Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000MKT021X
Title: WINDOW / GLASS: BACK WINDOW GLASS: INSTALLATION (2010 Corolla)		

INSTALLATION

1. INSTALL NO. 2 BACK WINDOW GLASS STOPPER (for 2-piece Type)

(a) Using a brush or sponge, coat the application area of the 2 No. 2 back window glass stoppers with Primer G.

NOTICE:

- Do not apply too much primer.
- Allow the primer coating to dry for 3 minutes or more.
- Throw away any leftover Primer G.

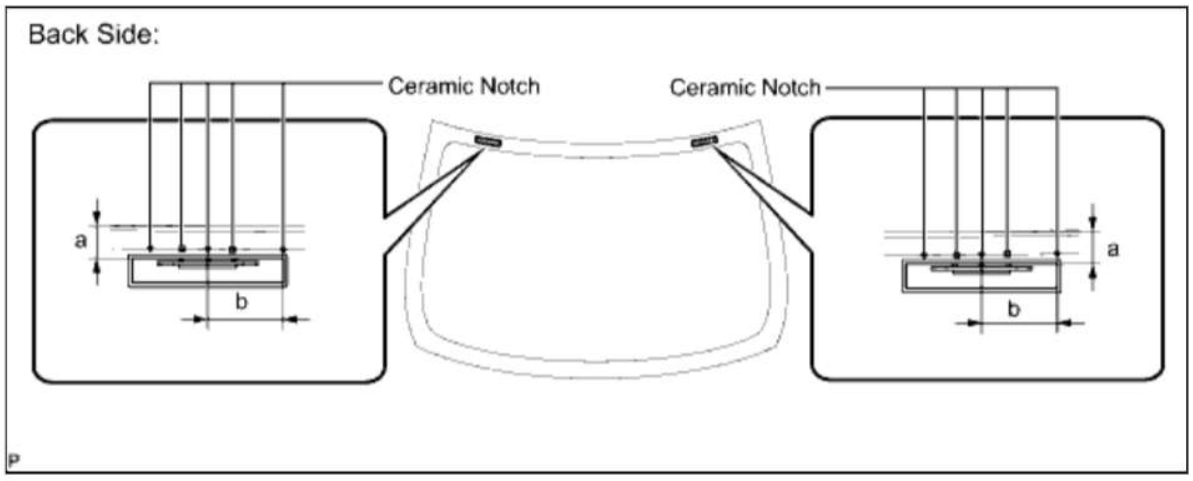
HINT:

If an area other than that specified is coated by accident, apply a non-residue solvent to a clean cloth and wipe off the excess primer.

(b) Install 2 new No. 2 back window glass stoppers onto the back window glass as shown in the illustration.

HINT:

Only 2-piece type No. 2 back window glass stoppers are supplied. Use the 2-piece type stoppers even if a 1-piece type was used.

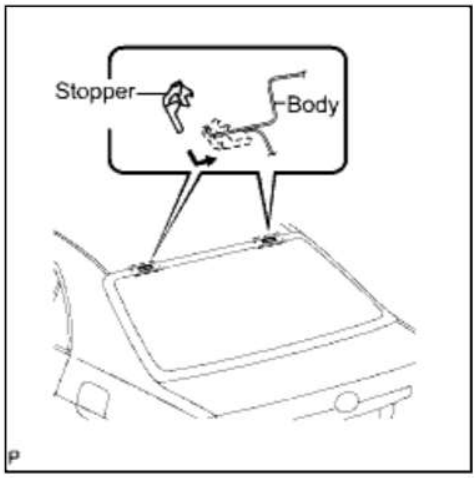


Standard Dimension:

AREA	DIMENSION
a	14.1 mm (0.555 in.)
b	40.0 mm (1.57 in.)

2. INSTALL NO. 1 BACK WINDOW GLASS STOPPER (for 2-piece Type)

cardiagn.com



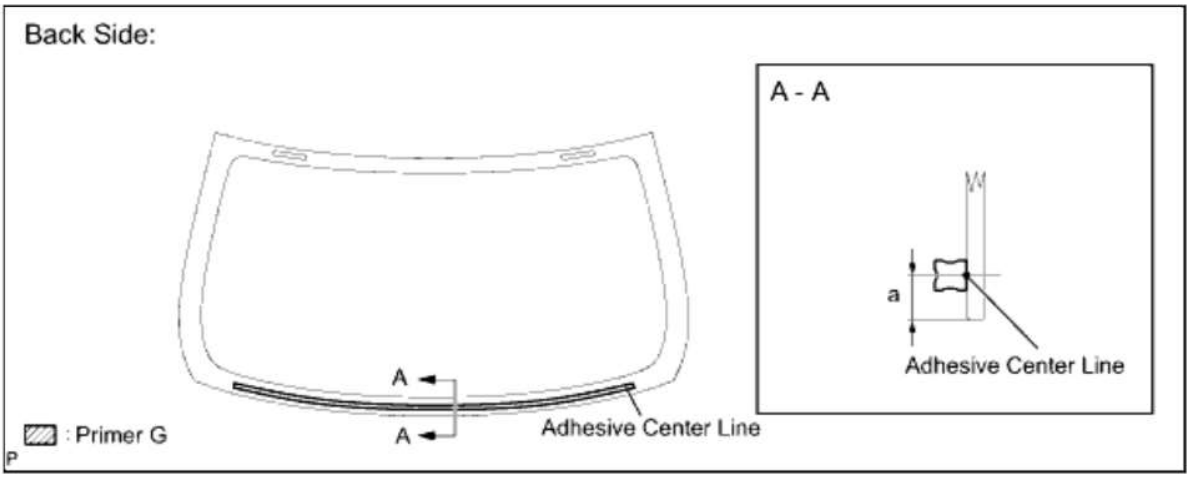
(a) Install 2 new No. 1 back window glass stoppers to the vehicle body as shown in the illustration.

HINT:

Only 2-piece type No. 1 back window glass stoppers are supplied. Use the 2-piece type stoppers even if a 1-piece type was used.

