GROUP 51C

OUTSIDE MIRROR

CONTENTS

GENERAL INFORMATION

M15102200023USA0000010000

DOOR MIRROR OPERATION

Remote Controlled Mirror Operation

- The mirror on the door mirror moves up/down and left/right by operating the remote controlled door mirror switch when the ignition switch is at the "ON" or "ACC" position.

Heated Door Mirror Operation

- The rear window defogger relay switch is activated (ON) by turning on the A/C-ECU built-in rear window defogger switch when the ignition switch is in the "ON" position. When the rear window defogger relay is turned ON, power is supplied to the rear window defogger and door mirror, and the heater of the door mirror (heated door mirror) starts operations. The rear window defogger comes with a timer function and will automatically turn OFF the switch approximately 20 minutes after the rear window defogger switch is turned ON. The heated door mirror operations are also terminated along with the rear window defogger, at this time.

SPECIFICATION(S)

SERVICE SPECIFICATION

M15102200001USA0000010000

Item	Standard value
Heated door mirror resistance value Ω	7.2 ± 1.4 at 25 °C (77°F)

DIAGNOSIS

TROUBLESHOOTING STRATEGY

M15102200045USA0000010000

Diagnosis should be carried out by the following procedures.

1. Gather the information from the customer.
2. Verify that the condition described by the customer exists.
3. Find the malfunction by the following Symptom Chart.
4. Verify the malfunction is eliminated.

TROUBLE SYMPTOM CHART

M15102200005USA0000010000

TROUBLE SYMPTOM	Inspection procedure No.	Reference page
All heated door mirrors do not operate	1	P.51C-3
Left or right side heated door mirror does not operate	2	P.51C-6

SYMPTOM PROCEDURES

INSPECTION PROCEDURE 1: All heated door mirror does not operate

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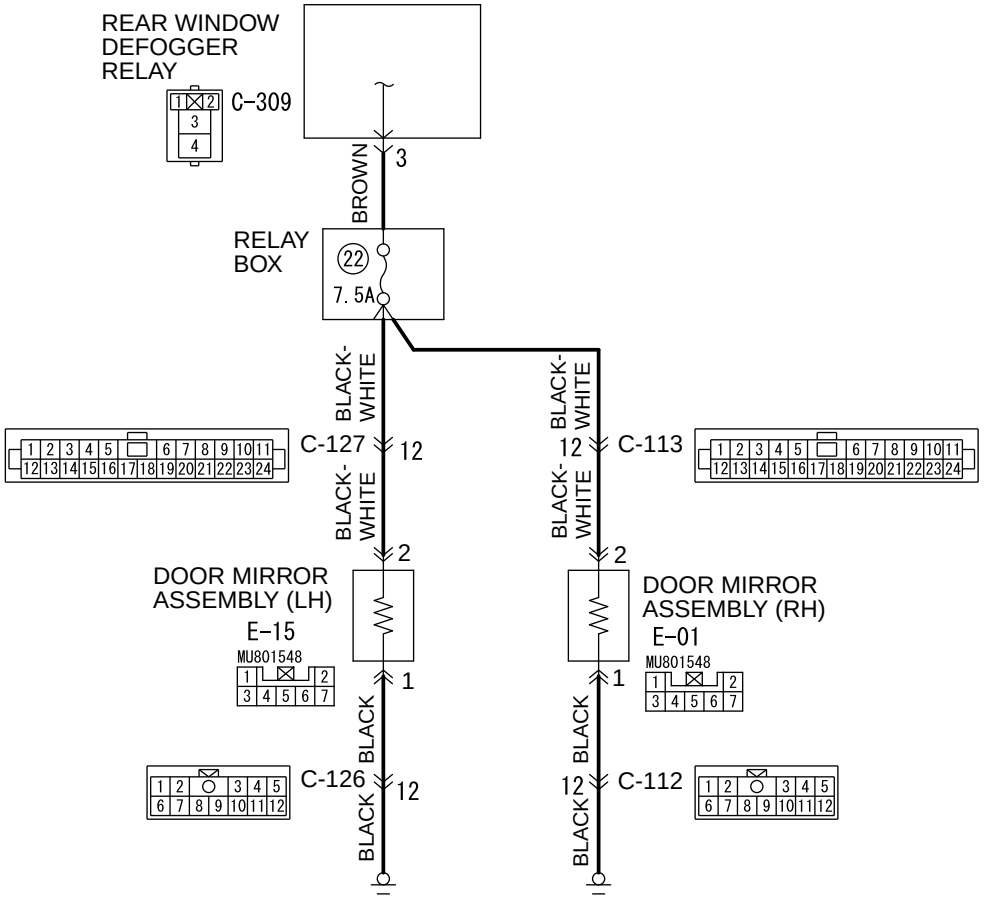
Heated Door Mirror Circuit



