



SERVICE BULLETIN

DOMESTIC SALES & AFTER SALES SERVICE OFFICE, MITSUBISHI MOTORS CORPORATION

PURPOSE : INFORMATION	ISSUE NO. : MSB-09E54-003A	DATE : 2009-10-05
SUBJECT : TROUBLESHOOTING FOR SECURITY ALARM SYSTEM	<div> <div><MODEL></div> <div>(EUR/RUSSIA)</div> <div>OUTLANDER</div> <div>(GS45X)(CW0W)</div> </div> <div> <div><M/Y></div> <div>10</div> </div>	
GROUP : CHASSIS ELECTRICAL		

1. Description:

Regarding the troubleshooting of the security alarm sensors (ultrasonic sensor and tilt sensor), there have been some errors and missing items. This Service Bulletin contains the correct information.

- Corrections on the diagnosis codes B120A, B120B and B120C
- Addition of the diagnosis codes U1539 and U1540
- Corrections in the trouble symptom "The activated security alarm siren sounds even though no faulty operation is made."
- Addition of the trouble symptom "Security alarm siren does not sound."

2. Applicable Manuals:

See Attached sheet 1.

There may be some attached sheets not included in this Service Bulletin because they are not applicable to your market. Their sheet numbers are not listed in the above table.

3. Details:

See Attached sheets 4 and 5.

<EUR>

Manual	Pub. No.	Title (Info-ID)	Attached Sheet
2010 OUTLANDER Workshop Manual	CGXE10E1-CD (English) CGXF10E1-CD (French) CGXG10E1-CD (German) CGXS10E1-CD (Spanish) CGXI10E1-CD (Italian)	Diagnosis Code Chart <Vehicles with Security Alarm Sensor> (M547-00-140-04700-00)	Attached sheet 4 (1/14)
		Code No. B120A Security Alarm Siren Error (M547-00-520-01200-00)	Attached sheet 4 (2/14, 3/14)
		Code No. B120B Security Alarm Sensor Error (M547-00-510-01500-00)	Attached sheet 4 (4/14, 5/14)
		Code No. B120C Security Alarm Siren Flat Battery (M547-00-570-01700-00)	Attached sheet 4 (6/14–9/14)
		Trouble Symptom Chart (M547-00-150-61300-00)	Attached sheet 5 (1/5)
		Inspection Procedure 4: The activated security alarm siren sounds even though no faulty operation is made. (M547-00-580-04700-00)	Attached sheet 5 (2/5–5/5)

<RUSSIA>

Underneath Manual	Underneath Pub. No.	Title (Info-ID)	Attached Sheet
2010 OUTLANDER Workshop Manual	N/A	Diagnosis Code Chart <Vehicles with Security Alarm Sensor> (M547-00-140-04700-00)	Attached sheet 4 (1/14)
		Code No. B120A Security Alarm Siren Error (M547-00-520-01200-00)	Attached sheet 4 (2/14, 3/14)
		Code No. B120B Security Alarm Sensor Error (M547-00-510-01500-00)	Attached sheet 4 (4/14, 5/14)
		Code No. B120C Security Alarm Siren Flat Battery (M547-00-570-01700-00)	Attached sheet 4 (6/14–9/14)
		Trouble Symptom Chart (M547-00-150-61300-00)	Attached sheet 5 (1/5)
		Inspection Procedure 4: The activated security alarm siren sounds even though no faulty operation is made. (M547-00-580-04700-00)	Attached sheet 5 (2/5–5/5)

Diagnosis code No.	Diagnostic item	Reference page
B120A	Security alarm siren error	
B120B	Security alarm sensor error	
B120C	Security alarm siren FlatBattery	
U1006	Security alarm siren LIN timeout	Refer to GROUP 54B - Diagnosis code chart
U1007	Security alarm sensorLINtimeout	Refer to GROUP 54B - Diagnosis code chart

<Added>

U1539	Security alarm siren LINchecksum	
U1540	Security alarm SNSR.LIN checksum	

Code No.B120A Security alarm siren error

⚠ CAUTION

Before replacing the ECU or sensor, ensure that the power supply circuit, the earth circuit and the communication circuit are normal.

