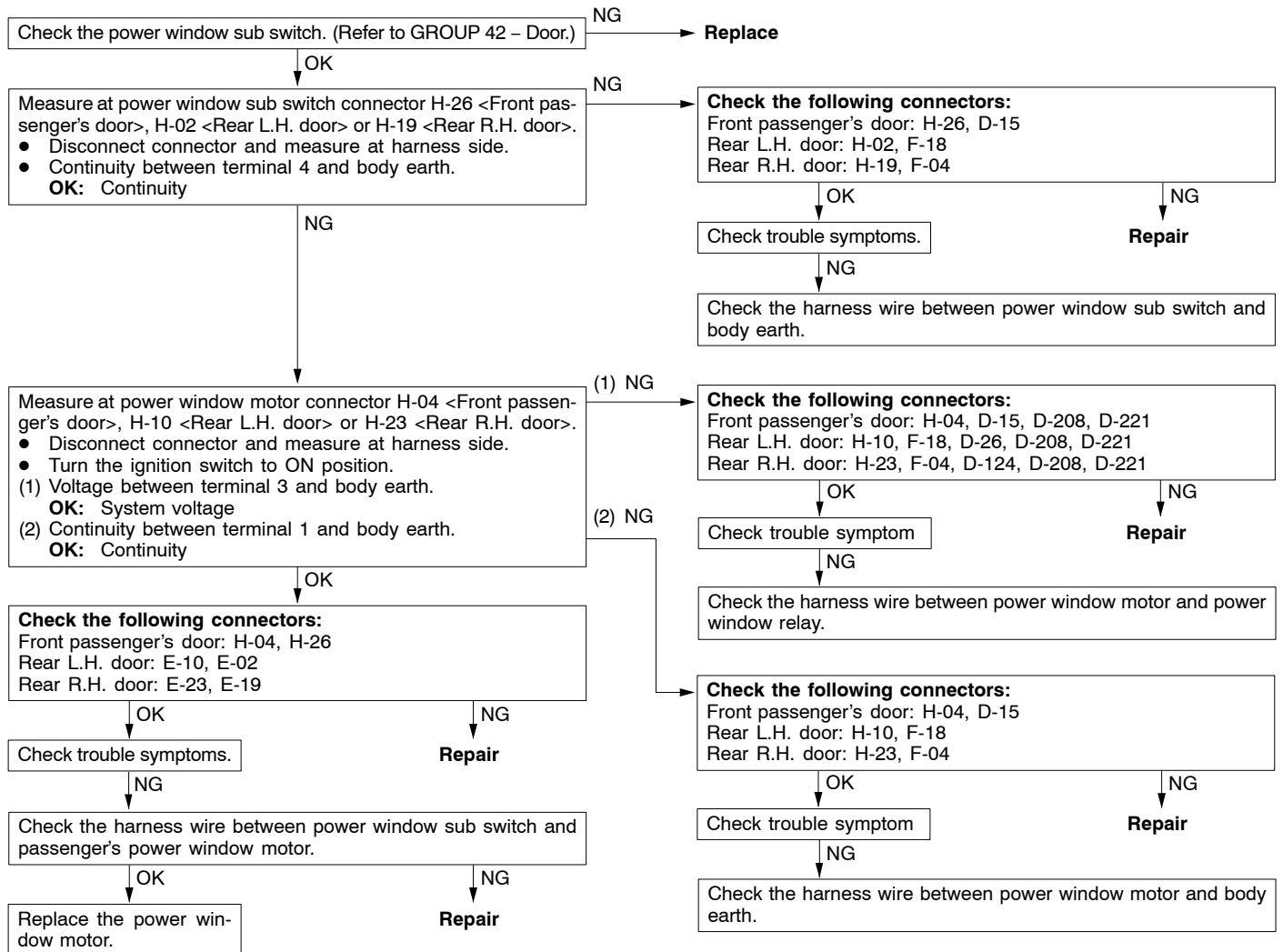
Inspection Procedure D-4

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power windows <Vehicles with safety mechanism power windows>: Power window main switch can not operate driver's window. | Probable cause |
| The cause is probably a malfunction of the power window main switch or driver's side power window motor, or an abnormality in the power supply circuit. | <ul style="list-style-type: none"> • Malfunction of power window main switch • Malfunction of driver's power window motor • Malfunction of harness wire or connector |



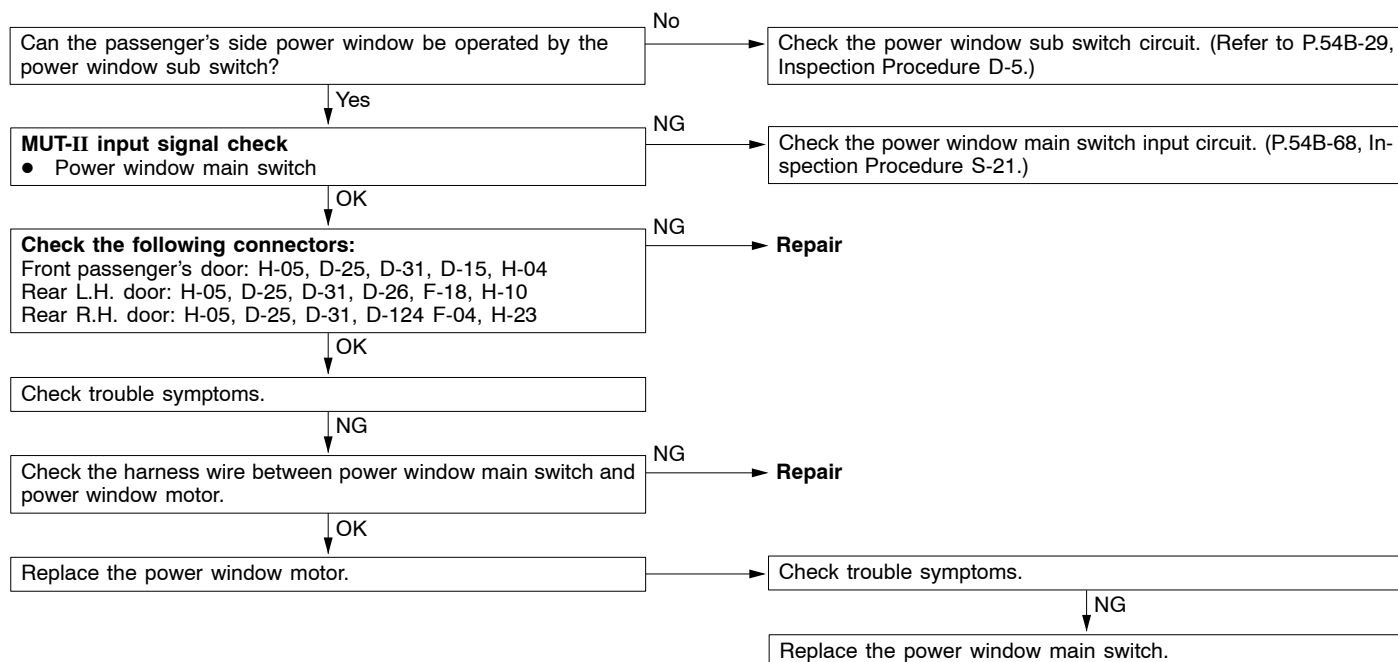
Inspection Procedure D-5

| Power windows <Vehicles with safety mechanism power windows>: Power window sub switch can not operate front passenger's or rear window. | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The cause is probably a malfunction of the power window sub switch or front passenger's or rear power window motor, or an abnormality in the power supply circuit. | <ul style="list-style-type: none"> • Malfunction of power window sub switch • Malfunction of front passenger's or rear power window motor • Malfunction of harness wire or connector |



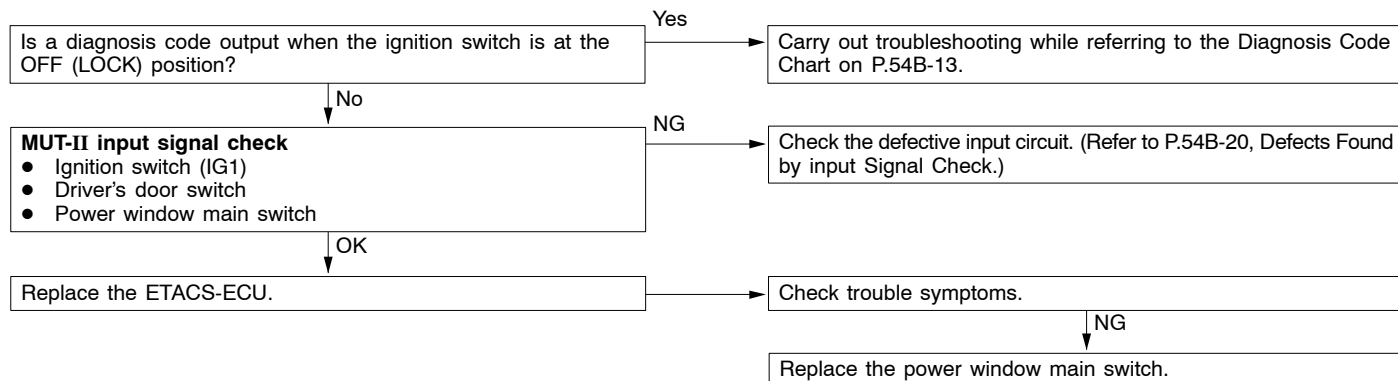
Inspection Procedure D-6

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| power windows <Vehicles with safety mechanism power windows>: Power window main switch can not operate front passenger's or rear window. | Probable cause |
| The cause is probably a malfunction of the power window main switch or front passenger's or rear power window motor, or an abnormality in the power supply circuit. | <ul style="list-style-type: none"> • Malfunction of power window main switch • Malfunction of front passenger's or rear power window motor • Malfunction of harness wire or connector |



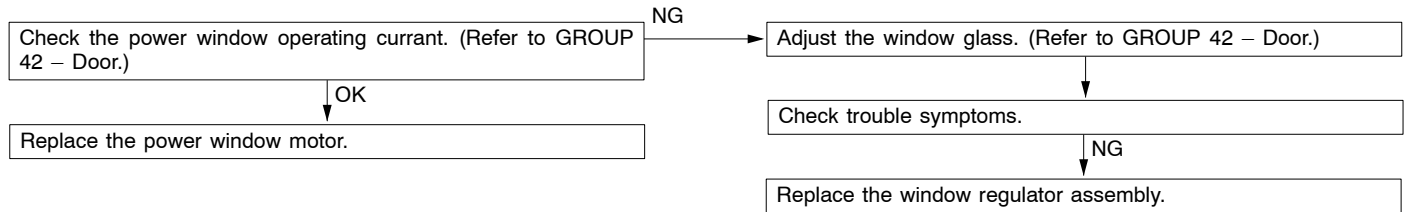
Inspection Procedure D-7

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power windows <Vehicles with safety mechanism power windows>: Power window timer function does not work normally. | Probable cause |
| The ETACS-ECU operates the power window timer function, based on the input signals from the following switches: <ul style="list-style-type: none"> • Ignition switch (IG1) • Driver's door switch If the function does not work normally, a defect on the relevant circuit, power window main switch or the ETACS-ECU may be suspected. | <ul style="list-style-type: none"> • Malfunction of driver's door switch • Malfunction of power window main switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



Inspection Procedure D-8

| Power windows <Vehicles with safety mechanism power windows>: When the glass is raised, it then lowers automatically. | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If the sliding resistance is too large when the glass is being raised, it is judged that something is jammed in the window, and the window is lowered by approximately 150 mm. | <ul style="list-style-type: none"> • Incorrect window glass adjustment • Glass slider is incorrectly installed or warped • Malfunction of power window motor |



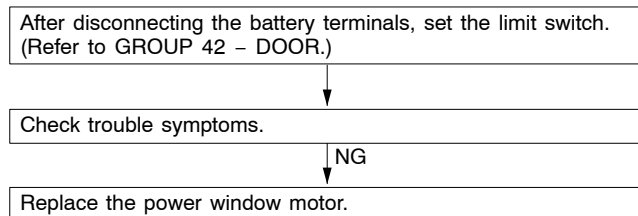
Inspection Procedure D-9

| Power windows <Vehicles with safety mechanism power windows>: Safety mechanism does not function. | Probable cause |
|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| The cause may be a malfunction of the revolution detection sensor in the power window motor. | <ul style="list-style-type: none"> • Malfunction of power window motor |

Replace the power window motor.

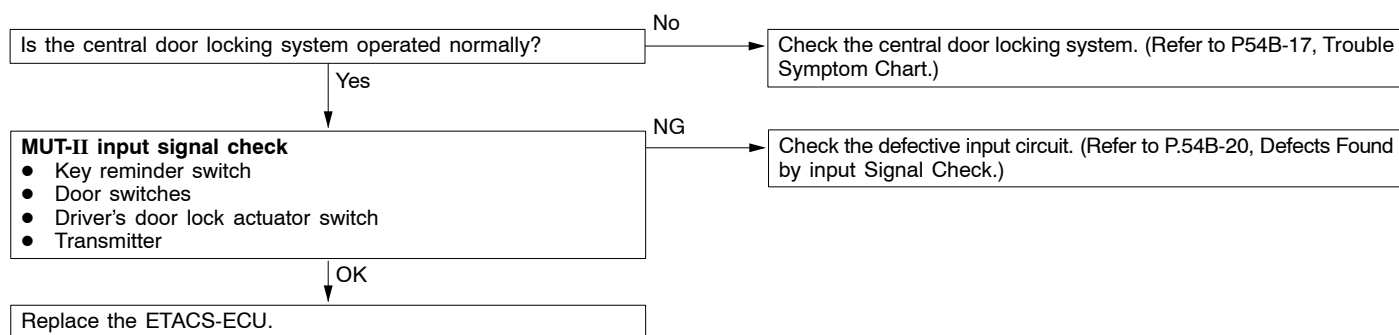
Inspection Procedure D-10

| Power windows <Vehicles with safety mechanism power windows>: When the glass is fully raised, it then lowers automatically. | Probable cause |
|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| The cause may be a malfunction of the revolution detection sensor in the power window motor. | <ul style="list-style-type: none"> • Malfunction of power window motor |



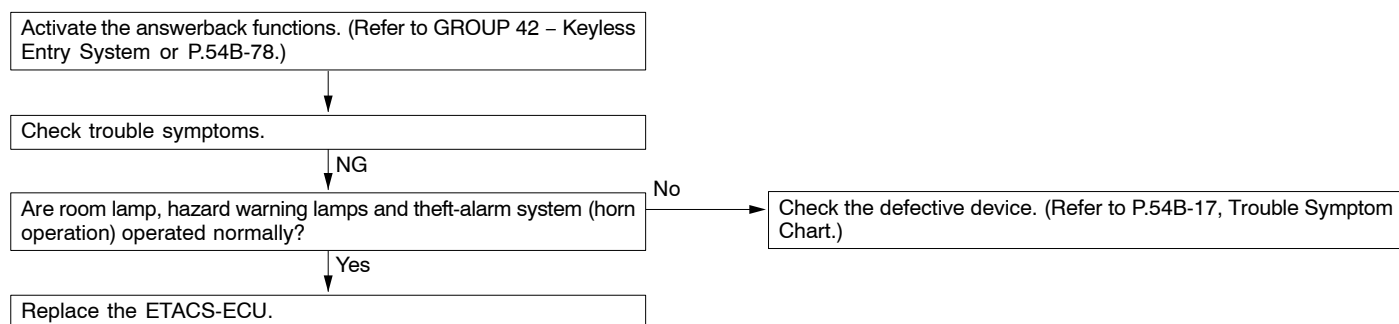
Inspection Procedure E-1

| Keyless entry system: Keyless entry system does not operate. | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the keyless entry system, based on the input signals from the following switches:</p> <ul style="list-style-type: none"> • Key reminder switch • Door switches • Driver's door lock actuator switch • Transmitter <p>If the function does not work normally, a defect on the relevant circuit or the ETACS-ECU may be suspected.</p> | <ul style="list-style-type: none"> • Malfunction of key reminder switch • Malfunction of door switches • Malfunction of driver's door lock actuator switch • Malfunction of transmitter • Malfunction of ETACS-ECU |



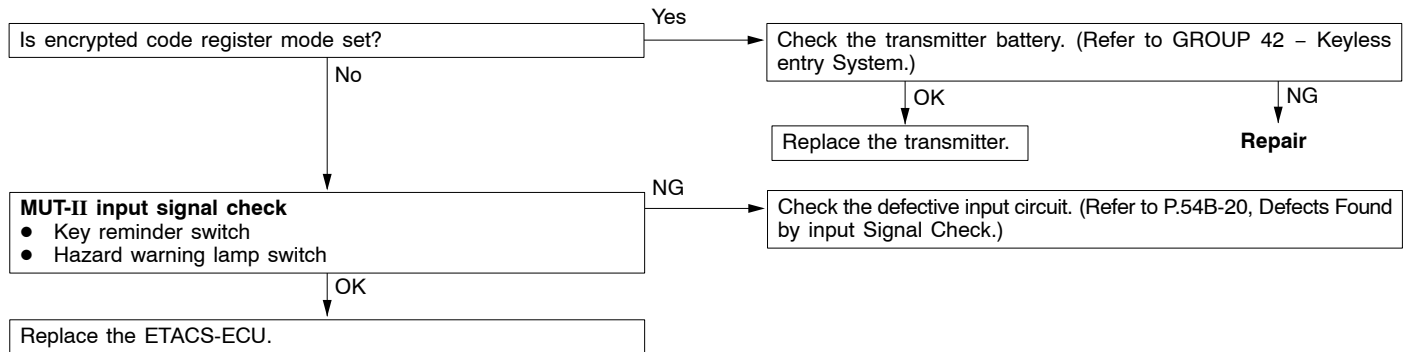
Inspection Procedure E-2

| Keyless entry system: The room lamp, hazard warning lamps and horn do not operate through the answerback function. | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The hazard warning lamp and horn answerback function can be selected by the driver's desire (can be deactivated). However, the room lamp answerback function can not be deactivated. If all of these device do not operate through the answerback function, the ETACS-ECU may be defective.</p> | <ul style="list-style-type: none"> • Malfunction of turn-signal lamp • Malfunction of room lamp • Malfunction of horn • Malfunction of theft-alarm horn • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



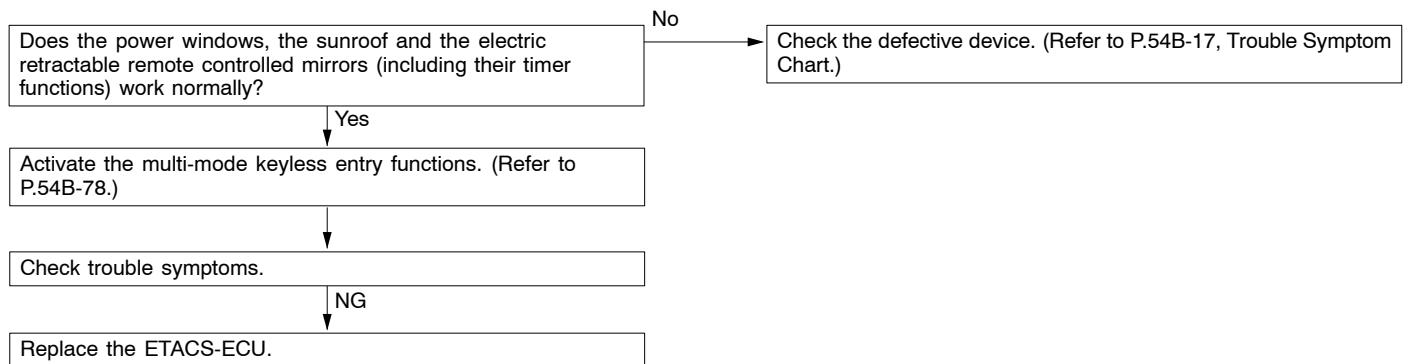
Inspection Procedure E-3

| Keyless entry system: The encrypted code cannot be registered. | Probable cause |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU activates the encrypted code register mode according to the following switch signals.</p> <ul style="list-style-type: none"> • Key reminder switch • Hazard warning lamp switch <p>If the encrypted code register mode is not set, the relevant input signal circuit or the ETACS-ECU may be defective.</p> <p>If a transmitter can not be registered although the encrypted code register mode is set, the transmitter or the ETACS-ECU may be defective.</p> | <ul style="list-style-type: none"> • Malfunction of key reminder switch • Malfunction of hazard warning lamp switch • Malfunction of transmitter • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



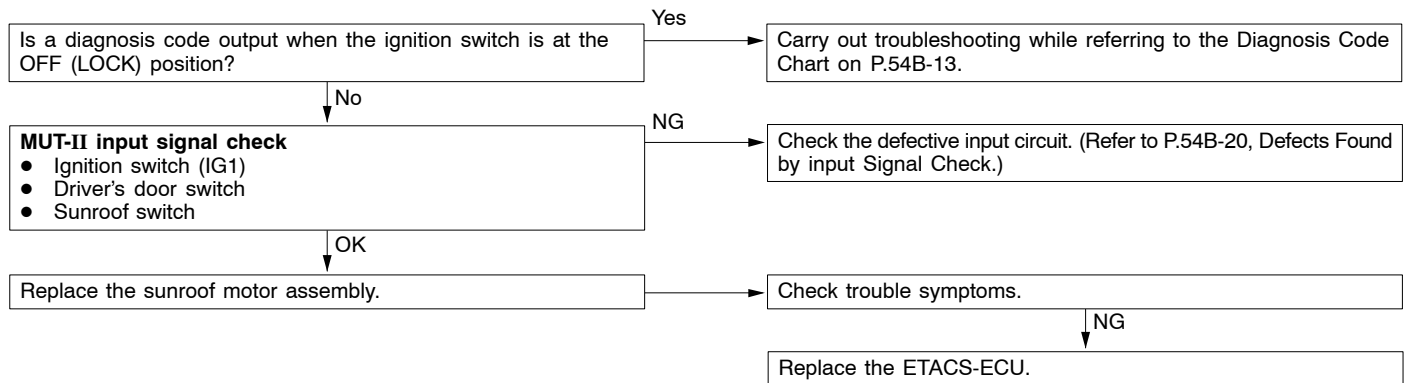
Inspection Procedure E-4

| Keyless entry system: Multi-mode keyless entry function does not work normally. | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <p>If the power windows, the sunroof and the electric retractable remote controlled mirrors work normally, the ETACS-ECU will be defective.</p> <p>Besides that, the operations of the power windows and the sunroof may be suspended.</p> | <ul style="list-style-type: none"> • Malfunction of ETACS-ECU |



Inspection Procedure F-2

| Sunroof: Sunroof timer function does not work normally. | Probable cause |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The sunroof motor assembly operates the sunroof timer function, based on the input signals from the following switches:</p> <ul style="list-style-type: none"> • Ignition switch (IG1) • Driver's door switch <p>If the function does not work normally, a defect on the relevant circuit, sunroof motor assembly or the ETACS-ECU may be suspected.</p> | <ul style="list-style-type: none"> • Malfunction of driver's door switch • Malfunction of sunroof motor assembly • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



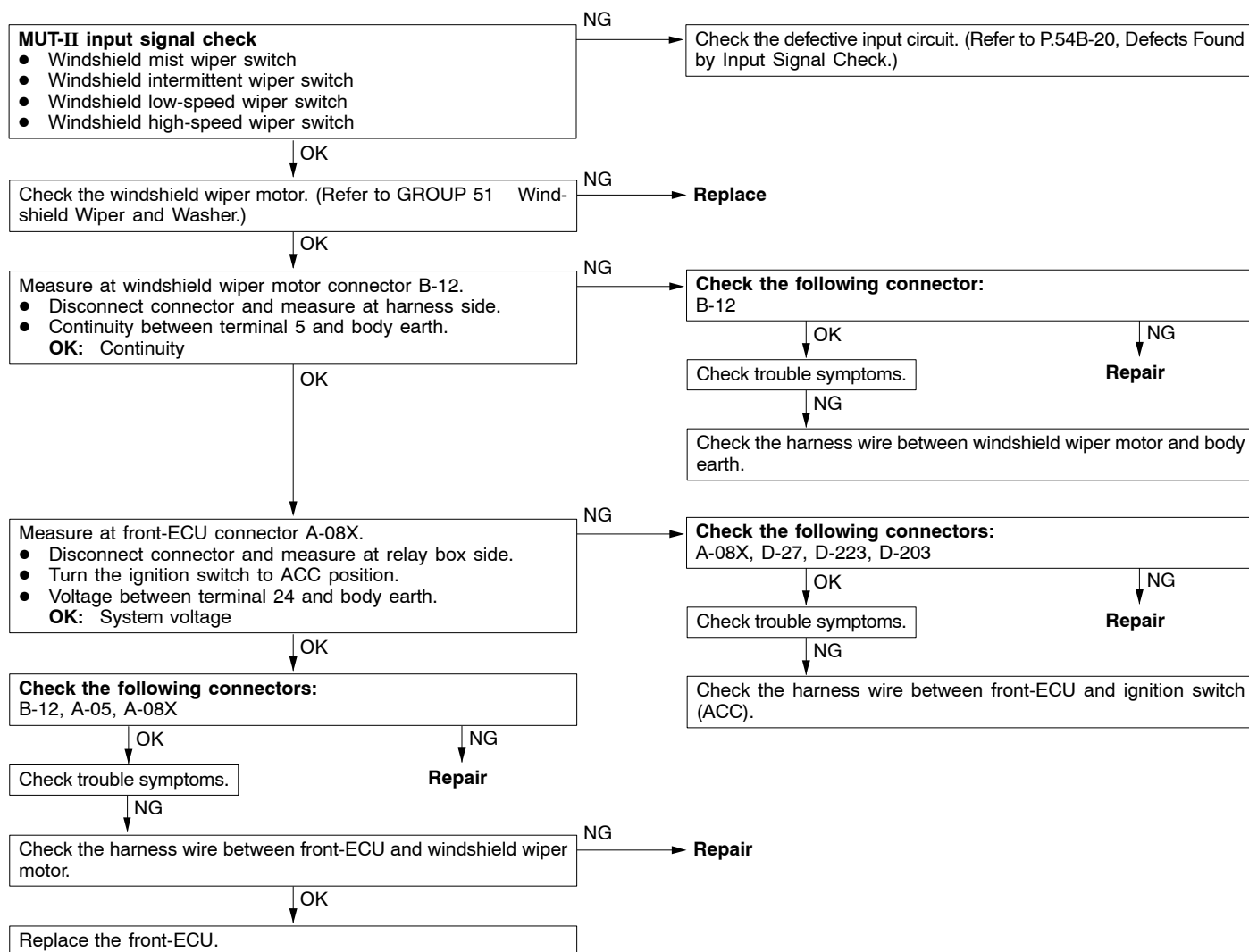
Inspection Procedure F-3

| Sunroof: Safety mechanism does not work normally. | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| <p>The sunroof motor assembly monitors load condition according to the current, which runs in the motor. If a predetermined current is exceeded, the sunroof motor reverses due to safety mechanism. If the sunroof motor does not reverse when an excessive load is applied, the sunroof motor assembly may be defective.</p> | <ul style="list-style-type: none"> • Malfunction of sunroof motor assembly |

Replace the sunroof motor assembly.

