SERVICE BULLETIN

MITSUBISHI MOTORS

GLOBAL AFTER SALES OFFICE, MITSUBISHI MOTORS CORPORATION

PURPOSE : CHANGE	ISSUE NO. : MSB-14EXML00-004	DATE : 2014-03-24
SUBJECT : POWER WINDOW		<DESTINATION/MODEL> (As per attached sheet 1) <M/Y> 13-14
GROUP : GENERAL (Gr:00)		OUTLANDER/OUTLANDER PHEV(GF0W)

1. Description :

Please refer to the attached document for the information about the change of mention in the applicable service manual.

2. Affected service manuals :

Please refer to the attached document (Attached sheet 1)

3. About the details :

Please refer to the attached document (Attached sheet 6-12)

【For overseas market】

Destination	Applicable manual	Pub. No.	Applicable title (INFO ID)	Contents
MMNA	2014 OUTLANDER Service Manual	MSCD-007B-2014	TROUBLE SYMPTOM CHART <POWER WINDOW> (M429-00-281-13400-01)	Attached sheet 6
			INSPECTION PROCEDURE C-3: Relevant power window(s) does not work by means of the front and rear passenger's power window sub switches. (M429-00-491-81400-01)	Attached sheet 7
			INSPECTION PROCEDURE C-4: Front and/or rear passenger’s power window(s) do not work by means of the power window main switch. (M429-00-501-52400-01)	Attached sheet 7
			INSPECTION PROCEDURE C-8: The driver’s power window inches only. (M429-01-400-02400-01 Added under)	Attached sheet 8
			DOOR TRIM REMOVAL AND INSTALLATION (M521-00-641-52800-01)	Attached sheet 9
EU/RUSSIA	2013 OUTLANDER Workshop Manual	CGFE13E1-CD(ENG) CGFF13E1-CD(FRE) CGFG13E1-CD(GER) CGFS13E1-CD(SPA) CGFI13E1-CD(ITA) RUSSIA:N/A	TROUBLE SYMPTOM CHART <POWER WINDOW> (M429-00-281-13400-01)	Attached sheet 10
			INSPECTION PROCEDURE C-3: Relevant power window(s) does not work by means of the front and rear passenger's power window sub switches. (M429-00-491-81400-01)	Attached sheet 11
			INSPECTION PROCEDURE C-4: Front and/or rear passenger’s power window(s) do not work by means of the power window main switch. (M429-00-501-52400-01)	Attached sheet 11
			INSPECTION PROCEDURE C-8: The driver’s power window inches only. (M429-01-400-02400-01 Added under)	Attached sheet 12
			DOOR TRIM REMOVAL AND INSTALLATION (M521-00-641-52800-01)	Attached sheet 9

Destination	Applicable manual	Pub. No.	Applicable title (INFO ID)	Contents
EU/ RUSSIA / ARGENTINA/ SOUTH AFRICA	2014 OUTLANDER/ OUTLANDER PHEV Workshop Manual	CGFE14E2-CD(ENG) CGFF14E2-CD(FRE) CGFG14E2-CD(GER) CGFS14E2-CD(SPA) CGFI14E2-CD(ITA) RUSSIA:N/A	TROUBLE SYMPTOM CHART <POWER WINDOW> (M429-00-281-13400-01)	Attached sheet 10
			INSPECTION PROCEDURE C-3: Relevant power window(s) does not work by means of the front and rear passenger's power window sub switches. (M429-00-491-81400-01)	Attached sheet 11
			INSPECTION PROCEDURE C-4: Front and/or rear passenger’s power window(s) do not work by means of the power window main switch. (M429-00-501-52400-01)	Attached sheet 11
			INSPECTION PROCEDURE C-8: The driver’s power window inches only. (M429-01-400-02400-01 Added under)	Attached sheet 12
			DOOR TRIM REMOVAL AND INSTALLATION (M521-00-641-52800-01)	Attached sheet 9
MMAL/NZ/CHINA	2013 OUTLANDER Workshop Manual	AU900304 (AUSTRALIA) DRAFT (New Zealand, CHINA)	TROUBLE SYMPTOM CHART <POWER WINDOW> (M429-00-281-13400-01)	Attached sheet 10
			INSPECTION PROCEDURE C-3: Relevant power window(s) does not work by means of the front and rear passenger's power window sub switches. (M429-00-491-81400-01)	Attached sheet 11
			INSPECTION PROCEDURE C-4: Front and/or rear passenger’s power window(s) do not work by means of the power window main switch. (M429-00-501-52400-01)	Attached sheet 11
			INSPECTION PROCEDURE C-8: The driver’s power window inches only. (M429-01-400-02400-01 Added under)	Attached sheet 12
			DOOR TRIM REMOVAL AND INSTALLATION (M521-00-641-52800-01)	Attached sheet 9
G.EXP/GCC	2014 OUTLANDER Workshop Manual	PWRE1303R(ENG) PWRS1304R(SPA)	TROUBLE SYMPTOM CHART <POWER WINDOW> (M429-00-281-13400-01)	Attached sheet 10
			INSPECTION PROCEDURE C-3: Relevant power window(s) does not work by means of the front and rear passenger's power window sub switches. (M429-00-491-81400-01)	Attached sheet 11
			INSPECTION PROCEDURE C-4: Front and/or rear passenger’s power window(s) do not work by means of the power window main switch. (M429-00-501-52400-01)	Attached sheet 11
			INSPECTION PROCEDURE C-8: The driver’s power window inches only. (M429-01-400-02400-01 Added under)	Attached sheet 12
			DOOR TRIM REMOVAL AND INSTALLATION (M521-00-641-52800-01)	Attached sheet 9