DIAGNOSTIC FUNCTION

- The security alarm siren communicates with the ETACS-ECU by the LIN via the LIN cutoff control unit. The diagnosis code No. B120A is set if the communication data between the ETACS-ECU and security alarm siren has an error when the relay inside the LIN cutoff control unit is ON (alarm is not activated.)

TROUBLESHOOTING HINT

Malfunction of security alarm siren

DIAGNOSIS PROCEDURE**STEP 1. M.U.T.-III diagnosis code.**

Check if diagnosis code is set to the ETACS-ECU.

Q: Is the diagnosis code set?

YES : Diagnose the ETACS-ECU. Refer to GROUP 54A, Diagnosis .

NO : Go to Step 2.

STEP 2. Security alarm siren operation check

- (1) With the windows of the vehicle opened, activate the security alarm.
- (2) Put the arm from the outside to the inside of the vehicle.
- (3) Check that the security alarm siren sounds.

Q: Is the check result normal?

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

NO : Go to Step 3.

STEP 3. Check the customise function.

Check if the security alarm siren operates when the sensitivity of the security alarm sensor is set to "Level 1".

Q: Is the check result normal?

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

NO : Replace the security alarm siren.

<Incorrect>

<Correct>

Attached sheet 4 (3/14)

<Correct>

DIAGNOSTIC FUNCTION

- The security alarm siren communicates with the ETACS-ECU by the LIN via the LIN cutoff control unit. The diagnosis code No. B120A is set if the communication data between the ETACS-ECU and security alarm siren has an error when the relay inside the LIN cutoff control unit is ON (alarm is not activated.)

TROUBLESHOOTING HINT

Malfunction of security alarm siren

DIAGNOSIS PROCEDURE**STEP 1. M.U.T.-III diagnosis code.**

Check if diagnosis code is set to the ETACS-ECU.

Q: Is the diagnosis code set?

YES : Diagnose the ETACS-ECU. Refer to GROUP 54A, Diagnosis .

NO : Go to Step 2.

STEP 2. Security alarm siren operation check

(1) Set the security alarm to the "Ready to be

triggered" condition.


- Open the driver's door by using the ignition key.
- Check that the security alarm siren sounds.

Q: Is the check result normal?

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

NO : Go to Step 3.

STEP 3. Replace the security alarm siren temporarily, and check whether the diagnosis code is set.

 ~~Check again if the diagnosis code is set to the CAN converter ECU.~~

- Erase the diagnosis code. <Incorrect>
- Turn the ignition switch from the LOCK (OFF) position to the ON position.
- Check if diagnosis code is set.

Q: Is the diagnosis code set?

YES : Replace the ETACS-ECU.

NO : Replace the security alarm siren.

<Correct>



Check again if the diagnosis code is set to the ETACS-ECU

Code No.B120B Security alarm sensor error

⚠ CAUTION

Before replacing the ECU or sensor, ensure that the power supply circuit, the earth circuit and the communication circuit are normal.

DIAGNOSTIC FUNCTION

The security alarm sensor communicates with the ETACS-ECU via the LIN bus line. If the diagnosis code No. B120B is set, the security alarm sensor itself may be defective.

TROUBLESHOOTING HINT

Malfunction of the security alarm sensor

DIAGNOSIS PROCEDURE**STEP 1. M.U.T.-III diagnosis code.**

Check if diagnosis code is set to the ETACS-ECU.

Q: Is the diagnosis code set?

YES : Diagnose the ETACS-ECU. Refer to GROUP 54A, Diagnosis .

NO : Go to Step 2.

STEP 2. Security alarm sensor operation check

Ultrasonic wave sensor check

1. With the windows of the vehicle opened, activate the security alarm.
2. Put the arm from the outside to the inside of the vehicle.
3. Check that the security alarm siren sounds.

Tilt angle sensor check

1. Activate the security alarm.
2. Raise the front wheels or rear wheels.
3. Check that the security alarm siren sounds.

Q: Is the check result normal?

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

NO : Go to Step 3.

STEP 3. Check the customise function.

Check if the ultrasonic wave sensor or tilt angle sensor of the security alarm sensor operates when the sensitivity of the security alarm sensor is set to "Level 1".