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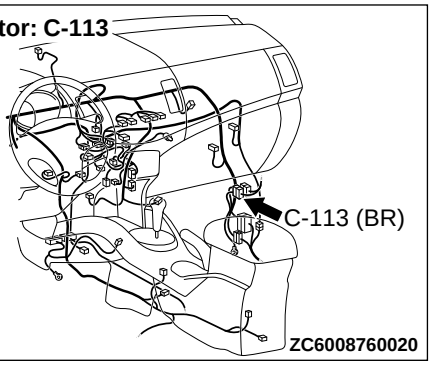
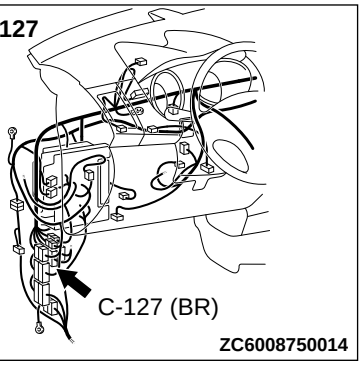
Connector: C-113



ZC6008760020

Connector: C-127



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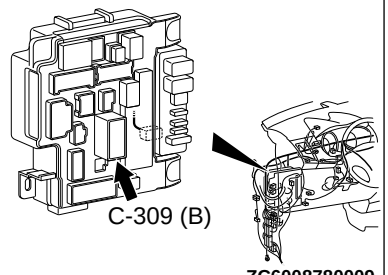
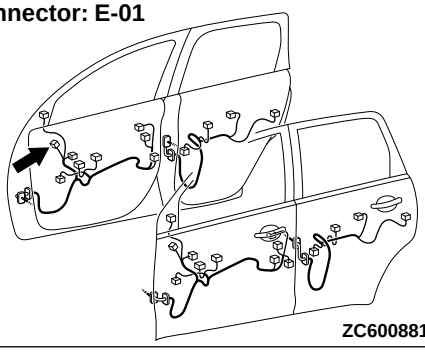
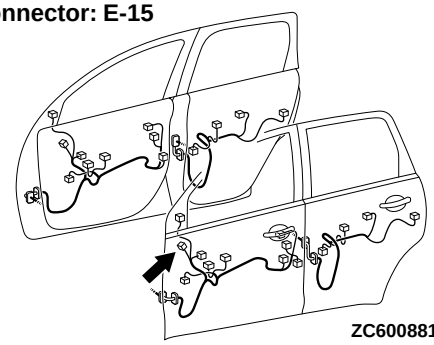
Connector: C-309



Connector: E-01



Connector: E-15



CIRCUIT OPERATION

If both of the door mirror heaters do not operate normally it may be due to a malfunction in the rear window defogger system.

TROUBLESHOOTING HINTS

- Malfunction of the rear window defogger system
- The wiring harness or connectors may have loose, corroded or damaged terminals, or terminals pushed back in the connector.

DIAGNOSIS

Required Special Tools:

- MB991223: Test Harness Set

STEP 1. Check the rear window defogger.

Check that the rear window defogger works normally as follows.

(1) Turn the ignition switch to the "ON" position.

(2) Push the rear window defogger switch to operate the defogger.

Q:Does the defogger work normally?

YES: Go to Step 2.

NO: Because of malfunction of the rear window defogger, carry out the troubleshooting (Refer to GROUP 55A, Manual A/C Diagnosis P.55A-60).

STEP 2. Check the door mirror (RH) connector E-01 and rear window defogger relay connector C-309 for loose, corroded

or damaged terminals, or terminals pushed back in the connector.

Q:Is the door mirror (RH) connector E-01 and rear window defogger relay connector C-309 in good condition?
YES: Go to Step 3.
NO: Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Check if the door mirrors works normally.

STEP 3. Check the wiring harness between the door mirror (RH) connector E-01 (terminal 2) and rear window defogger relay connector C-309 (terminal 3).
NOTE: Also check intermediate connector C-113 for loose, corroded or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-113 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q:Is the wiring harness between door mirror (RH) connector E-01 (terminal 2) and rear window defogger relay connector C-309 (terminal 3) in good condition?
YES: Go to step 4.
NO: Repair the wiring harness as necessary. Check if all heated door mirrors work normally.

STEP 4. Check door mirror (LH) connector E-15.

Q:Is the door mirror (LH) connector E-15 in good condition?
YES: Go to Step 5.
NO: Repair or replace the damaged component(s). Check if all heated door mirrors work normally.

STEP 5. Check the wiring harness between door mirror (LH) connector E-15 (terminal 2) and rear window defogger relay connector C-309 (terminal 3).
NOTE: Also check intermediate connector C-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-127 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q:Is the wiring harness between door mirror (RH) connector E-15 (terminal 2) and rear window defogger relay connector C-309 (terminal 3) in good condition?
YES: The procedure is complete.
NO: Repair the wiring harness as necessary. Check if the all heated door mirrors work normally.