Trouble symptom	Inspection procedure number	Reference page
The window glass lowers automatically while it is rising <Driver's side door>.	C-7	
The driver's power window inches only.	C-8	

SYMPTOM PROCEDURES <POWER WINDOW> <Added>

Power window main switch one-touch function does not work <Driver's side door>.	C-9

INSPECTION PROCEDURE C-1: Power windows do not work at all.

⚠ CAUTION
- **Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.**
- **When the ETACS-ECU of vehicles without KOS is replaced, the encrypted code of the ignition key needs to be registered to the ETACS-ECU. (If the encrypted code is not registered, the engine cannot be started. Register the encrypted code as described in Immobilizer System – How to Register Key ID.)**

COMMENTS ON TROUBLE SYMPTOM
If the power windows do not work at all, a malfunction of the power supply or ETACS-ECU is suspected.

PROBABLE CAUSES
- Malfunction of ETACS-ECU
- Damaged wiring harness and connectors

DIAGNOSIS

STEP 1. Check the power supply system.
With the ignition switch in the LOCK (OFF) position, check if the following function operates normally:
- Hazard warning light

Q: Is the check result normal?
YES : Go to Step 2
NO : Refer to GROUP 54A – Malfunction of ETACS-ECU Power Supply Circuit.

STEP 2. Using scan tool (M.U.T.-III), DTC check
Check that ETACS-ECU stores a diagnostic trouble code.

Q: Is the diagnostic trouble code stored?
YES : Refer to GROUP 54A – Diagnostic Trouble Code Chart.
NO : Go to Step 3

STEP 3. Using scan tool (M.U.T.-III), check data list.
Check the ETACS-ECU service item related to the power window.

Item No.	Item name	Normal condition
254	IG Voltage	System voltage

OK: Normal condition is displayed.

Q: Is the check result normal?
YES : Go to Step 4
NO : Refer to GROUP 54A – Inspection Procedure 2: The ignition switch (IG1) signal is not received.

STEP 4. Voltage measurement at the ETACS-ECU connector (+B1 terminal).
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Measure the voltage between the ETACS-ECU connector (+B1 terminal) and body ground.

OK: System voltage

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

STEP 8. Retest the system. <Deleted>

(1) Replace the front power window sub switch.

(2) Check that the front passenger's door power window can be operated by the front power window sub switch.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction.

NO : Replace the front power window motor (RH).

<Incorrect>

<Correct>

Go to Step 3.

STEP 9. Check the rear power window sub switch (RH).

Check that the rear power window sub switch (RH) works normally. Refer to Power Window Sub Switch Continuity Check.

Q: Is the check result normal?

YES : Go to Step 10.

NO : Replace the rear power window sub switch (RH). <Deleted>

STEP 10. Check the rear power window motor (RH).

Check that the rear power window motor (RH) works normally. Refer to Power Window Motor Continuity Check.

<Correct>

Go to Step 9.

Q: Is the check result normal?