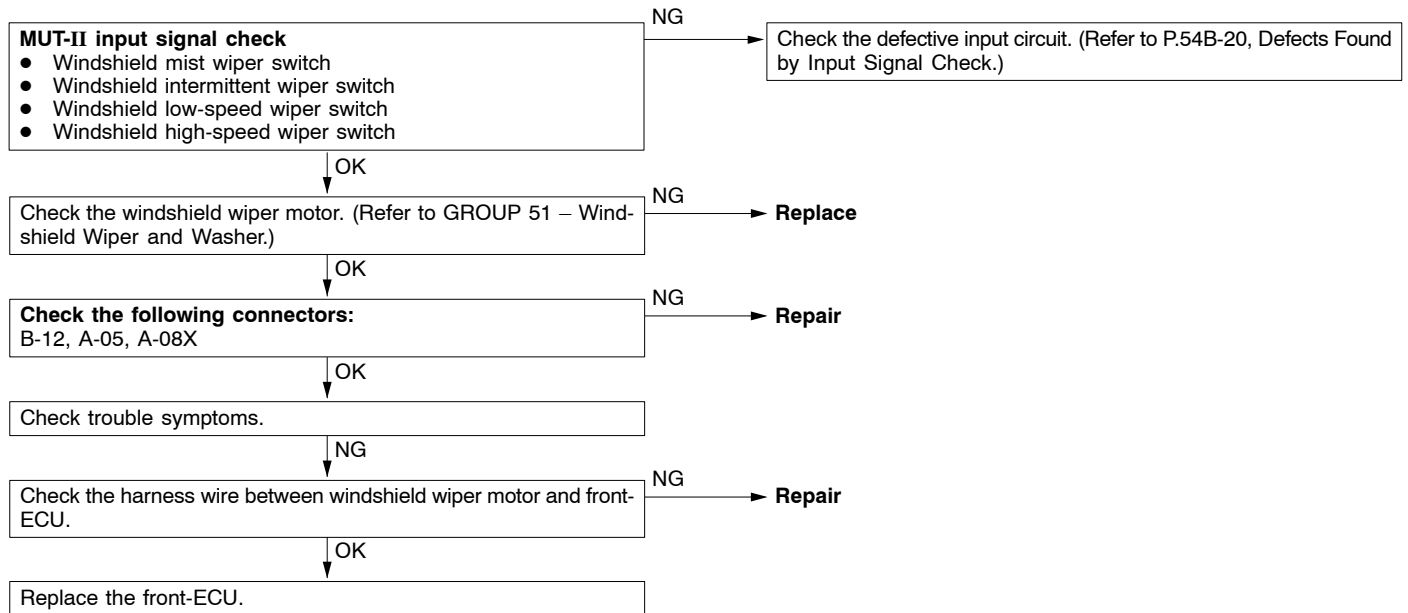
Inspection Procedure G-1

| Windshield wiper and washer: Windshield wiper does not operate. | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If the windshield wiper does not work at all, the windshield wiper motor, column switch or the front-ECU may be defective. | <ul style="list-style-type: none"> • Malfunction of windshield wiper motor • Malfunction of column switch • Malfunction of front-ECU • Malfunction of harness wire or connector |



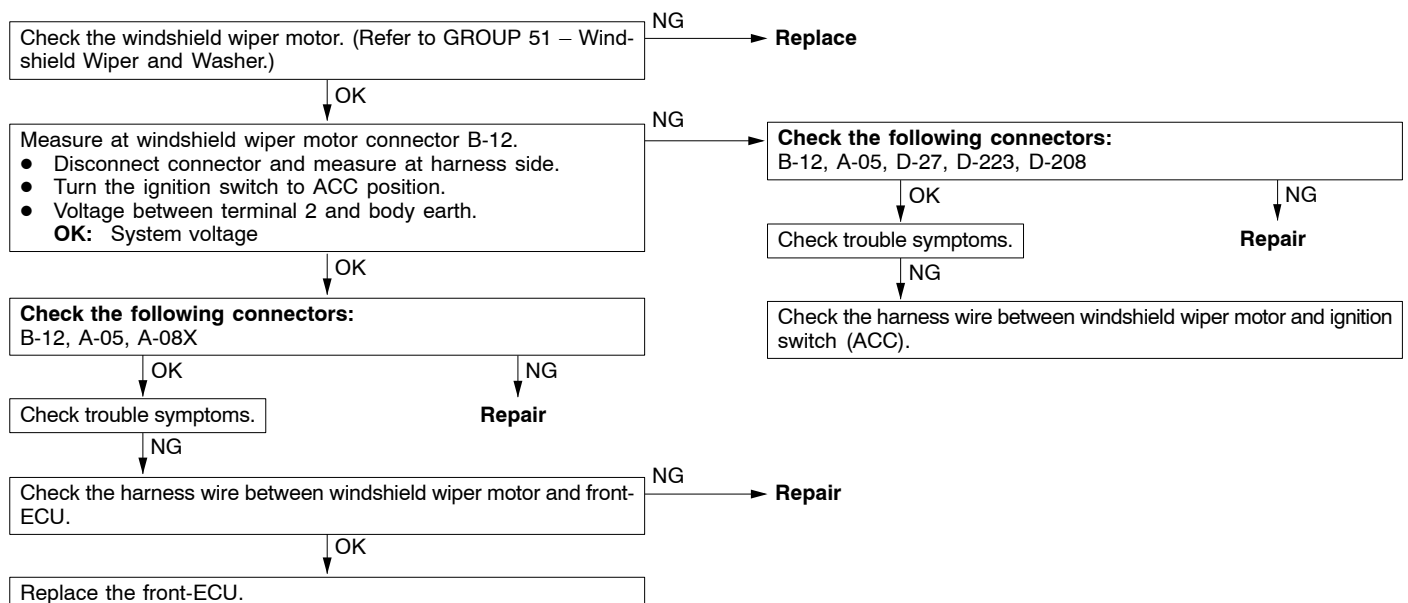
Inspection Procedure G-2

| Windshield wiper and washer: Any of the windshield wiper switch positions is defective. | Probable cause |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The windshield wiper motor, column switch or the front-ECU may be defective. | <ul style="list-style-type: none"> • Malfunction of windshield wiper motor • Malfunction of column switch • Malfunction of front-ECU • Malfunction of harness wire or connector |



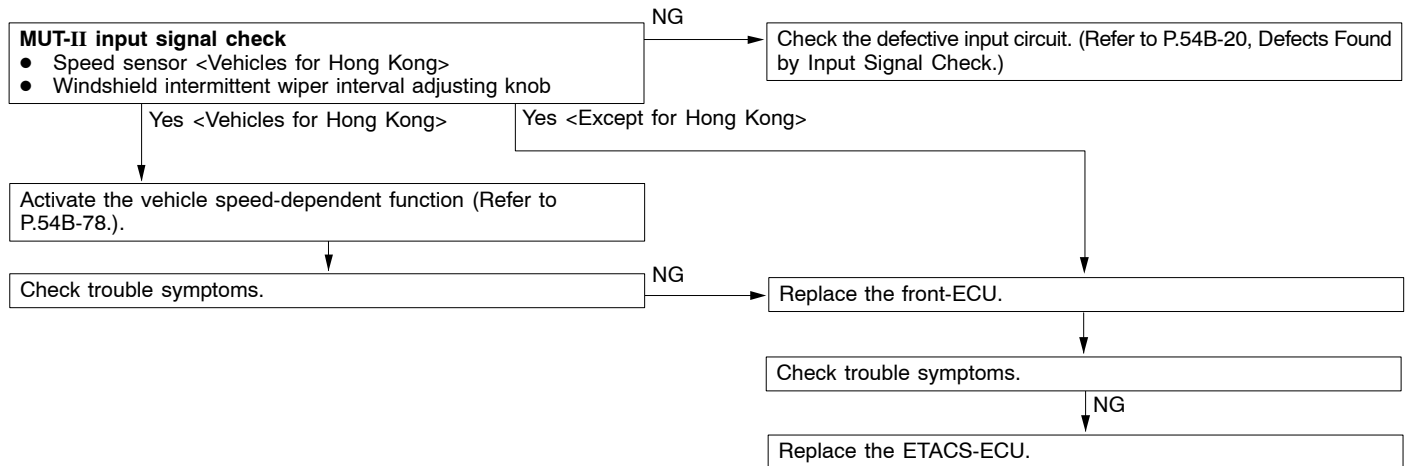
Inspection Procedure G-3

| Windshield wiper and washer: Windshield wiper does not stop at the predetermined park position. | Probable cause |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The windshield wiper motor or the front-ECU may be defective. | <ul style="list-style-type: none"> • Malfunction of windshield wiper motor • Malfunction of front-ECU • Malfunction of harness wire or connector |



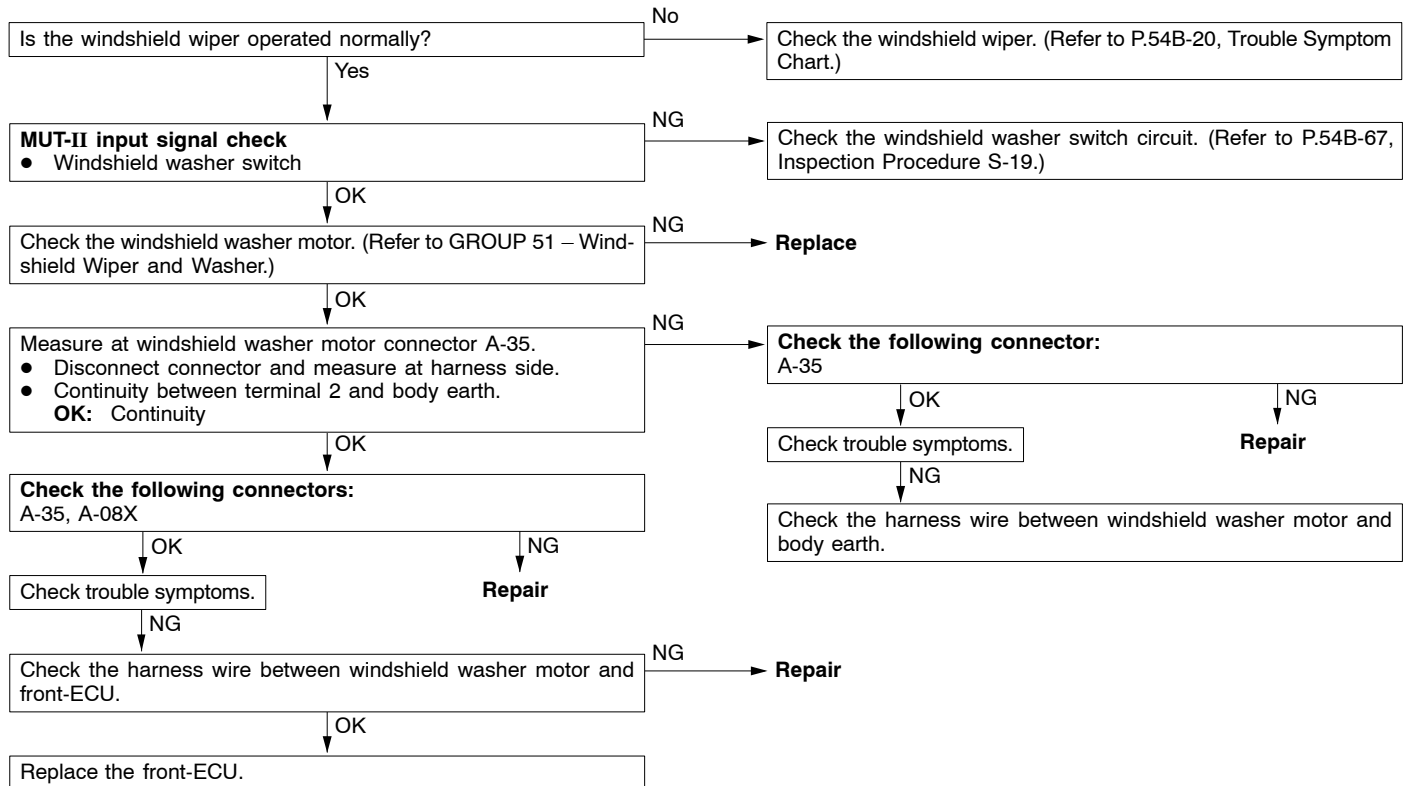
Inspection Procedure G-4

| Windshield wiper and washer: Windshield intermittent wiper interval cannot be adjusted. | Probable cause |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU calculates the intermittent wiper interval from the following input signals, and sends a signal to the front-ECU through the SWS communication line.</p> <ul style="list-style-type: none"> • Speed sensor <Vehicles for Hong Kong> • Windshield intermittent wiper interval adjusting knob <p>If the signal is defective, the front-ECU will ignore the signal and set the intermittent wiper interval to 4 seconds.</p> <p>On vehicles for Hong Kong, the vehicle speed-dependent function may be suspended by the configuration function.</p> | <ul style="list-style-type: none"> • Malfunction of column switch • Malfunction of front-ECU • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



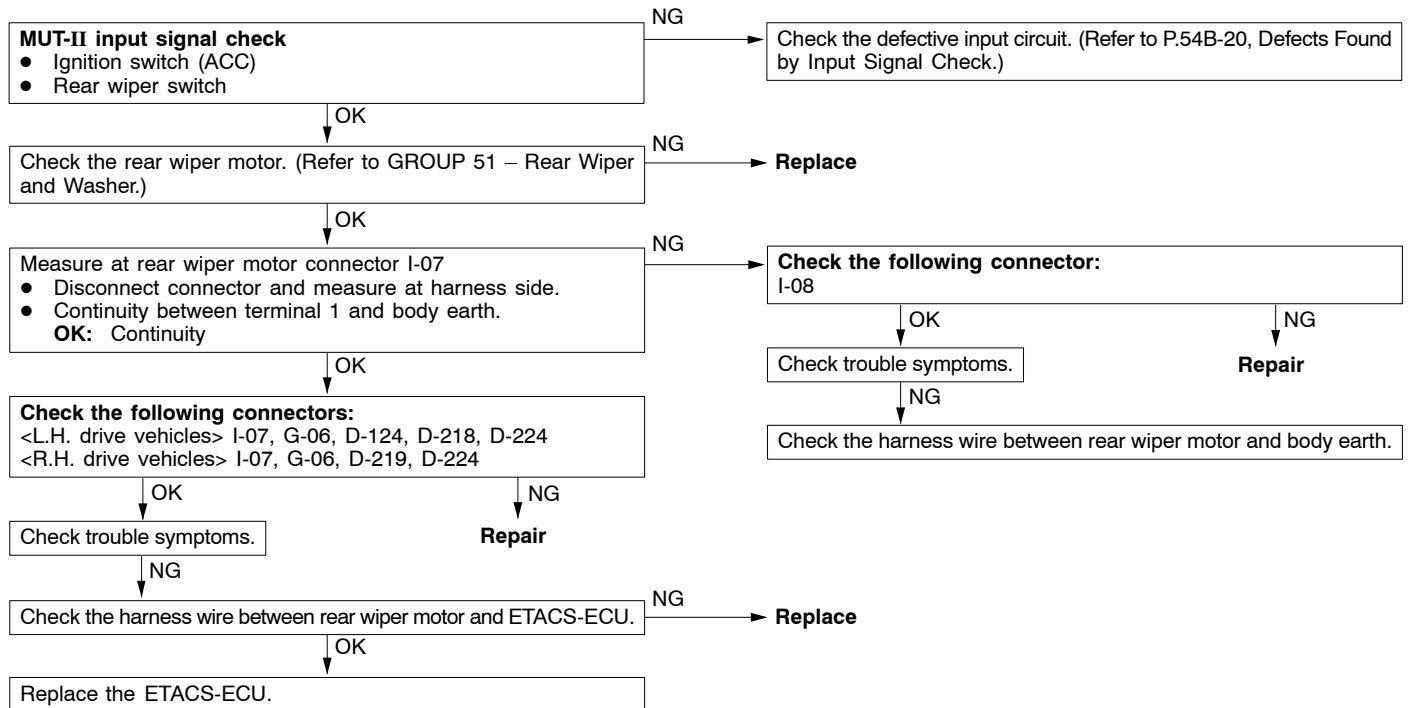
Inspection Procedure G-5

| Windshield wiper and washer: Windshield washer does not work. | Probable cause |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The windshield washer motor, the column switch or the front-ECU may be defective. | <ul style="list-style-type: none"> • Malfunction of windshield washer motor • Malfunction of column switch • Malfunction of front-ECU • Malfunction of harness wire or connector |



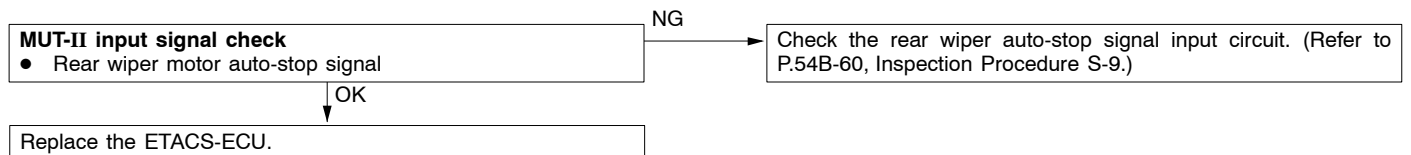
Inspection Procedure H-1

| Rear wiper and washer: Rear wiper does not work normally. | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the rear wiper according to the input signals from the following switches:</p> <ul style="list-style-type: none"> • Ignition switch (ACC) • Rear wiper switch <p>If the rear wiper does not work normally, the relevant input signal circuit, the rear wiper motor, the column switch or the ETACS-ECU may be defective.</p> | <ul style="list-style-type: none"> • Malfunction of rear wiper motor • Malfunction of column switch • Malfunction of front-ECU • Malfunction of harness wire or connector |



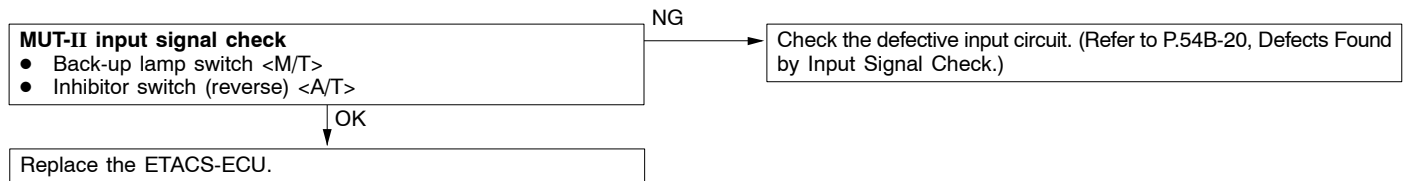
Inspection Procedure G-2

| Rear wiper and washer: Rear wiper does not stop at the predetermined park position. | Probable cause |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The rear wiper motor or the ETACS-ECU may be defective.</p> | <ul style="list-style-type: none"> • Malfunction of rear wiper motor • Malfunction of front-ECU • Malfunction of harness wire or connector |



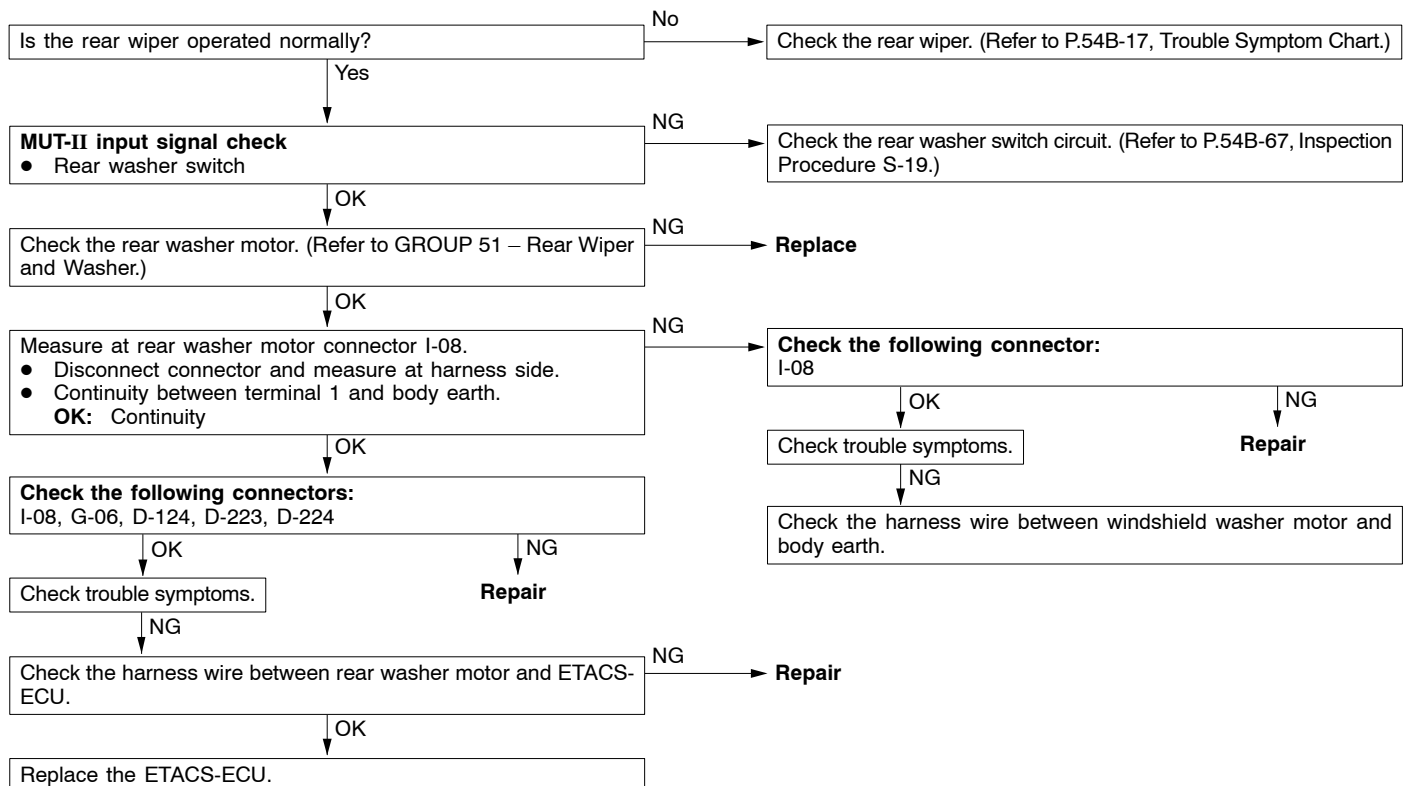
Inspection Procedure G-3

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rear wiper and washer: When the shift lever <M/T> or selector lever <A/T> is moved to R position during the rear wiper operation, the rear wiper does not operate at the continuous mode. | Probable cause |
| The ETACS-ECU operates the rear wiper consecutively twice when the shift lever <M/T> or selector lever <A/T> is moved to R position while the rear wiper is turned on. If the rear wiper does not work consecutively twice, the back-up lamp switch <M/T> or the inhibitor switch (reverse) <A/T> may be defective. | <ul style="list-style-type: none"> • Malfunction of back-up lamp switch • Malfunction of inhibitor switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



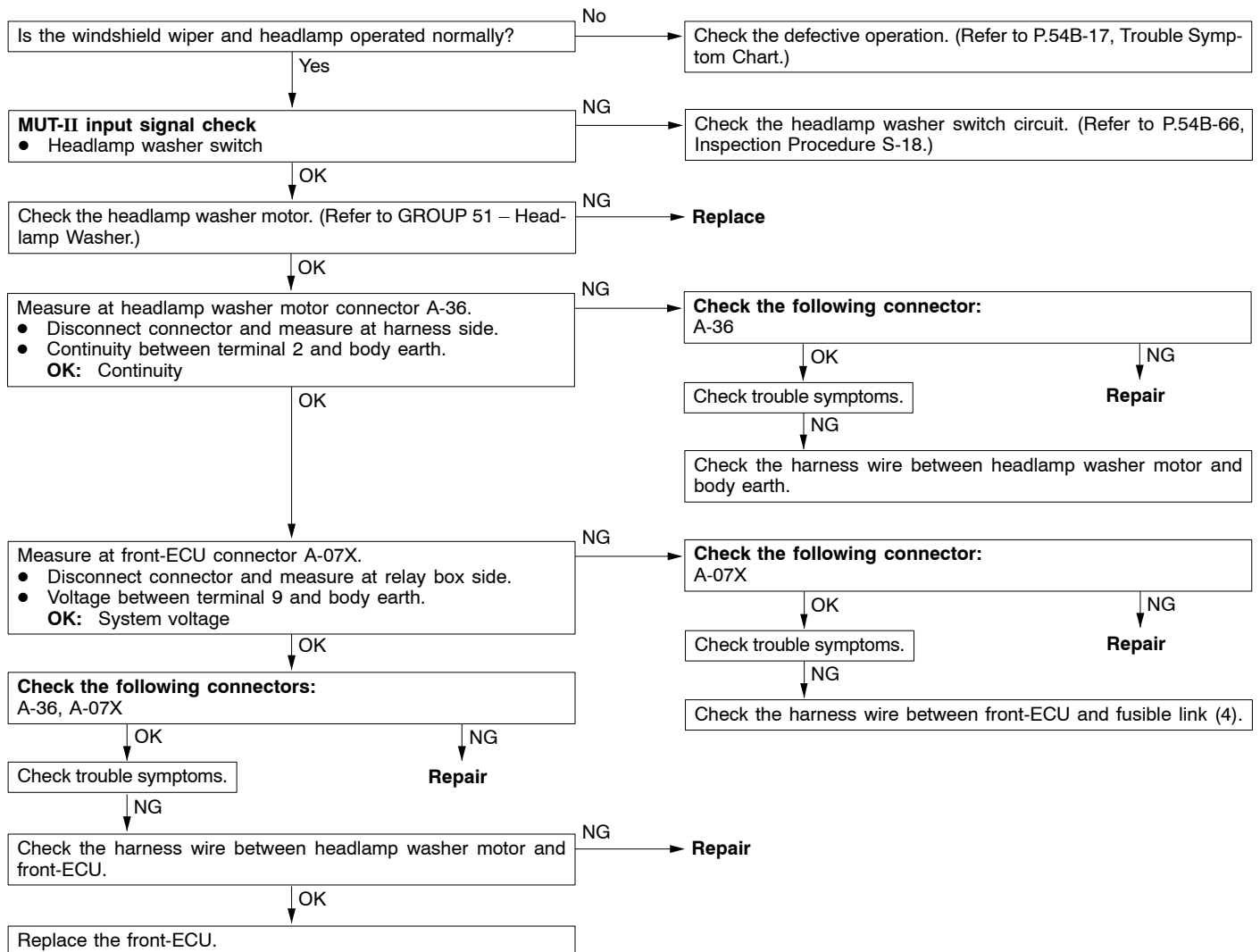
Inspection Procedure G-4

| | |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rear wiper and washer: Rear washer does not work. | Probable cause |
| The rear washer motor, the column switch or the ETACS-ECU may be defective. | <ul style="list-style-type: none"> • Malfunction of rear washer motor • Malfunction of column switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