3. INSTALL BACK WINDOW GLASS ADHESIVE DAM

(a) Using a brush or sponge, coat the application area of the back window glass adhesive dam with Primer G.



Standard Dimension:

AREA	DIMENSION
a	6.1 mm (0.240 in.)

NOTICE:

- Do not apply too much primer.
- Allow the primer coating to dry for 3 minutes or more.
- Throw away any leftover Primer G.

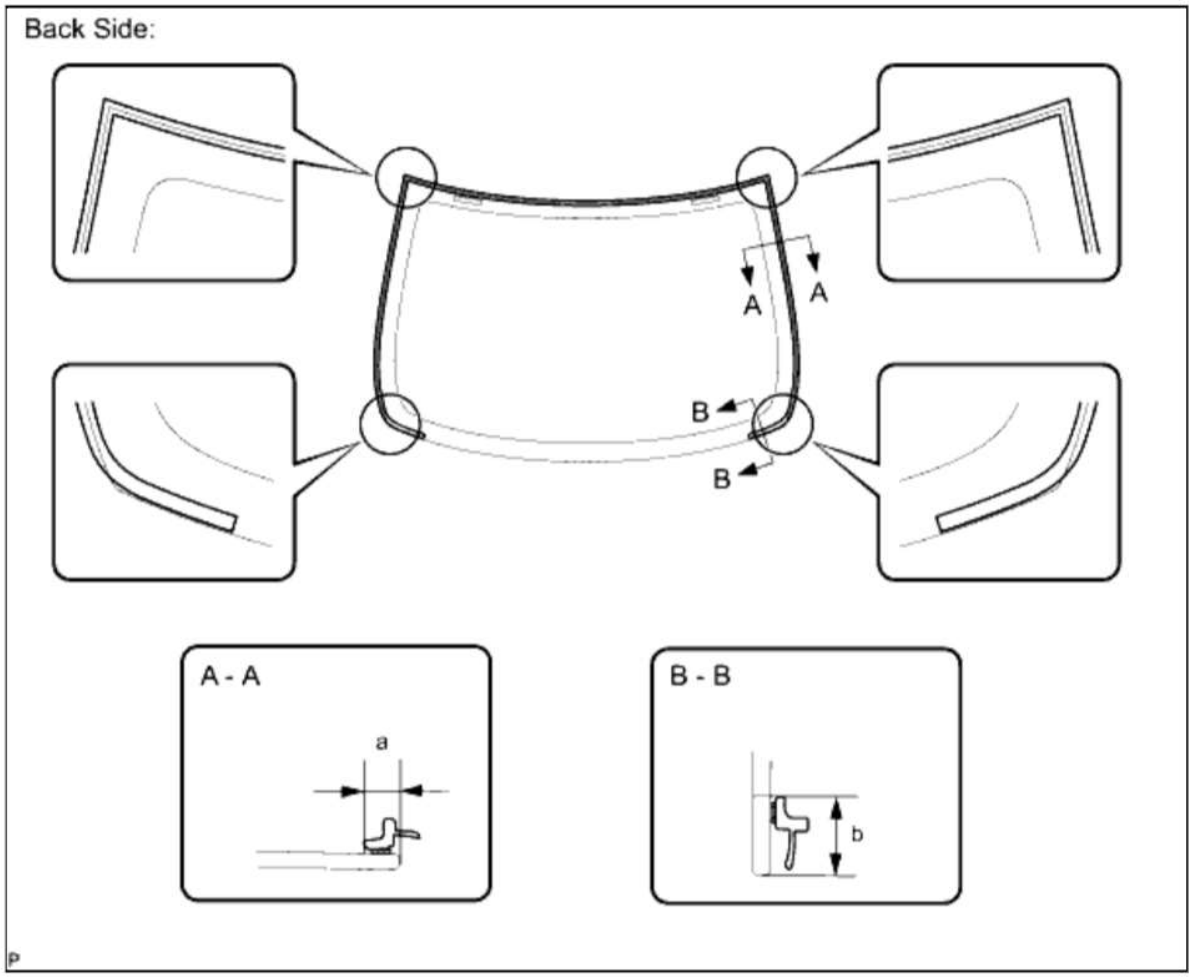
HINT:

If an area other than that specified is coated by accident, apply a non-residue solvent to a clean cloth and wipe off the excess primer.

cardiagn.com

4. INSTALL NO. 1 BACK WINDOW MOULDING

(a) Using a brush or sponge, coat the application area of the No. 1 back window moulding with Primer G.



Standard Dimension:

AREA	DIMENSION
a	7.4 mm (0.291 in.)
b	15.5 mm (0.610 in.)

NOTICE:

- Do not apply too much primer.
- Allow the primer coating to dry for 3 minutes or more.
- Throw away any leftover Primer G.

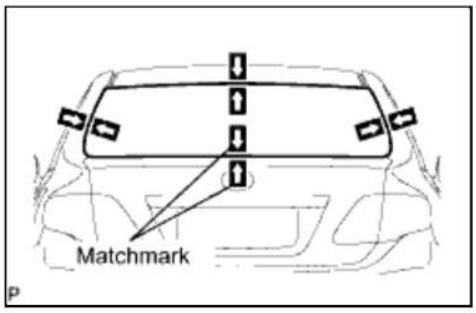
HINT:

If an area other than that specified is coated by accident, apply a non-residue solvent to a clean cloth and wipe off the excess primer.

(b) Install a new No. 1 back window moulding onto the back window glass.

cardiagn.com

5. INSTALL BACK WINDOW GLASS



(a) Position the back window glass assembly.

(1) Using suction cups, place the back window glass assembly in the correct position.

(2) Check that the entire contact surface of the back window glass rim is perfectly even.

(3) Place the matchmarks on the back window glass and vehicle body on the locations indicated in the illustration.