YES : Go to Step 11.

NO : Replace the rear power window motor (RH).

STEP 11. Voltage measurement at rear power window sub switch (RH) connector (ON line terminal).

(1) Disconnect the connector, and measure at the wiring harness side.

(2) Turn the ignition switch to the ON position.

(3) Measure the voltage between the rear power window sub switch (RH) connector (ON line terminal) and body ground.

OK: System voltage

Q: Is the check result normal?

YES : Go to Step 13.

NO : Go to Step 12.

STEP 12. Check of open circuit in PWS line between ETACS-ECU connector and rear power window sub switch (RH) connector.

Q: Is the check result normal?

YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction).

NO : Repair the connector(s) or wiring harness.

STEP 13. Check of short to power supply, short to ground, and open circuit in input/output line between rear power window sub switch (RH) connector and rear power window motor (RH) connector.

Q: Is the check result normal?

YES : Go to Step 14.

NO : Repair the connector(s) or wiring harness.

STEP 14. Retest the system.

(1) Replace the rear power window sub switch (RH).

(2) Check that the rear right door power window can be operated by the rear power window sub switch (RH).

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction).

NO : Replace the rear power window motor (RH).

<Incorrect>

STEP 15. Check the rear power window sub switch (LH).

Check that the rear power window sub switch (LH) works normally. Refer to Power Window Sub Switch Continuity Check.

Q: Is the check result normal?

YES : Go to Step 16.

NO : Replace the rear power window sub switch (LH).

STEP 16. Check the rear power window motor (LH).

Check that the rear power window motor (LH) works normally. Refer to Power Window Motor Continuity Check.

Q: Is the check result normal?

YES : Go to Step 17.

NO : Replace the rear power window motor (LH).

STEP 17. Voltage measurement at rear power window sub switch (LH) connector (ON line terminal).

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Measure the voltage between the rear power window sub switch (LH) connector (ON line terminal) and body ground.

OK: System voltage

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

STEP 18. Check of open circuit in PWS line between ETACS-ECU connector and rear power window sub switch (LH) connector.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction).

NO : Repair the connector(s) or wiring harness.

STEP 19. Check of short to power supply, short to ground, and open circuit in input/output line between rear power window sub switch (LH) connector and rear power window motor (LH) connector.

Q: Is the check result normal?
YES : Go to Step 20.
NO : Repair the connector(s) or wiring harness.

STEP 20. Retest the system. <Deleted>

~~(1) Replace the rear power window sub switch (LH).~~
~~(2)~~ Check that the rear left door power window can be operated by the rear power window sub switch (LH).

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction).
NO : ~~Replace the rear power window motor (LH).~~ <Incorrect>

Go to Step 15. <Correct>

INSPECTION PROCEDURE C-4: Front and/or rear passenger's power window(s) do not work by means of the power window main switch.

⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

COMMENTS ON TROUBLE SYMPTOM

If the passenger's and/or rear power window does not work by means of the power window main switch, the power window main switch or the respective power window sub switch(es) may be defective.

PROBABLE CAUSES

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

DIAGNOSIS

STEP 1. Check the power window main switch.
Check that the driver's power window works by means of the power window main switch.

Q: Is the check result normal?
YES : Go to Step 2
NO : Refer to inspection procedure 2 "Driver's power window does not work by means of the power window main switch."

STEP 2. Check the power window sub switch.
Check that each power window works by means of the respective power window sub switch when the power window lock switch is turned off.

Q: Is the check result normal?
YES : Go to Step 3
NO : Refer to inspection procedure 3 "Relevant power window(s) does not work by means of the front and rear passenger's power window sub switches."

STEP 3. Determine a trouble spot.

<Deleted>

Q: Which power window does not work?
Front passenger's door : Go to Step 4
Rear right door : Go to Step 6
Rear left door : Go to Step 8

STEP 4. Check of short to power supply, short to ground, and open circuit in U.AS, D.AS line between power window main switch connector and front power window sub switch connector.

Q: Is the check result normal?
YES : Go to Step 5
NO : Repair the connector(s) or wiring harness.

STEP 5. Retest the system.

<Deleted>

(1) Replace the front power window sub switch.
(2) Check that the front passenger's power window works by means of the power window main switch.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction).
NO : Replace the power window main switch (Refer to GROUP 52A, Trims - Door trim).