INSPECTION PROCEDURE 2: Left or right heated door mirror does not operate

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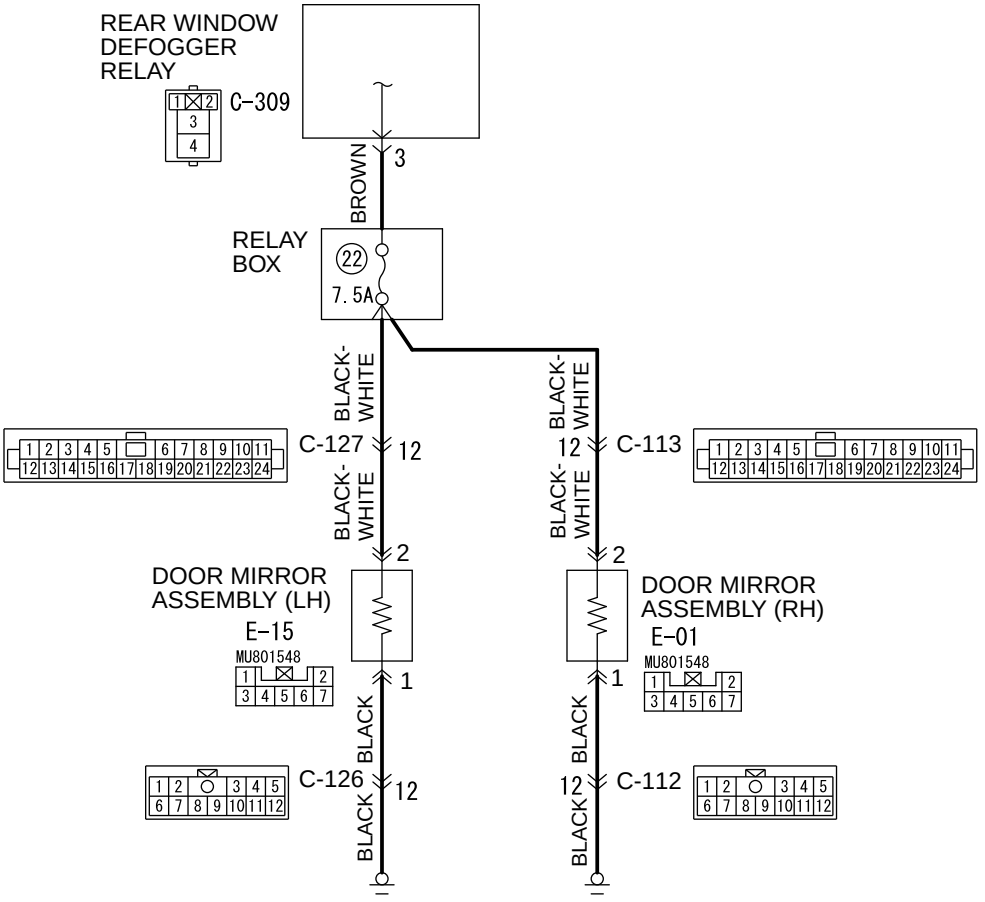
Heated Door Mirror Circuit



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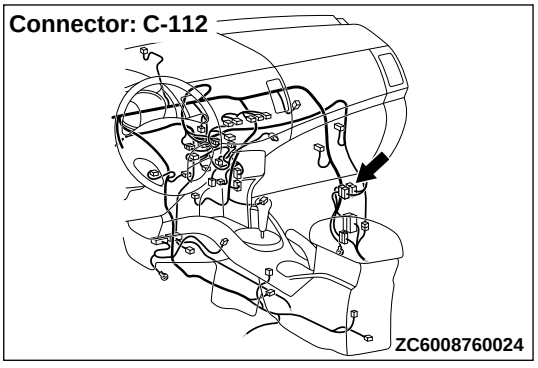
Connector: C-112



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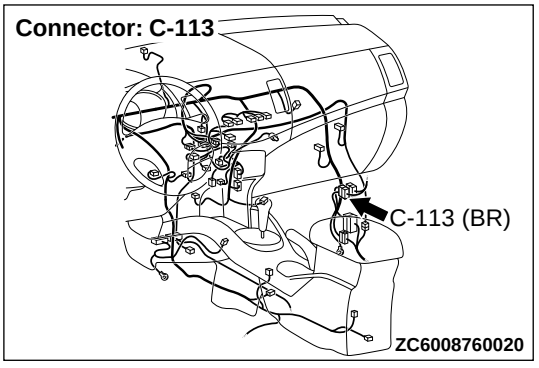
Connector: C-113



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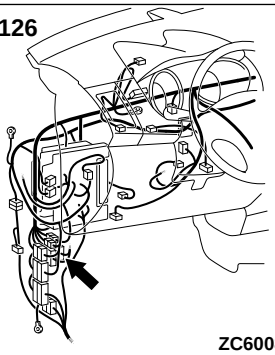
Connector: C-126