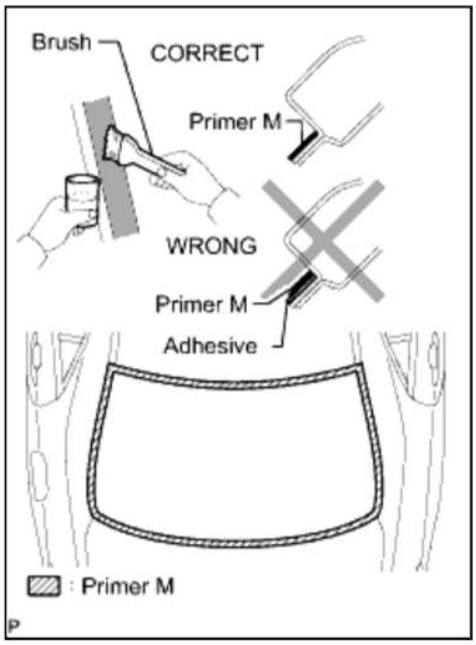
HINT:

- Placing matchmarks is necessary only when installing a new glass. If it is the reused glass, matchmarks should already be present.
- When reusing the glass, check and correct the matchmark positions.

NOTICE:

Check that the stoppers are attached to the vehicle body correctly.

(4) Using suction cups, remove the back window glass assembly.



(b) Using a brush, coat the installation surface on the vehicle body with Primer M.

NOTICE:

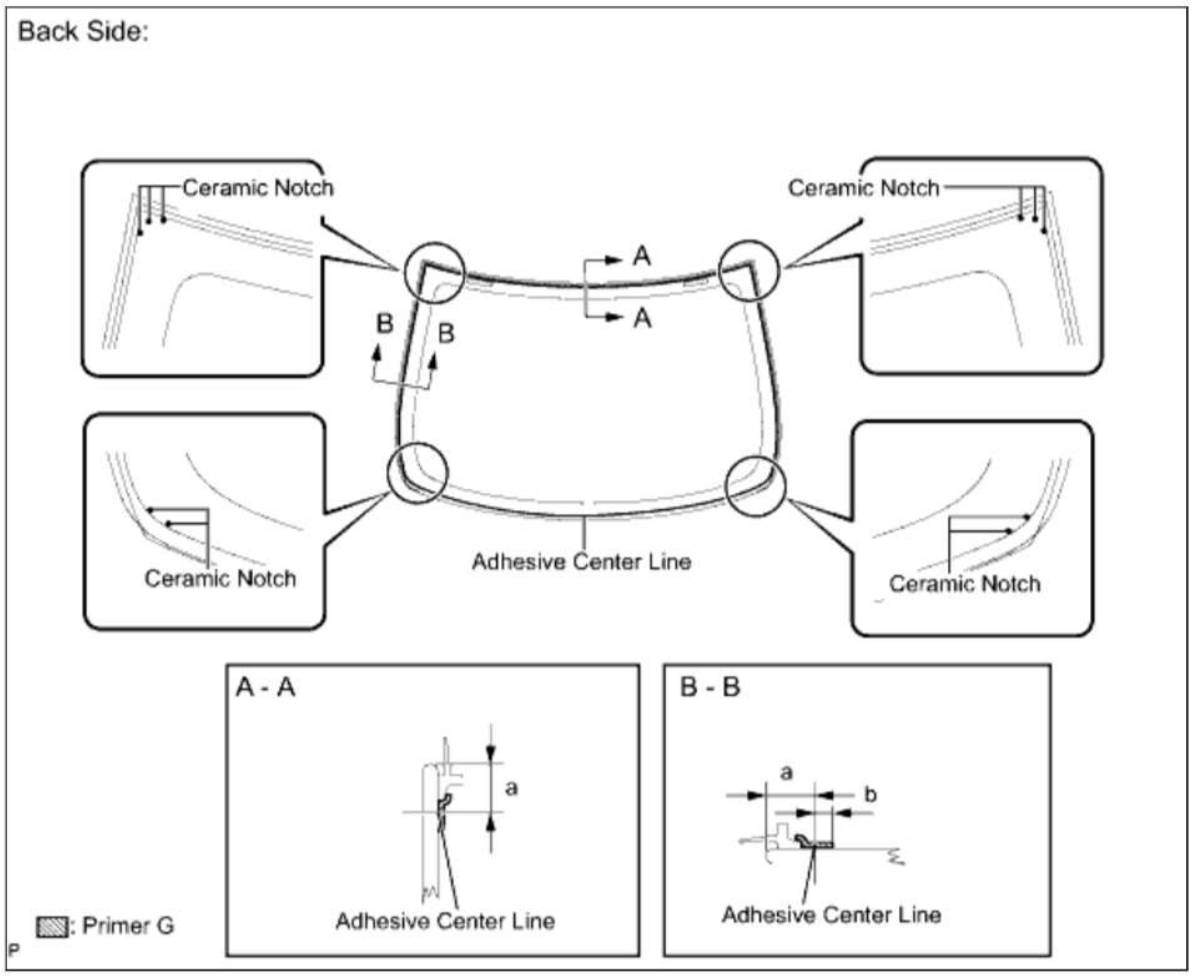
- Do not coat the adhesive with Primer M.
- Do not apply too much primer.
- Allow the primer coating to dry for 3 minutes or more.
- Throw away any leftover Primer G.

HINT:

If an area other than that specified is coated by accident, apply a non-residue solvent to a clean cloth and wipe off the excess primer.

(c) Using a brush or sponge, coat the application area of adhesive with Primer G.

cardiagn.com



Standard Dimension:

AREA	DIMENSION
a	9.5 mm (0.374 in.)
b	10.0 mm (0.394 in.)

NOTICE:

- Do not apply too much primer.
- Allow the primer coating to dry for 3 minutes or more.
- Throw away any leftover Primer G.

HINT:

If an area other than that specified is coated by accident, apply a non-residue solvent to a clean cloth and wipe off the excess primer.

(d) Apply adhesive to the glass.

Adhesive:
Toyota Genuine Windshield Glass Adhesive or equivalent

(1) Cut off the tip of the cartridge nozzle as shown in the illustration.