STEP 6. Check of short to power supply, short to ground, and open circuit in U.RR, D.RR line between power window main switch connector and front power window sub switch connector.

Q: Is the check result normal?
YES : Go to Step 7
NO : Repair the connector(s) or wiring harness.

STEP 7. Retest the system.

(1) Replace the rear power window sub switch (RH).
(2) Check that the rear right power window works by means of the power window main switch.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction).
NO : Replace the power window main switch (Refer to GROUP 52A, Trims - Door trim).

STEP 8. Check of short to power supply, short to ground, and open circuit in U.RL, D.RL line between power window main switch connector and front power window sub switch connector.

Q: Is the check result normal?
YES : Go to Step 9
NO : Repair the connector(s) or wiring harness.

STEP 9. Retest the system.

<Deleted>

(1) Replace the rear power window sub switch (LH).
(2) Check that the rear left power window works by means of the power window main switch.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction).
NO : Replace the power window main switch (Refer to GROUP 52A, Trims - Door trim).

INSPECTION PROCEDURE C-5: The power window timer function does not work normally.

⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

COMMENTS ON TROUBLE SYMPTOM

If the power window timer does not work normally, a malfunction of the power window main switch or ETACS-ECU is suspected.

STEP 6. Voltage measurement at power window main switch connector (VCC terminal).

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the voltage between the power window main switch connector (VCC terminal) and body ground.

OK: 5V

Q: Is the check result normal?

YES : Go to Step 7.

NO : Replace the power window main switch (Refer to GROUP 52A, Trims - Door trim).

STEP 7. Retest the system.

(1) Make the power windows learn their fully closed position.
(2) Check that the driver's power window works normally.

Q: Is the check result normal?

YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction).

NO : Replace the front power window motor (LH).

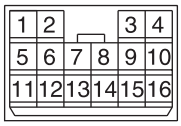
CHECK AT ECU TERMINAL

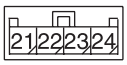
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POWER WINDOW MAIN SWITCH TERMINAL CHECK

<Added>

From attached sheet 8（2/2）.





ACC00076

Terminal No.	Terminal code	Check item	Check condition	Normal condition
1	D.AS	Output to power window motor (Passenger's side)	The front passenger's window lowers	System voltage
			The front passenger's window rises	1 V or less
2	U.AS	Output to power window motor (Passenger's side)	The front passenger's window rises	System voltage
			The front passenger's window lowers	1 V or less
3	MD	Output to power window motor (Driver's side)	The driver's window lowers	1 V or less
			The driver's window rises	System voltage
4	MU	Output to power window motor (Driver's side)	The driver's window rises	1 V or less
			The driver's window lowers	System voltage
5	+BP	Power supply	Always	System voltage
6	SEN1	Input from power window motor (pulse sensor signal)	When the power windows are operating	0 to 5 V (pulse signal)
7	SGND	Input from power window motor (pulse sensor ground)	–	1 V or less
8	E.DL	Ground	Always	1 V or less
9	VCC	Input from power window motor (power supply to pulse sensor)	When the power windows are operating	5 V
10	+B	Power supply	Ignition switch: ON	Battery positive voltage

To attached sheet 8 (1/2).

Attached sheet 8 (2/2)

<Added>

INSPECTION PROCEDURE C-9: Power window main switch one-touch function does not work <Driver's side door>.

⚠ CAUTION
Before replacing the ECU, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM
Malfunction of the power window motor revolution detection sensor or power window main switch.

PROBABLE CAUSES
- Malfunction of the power window main switch
- Damaged harness wires and connectors
- Malfunction of the power window motor

DIAGNOSIS

STEP 1. Check the power window fully closed position
(1) Carry out the learning procedures of the power window fully closed position (Refer to).
(2) Check that the one-touch function works by means of the power window main switch.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to adjustment of faulty power window .

STEP 2. Check of short to power supply, short to ground, and open circuit in VCC, SEN1, SEN2, SGND line between the power window main switch connector and the front power window motor (LH) connector

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

STEP 3. Retest the system.
Check that the one-touch function works by means of the power window main switch.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/ Inspection Service Points - How to Cope with Intermittent Malfunction).
NO : Replace the power window main switch. Then go to Step 4.