Q: Is the check result normal?

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

NO : Replace the security alarm sensor.

<Incorrect>

<Correct>

Attached sheet 4 (5/14)

<Correct>

DIAGNOSTIC FUNCTION

The security alarm sensor communicates with the ETACS-ECU via the LIN bus line. If the diagnosis code No. B120B is set, the security alarm sensor itself may be defective.

NOTE:

- *Diagnosis code No.B120B may be set when the security alarm sensor cover is improperly installed or is removed. Check if the security alarm sensor cover is properly installed.*
- *Diagnosis code No.B120B is set when the ultrasonic wave transmission/reception part of the security alarm sensor is covered. Check if the ultrasonic wave transmission/reception part of the security alarm sensor was covered.*

TROUBLESHOOTING HINT

Malfunction of the security alarm sensor

DIAGNOSIS PROCEDURE**STEP 1. M.U.T.-III diagnosis code.**

Check if diagnosis code is set to the ETACS-ECU.

Q: Is the diagnosis code set?

- YES :** Diagnose the ETACS-ECU. Refer to GROUP 54A, Diagnosis .
- NO :** Go to Step 2.

STEP 2. Security alarm sensor operation check

Ultrasonic wave sensor check

1. With the windows of the vehicle opened, set the security alarm to the "Ready to be triggered" condition.
2. Put the arm from the outside to the inside of the vehicle.
3. Check that the security alarm siren sounds.

Tilt angle sensor check

1. Set the security alarm to the "Ready to be triggered" condition.
2. Raise the front wheels or rear wheels.
3. Check that the security alarm siren sounds.

Q: Is the check result normal?

- YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction).
- NO :** Go to Step 3.

STEP 3. M.U.T.-III diagnosis code.

Check if diagnosis code No. B120A is set to the ETACS-ECU.

Q: Is diagnosis code No. B120A set?

- YES :** Perform the troubleshooting of diagnosis code No.B120A. (~~Refer to~~) ~~<Deleted>~~ ⚠
- NO <The ultrasonic wave sensor is defective, or the ultrasonic wave sensor and the inclination sensor are defective> :** Go to step 4.
- NO <Only the inclination sensor is defective> :** Go to step 5.

STEP 4. Check the customise function.

Check if the ultrasonic wave sensor of the security alarm sensor operates when the sensitivity of the security alarm sensor is set to "Level 1".

Q: Is the check result normal?

- YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction).
- NO :** Go to step 5.

STEP 5. Replace the security alarm sensor temporarily, and check whether the diagnosis code is set.

Check again if the diagnosis code is set to the ETACS-ECU.

- (1) Erase the diagnosis code.
- (2) Turn the ignition switch from the LOCK (OFF) position to the ON position.
- (3) Check if diagnosis code is set.

Q: Is the diagnosis code set?

- YES :** Replace the ETACS-ECU.
- NO :** Replace the security alarm sensor.

Code No.B120C Security alarm siren Flat Battery

⚠ CAUTION

Before replacing the ECU or sensor, ensure that the power supply circuit, the earth circuit and the communication circuit are normal.

DIAGNOSTIC FUNCTION

The diagnosis code No. B120C is set when the battery inside the security alarm siren has an error.

TROUBLESHOOTING HINT

Malfunction of security alarm siren

DIAGNOSIS PROCEDURE

Replace the security alarm siren.

<Incorrect>

<Correct>

Attached sheet 4 (7/14)

<Added>

Attached sheet 4 (8,9/14)

<Correct>

⚠ CAUTION

Before replacing the ECU or sensor, ensure that the power supply circuit, the earth circuit and the communication circuit are normal.

DIAGNOSTIC FUNCTION

The diagnosis code No.B120C is set when the voltage of the rechargeable battery is low, or when the battery inside the security alarm siren has an error.

NOTE: The rechargeable battery integrated in the security alarm siren is charged by turning the ignition switch to the ON position.

TROUBLESHOOTING HINT

- Abnormality in security alarm siren
- Service life of rechargeable battery
- Since the vehicle had been stationary for long time, the rechargeable battery remained uncharged. This reduced voltage.

DIAGNOSIS PROCEDURE**M.U.T.-III diagnosis code.**

Recheck whether the diagnosis code is set.