HINT:

cardiagn.com

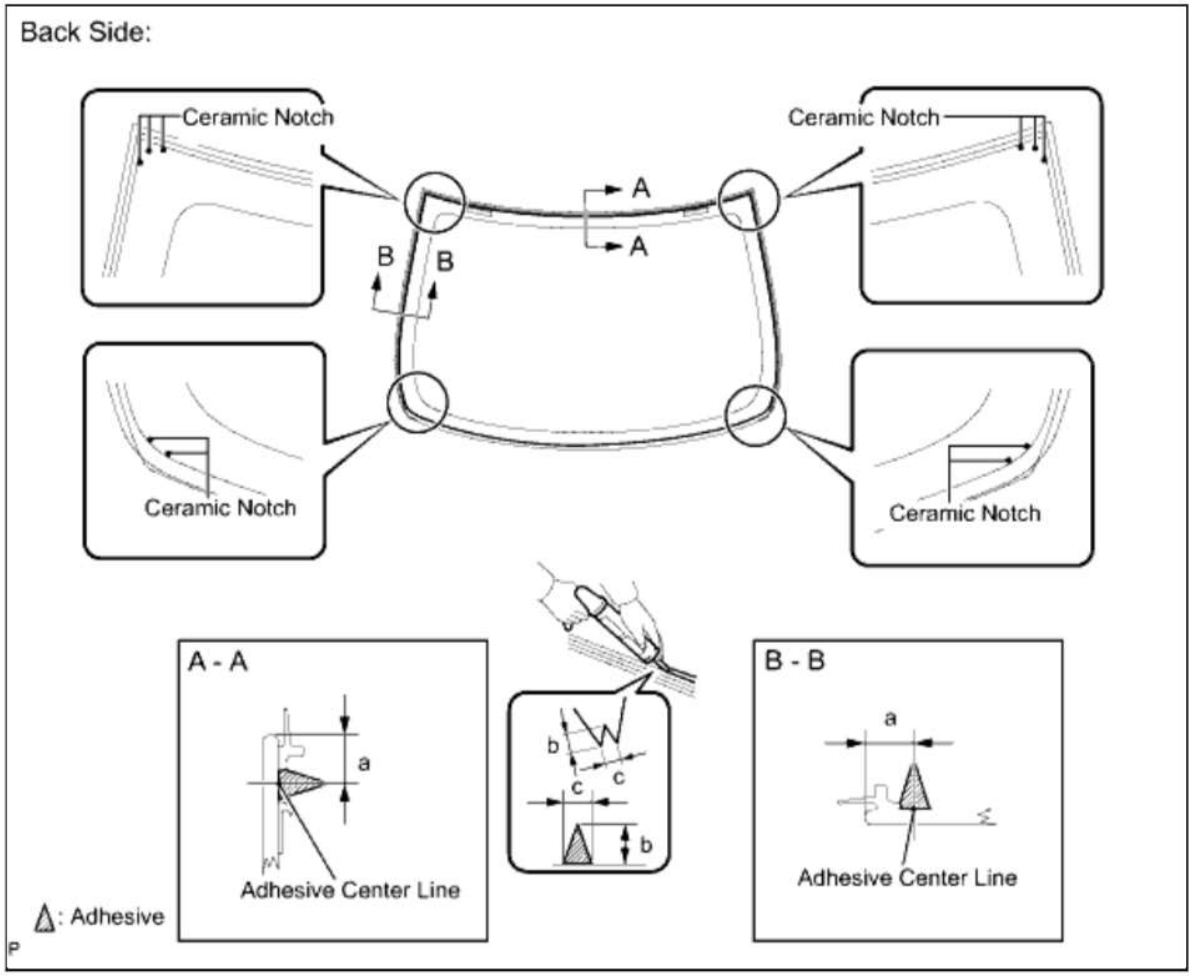
After cutting off the tip, use all adhesive within the time described in the table below.

Usage Time Frame:

TEMPERATURE	TACK-FREE TIME
35°C (95°F)	15 minutes
20°C (68°F)	1 hour and 40 minutes
5°C (41°F)	8 hours

(2) Load the sealer gun with a cartridge.

(3) Apply adhesive to the back window glass as shown in the illustration.



Standard Dimension:

AREA	DIMENSION
a	9.5 mm (0.374 in.)
b	12.0 mm (0.472 in.)
c	8.0 mm (0.315 in.)

cardiagn.com

HINT:

Apply adhesive onto the ceramic notches.

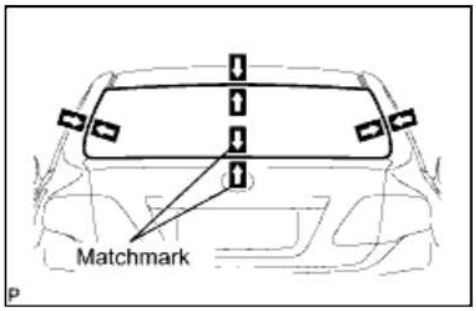
(e) Install the back window glass assembly.

(1) Using suction cups, position the back window glass so that the matchmarks are aligned, and press it in gently along the rim.

(2) Lightly press the outer surface of the back window glass to ensure that it is securely attached to the vehicle body.

NOTICE:

- Check that the back window glass stoppers are attached to the vehicle body correctly.
- Check the clearance between the vehicle body and back window glass.



HINT:

Press the glass with a force of 98 N (10 kgf, 22 lbf) or more.

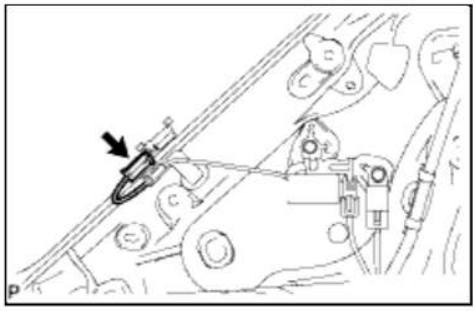
(3) Hold the back window glass using protective tape until applied adhesive becomes hard.

NOTICE:

Do not drive the vehicle for the amount of time described in the table below.

