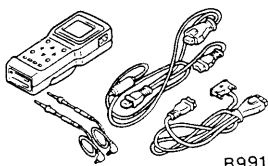
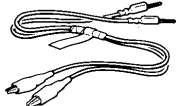
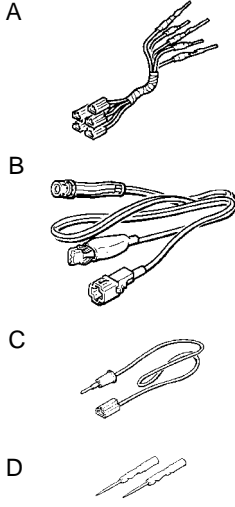


## SPECIAL TOOLS

Tool	Number	Name	Use
 B991502	MB991502	MUT-II subassembly	For SWS inspections (diagnosis code display and input signal check by MUT-II)
	MB991529	Diagnosis code check harness	For checking input signals by voltmeter
 A B C D C991223	MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222	Harness set A: Test harness B: LED harness C: LED harness adapter D: Probe	For checking voltage (continuity and value) at harnesses and connectors A: For checking connector pin contact voltage B: For checking power supply circuits C: For checking power supply circuits D: For connection to commercially available testers

## TROUBLESHOOTING

### BEFORE COMMENCING TROUBLESHOOTING

Before starting troubleshooting, check the following two points to ensure there are no defects.

- Check the state of the connector couplings to the ETACS-ECU and junction box.
- Check that the fuses and fusible links relating to all systems are not fused.

### STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

Refer to [How to Use Troubleshooting/Inspection Service Points](#).

### DIAGNOSTIC FUNCTIONS

#### READING DIAGNOSIS CODES

Read the diagnosis codes using MUT-II. (Refer to [How to Use Troubleshooting/Inspection Service Points](#).)

#### NOTES:

- (1) Connect MUT-II to the 16-pin diagnosis connector (black).
- (2) The diagnosis code cannot be read when there is an ETACS-ECU fault or when the power is first turned ON (voltage rising). In this case, refer to [“No Communication with MUT-II”](#) on Fault Symptom Inspection Procedure, and perform troubleshooting.

## INPUT SIGNAL CHECK

1. Check the inputs using MUT-II or a voltmeter. (Refer to [How to Use Troubleshooting/Inspection Service Points.](#))
2. The following input signals can be checked using MUT-II or a voltmeter connected to the diagnosis connector.

NOTE: When fault is detected during input signal inspection, refer to [Trouble Symptom Chart](#) to perform troubleshooting.

### Input Signal Check Function

Input signal		Buzzer operation condition	
Ignition switch (ACC)		When ignition switch turned from LOCK OFF to ACC.	
Ignition switch (IG1)		When ignition switch turned from ACC to ON.	
Ignition key reminder switch		When ignition key is removed from the ignition key cylinder (from the inserted position).	
Inhibitor switch (reverse)		When shift lever is moved to the R (reverse) position with the ignition switch ON.	
Electrical remote control mirror switch (folding/reset switch) <Hong Kong and Singapore (except for CS3A)>		When switch turned from OFF to ON.	
Hazard lamp switch			
Fog lamp switch			
Driver's door switch			
All door switches		When driver's door opened from closed	
Driver's door lock actuator		When any door opened when all doors were closed.	
Vehicle speed signal		When the driver's side key cylinder or inside lock knob is moved from the locked to unlocked position or vice versa.	
Photo sensor <Hong Kong and Singapore (except for CS3A)>		When the driver's side key cylinder or inside lock knob is moved from the locked to unlocked position or vice versa.	
Column switches	Automatic lighting switch <Hong Kong and Singapore (except for CS3A)>	Vehicle speed changes from less than 10 km/h to 10 km/h or more.	
	Tail lamp switch	When the lighting in the vicinity of the sensor goes darker.	
	Headlamp switch	When the lighting switch is turned from any position to automatic lighting ON.	
	Dimmer switch	When lighting switch turned from automatic lighting to tail lamp position.	
	Passing switch	When lighting switch turned from tail lamp to headlamp position.	
	Left-hand turn signal lamp switch	When switch turned from OFF to ON.	
	Right-hand turn signal lamp switch		
	Windshield mist wiper switch		
	Windshield wiper intermittent timing switch		
	Windshield wiper LO speed switch		
	Windshield wiper HI speed switch		
	Windshield wiper intermittent timing adjustment		When knob turned from FAST to SLOW. (Signal output once when knob is around the central position.)
	Windshield washer switch		When switch turned from OFF to ON.

Input signal		Buzzer operation condition
Power window main switch	All switches <Hong Kong and Singapore (except for CS3A)>	When switch turned from OFF to ON.
Keyless entry transmitter	All switches <Hong Kong and Singapore (except for CS3A)>	When switch turned from OFF to ON.
Sunroof	All switches <Hong Kong and Singapore (except for CS3A)>	When switch turned from OFF to ON.
Universal fuse No. 17 <Hong Kong and Singapore (except for CS3A)>		When universal fuse No. 17 under power supply load.

## DIAGNOSIS CODE CHART

Code No.	Diagnosis item
11	ETACS-ECU-related failure
12	Column switch-related failure or fault in connecting to ETACS-ECU
13	Front ECU-related failure or fault in connecting to ETACS-ECU
21	Short circuit in communication lines

## DIAGNOSIS CODE INSPECTION PROCEDURES

Code No. 11 ETACS-ECU-related failure	Probable cause
The ETACS-ECU monitors its own communication data, outputting this diagnosis code when data error occurs 15 consecutive times (for 0.6 seconds). The diagnosis code output stops when the ETACS-ECU confirms that its data was transmitted normally 15 consecutive times (for 0.6 seconds).	<ul style="list-style-type: none"> <li>ETACS-ECU fault</li> </ul>

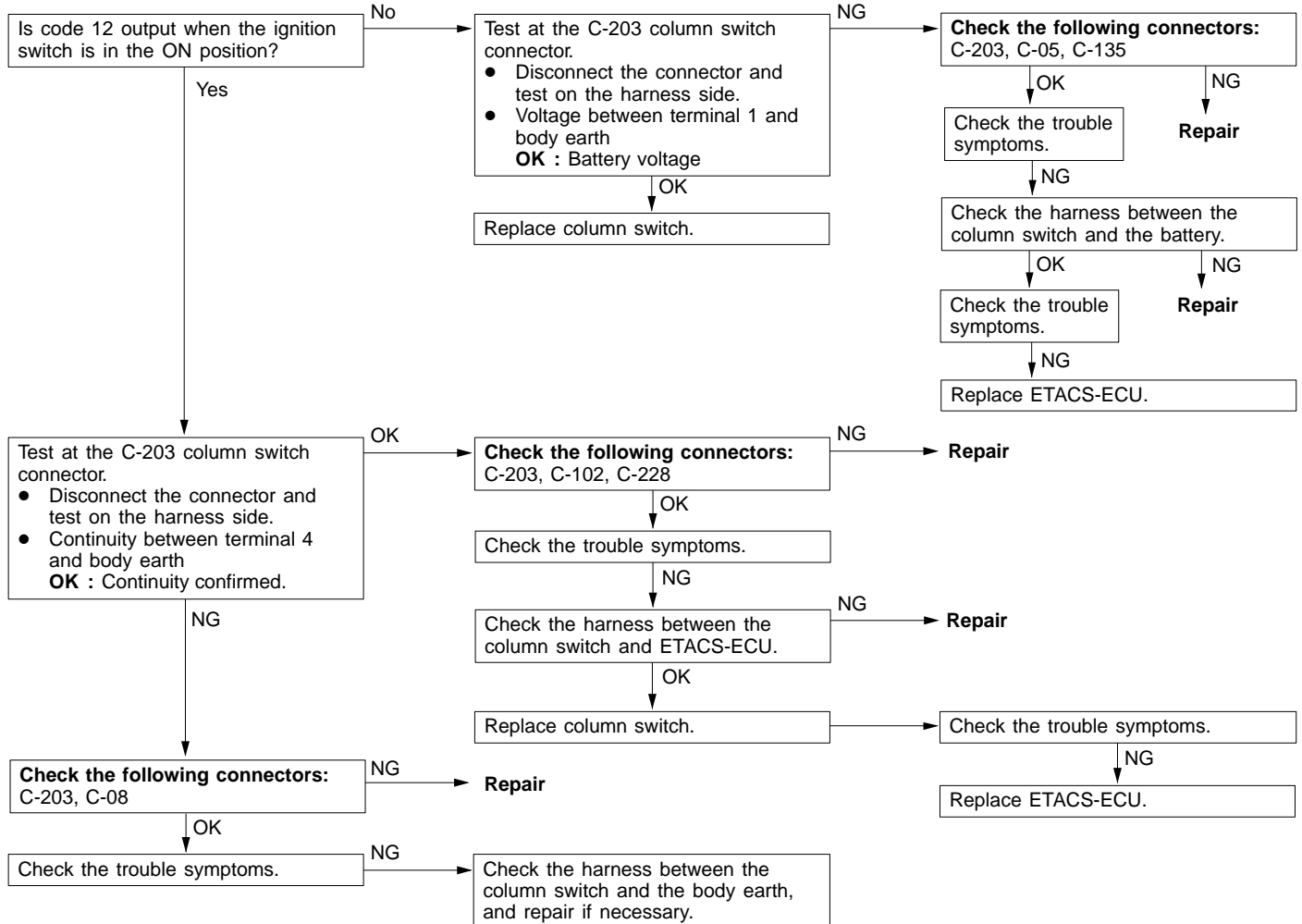
Replace ETACS-ECU.

## Code No. 12 Column switch-related fault or fault in connecting to ETACS-ECU

### Probable cause

This diagnosis code is output when a column switch outputs a signal (at least three times a second) that is not in accordance with the transmission request signal from ETACS-ECU. The diagnosis code output stops when the column switch continuously outputs for one second a signal that accords with the transmission request signal from ETACS-ECU.

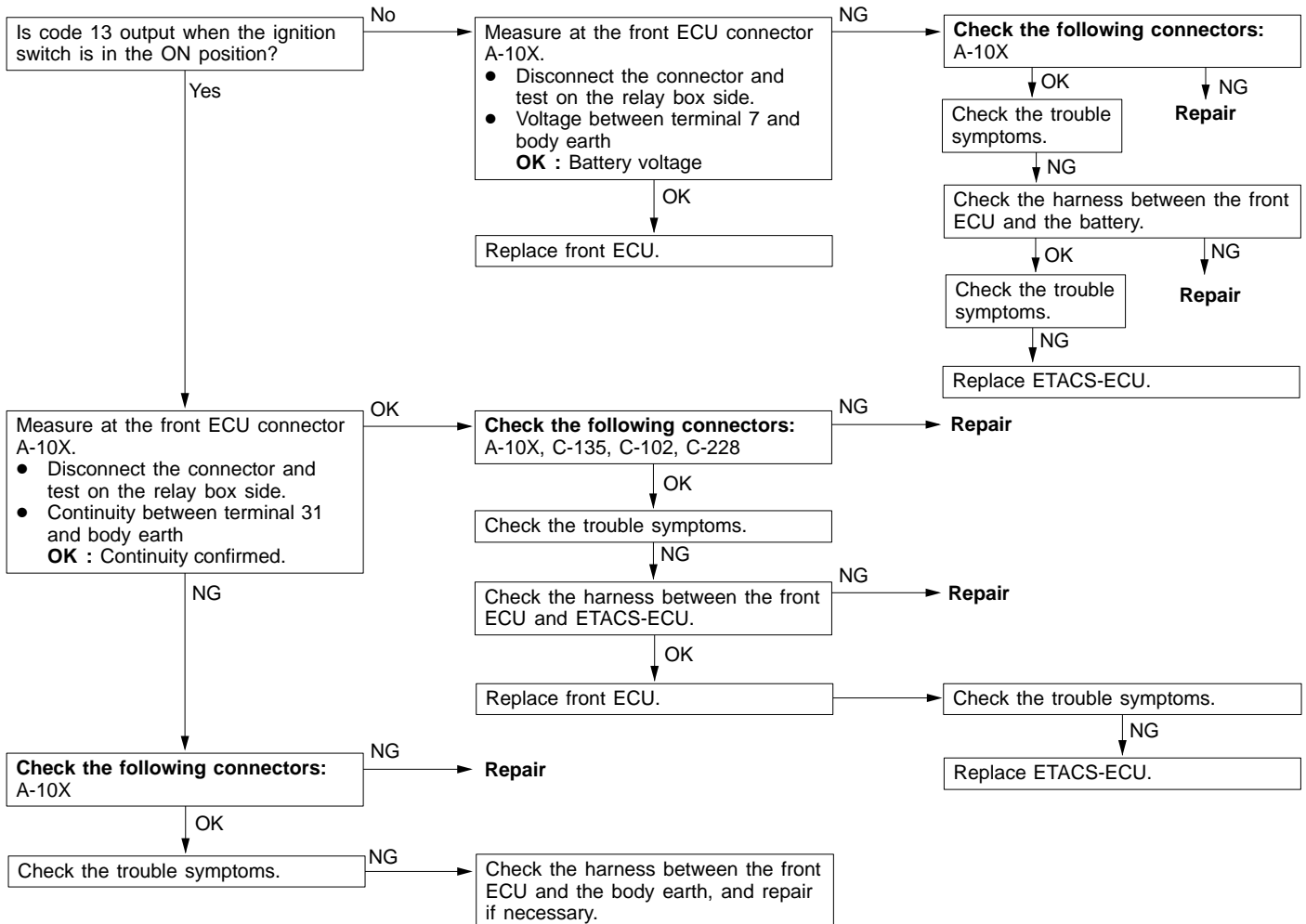
- Column switch fault
- ETACS-ECU fault
- Harness or connector fault



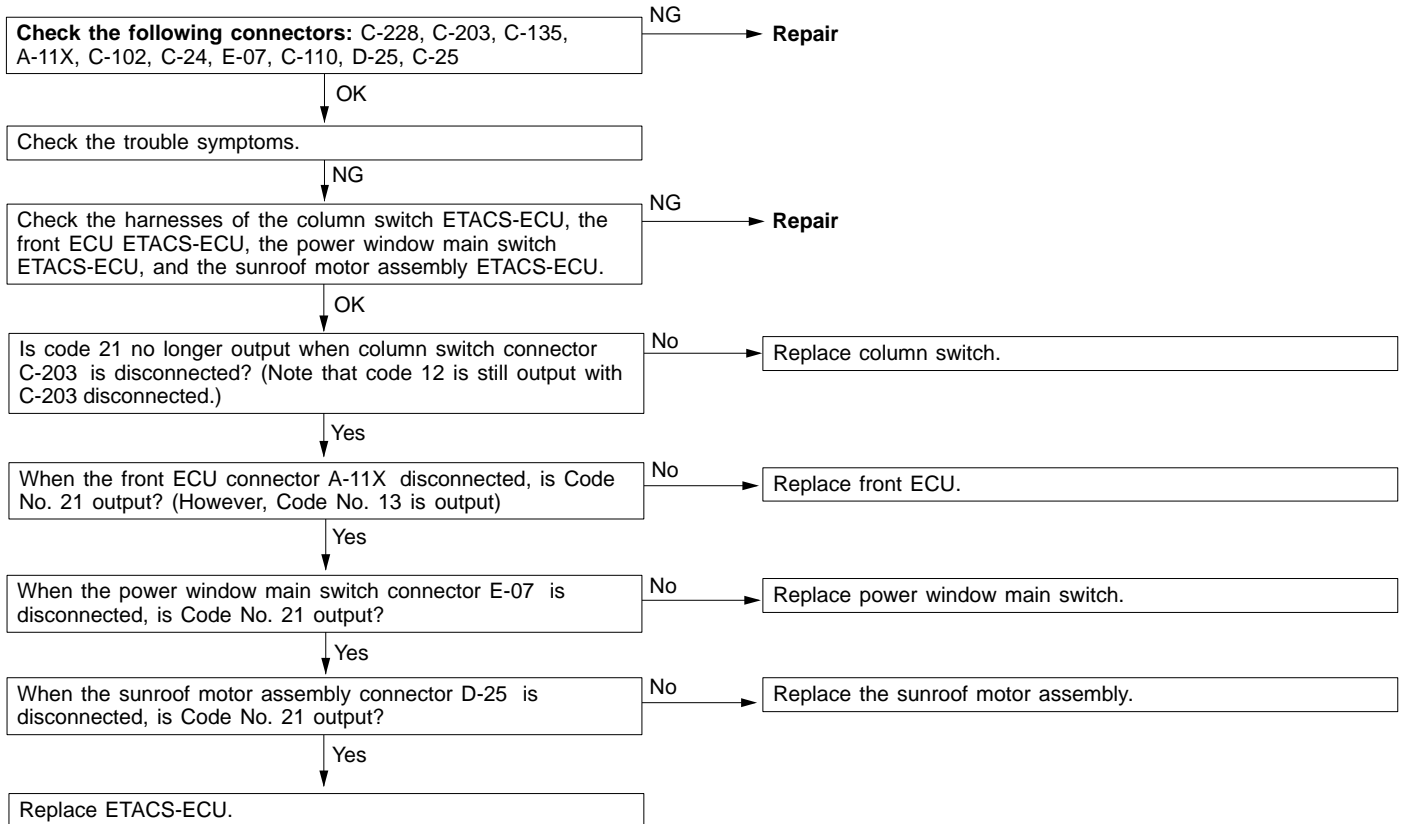
**Code No. 13 Front ECU-related fault or fault in connecting to ETACS-ECU**
**Probable cause**

This diagnosis code is output when the signal output from the front ECU to ETACS-ECU contains an error for 15 consecutive communication cycles (0.6 seconds). The diagnosis code output stops when the signal output from the front ECU to ETACS-ECU is normal for 15 consecutive communication cycles (0.6 seconds).

- Front ECU fault
- ETACS-ECU fault
- Harness or connector fault



Code No. 21 Short circuit in communication lines.	Probable cause
This diagnostic code is output when the voltage on an SWS communication line goes LOW for 0.3 seconds. The diagnosis code output stops when the ETACS-ECU data line voltage goes HIGH for 0.3 seconds, or when the ETACS-ECU receives a normal signal from another ECU or switch. During the output of this code, other codes are suppressed.	<ul style="list-style-type: none"> <li>Column switch fault</li> <li>Front ECU fault</li> <li>Power window main switch fault</li> <li>Sunroof motor assembly fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



## TROUBLE SYMPTOM CHART

Trouble symptom		Inspection procedure
No communication with MUT-II		A-1
Buzzers	Ignition key removal reminder warning function not working normally.	B-1
	Lights left ON reminder warning function not working normally.	B-2
	R (reverse) selected warning function not working normally.	B-3
	Speed alarm function is not properly operated. <GCC>	B-4
Central locking	Central door locking system not working at all.	C-1
	Some doors not locking or unlocking.	C-2
	Key removal reminder function not working normally <Hong Kong and Singapore (except for CS3A)>.	C-3
Power window	Power windows not working at all.	D-1
	Power windows are not operated with the power window main switch.	
	Driver's power window not responding to power window main switch.	D-2
	Windows not responding to passenger or rear power window switches.	D-3
	Passenger or rear power windows not responding to power window main switch.	D-4
	Power window timer function not working normally.	D-5
	While the window is winding up, it suddenly starts coming down again.	D-6
	Safety mechanism (to prevent jamming of fingers, etc.) not working.	D-7
Keyless entry system <Hong Kong and Singapore (except for CS3A)>	The keyless entry system does not work at all.	E-1
	Keyless entry's hazard answerback function or room entry lamp answerback function does not work normally.	E-2
	Access code cannot be registered.	E-3
	The multimode keyless entry function is not working normally.	E-4
	Power windows are not properly operated with the multimode keyless entry function.	E-5
	Sunroof close is not properly operated with the multimode keyless entry function.	E-6
Sunroof <Hong Kong and Singapore (except for CS3A)>	The sunroof timer function does not operate normally.	F-1
Windshield wipers and washer	The windshield wipers do not work at all.	G-1
	The windshield wipers only operate at "LO" speed (though the wipers and washer can be switched OFF).	G-2
	The windshield wipers do not respond to any switch position.	G-3
	The windshield wipers do not stop in the normal predetermined position.	G-4
	The windshield wiper intermittent timing does not respond to the adjustment knob or to the vehicle speed.	G-5
	The windshield washer does not work at all.	G-6
	Windshield wipers are not operated with the switch in INT, WASHER and MIST positions, and operated in a low mode with the switch in Lo and Hi positions.	G-7
Electric retractable door mirror <Hong Kong and Singapore (except for CS3A)>	The electric retractable door mirror is not working at all.	I-1
	The electric retractable door mirror timer function is not working.	I-2
	Automatic reset function of the electric folding door mirrors is not properly working.	I-3

Trouble symptom		Inspection procedure
Ignition key cylinder illumination lamp	The ignition key cylinder illumination lamp is not turning ON or OFF normally.	J-1
Headlamps, tail lamps	Except for lighting switch “OFF,” the headlamps only respond to the “low-beam” position.	K-1
	The tail lamps do not work.	K-2
	The headlamps (low-beam) do not light.	K-3
	The headlamps (high-beam) do not light.	K-4
	The headlamps (low or high-beam) do not work when the passing switch is ON.	K-5
	The headlamp automatic cut-off function is not working normally.	K-6
	The automatic lighting function is not working normally <Hong Kong and Singapore (except for CS3A)>.	K-7
Front fog lamp	Front fog lamps are not properly illuminated.	L-1
Rear fog lamp	Rear fog lamp is not properly illuminated.	
Flasher timer	The turn signal lights do not light.	M-1
	The hazard lamps do not light up.	M-2
Room entry lamps	The room entry lamps do not come ON or OFF normally.	N-1
	The interior lamp automatic cut-off function is not working normally <Hong Kong and Singapore (except for CS3A)>	N-2

## DEFECTS FOUND BY INPUT SIGNAL CHECK

When a fault is identified in an input signal check, use the following table to investigate the fault.

Trouble symptom		Inspection procedure
No ignition switch (ACC) signal input to ETACS-ECU.		O-1
No ignition switch (IG1) signal input to ETACS-ECU.		O-2
No key reminder switch signal input to ETACS-ECU.		O-3
No inhibitor switch (reverse) signal input to ETACS-ECU.		O-4
No remote control mirror switch (retract/return) signal input to ETACS-ECU <Hong Kong and Singapore (except for CS3A)>		O-5
No hazard lamp switch signal input to ETACS-ECU.		O-6
No fog lamp switch signal input to ETACS-ECU.		O-7
No driver's door switch signal input to ETACS-ECU.		O-8
No door switch signals input to ETACS-ECU.		
No driver's door lock actuator signal input to ETACS-ECU.		O-9
No vehicle speed (engine-CVT-ECU) signal input to ETACS-ECU.		O-10
No photo sensor signal input to ETACS-ECU. <Hong Kong and Singapore (except for CS3A)>.		O-11
Column switches	No automatic lighting switch signal input to input to ETACS-ECU <Hong Kong and Singapore (except for CS3A)>	O-12
	No tail lamp switch signal input to ETACS-ECU.	
	No headlamp switch signal input to ETACS-ECU.	
	No dimmer switch signal input to ETACS-ECU.	
	No passing switch signal input to ETACS-ECU.	
	No turn signal lamp left-hand switch signal input to ETACS-ECU.	
	No turn signal lamp right-hand switch signal input to ETACS-ECU.	



## 54B SWS BASE – Troubleshooting

Trouble symptom		Inspection procedure
Column switches	No windshield mist wiper switch signal input to ETACS-ECU.	O-13
	No windshield wiper intermittent switch signal input to ETACS-ECU.	
	No windshield wiper low-speed switch signal input to ETACS-ECU.	
	No windshield wiper high-speed switch signal input to ETACS-ECU.	
	No windshield wiper intermittent timing adjustment signal input to ETACS-ECU.	O-14
	No windshield washer switch signal input to ETACS-ECU.	O-13
Power window main switch	No power window main switch signal input to ETACS-ECU.	O-15
Keyless entry transmitter	No signal from the keyless entry transmitter switches is input to ETACS-ECU.	O-16
Sunroof <Hong Kong and Singapore (except for CS3A)>	No signal from the sunroof switches is input to ETACS-ECU.	O-17
Universal fuse No.17 <Hong Kong and Singapore (except for CS3A)>	No load signal is detected on universal fuse No. 17.	O-18
When the ignition switch is in the LOCK (OFF) position, no functions work normally.		P-1
ETACS-ECU battery power supply circuit control check.		

NOTE: A diagnosis code is output for front ECU and column switch battery power supply circuit control abnormalities. Apply the diagnosis code inspection procedures to address these abnormalities.

MAIN

Group  
54

54B

### Input Signal Inspection Procedure Nos. by Function

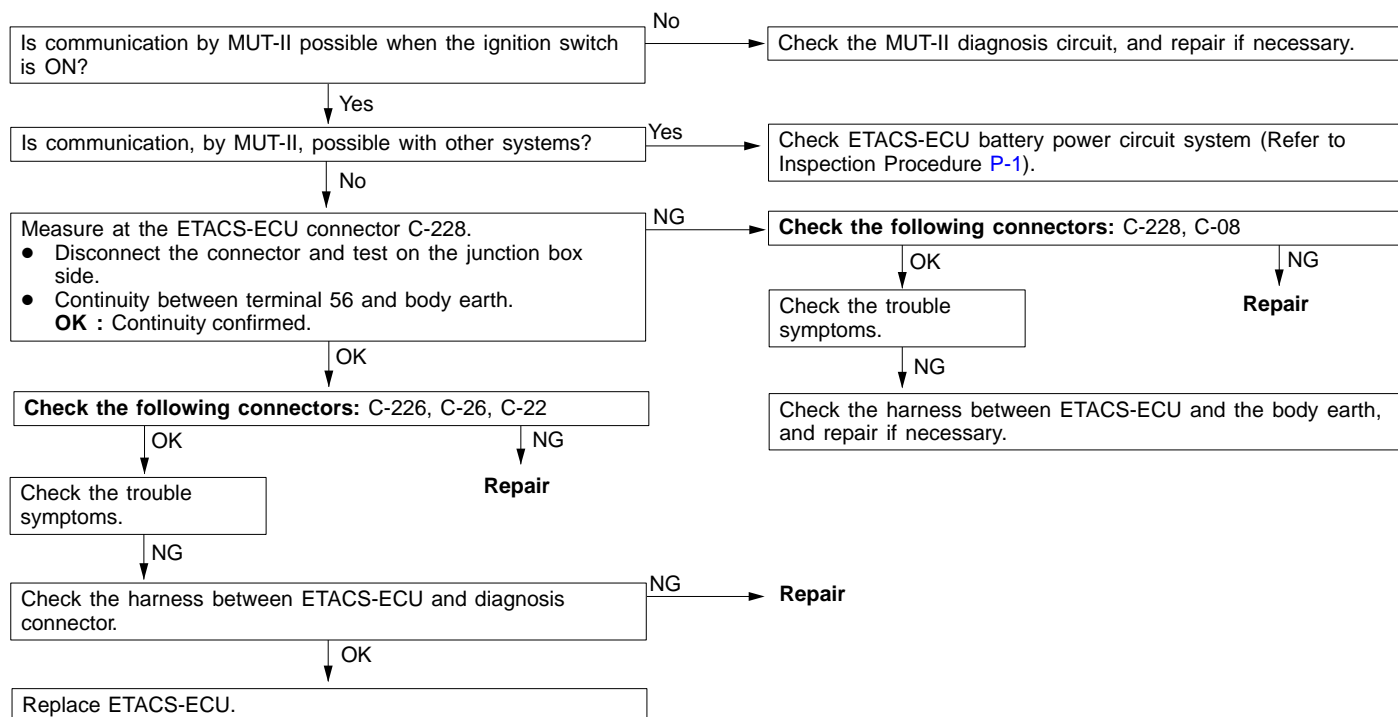
When more than one SWS function fails at the same time, run checks based on the following table. (The table lists only input signals and functions in which multiple faults can occur.)