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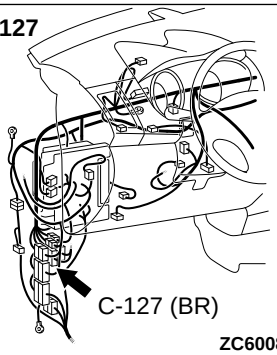
Connector: C-127



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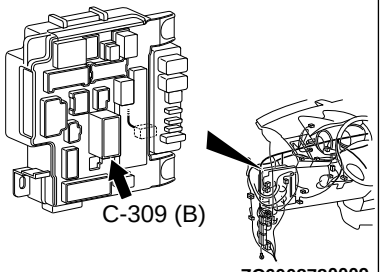
Connector: C-309



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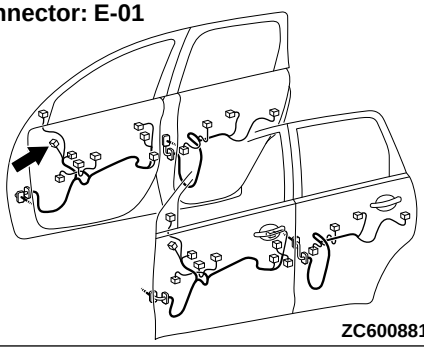
Connector: E-01



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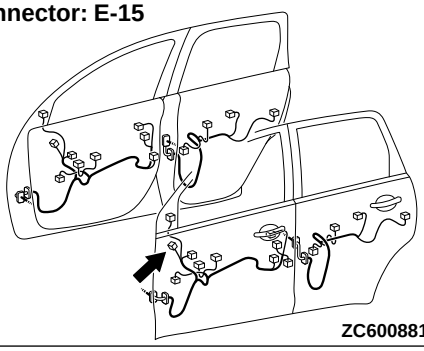
Connector: E-15



ZC6008810007

CIRCUIT OPERATION

If either of the heated door mirror do not operate normally, it may be due to malfunctions in the heated door mirror circuit or door mirror.

TROUBLESHOOTING HINTS

- Malfunction of the heated door mirror circuit
- Malfunction of the door mirror
- The wiring harness or connectors may have loose, corroded or damaged terminals, or terminals pushed back in the connector.

DIAGNOSIS

Required Special Tools:

- MB991223: Test Harness Set

STEP 1. Verify the operation of each heated door mirror.

Q:Which door mirror does not heat?
Door mirror (LH): Go to Step 2.
Door mirror (RH): Go to Step 8.

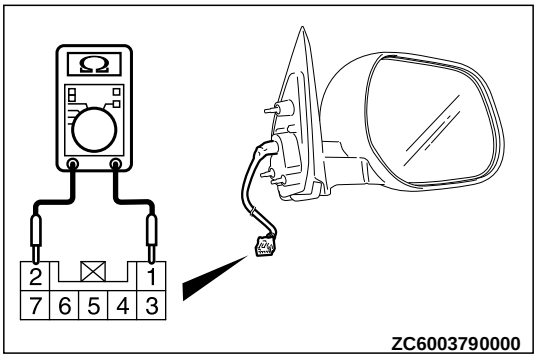
STEP 2. Check door mirror (LH) connector E-15 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q:Is door mirror (LH) connector E-15 in good condition?
YES: Go to Step 3.
NO: Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. And then check to see that the heater function of the door mirror (LH) operates normally.

STEP 3. Check the heater of the door mirror (LH).

⚠ CAUTION

When relocating the car between locations of extremely different temperatures (warm and cold), leave the car in a location for a while to adapt to the temperature prior to checking it.

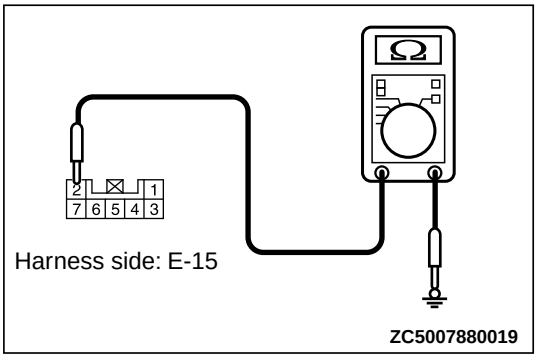


Check to see that the resistance between terminal 1 and 2 of the door mirror (LH) connector E-15.
- The resistance should be 7.2 ± 1.4 Ω at 25°C (77°F).

Q:Is the resistance normal?
YES: Go to Step 4.
NO: Replace the door mirror (LH). And then check to see that the heater function of the door mirror (LH) is operating normally.

STEP 4. Check the ground circuit between door mirror (LH) connector E-15 and ground for open circuit. Measure the resistance at door mirror (LH) connector E-15.