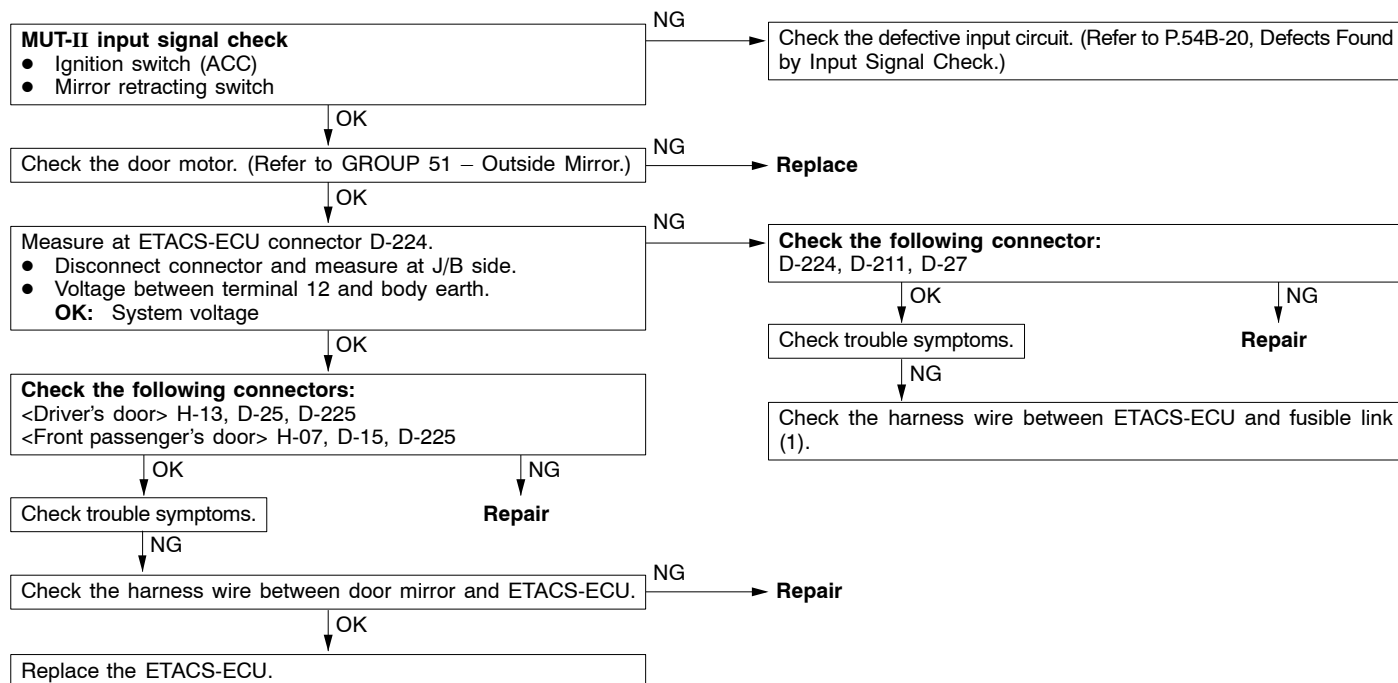
Inspection Procedure I-1

| Headlamp washer: Headlamp washer does not work. | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The front-ECU operates the headlamp washers if the headlamp washer switch is turned to ON while the headlamp relays (low and high) are ON and the ignition switch is at the ACC or ON position.</p> <p>If the headlamp washer does not work normally, the headlamp washer motor, the column switch or the front-ECU may be defective.</p> | <ul style="list-style-type: none"> • Malfunction of headlamp washer motor • Malfunction of column switch • Malfunction of front-ECU • Malfunction of harness wire or connector |



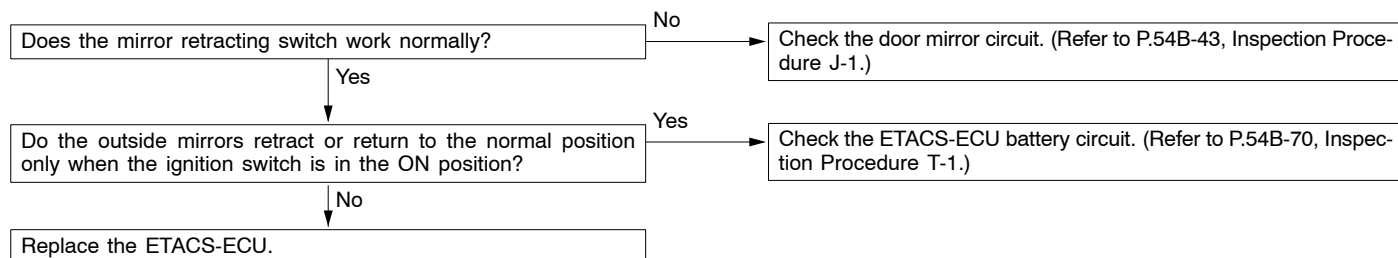
Inspection Procedure J-1

| Electric retractable remote controlled mirror: Electric retractable remote controlled mirror does not work at all. | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the electric retractable remote controlled mirror operation, based on input signals from the following switches:</p> <ul style="list-style-type: none"> • Ignition switch (ACC) • Mirror retracting switch <p>If the electric retractable remote controlled mirror does not work normally, the relevant input signal circuit, the door mirror or the ETACS-ECU may be defective.</p> | <ul style="list-style-type: none"> • Malfunction of mirror retracting switch • Malfunction of door mirror • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



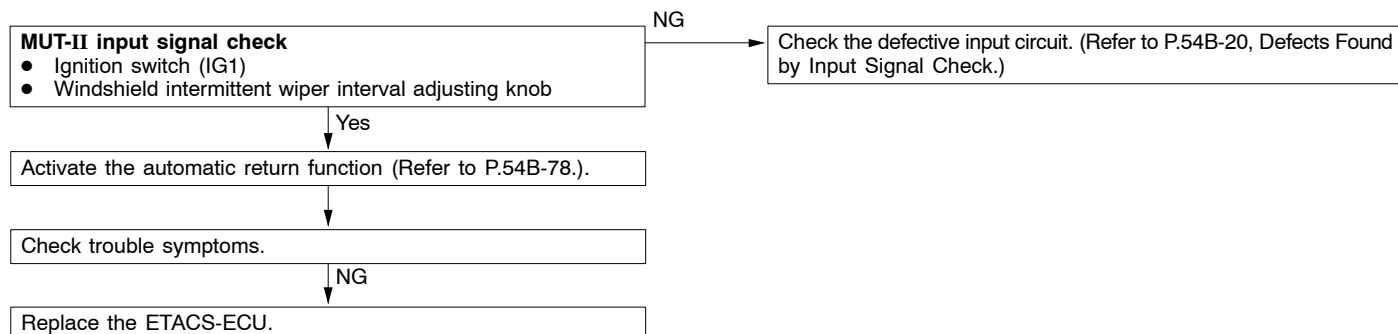
Inspection Procedure J-2

| Electric retractable remote controlled mirror: Electric retractable remote controlled mirror timer function does not work normally. | Probable cause |
|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| If the mirror retracting switch works normally, the ETACS-ECU will be defective. | <ul style="list-style-type: none"> • Malfunction of ETACS-ECU |



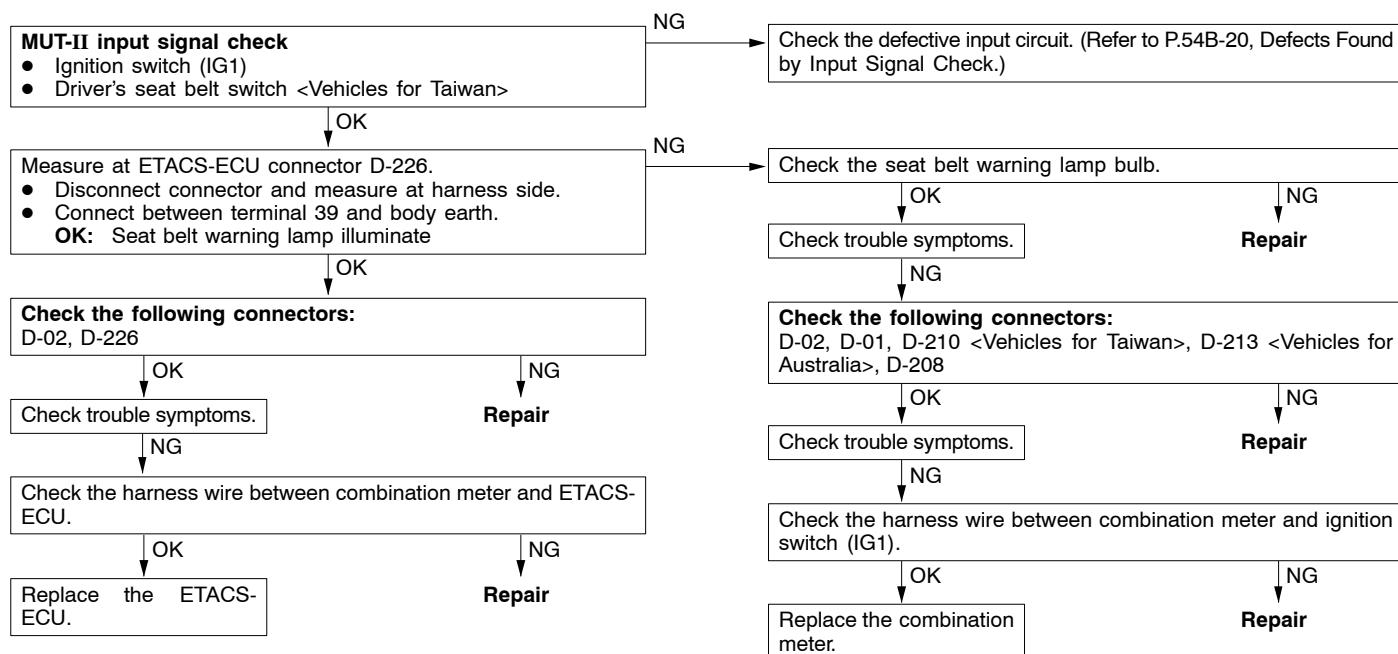
Inspection Procedure J-3

| Electric retractable remote controlled mirror: The outside mirrors do not return to the normal position automatically. | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the automatic return function, based on input signals from the following switches:</p> <ul style="list-style-type: none"> • Ignition switch (IG1) • Speed sensor <p>If this function does not work normally, the relevant input signal circuit or the ETACS-ECU may be defective.</p> <p>Besides that, this function may be suspended by the configuration function.</p> | <ul style="list-style-type: none"> • Malfunction of speed sensor • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



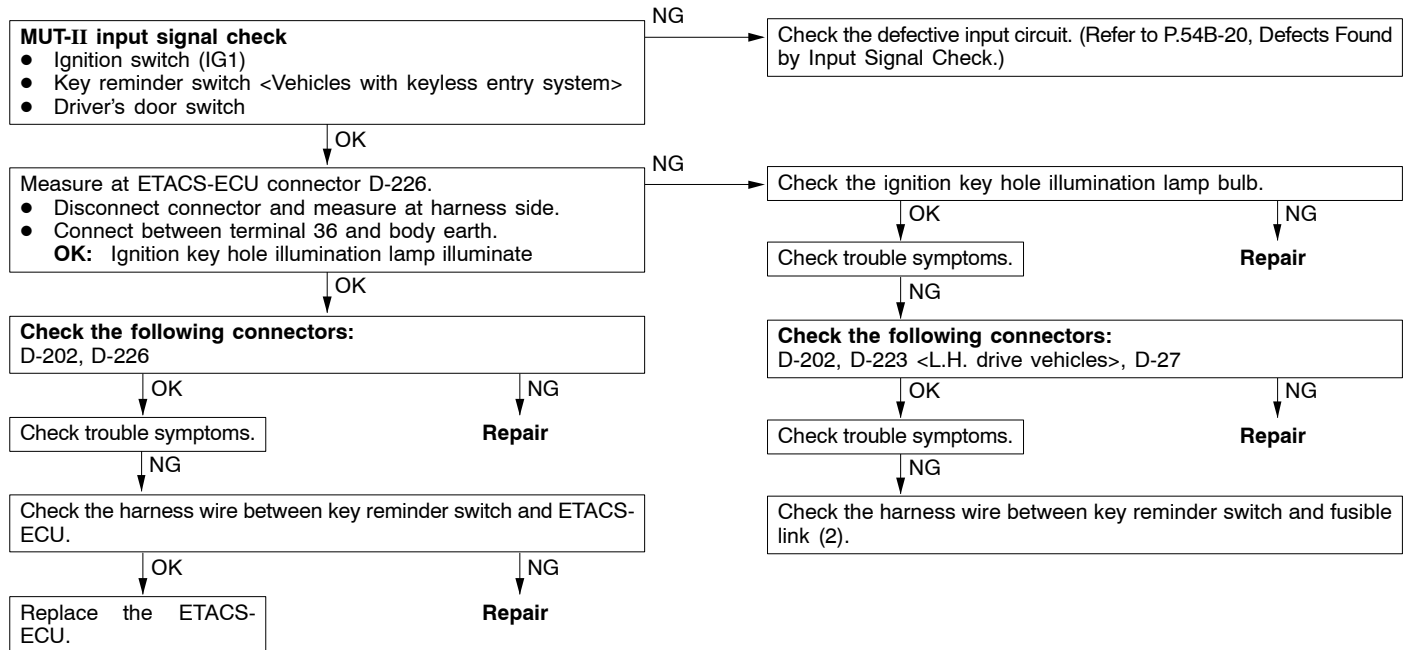
Inspection Procedure K-1

| Seat belt warning lamp: Seat belt warning lamp does not work normally. | Probable cause |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the seat belt warning lamp operation, based on input signals from the following switches:</p> <ul style="list-style-type: none"> • Ignition switch (IG1) • Driver's seat belt switch <Vehicles for Taiwan> <p>If the seat belt warning lamp does not work normally, the relevant input signal circuit, the combination meter or the ETACS-ECU may be defective.</p> | <ul style="list-style-type: none"> • Malfunction of driver's seat belt switch <Vehicles for Taiwan> • Malfunction of combination meter • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



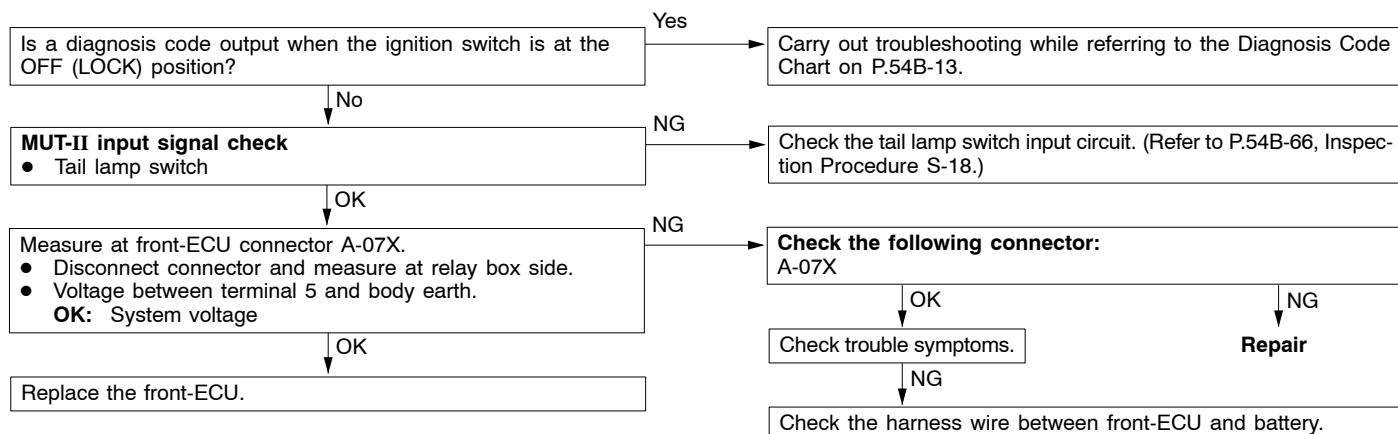
Inspection Procedure L-1

| Ignition key hole illumination lamp: Ignition key hole illumination lamp does not work normally. | Probable cause |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the ignition key hole illumination lamp operation, based on input signals from the following switches:</p> <ul style="list-style-type: none"> • Ignition switch (IG1) • Key reminder switch <Vehicles with keyless entry system> • Driver's door switch <p>If the ignition key hole illumination lamp does not work normally, the relevant input signal circuit, the combination meter or the ETACS-ECU may be defective.</p> | <ul style="list-style-type: none"> • Malfunction of key reminder switch <Vehicles with keyless entry system> • Malfunction of driver's door switch • Malfunction of combination meter • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



Inspection Procedure M-1

| Headlamp, tail lamp: Tail lamps do not illuminate. | Probable cause |
|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The column switch or the front-ECU may be defective. | <ul style="list-style-type: none"> • Malfunction of column switch • Malfunction of front-ECU • Malfunction of harness wire or connector |

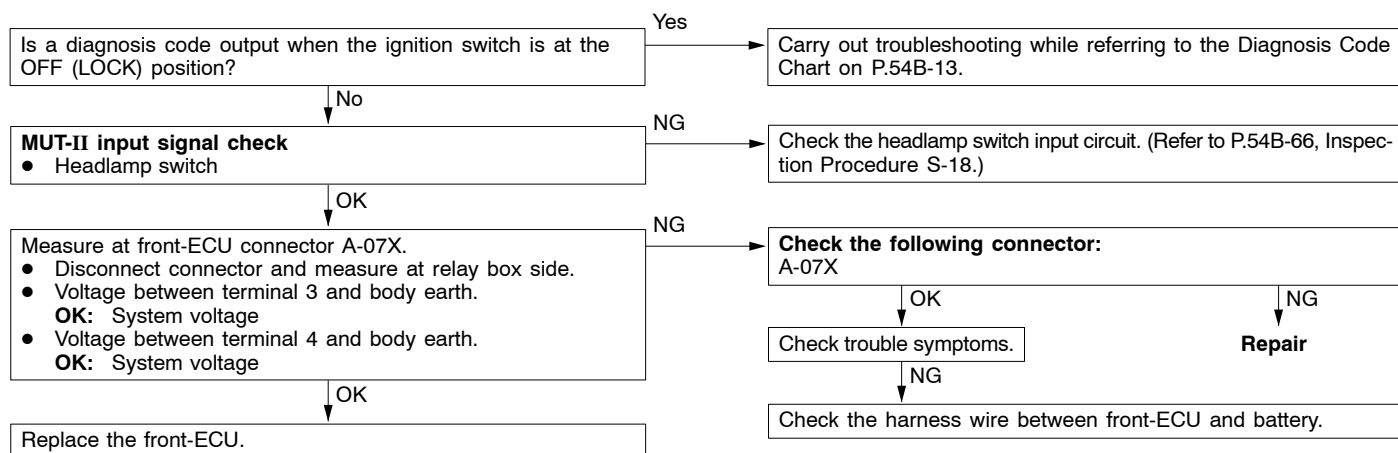


NOTE

If only one lamp does not illuminate, the harness wire between the lamp and front-ECU may be defective or the light bulb may be burned out. In this case, check the tail lamp circuit.

Inspection Procedure M-2

| Headlamp, tail lamp: Headlamps (low-beam) do not illuminate. | Probable cause |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The column switch or the front-ECU may be defective. | <ul style="list-style-type: none"> • Malfunction of column switch • Malfunction of front-ECU • Malfunction of harness wire or connector |

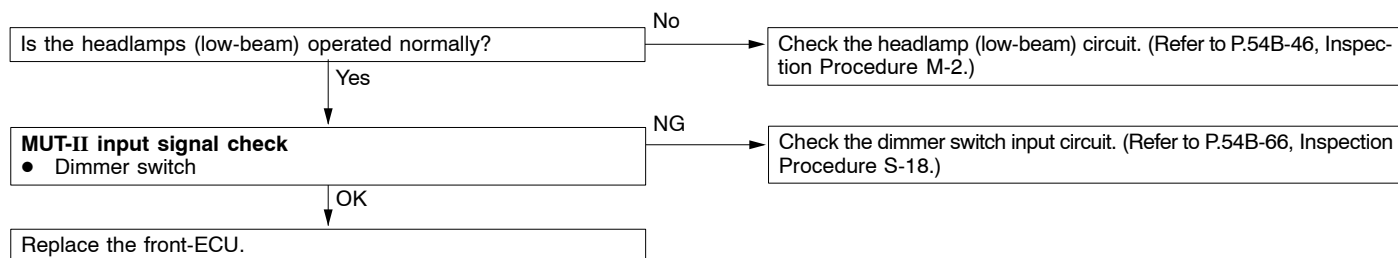


NOTE

If only one of the headlamps (low-beam) does not illuminate, the harness wire between the headlamp and front-ECU may be defective or the headlamp bulb may be burned out. In this case, check the headlamp circuit.

Inspection Procedure M-3

| Headlamp, tail lamp: Headlamps (high-beam) do not illuminate. | Probable cause |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The column switch or the front-ECU is suspected to be defective. | <ul style="list-style-type: none"> • Malfunction of column switch • Malfunction of front-ECU • Malfunction of harness wire or connector |

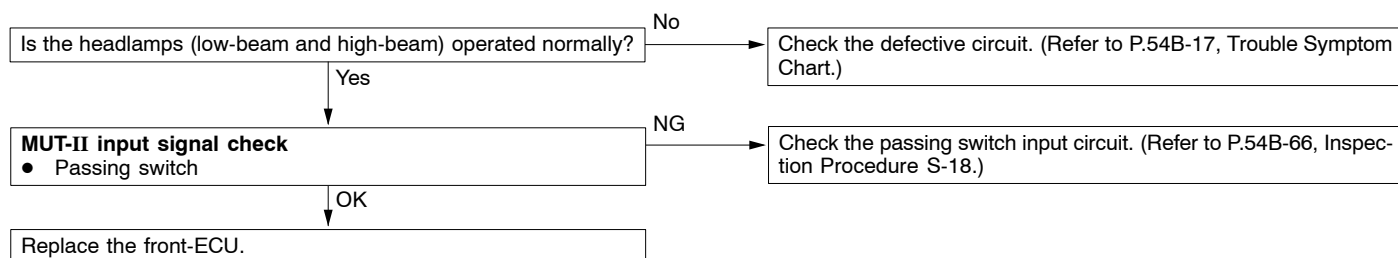


NOTE

If only one of the headlamps (high-beam) does not illuminate, the harness wire between the headlamp and front-ECU may be defective or the headlamp bulb may be burned out. In this case, check the headlamp circuit.