STEP 4. Retest the system.
Check that the one-touch function works by means of the power window main switch.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/ Inspection Service Points - How to Cope with Intermittent Malfunction).
NO : Replace the front power window motor (LH).

Attached sheet 9

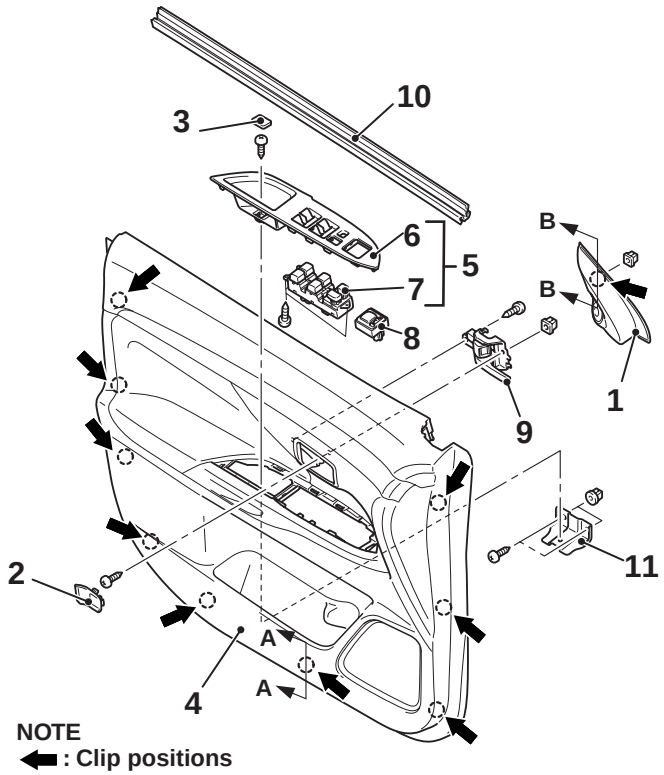
DOOR TRIM

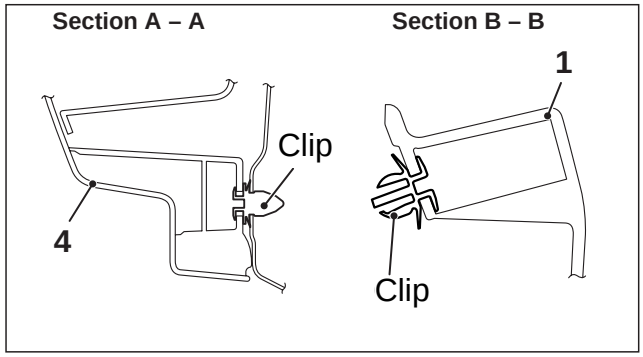
REMOVAL AND INSTALLATION

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<Added>

Post-installation Operation
- Door inside handle knob play check (Refer to GROUP 42A - Door, On-vehicle Service, Door Inside Handle Check).
- Learning procedures of power window fully closed position (Refer to GROUP 42A - Door, On-vehicle Service, Learning Procedures of Power Window Fully Closed Position) <Driver's door>





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Front door trim removal steps
- Tweeter connector
1. Front door sash trim
2. Inside handle cover cap
3. Door trim cap
4. Front door trim
5. Power window switch assembly
6. Power window switch panel

<<A>>
<<B>>
<<C>> >>A<<

Front door trim removal steps
- Power window switch connector
7. Power window switch
8. Remote-controlled mirror switch
9. Inside handle cover
10. Door beltline weatherstrip inner
11. Front door pull handle bracket

Attached sheet 10

STEP 3. Check of open circuit in earth line between tailgate lock release handle connector and body earth.

Q: Is the check result normal?

YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction).

NO : Repair the connector(s) or wiring harness.

STEP 4. Check of open circuit in GTOP line between ETACS-ECU connector and tailgate lock release handle connector.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the connector(s) or wiring harness.

STEP 5. M.U.T.-III data list

Check the ETACS-ECU signals related to the tailgate.

- Tailgate lock release handle: from OFF to ON

Item No.	Item name	Normal condition
230	Gate opener	from OFF to ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction).

NO : Replace ETACS-ECU.

TROUBLE SYMPTOM CHART <POWER WINDOW>

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⚠ CAUTION

During diagnosis, a diagnosis code associated with other system may be set when the ignition switch is turned on with connector(s) disconnected. On completion, confirm all systems for diagnosis code(s). If diagnosis code(s) are set, erase them all.