- (1) Charge the rechargeable battery of the security alarm siren by turning the ignition switch to the

ON position. (In principle, charge the battery for 30 minutes or more.)

- (2) Erase the diagnosis code.
- (3) After the diagnosis code is erased, turn the ignition switch to the LOCK (OFF) position.
- (4) Activate the security alarm once, and then cancel it.

NOTE: Note that after erasing diagnosis code No.B120C, if the ignition switch is turned from the LOCK (OFF) position to the ON position before activating the security alarm, diagnosis code No.B120C will be set even though the system is normal.

- (5) Turn the ignition switch from the LOCK (OFF) position to the ON position.
- (6) On completion, check that the diagnosis code is not reset.

Q: Is the diagnosis code set?

YES : Replace the security alarm siren.

NO : The diagnosis is complete.

<Added>

Code No.U1539 Security alarm siren LINchecksum**JUDGMENT CRITERIA**

The ETACS-ECU will set diagnosis code No. U1539 when abnormal signals are received from the security alarm siren.

PROBABLE CAUSES

Faulty security alarm siren

DIAGNOSIS PROCEDURE**Check whether the diagnosis code is reset.**

Check again if the diagnosis code is set to the ETACS-ECU.

(1) Erase the diagnosis code.

(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.

(3) Check if diagnosis code is set.

Q: Is the diagnosis code set?

YES : Replace the security alarm siren.

NO : A poor connection, open circuit, or other intermittent malfunctions in the LIN bus lines between the security alarm siren and the ETACS-ECU (Refer to GROUP 00 – How to Cope with Intermittent Malfunction).

<Added>

Code No.U1540 Security alarm SNSR.LIN checksum**JUDGMENT CRITERIA**

The ETACS-ECU will set diagnosis code No. U1540 when abnormal signals are received from the security alarm sensor.

PROBABLE CAUSES

Faulty security alarm sensor

DIAGNOSIS PROCEDURE**Check whether the diagnosis code is reset.**

Check again if the diagnosis code is set to the ETACS-ECU.

(1) Erase the diagnosis code.

(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.

(3) Check if diagnosis code is set.

Q: Is the diagnosis code set?

YES : Replace the security alarm sensor.

NO : A poor connection, open circuit, or other intermittent malfunctions in the LIN bus lines between the security alarm sensor and the ETACS-ECU (Refer to GROUP 00 – How to Cope with Intermittent Malfunction).

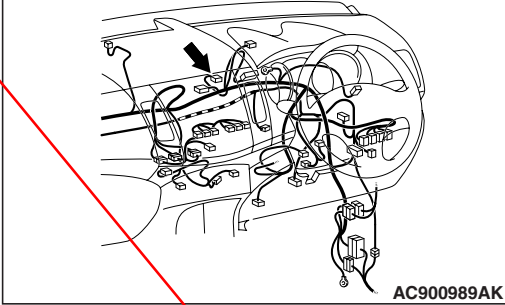
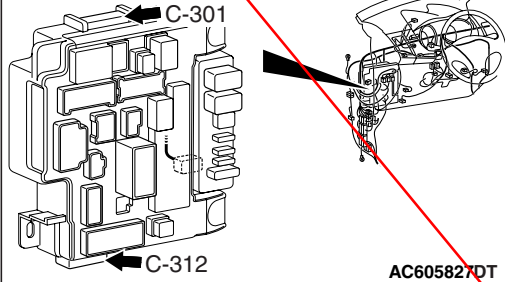
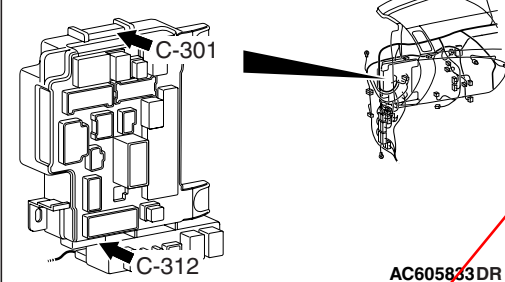
Trouble symptom	Inspection Procedure No.	Reference page
The security alarm is not armed (the security indicator lamp does not illuminate).	1	
The interior alarm does not work normally while the security alarm is triggered.	2	
The hazard warning lamps do not flash while the security alarm is triggered.	3	
The activated security alarm siren sounds even though no faulty operation is made.	4	

<Added>

Security alarm siren does not sound.