[illegible]

## INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

## Inspection Procedure A-1

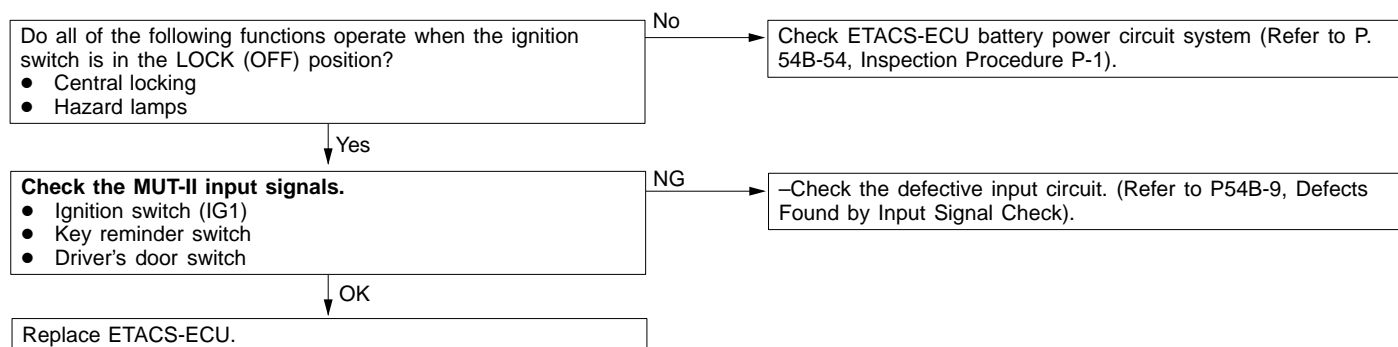
No communication with MUT-II	Probable cause
Either the ETACS-ECU power supply circuit system or the harness or connector between the diagnosis connector and ETACS-ECU may be defective.	<ul style="list-style-type: none"> <li>• Harness or connector fault</li> <li>• ETACS-ECU fault</li> </ul>



NOTE: When failure is detected on the harness between ETACS-ECU and the body earth, check No. 3 terminal (C-213) of ETACS-ECU as well. Repair, if required.

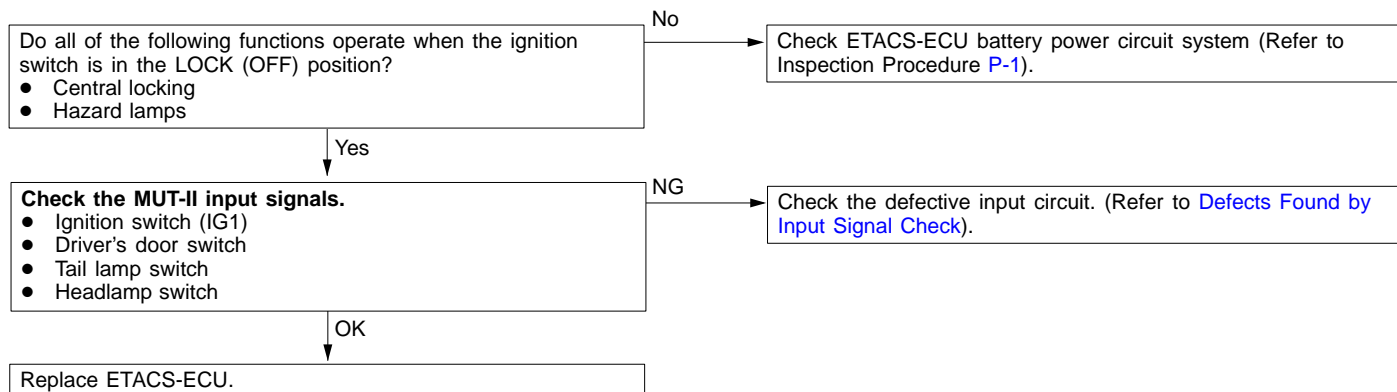
## Inspection Procedure B-1

Ignition key removal reminder warning function not working normally.	Probable cause
<p>The ETACS-ECU controls the headlamp automatic cut-off function based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>• Ignition switch (IG1)</li> <li>• Key reminder switch</li> <li>• Driver's door switch</li> </ul> <p>If the ignition key removal reminder warning function does not operate normally, one of the above input circuit systems or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>• Key reminder switch fault</li> <li>• Driver's door switch fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



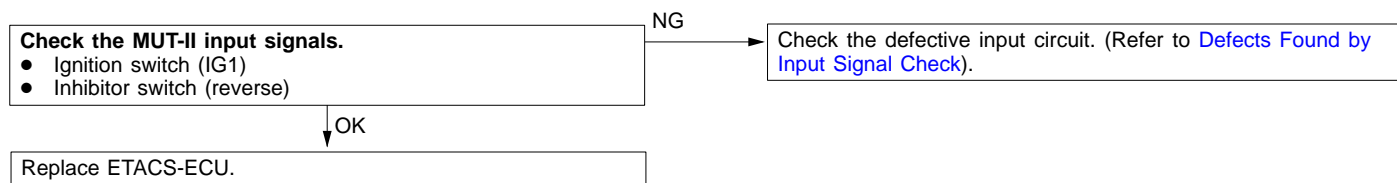
## Inspection Procedure B-2

Lights left ON reminder warning function not working normally.	Probable cause
<p>The ETACS-ECU controls the headlamp automatic cut-off function based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>Ignition switch (IG1)</li> <li>Driver's door switch</li> <li>Tail lamp switch</li> <li>Headlamp switch</li> </ul> <p>If the ignition key removal reminder warning function does not operate normally, one of the above input circuit systems or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>Driver's door switch fault</li> <li>Column switch fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



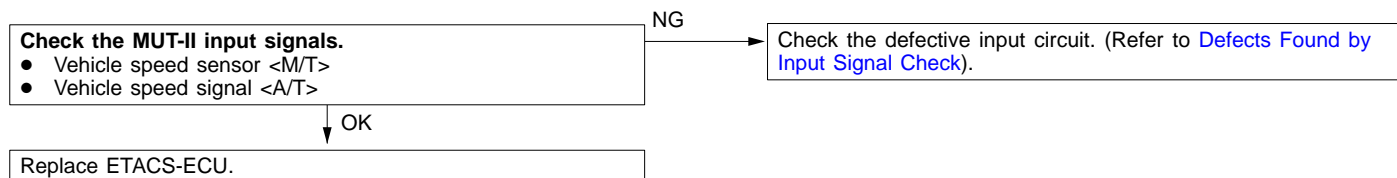
## Inspection Procedure B-3

R (reverse) selected warning function not working normally.	Probable cause
<p>The ETACS-ECU controls the headlamp automatic cut-off function based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>Ignition switch (IG1)</li> <li>Inhibitor switch (reverse)</li> </ul> <p>If the ignition key removal reminder warning function does not operate normally, one of the above input circuit systems or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>Inhibitor switch fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



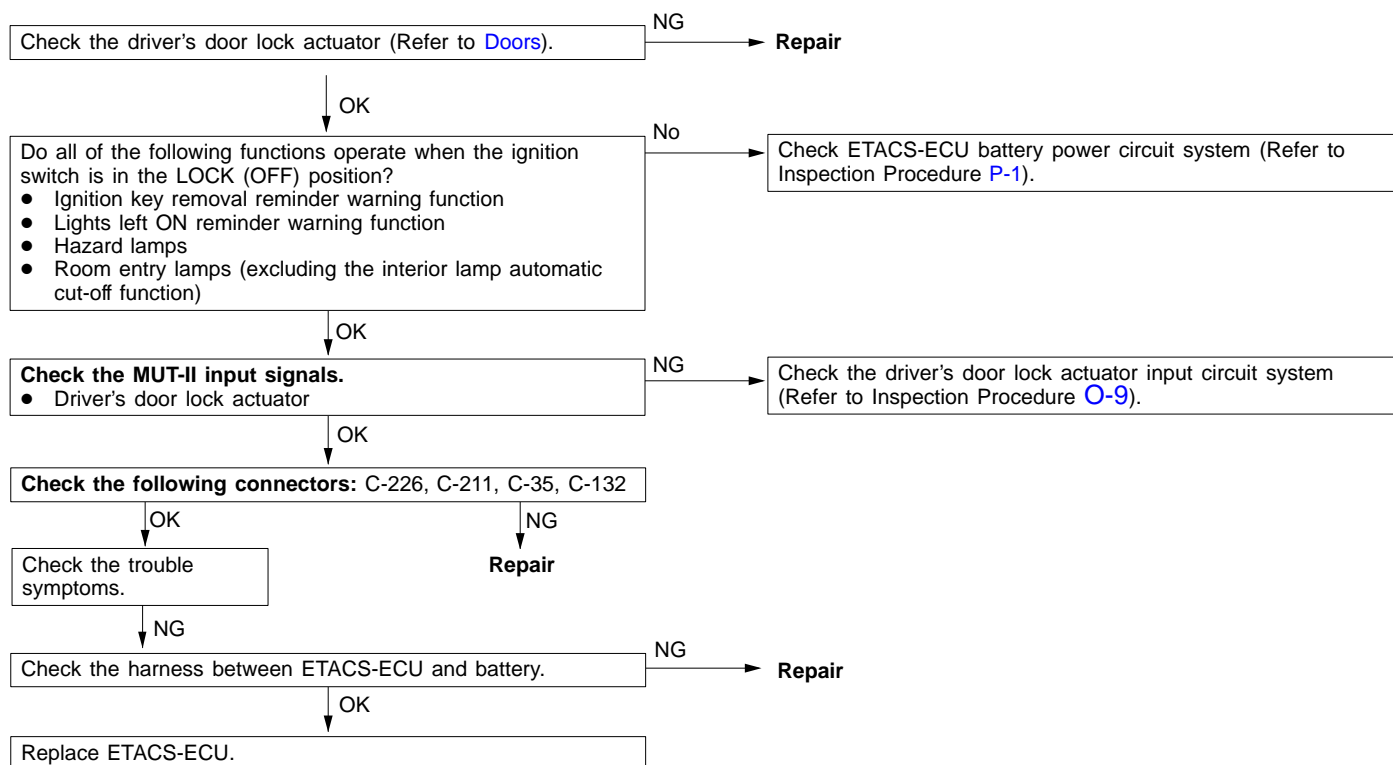
## Inspection Procedure B-4

Speed alarm function is not properly operated. <GCC>	Probable cause
<p>The ETACS-ECU controls the headlamp automatic cut-off function based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>Vehicle speed sensor &lt;M/T&gt;</li> <li>Vehicle speed signal &lt;A/T&gt;</li> </ul> <p>If the ignition key removal reminder warning function does not operate normally, one of the above input circuit systems or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>ETACS-ECU fault</li> <li>Vehicle speed sensor</li> <li>Engine-A/T-ECU</li> <li>Engine-CVT-ECU</li> </ul>



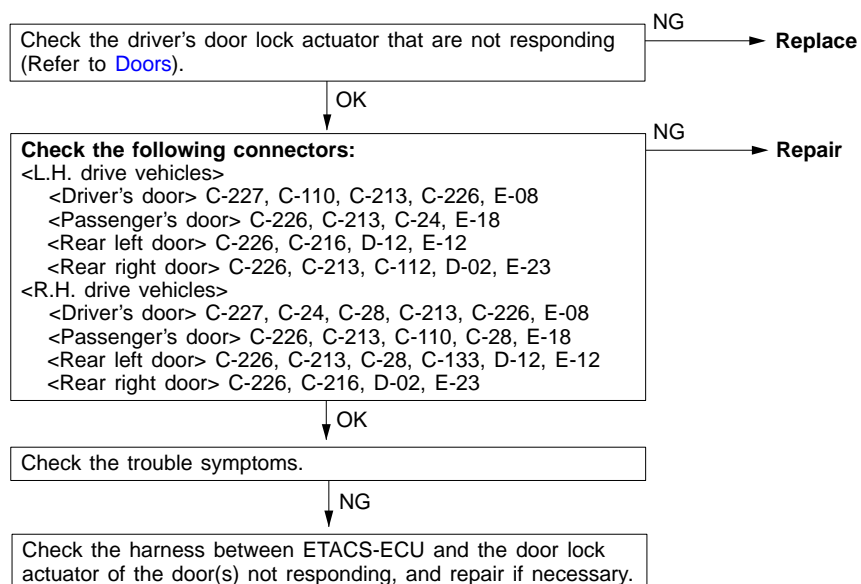
## Inspection Procedure C-1

Central door locking system not working at all.	Probable cause
A change in the input signal from the driver's door lock actuator activates all the door lock actuators, causing the ETACS-ECU to lock or unlock all the doors. If the central locking is not working normally, the driver's door lock actuator or the ETACS-ECU may be defective.	<ul style="list-style-type: none"> <li>Driver's door lock actuator fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



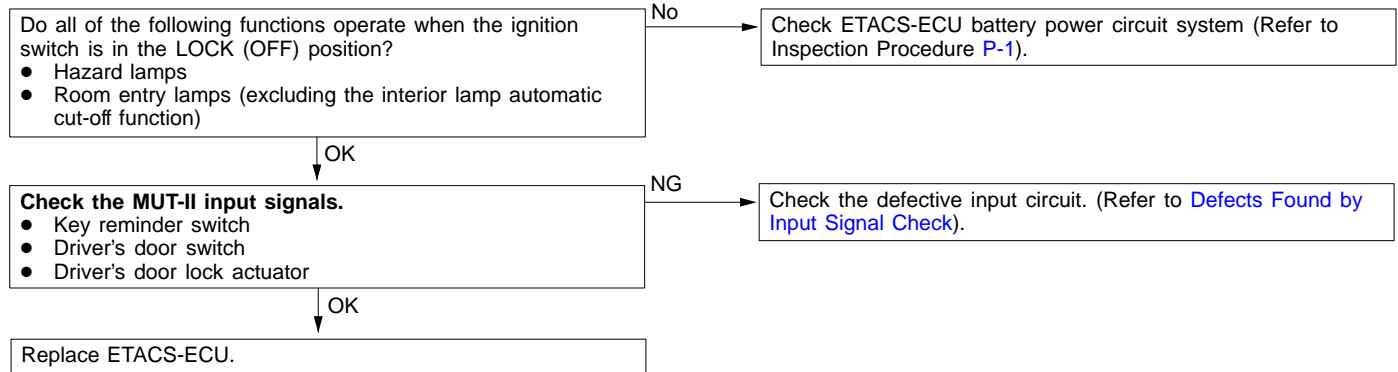
## Inspection Procedure C-2

Some doors not locking or unlocking.	Probable cause
The door lock actuator of the door(s) that are not responding may be defective.	<ul style="list-style-type: none"> <li>Door lock actuator fault</li> <li>Harness or connector fault</li> </ul>



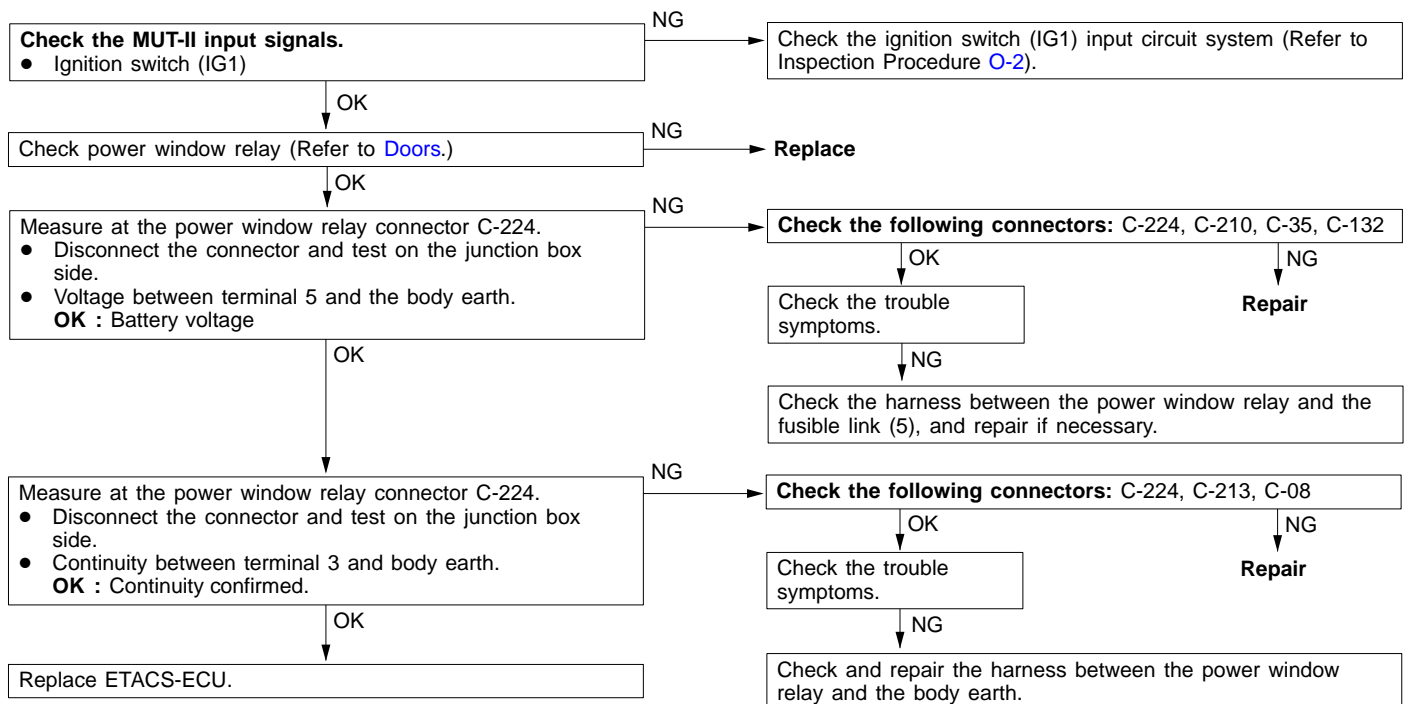
## Inspection Procedure C-3

Key removal reminder function is not working normally. <Hong Kong and Singapore (except for CS3A)>	Probable cause
<p>The ETACS-ECU controls the headlamp automatic cut-off function based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>Key reminder switch</li> <li>Driver's door switch</li> <li>Driver's door lock actuator</li> </ul> <p>If the ignition key removal reminder warning function does not operate normally, one of the above input circuit systems or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>Key reminder switch fault</li> <li>Driver's door switch</li> <li>Driver's door lock actuator</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



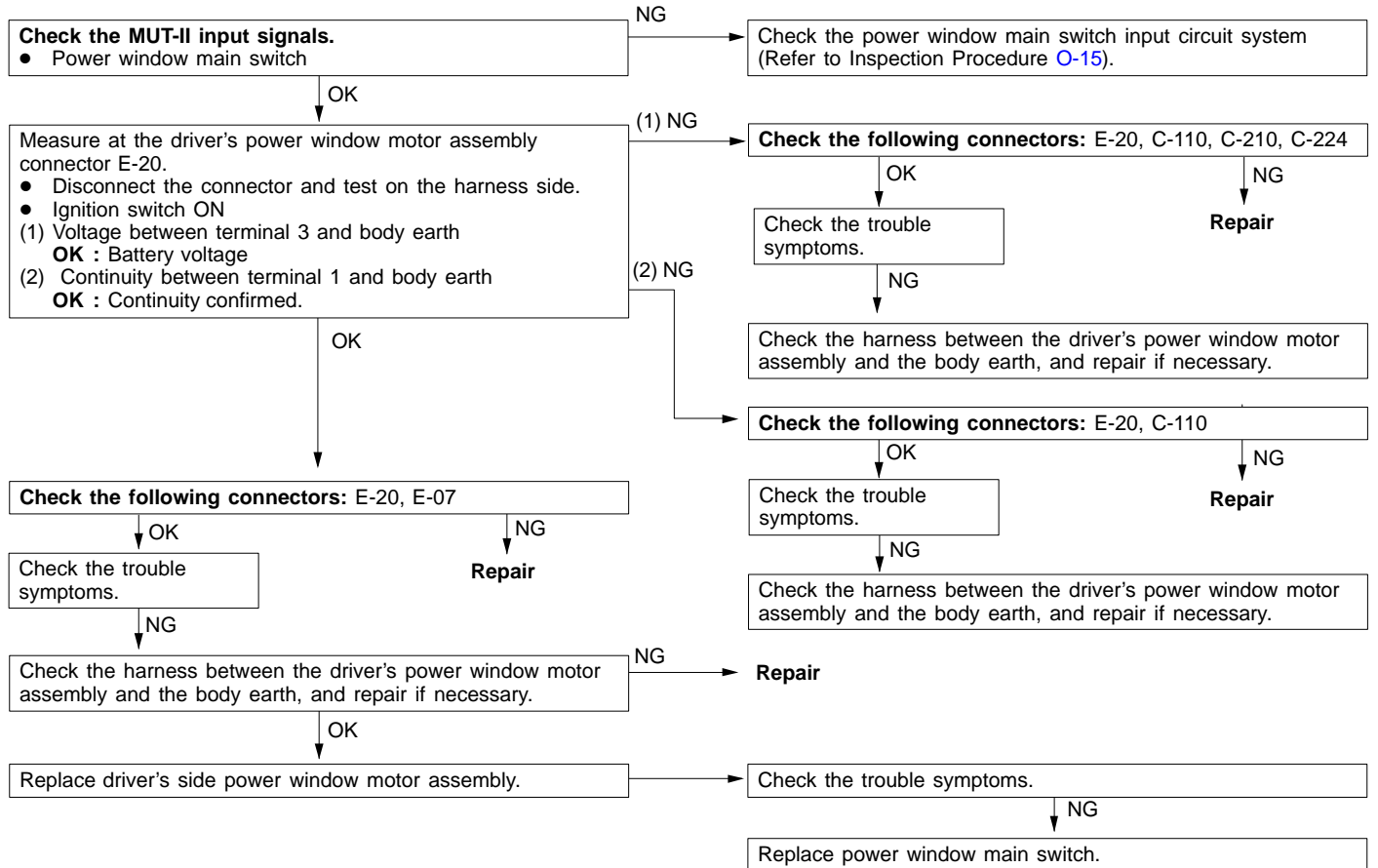
## Inspection Procedure D-1

Power windows not working at all.	Probable cause
<p>Power windows are not operated with the power window main switch.</p> <p>The power window relay or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>Power window relay fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



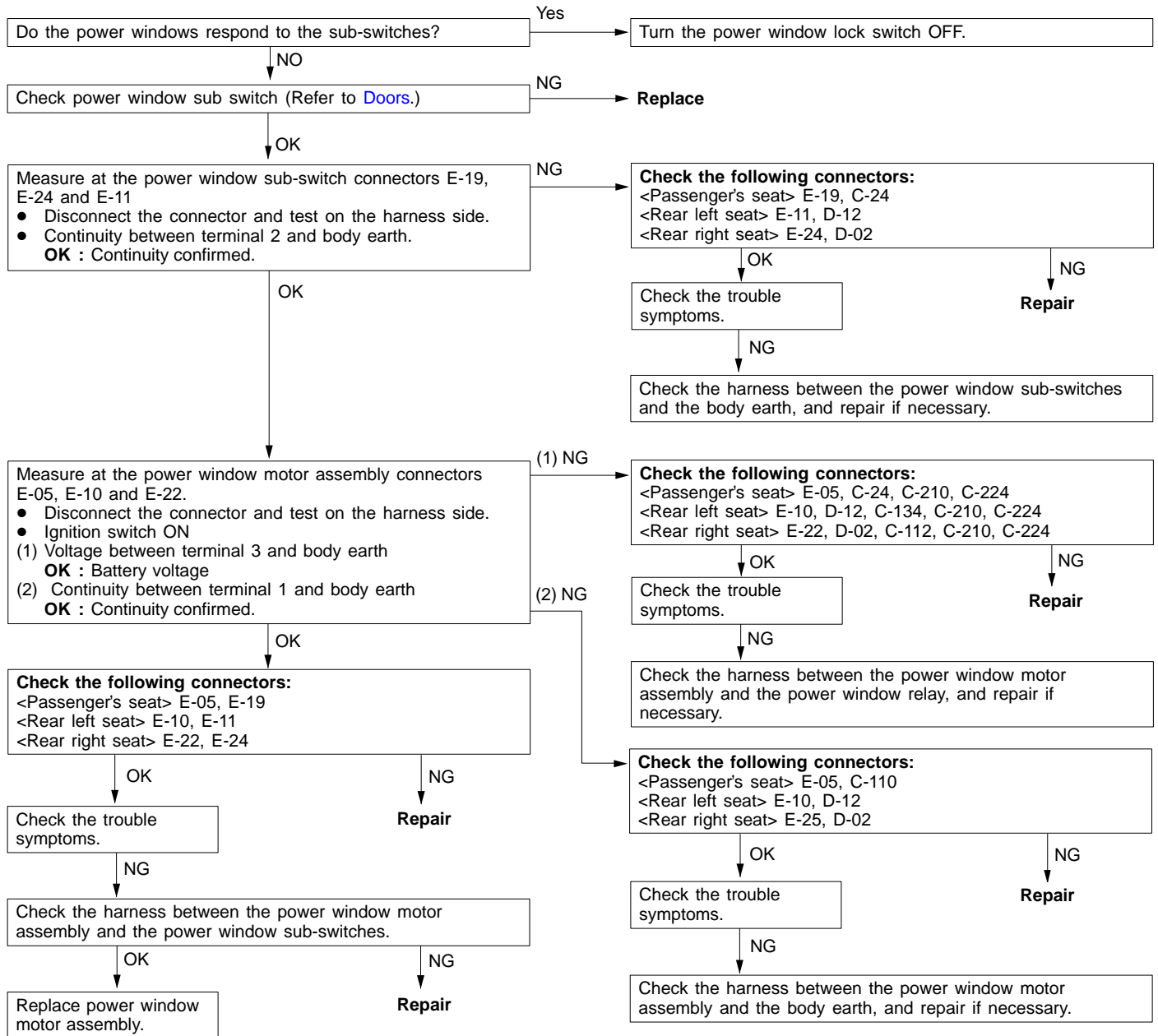
## Inspection Procedure D-2

Driver's power window not responding to power window main switch.	Probable cause
Either the power window main switch or the driver's side power window motor assembly may be defective. Or, the power window lock switch could be ON.	<ul style="list-style-type: none"> <li>Power window main switch fault</li> <li>Driver's side power window motor assembly fault</li> <li>Harness or connector fault</li> </ul>



## Inspection Procedure D-3

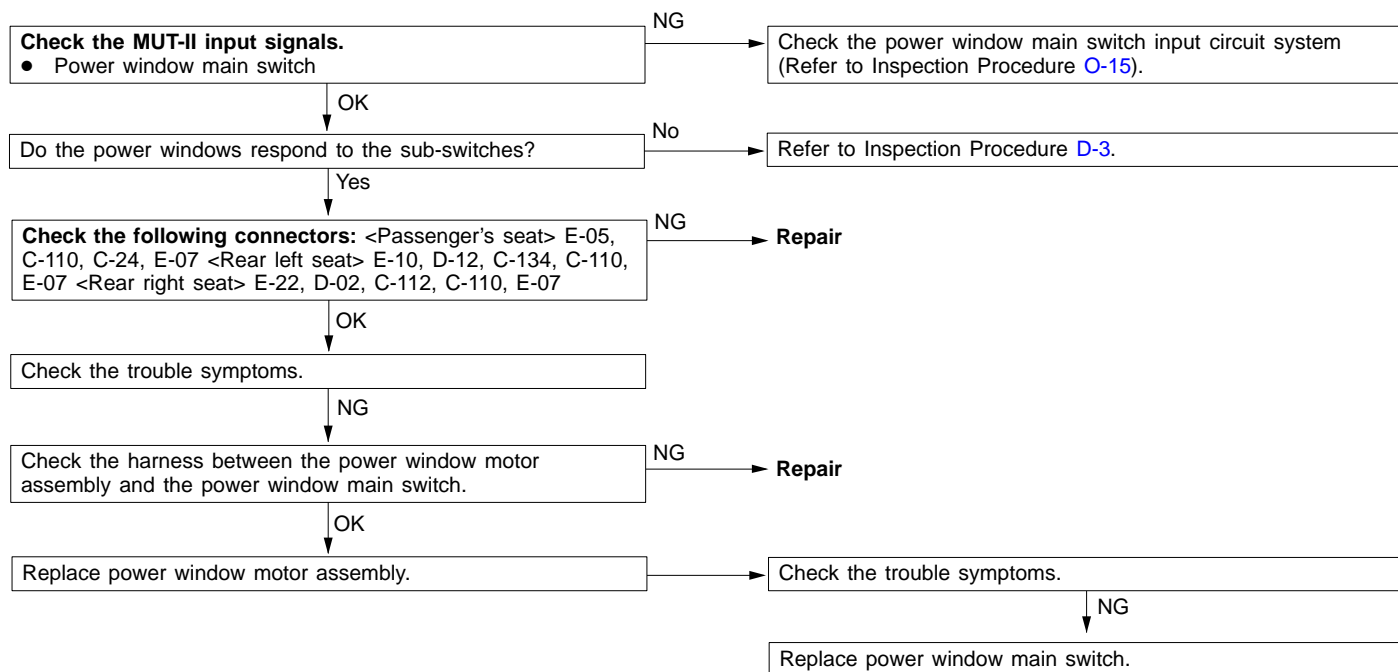
Windows not responding to passenger or rear power window switches.	Probable cause
Either the power window sub-switches or the passenger's or rear power window motor assembly may be defective.	<ul style="list-style-type: none"> <li>Power window sub-switch fault</li> <li>Passenger's or rear power window motor assembly fault</li> <li>Harness or connector fault</li> </ul>