Trouble symptom	Inspection procedure number	Reference page
Power windows do not work at all.	C-1	
Driver's power window does not work by means of the power window main switch.	C-2	
Relevant power window(s) does not work by means of the front and rear passenger's power window sub switches.	C-3	
Front and/or rear passenger's power window(s) do not work by means of the power window main switch.	C-4	
The power window timer function does not work normally.	C-5	
Power window anti-trap function does not work normally <Driver's side door>.	C-6	
The window glass lowers automatically while it is rising <Driver's side door>.	C-7	
The driver's power window inches only.	C-8	
Power window main switch one-touch function does not work <Driver's side door>.	C-9	

<Added>

Attached sheet 11 (1/4)

YES : Go to Step 4.
NO : Replace the front power window sub switch.

STEP 4. Check the front power window motor (RH <LH driver vehicles>, LH <RH drive vehicles>).
Check that the front power window motor (RH <LH driver vehicles>, LH <RH drive vehicles>) works normally. Refer to Power Window Motor Continuity Check.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the front power window motor (passenger's side).

Go to Step 3.
<Correct>

STEP 5. Voltage measurement at front power window sub switch connector (ON line terminal).
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Measure the voltage between the front power window sub switch connector (ON line terminal) and body earth.

OK: System voltage

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

STEP 6. Check of open circuit in PWM line between ETACS-ECU connector and front power window sub switch connector.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction).

NO : Repair the connector(s) or wiring harness.

STEP 7. Check of short to power supply, short to earth, and open circuit in input/output line between front power window sub switch connector and front power window motor (RH <LH driver vehicles>, LH <RH drive vehicles>) connector.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the connector(s) or wiring harness.

STEP 8. Retest the system. <Deleted>
(1) ~~Replace the front power window sub switch.~~
(2) Check that the front passenger's door power window can be operated by the front power window sub switch.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction).
NO : ~~Replace the front power window motor (RH <LH driver vehicles>, LH <RH drive vehicles>).~~

<Incorrect>

STEP 9. Check the rear power window sub switch (RH).
Check that the rear power window sub switch (RH) works normally. Refer to Power Window Sub Switch Continuity Check.

Q: Is the check result normal?
YES : Go to Step 10.
NO : Replace the rear power window sub switch (RH).

STEP 10. Check the rear power window motor (RH).
Check that the rear power window motor (RH) works normally. Refer to Power Window Motor Continuity Check.

Q: Is the check result normal?
YES : Go to Step 11.
NO : Replace the rear power window motor (RH).

STEP 11. Voltage measurement at rear power window sub switch (RH) connector (ON line terminal).
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Measure the voltage between the rear power window sub switch (RH) connector (ON line terminal) and body earth.

OK: System voltage

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

Attached sheet 11 (2/4)

STEP 12. Check of open circuit in PWS line between ETACS-ECU connector and rear power window sub switch (RH) connector.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction).

NO : Repair the connector(s) or wiring harness.

STEP 13. Check of short to power supply, short to earth, and open circuit in input/output line between rear power window sub switch (RH) connector and rear power window motor (RH) connector.

Q: Is the check result normal?
YES : Go to Step 14.
NO : Repair the connector(s) or wiring harness.

STEP 14. Retest the system. <Deleted>

(1) Replace the rear power window sub switch (RH).
(2) Check that the rear right door power window can be operated by the rear power window sub switch (RH).

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction).
NO : Replace the rear power window motor (RH). <Incorrect>

STEP 15. Check the rear power window sub switch (LH).
Check that the rear power window sub switch (LH) works normally. Refer to Power Window Sub Switch Continuity Check.

Go to Step 9. <Correct>

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

STEP 16. Check the rear power window motor (LH).
Check that the rear power window motor (LH) works normally. Refer to Power Window Motor Continuity Check.

Q: Is the check result normal?
YES : Go to Step 17.
NO : Replace the rear power window motor (LH).

STEP 17. Voltage measurement at rear power window sub switch (LH) connector (ON line terminal).
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.
(3) Measure the voltage between the rear power window sub switch (LH) connector (ON line terminal) and body earth.

OK: System voltage

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

STEP 18. Check of open circuit in PWS line between ETACS-ECU connector and rear power window sub switch (LH) connector.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction).