(1) Disconnect door mirror (LH) connector E-15 and check at the wiring harness side connector.
(2) Measure the resistance value between terminal 1 and ground.
- The resistance should be 2Ω or less.



Q:Is the measured resistance 2Ω or less?
YES: Go to Step 6.
NO: Go to Step 5.

STEP 5. Check the wiring harness between door mirror (LH) connector E-15 (terminal 1) and ground.

NOTE: Also check intermediate connector C-126 and C-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-126 and

C-127 is damaged, repair or replace the damaged component (s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q:Is the wiring harness between door mirror (LH) connector E-15 (terminal 1) and ground in good condition?
YES: No action is necessary and testing is complete.
NO: The wiring harness may be damaged. Repair the wiring harness as necessary. And then check to see that the heater function of the door mirror (LH) operates normally.

STEP 6. Check rear window defogger relay connector C-309 for loose, corroded or damaged terminal, or terminals pushed back in the connector.

Q:Is rear window defogger relay connector C-309 in good condition?
YES: Go to Step 7.
NO: Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. And then check to see that the heater function of the door mirror (LH) operates normally.

STEP 7. Check the wiring harness between door mirror (LH) connector E-15 (terminal 2) and rear window defogger relay connector C-309 (terminal 3).
NOTE: Also check intermediate connector C-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-127 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q:Is the wiring harness between door mirror (LH) connector E-15 (terminal 2) and rear window defogger relay connector C-309 (terminal 3) in good condition?
YES: No action is necessary and testing is complete.
NO: Repair the wiring harness as necessary. And then check to see that the heater function of the door mirror (LH) operates normally.

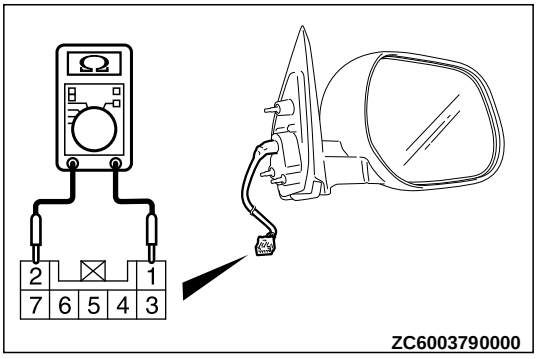
STEP 8. Check the door mirror (RH) connector E-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q:Is the door mirror (RH) connector E-01 in good condition?
YES: Go to Step 9.
NO: Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. And then check to see that the heater function of the door mirror (RH) operates normally.

STEP 9. Check the heater function of the door mirror (RH).

⚠ CAUTION

When relocating the car between locations of extremely different temperatures (warm and cold), leave the car in a location for a while to adapt to the temperature prior to checking it.



Check to see that the resistance between terminal 1 and 2 of the door mirror (RH) connector E-01.

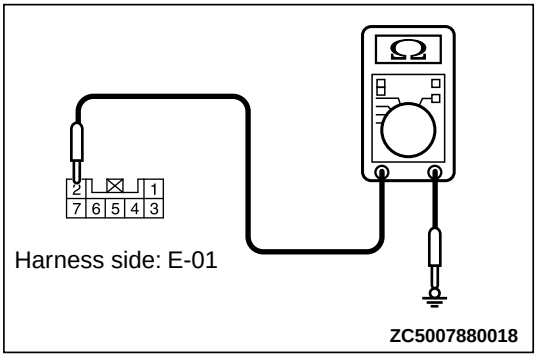
- The resistance should be 7.2 ± 1.4 Ω at 25°C (77°F).

Q:Is the resistance normal?

YES: Go to Step 10.

NO: Replace the door mirror (RH). And then check to see that the heater function of the door mirror (RH) operates normally.

STEP 10. Check the ground circuit between door mirror (RH) connector E-01 and ground for open circuit. Measure the resistance at door mirror (RH) connector E-01.



(1) Disconnect door mirror (RH) connector E-01, and check at the wiring harness side connector.

(2) Measure the resistance value between terminal 1 and ground.

- The resistance should be 2Ω or less.

Q:Is the measured resistance 2Ω or less?

YES: Go to Step 12.

NO: Go to Step 11.

STEP 11. Check the wiring harness between door mirror (RH) connector E-01 (terminal 1) and ground.

NOTE: Also check intermediate connector C-112 and C-113 for loose, corroded or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-112 and C-113 is damaged, repair or replace the damaged component (s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q:Is the wiring harness between door mirror (RH) connector E-01 (terminal 1) and ground in good condition?

YES: No action is necessary and testing is complete.

NO: The wiring harness may be damaged. Repair the wiring harness as necessary. And then check to see that the heater function of the door mirror (RH) operates normally.

STEP 12. Check rear window defogger relay connector C-309 for loose, corroded or damaged terminal, or terminals pushed back in the connector.

Q:Is rear window defogger relay connector C-309 in good condition?