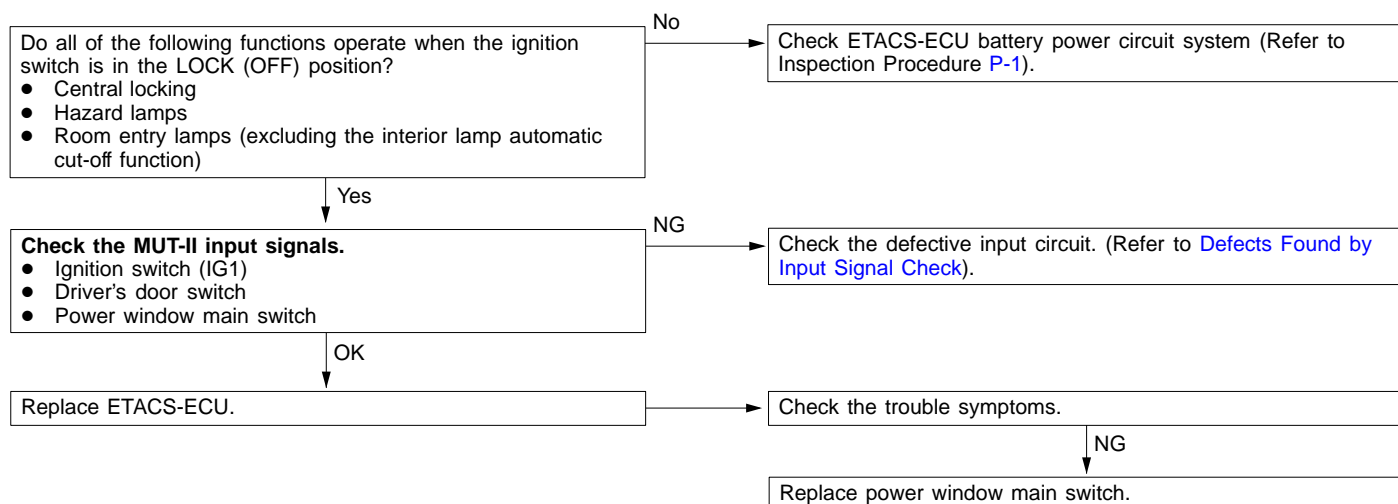
## Inspection Procedure D-4

Passenger or rear power windows not responding to power window main switch.	Probable cause
Either the power window main switch or the passenger's or rear power window motor assembly may be defective.	<ul style="list-style-type: none"> <li>Power window main switch fault</li> <li>Passenger's or rear power window motor assembly fault</li> <li>Harness or connector fault</li> </ul>



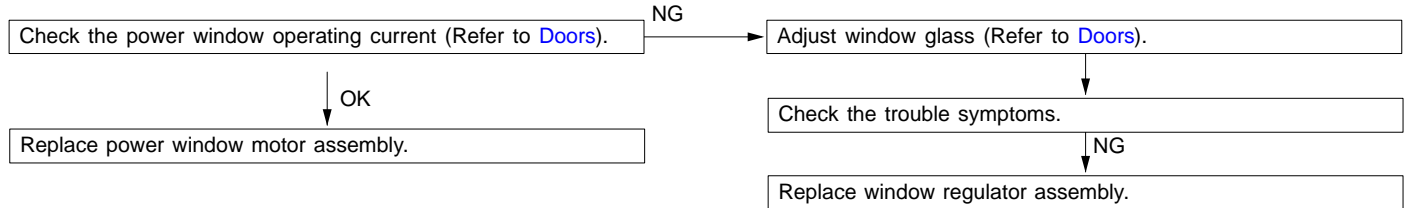
## Inspection Procedure D-5

Power window timer function not working normally.	Probable cause
<p>The ETACS-ECU controls the headlamp automatic cut-off function based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>Ignition switch (IG1)</li> <li>Driver's door switch</li> </ul> <p>If the power window timer function does not operate normally, one of the above input circuit systems, the power window main switch, or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>Driver's door switch fault</li> <li>Power window main switch fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



## Inspection Procedure D-6

While the window is winding up, it suddenly starts coming down again.	Probable cause
If the sliding resistance is too great when the window is being raised or if the glass encounters an object, the window will return about 150 mm.	<ul style="list-style-type: none"> <li>The window glass is not properly adjusted.</li> <li>The glass slider is incorrectly installed or warped.</li> <li>Power window motor assembly fault</li> <li>Window regulator assembly fault</li> </ul>



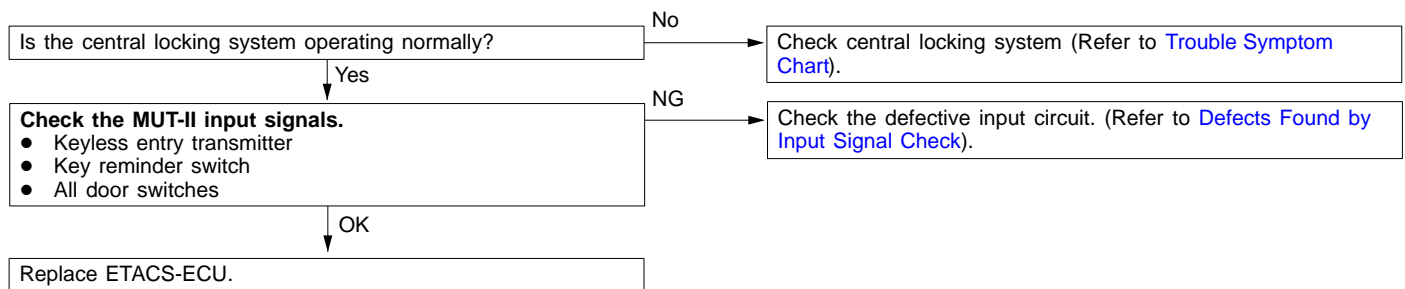
## Inspection Procedure D-7

The power window safety mechanism is not working.	Probable cause
The revolution detection sensor in the power window motor assembly is defective.	<ul style="list-style-type: none"> <li>Power window motor assembly fault</li> </ul>

Replace power window motor assembly.

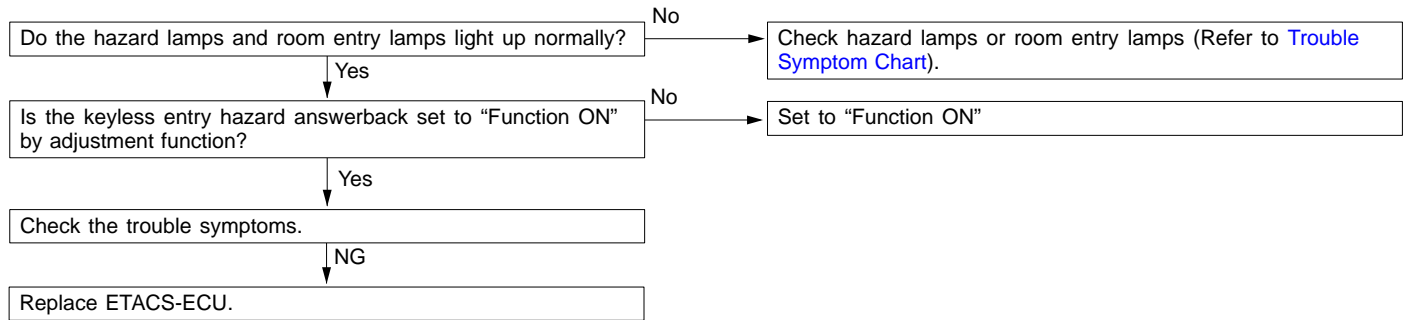
## Inspection Procedure E-1

The keyless entry system does not work at all. <Hong Kong and Singapore (except for CS3A)>	Probable cause
<p>The ETACS-ECU controls the headlamp automatic cut-off function based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>Key reminder switch</li> <li>All door switches</li> <li>Keyless entry transmitter</li> <li>Driver's door lock actuator</li> </ul> <p>If the ignition key removal reminder warning function does not operate normally, one of the above input circuit systems or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>Key reminder switch fault</li> <li>Door switch fault</li> <li>Keyless entry transmitter fault</li> <li>ETACS-ECU fault</li> </ul>



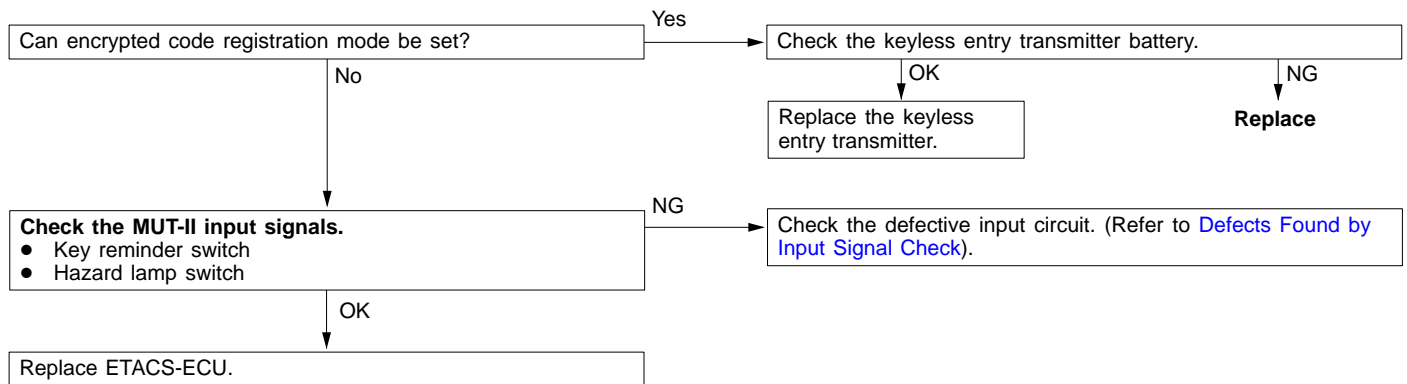
## Inspection Procedure E-2

Keyless entry's hazard answerback function or room entry lamp answerback function does not work normally. <Hong Kong and Singapore (except for CS3A)>	Probable cause
If the hazard lamps and room entry lamps are operating normally, the ETACS-ECU may be defective. Or, the headlamp automatic cut-off operation may have been disabled by the function adjustment feature.	<ul style="list-style-type: none"> <li>• Turn signal lamp fault</li> <li>• Room entry lamp fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



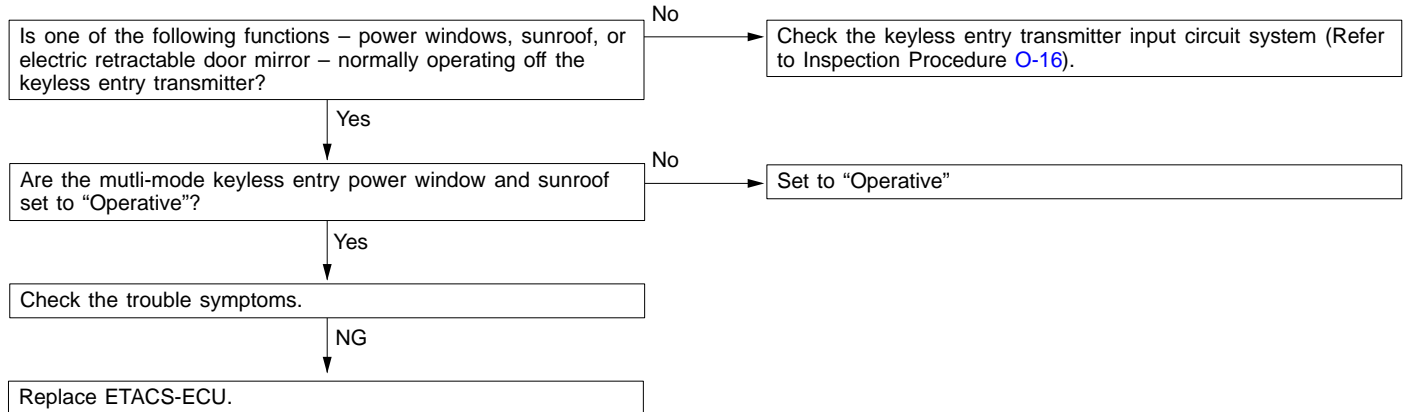
## Inspection Procedure E-3

Access code cannot be registered. <Hong Kong and Singapore (except for CS3A)>	Probable cause
<p>The ETACS-ECU sets encrypted code registration mode based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>• Key reminder switch</li> <li>• Hazard lamp switch</li> </ul> <p>If encrypted code registration mode cannot be set, one of the above input circuit systems or the ETACS-ECU may be defective.</p> <p>If the code cannot be registered even though encrypted code registration mode is set, the keyless entry transmitter or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>• Key reminder switch fault</li> <li>• Hazard lamp switch fault</li> <li>• Keyless entry transmitter battery fault</li> <li>• Keyless entry transmitter fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



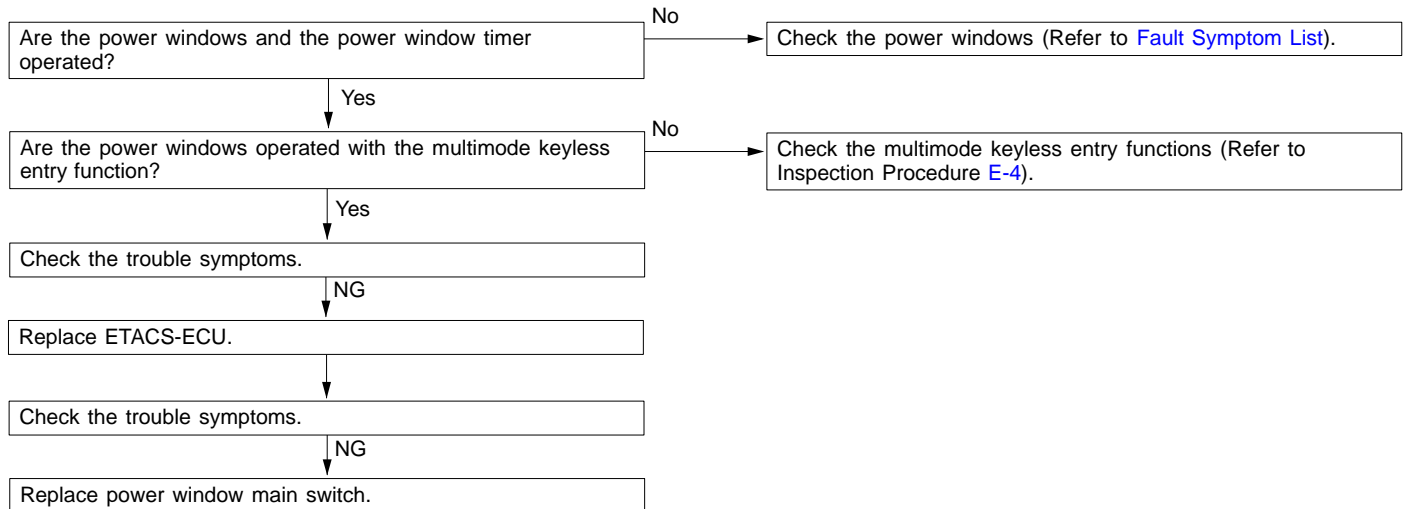
## Inspection Procedure E-4

The multimode keyless entry function is not working normally <Hong Kong and Singapore (except for CS3A)>	Probable cause
If the power windows, sunroof, and electric retractable door mirror are operating normally, the ETACS-ECU may be defective. Or, the power window and sunroof operation may have been disabled by the function adjustment feature.	<ul style="list-style-type: none"> <li>ETACS-ECU fault</li> <li>Keyless entry transmitter fault</li> </ul>



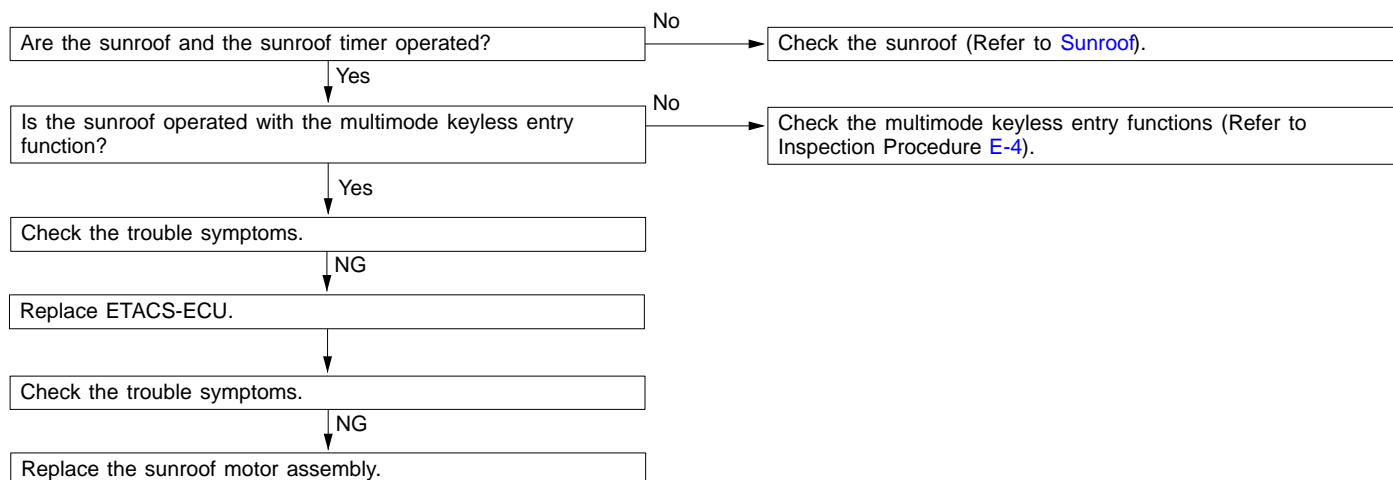
## Inspection Procedure E-5

Power windows are not properly operated with the multimode keyless entry function. <Hong Kong and Singapore (except for CS3A)>	Probable cause
If the power windows are properly operated in a normal mode, fault may occurs on ETACS-ECU.	<ul style="list-style-type: none"> <li>ETACS-ECU fault</li> <li>Power window main switch fault</li> </ul>



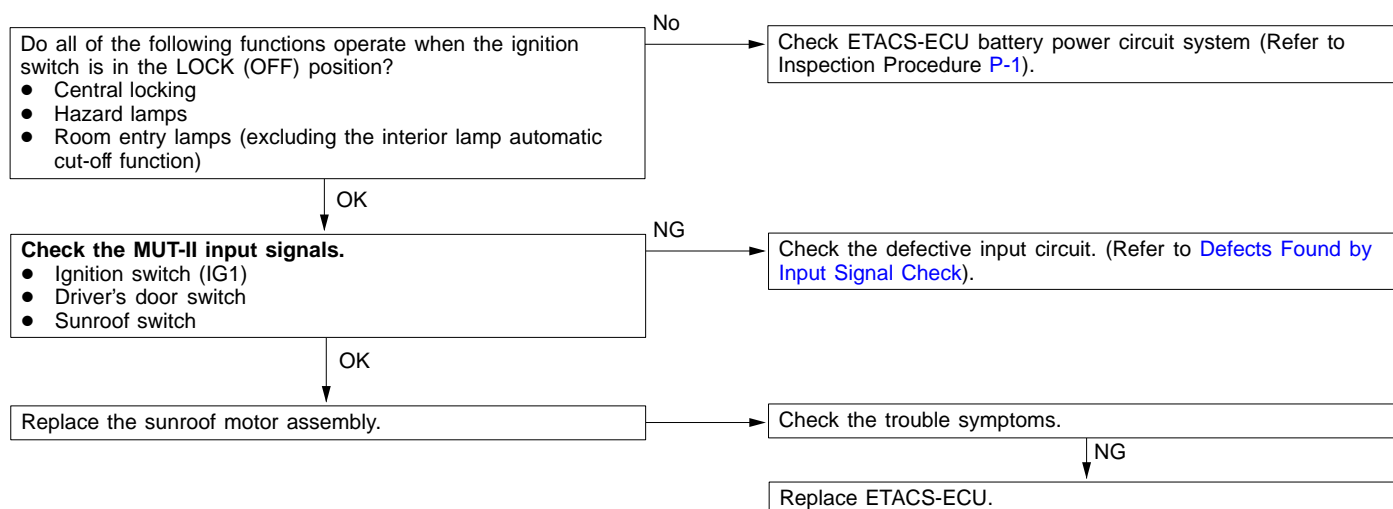
## Inspection Procedure E-6

The sunroof close is not properly operated with the multimode keyless entry function. <Hong Kong and Singapore (except for CS3A)>	Probable cause
If the sunroof is properly operated in a normal mode, fault may occur on ETACS-ECU.	<ul style="list-style-type: none"> <li>ETACS-ECU fault</li> <li>Sunroof motor assembly fault</li> </ul>



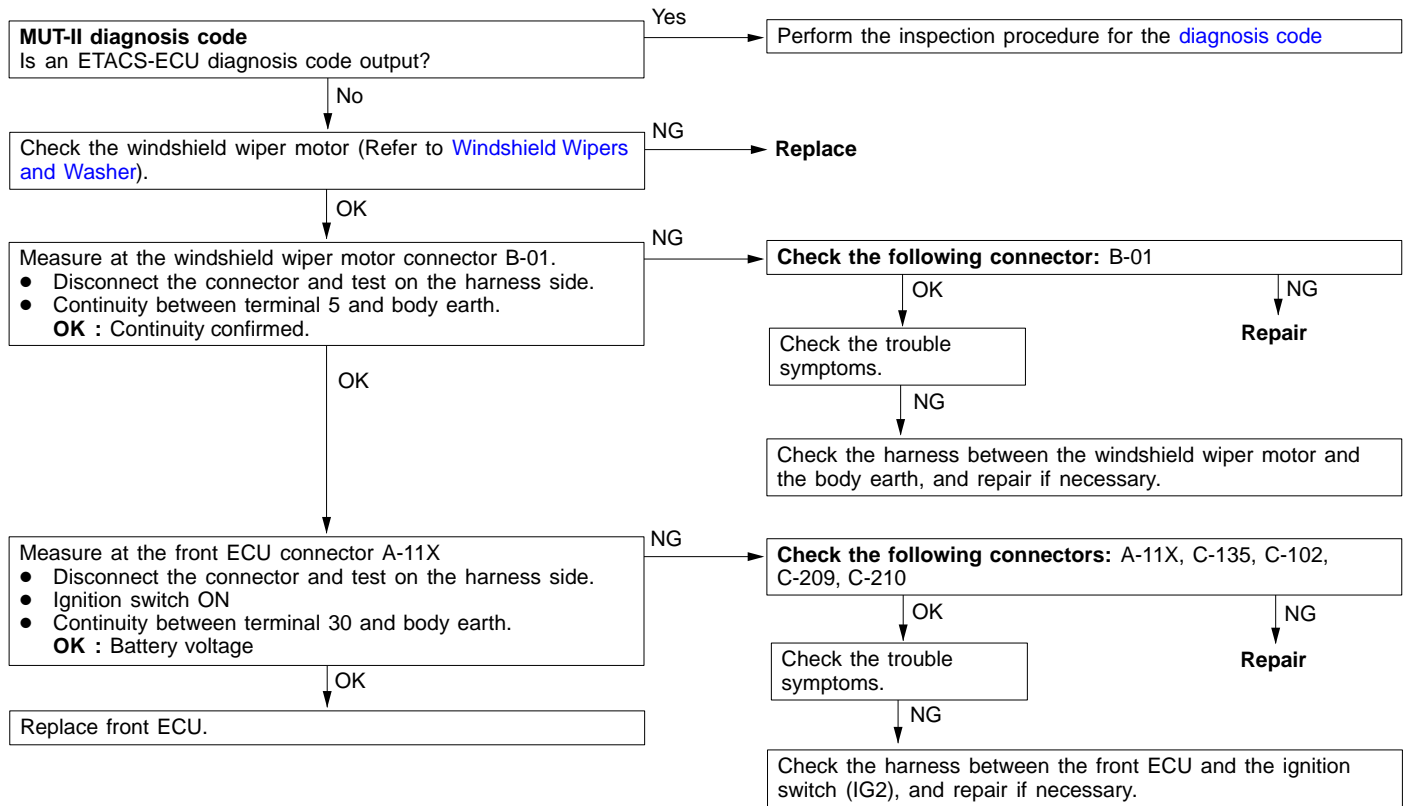
## Inspection Procedure F-1

The sunroof timer function does not operate normally. <Hong Kong and Singapore (except for CS3A)>	Probable cause
The sunroof timer function is controlled by signals from the sunroof motor assembly ignition switch (IG2) circuit, the ETACS-ECU ignition switch (IG1), and the driver's door switch. If the sunroof timer is not operating normally, either the communication circuit system, the driver's door switch input circuit system, the sunroof motor assembly, or the ETACS-ECU may be defective.	<ul style="list-style-type: none"> <li>Driver's door switch fault</li> <li>Sunroof motor assembly fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



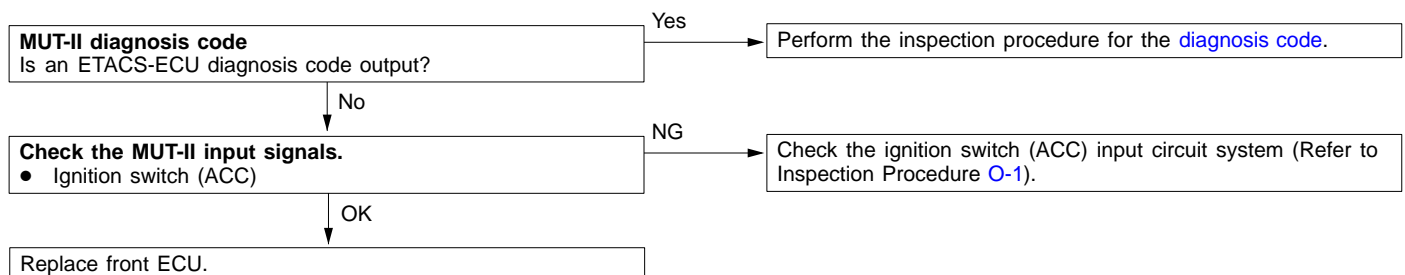
## Inspection Procedure G-1

The windshield wipers do not work at all.	Probable cause
Either the windshield wiper motor, the column switch, or the front ECU may be defective.	<ul style="list-style-type: none"> <li>Windshield wiper motor fault</li> <li>Column switch fault</li> <li>Front ECU fault</li> <li>Harness or connector fault</li> </ul>