5

Connector: C-42 <RHD>

Connectors: C-301, C-312 <LHD>
Junction blockConnectors: C-301, C-312 <RHD>
Junction block**TECHNICAL DESCRIPTION (COMMENT)**

If the activated security alarm siren sounds even though no faulty operation is made, the security alarm siren may not be able to receive the signal from the ETACS-ECU via the LIN cutoff control unit.

TROUBLESHOOTING HINTS

- security alarm siren may be defective
- LIN cutoff control unit may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS PROCEDURE**STEP 1. M.U.T.-III diagnosis code.**

Check if diagnosis code is set to the ETACS-ECU.

Q: Is the diagnosis code set?

YES : Diagnose the ETACS-ECU. Refer to GROUP 54A, Diagnosis .

NO : Go to Step 2.

STEP 2. LIN cutoff control unit check

Check the continuity of the LIN cutoff control unit. (Refer to .)

Q: Is the check result normal?

YES : Go to Step 3.

NO : Replace LIN cutoff control unit.

STEP 3. Connector check: C-301 ETACS-ECU connector, C-312 ETACS-ECU connector, C-42 LIN cutoff control unit connector

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the defective connector.

STEP 4. Wiring harness check between the C-301 ETACS-ECU connector terminal No. 13 and C-42 LIN cutoff control unit connector terminal No. 3

Check the signal line for open circuit and short circuit.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the wiring harness.

STEP 5. Wiring harness check between the C-312 ETACS-ECU connector terminal No. 9 and C-42 LIN cutoff control unit connector terminal No. 8

Check the signal line for short circuit.

NOTE: Prior to the wiring harness inspection, check C-38 intermediate connector, and repair if necessary.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the wiring harness.

STEP 6. Retest the security alarm system.

Check if the activated security alarm siren sounds even though no faulty operation is made.

Q: Is the check result normal?

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

NO : Replace the ETACS-ECU.

<Incorrect>

<Correct>

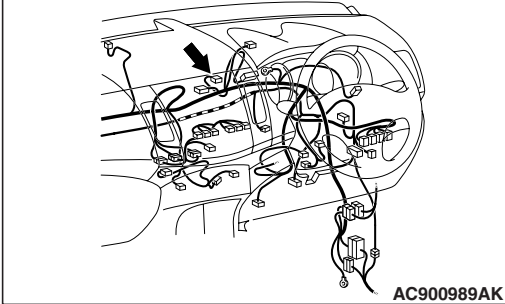
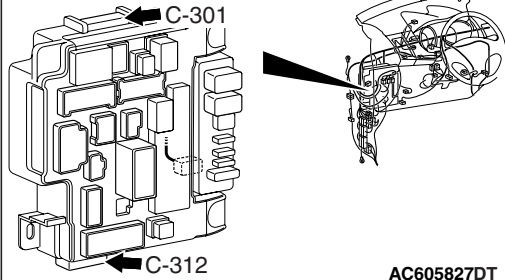
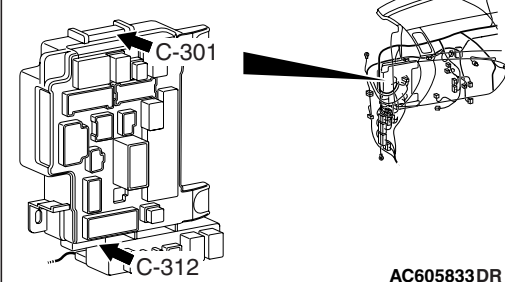
Attached sheet 5 (3,4/5)

<Added>

Attached sheet 5 (5/5)

<Correct>

Connector: C-42 <RHD>

Connectors: C-301, C-312 <LHD>
Junction blockConnectors: C-301, C-312 <RHD>
Junction block**TECHNICAL DESCRIPTION (COMMENT)**

If the activated security alarm siren sounds even though no faulty operation is made, the security alarm siren may not be able to receive the signal from the ETACS-ECU via the LIN cutoff control unit.