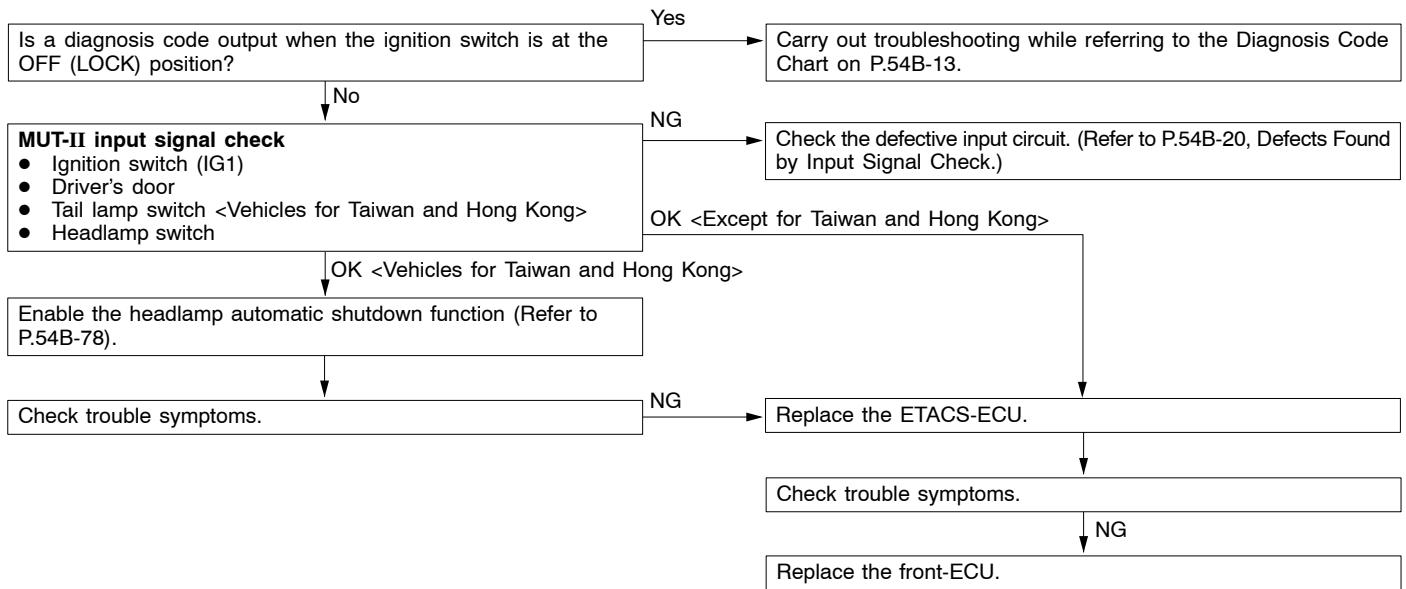
Inspection Procedure M-4

| Headlamp, tail lamp: Headlamps do not illuminate when the passing switch is operated. | Probable cause |
|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If the headlamps (low-beam and high-beam) are defective, the column switch or the front-ECU is suspected to be defective. | <ul style="list-style-type: none"> • Malfunction of column switch • Malfunction of front-ECU • Malfunction of harness wire or connector |



Inspection Procedure M-5

| Headlamp, tail lamp: The headlamp automatic shutdown function does not work normally. | Probable cause |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the headlamp automatic shutdown function, based on the signals from the following switch:</p> <ul style="list-style-type: none"> • Ignition switch (IG1) • Driver's door switch • Tail lamp switch <Vehicles for Taiwan and Hong Kong> • Headlamp switch <p>If the head lamp automatic shutdown function does work normally, a defect on relevant input circuits, the ETACS-ECU or the front-ECU is suspected.</p> <p>On vehicles for Taiwan and Hong Kong, this function may be suspended by the configuration function.</p> | <ul style="list-style-type: none"> • Malfunction of driver's door switch • Malfunction of column switch. • Malfunction of front-ECU • Malfunction of harness wire or connector |



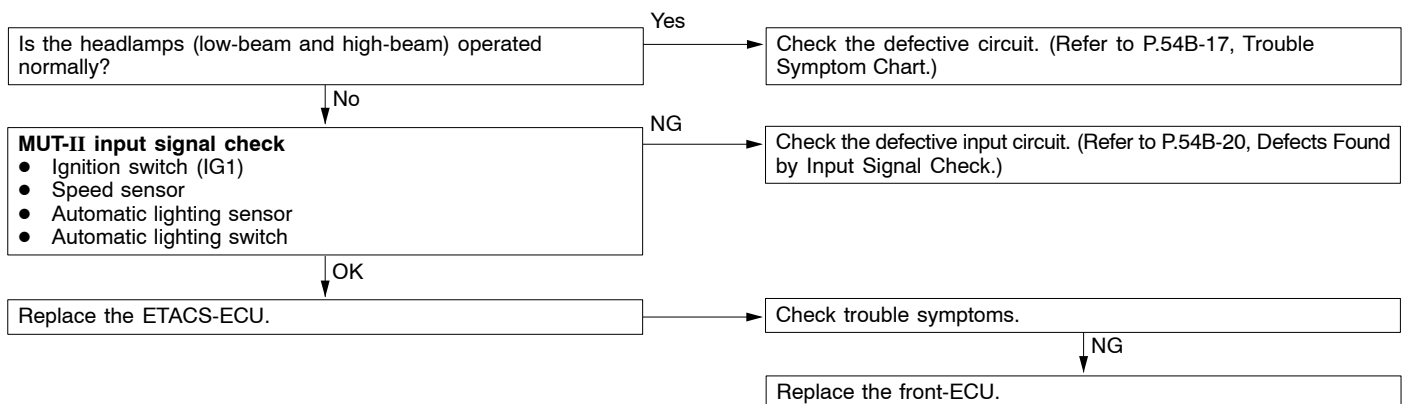
Inspection Procedure M-6

| Headlamp, tail lamp: Headlamps dimmer switch automatic reset function does not work normally. | Probable cause |
|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| The headlamp dimmer switch automatic reset function is controlled by the front-ECU. If a defect appears, the front-ECU may be defective. | <ul style="list-style-type: none"> • Malfunction of front-ECU |

Replace the front-ECU.

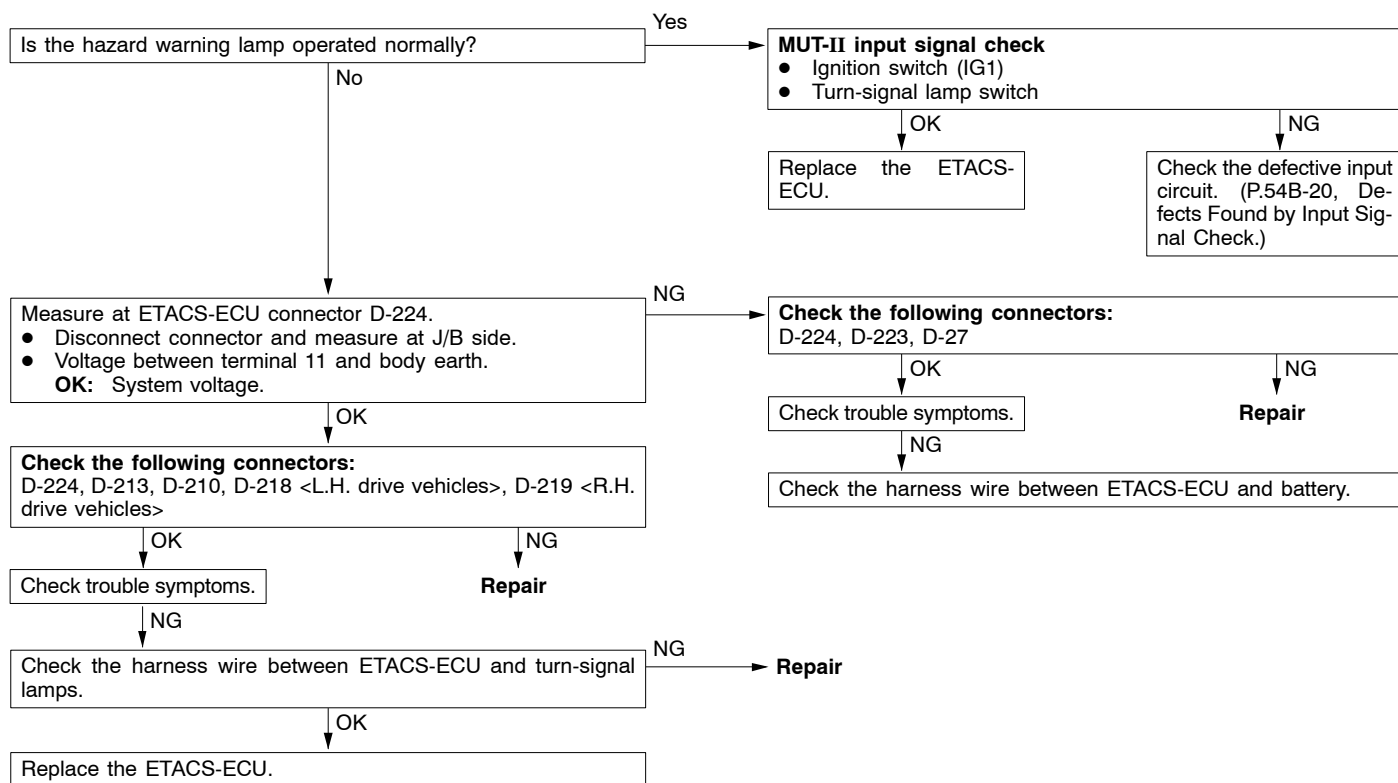
Inspection Procedure M-7

| Headlamp, tail lamp: Automatic lighting function does not work. | Probable cause |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU operates the automatic lighting function, based on the signals from the following switch and sensor:</p> <ul style="list-style-type: none"> • Ignition switch (IG1) • Speed sensor • Automatic lighting sensor • Automatic lighting switch <p>If the automatic lighting function does work normally, a defect on relevant input circuits, the ETACS-ECU or the front-ECU is suspected.</p> | <ul style="list-style-type: none"> • Malfunction of speed sensor • Malfunction of automatic lighting sensor • Malfunction of ETACS-ECU • Malfunction of front-ECU • Malfunction of harness wire or connector. |



Inspection Procedure N-1

| Flasher timer: Turn-signal lamps do not flash when the turn-signal lamp switch is turned on. | Probable cause |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU makes the turn-signal lamps flash, based on the input signals from the following switched:</p> <ul style="list-style-type: none"> • Ignition switch (IG1) • Turn-signal lamp switch <p>If the turn-signal lamps do not flash normally, a defect on the relevant circuits or the ETACS-ECU may be suspected.</p> <p>If the hazard warning lamps also do not flash, a defect in the ETACS-ECU power supply line specific to the turn-signal lamps is suspected.</p> | <ul style="list-style-type: none"> • Malfunction of column switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector. |

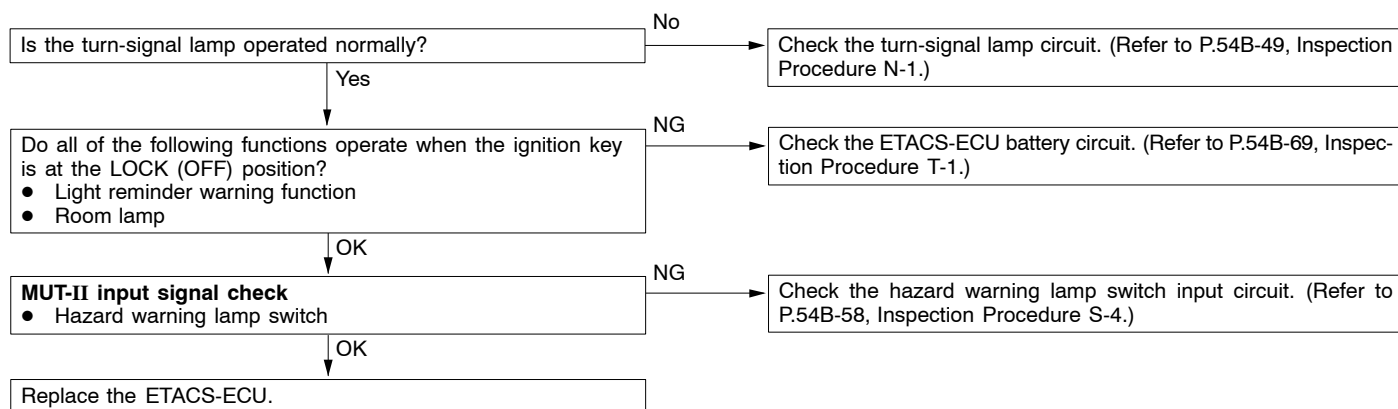


NOTE

If only one of the turn-signal lamp does not flash, the harness wire between the lamp and ETACS-ECU may be defective or the lamp bulb may be burned out. In this case, check the turn-signal lamp and hazard warning lamp circuit.

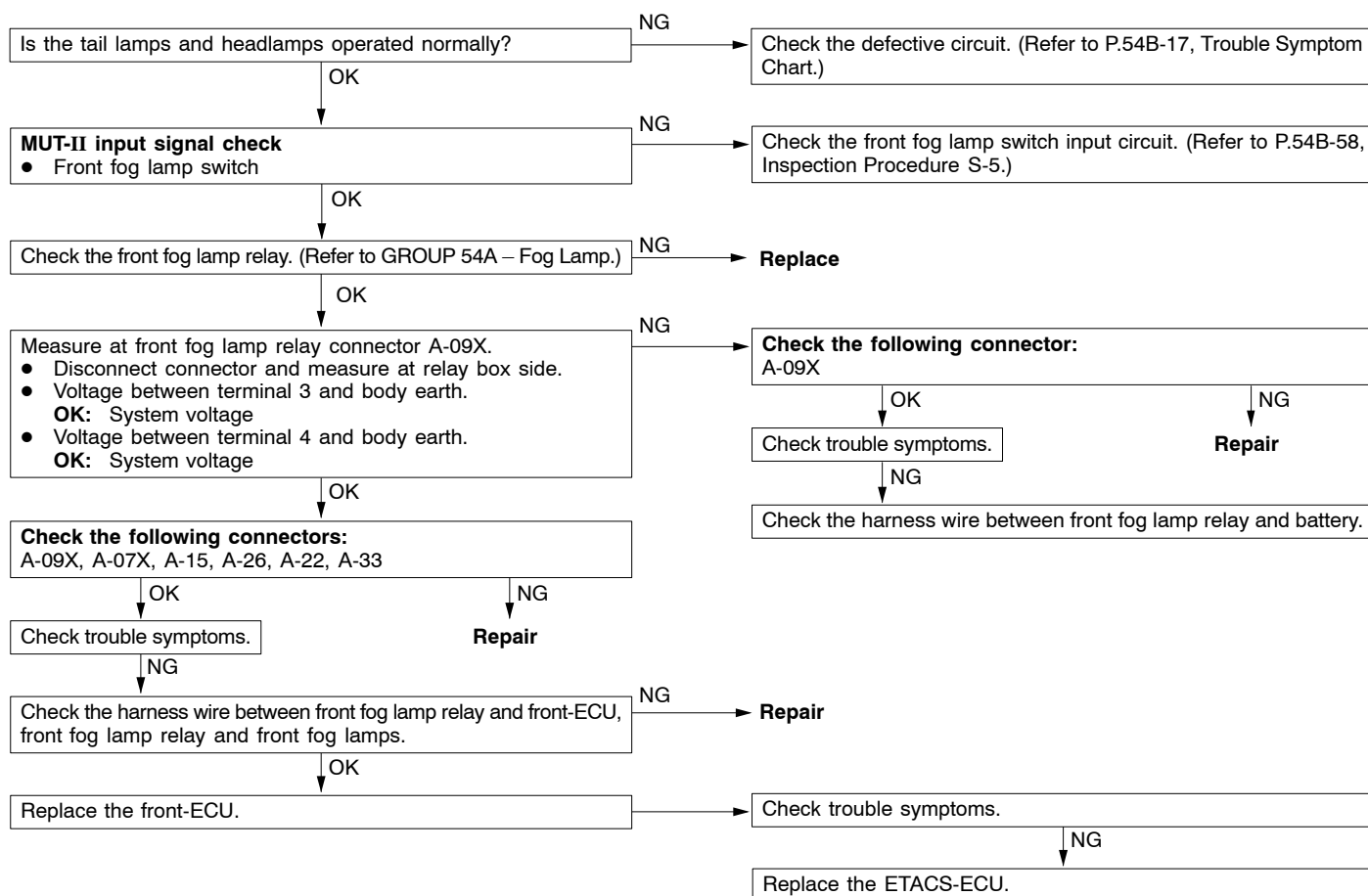
Inspection Procedure N-2

| Flasher timer: Hazard warning lamps do not flash when the hazard warning lamp switch is turned on. | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU makes the turn-signal lamps flash, based on the input signals from the hazard warning lamp switch.</p> <p>If the turn-signal lamps do not flash normally, the hazard warning lamp switch input circuit or the ETACS-ECU may be defective.</p> | <ul style="list-style-type: none"> • Malfunction of hazard warning lamp switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector. |



Inspection Procedure O-1

| Front fog lamp: Front fog lamps do not illuminate when the front fog lamp switch is turned on. | Probable cause |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If the tail lamps and headlamps illuminate normally, the front fog lamp switch, the front fog lamp relay, the front-ECU or the ETACS-ECU may be defective. | <ul style="list-style-type: none"> • Malfunction of front fog lamp switch • Malfunction of front fog lamp relay • Malfunction of front-ECU • Malfunction of ETACS-ECU • Malfunction of harness wire or connector. |



NOTE

If only one of the front fog lamp or front fog lamp indicator lamp does not illuminate, the harness wire between the lamp and front fog lamp relay may be defective or the lamp bulb may be burned out. In this case, check the front fog lamp circuit.

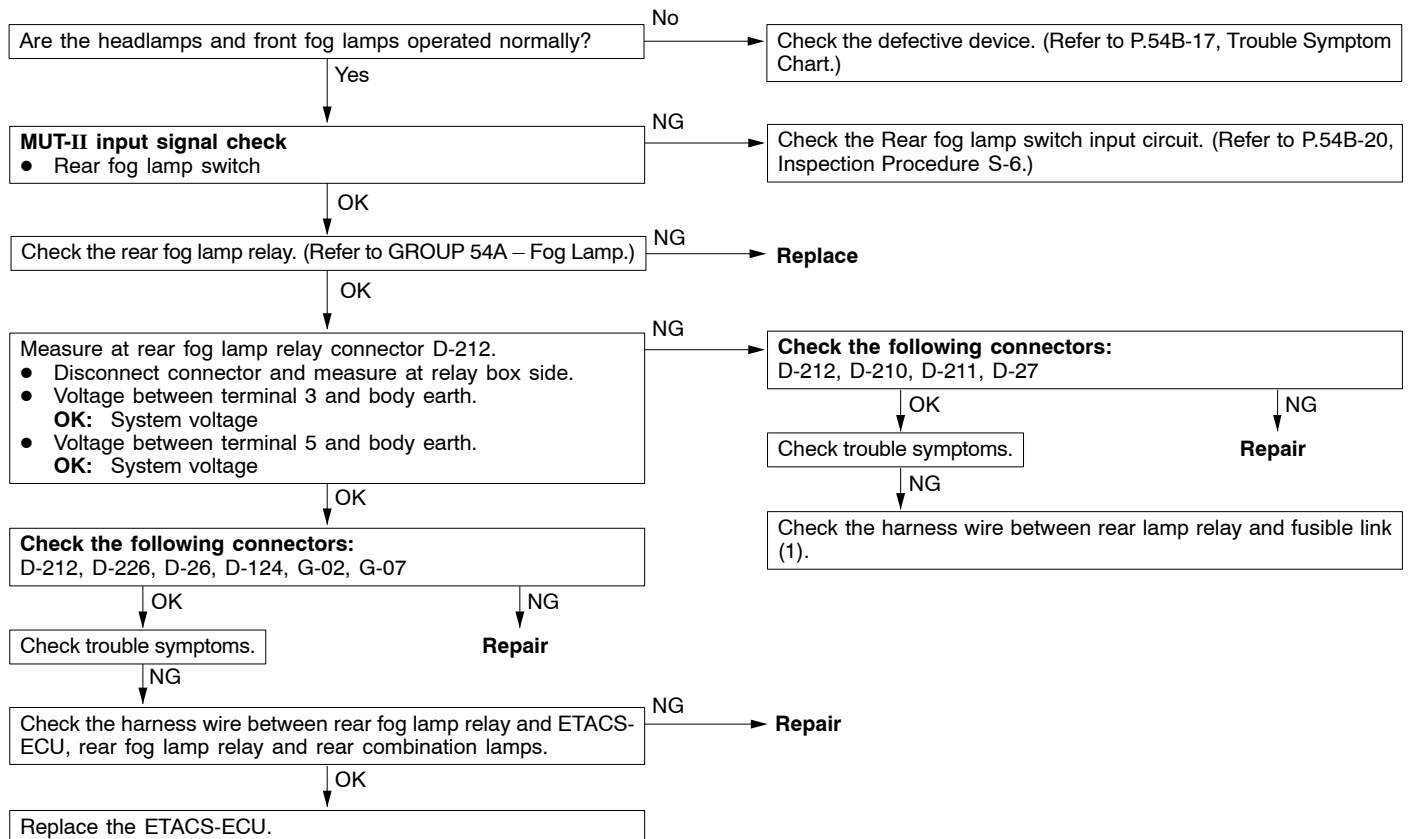
Inspection Procedure K-2

| | |
|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Front fog lamp: Front fog lamps do not go out when the tail lamps are turned off while the fog lamps are on. | Probable cause |
| If the malfunction above occurs, the ETACS-ECU may be defective. | <ul style="list-style-type: none"> Malfunction of ETACS-ECU |

Replace the ETACS-ECU.

Inspection Procedure P-1

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rear fog lamp: Rear fog lamps do not illuminate when the rear fog lamp switch is turned on. | Probable cause |
| If the headlamps and rear fog lamps illuminate normally, the rear fog lamp switch, the rear fog lamp relay or the ETACS-ECU may be defective. | <ul style="list-style-type: none"> Malfunction of rear fog lamp switch Malfunction of rear fog lamp relay Malfunction of ETACS-ECU Malfunction of harness wire or connector. |



NOTE

If only one of the rear fog lamp or rear fog lamp indicator lamp does not illuminate, the harness wire between the lamp and rear fog lamp relay may be defective or the lamp bulb may be burned out. In this case, check the rear fog lamp circuit.

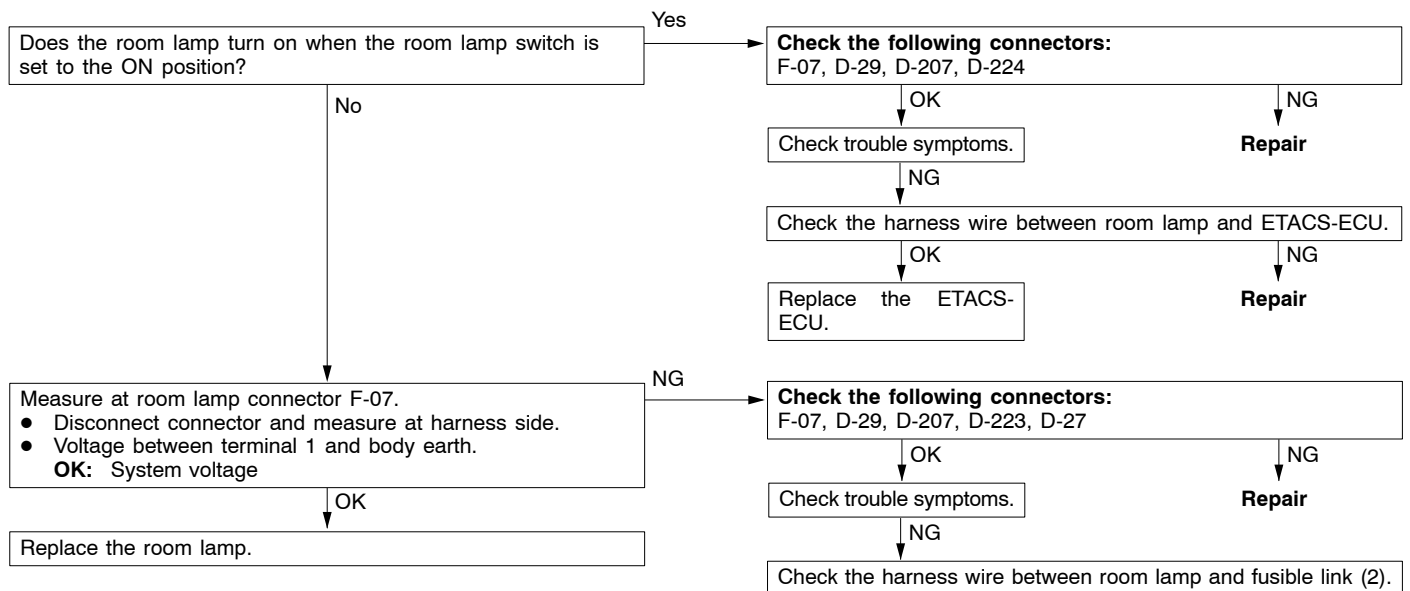
Inspection Procedure P-2

| | |
|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Rear fog lamp: Rear fog lamps do not go out when the headlamps and front fog lamps are turned off while the fog lamps are on. | Probable cause |
| If the malfunction above occurs, the ETACS-ECU may be defective. | <ul style="list-style-type: none"> Malfunction of ETACS-ECU |

Replace the ETACS-ECU.