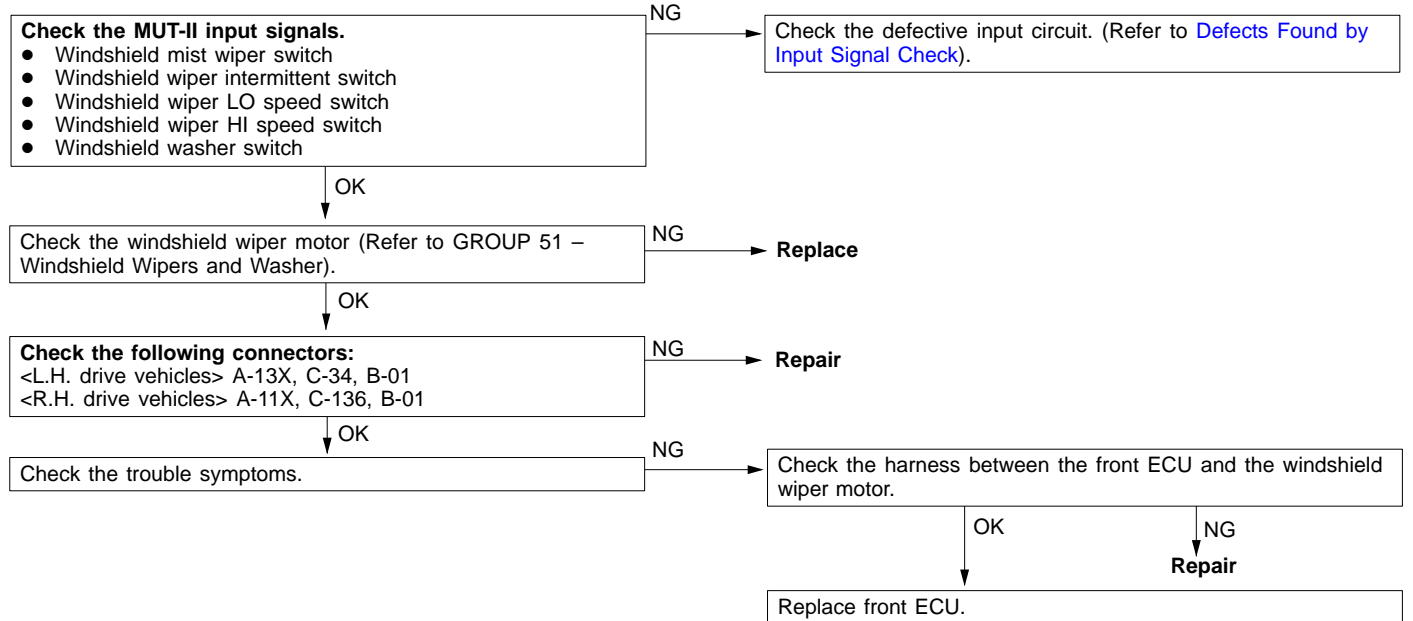
## Inspection Procedure G-2

The windshield wipers only operate at “LO” speed (though the wipers and washer can be switched OFF).	Probable cause
If the windshield wipers only operate at “LO” speed regardless of the switch position, the windshield wiper fail-safe function is probably activated. Or, the ETACS-ECU ignition switch (ACC) signal may be controlling the wiper operation.	<ul style="list-style-type: none"> <li>Column switch fault</li> <li>Front ECU fault</li> <li>Harness or connector fault</li> </ul>



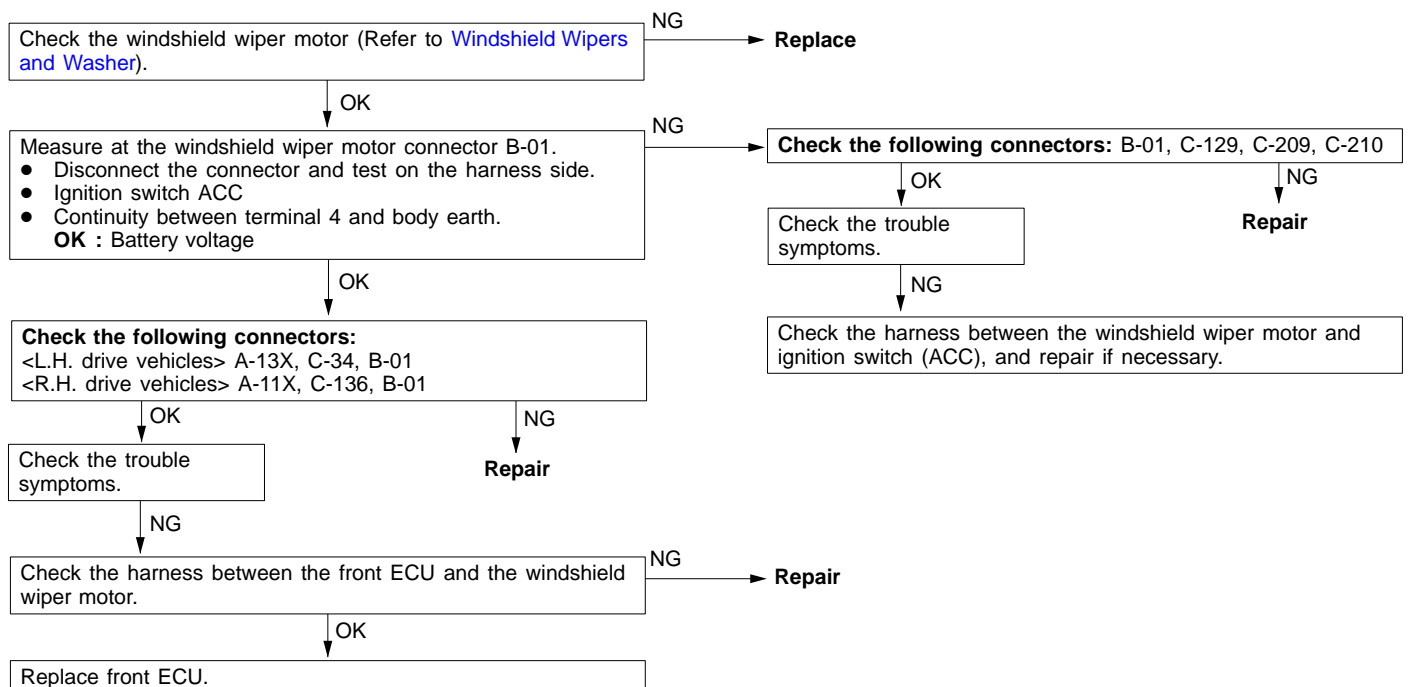
## Inspection Procedure G-3

The windshield wipers do not respond to any switch position.	Probable cause
Either the windshield wiper motor, the column switch, or the front ECU may be defective.	<ul style="list-style-type: none"> <li>Windshield wiper motor fault</li> <li>Column switch fault</li> <li>Front ECU fault</li> <li>Harness or connector fault</li> </ul>



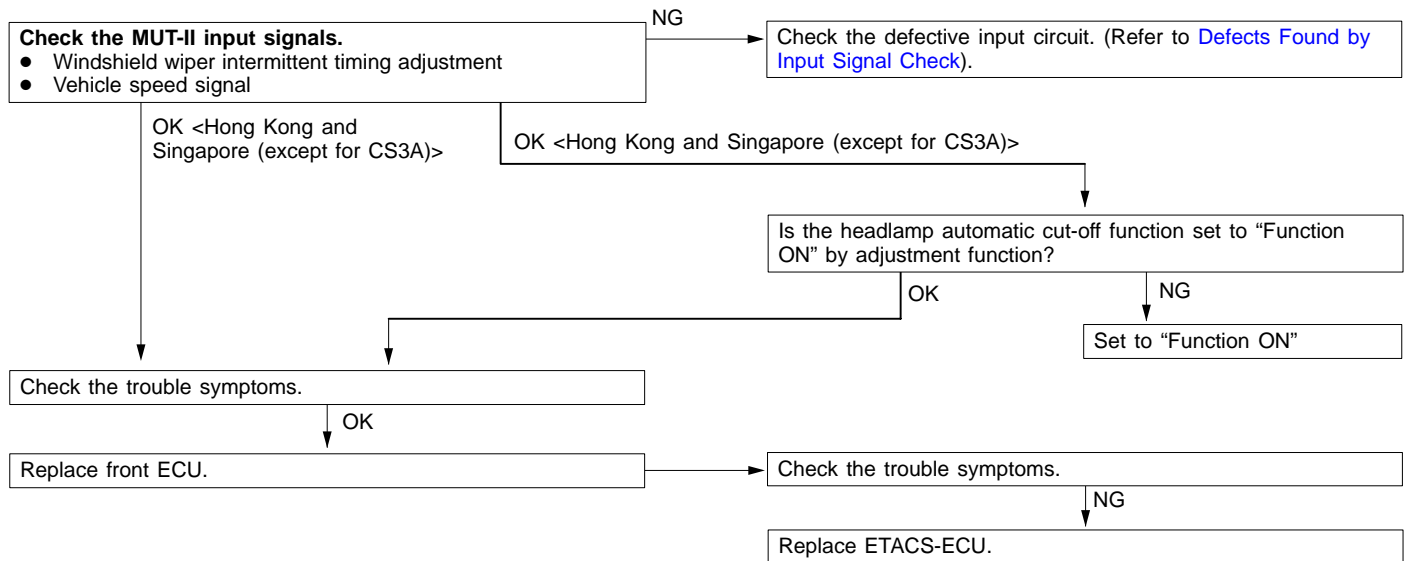
## Inspection Procedure G-4

The windshield wipers do not stop in the normal predetermined position.	Probable cause
Either the windshield wiper motor or the front ECU may be defective.	<ul style="list-style-type: none"> <li>Windshield wiper motor fault</li> <li>Front ECU fault</li> <li>Harness or connector fault</li> </ul>



## Inspection Procedure G-5

The windshield wiper intermittent timing does not respond to the adjustment made or to the vehicle speed.	Probable cause
The ETACS-ECU calculates the intermittent timing from the windshield wiper adjustment setting and the vehicle speed, and transmits a signal to the front ECU. When the intermittent time is not changed, fault may occur on the windshield intermittent wiper volume input circuit system, the vehicle speed input circuit system, the front ECU or ETACS-ECU. On the models for Hong Kong and Singapore (except for CS3A), the vehicle speed sensitive wiper function may be set to "Function OFF" by adjustment function.	<ul style="list-style-type: none"> <li>Column switch fault</li> <li>Vehicle speed signal fault</li> <li>Front ECU fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>

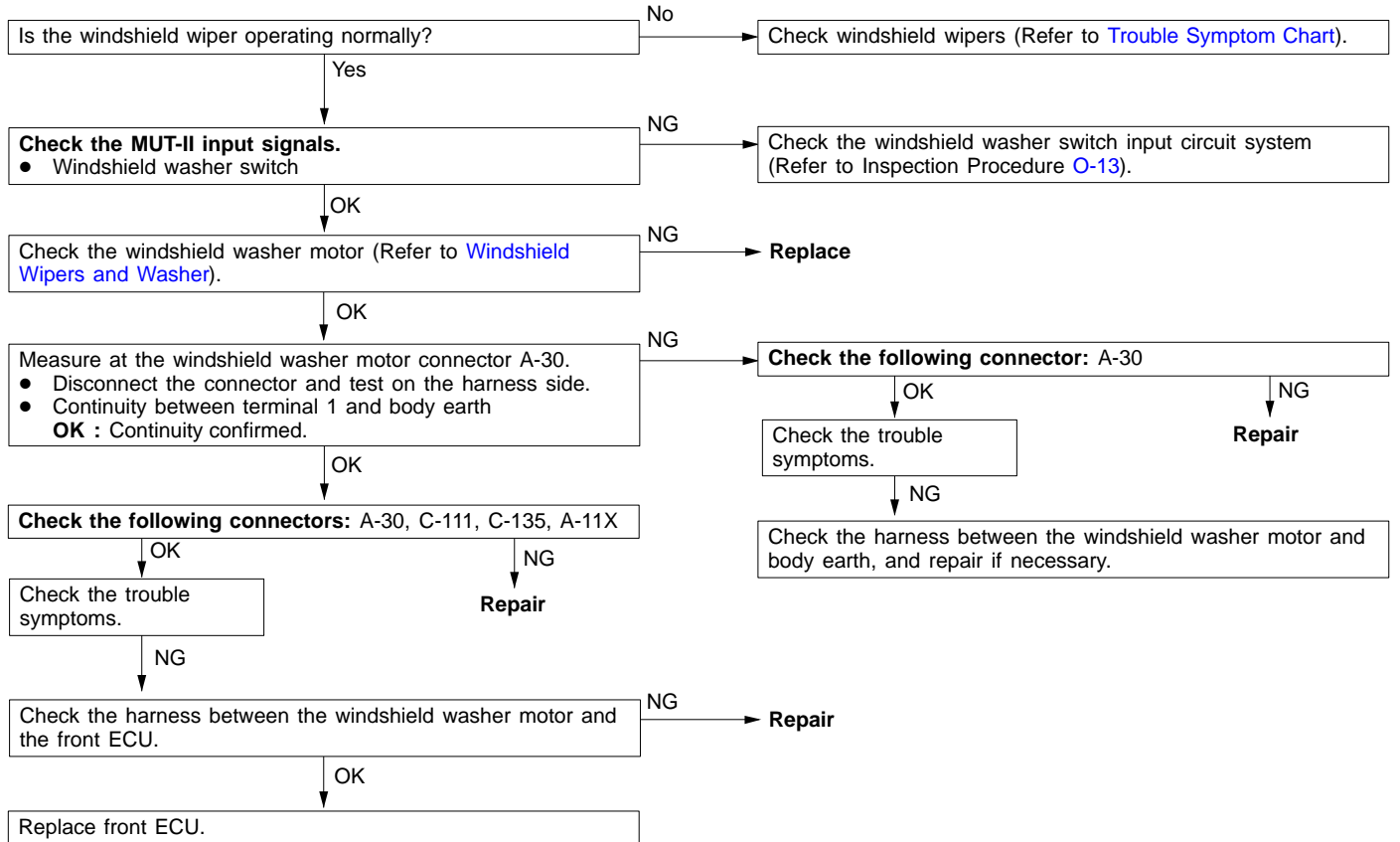


NOTE: With MUT-II connected to the diagnostic connector, drive the vehicle to inspect vehicle speed signal in the MUT-II input signal test. When the buzzer sounds, this test is evaluated "Passed".



## Inspection Procedure G-6

The windshield washer does not work at all.	Probable cause
Either the windshield washer switch input circuit system, the windshield washer motor, or the front ECU may be defective.	<ul style="list-style-type: none"> <li>Windshield washer motor fault</li> <li>Column switch fault</li> <li>Front ECU fault</li> <li>Harness or connector fault</li> </ul>



## Inspection Procedure G-7

**Windshield wipers are not operated with the switch in INT, WASHER and MIST positions, and operated in a low mode with the switch in Lo and Hi positions.**

### Probable cause

Fail-safe function may be operated due to the fault on SWS communication line.  
Fail-safe function is activated with the ignition switch in ACC position when the ignition switch ACC signal is not input due to the open circuit, etc.

- Column switch fault
- Front ECU fault
- ETACS-ECU fault
- Harness or connector fault

#### Check the MUT-II input signals.

- Ignition switch (ACC)

No

Check the ignition switch (ACC) input circuit system (Refer to Inspection Procedure [O-1](#))

Yes

Check the trouble symptoms.

NG

Replace front ECU.

↓

Check the trouble symptoms.

NG

Replace column switch.

↓

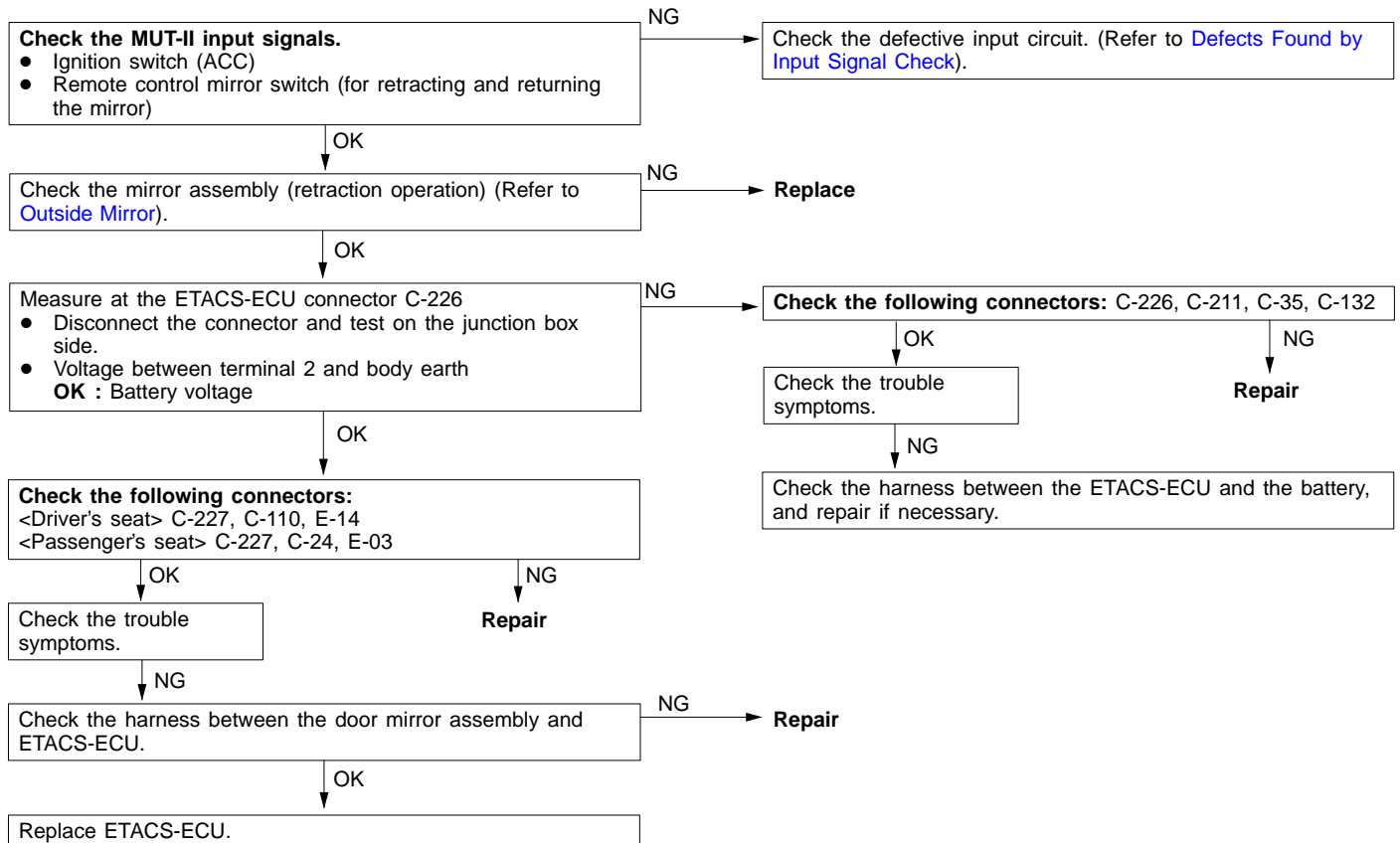
Check the trouble symptoms.

NG

Replace ETACS-ECU.

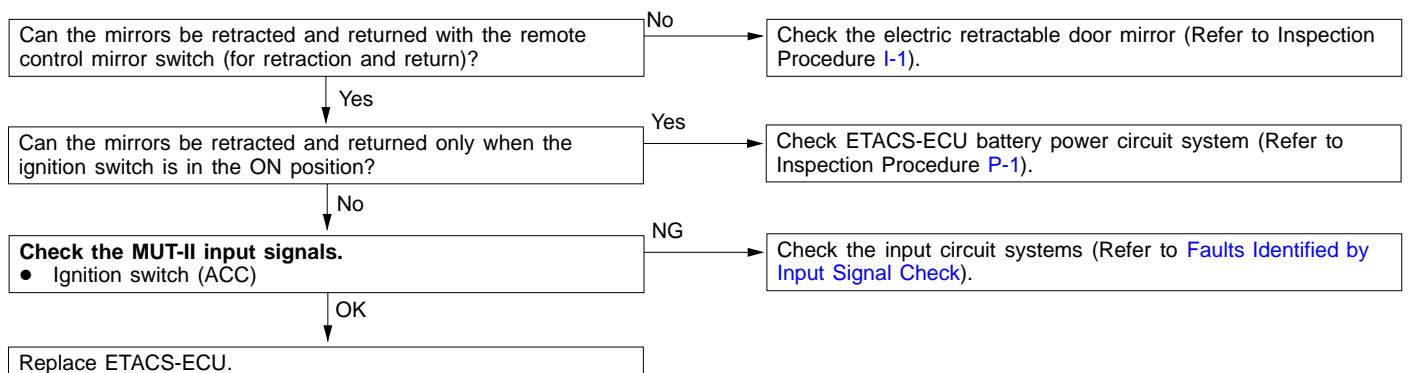
## Inspection Procedure I-1

The electric retractable door mirror is not working at all. <Hong Kong and Singapore (except for CS3A)>	Probable cause
<p>The ETACS-ECU controls the electric retractable door mirror based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>Ignition switch (ACC)</li> <li>Remote control mirror switch (for retracting and returning the mirror)</li> </ul> <p>If the electric retractable door mirror does not operate normally, one of the above input circuit systems, the door mirror assembly, or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>Remote control mirror switch fault</li> <li>Mirror assembly fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



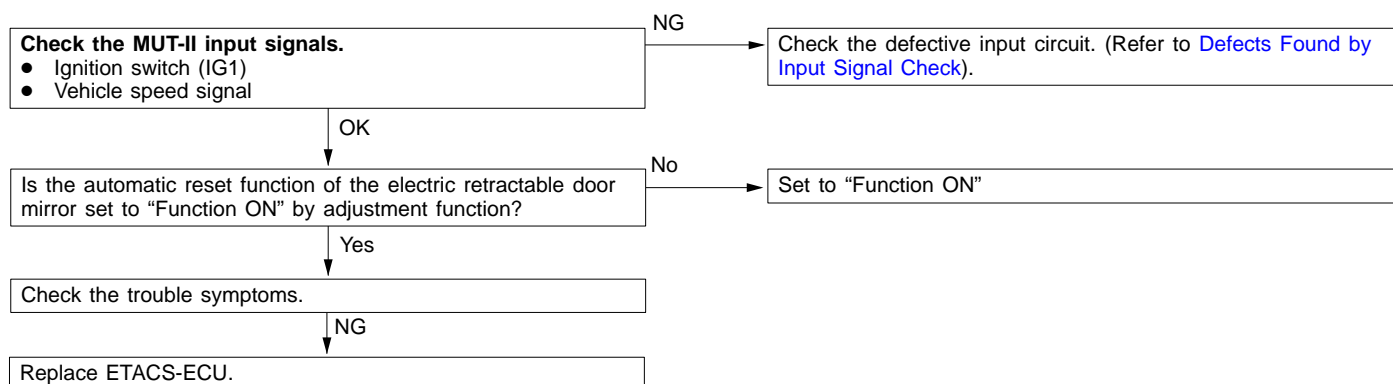
## Inspection Procedure I-2

The electric retractable door mirror timer function is not working <Hong Kong and Singapore (except for CS3A)>	Probable cause
<p>If the mirrors can be retracted and returned using the remote control mirror switch (for retraction and return), the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>ETACS-ECU fault</li> </ul>



## Inspection Procedure I-3

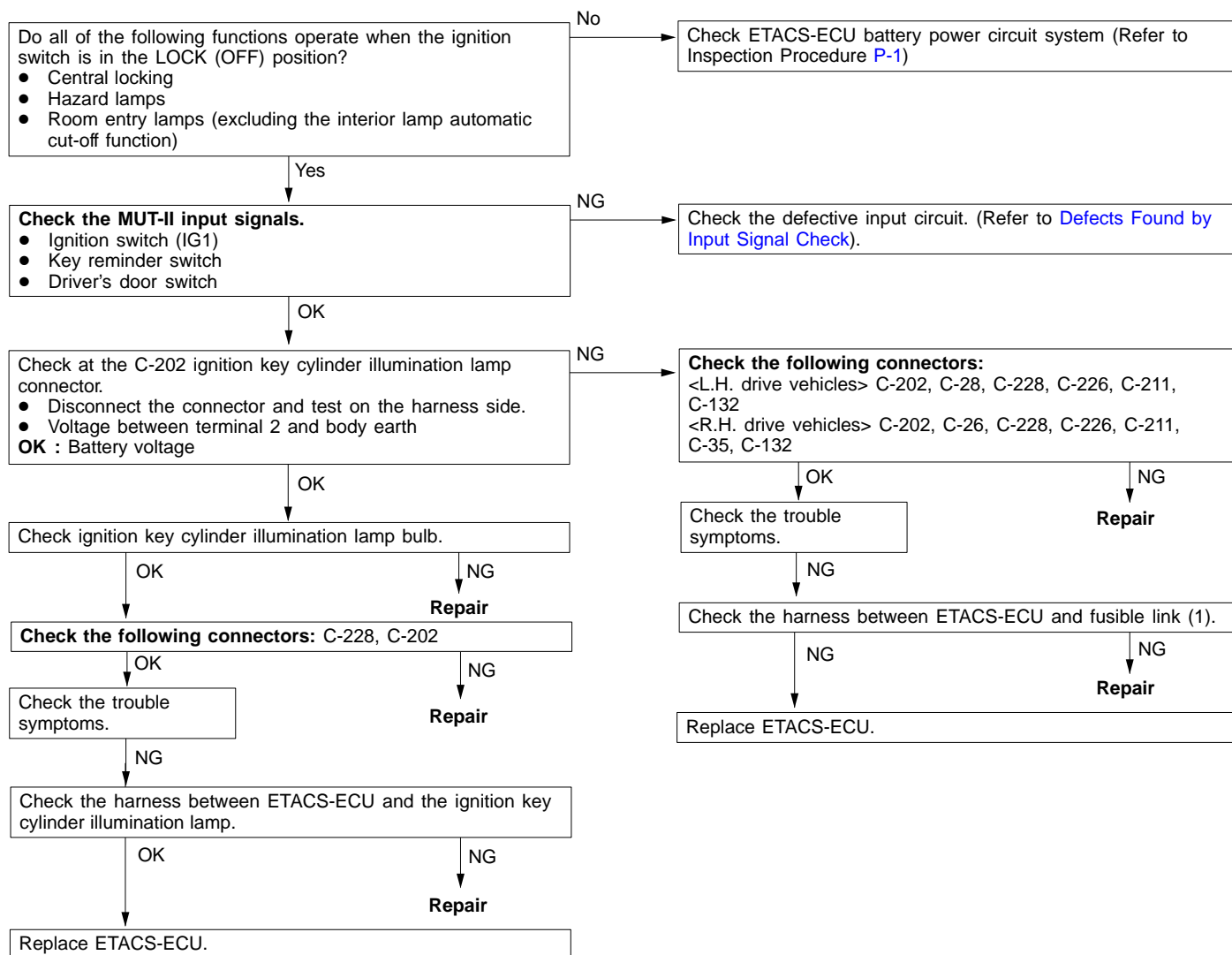
Automatic reset function of the electric folding door mirrors is not properly working. <Hong Kong and Singapore (except for CS3A)>	Probable cause
<p>The ETACS-ECU controls the headlamp automatic cut-off function based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>• Ignition switch (IG1)</li> <li>• Vehicle speed signal</li> </ul> <p>If the ignition key removal reminder warning function does not operate normally, one of the above input circuit systems or the ETACS-ECU may be defective. Or, the headlamp automatic cut-off operation may have been disabled by the function adjustment feature.</p>	<ul style="list-style-type: none"> <li>• Vehicle speed signal fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



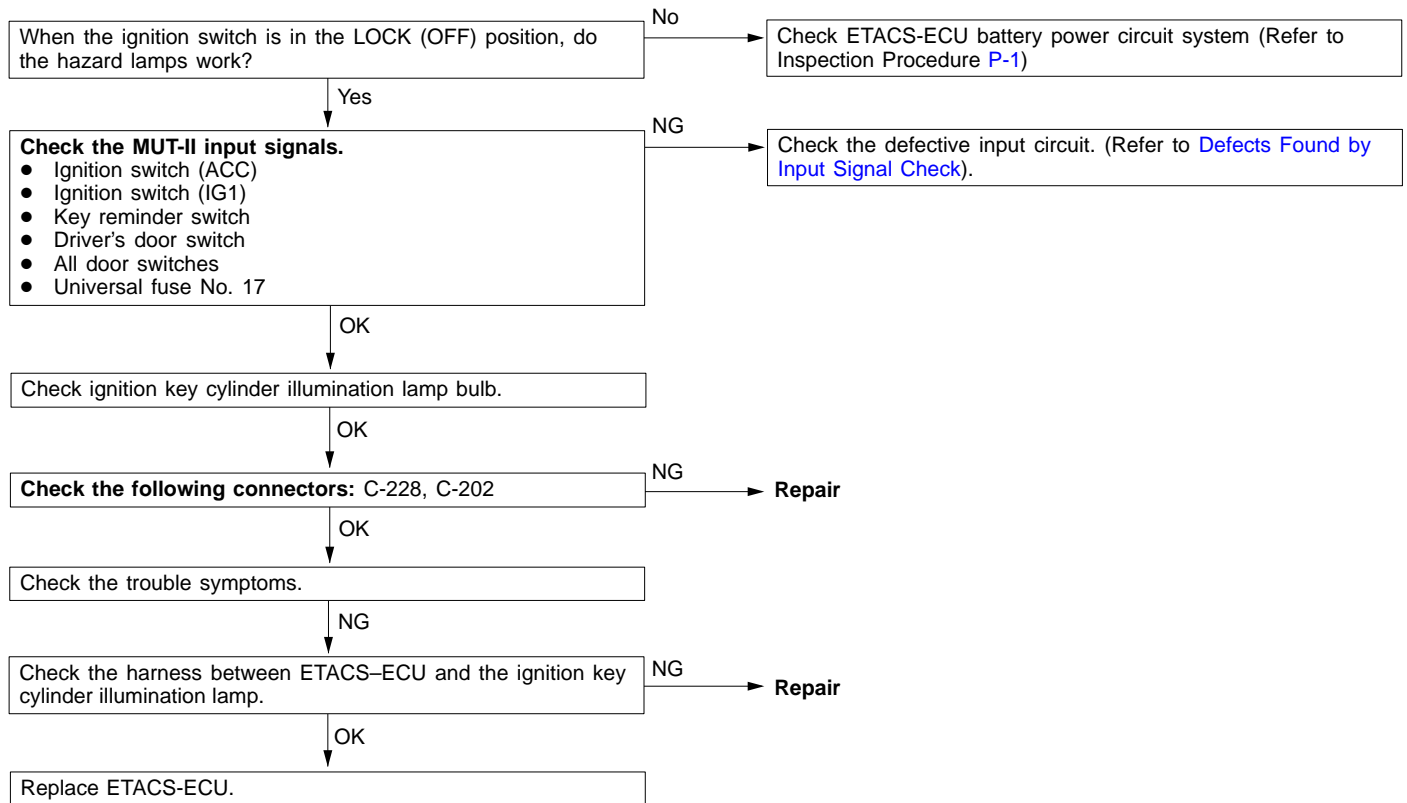
NOTE: With MUT-II connected to the diagnostic connector, drive the vehicle to inspect vehicle speed signal in the MUT-II input signal test. When the buzzer sounds, this test is evaluated "Passed".