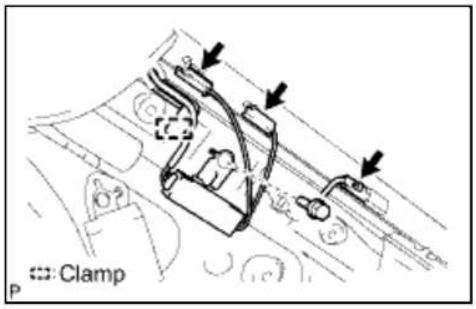
Minimum Time:

TEMPERATURE	MINIMUM TIME PRIOR TO DRIVING VEHICLE
35°C (95°F)	1 hour and 30 minutes
20°C (68°F)	5 hours
5°C (41°F)	24 hours



(f) Connect the connector to the rear pillar LH.

cardiagn.com



(g) Install the amplifier antenna assembly to the rear pillar RH with the bolt.

Torque: 8.4 N·m (86 kgf·cm, 74in·lbf)

(h) Engage the clamp.

(i) Connect the connectors.

6. INSPECT FOR LEAK AND REPAIR

(a) After the adhesive has hardened, apply water from the outside of the vehicle. Check that no water leaks into the cabin.

(b) If water leaks into the cabin, allow the water to dry and add adhesive.

(c) Remove the protective tape.

7. INSTALL PACKAGE TRAY TRIM PANEL ASSEMBLY (w/o Rear Spoiler) INFO

8. INSTALL PACKAGE TRAY TRIM PANEL ASSEMBLY (w/ Rear Spoiler) INFO

9. INSTALL PACKAGE TRAY TRIM BELT HOLE COVER INFO

10. INSTALL ROOF HEADLINING ASSEMBLY

Return the rear section of the roof headlining assembly to the original position.