YES: Go to Step 13.

NO: Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. And then check to see that the heater function of the door mirror (RH) operates normally.

STEP 13. Check the wiring harness between door mirror (RH) connector E-01 (terminal 2) and rear window defogger relay connector C-309 (terminal 3).

NOTE: Also check intermediate connector C-113 for loose, corroded or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-113 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q:Is the wiring harness between door mirror (RH) connector E-01 (terminal 2) and rear window defogger relay connector C-309 (terminal 3) in good condition?

YES: No action is necessary and testing is complete.

NO: Repair the wiring harness as necessary. And then check to see that the heater function of the door mirror (RH) operates normally.

OUTSIDE MIRROR

REMOVAL AND INSTALLATION

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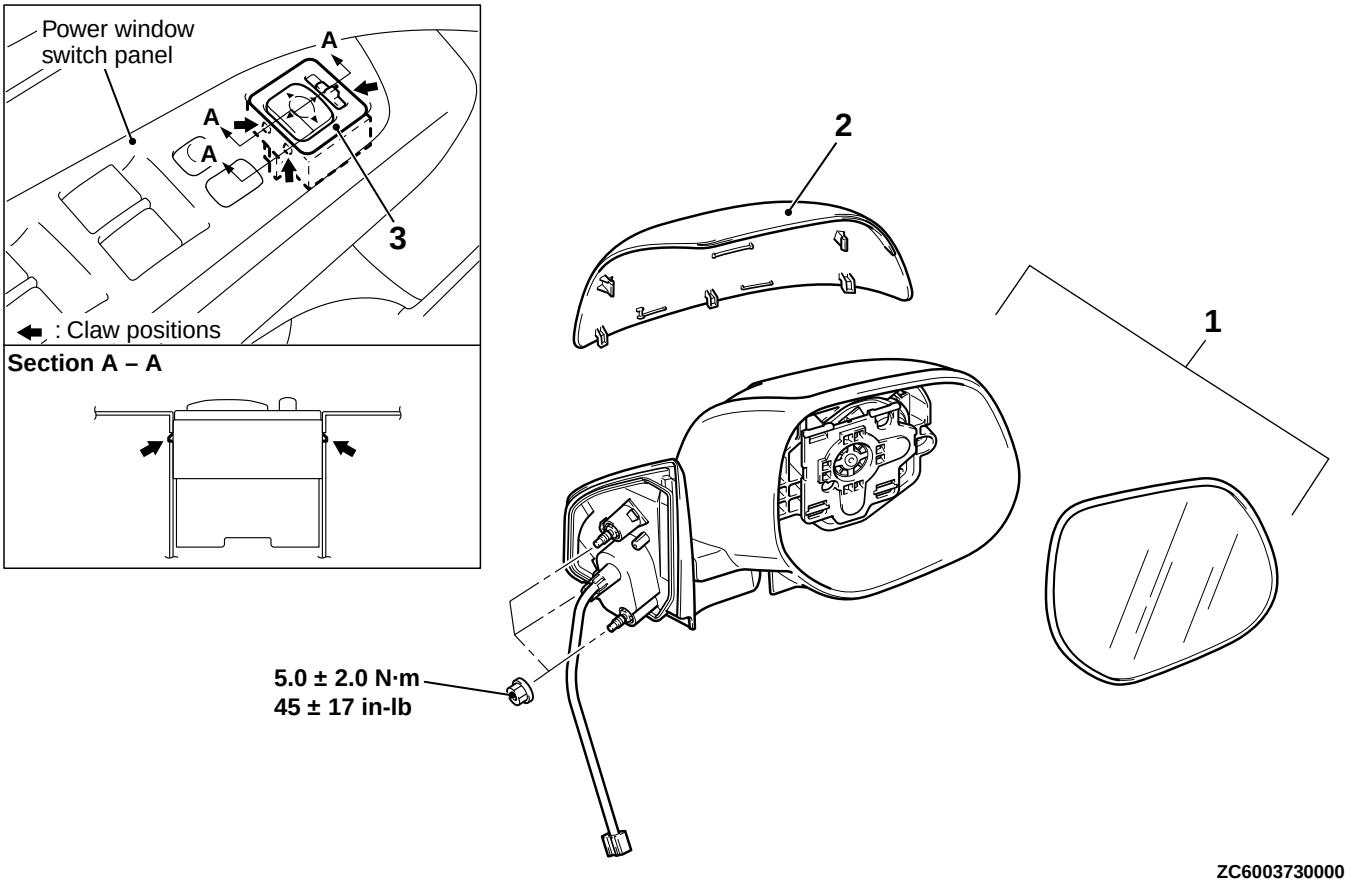
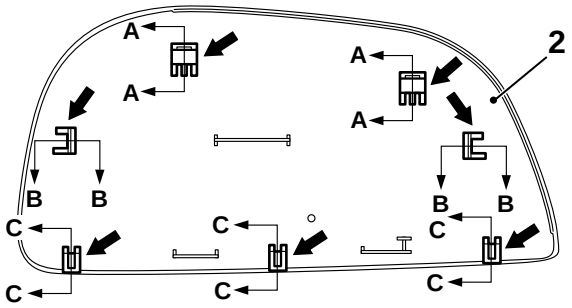
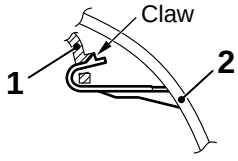