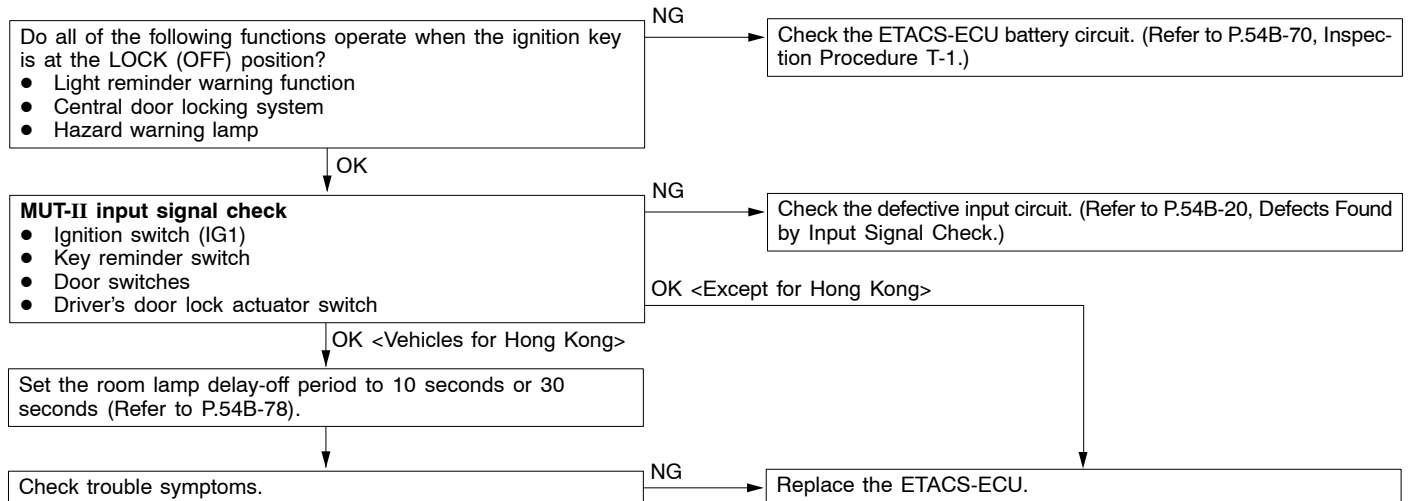
Inspection Procedure Q-1

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Room lamp: Room lamp does not illuminate. | Probable cause |
| If the room lamp does not illuminate at all, the room lamp bulb may be burned out, or the power supply circuit or the ETACS-ECU may be defective. | <ul style="list-style-type: none"> Malfunction of room lamp Malfunction of ETACS-ECU Malfunction of harness wire or connector |



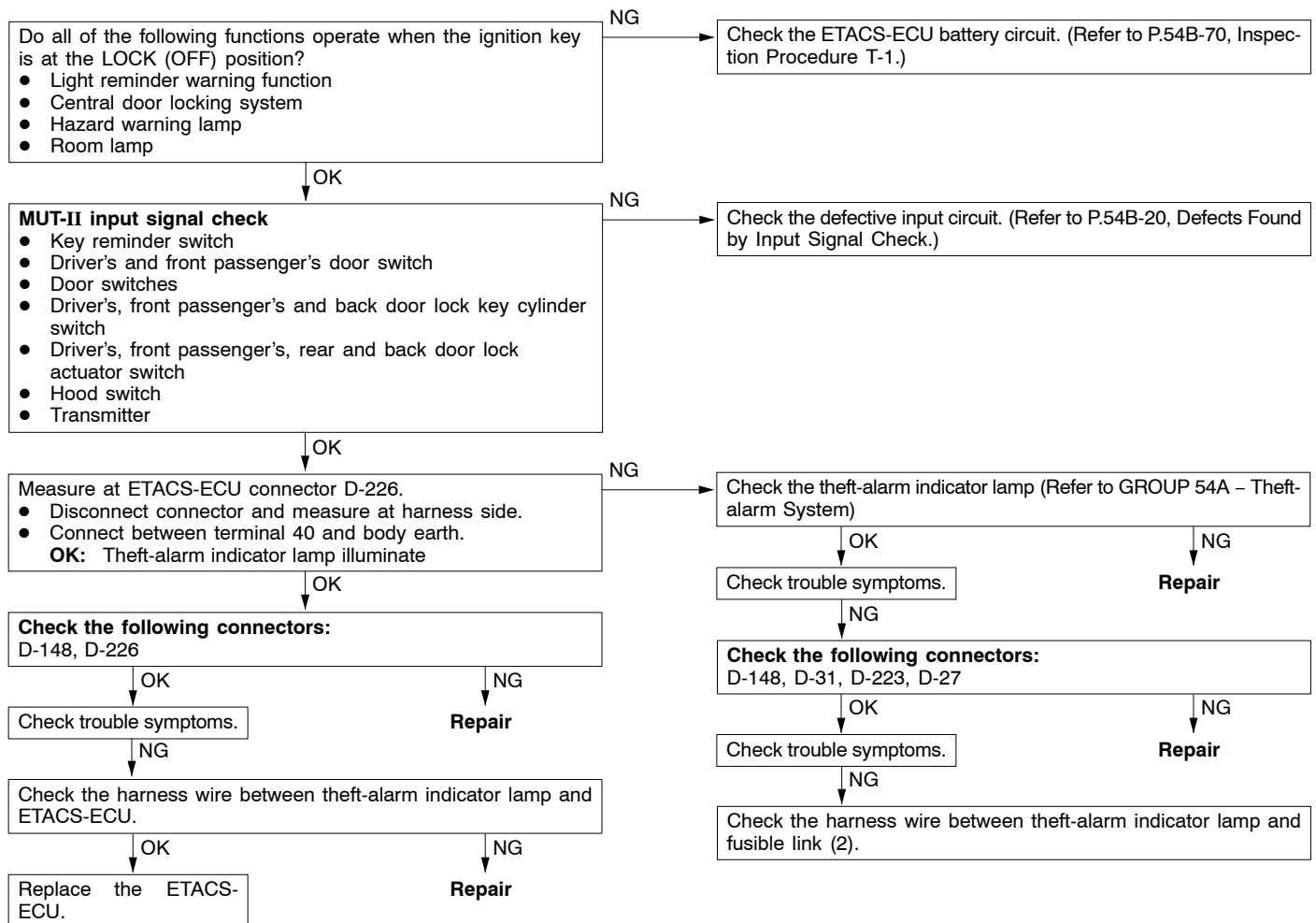
Inspection Procedure Q-2

| Room lamp: Room lamp dimming function does not work normally. | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU dims the room lamp according to the input signals from the following switches:</p> <ul style="list-style-type: none"> • Ignition switch (IG1) • Key reminder switch • Door switches • Driver's door lock actuator switch <p>If the room lamp does not be dimmed normally, the relevant input signal circuit or the ETACS-ECU may be defective.</p> <p>On vehicles for Hong Kong, the delay-off period may be set to 0 second by the configuration function.</p> | <ul style="list-style-type: none"> • Malfunction of key reminder switch • Malfunction of driver's door switch • Malfunction of door switches • Malfunction of driver's door lock actuator switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



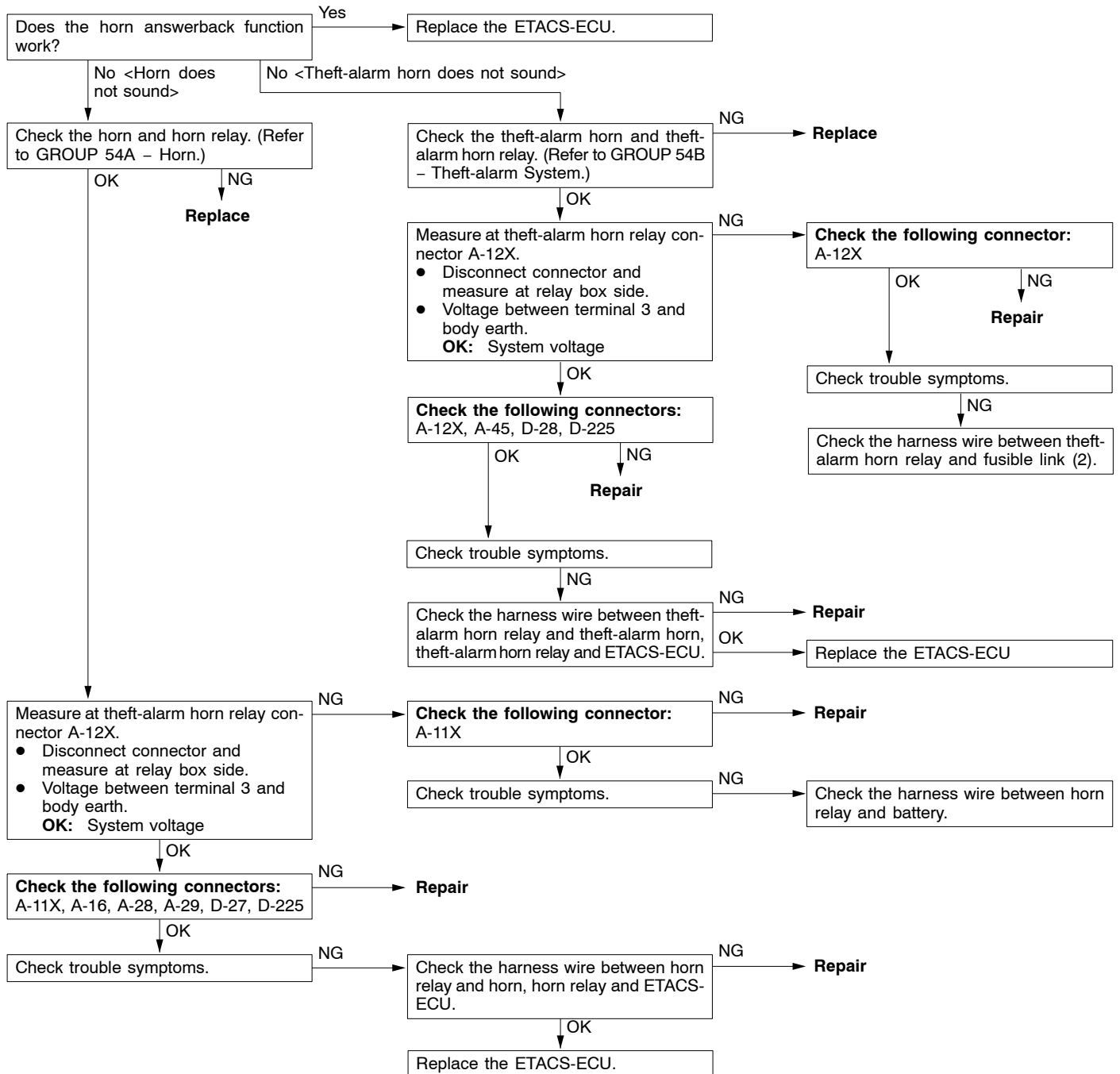
Inspection Procedure R-1

| Theft-alarm system: Theft-alarm system is not armed. (Theft-alarm indicator light does not illuminate.) | Probable cause |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The ETACS-ECU arms the theft-alarm system according to the input signals from the following switches:</p> <ul style="list-style-type: none"> • Key reminder switch • Driver's and front passenger's door switch • Door switches • Driver's, front passenger's and back door lock key cylinder switch • Driver's, front passenger's, rear and back door lock actuator switch • Hood switch • Transmitter <p>If the theft-alarm system does not be armed normally, the relevant input signal circuit or the ETACS-ECU may be defective.</p> | <ul style="list-style-type: none"> • Malfunction of key reminder switch • Malfunction of driver's, front passenger's door switch • Malfunction of door switches • Malfunction of driver's, front passenger's and back door lock key cylinder switch • Malfunction of driver's, front passenger's, rear and back door lock actuator switch • Malfunction of hood switch • Malfunction of transmitter • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



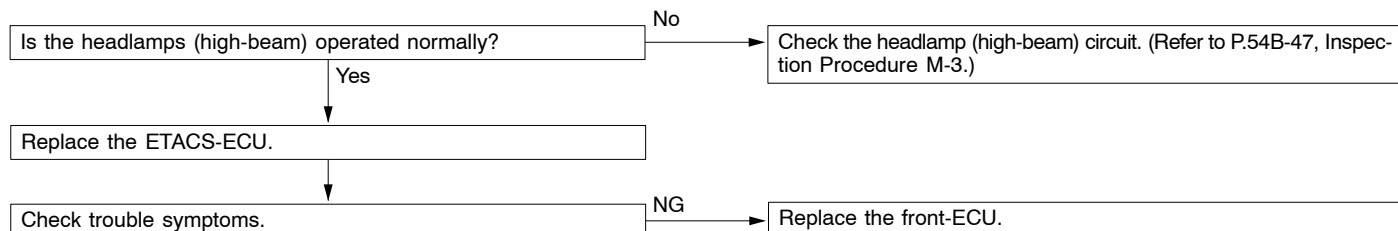
Inspection Procedure R-2

| Theft-alarm system: Horn does not sound when the theft-alarm system is triggered. | Probable cause |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The theft-alarm horn and horn are shared by the keyless entry system. If the theft-alarm horn and horn sounds normally through the keyless entry system answerback, the ETACS-ECU may be defective. | <ul style="list-style-type: none"> • Malfunction of theft-alarm horn • Malfunction of horn • Malfunction of theft-alarm horn relay • Malfunction of horn relay • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



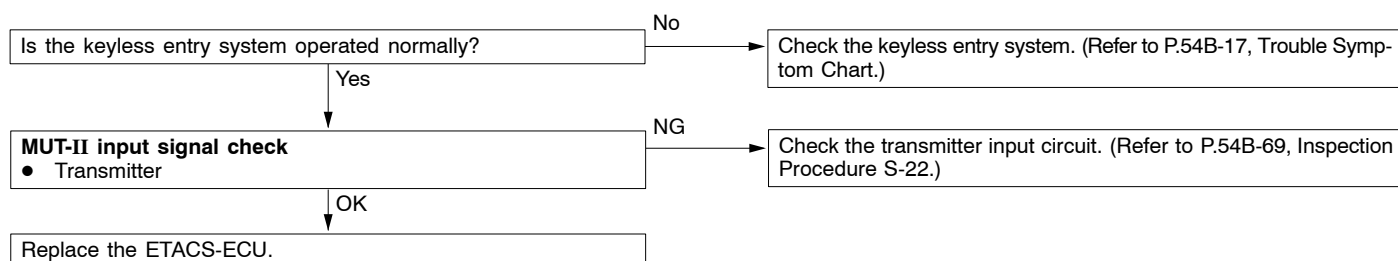
Inspection Procedure R-3

| Theft-alarm system: Headlamps (high-beam) do not flash when the theft-alarm system is triggered. | Probable cause |
|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If the headlamps (high-beam) work normally, the front-ECU or the ETACS-ECU may be defective. | <ul style="list-style-type: none"> • Malfunction of front-ECU • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



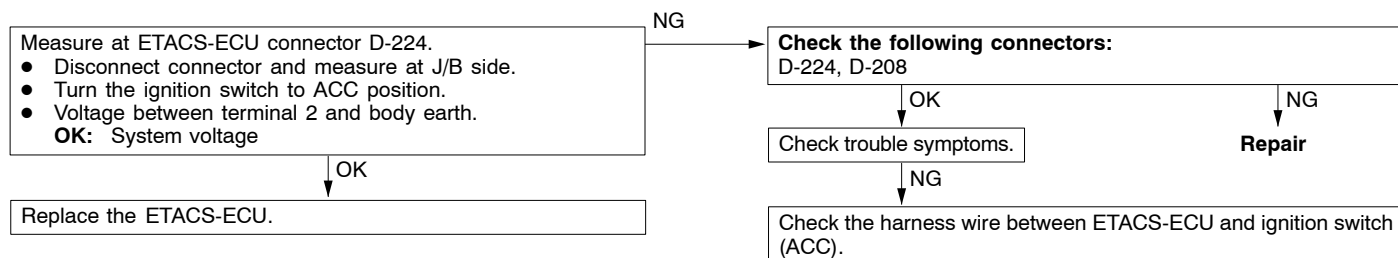
Inspection Procedure R-4

| Theft-alarm system: Panic alarm function does not work. | Probable cause |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| If the keyless entry system is normal, the ETACS-ECU is defective. | <ul style="list-style-type: none"> • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



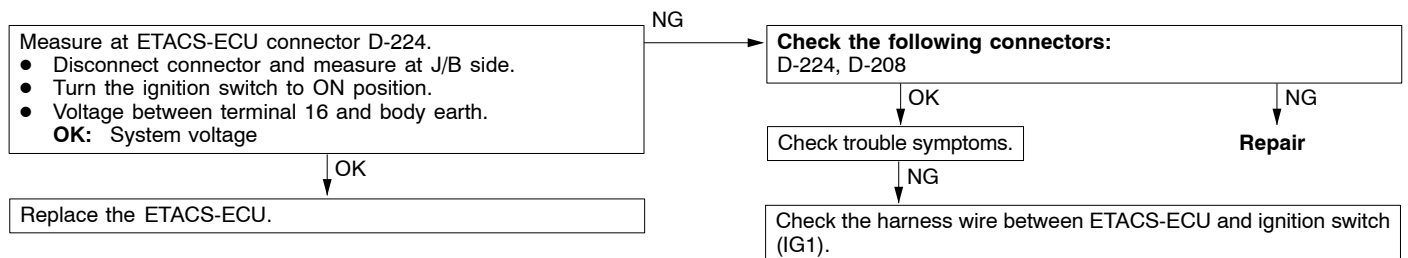
Inspection Procedure S-1

| Ignition switch (ACC) signal is not sent to the ETACS-ECU. | Probable cause |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| The ignition switch (ACC) input signal is used to operate the following devices. If the signal fails, these devices will not work normally. <ul style="list-style-type: none"> • Windshield wiper and washer • Rear wiper and washer • Headlamp washer <Vehicles with headlamp washer> • Electric retractable remote controlled mirror <Vehicles for Hong Kong> | <ul style="list-style-type: none"> • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



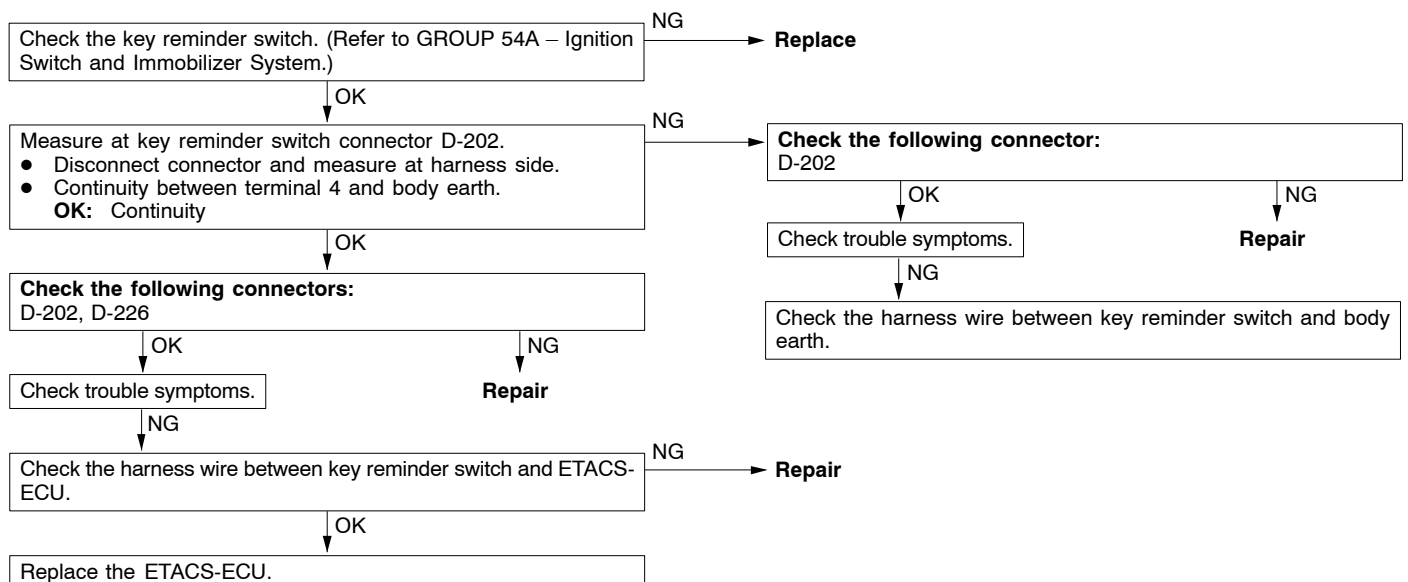
Inspection Procedure S-2

| Ignition switch (IG1) signal is not sent to the ETACS-ECU. | Probable cause |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <p>The ignition switch (IG1) input signal is used to operate the following devices. If the signal fails, these devices will not work normally.</p> <ul style="list-style-type: none"> • Ignition key reminder warning buzzer function • Light reminder warning buzzer function • Back-up warning buzzer function • Seat belt warning buzzer function • Power window timer function • Sunroof timer function • Seat belt warning lamp • Ignition key hole illumination lamp • Headlamp automatic shutdown function • Automatic lighting function • Turn-signal lamp • Room lamp dimming function | <ul style="list-style-type: none"> • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



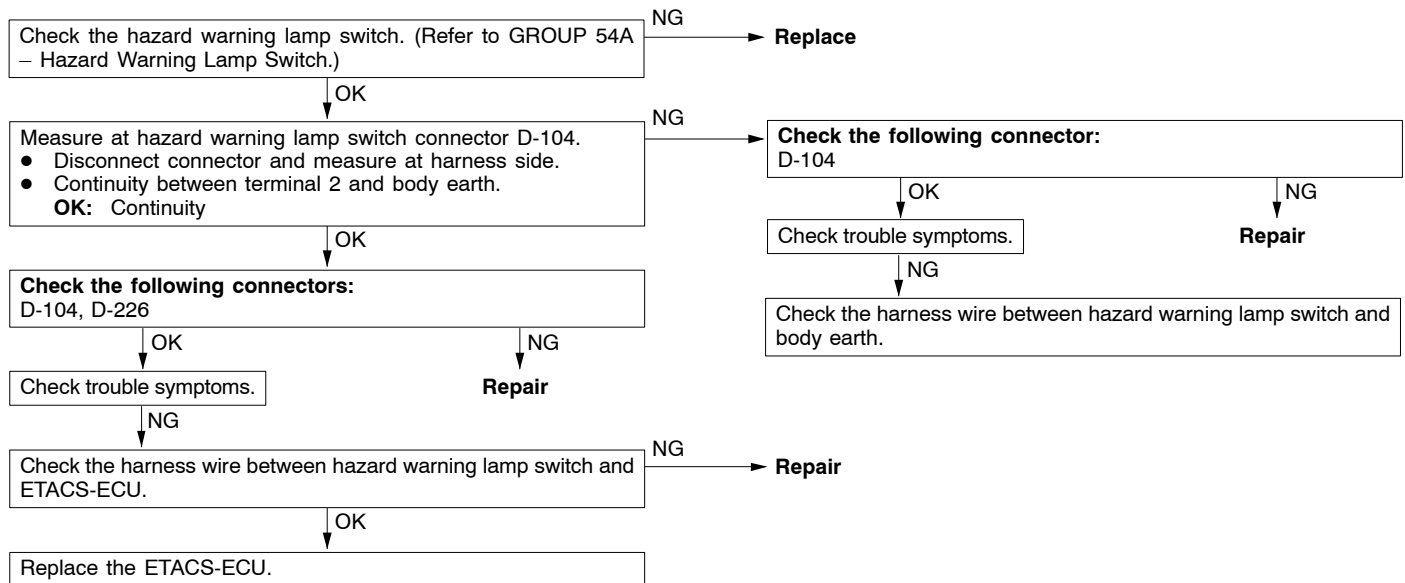
Inspection Procedure S-3

| Key reminder switch signal is not sent to the ETACS-ECU. | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The key reminder switch input signal is used to operate the following devices. If the signal fails, these devices will not work normally.</p> <ul style="list-style-type: none"> • Ignition key reminder warning buzzer function • Forgotten key prevention function • Keyless entry system • Ignition key hole illumination lamp • Room lamp dimming function • Theft-alarm system | <ul style="list-style-type: none"> • Malfunction of key reminder switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



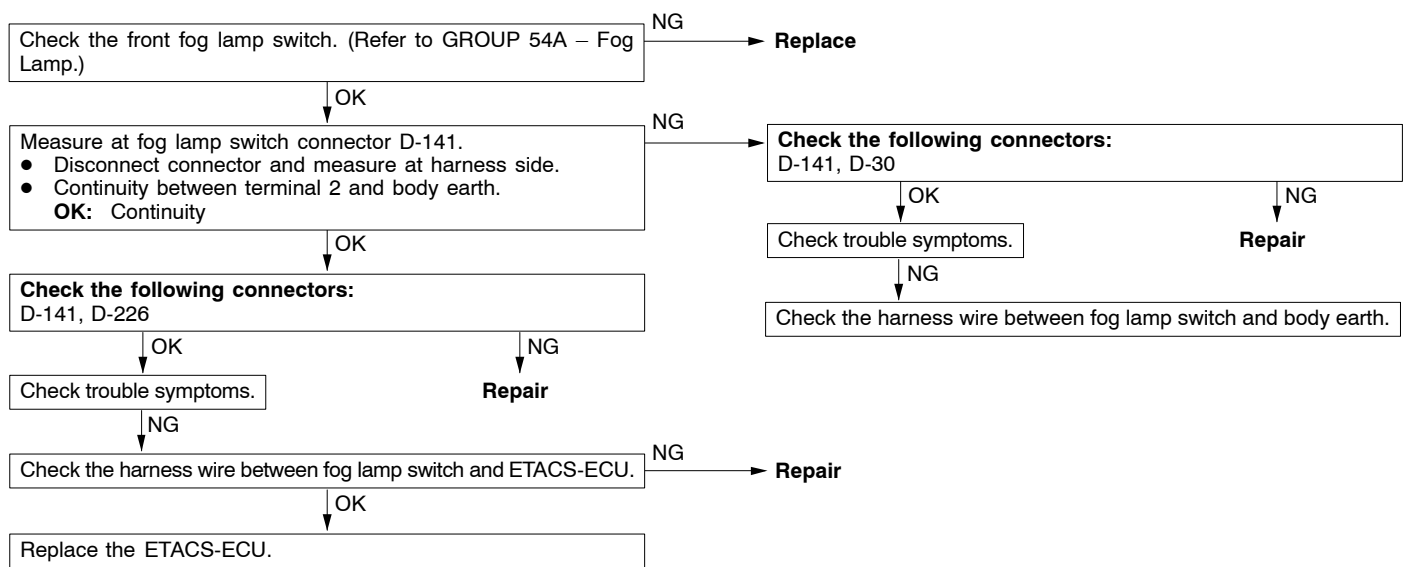
Inspection Procedure S-4

| Hazard warning lamp switch signal is not sent to the ETACS-ECU. | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The hazard warning lamp switch input signal is used to operate the following devices. If the signal fails, these devices will not work normally.</p> <ul style="list-style-type: none"> • Hazard warning lamp • Keyless entry system (Registering the encrypted code) | <ul style="list-style-type: none"> • Malfunction of hazard warning lamp switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