## Inspection Procedure J-1

The ignition key cylinder illumination lamp is not turning ON and OFF normally.	Probable cause
<p>&lt;Except for Hong Kong and Singapore (except for CS3A)&gt;</p> <p>The ETACS-ECU controls the ignition key cylinder illumination lamp function based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>• Ignition switch (IG1)</li> <li>• Key reminder switch</li> <li>• Driver's door switch</li> </ul> <p>If the ignition key cylinder illumination lamp function is not operating normally, either one of the above input circuit systems, the ignition key cylinder illumination lamp, or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>• Key reminder switch fault</li> <li>• Driver's door switch fault</li> <li>• Ignition key cylinder illumination lamp fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>
<p>&lt;Hong Kong and Singapore(except for CS3A)&gt;</p> <p>The ETACS-ECU controls the ignition key cylinder illumination lamp function based on input signals from the following switches.</p> <p>Because the interior lamps turn off by the interior lamp automatic cut-off function, also check the input signals for that function.</p> <ul style="list-style-type: none"> <li>• Ignition switch (ACC)</li> <li>• Ignition switch (IG1)</li> <li>• Key reminder switch</li> <li>• Driver's door switch</li> <li>• All door switches</li> <li>• Universal fuse No. 17</li> </ul> <p>When it is not properly operated, fault may occur on these input circuit systems, ignition key cylinder illumination lamp, interior lamp automatic cut-off, or ETACS-ECU.</p>	<ul style="list-style-type: none"> <li>• Key reminder switch fault</li> <li>• Driver's door switch fault</li> <li>• Ignition key cylinder illumination lamp fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>

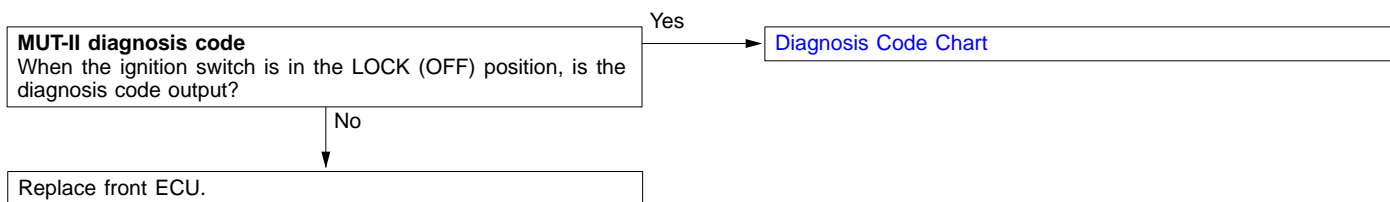


## &lt;Hong Kong and Singapore (except for CS3A)&gt;



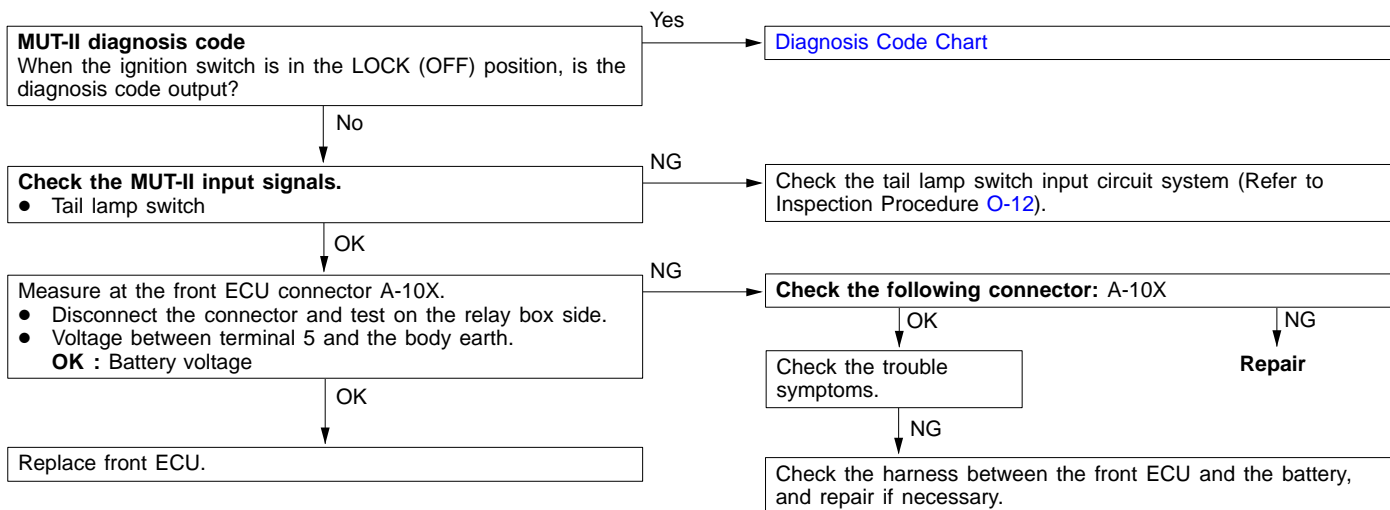
## Inspection Procedure K-1

<b>Except for lighting switch “OFF,” the headlamps only respond to the “low-beam” position.</b>	<b>Probable cause</b>
If the headlamps only go onto low-beam regardless of the switch position, the headlamp failsafe function is probably activated.	<ul style="list-style-type: none"> <li>• Column switch fault</li> <li>• Front ECU fault</li> <li>• Harness or connector fault</li> </ul>



## Inspection Procedure K-2

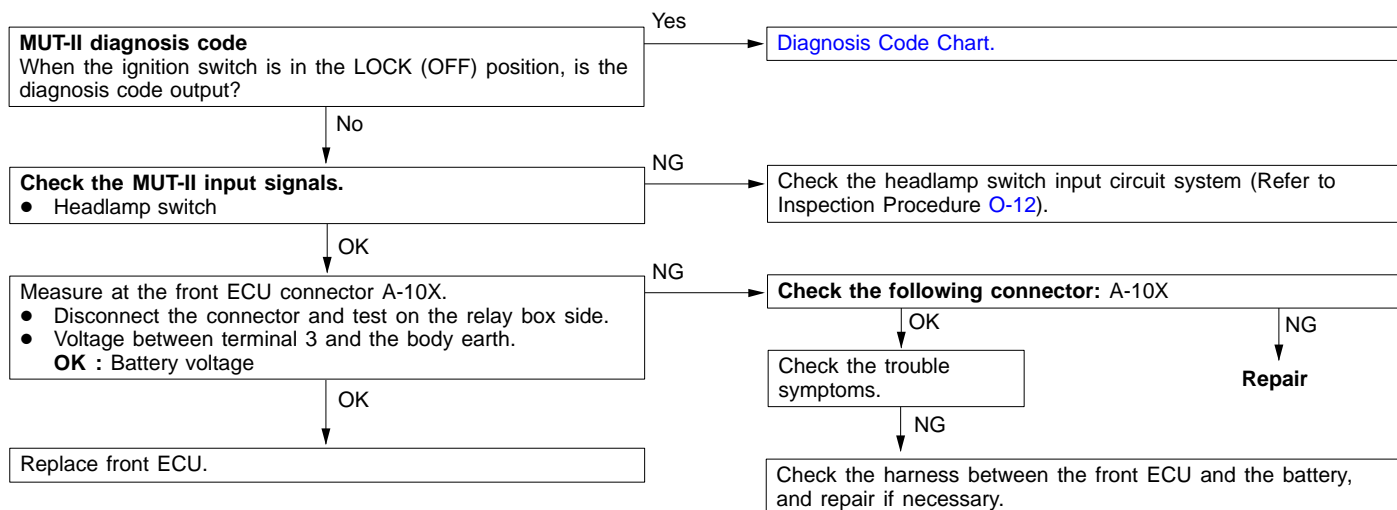
<b>The tail lamps do not work.</b>	<b>Probable cause</b>
If none of the tail lamps light up, either the tail lamp switch input circuit system or the front ECU may be defective.	<ul style="list-style-type: none"> <li>• Column switch fault</li> <li>• Front ECU fault</li> <li>• Harness or connector fault</li> </ul>



NOTE: If only one of the tail lamps fails to light up, check the bulb and the harness between the front ECU and the lamp, and between the lamp and body earth.

## Inspection Procedure K-3

The headlamps (low-beam) do not light.	Probable cause
If the (low-beam) headlamp on neither side lights up, either the headlamp switch input circuit system or the front ECU may be defective.	<ul style="list-style-type: none"> <li>Column switch fault</li> <li>Front ECU fault</li> <li>Harness or connector fault</li> </ul>

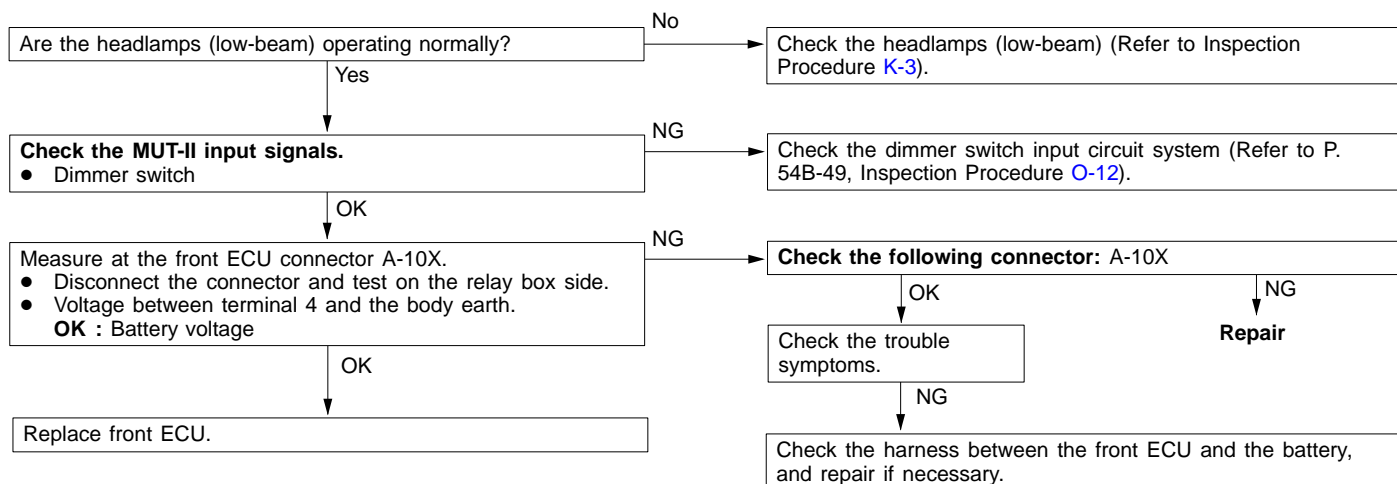


## NOTES:

- If only one of the headlamps fails to light up, check the headlamp bulb and the harness between the front ECU and the headlamps, and between the headlamps and body earth.
- When failure is detected on the harness from the front ECU to the battery, check and repair the front ECU No. 4 terminal (A-10X) as well.

## Inspection Procedure K-4

The headlamps (high-beam) do not light.	Probable cause
If the (high-beam) headlamp on neither side lights up, either the dimmer switch input circuit system or the front ECU may be defective.	<ul style="list-style-type: none"> <li>Column switch fault</li> <li>Front ECU fault</li> <li>Harness or connector fault</li> </ul>



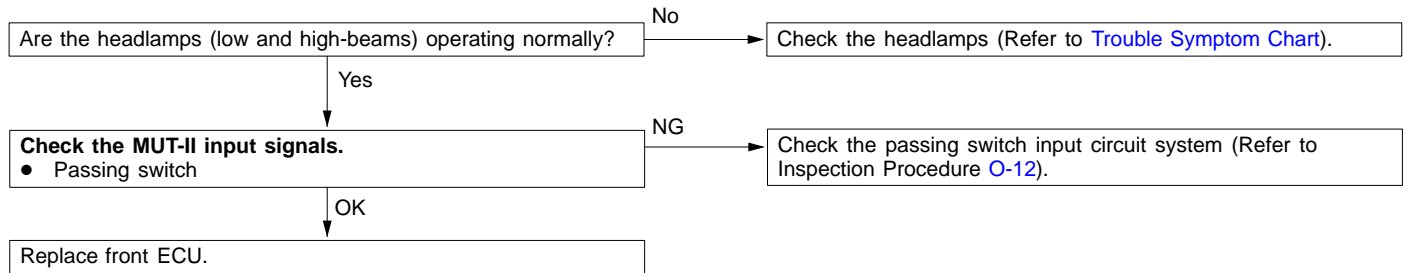
## NOTES:

- If only one of the headlamps fails to light up, check the headlamp bulb and the harness between the front ECU and the headlamps, and between the headlamps and body earth.
- When failure is detected on the harness from the front ECU to the battery, check and repair the front ECU No. 3 terminal (A-10X) as well.



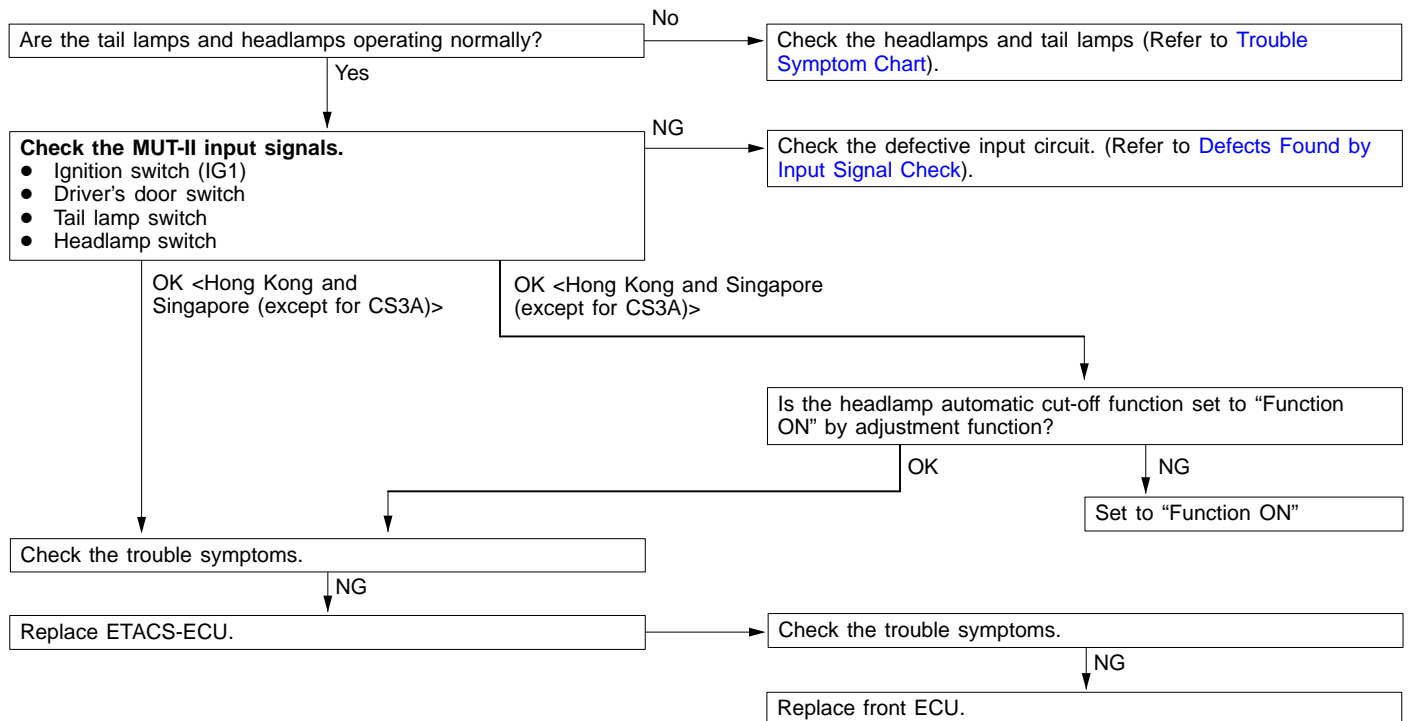
## Inspection Procedure K-5

The headlamps (low or high-beam) do not work when the passing switch is ON.	Probable cause
If the headlamps (low and high-beams) are normal, either the passing switch input circuit system or the front ECU may be defective.	<ul style="list-style-type: none"> <li>Column switch fault</li> <li>Front ECU fault</li> <li>Harness or connector fault</li> </ul>



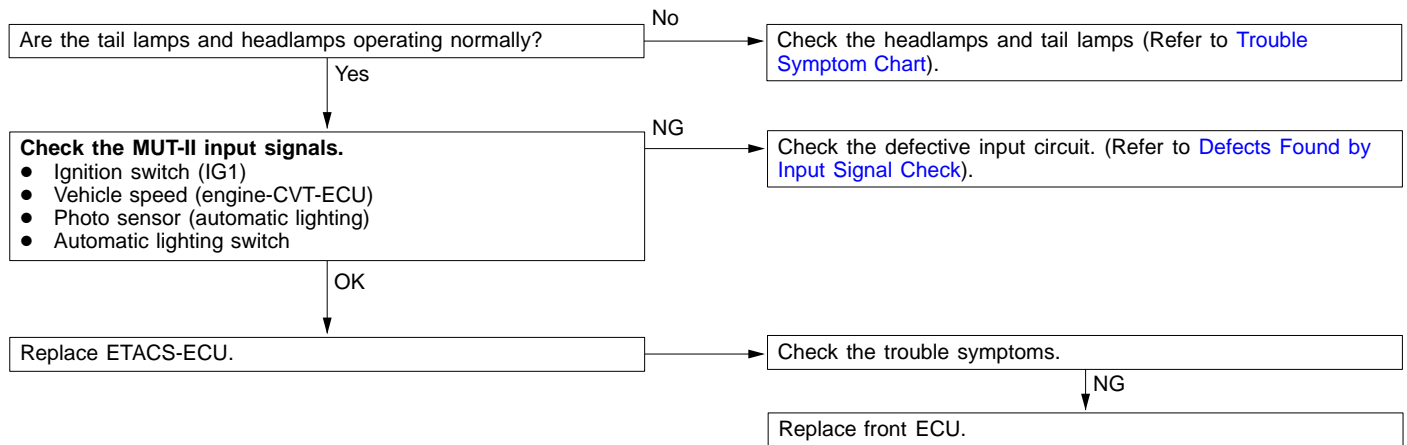
## Inspection Procedure K-6

The headlamp automatic cut-off function is not working normally.	Probable cause
<p>The ETACS-ECU controls the headlamp automatic cut-off function based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>Ignition switch (IG1)</li> <li>Driver's door switch</li> <li>Tail lamp switch</li> <li>Headlamp switch</li> </ul> <p>If the headlamp automatic cut-off function is not operating normally, either one of the above input circuit systems, the front ECU, or the ETACS-ECU may be defective. On the models for Hong Kong and Singapore (except for CS3A), the function may be set to "Function OFF" by adjustment function.</p>	<ul style="list-style-type: none"> <li>Driver's door switch fault</li> <li>Column switch fault</li> <li>Front ECU fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



## Inspection Procedure K-7

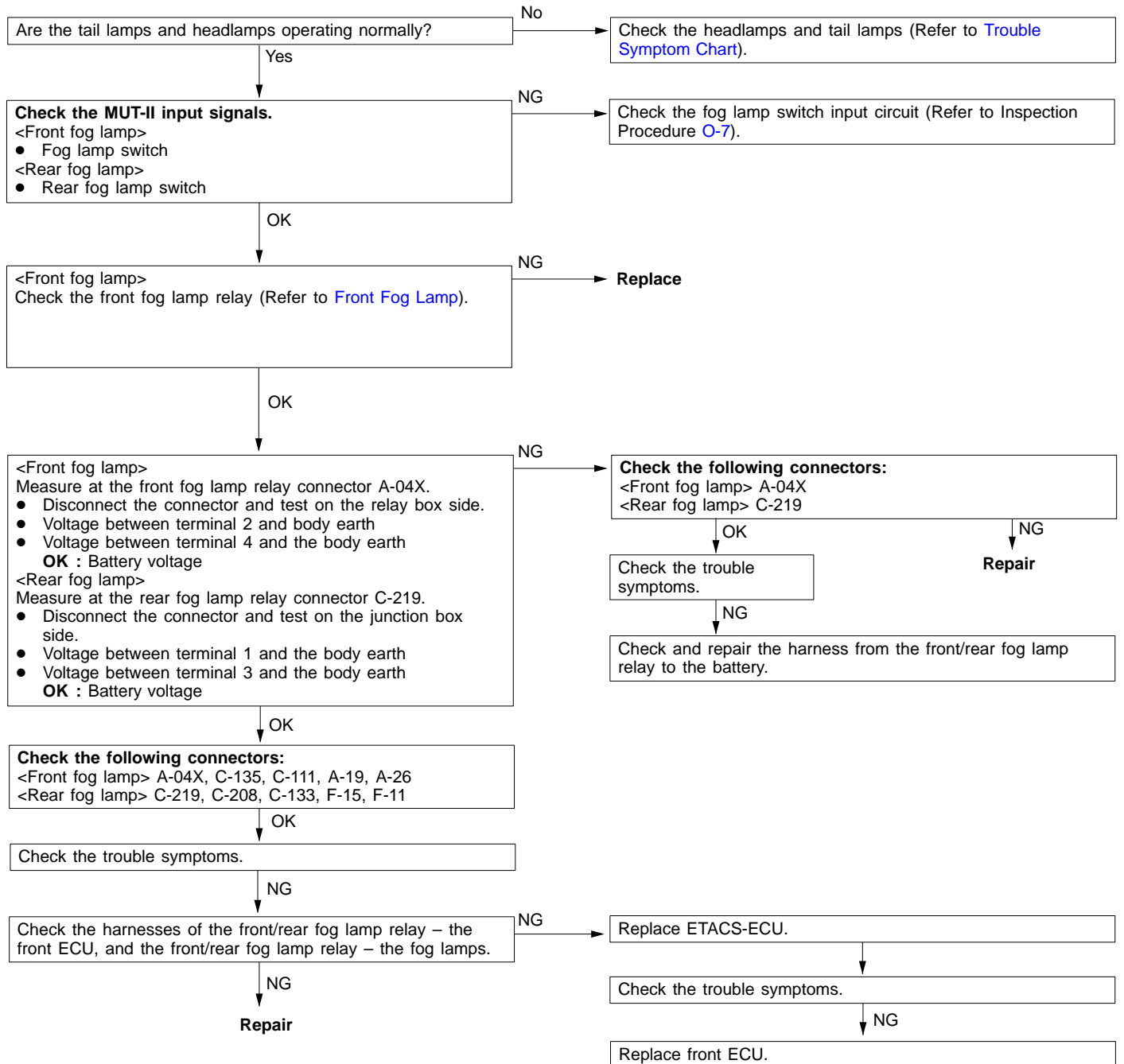
The automatic lighting function is not working normally <Hong Kong and Singapore (except for CS3A)>	Probable cause
<p>The ETACS-ECU controls the headlamp automatic cut-off function based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>• Ignition switch (IG1)</li> <li>• Vehicle speed signal</li> <li>• Sun light sensor</li> <li>• Automatic lighting switch</li> </ul> <p>If the headlamp automatic cut-off function is not operating normally, either one of the above input circuit systems, the front ECU, or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>• Sun light sensor inoperative</li> <li>• Column switch fault</li> <li>• Front ECU fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



NOTE: When vehicle speed signal (engine-CVT-ECU) is checked with MUT-II in the ETACS-ECU input signal test, drive the vehicle with MUT-II connected to diagnostic connector. When the buzzer sounds, this test is evaluated OK.