11. INSTALL SUN ROOF OPENING TRIM MOULDING (w/ Sliding Roof) INFO

12. INSTALL NO. 1 ROOM LIGHT ASSEMBLY INFO

13. INSTALL REAR ASSIST GRIP SUB-ASSEMBLY INFO

14. INSTALL ROOF SIDE INNER GARNISH ASSEMBLY LH INFO

15. INSTALL ROOF SIDE INNER GARNISH BOARD LH INFO

16. INSTALL REAR SEAT SIDE GARNISH LH INFO

17. INSTALL ROOF SIDE INNER GARNISH ASSEMBLY RH INFO

18. INSTALL ROOF SIDE INNER GARNISH BOARD RH INFO

19. INSTALL REAR SEAT SIDE GARNISH RH INFO

20. INSTALL REAR SEATBACK ASSEMBLY RH INFO

21. INSTALL REAR SEATBACK ASSEMBLY LH INFO

cardiagn.com

22. INSTALL REAR SEAT CUSHION ASSEMBLY INFO

23. INSTALL REAR SEAT CENTER HEADREST ASSEMBLY

24. INSTALL REAR SEAT HEADREST ASSEMBLY RH

25. INSTALL REAR SEAT HEADREST ASSEMBLY LH

26. INSTALL SPARE WHEEL COVER

27. INSTALL REAR DOOR OPENING TRIM WEATHERSTRIP LH INFO

28. INSTALL REAR DOOR SCUFF PLATE LH INFO

29. INSTALL REAR DOOR OPENING TRIM WEATHERSTRIP RH INFO

30. INSTALL REAR DOOR SCUFF PLATE RH INFO

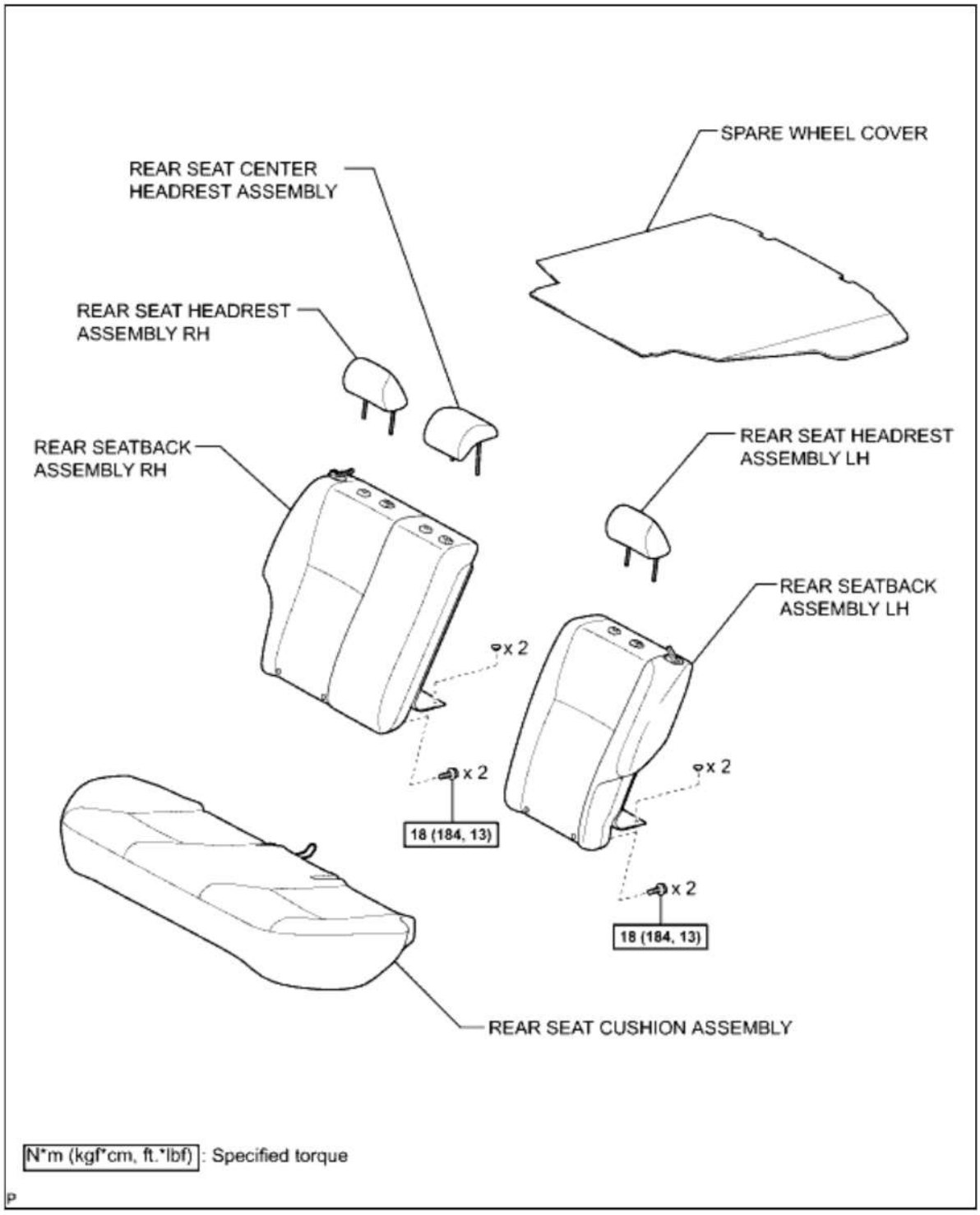


cardiagn.com

Last Modified: 3-10-2010	6.4 K	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002GAI00JX
Title: WINDOW / GLASS: BACK WINDOW GLASS: COMPONENTS (2010 Corolla)		