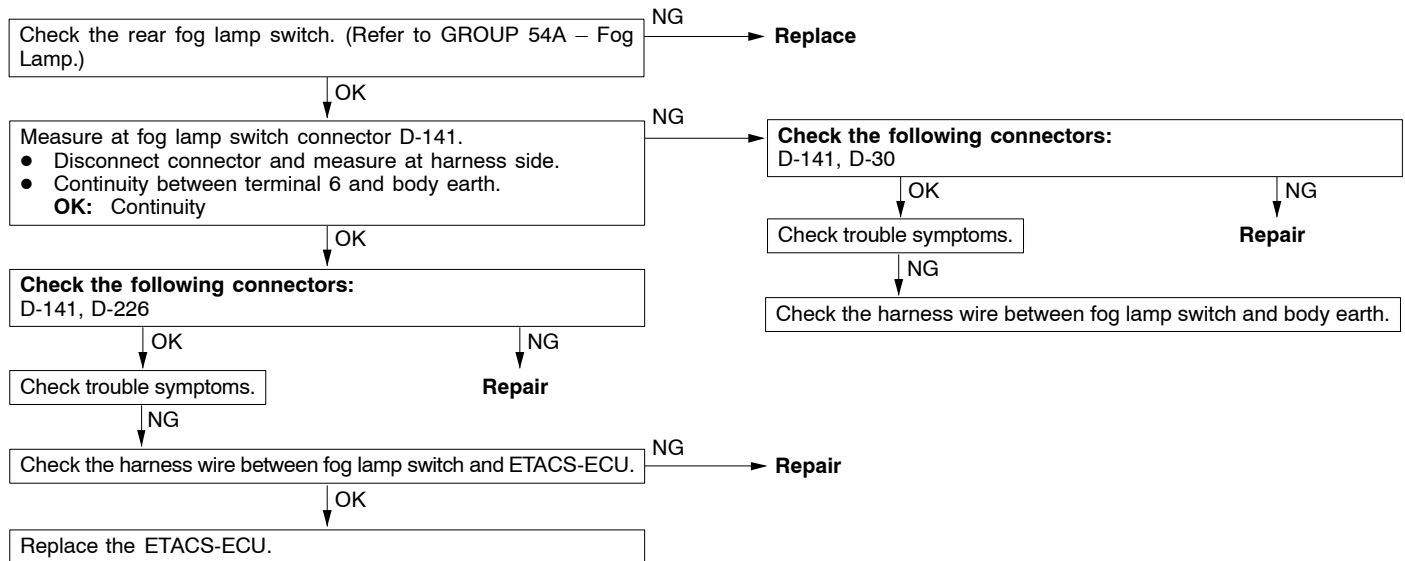
Inspection Procedure S-5

| Front fog lamp switch signal is not sent to the ETACS-ECU. | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The front fog lamp switch input signal is used to operate the front fog lamp. If the signal fails, front fog lamp will not work normally.</p> | <ul style="list-style-type: none"> • Malfunction of fog lamp switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



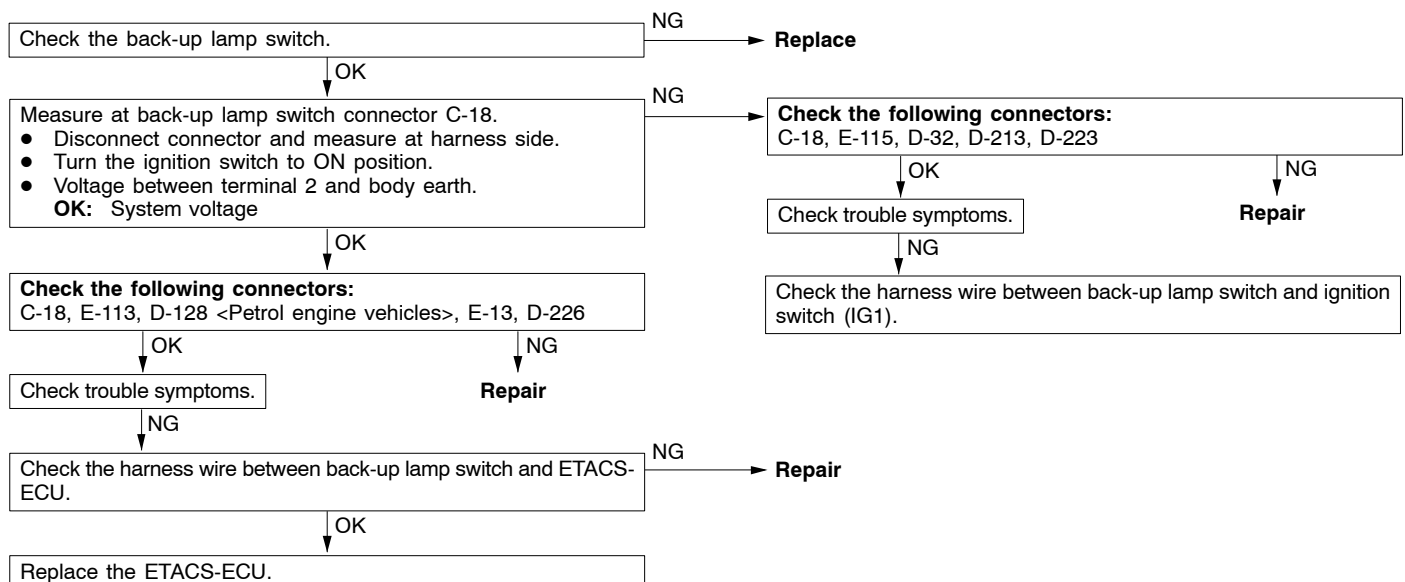
Inspection Procedure S-6

| Rear fog lamp switch signal is not sent to the ETACS-ECU. | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The rear fog lamp switch input signal is used to operate the rear fog lamp. If the signal fails, rear fog lamp will not work normally. | <ul style="list-style-type: none"> • Malfunction of fog lamp switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



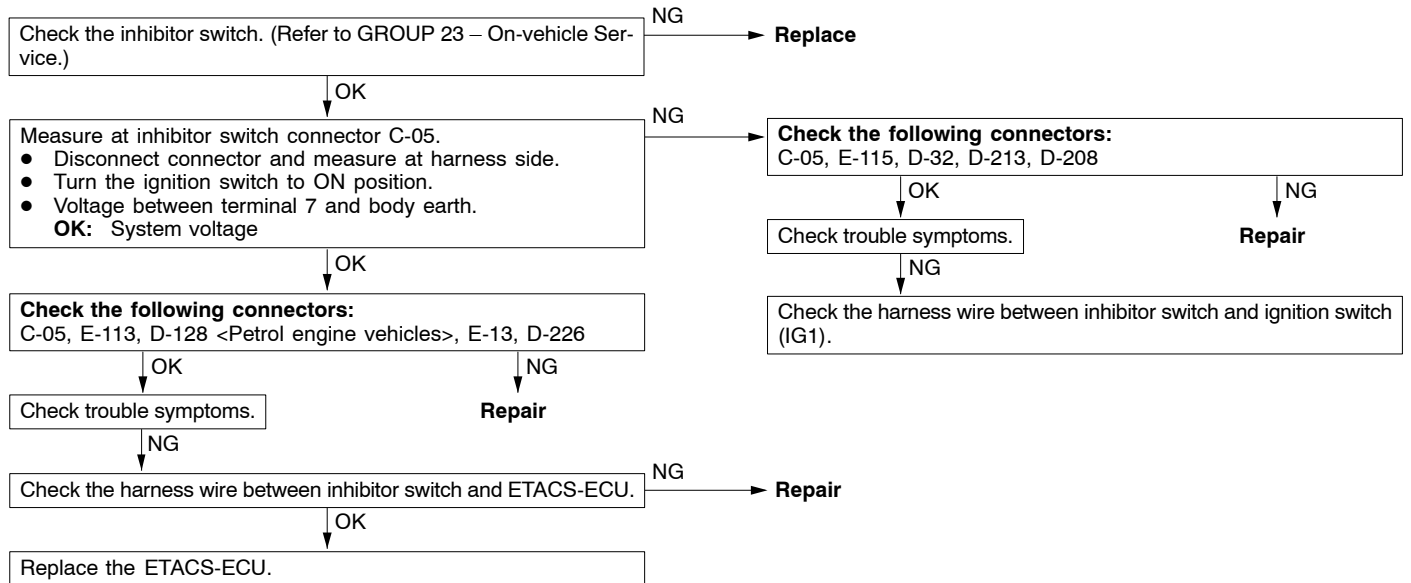
Inspection Procedure S-7

| Back-up lamp switch signal is not sent to the ETACS-ECU. <M/T> | Probable cause |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The back-up lamp switch input signal is used to operate the rear wiper. If the signal is an error, the rear wiper will not operate consecutively twice when the rear wiper is on and the shift lever is moved to R position. | <ul style="list-style-type: none"> • Malfunction of back-up lamp switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



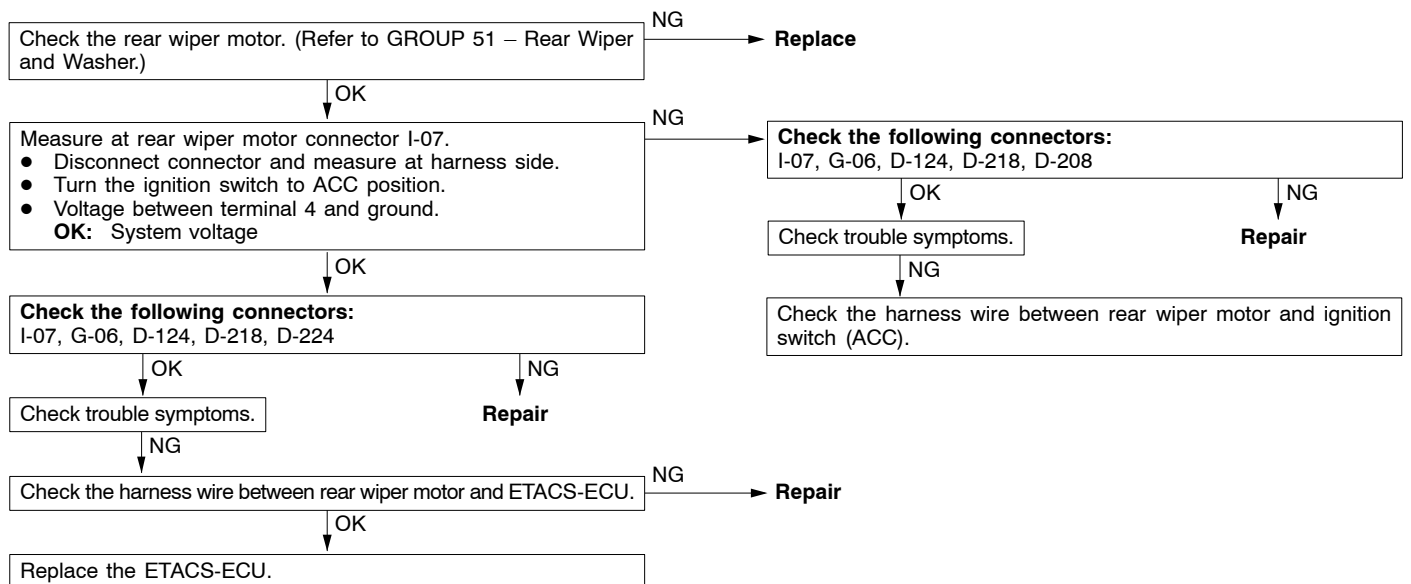
Inspection Procedure S-8

| Inhibitor switch (reverse) signal is not sent to the ETACS-ECU. <A/T> | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The inhibitor switch (reverse) input signal is used to operate the following devices. If the signal fails, these devices will not work normally.</p> <ul style="list-style-type: none"> Back-up warning buzzer function Rear wiper and washer | <ul style="list-style-type: none"> Malfunction of inhibitor switch Malfunction of ETACS-ECU Malfunction of harness wire or connector |



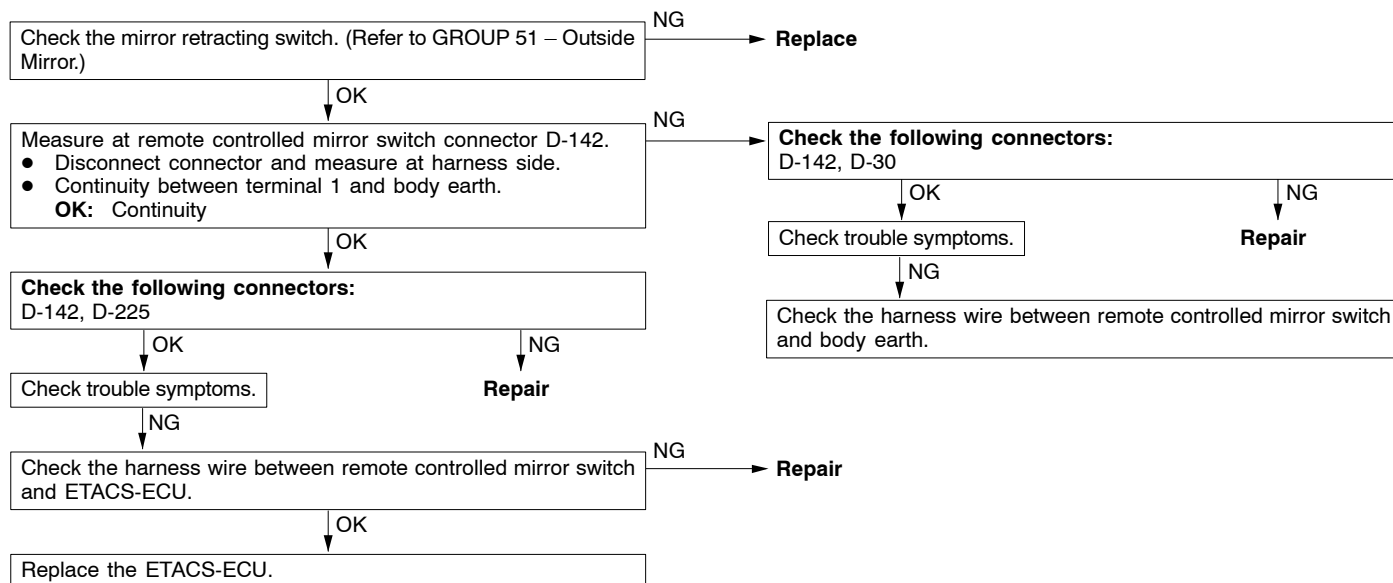
Inspection Procedure S-9

| Rear wiper motor auto-stop signal is not sent to the ETACS-ECU. | Probable cause |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Rear wiper motor auto-stop signal is used to operate the rear wiper. If the signal is an error, the rear wiper will not stop at the predetermined park position.</p> | <ul style="list-style-type: none"> Malfunction of rear wiper motor Malfunction of ETACS-ECU Malfunction of harness wire or connector |



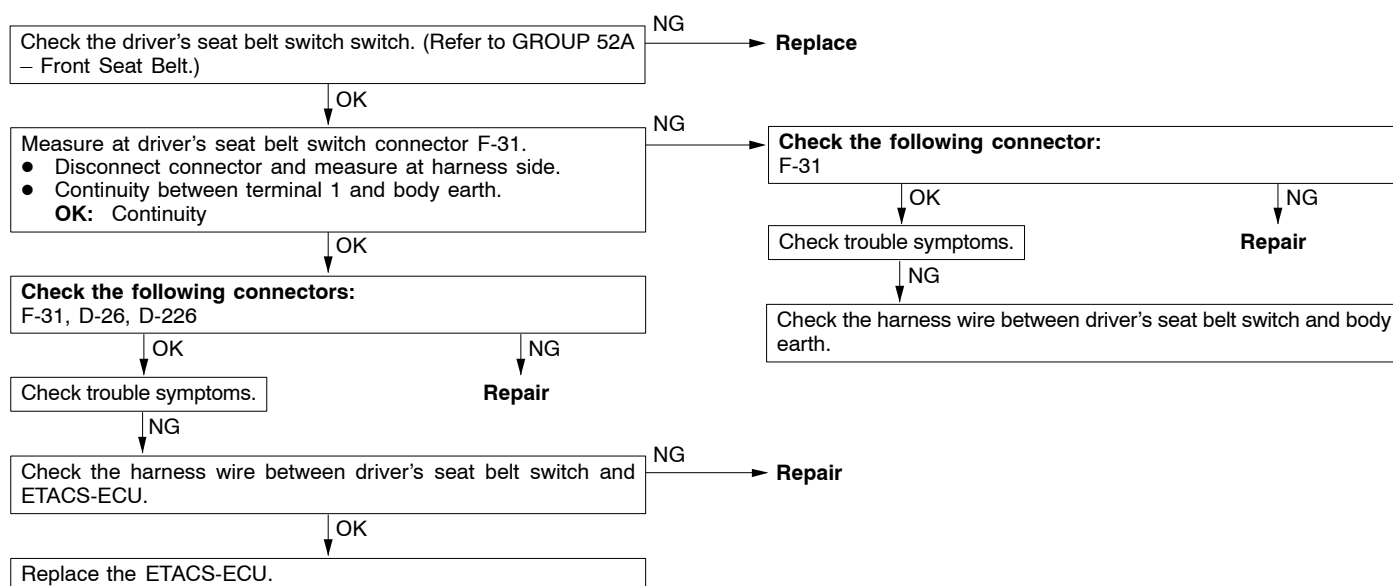
Inspection Procedure S-10

| Mirror retracting switch signal is not sent to the ETACS-ECU. | Probable cause |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The mirror retracting switch input signal is used to operate the electric retractable remote controlled mirror. If the signal fails, retractable remote controlled mirror will not work normally. | <ul style="list-style-type: none"> • Malfunction of remote controlled mirror switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



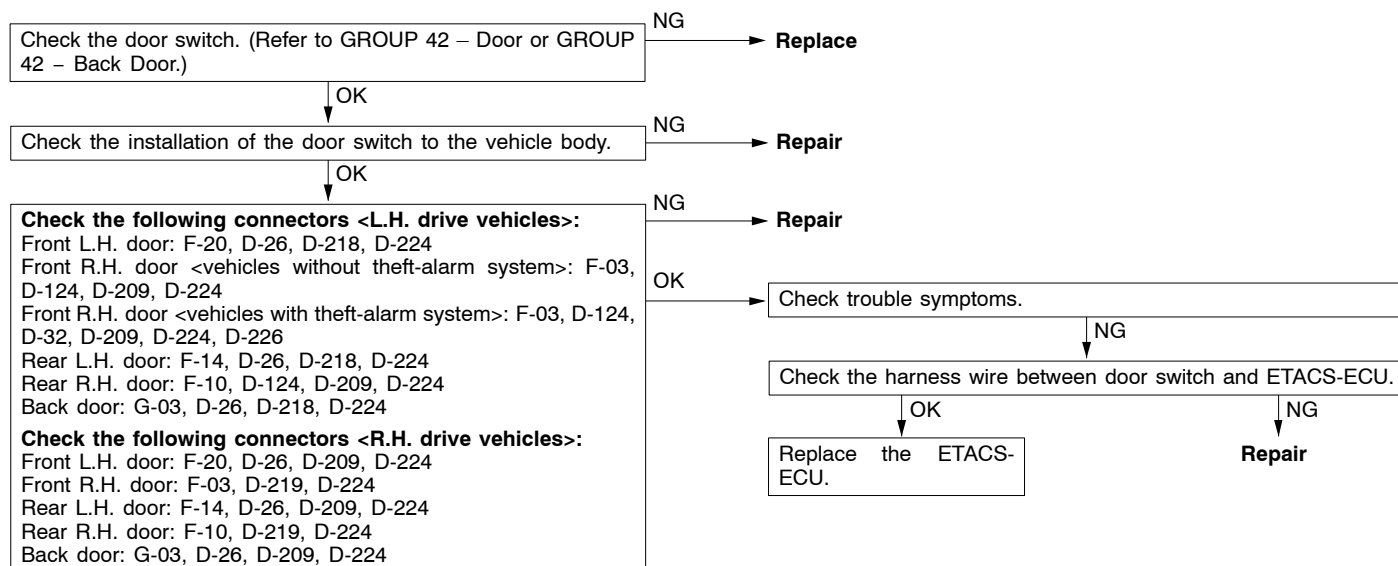
Inspection Procedure S-11

| Driver's seat belt switch signal is not sent to the ETACS-ECU. | Probable cause |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The driver's seat belt switch input signal is used to operate the following devices. If the signal fails, these devices will not work normally. <ul style="list-style-type: none"> • Seat belt warning buzzer function • Seat belt warning lamp <Vehicles for Taiwan> | <ul style="list-style-type: none"> • Malfunction of driver's seat belt switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



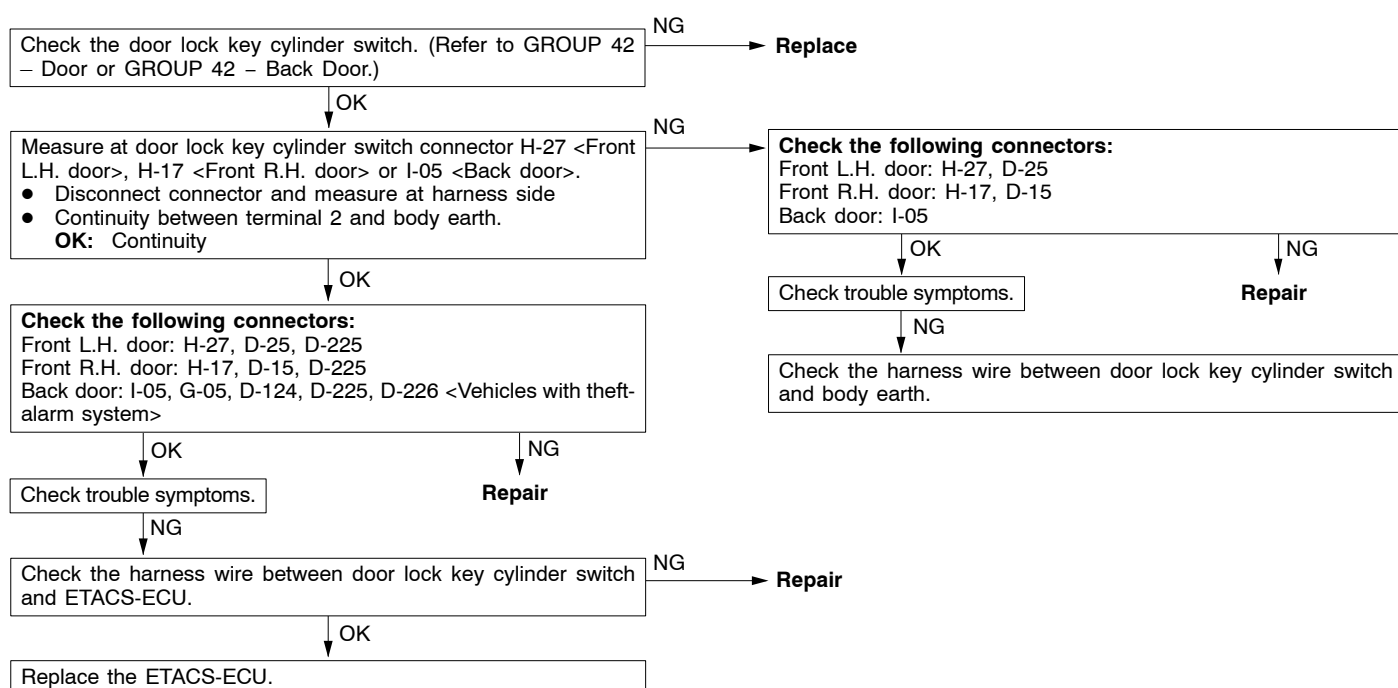
Inspection Procedure S-12

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Driver's door switch signal is not sent to the ETACS-ECU. | Probable cause |
| Front passenger's door switch signal is not sent to the ETACS-ECU. | |
| Door switches signal is not sent to the ETACS-ECU. | |
| <p><Driver's door switch> The driver's door switch is used to operate the following functions. If the signal fails, these devices will not work normally.</p> <ul style="list-style-type: none"> • Ignition key reminder warning buzzer function • Light reminder warning buzzer function • Forgotten key prevention function • Power window timer function • Ignition key hole illumination lamp • Headlamp automatic shutdown function • Theft-alarm system <p><Front passenger's door switch> The front passenger's door switch is used to operate the following functions. If the signal fails, these devices will not work normally.</p> <ul style="list-style-type: none"> • Forgotten key prevention function • Power window timer function • Theft-alarm system <p><Door switches> The door switches is used to operate the following devices. If the signal fails, these devices will not work normally.</p> <ul style="list-style-type: none"> • Keyless entry system <vehicles keyless entry system> • Room lamp dimming function | <ul style="list-style-type: none"> • Malfunction of driver's, front passenger's, rear or back door switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



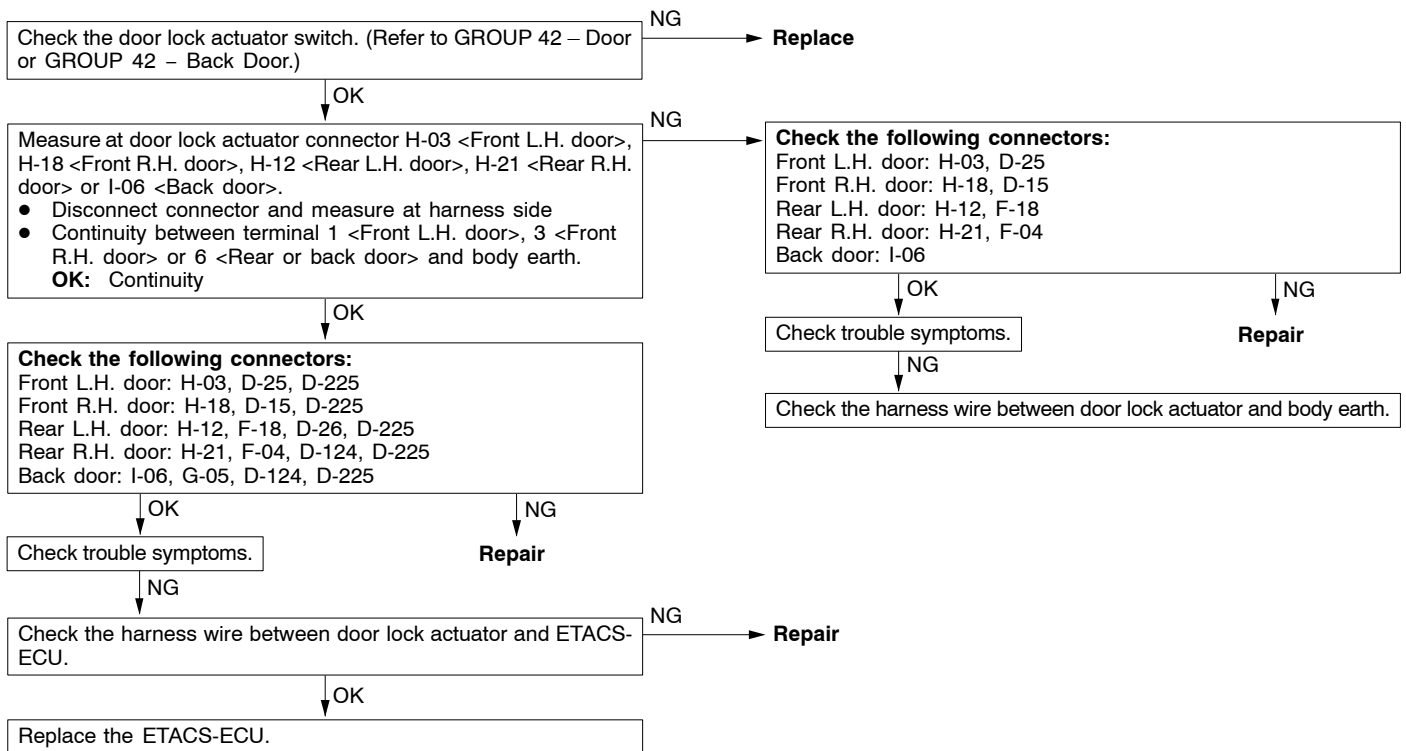
Inspection Procedure S-13

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Driver's door lock key cylinder switch signal is not sent to the ETACS-ECU. | Probable cause |
| Front passenger's door lock key cylinder switch signal is not sent to the ETACS-ECU. | |
| Back door lock key cylinder switch signal is not sent to the ETACS-ECU. | |
| <p>The driver's, front passenger's and back door lock key cylinder switch is used to operate the following functions. If the signal fails, these devices will not work normally.</p> <ul style="list-style-type: none"> Central door locking system (except the back door key cylinder switch for Taiwan) Theft-alarm system | <ul style="list-style-type: none"> Malfunction of driver's, front passenger's or back door lock key cylinder switch Malfunction of ETACS-ECU Malfunction of harness wire or connector |