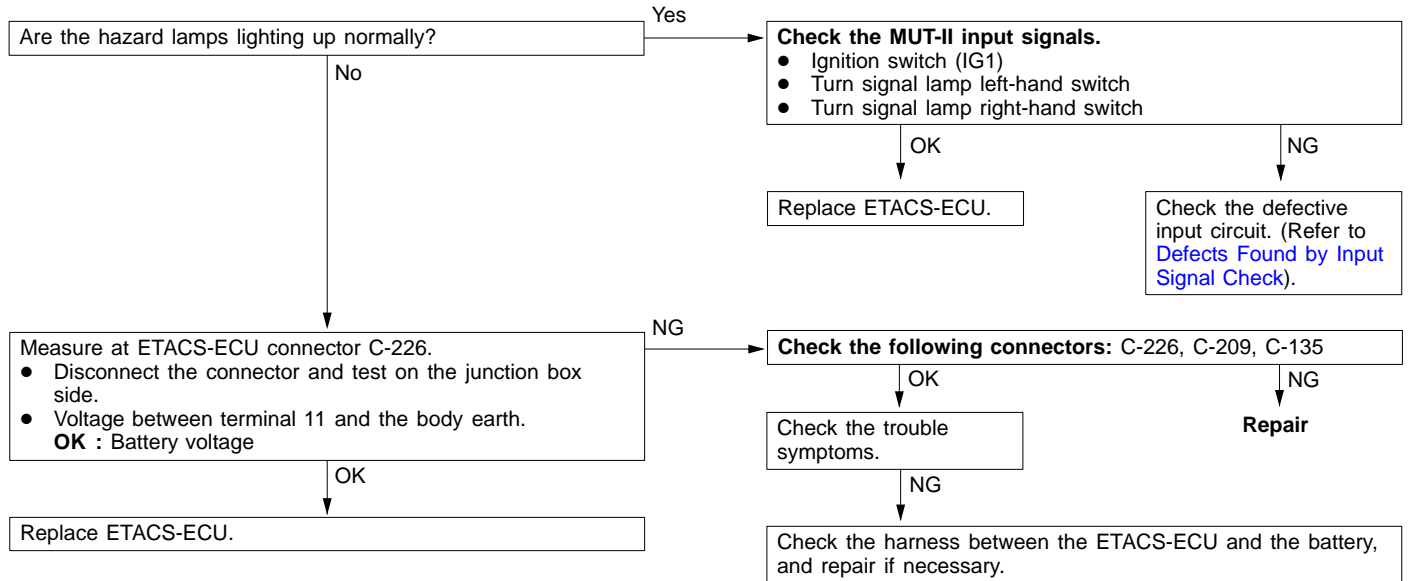
## Inspection Procedure L-1

Front fog lamps are not properly illuminated.	Probable cause
Rear fog lamp is not properly illuminated.	
If the tail lamps and the headlamps are normal when the both fog lamps are not illuminated, failure may occur on the fog lamp switch input circuit, the fog lamp relay, and the front ECU or ETACS-ECU.	<ul style="list-style-type: none"> <li>Fog lamp switch inoperative</li> <li>Fog lamp relay inoperative</li> <li>Front ECU fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



## Inspection Procedure M-1

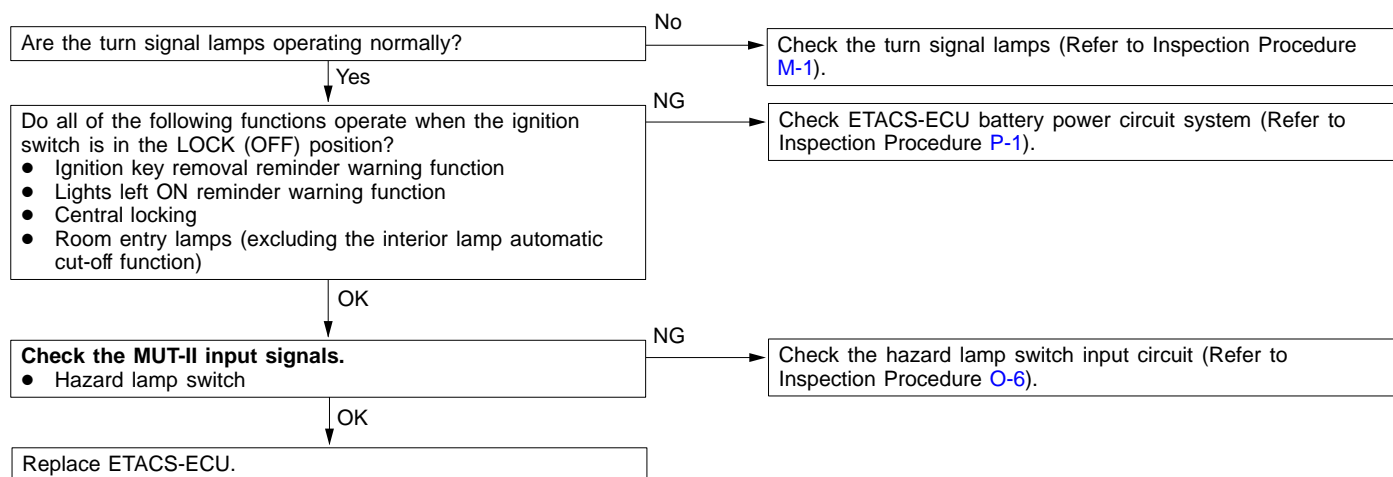
The turn signal lights do not light.	Probable cause
<p>The ETACS-ECU controls the turn signal lamps based on input signals from the following switches.</p> <ul style="list-style-type: none"> <li>Ignition switch (IG1)</li> <li>Turn signal lamp left-hand switch</li> <li>Turn signal lamp right-hand switch</li> </ul> <p>If none of the turn signal lamps are operating normally, either one of the above input circuit systems or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>Column switch fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



**NOTE:** If only one of the turn signal lamps is not lighting, check the bulb and the harness between the ETACS-ECU and the lamp, and between the lamp and the body earth.

## Inspection Procedure M-2

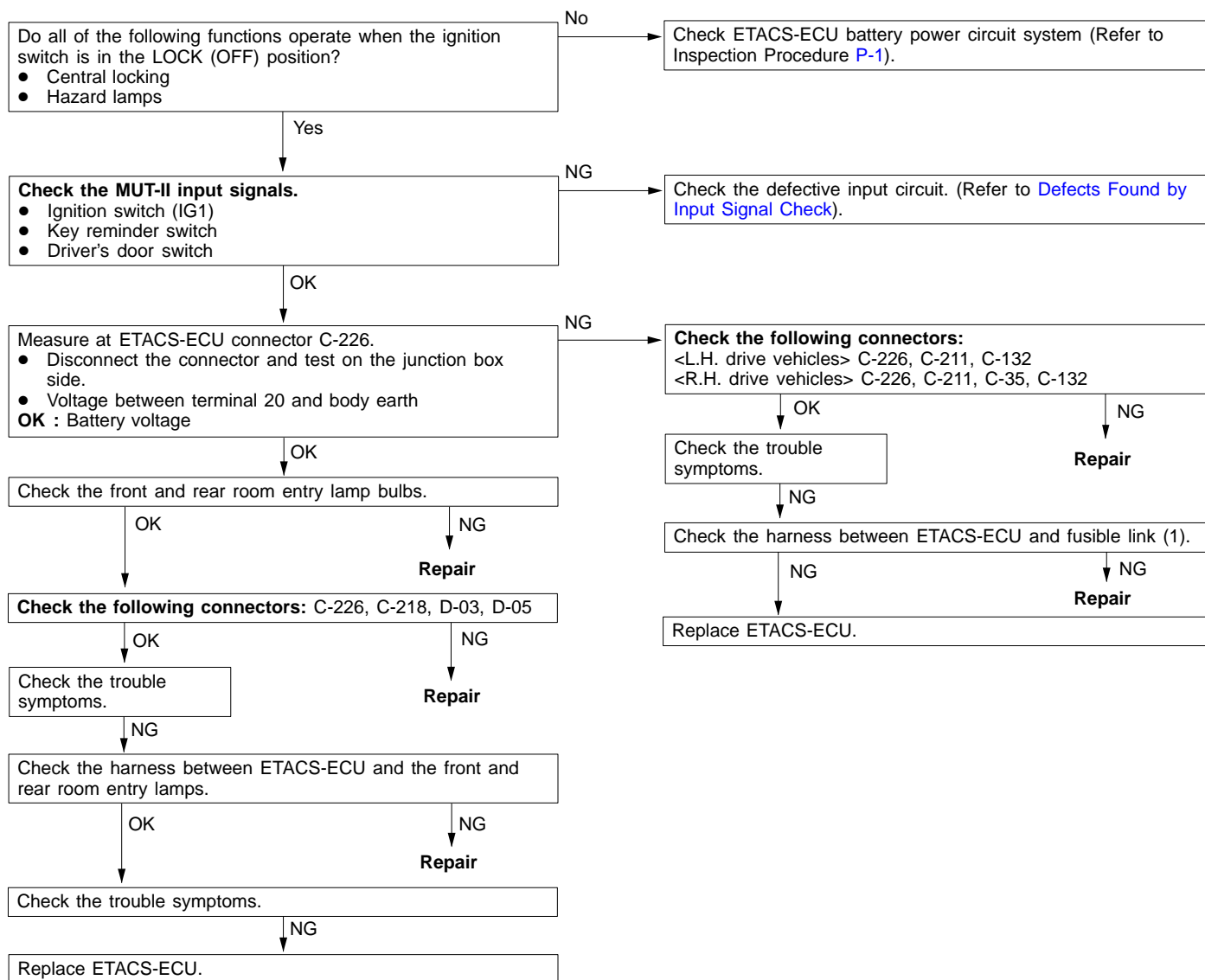
The hazard lamps do not light up.	Probable cause
<p>The ETACS-ECU controls the hazard lamps based on input signals from the hazard lamp switch.</p> <p>If the hazard lamps are not operating normally, either the hazard lamp switch input circuit system or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>• Hazard lamp switch fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



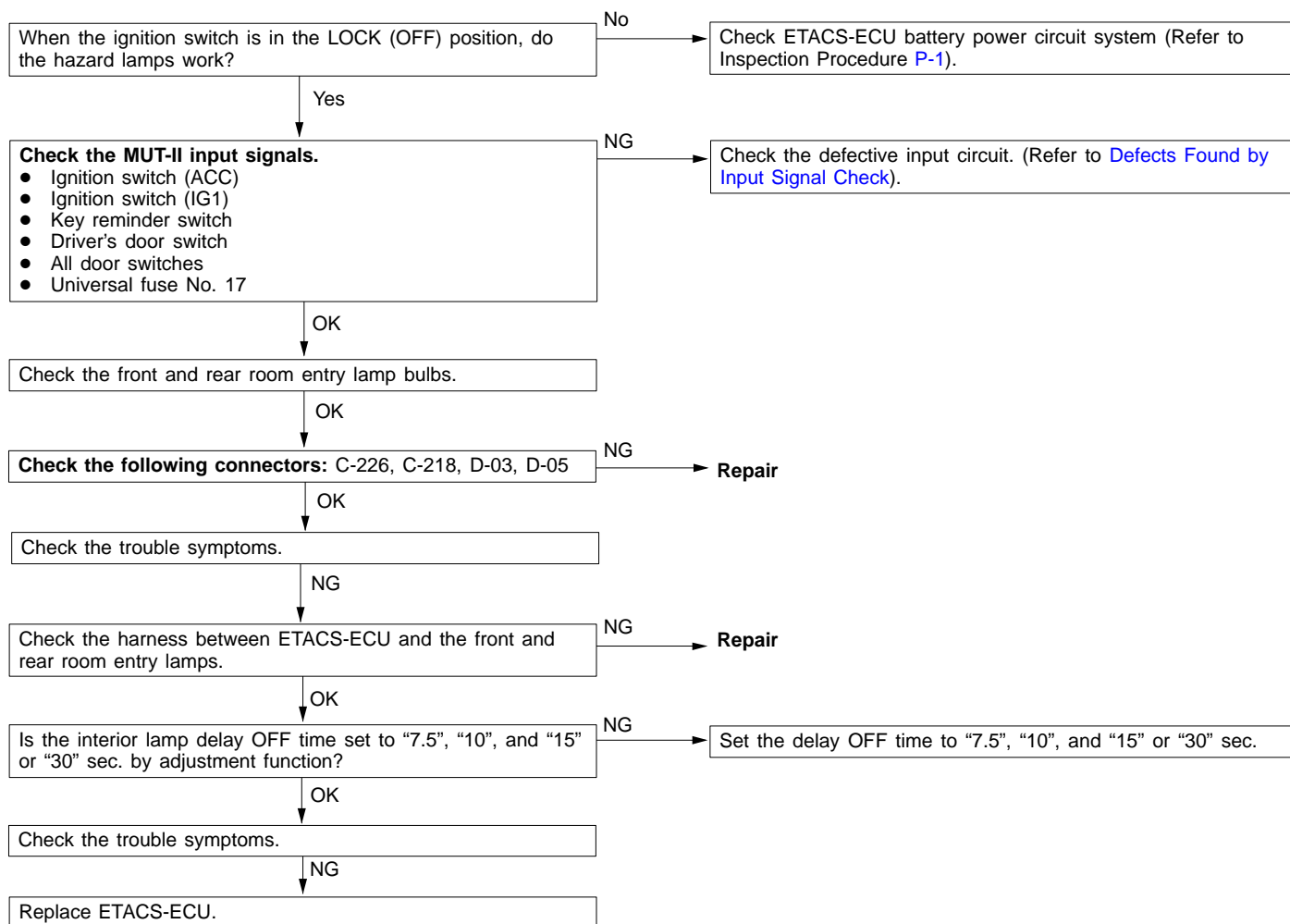
## Inspection Procedure N-1

The room entry lamps do not come ON or OFF normally.	Probable cause
<p>&lt;Except for Hong Kong and Singapore (except for CS3A)&gt; The ETACS-ECU controls the room entry lamp ON/OFF operation based on input signals from the following.</p> <ul style="list-style-type: none"> <li>• Ignition switch (IG1)</li> <li>• Key reminder switch</li> <li>• Driver's door switch</li> <li>• All door switches</li> <li>• Driver's door lock actuator</li> </ul> <p>If the room entry lamp ON/OFF operation is defective, either one of the above input circuit systems or the ETACS-ECU may be defective.</p>	<ul style="list-style-type: none"> <li>• Key reminder switch fault</li> <li>• Door switch fault</li> <li>• Driver's door lock actuator fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>
<p>&lt;Hong Kong and Singapore(except for CS3A)&gt; The ETACS-ECU controls the room entry lamp ON/OFF operation based on input signals from the following. Because the interior lamps turn off by the interior lamp automatic cut-off function, also check the input signals for that function.</p> <ul style="list-style-type: none"> <li>• Ignition switch (ACC)</li> <li>• Ignition switch (IG1)</li> <li>• Key reminder switch</li> <li>• Driver's door switch</li> <li>• All door switches</li> <li>• Driver's door lock actuator</li> <li>• Universal fuse No. 17</li> </ul> <p>If the room entry lamp ON/OFF operation is defective, either one of the above input circuit systems, the interior lamp automatic cut-off function, or the ETACS-ECU may be defective. Or, the cut-off delay time may have been set to "0 seconds" by the function adjustment feature.</p>	<ul style="list-style-type: none"> <li>• Key reminder switch fault</li> <li>• Door switch fault</li> <li>• Driver's door lock actuator fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>

## &lt;Except for Hong Kong and Singapore (except for CS3A)&gt;

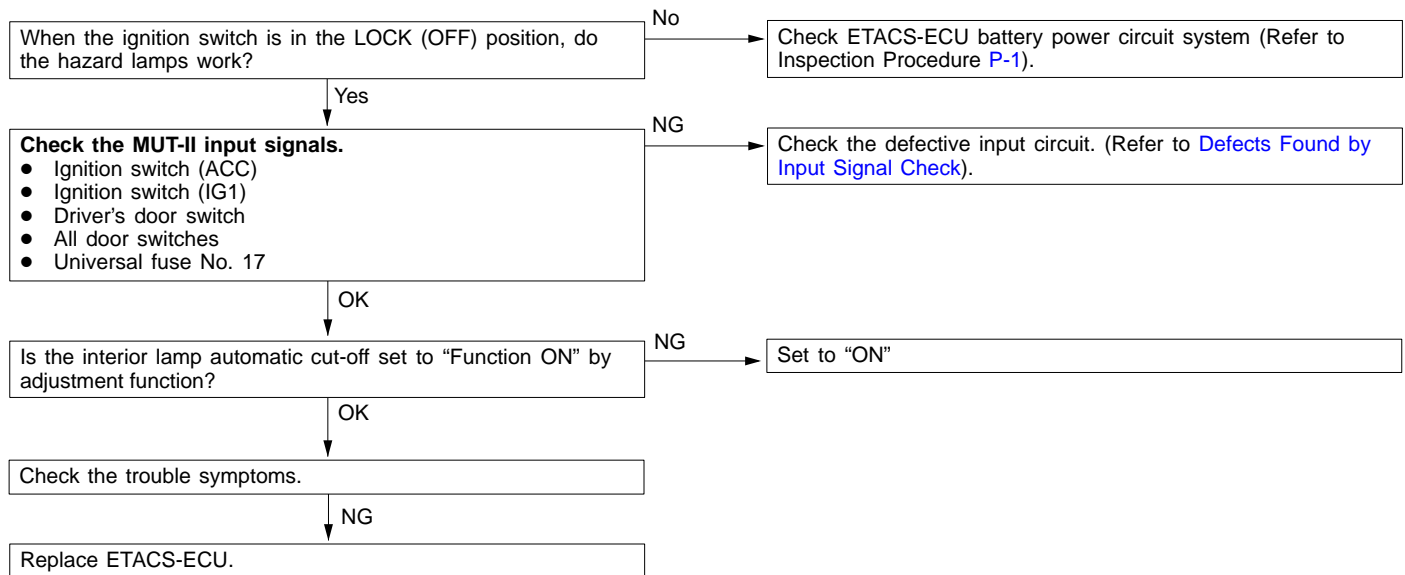


## &lt;Hong Kong and Singapore (except for CS3A)&gt;



## Inspection Procedure N-2

The interior lamp automatic cut-off function is not working normally <Hong Kong and Singapore (except for CS3A)>	Probable cause
<p>The ETACS-ECU controls the interior lamp automatic cut-off function based on input signals from the following.</p> <ul style="list-style-type: none"> <li>• Ignition switch (ACC)</li> <li>• Ignition switch (IG1)</li> <li>• Driver's door switch</li> <li>• All door switches</li> <li>• Universal fuse No. 17</li> </ul> <p>If the room entry lamp ON/OFF operation is defective, either one of the above input circuit systems or the ETACS-ECU may be defective. Or, the interior lamp automatic cut-off function may have been disabled by the function adjustment feature.</p>	<ul style="list-style-type: none"> <li>• All door switches defective</li> <li>• Room entry lamp fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>

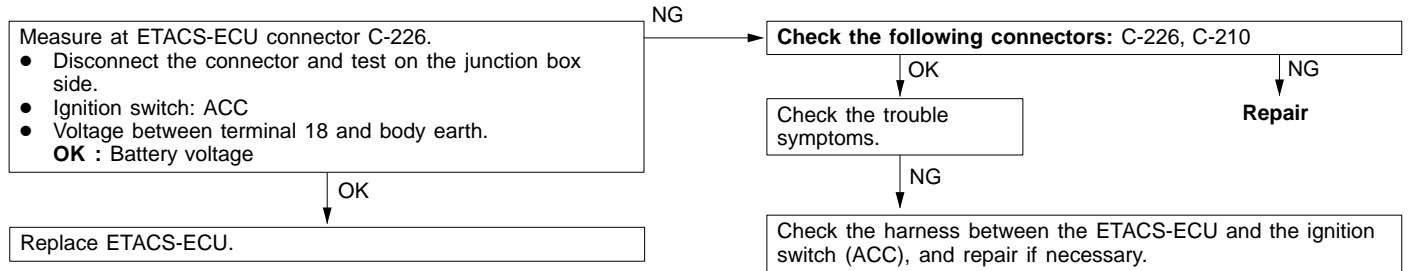


NOTE: If any one of the following interior lamps (front and rear room entry lamps, trunk compartment lamp, door-open indicator lamp, ignition key cylinder illumination lamp) fails to light, check the bulb and the harness between the ETACS-ECU and the lamp, and between the lamp and the body earth.



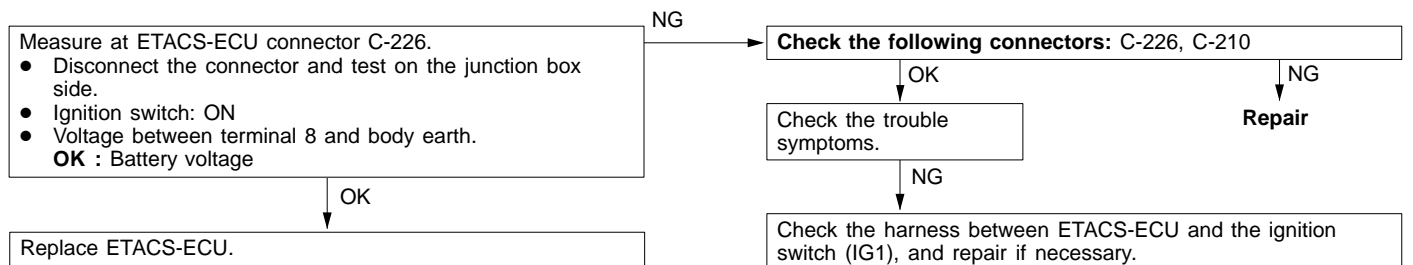
## Inspection Procedure O-1

No ignition switch (ACC) signal input to ETACS-ECU.	Probable cause
<p>As the ignition switch (ACC) input signal is used to control the operation of the following functions, any abnormality in this signal prevents these functions operating normally.</p> <ul style="list-style-type: none"> <li>• Windshield wiper and washer</li> <li>• Electric retractable door mirror</li> <li>• Interior lamp automatic cut-off</li> </ul>	<ul style="list-style-type: none"> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



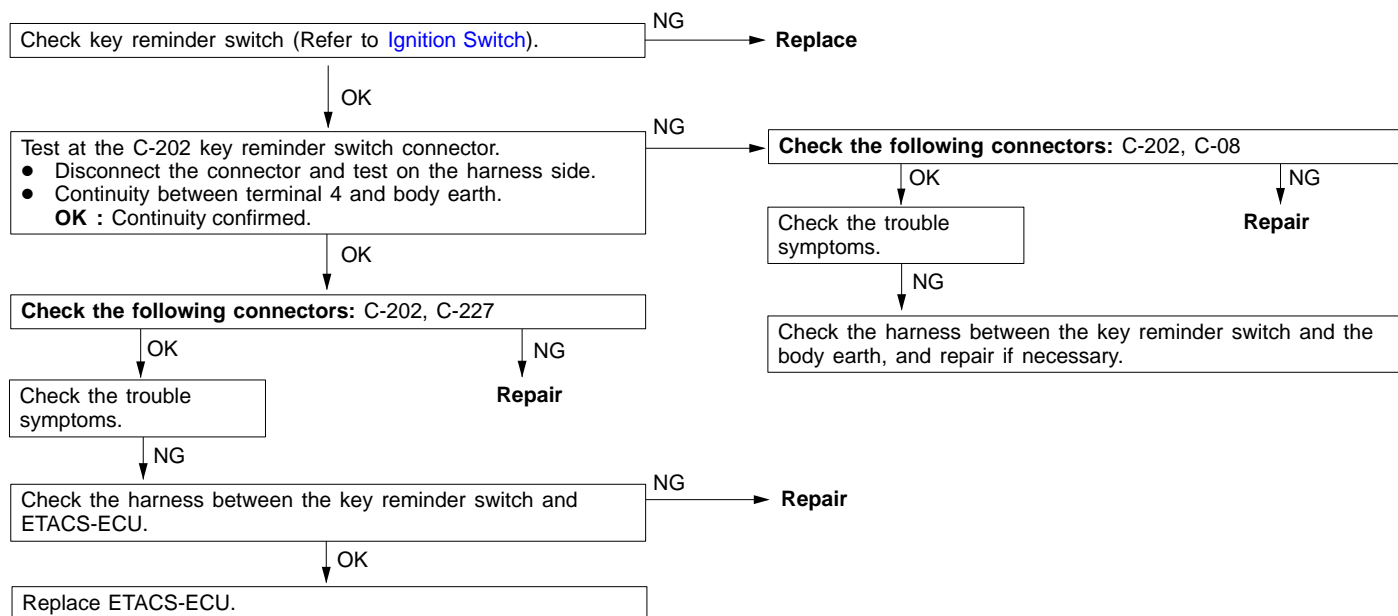
## Inspection Procedure O-2

No ignition switch (IG1) signal input to ETACS-ECU.	Probable cause
<p>As the ignition switch (IG1) input signal is used to control the operation of the following functions, any abnormality in this signal prevents these functions operating normally.</p> <ul style="list-style-type: none"> <li>• Ignition key removal reminder warning function</li> <li>• Lights left ON reminder warning function</li> <li>• R (reverse) selected warning function</li> <li>• Power window timer function</li> <li>• Sunroof timer function</li> <li>• Electric retractable door mirror (automatic return, timer function)</li> <li>• Ignition key cylinder illumination lamp</li> <li>• Headlamp automatic cut-off function</li> <li>• Automatic lighting function</li> <li>• Turn signal lamps</li> <li>• Room entry lamps</li> </ul>	<ul style="list-style-type: none"> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



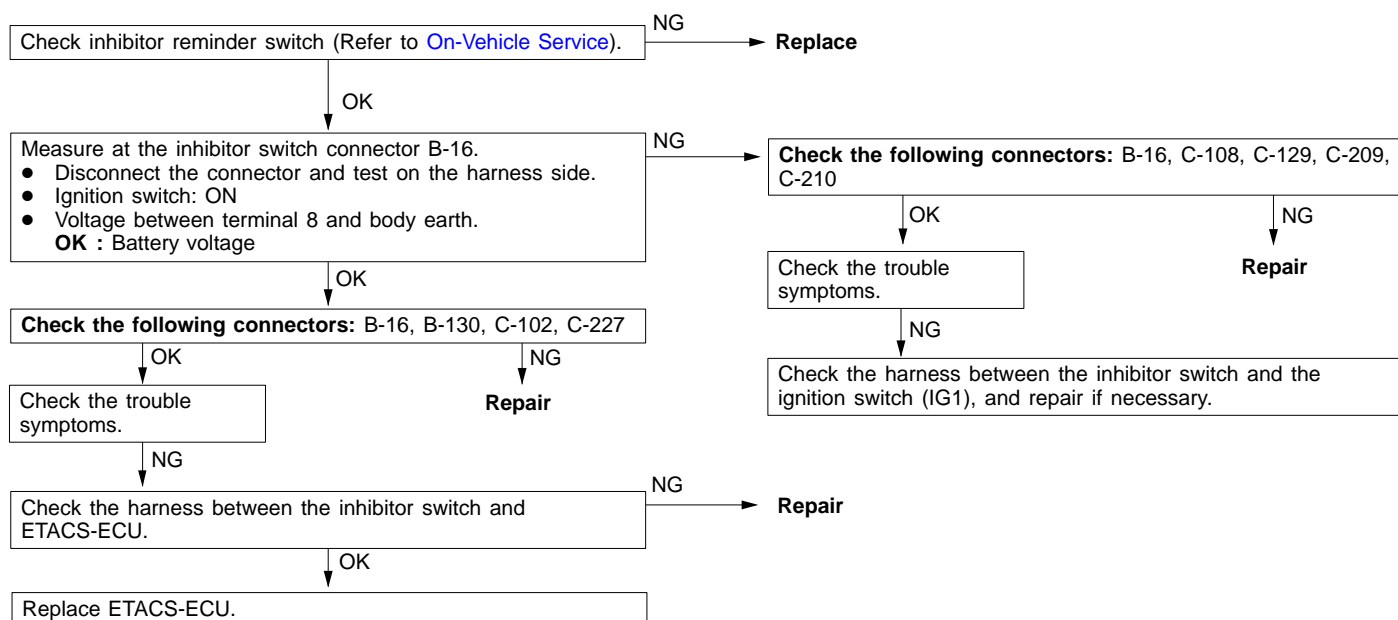
## Inspection Procedure O-3

No key reminder switch signal input to ETACS-ECU.	Probable cause
<p>As the ignition key removal reminder switch input signal is used to control the operation of the following functions, any abnormality in this signal prevents these functions operating normally.</p> <ul style="list-style-type: none"> <li>• Ignition key removal reminder warning function</li> <li>• Key removal reminder function</li> <li>• Keyless entry</li> <li>• Ignition key cylinder illumination lamp</li> <li>• Room entry lamps</li> </ul>	<ul style="list-style-type: none"> <li>• Key reminder switch fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