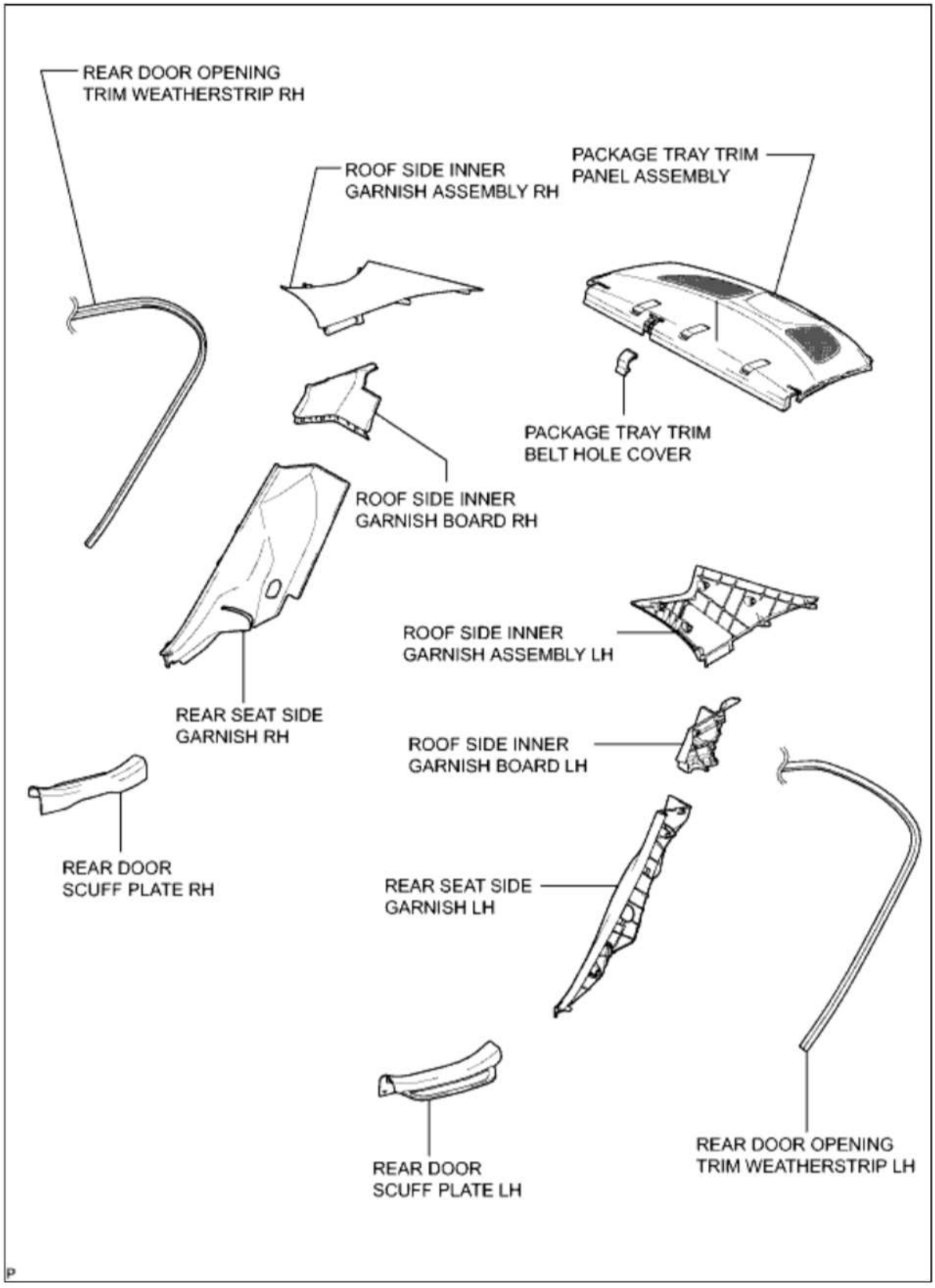
COMPONENTS

ILLUSTRATION



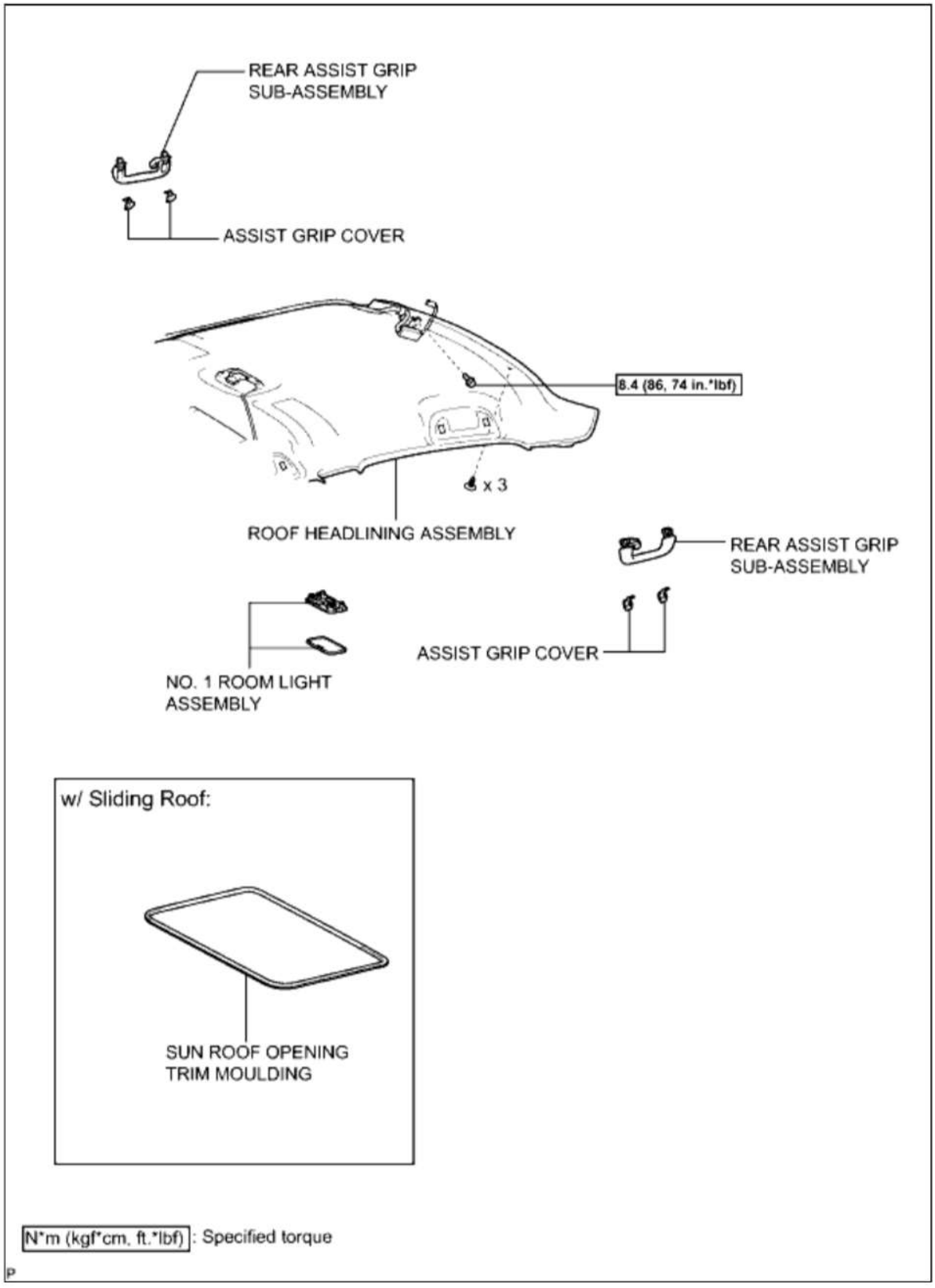
cardiagn.com

ILLUSTRATION



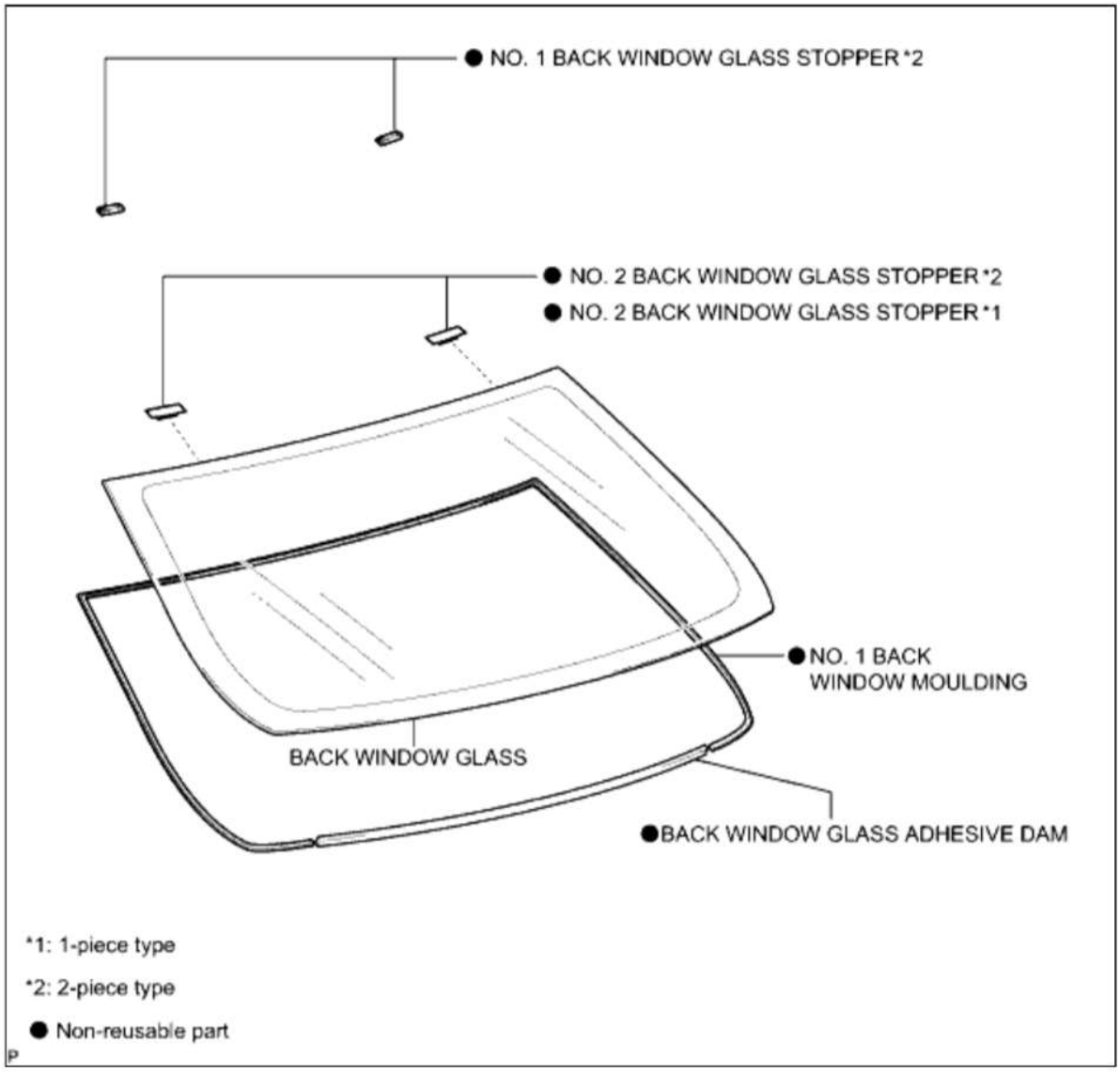
cardiagn.com

ILLUSTRATION



cardiagn.com

ILLUSTRATION



cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000MKV021X
Title: WINDOW / GLASS: BACK WINDOW GLASS: REMOVAL (2010 Corolla)		

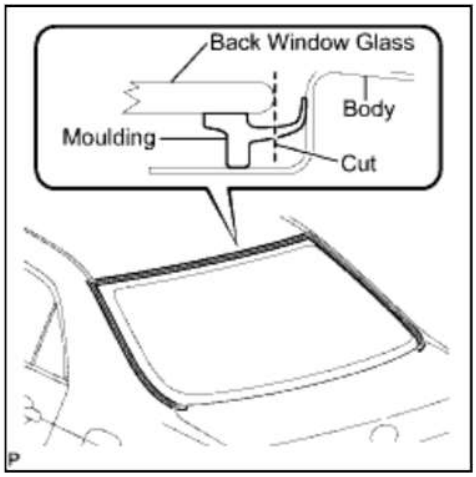
REMOVAL

1. REMOVE REAR DOOR SCUFF PLATE LH INFO
2. REMOVE REAR DOOR OPENING TRIM WEATHERSTRIP LH INFO
3. REMOVE REAR DOOR SCUFF PLATE RH INFO
4. REMOVE REAR DOOR OPENING TRIM WEATHERSTRIP RH INFO
5. REMOVE SPARE WHEEL COVER
6. REMOVE REAR SEAT HEADREST ASSEMBLY LH
7. REMOVE REAR SEAT HEADREST ASSEMBLY RH
8. REMOVE REAR SEAT CENTER HEADREST ASSEMBLY
9. REMOVE REAR SEAT CUSHION ASSEMBLY INFO
10. REMOVE REAR SEATBACK ASSEMBLY LH INFO
11. REMOVE REAR SEATBACK ASSEMBLY RH INFO
12. REMOVE REAR SEAT SIDE GARNISH LH INFO
13. REMOVE ROOF SIDE INNER GARNISH BOARD LH INFO
14. REMOVE ROOF SIDE INNER GARNISH ASSEMBLY LH INFO
15. REMOVE REAR SEAT SIDE GARNISH RH INFO
16. REMOVE ROOF SIDE INNER GARNISH BOARD RH INFO
17. REMOVE ROOF SIDE INNER GARNISH ASSEMBLY RH INFO