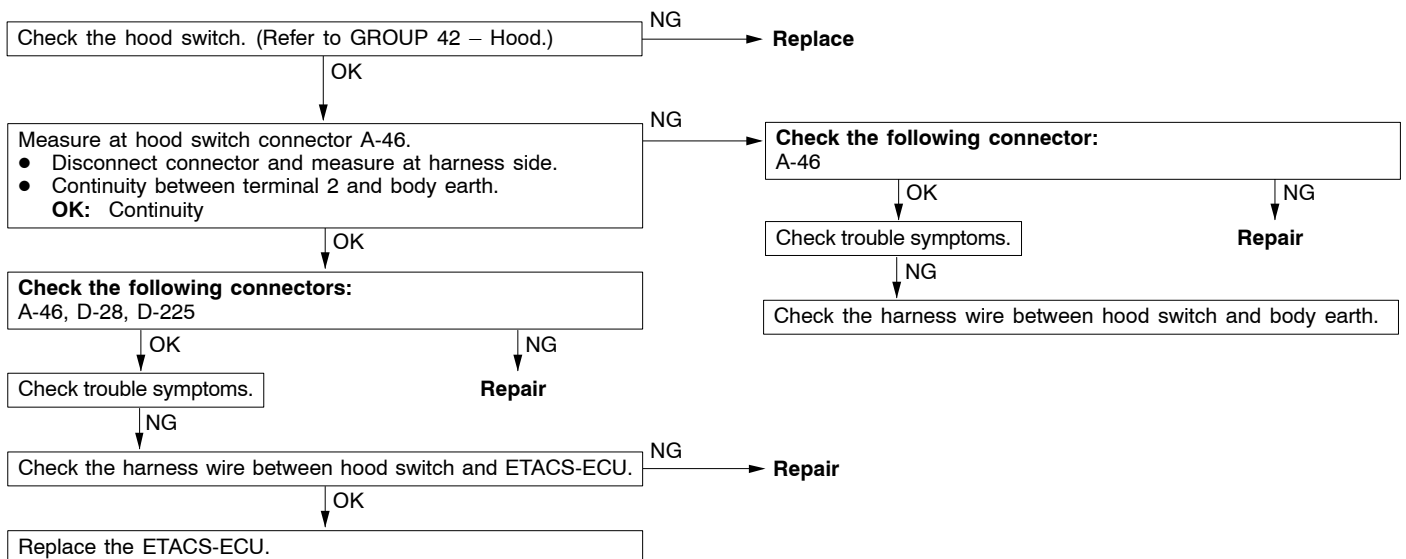
Inspection Procedure S-14

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Driver's door lock actuator switch signal is not sent to the ETACS-ECU. | Probable cause |
| Front passenger's, rear or back door lock actuator switch signal is not sent to the ETACS-ECU. | |
| <p><Driver's door lock actuator switch> The driver's door lock actuator switch is used to operate the following systems or functions. If the signal fails, these systems or function will not work normally.</p> <ul style="list-style-type: none"> Central door locking system Forgotten key prevention function Keyless entry system Theft-alarm system <p><Front passenger's, rear or back door lock actuator switch> The front passenger's, rear or back door lock actuator switch input signal is used to operate the theft-alarm system. If the signal fails, theft-alarm system will not work normally.</p> | <ul style="list-style-type: none"> Malfunction of driver's, front passenger's, rear or back door lock actuator Malfunction of ETACS-ECU Malfunction of harness wire or connector |



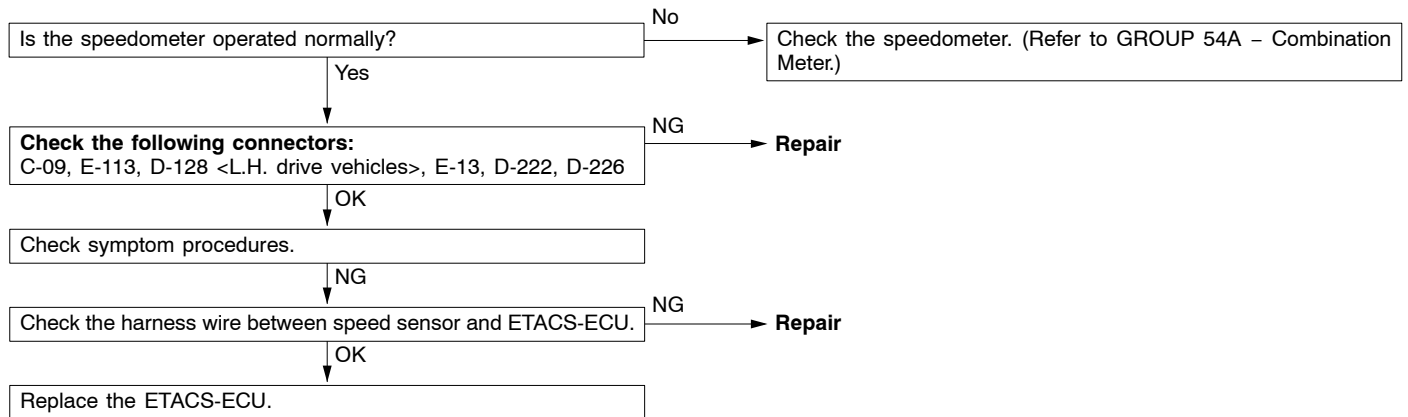
Inspection Procedure S-15

| Hood switch signal is not sent to the ETACS-ECU. | Probable cause |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The hood switch input signal is used to operate the theft-alarm system. If the signal fails, theft-alarm system will not work normally. | <ul style="list-style-type: none"> • Malfunction of hood switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



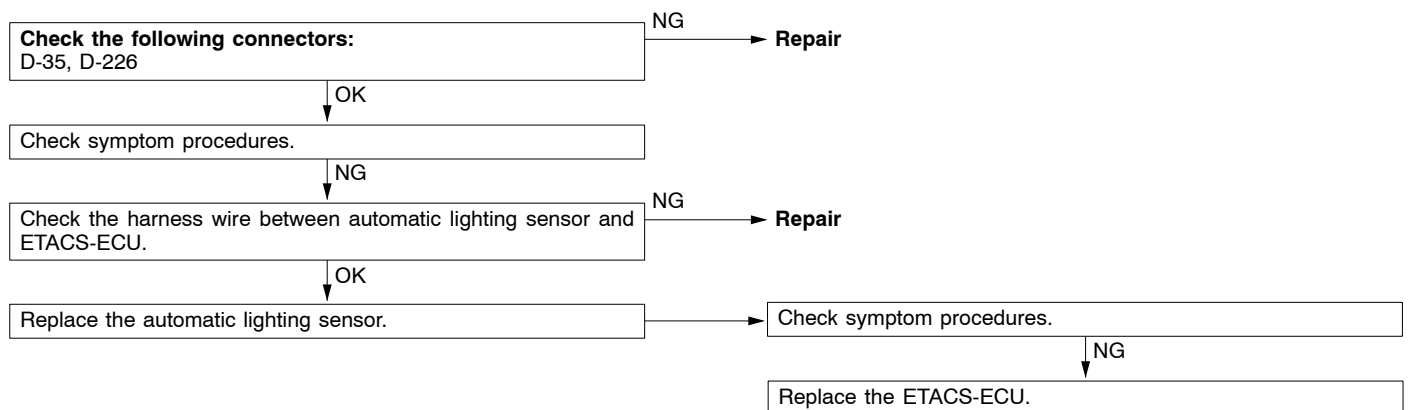
Inspection Procedure S-16

| Speed sensor signal is not sent to the ETACS-ECU. | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The speed sensor is used to operate the following systems or functions. If the signal fails, these systems or function will not work normally.</p> <ul style="list-style-type: none"> • Speed alarm function • Vehicle speed-dependent function of the windshield wiper and washer • Automatic return function of the electric retractable remote controlled mirrors | <ul style="list-style-type: none"> • Malfunction of speed sensor • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



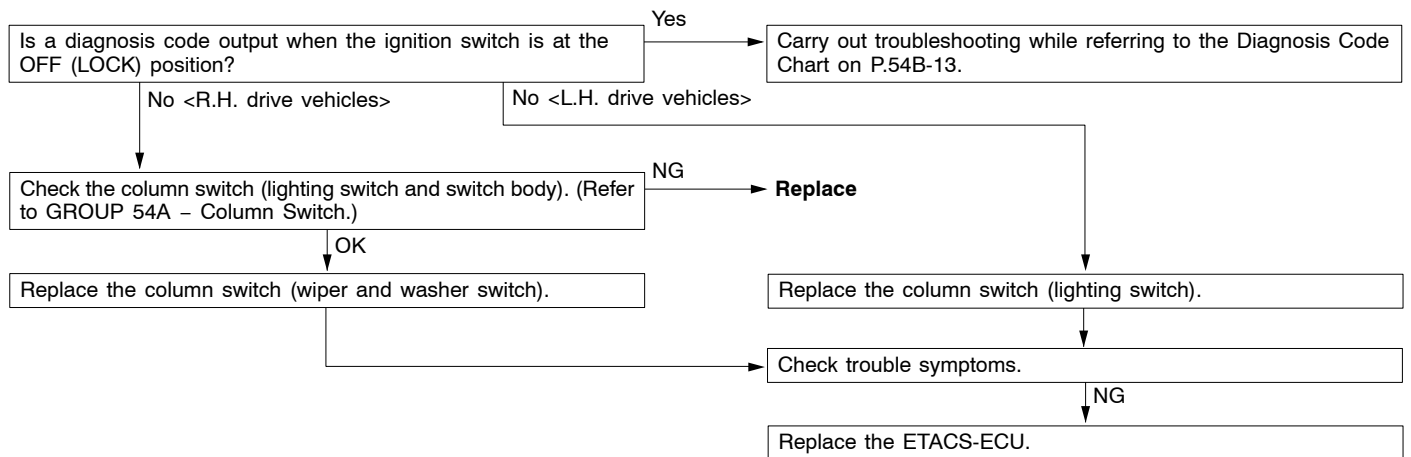
Inspection Procedure S-17

| Automatic lighting sensor signal is not sent to the ETACS-ECU. | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The automatic lighting sensor signal is used to operate the automatic lighting function. If the signal fails, automatic lighting function will not work normally.</p> | <ul style="list-style-type: none"> • Malfunction of automatic lighting sensor • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



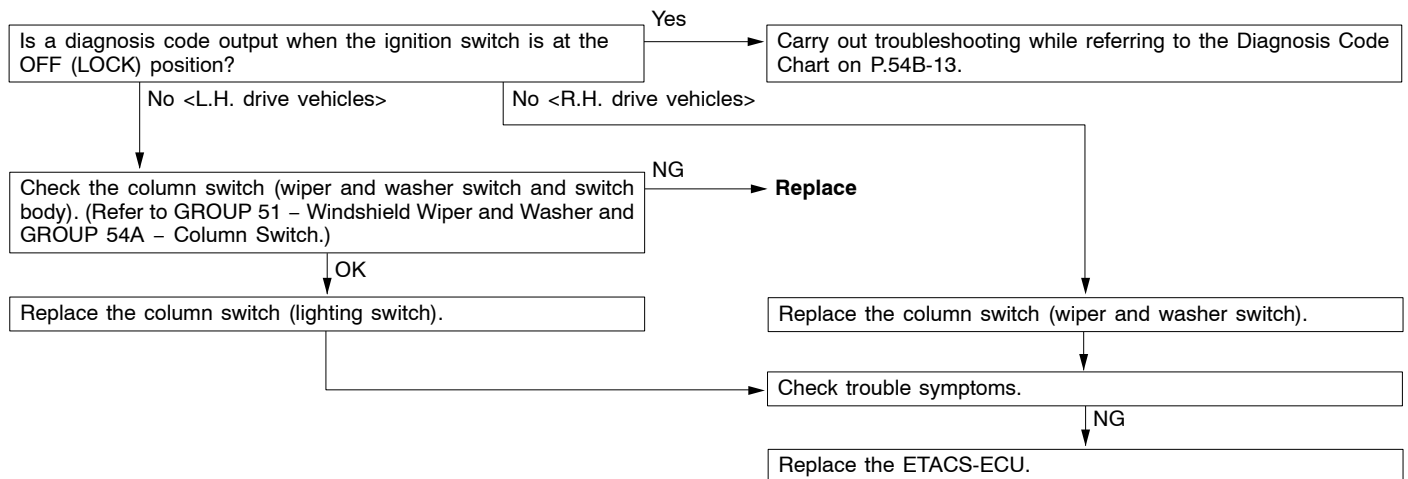
Inspection Procedure S-18

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Column switch: <ul style="list-style-type: none"> • Automatic lighting switch signal is not sent to the ETACS-ECU. • Tail lamp switch signal is not sent to the ETACS-ECU. • Headlamp switch signal is not sent to the ETACS-ECU. • Dimmer switch signal is not sent to the ETACS-ECU. • Passing switch signal is not sent to the ETACS-ECU. • Turn-signal lamp switch signal is not sent to the ETACS-ECU. • Headlamp washer switch is not sent to the ETACS-ECU. | Probable cause |
| <p>The column switch (lighting switch) is used to operate the following systems or functions. If the signal fails, these systems or function will not work normally.</p> <ul style="list-style-type: none"> • Light reminder warning function • Headlamp washer • Headlamp, tail lamp • Turn-signal lamp • Front fog lamp • Rear fog lamp | <ul style="list-style-type: none"> • Malfunction of column switch • Malfunction of ETACS-ECU |



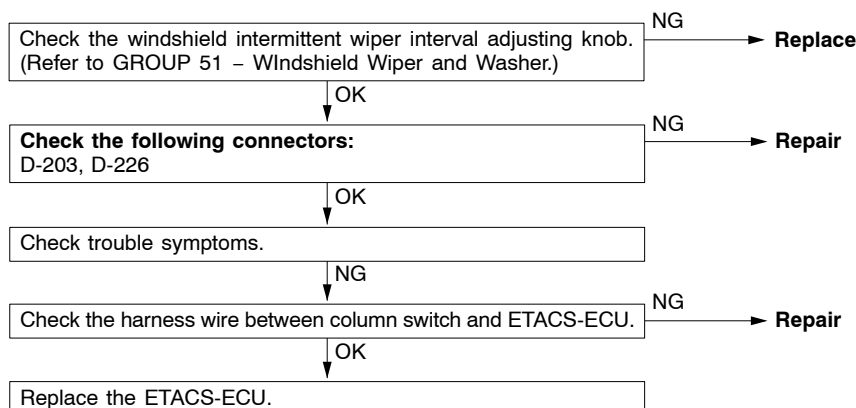
Inspection Procedure S-19

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Column switch: <ul style="list-style-type: none"> • Windshield mist wiper switch signal is not sent to the ETACS-ECU. • Windshield intermittent wiper switch signal is not sent to the ETACS-ECU. • Windshield low-speed wiper switch signal is not sent to the ETACS-ECU. • Windshield high-speed wiper switch signal is not sent to the ETACS-ECU. • Windshield washer switch is not sent to the ETACS-ECU. • Rear wiper switch is not sent to the ETACS-ECU. • Rear washer is not sent to the ETACS-ECU. | Probable cause |
| <p>The column switch (wiper and washer switch) is used to operate the following systems or functions. If the signal fails, these systems or function will not work normally.</p> <ul style="list-style-type: none"> • Windshield wiper and washer • Rear wiper and washer | <ul style="list-style-type: none"> • Malfunction of column switch • Malfunction of ETACS-ECU |



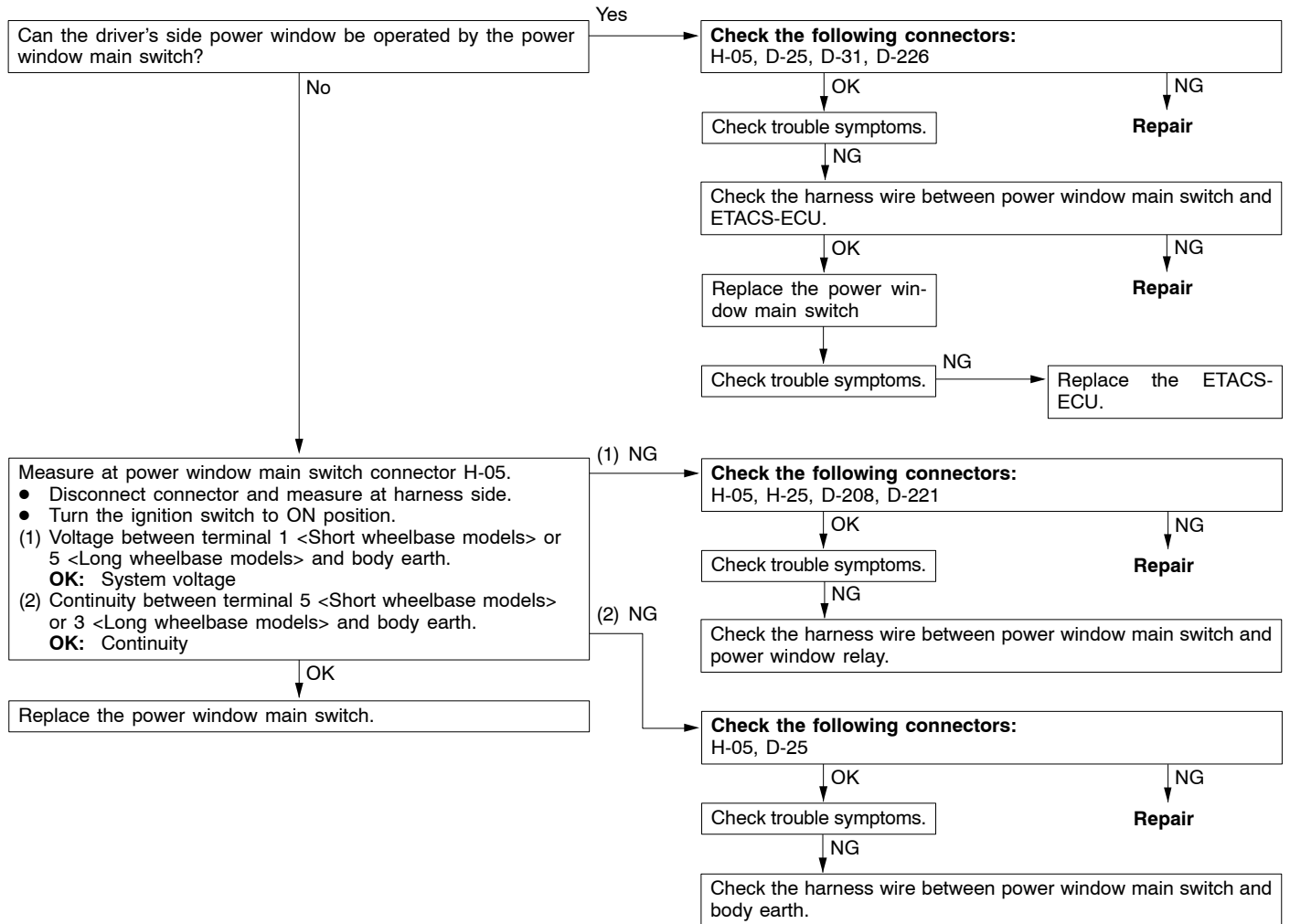
Inspection Procedure S-20

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Column switch: Windshield intermittent wiper interval adjusting knob signal is not sent to the ETACS-ECU. | Probable cause |
| <p>If the windshield intermittent wiper interval adjusting knob is defective the windshield intermittent wiper interval can not be adjusted.</p> | <ul style="list-style-type: none"> • Malfunction of column switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



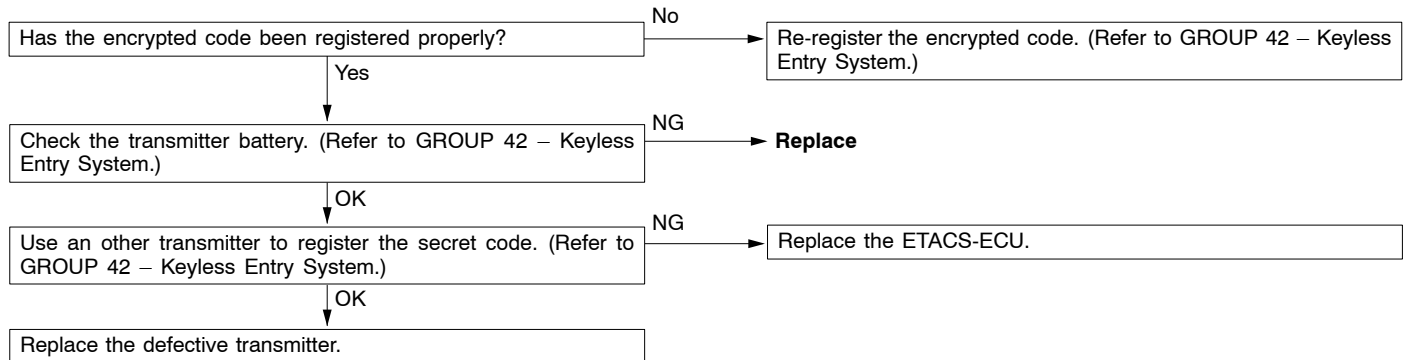
Inspection Procedure S-21

| Power window main switch: Any switch signal is not sent to the ETACS-ECU. | Probable cause |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If there is a problem with communication between the power window main switch and the ETACS-ECU, the input signal check for the power window main switch can no longer be carried out. In addition, the power window timer function will also stop working. | <ul style="list-style-type: none"> • Malfunction of power window main switch • Malfunction of ETACS-ECU • Malfunction of harness wire or connector |



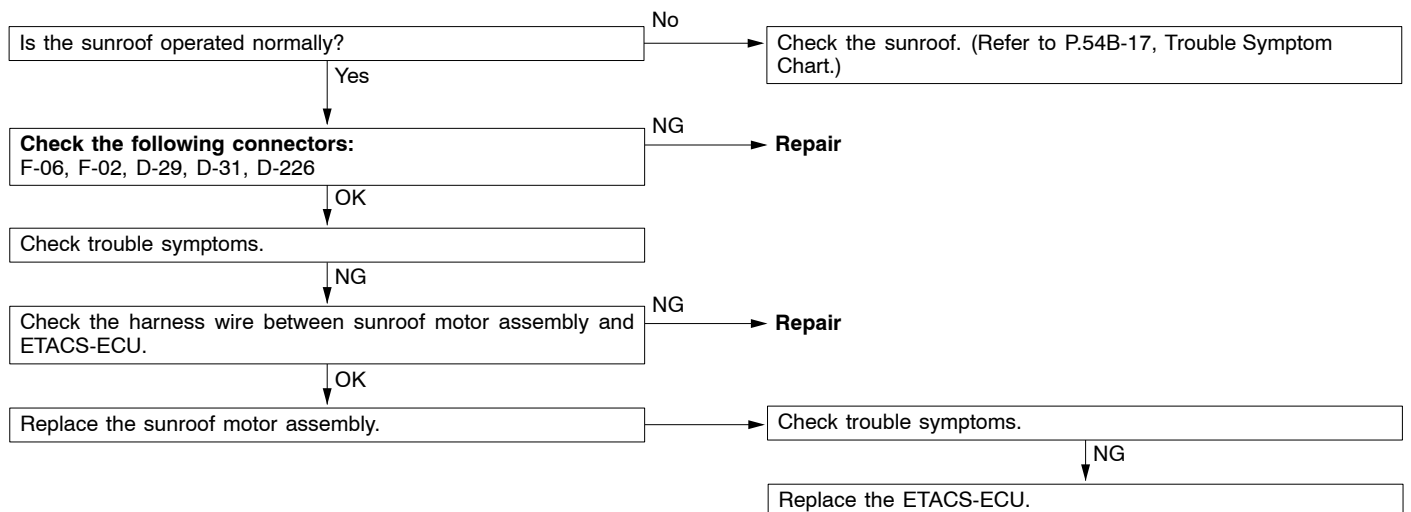
Inspection Procedure S-22

| Transmitter: Any switch signal is not sent to the ETACS-ECU. | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| The transmitter input signal is used to operate the keyless entry system. If the signal fails, keyless entry will not work normally. | <ul style="list-style-type: none"> • Malfunction of transmitter • Malfunction of ETACS-ECU |