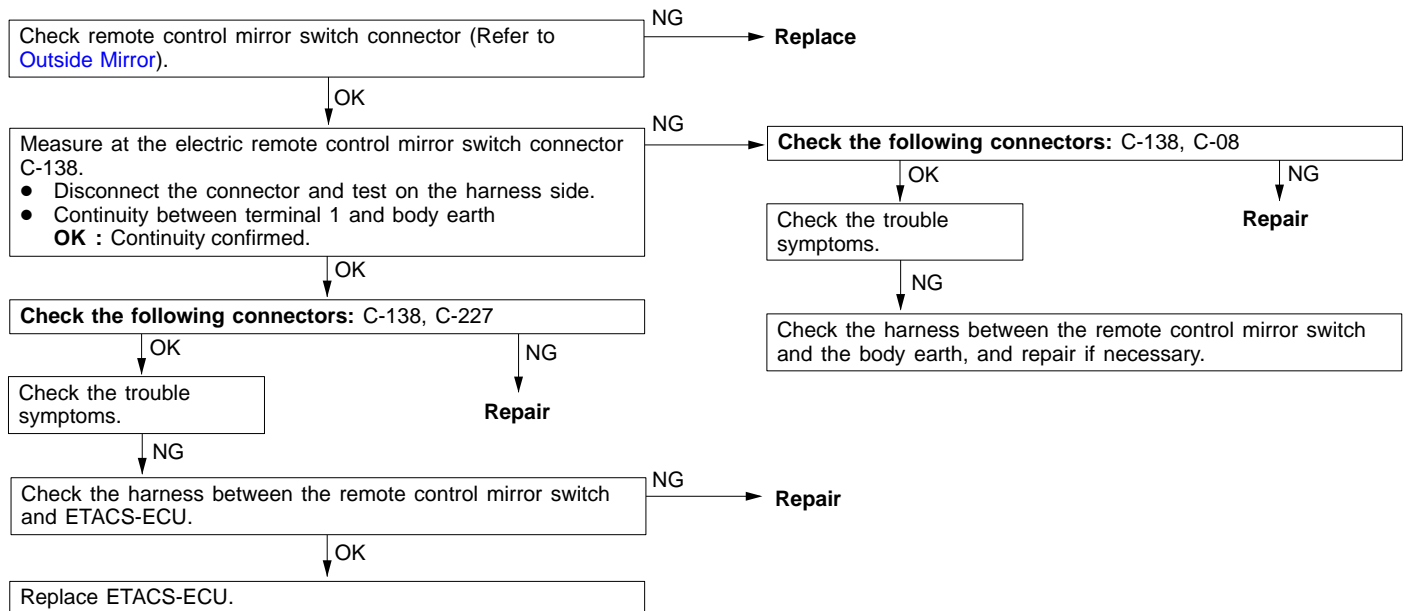
## Inspection Procedure O-4

No inhibitor switch (reverse) signal input to ETACS-ECU.	Probable cause
<p>As the inhibitor switch (reverse) input signal is used to control the operation of the following functions, any abnormality in this signal prevents these functions operating normally.</p> <ul style="list-style-type: none"> <li>• R (reverse) selected warning function</li> </ul>	<ul style="list-style-type: none"> <li>• Inhibitor switch fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



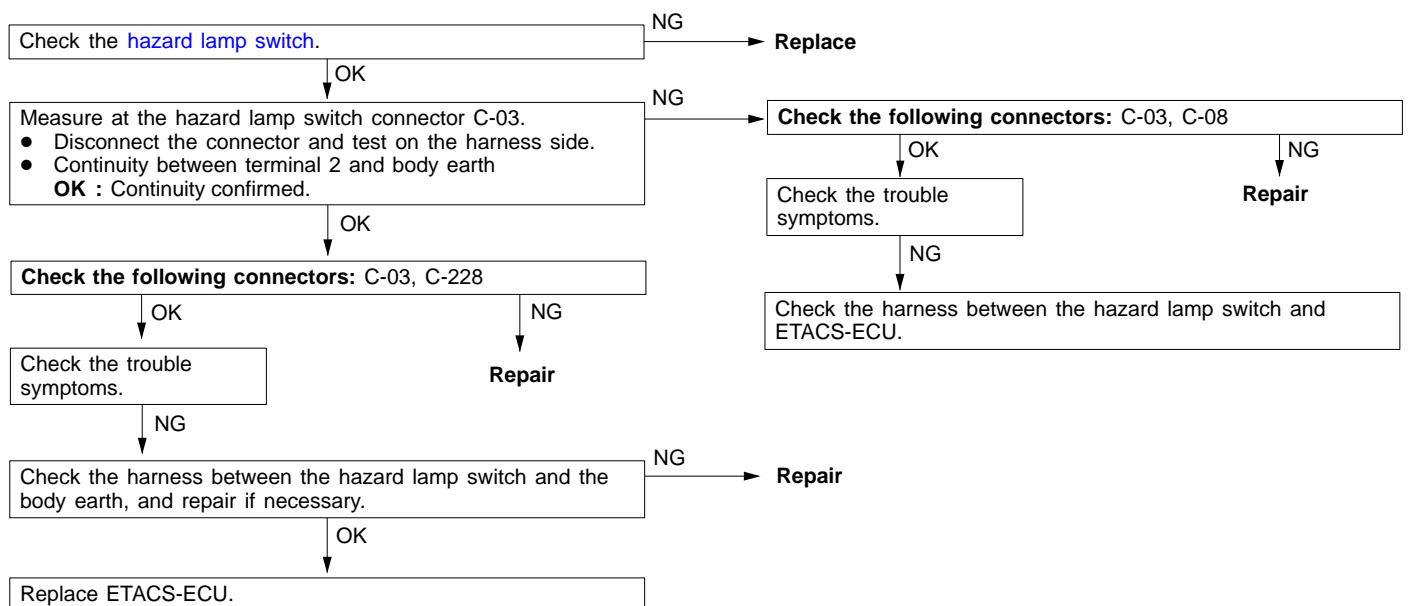
## Inspection Procedure O-5

No remote control mirror switch (retract/return) signal input to ETACS-ECU <Hong Kong and Singapore (except for CS3A)>	Probable cause
As the input signal of the remote control mirror switch (for retracting and returning the mirror) is used to control the operation of the electric retractable door mirror, any abnormality in this signal prevents the retraction and return of the door mirror when the remote control mirror switch is pressed.	<ul style="list-style-type: none"> <li>Remote control mirror switch fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



## Inspection Procedure O-6

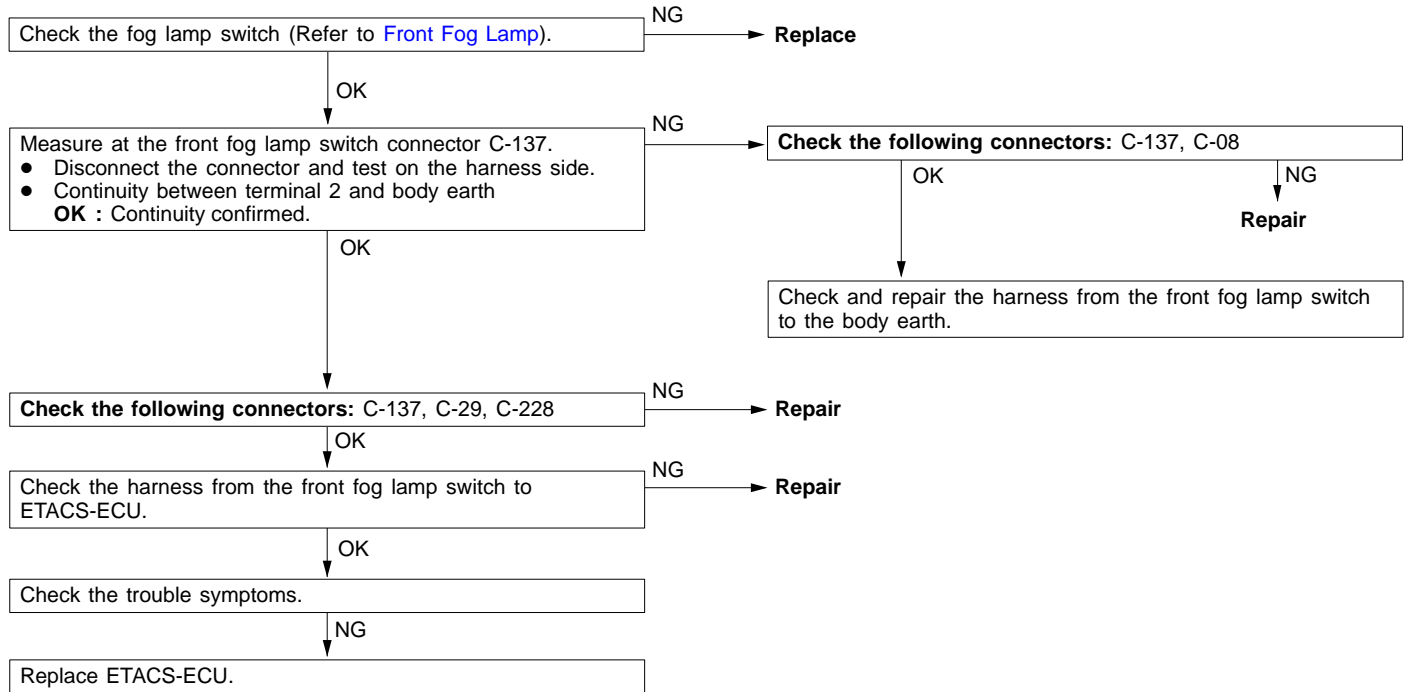
No hazard lamp switch signal input to ETACS-ECU.	Probable cause
As the hazard lamp switch input signal is used to control the operation of the following functions, any abnormality in this signal prevents these functions operating normally. <ul style="list-style-type: none"> <li>Keyless entry system (encrypted code registration)</li> <li>Hazard lamps</li> </ul>	<ul style="list-style-type: none"> <li>Hazard lamp switch fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



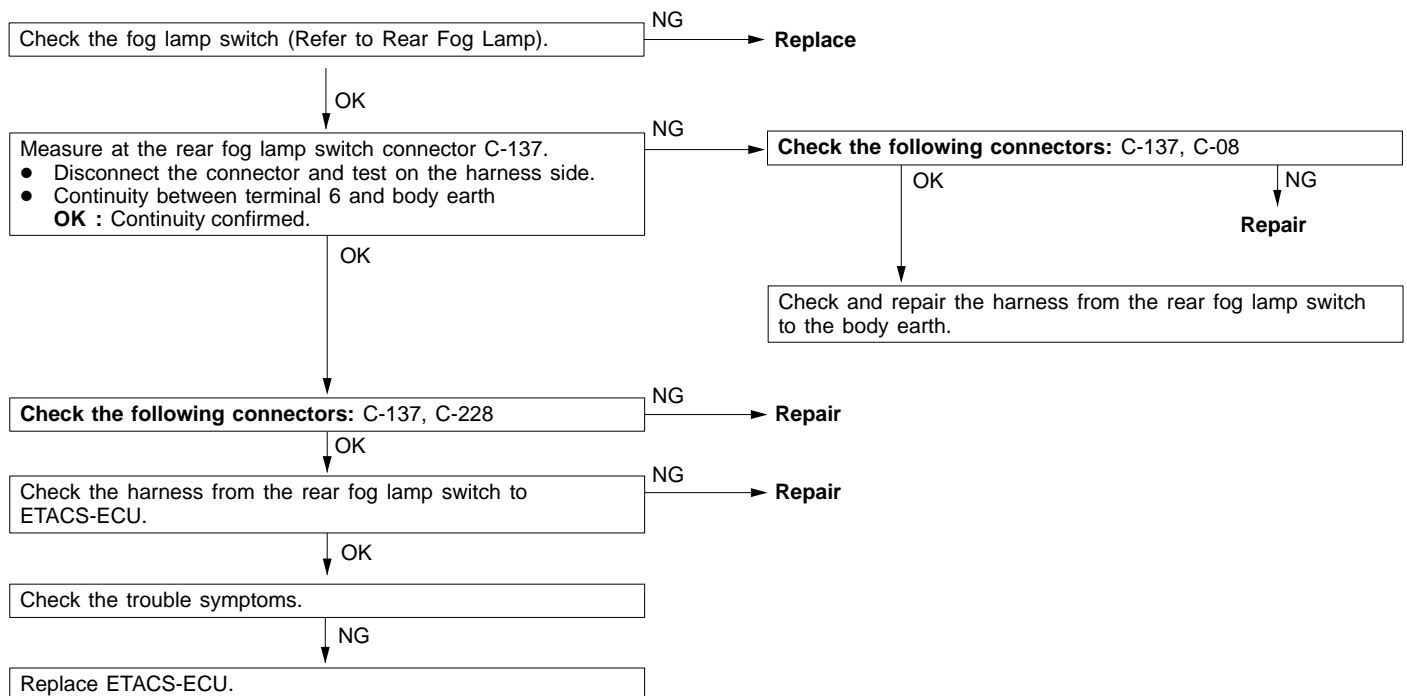
## Inspection Procedure O-7

No fog lamp switch signal input to ETACS-ECU.	Probable cause
When the fog lamp switch input signal fault occurs, the fog lamp switch signal is not transmitted to the SWS communication line.	<ul style="list-style-type: none"> <li>Fog lamp switch inoperative</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>

### <Front fog lamp switch>

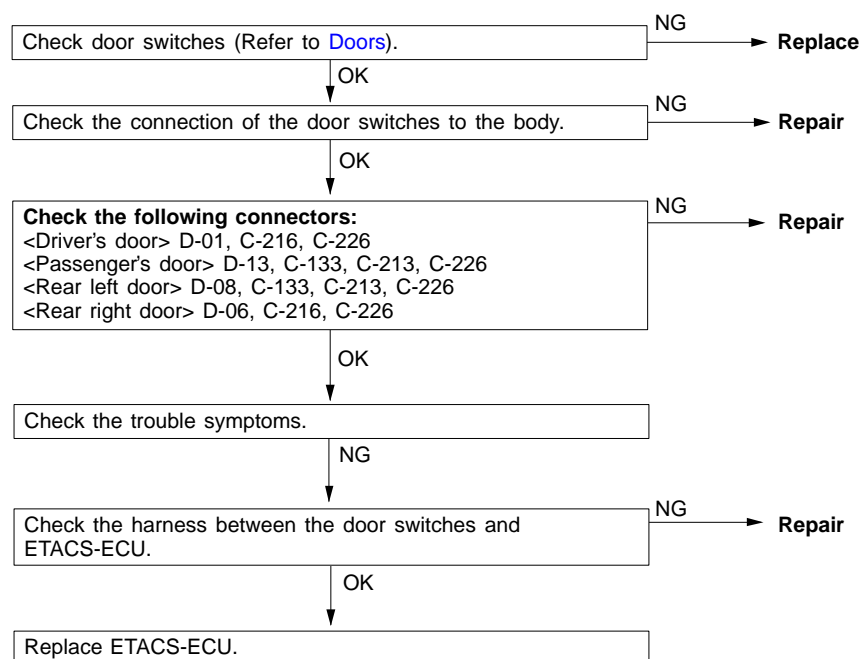


### <Rear fog lamp switch> (where fitted)



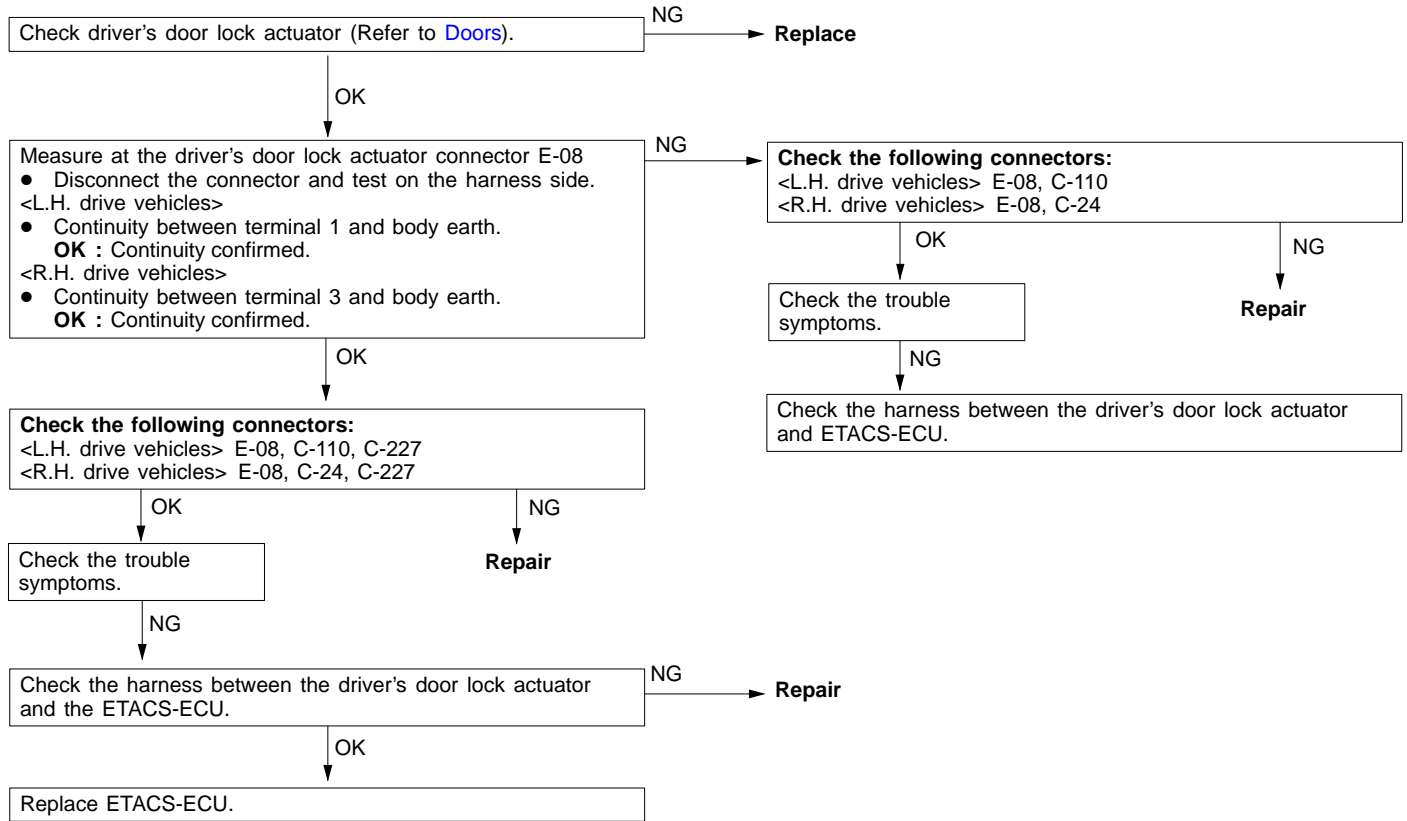
## Inspection Procedure O-8

No driver's door switch signal input to ETACS-ECU.	Probable cause
<b>No door switch signals input to ETACS-ECU.</b> Driver's door switch As the driver's door switch input signal is used to control the operation of the following functions, any abnormality in this signal prevents these functions operating normally. <ul style="list-style-type: none"> <li>• Ignition key removal reminder warning function</li> <li>• Lights left ON reminder warning function</li> <li>• Key removal reminder function</li> <li>• Power window timer function</li> <li>• Sunroof timer function</li> <li>• Ignition key cylinder illumination lamp</li> <li>• Headlamp automatic cut-off function</li> <li>• Room entry lamps</li> </ul> Door switches As the door switch input signals are used to control the operation of the following functions, any abnormality in these signals prevents the functions operating normally. <ul style="list-style-type: none"> <li>• Keyless entry system</li> <li>• Room entry lamps</li> </ul>	<ul style="list-style-type: none"> <li>• Door switch fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



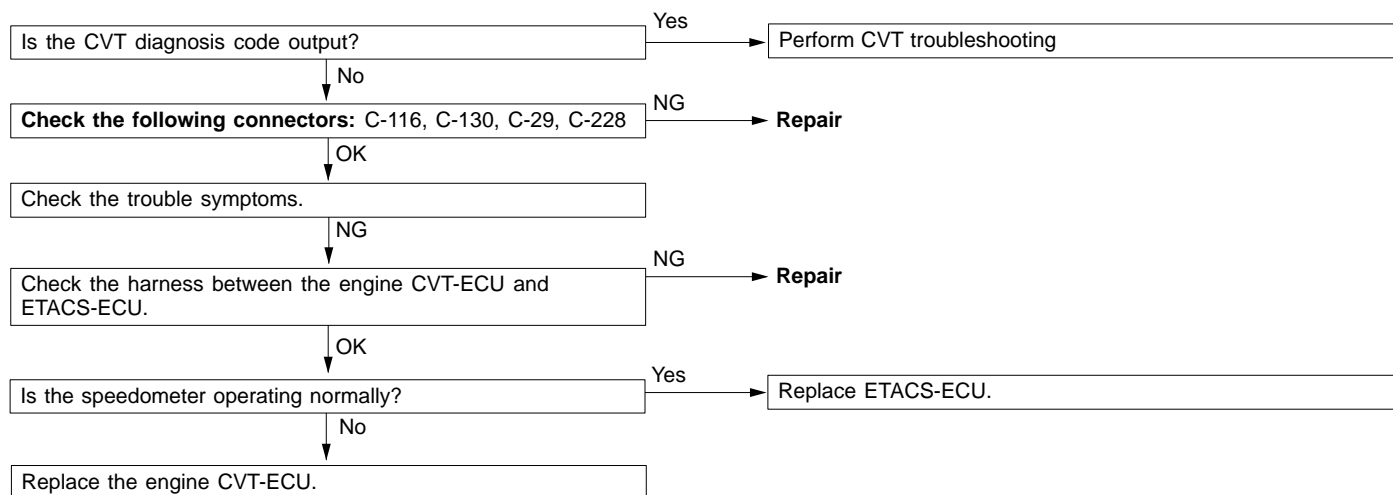
## Inspection Procedure O-9

No driver's door lock actuator signal input to ETACS-ECU.	Probable cause
<p>As the driver's door lock actuator input signal is used to control the operation of the following functions, any abnormality in this signal prevents these functions operating normally.</p> <ul style="list-style-type: none"> <li>• Key removal reminder function</li> <li>• Central locking</li> <li>• Keyless entry system</li> <li>• Room entry lamps (keyless entry answerback operation)</li> </ul>	<ul style="list-style-type: none"> <li>• Driver's door lock actuator fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



## Inspection Procedure O-10

No vehicle speed (engine CVT-ECU) signal input to ETACS-ECU.	Probable cause
<p>As the vehicle speed input signal is used to control the operation of the following functions, any abnormality in this signal prevents these functions operating normally.</p> <ul style="list-style-type: none"> <li>• Windshield wipers and washer (vehicle speed responsive wiper function)</li> <li>• Electric retractable door mirror (automatic return function)</li> <li>• Automatic lighting function</li> </ul>	<ul style="list-style-type: none"> <li>• Vehicle speed sensor fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>

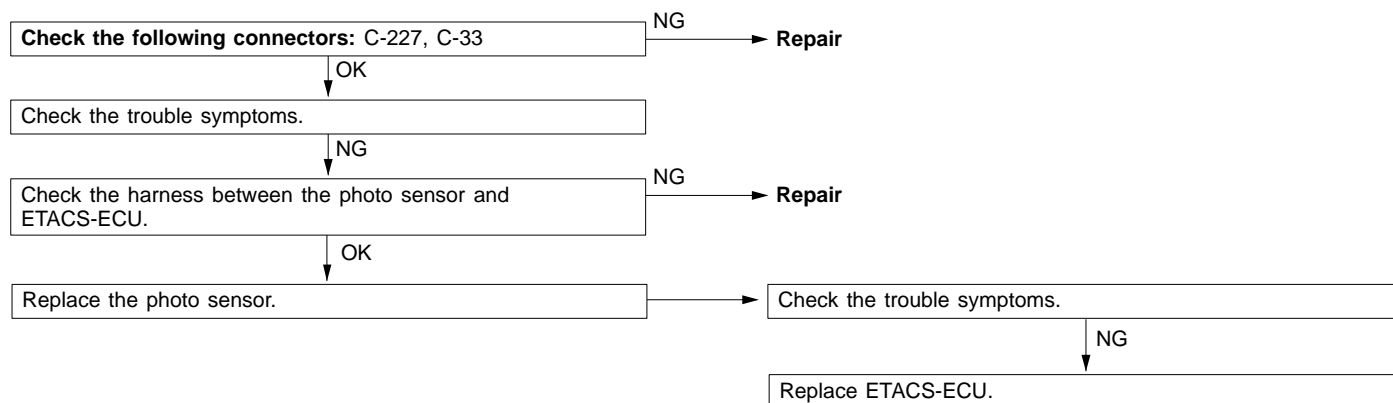


### NOTES:

- (1) If replacing the engine CVT-ECU does not fix the problem, check the interface between the combination meter and the ECU that uses the engine CVT? vehicle speed signal. Also check the harnesses and connectors.
- (2) Actually drive the vehicle when checking the speedometer.