NOTE: The security alarm siren may be sounding by false alarm. Investigate what kind of situation the security alarm siren sounded under. Check if there was any condition that caused false alarm.

TROUBLESHOOTING HINTS

- security alarm siren may be defective
- LIN cutoff control unit may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS PROCEDURE**STEP 1. Vehicle status check when security alarm siren is sounding**

(1) Since it is suspected that the security alarm ~~Siren~~ ^{<Deleted>} has sounded accidentally, investigate whether the vehicle is under the situation below. Repair if an abnormality is found.

- The windows and sunroof are open.
- Some moving accessories are fitted in the vehicle.
- The interior equipment has been modified before a malfunction occurs. ^{<Incorrect>}

(2) Set the sensitivity level of security alarm ~~Siren~~ ^{<Deleted>} to Level 4 by using the customisation function.

(3) Check if the security alarm siren sounds during the status of "Ready to be triggered" even though no faulty operation is made.

Q: Is the check result normal?

YES : Go to Step 2

NO : The diagnosis is complete.

STEP 2. M.U.T.-III diagnosis code.

Check if diagnosis code is set to the ETACS-ECU.

Q: Is the diagnosis code set?

YES : Diagnose the ETACS-ECU. Refer to GROUP 54A, Diagnosis .

NO : Go to Step 3.

STEP 3. LIN cutoff control unit check

Check the continuity of the LIN cutoff control unit.

~~(Refer to .)~~ ^{<Deleted>}

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace LIN cutoff control unit.

STEP 4. Connector check: C-301 ETACS-ECU connector, C-312 ETACS-ECU connector, C-42 LIN cutoff control unit connector

Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the defective connector.

STEP 5. Wiring harness check between the C-301 ETACS-ECU connector terminal No. 13 and C-42 LIN cutoff control unit connector terminal No. 3

Check the signal line for open circuit and short circuit.

Q: Is the check result normal?

<Correct>

YES : Go to Step 6.
NO : Repair the wiring harness.

STEP 6. Wiring harness check between the C-312 ETACS-ECU connector terminal No. 9 and C-42 LIN cutoff control unit connector terminal No. 8

Check the signal line for short circuit.

NOTE: Prior to the wiring harness inspection, check C-38 intermediate connector, and repair if necessary.

Q: Is the check result normal?

YES : Go to Step 7.
NO : Repair the wiring harness.

STEP 7. Retest the security alarm system.

Check if the activated security alarm siren sounds even though no faulty operation is made.

Q: Is the check result normal?

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

NO : Replace the ETACS-ECU.

<Added>

Inspection Procedure 5: Security alarm siren does not sound.**⚠ CAUTION**

Before replacing the ECU, ensure that the power supply circuit, the earth circuit and the communication circuit are normal.

TECHNICAL DESCRIPTION (COMMENT)

When only the hazard warning lamp flashes and the security alarm siren does not sound during "Exterior protection" status, the security alarm siren may have an internal error or the LIN cutoff control unit may be defective.

TROUBLESHOOTING HINTS

- Security alarm siren may be defective
- LIN cutoff control unit may be defective

DIAGNOSIS PROCEDURE**STEP 1. Security alarm siren operation check**

- (1) Set the security alarm to the "Ready to be triggered" condition.
- (2) Open the driver's door by using the ignition key.
- (3) Check that the security alarm siren sounds.

Q: Is the check result normal?

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

NO : Go to Step 2.

STEP 2. M.U.T.-III diagnosis code.

Check if diagnosis code is set to the ETACS-ECU.

Q: Is the diagnosis code set?

<Deleted>

YES : Diagnose the ETACS-ECU (~~Refer to~~).

NO : Go to Step 3.

**STEP 3. LIN cutoff control unit check**

Check the continuity of the LIN cutoff control unit.

~~(Refer to)~~ <Deleted>

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace LIN cutoff control unit.

STEP 4. Security alarm siren operation check

- (1) Set the security alarm to the "Ready to be triggered" condition.
- (2) Open the driver's door by using the ignition key.
- (3) Check that the security alarm siren sounds.

Q: Is the check result normal?

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

NO : Replace the security alarm siren.