NO : Repair the connector(s) or wiring harness.

STEP 19. Check of short to power supply, short to earth, and open circuit in input/output line between rear power window sub switch (LH) connector and rear power window motor (LH) connector.

Q: Is the check result normal?
YES : Go to Step 20.
NO : Repair the connector(s) or wiring harness.

STEP 20. Retest the system. <Deleted>

(1) Replace the rear power window sub switch (LH).
(2) Check that the rear left door power window can be operated by the rear power window sub switch (LH).

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction).
NO : Replace the rear power window motor (LH). <Incorrect>

Go to Step 15. <Correct>

Attached sheet 11 (3/4)

INSPECTION PROCEDURE C-4: Front and/or rear passenger's power window(s) do not work by means of the power window main switch.

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

COMMENTS ON TROUBLE SYMPTOM

If the passenger's and/or rear power window does not work by means of the power window main switch, the power window main switch or the respective power window sub switch(es) may be defective.

PROBABLE CAUSES

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

DIAGNOSTIC PROCEDURE

STEP 1. Check the power window main switch.
Check that the driver's power window works by means of the power window main switch.

Q: Is the check result normal?
YES : Go to Step 2
NO : Refer to inspection procedure 2 "Driver's power window does not work by means of the power window main switch."

STEP 2. Check the power window sub switch.
Check that each power window works by means of the respective power window sub switch when the power window lock switch is turned off.

Q: Is the check result normal?
YES : Go to Step 3
NO : Refer to inspection procedure 3 "Relevant power window(s) does not work by means of the front and rear passenger's power window sub switches."

STEP 3. Determine a trouble spot.

Q: Which power window does not work?
Front passenger's door : Go to Step 4
Rear right door : Go to Step 6
Rear left door : Go to Step 8

STEP 4. Check of short to power supply, short to earth, and open circuit in U.AS, D.AS line between power window main switch connector and front power window sub switch connector.

Q: Is the check result normal?
YES : Go to Step 5
NO : Repair the connector(s) or wiring harness.

STEP 5. Retest the system. <Deleted>
(1) Replace the front power window sub switch.
(2) Make the power widows learn their fully closed position.
(3) Check that the front passenger's power window works by means of the power window main switch.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction).
NO : Replace the power window main switch (Refer to GROUP 52A, Trims - Door trim).

STEP 6. Check of short to power supply, short to earth, and open circuit in U.RR, D.RR line between power window main switch connector and front power window sub switch connector.

Q: Is the check result normal?
YES : Go to Step 7
NO : Repair the connector(s) or wiring harness.

STEP 7. Retest the system. <Deleted>
(1) Replace the rear power window sub switch (RH).
(2) Make the power widows learn their fully closed position.
(3) Check that the rear right power window works by means of the power window main switch.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction).
NO : Replace the power window main switch (Refer to GROUP 52A, Trims - Door trim).

<Incorrect> (1) <Correct>
<Correct> (1) <Incorrect>
(2) <Correct>
(2) <Correct>

<Correct>
(1)
BODY DOOR
<Incorrect>
(2)
(3)
<Correct>
(2)

STEP 8. Check of short to power supply, short to earth, and open circuit in U.RL, D.RL line between power window main switch connector and front power window sub switch connector.

Q: Is the check result normal?
YES : Go to Step 9
NO : Repair the connector(s) or wiring harness.

STEP 9. Retest the system.
(1) Replace the rear power window sub switch (LH).
<Deleted>

(2) Make the power widows learn their fully closed position.
(3) Check that the rear left power window works by means of the power window main switch.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction).
NO : Replace the power window main switch (Refer to GROUP 52A, Trims - Door trim).

INSPECTION PROCEDURE C-5: The power window timer function does not work normally.

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

COMMENTS ON TROUBLE SYMPTOM

If the power window timer does not work normally, a malfunction of the power window main switch or ETACS-ECU is suspected.

PROBABLE CAUSES

- Malfunction of the driver's door switch
- Malfunction of the front passenger's door switch
- Malfunction of the power window main switch
- Malfunction of ETACS-ECU
- Damaged wiring harness and connectors

DIAGNOSTIC PROCEDURE

STEP 1. Check the power supply system.
With the ignition switch in the LOCK (OFF) position, check if the following function operates normally:
- Hazard warning lamp

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to GROUP 54A – Malfunction of ETACS-ECU Power Supply Circuit.