Door mirror outer cover claw positions

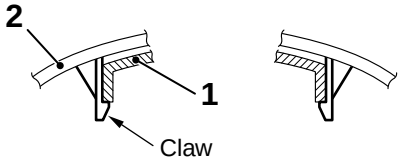


: Claw positions

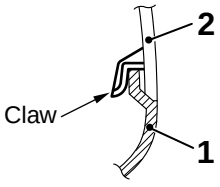
Section A – A



Section B – B



Section C – C



ZC6003740000

Door mirror assembly removal steps

· Front door trim (Refer to GROUP 52A, Door Trim P.52A-11)

1. Door mirror assembly

Door mirror outer cover removal steps

1. Door mirror assembly

<<A>> >>A<<

Door mirror outer cover removal steps

2. Door mirror outer cover

Remote controlled mirror switch removal steps

· Front door trim (Refer to GROUP 52A, Door Trim P.52A-11)

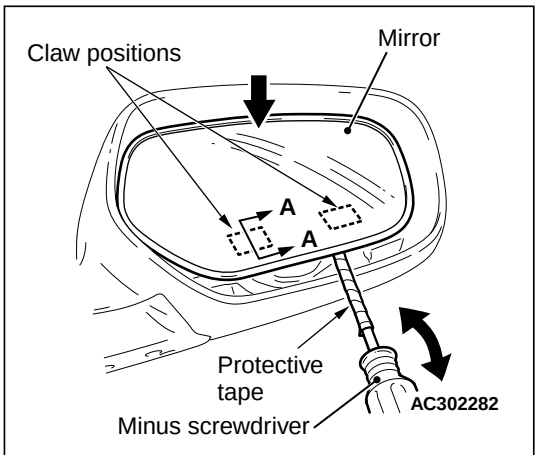
3. Remote controlled mirror switch

REMOVAL SERVICE POINTS

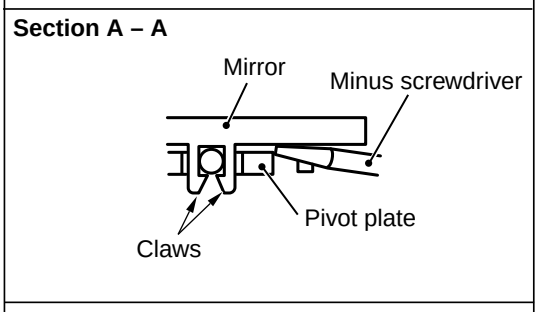
<<A>> DOOR MIRROR OUTER COVER REMOVAL

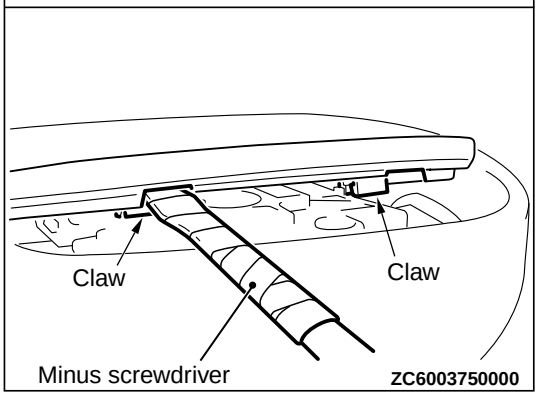
⚠ CAUTION

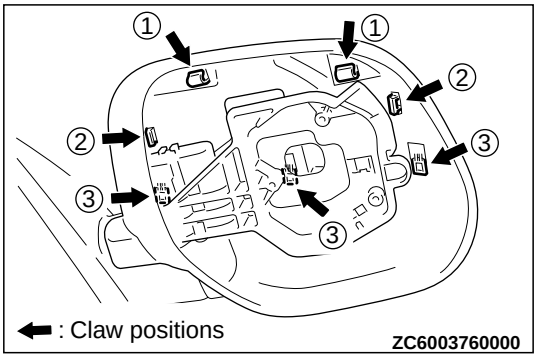
The tab of the mirror is prone to breakage when working in cold temperatures. Always use a hair drier or the like to warm up the mirror tab and its periphery to 20°C(68°F) or higher prior to works. When the mirror is heated too quickly from its cold state, it may be broken.