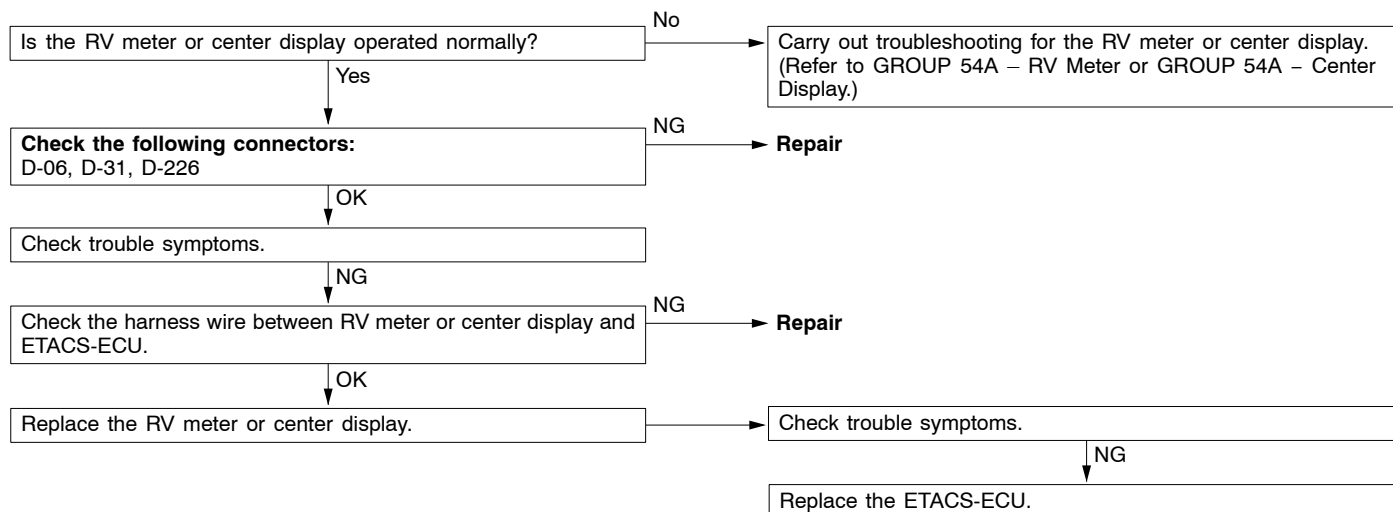
Inspection Procedure S-23

| Sunroof switch: Any switch signal is not sent to the ETACS-ECU. | Probable cause |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If there is a problem with communication between the sunroof motor assembly and the ETACS-ECU, the input signal check for the sunroof switch can no longer be carried out. In addition, the sunroof timer function will also stop working. | <ul style="list-style-type: none"> • Malfunction of sunroof switch • Malfunction of sunroof motor assembly • Malfunction of ETACS-ECU • Malfunction of harness wire or connector. |



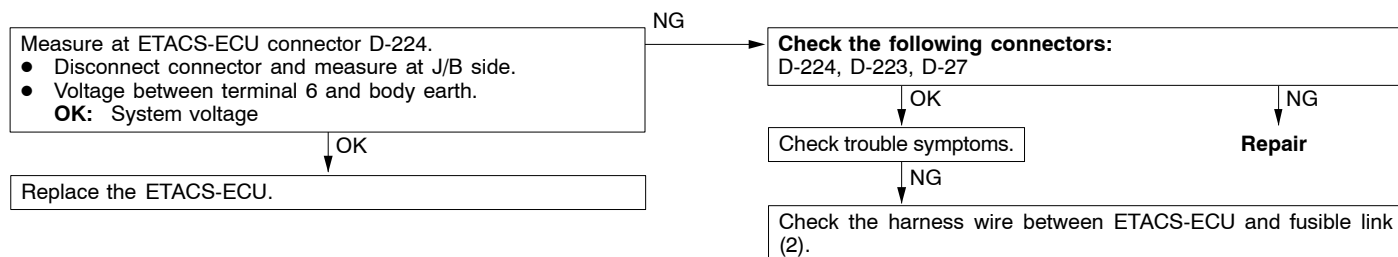
Inspection Procedure S-24

| RV meter or center display: Any switch signal is not sent to the ETACS-ECU. | Probable cause |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The cause is probably a malfunction of the RV meter or center display or the ETACS-ECU. | <ul style="list-style-type: none"> • Malfunction of RV meter or center display • Malfunction of ETACS-ECU • Malfunction of harness wire or connector. |



Inspection Procedure T-1

| Check the circuit (power supply line) from the battery to the ETACS-ECU. | Probable cause |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <p>If that power supply circuit is defective, the circuit flowing through the ignition switch (IG1) will function as a back-up circuit. In this case, the following functions will not work when the ignition switch is at LOCK (OFF) position.</p> <ul style="list-style-type: none"> • Light reminder warning buzzer function • Ignition key reminder warning buzzer function • Central door lock ing system • Ignition key hole illumination lamp • Hazard warning lamp • Room lamp • Theft-alarm system | <ul style="list-style-type: none"> • Malfunction of ETACS-ECU • Malfunction of harness wire or connector. |



CHECK AT ECU TERMINALS

1. ETACS-ECU

*

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |

| | | | | | | | |
|----|----|----|----|----|----|----|----|
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
| 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 |

X1208CA

NOTE

*: Since the ETACS-ECU is directly mounted on the junction block and the measurement for connector of terminals No.1 to 20 is impossible, the values concerning these terminals are shown for reference only.

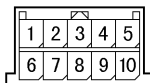
| Terminal No. | Check items | Checking requirements | Normal condition |
|--------------|-----------------------------------------------------------------|---------------------------------------------------------------------|-------------------------|
| 1 | Rear wiper output | When rear wiper is operated | System voltage |
| 2 | Ignition switch (ACC) power supply | Ignition switch: ACC | System voltage |
| 3 | Rear washer output | When rear washer is operated | System voltage |
| 4 | Door lock output | When the door lock actuators are working to lock | System voltage |
| 5 | Rear wiper auto-stop signal input | When rear wiper is operated | System voltage |
| 6 | Battery power supply (for ECU) | Always | System voltage |
| 7 | Door switches signal input | Either door switch: ON (Door open) | 0 V |
| 8 | Power window relay output | When power windows can be operated | 2 V or less |
| 9 | Driver's door switch signal input | Driver's door switch: ON (Driver's door open) | 0 V |
| 11 | Battery power supply (for turn-signal lamp) | Always | System voltage |
| 12 | Battery power supply (for central door lock) | Always | System voltage |
| 14 | Turn-signal lamp (R.H.) output | When turn-signal lamp (L.H.) is lighted | System voltage |
| 15 | Turn-signal lamp (L.H.) output | When turn-signal lamp (R.H.) is lighted | System voltage |
| 16 | Ignition switch (IG1) power supply | Ignition switch: ON | System voltage |
| 17 | Door unlock output <Except for Taiwan> | When door lock actuators are working to unlock | System voltage |
| | Door unlock output (except driver's door) <Vehicles for Taiwan> | When door lock actuators except driver's door are working to unlock | System voltage |
| 18 | Room lamp output | When room lamp is lighted | 2 V or less |
| 19 | Door unlock output (for driver's door) <Vehicles for Taiwan> | When driver's door lock actuator is working to unlock | System voltage |
| 20 | Ground (for ECU) | Always | 0 V |
| 21 | SWS communication line | Always | 0 – 12 V (pulse signal) |
| 22 | Diagnosis indication selection input | When MUT-II is connected | 0 V |

| Terminal No. | Check items | Checking requirements | Normal condition |
|--------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------------------------------|
| 23 | Ground (for sensor) | Always | 0 V |
| 24 | Front fog lamp switch signal input | Front fog lamp switch: ON | 0 V |
| 25 | Rear fog lamp switch signal input <Vehicles with rear fog lamp> | Rear fog lamp switch: ON | 0 V |
| | Driver's seat belt switch signal input <Vehicles for Taiwan> | Driver's seat belt switch: ON (Unfastened seat belt) | 0 V |
| 26 | Key reminder switch signal input | Key reminder switch: ON (Ignition key removed) | 0 V |
| 27 | Hazard warning lamp switch signal input | Hazard warning lamp switch: ON | 0 V |
| 28 | Back door lock key cylinder switch (LOCK) signal input <Vehicles with theft-alarm system> | Back door lock key cylinder switch: LOCK | 0 V |
| | Speed sensor signal input <Vehicles for Hong Kong and GCC> | When the vehicle is being driven. | 0 – 12 V (pulse signal) |
| 29 | Front passenger's door switch signal input <Vehicles for Taiwan> | Front passenger's door switch: ON (Front passenger's door open) | 0 V |
| 31 | Data request signal output | Always | 0 – 5 V (Pulse signal) |
| 32 | Automatic lighting sensor power supply | Ignition switch: ON | 5 V |
| 33 | Automatic lighting sensor signal input | Ignition switch: ON, Brightness around the sensor: dark → bright | 0 → Approx. 4 V |
| 34 | Windshield intermittent wiper interval adjusting knob signal input | Ignition switch: ACC, Windshield intermittent wiper interval adjusting knob: FAST → SLOW | 0 → 2.5 V |
| 35 | Back-up lamp switch signal input <M/T> | Ignition switch: ON, Shift lever: R | System voltage |
| | Inhibitor switch (reverse) signal input <A/T> | Ignition switch: ON, Selector lever: R | System voltage |
| 36 | Ignition key hole illumination lamp output | When ignition key hole illumination lamp is lighted | 2 V or less |
| 37 | Diagnosis code or input signal check output | When diagnosis code is output | 0 – 12 V (pulse signal) |
| | | When input signal check is output | 0, 12 V (When input pulse signal is changed) |
| 38 | Automatic lighting sensor earth | Always | 0 V |
| 39 | Seat belt warning lamp output | When seat belt warning lamp is lighted | 2 V or less |

| Terminal No. | Check items | Checking requirements | Normal condition |
|--------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------|
| 40 | Rear fog lamp relay output <Vehicles with rear fog lamp> | When rear fog lamp is lighted | 2 V or less |
| | Theft-alarm indicator lamp output <Vehicles with theft-alarm system> | When theft-alarm indicator lamp is lighted | 2 V or less |
| 41 | Output signal for retracting the electric retractable remote controlled mirror (L.H.) | While the electric retractable remote controlled mirror (L.H.) is being retracted | 12 V |
| 42 | Output signal for retracting the electric retractable remote controlled mirror (R.H.) <Vehicles for Hong Kong> | While the electric retractable remote controlled mirror (R.H.) is being retracted | 12 V |
| | Horn output <Vehicles with theft-alarm system> | When horn is sounding by keyless entry horn answerback or theft-alarm system | 2 V or less |
| 43 | Output signal for returning the electric retractable remote controlled mirror (L.H.) | While the electric retractable remote controlled mirror (L.H.) is being returned to the normal position | 12 V |
| 44 | Output signal for returning the electric retractable remote controlled mirror (R.H.) | While the electric retractable remote controlled mirror (R.H.) is being returned to the normal position | 12 V |
| 45 | Back door lock key cylinder switch (UNLOCK) signal input | Back door lock key cylinder switch: UNLOCK | 0 V |
| 46 | Front passenger's door lock actuator switch (UNLOCK) signal input | Front passenger's door lock actuator switch: UNLOCK | 0 V |
| 47 | Rear and back door lock actuator switch (UNLOCK) signal input | Rear or back door lock actuator switch: UNLOCK | 0 V |
| 48 | Mirror retracting switch signal input <Vehicles for Hong Kong> | Mirror retracting switch: ON | 0 V |
| | Hood switch signal input <Vehicles with theft-alarm system> | Hood switch: ON (Hood open) | 0 V |
| 49 | Theft-alarm horn output | When theft-alarm horn is sounding | 2 V or less |
| 50 | Driver's and front passenger's door lock key cylinder switch (LOCK) signal input <Vehicles for Hong Kong> | Drivers or front passenger's door lock key cylinder switch: LOCK | 0 V |
| 51 | Front passenger's door lock key cylinder switch (UNLOCK) signal input <Vehicles for Hong Kong> | Front passenger's door lock key cylinder switch: UNLOCK | 0 V |
| 52 | Driver's door switch lock key cylinder switch (UNLOCK) signal input <Vehicles for Hong Kong> | Driver's door lock key cylinder switch: UNLOCK | 0 V |

| Terminal No. | Check items | Checking requirements | Normal condition |
|--------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------|
| 53 | Front passenger's door lock key cylinder switch (LOCK) signal input <Except for Taiwan and South Africa> | Front passenger's door lock key cylinder switch: LOCK | 0 V |
| | Front passenger's and back door lock key cylinder switch (LOCK) signal input <Vehicles for South Africa> | Front passenger's or back door lock key cylinder switch: LOCK | 0 V |
| | Door lock switch (LOCK) signal input <Vehicles for Taiwan> | Door lock switch: LOCK | 0 V |
| 54 | Front passenger's door lock key cylinder switch (UNLOCK) signal input <Except for Taiwan and South Africa> | Front passenger's door lock key cylinder switch: UNLOCK | 0 V |
| | Front passenger's and back door lock key cylinder switch (UNLOCK) signal input <Vehicles for South Africa> | Front passenger's or back door lock switch: UNLOCK | 0 V |
| | Door lock switch (UNLOCK) signal input <Vehicles for Taiwan> | Door lock switch: UNLOCK | 0 V |
| 55 | Driver's door lock actuator switch (LOCK) signal input | Driver's door lock actuator switch: LOCK | 0 V |
| 56 | Driver's door lock actuator switch (UNLOCK) signal input | Driver's door lock actuator switch: UNLOCK | 0 V |

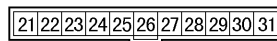
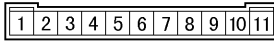
2. COLUMN SWITCH



X1209CA

| Terminal No. | Check items | Checking requirements | Normal condition |
|--------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------|
| 1 | Battery power supply | Always | System voltage |
| 2 | Data request signal input | Always | 0 – 5 V (pulse signal) |
| 3 | SWS communication line | Always | 0 – 12 V (pulse signal) |
| 4 | Ground | Always | 0 V |
| 6 | Windshield intermittent wiper interval adjusting knob signal output | Ignition switch: ACC, Windshield intermittent wiper interval adjusting knob: FAST → SLOW | 0 → 2.5 V |
| 8 | Windshield wiper switch backup output | Windshield low-speed wiper switch or windshield high-speed wiper switch: ON | 0 V |
| 9 | Ignition switch (IG1) power supply | Ignition switch: ON | System voltage |
| 10 | Headlamp switch backup output | Headlamp switch: ON | 0 V |

3. FRONT-ECU

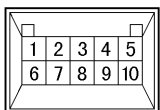


X1210CA

NOTE

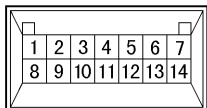
Since the front-ECU is directly mounted on the relay box and measurement is impossible, these values are shown for reference.

| Terminal No. | Check items | Checking requirements | Normal condition |
|--------------|--------------------------------------------|-----------------------------------------------------------------------------|-------------------------|
| 1 | Front fog lamp relay output | When front fog lamp is lighted | 2 V or less |
| 2 | Headlamp (high-beam) output | When headlamp (high-beam) is lighted | System voltage |
| 3, 4 | Battery power supply (for headlamp) | Always | System voltage |
| 5 | Battery power supply (for tail lamp) | Always | System voltage |
| 6 | Headlamp (low-beam) output | When headlamp (low-beam) is lighted | System voltage |
| 7 | Battery power supply (for ECU) | Always | System voltage |
| 8 | Tail lamp output | When tail lamp is lighted | System voltage |
| 9 | Battery power supply (for headlamp washer) | Always | System voltage |
| 11 | Headlamp washer output | When headlamp washer is operated | System voltage |
| 21 | Windshield washer output | When windshield washer is operated | System voltage |
| 22 | SWS communication line | Always | 0 – 12 V (pulse signal) |
| 23 | Windshield wiper auto-stop signal input | When windshield wiper is operated | System voltage |
| 24 | Ignition switch (ACC) power supply | Ignition switch: ACC | System voltage |
| 25 | Headlamp switch backup input | Headlamp switch: ON | 0 V |
| 26 | Windshield wiper backup input | Windshield low-speed wiper switch or windshield high-speed wiper switch: ON | 0 V |
| 27 | Windshield wiper (low-speed) output | When windshield wiper is operated (at low-speed) | System voltage |
| 28 | Windshield wiper (high-speed) output | When windshield wiper is operated (at high-speed) | System voltage |
| 30 | Ignition switch (IG2) power supply | Ignition switch: ON | System voltage |
| 31 | Ground | Always | 0 V |

4. POWER WINDOW MAIN SWITCH <Vehicles with Safety Mechanism Power Windows>**<Short wheelbase models>**

X1211CA

| Terminal No. | Check items | Checking requirements | Normal condition |
|--------------|------------------------------------------------------------------------------------------|------------------------|-------------------------|
| 1 | Power supply | Power window relay: ON | System voltage |
| 3 | SWS communication line (between the power window main switch and the power window motor) | Power window relay: ON | 0 – 12 V (pulse signal) |
| 4 | SWS communication line (between the power window main switch and the ETACS-ECU) | Always | 0 – 12 V (pulse signal) |
| 5 | Ground | Always | 0 V |

<Long Wheelbase Models>

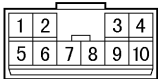
X1212CA

| Terminal No. | Check items | Checking requirements | Normal condition |
|--------------|------------------------------------------------------------------------------------------|------------------------|-------------------------|
| 1 | SWS communication line (between the power window main switch and the power window motor) | Power window relay: ON | 0 – 12 V (pulse signal) |
| 3 | Ground | Always | 0 V |
| 5 | Power supply | Power window relay: ON | System voltage |
| 7 | SWS communication line (between the power window main switch and the ETACS-ECU) | Always | 0 – 12 V (pulse signal) |

5. POWER WINDOW MOTOR <Vehicles with Safety Mechanism Power Window>

X1213CA

| Terminal No. | Check items | Checking requirements | Normal condition |
|--------------|------------------------------------------------------------------------------------------|-------------------------------|-------------------------|
| 1 | Ground | Always | 0 V |
| 2 | Power window sub switch (DOWN) signal input <Except driver's door> | Power window sub switch: DOWN | 0 V |
| 3 | Power supply | Power window relay: ON | System voltage |
| 4 | Power window sub switch (UP) signal input <Except driver's door> | Power window sub switch: UP | 0 V |
| 6 | SWS communication line (between the power window main switch and the power window motor) | Power window relay: ON | 0 – 12 V (pulse signal) |

6. SUNROOF MOTOR ASSEMBLY

X1214CA

| Terminal No. | Check items | Checking requirements | Normal condition |
|--------------|------------------------------------------|----------------------------|-------------------------|
| 1 | Battery power supply (for motor) | Always | System voltage |
| 2 | Ignition switch (IG2) power supply | Ignition switch: ON | System voltage |
| 3 | Battery power supply (for ECU) | Always | System voltage |
| 5 | Ground | Always | 0 V |
| 6 | Sunroof switch (CLOSE/DOWN) signal input | Sunroof switch: CLOSE/DOWN | 0 V |
| 7 | Sunroof switch (UP) signal input | Sunroof switch: UP | 0 V |
| 8 | Sunroof switch (OPEN) signal input | Sunroof switch: OPEN | 0 V |
| 6 | SWS communication line | Always | 0 – 12 V (pulse signal) |

7. RV METER OR CENTER DISPLAY

Refer to GROUP 54A – RV Meter or GROUP 54A – Center Display.

ON-VEHICLE SERVICE

ADJUSTMENT PROCEDURES OF SWS FUNCTION

Through special operation of input switches, it is possible to disable and enable the functions listed below. Settings are retained even if the battery is disconnected.

- Keyless entry hazard answerback function
- Power windows and sunroof, which the multi-mode keyless entry system operates <Vehicles for Hong Kong>
- Vehicle speed-dependent wiper function <Vehicles for Hong Kong>
- Sensitivity of the automatic lighting system (brightness, where the lamps are turned on) <Vehicles for Hong Kong>
- Headlamp automatic shutdown function <Vehicles for Taiwan and Hong Kong>
- Delay-off period of the room lamp <Vehicles for Hong Kong>
- Initialization of above mentioned functions

NOTE

Vehicles for Taiwan, excepting this method the keyless entry hazard and horn answerback can be adjusted by operating the transmitter only. (The operating method to use the transmitter only is easier.) Refer to GROUP 42 – Keyless Entry System.

Configuration Mode Entry Conditions

1. Set each switch at the following condition.
 - Hazard warning lamp switch: OFF
 - Diagnosis control: ON (MUT-II connected or terminal 1 of diagnosis connector connected to earth)
 - Key reminder switch: OFF (ignition key inserted)
 - Ignition switch: LOCK (OFF)
 - Driver's door switch: OFF (driver's door closed)
2. When the windshield washer switch is continuously turned ON for more than 10 seconds, the buzzer integrated in the ETACS-ECU sounds once and the mode is switched to the configuration mode.

Configuration Mode Cancellation Conditions

The ETACS-ECU cancels the configuration mode when any of the conditions listed below is satisfied.

- Diagnosis control: OFF (MUT-II disconnected or terminal 1 of diagnosis connector disconnected from earth)
- Key reminder switch: ON (ignition key removed)
- Ignition switch: any position other than LOCK (OFF)
- Driver's door switch: ON (driver's door open)
- No configuration performed within three minutes of entry to configuration mode (If configuration is performed within first three minutes, monitoring continues for three minutes from that point.)

Configuration of Functions

| Function | Configuration procedure |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Keyless entry hazard answerback | <p>If the transmitter's LOCK switch is turned ON twice within two seconds, the lock answerback function's enabled/disabled status is inverted.</p> <ul style="list-style-type: none"> • When this function is enabled, the ETACS-ECU buzzer sounds once (initial status). • When this function is disabled, the ETACS-ECU buzzer sounds twice. <p>If the transmitter's UNLOCK switch is turned ON twice within two seconds, the unlock answerback function's enabled/disabled status is inverted.</p> <ul style="list-style-type: none"> • When this function is enabled, the ETACS-ECU buzzer sounds once (initial status). • When this function is disabled, the ETACS-ECU buzzer sounds twice. |
| Power windows and sunroof, which the multi-mode keyless entry system operates <Vehicles for Hong Kong> | <p>If one of the power window main switches is turned on twice at interval of at least 0.3 seconds within two seconds, the multi-mode keyless entry system will disable or enable the operations of the power windows and the sunroof in the following order (Next to "c", the function returns to "a" and repeats the sequence from "a").</p> <ol style="list-style-type: none"> The front power windows are enabled to be closed and opened, and the rear power windows and the sunroof can be closed only. If this step is completed, the ETACS-ECU buzzer sounds once. The power windows and the sunroof are disabled. If this step is completed, the ETACS-ECU buzzer sounds twice. The power windows and the sunroof are enabled to be closed. If this step is completed, the ETACS-ECU buzzer sounds three times (initial status). |
| Vehicle speed-dependent wiper function <Vehicles for Hong Kong> | <p>If the windshield mist wiper switch remains ON for more than two seconds, the vehicle speed-dependent wiper function will be toggled on and off.</p> <ul style="list-style-type: none"> • When this function is enabled, the ETACS-ECU buzzer sounds once (initial status). • When this function is disabled, the ETACS-ECU buzzer sounds twice. |
| Automatic return function for electric retractable remote controlled mirrors <Vehicles for Hong Kong> | <p>If the mirror retracting switch remains ON for more than two seconds, the automatic return function for the electric retractable remote controlled mirrors will be toggled on and off.</p> <ul style="list-style-type: none"> • When this function is enabled, the ETACS-ECU buzzer sounds once (initial status). • When this function is disabled, the ETACS-ECU buzzer sounds twice. |
| Headlamp automatic shutdown function <Vehicles for Taiwan and Hong Kong> | <p>If the passing switch is turned ON for more than two seconds while the headlamp switch turned ON and the turn-signal lamp switch (R.H.) remain ON, the headlamp automatic shutdown function will change in the order below. (Next to "c", the function returns to "a" and repeats the sequence from "a".)</p> <ol style="list-style-type: none"> The headlamps and the tail lamps are enabled to extinguish automatically when the headlamp switch or tail lamp switch is turned on while the ignition switch is in the LOCK (OFF) position. If this step is completed, the ETACS-ECU buzzer sounds once. This function is disabled. If this step is completed, the ETACS-ECU buzzer sounds twice. This function is enabled (standard status, refer to P.54B-7). If this step is completed, the ETACS-ECU buzzer sounds three times (initial status). |

| Function | Configuration procedure |
|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sensitivity of the automatic lighting system (brightness, where the lamps will illuminate) <Vehicles for Hong Kong> | <p>If the passing switch is turned ON for more than two seconds with the automatic lighting switch turned ON and the turn-signal lamp switch (L.H.) turned ON, the sensitivity of the automatic lighting system changes in the order below. (Next to “d”, the function returns to “a” and repeats the sequence from “a”).</p> <ol style="list-style-type: none"> If it is under high illumination, the lamps will illuminate. If this step is completed, the ETACS-ECU buzzer sounds once. If it is under standard illumination, the lamps will illuminate. If this step is completed, the ETACS-ECU buzzer sounds twice (initial status). If it is under low illumination, the lamps will illuminate. If this step is completed, the ETACS-ECU buzzer sounds three times. If it is under very low illumination, the lamps will illuminate. If this step is completed, the ETACS-ECU buzzer sounds four times. |
| Delay-off period of room lamp <Vehicles for Hong Kong> | <p>Each time the turn-signal lamp switch is moved from one position to the other position within three seconds, the delay-off period changes step by step as follows. (Next to “c”, the function returns to “a” and repeats the sequence from “a”).</p> <ol style="list-style-type: none"> 30 seconds; If this step is completed, the ETACS-ECU buzzer sounds once (initial status). 10 seconds; If this step is completed, the ETACS-ECU buzzer sounds twice. 0 second (no delay-off period); If this step is completed, the ETACS-ECU buzzer sounds three times. |
| Initialization of above mentioned functions | <p>If the windshield washer switch is turned ON for more than 20 seconds, the buzzer sounds twice and all functions are initialized. (The configuration mode entry buzzer sounds after 10 seconds, but the switch must be kept ON for 20 seconds to achieve initialization.)</p> <p>If the windshield washer switch is kept ON for more than 20 seconds without prior entry of the configuration mode, the configuration mode is entered after 10 seconds and initialization does not take place.</p> |