STEP 2. M.U.T.-III data list
Check the signals related to the power window operation.
- Turn the ignition switch to the ON position.
- Close the driver's door.
- Close the front passenger's door.

Item No.	Item name	Normal condition
254	IG Voltage	System voltage
256	Dr door ajar switch	Close
257	As door ajar switch	Close

OK: Normal conditions are displayed for all the items.

Q: Is the check result normal?
Normal conditions are displayed for all the items. : Go to Step 3.
Normal condition is not displayed for item No. 254. : Refer to GROUP 54A – Inspection Procedure 2: The ignition switch (IG1) signal is not received.
Normal condition is not displayed for item No. 256. : Refer to GROUP 54A – Inspection Procedure 5: Front door switch (driver's side) signal is not received.
Normal condition is not displayed for item No. 257. : Refer to GROUP 54A – Inspection Procedure 6: Front door switch (passenger's side) signal is not received.

Attached sheet 12 (1/2)

STEP 6. Voltage measurement at power window main switch connector (VCC terminal).
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the voltage between the power window main switch connector (VCC terminal) and body earth.

OK: 5V

Q: Is the check result normal?
YES : Go to Step 7.
NO : Replace the power window main switch (Refer to GROUP 52A, Trims - Door trim).

STEP 7. Retest the system.
(1) Make the power widows learn their fully closed position.
(2) Check that the driver's power window works normally.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction).

NO : Replace the front power window motor (LH <LH drive vehicles>, RH <RH drive vehicles>.

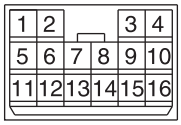
CHECK AT ECU TERMINAL

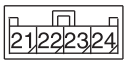
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POWER WINDOW MAIN SWITCH TERMINAL CHECK

<Added>

From attached sheet 12 (2/2).





ACC00076

Terminal No.	Terminal code	Check item	Check condition	Normal condition
1	D.AS	Output to power window motor (Passenger's side)	The front passenger's window lowers	System voltage
			The front passenger's window rises	1 V or less
2	U.AS	Output to power window motor (Passenger's side)	The front passenger's window rises	System voltage
			The front passenger's window lowers	1 V or less
3	MD	Output to power window motor (Driver's side)	The driver's window lowers	1 V or less
			The driver's window rises	System voltage
4	MU	Output to power window motor (Driver's side)	The driver's window rises	1 V or less
			The driver's window lowers	System voltage
5	+BP	Power supply	Always	System voltage
6	SEN1	Input from power window motor (pulse sensor signal)	When the power windows are operating	0 to 5 V (pulse signal)
7	SGND	Input from power window motor (pulse sensor earth)	–	1 V or less
8	E.DL	Earth	Always	1 V or less
9	VCC	Input from power window motor (power supply to pulse sensor)	When the power windows are operating	5 V

To attached sheet 12 (1/2).

Attached sheet 12 (2/2)

<Added>

INSPECTION PROCEDURE C-9: Power window main switch one-touch function does not work <Driver's side door>.

⚠ CAUTION
Before replacing the ECU, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM
Malfunction of the power window motor revolution detection sensor or power window main switch.

PROBABLE CAUSES
- Malfunction of the power window main switch
- Damaged harness wires and connectors
- Malfunction of the power window motor

DIAGNOSIS PROCEDURE

STEP 1. Check the power window fully closed position
(1) Carry out the learning procedures of the power window fully closed position (Refer to).
(2) Check that the one-touch function works by means of the power window main switch.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to adjustment of faulty power window .

STEP 2. Check of short to power supply, short to earth, and open circuit in VCC, SEN1, SEN2, SGND line between the power window main switch connector and the front power window motor (LH) <LHD>, the front power window motor (RH) <RHD> connector

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

STEP 3. Retest the system.
Check that the one-touch function works by means of the power window main switch.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/ Inspection Service Points - How to Cope with Intermittent Malfunction).
NO : Replace the power window main switch. Then go to Step 4.

STEP 4. Retest the system.
Check that the one-touch function works by means of the power window main switch.

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/ Inspection Service Points - How to Cope with Intermittent Malfunction).
NO : Replace the front power window motor (LH) <LHD>, the front power window motor (RH) <RHD>.