1. Slant the mirror upward with your hands. Then insert a flat-tipped screwdriver wrapped with protective tape between the pivot plate and mirror through the cut-out from behind the mirror. Now pry off the mirror tab and release the lower side of the mirror as shown in the illustration.
2. Release the upper side of the mirror from the tab as shown while pulling out the mirror.
3. Disconnect the connectors of the heated mirror.







4. Remove the door mirror outer cover by disengaging the claws in the numerical order of the illustration from the mirror body side.

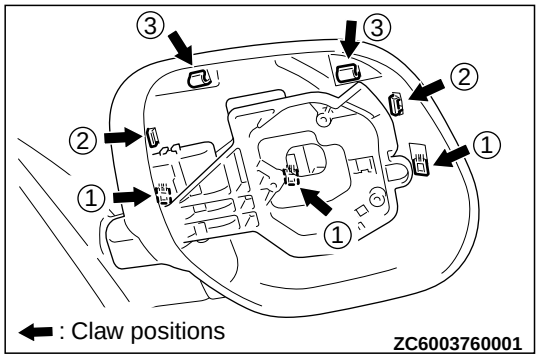
INSTALLATION SERVICE POINT

>>A<< DOOR MIRROR OUTER COVER INSTALLATION

⚠ CAUTION

Tap the claw positions securely to confirm that they are engaged securely.

Install the door mirror outer cover by engaging the claws in the numerical order of the illustration.



INSPECTION

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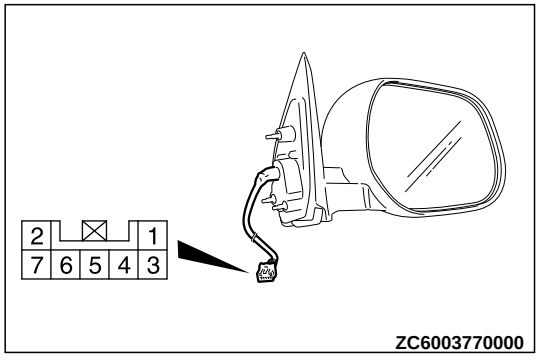
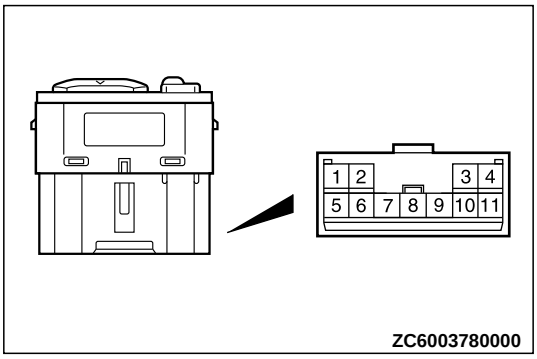
DOOR MIRROR ASSEMBLY OPERATION CHECK

Remove the door trim, and then connect the battery to the door mirror assembly connector to check that the door mirror operates.



Battery connection	Operation direction
▪Connect terminal 5 to the negative battery terminal. ▪Connect terminal 7 to the positive battery terminal.	Up
▪Connect terminal 5 to the positive battery terminal. ▪Connect terminal 7 to the negative battery terminal.	Down
▪Connect terminal 5 to the negative battery terminal. ▪Connect terminal 6 to the positive battery terminal.	Right
▪Connect terminal 5 to the positive battery terminal. ▪Connect terminal 6 to the negative battery terminal.	Left



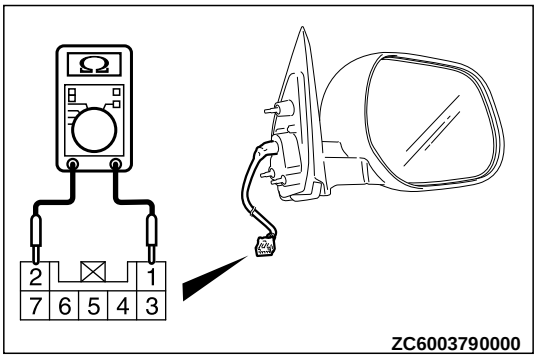
REMOTE CONTROLLED MIRROR SWITCH CONTINUITY CHECK

Switch position		Tester connection	Specified condition
Left side	Up	1 - 6, 9 - 11	Continuity (Less than 2 Ω)
	Down	1 - 11, 6 - 9	
	Right	1 - 6, 9 - 10	
	Left	1 - 10, 6 - 9	
Right side	Up	1 - 6, 3 - 9	
	Down	1 - 3, 6 - 9	
	Right	1 - 6, 2 - 9	
	Left	1 - 2, 6 - 9	

HEATED DOOR MIRROR CHECK

⚠ CAUTION

When relocating the car between locations with extremely different temperatures (warm and cold), leave the car in the location for a while to adapt to the temperature prior to checking it.



Check that the resistance value between the connector terminals is at the standard value.

Standard value: 7.2 ± 1.4 Ω at 25°C(77°F)