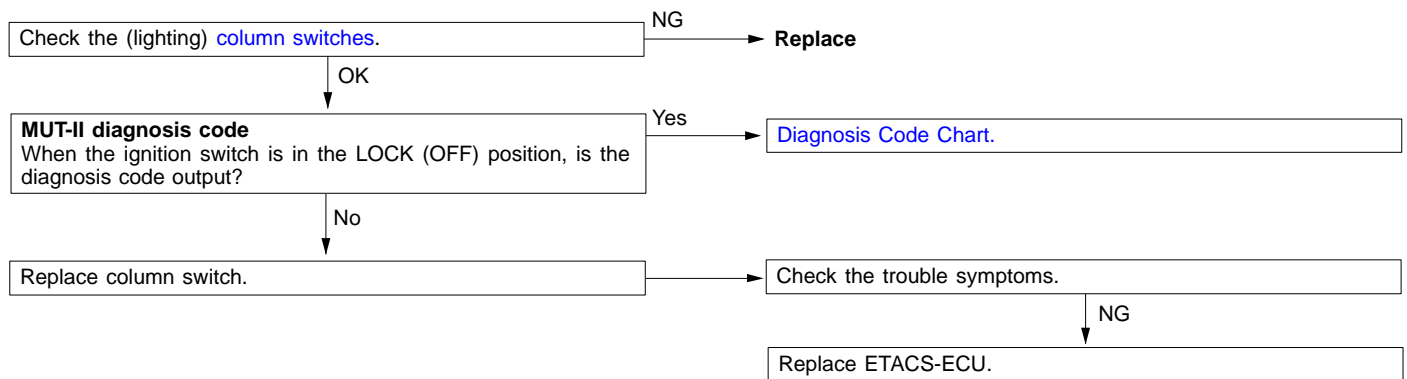
## Inspection Procedure O-11

No photo sensor signal input to ETACS-ECU. <Hong Kong and Singapore (except for CS3A)>	Probable cause
<p>As the photo sensor input signal is used to control the auto lamp function, any failure prevents the auto lamp function from operating properly.</p>	<ul style="list-style-type: none"> <li>• Photo sensor inoperative</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



## Inspection Procedure O-12

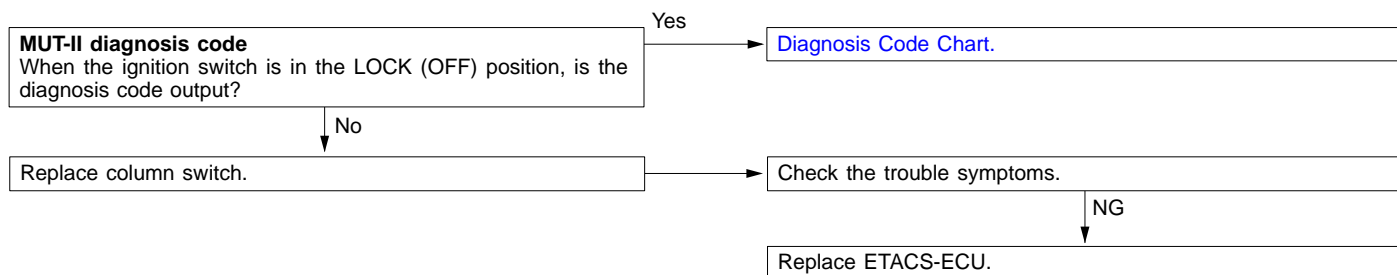
<b>Column switches:</b> <ul style="list-style-type: none"> <li>• No automatic lighting switch signal input to input to ETACS-ECU.</li> <li>• No tail lamp switch signal input to ETACS-ECU.</li> <li>• No headlamp switch signal input to ETACS-ECU.</li> <li>• No dimmer switch signal input to ETACS-ECU.</li> <li>• No passing switch signal input to ETACS-ECU.</li> <li>• No left-hand turn signal lamp switch signal input to ETACS-ECU.</li> <li>• No right-hand turn signal lamp switch signal input to ETACS-ECU.</li> </ul>	<b>Probable cause</b>
<p>As the (lighting) column switch input signals control the operation of the following functions, any abnormality in the signals prevents these functions operating normally.</p> <ul style="list-style-type: none"> <li>• Lights left ON reminder warning function</li> <li>• Headlamps, tail lamps</li> <li>• Turn signal lamps</li> </ul>	<ul style="list-style-type: none"> <li>• Column switch fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>





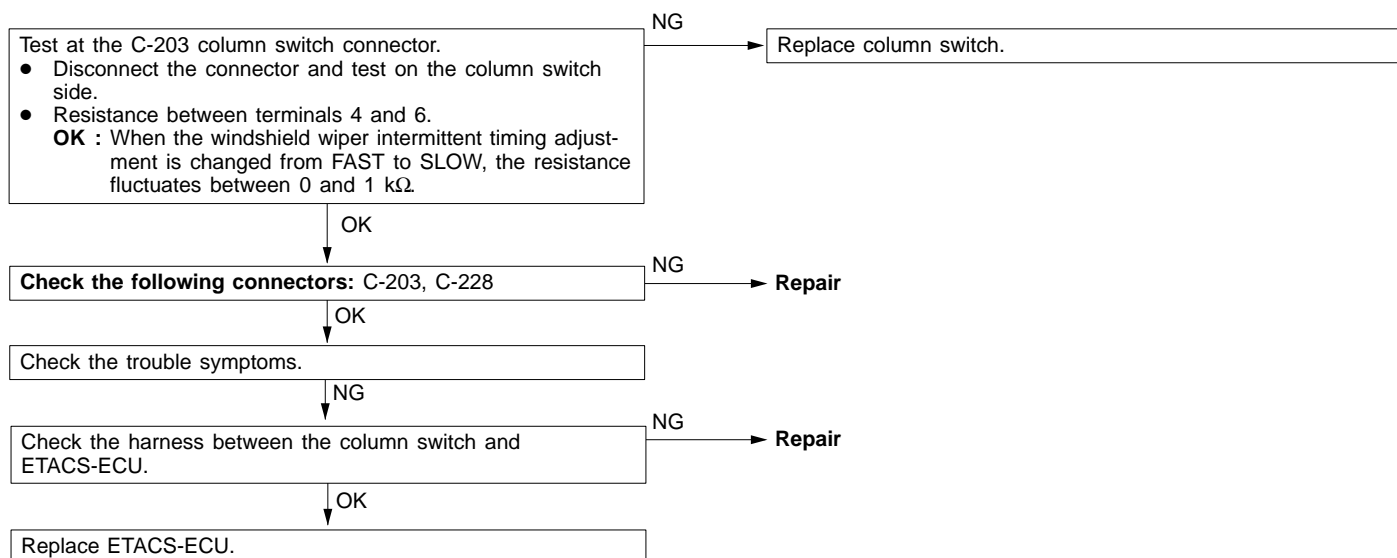
## Inspection Procedure O-13

<b>Column switches:</b> <ul style="list-style-type: none"> <li>• No windshield mist wiper switch signal input to ETACS-ECU.</li> <li>• No windshield wiper intermittent switch signal input to ETACS-ECU.</li> <li>• No windshield low-speed wiper switch signal input to ETACS-ECU.</li> <li>• No windshield high-speed wiper switch input to ETACS-ECU.</li> <li>• No windshield washer switch signal input to ETACS-ECU.</li> </ul>	<b>Probable cause</b>
<p>As the column switch (wiper/washer switch) input signal is used to control the following functions, any failure prevents these functions from operating properly.</p> <ul style="list-style-type: none"> <li>• Windshield wiper and washer</li> </ul>	<ul style="list-style-type: none"> <li>• Column switch fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



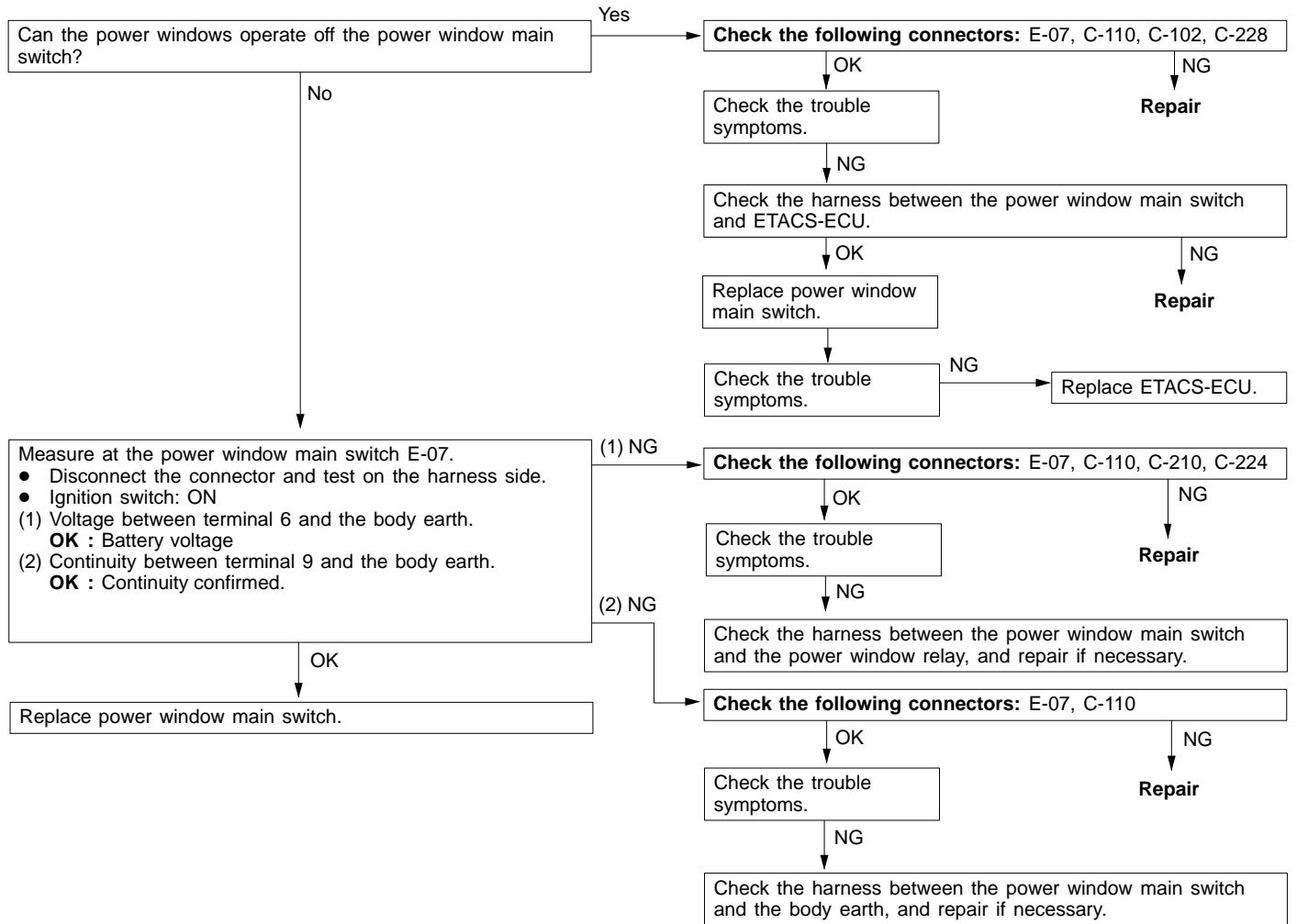
## Inspection Procedure O-14

<b>No column switch windshield wiper intermittent timing adjustment signal input to ETACS-ECU.</b>	<b>Probable cause</b>
<p>As the windshield wiper intermittent timing adjustment input signal is used to calculate the interval timing, any abnormality in the signal prevents adjustment of the interval.</p>	<ul style="list-style-type: none"> <li>• Column switch fault</li> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



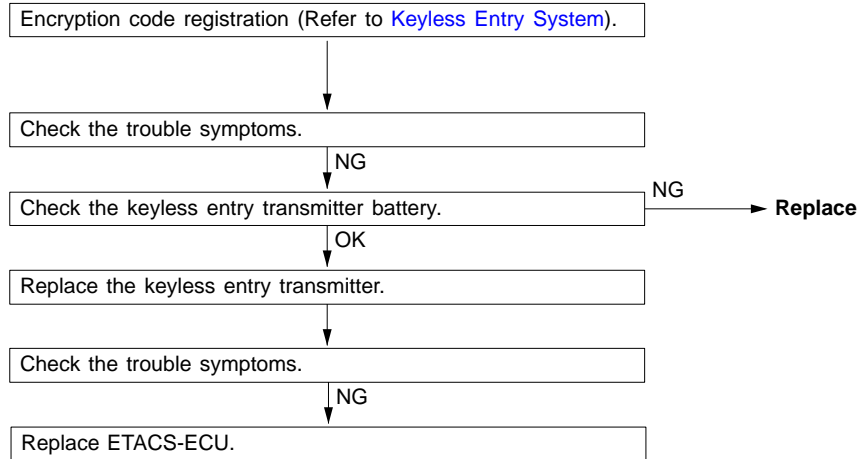
## Inspection Procedure O-15

No power window main switch signal input to ETACS-ECU.	Probable cause
<p>The power window main switch input signal is generated to check the individual switch position of the power window main switch, and the communication status for ETACS-ECU. Any communication line abnormality stops the following functions operating normally.</p> <ul style="list-style-type: none"> <li>Power windows</li> <li>Multimode keyless entry function</li> </ul>	<ul style="list-style-type: none"> <li>Power window main switch fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



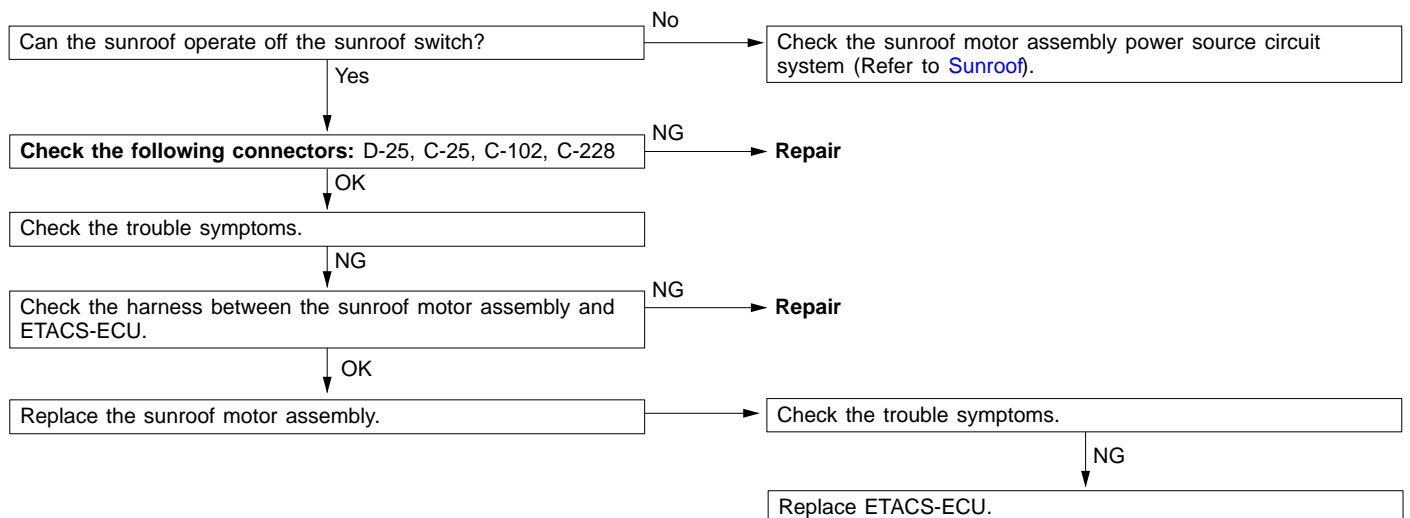
## Inspection Procedure O-16

No signal from the keyless entry transmitter switches is input to ETACS-ECU.	Probable cause
As the keyless entry transmitter input signal is used to control the keyless entry system, any abnormality in the signal prevents the keyless entry system operating normally.	<ul style="list-style-type: none"> <li>Keyless entry transmitter fault</li> <li>Keyless entry transmitter battery fault</li> <li>ETACS-ECU fault</li> </ul>



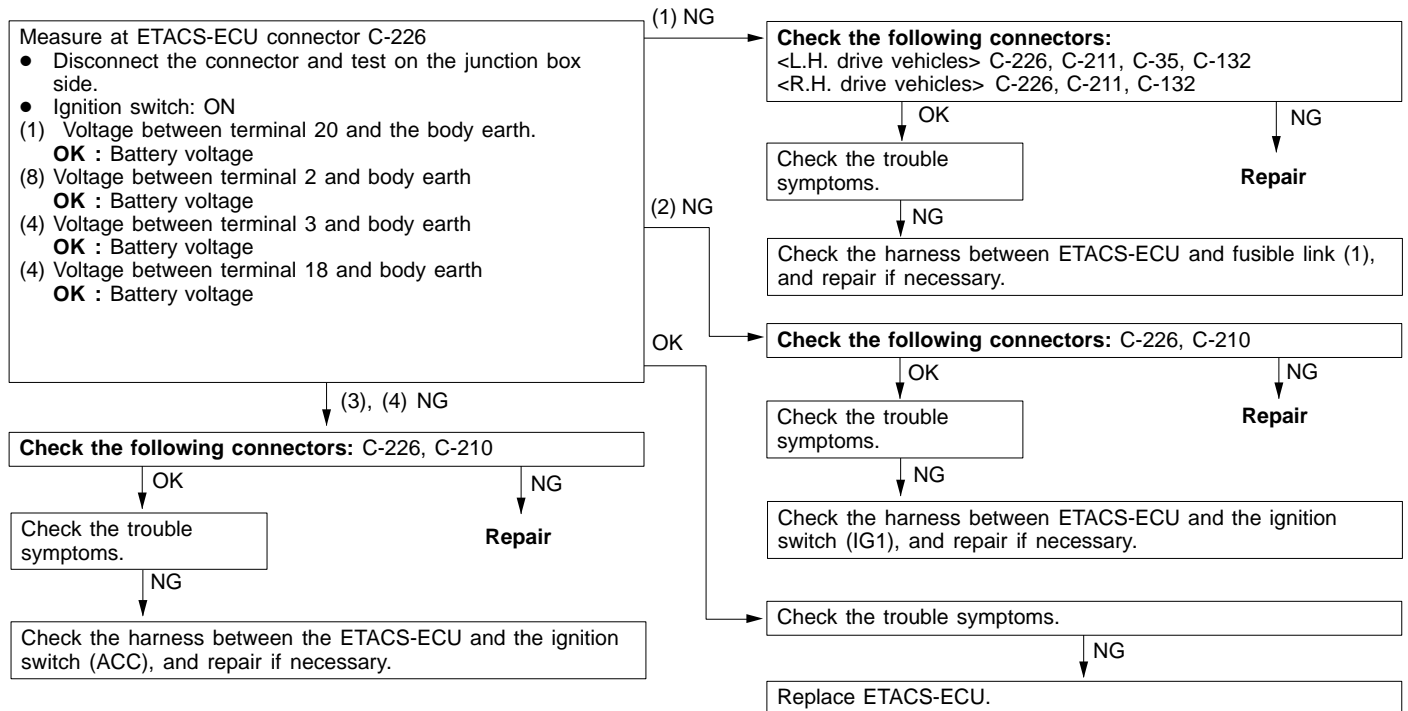
## Inspection Procedure O-17

No signal from the sunroof switches is input to ETACS-ECU. <Hong Kong and Singapore (except for CS3A)>	Probable cause
<p>The sunroof switch input signal is used for checking switches and for confirming the state of communication with the ETACS-ECU. Any communication line abnormality stops the following functions operating normally.</p> <ul style="list-style-type: none"> <li>Sunroof timer function</li> <li>Multimode keyless entry function</li> </ul>	<ul style="list-style-type: none"> <li>Sunroof switch fault</li> <li>Sunroof motor assembly fault</li> <li>ETACS-ECU fault</li> <li>Harness or connector fault</li> </ul>



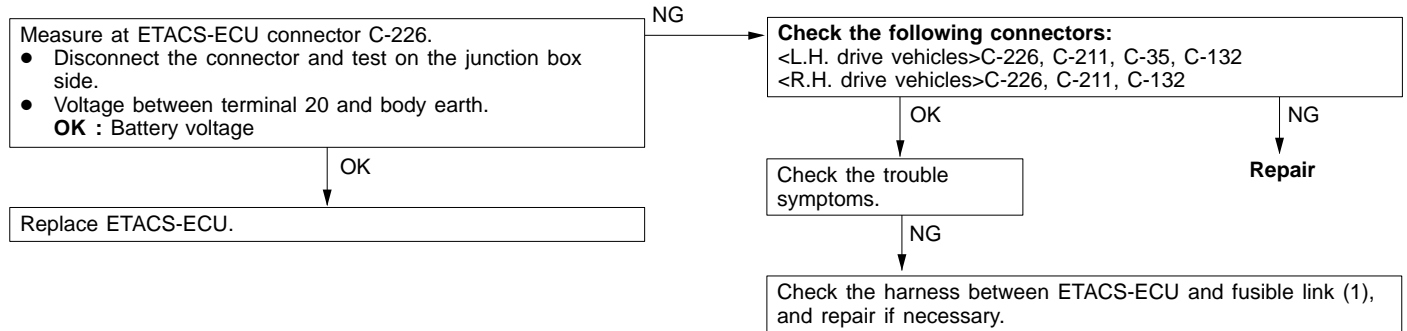
## Inspection Procedure O-18

No load signal is detected on universal fuse No. 17 <Hong Kong and Singapore (except for CS3A)>	Probable cause
<p>As the universal fuse No. 17 load signal is used for controlling the interior lamp automatic lighting function, any abnormality in this signal prevents the following functions operating normally.</p> <ul style="list-style-type: none"> <li>• Ignition key cylinder illumination lamp</li> <li>• Room entry lamps</li> </ul>	<ul style="list-style-type: none"> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



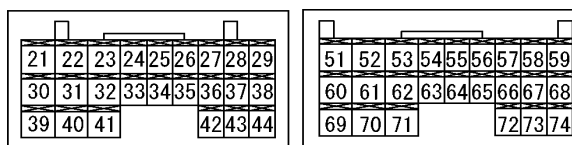
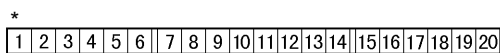
## Inspection Procedure P-1

<b>When the ignition switch is in the LOCK (OFF) position, no functions work normally.</b>	<b>Probable cause</b>
<b>Checking of the ETACS-ECU battery power supply circuit system.</b>	<b>Probable cause</b>
<p>As a fault in this circuit disables ETACS-ECU functions when the ignition switch is in the LOCK (OFF) position, any abnormality in this signal prevents the following functions operating.</p> <ul style="list-style-type: none"> <li>• Ignition key removal reminder warning function</li> <li>• Lights left ON reminder warning function</li> <li>• Power window timer function</li> <li>• Keyless entry system</li> <li>• Sunroof timer function</li> <li>• Electric retractable door mirror timer function</li> <li>• Ignition key cylinder illumination lamp</li> <li>• Headlamp automatic cut-off function</li> </ul> <p>Or, the following functions operate when the ignition switch is in the ON position only.</p> <ul style="list-style-type: none"> <li>• Diagnosis code reading and input signal check by MUT-II.</li> <li>• Central locking</li> <li>• Headlamps, tail lamps</li> <li>• Hazard lamps</li> <li>• Room entry lamps</li> </ul>	<ul style="list-style-type: none"> <li>• ETACS-ECU fault</li> <li>• Harness or connector fault</li> </ul>



## CHECKS AT ECU TERMINALS

## ETACS-ECU



Y0795AU

NOTE\*: See the list below for data on the ETACS-ECU terminal 1 – 20 connectors. As the ETACS-ECU connects directly onto the junction box, the voltages cannot be measured.

Terminal No.	Check items	Checking requirements	Normal condition
1	Power window relay output	When power windows operating normally	Battery voltage
2	Battery power supply (for central locking)	Any time	Battery voltage
3	Earth (for ECU)	Any time	0 V
4	Ignition switch (ACC)	Ignition switch: ACC	Battery voltage
5	Room entry lamp output	When room entry lamps ON	2 V or below
6	Interior lamp power supply	Any time (when interior lamp cut-off function not operating)	Battery voltage
7	Door switch input	When any one door switch ON (door open)	0 V
8	Ignition switch (IG1) power supply	Ignition switch: ON	Battery voltage
9	Right-hand turn signal lamp output	When right-hand turn signal lamp ON	Battery voltage
10	Driver's door switch input	When driver's door switch ON (door open)	0 V
11	Battery power supply (for hazard lamps)	Any time	Battery voltage
12	Central locking (lock) output	When door lock actuator operating (locking operation)	Battery voltage
13	Central locking (unlock) output (NOT driver's door)	When door lock actuator operating (unlocking)	Battery voltage
14	Left-hand turn signal lamp output	When left-hand turn signal lamp ON	Battery voltage
15	–	–	–
16	–	–	–
17	–	–	–
18	Ignition switch (ACC) power supply	Ignition switch: ACC	Battery voltage
19	Battery power supply for interior lamp	When interior lamp ON	Battery voltage
20	Battery power supply (for ECU)	Any time	Battery voltage
21	–	–	–
22	Central locking (unlock) output (for driver's door)	When door lock actuator operating (unlocking)	Battery voltage
23	–	–	–
24	Remote control (retraction and return) mirror switch input	Electric retraction remote control (retraction and return) mirror switch: ON	0 V
25	–	–	–

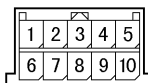
## 54B SWS BASE – Troubleshooting

Terminal No.	Check items	Checking requirements	Normal condition
26	Photo sensor (automatic lighting) power supply	Ignition switch: ON	5 V
27	Photo sensor (automatic lighting) input	Ignition switch: ON and light around sensor dark – bright	0 – 4 V approx.
28	Photo sensor (automatic lighting) earth	Any time	0 V
29	–	–	–
30	Key reminder switch input	Key reminder switch ON (ignition key removed)	0 V
31	Electric retractable door mirror	When electric retractable door mirror operating (returning)	12 V
32, 34	–	–	–
35	Driver's door lock actuator (locking switch) input	When driver's door lock locked	0 V
36	Driver's door lock actuator (unlocking switch) input	When driver's door lock unlocked	0 V
37, 38	–	–	–
39	Inhibitor switch (reverse) input	When shift lever in R (reverse) position	Battery voltage
40	Electric retractable door mirror	When electric retractable door mirror operating (retracting)	12 V
51	Diagnosis output/input check signal output	During diagnosis output (when MUT-II connected or diagnosis connector No. 1 grounded on the body.)	0 – 12 V (pulse signal)
	Diagnosis output/input check signal output	When an input check is output	0, 12 V (at input signal change)
52	Ignition switch (ACC) power supply	Ignition switch: ACC	Battery voltage
53, 54	–	–	–
55	Hazard lamp switch input	Hazard lamp switch: ON	0 V
56	Earth (for sensors)	Any time	0 V
57, 58	–	–	–
59	SWS communication line	Any time	0 – 12 V (pulse signal)
60	–	–	–
61	Battery power supply	Any time	Battery voltage
62	–	–	–
63	Vehicle speed signal input	When vehicle driven	0 – 12 V (pulse signal)
64, 65	–	–	–
66	Windshield wiper intermittent timing adjustment input	Ignition switch: ACC with adjustment changing Fast – Slow	0 – 2.5 V
67	Diagnosis control input	When MUT-II connected	0 V
68	SWS request signal output	Any time	0 – 12 V (pulse signal)
69	Ignition key cylinder illumination lamp output	When ignition key cylinder illumination lamp ON	2 V or below
70	–	–	–

**MAIN**
**Group  
54**
**54B**

Terminal No.	Check items	Checking requirements	Normal condition
71	Interior lamp power supply	Any time (when interior lamp cut-off function not operating)	Battery voltage
72 – 74	–	–	–

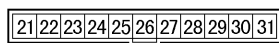
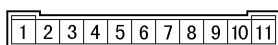
## COLUMN SWITCHES



X1209CA

Terminal No.	Check item	Checking requirements	Normal condition
1	Battery power supply	Any time	Battery voltage
2	SWS request signal input	Any time	0 – 12 V (pulse signal)
3	SWS communication line	Any time	0 – 12 V (pulse signal)
4	Earth	Any time	0 V
6	Windshield wiper intermittent timing adjustment output	Ignition switch: ACC with adjustment changing Fast – Slow	0 – 2.5 V
8	Windshield wiper switch backup output	Windshield wiper low or high-speed switch: ON	0 V
9	Ignition switch (IG1) power supply	Ignition switch: ON	Battery voltage
10	Headlamp switch backup output	Headlamp switch: ON	0 V

## FRONT ECU



X1210CA

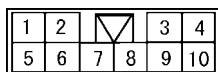
NOTE: See the list below for data on the front ECU terminals. As the front ECU connects directly onto the relay box, the voltages cannot be measured.

Terminal No.	Check item	Checking requirements	Normal condition
1	–	–	–
2	Headlamp (high-beam) output	When headlamp (high-beam) ON	Battery voltage
3, 4	Battery power supply (for headlamps)	Any time	Battery voltage
5	Battery power supply (for tail lamps)	Any time	Battery voltage
6	Headlamp (low-beam) output	When headlamp (low-beam) ON	Battery voltage
7	Battery power supply (for ECU)	Any time	Battery voltage
8	Tail lamp output	When tail lamps ON	Battery voltage
9 – 11	–	–	–
21	Windshield washer output	When windshield washer operating	Battery voltage
22	SWS communication line	Any time	0 – 12 V (pulse signal)
23	Windshield wiper automatic STOP signal input	When windshield wiper operating	Battery voltage
24	Ignition switch (ACC) power supply	Ignition switch: ACC	Battery voltage
25	Headlamp switch backup input	Headlamp switch: ON	0 V



Terminal No.	Check item	Checking requirements	Normal condition
26	Windshield wiper switch backup input	Windshield wiper low or high-speed switch: ON	0 V
27	Windshield wiper (low-speed) output	When windshield wiper operating (at low-speed)	Battery voltage
28	Windshield wiper (high-speed) output	When windshield wiper operating (at high-speed)	Battery voltage
30	Ignition switch (IG2) power supply	Ignition switch: ON	Battery voltage
31	Earth	Any time	0 V

## POWER WINDOW MAIN SWITCH



Y0794AU

Terminal No.	Check item	Checking requirements	Normal condition
1	–	–	–
2	SWS communication line (with power window motor assembly)	Power window relay: ON	0 – 12 V (pulse signal)
3 – 5	–	–	–
6	Power supply	Power window relay: ON	Battery voltage
7	–	–	–
8	SWS communication line (with ETACS-ECU)	Any time	0 – 12 V (pulse signal)
9	Earth	Any time	0 V
10	–	–	–

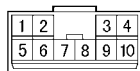
## POWER WINDOW MOTOR ASSEMBLY



X1213CA

Terminal No.	Check item	Checking requirements	Normal condition
1	Earth	Any time	0 V
2	Power window sub-switch (DOWN) input (passenger's and rear doors only)	Power window sub-switch: DOWN	0 V
3	Power supply	Power window relay: ON	Battery voltage
4	Power window sub-switch (UP) input (passenger's and rear doors only)	Power window sub-switch: UP	0 V
6	SWS communication line	Power window relay: ON	0 – 12 V (pulse signal)

## SUNROOF MOTOR ASSEMBLY



X1214CA

Terminal No.	Check item	Checking requirements	Normal condition
1	Battery power supply (for motor)	Any time	Battery voltage
2	Ignition switch (IG2) power supply	Ignition switch: ON	Battery voltage
3	Battery power supply (for ECU)	Any time	Battery voltage
4	–	–	–
5	Earth	Any time	0 V
6	Sunroof switch (CLOSE/DOWN) input	Sunroof switch: CLOSE/DOWN	0 V
7	Sunroof switch (UP) input	Sunroof switch: UP	0 V
8	Sunroof switch (OPEN) input	Sunroof switch: OPEN	0 V
9	–	–	–
10	SWS communication line	Any time	0 – 12 V