18. REMOVE REAR ASSIST GRIP SUB-ASSEMBLY INFO
19. REMOVE NO. 1 ROOM LIGHT ASSEMBLY INFO
20. REMOVE PACKAGE TRAY TRIM BELT HOLE COVER INFO
21. REMOVE PACKAGE TRAY TRIM PANEL ASSEMBLY (w/o Rear Spoiler) INFO
22. REMOVE PACKAGE TRAY TRIM PANEL ASSEMBLY (w/ Rear Spoiler) INFO
23. REMOVE SUN ROOF OPENING TRIM MOULDING (w/ Sliding Roof) INFO
24. REMOVE ROOF HEADLINING ASSEMBLY (w/o Sliding Roof)

cardiagn.com

It is not necessary to completely remove the roof headlining assembly. Slightly lower the rear section of the roof headlining assembly so that the back window glass can be removed.

25. REMOVE NO. 1 BACK WINDOW MOULDING



(a) Using a knife, cut off the moulding as shown in the illustration.

CAUTION:

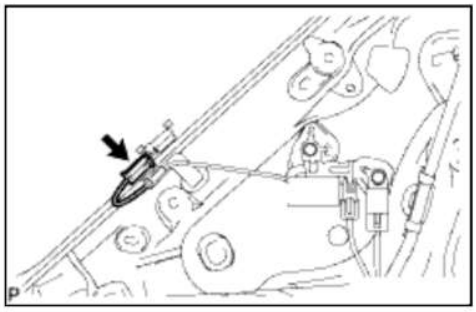
- Do not damage the vehicle body with the knife.
- If the vehicle body is damaged, repair the damaged portion by applying an anti-rust coating after removing the back window glass.

(b) Remove the remaining moulding from the back window glass.

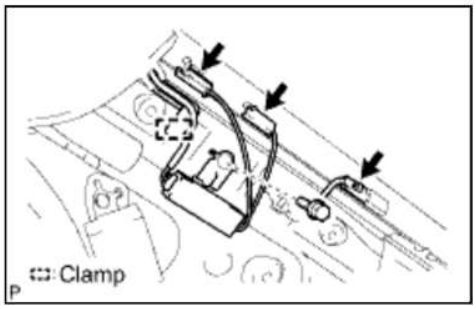
HINT:

When removing the moulding, make a partial cut, then pull and remove it by hand.

26. REMOVE BACK WINDOW GLASS



(a) Disconnect the connector from the rear pillar LH.

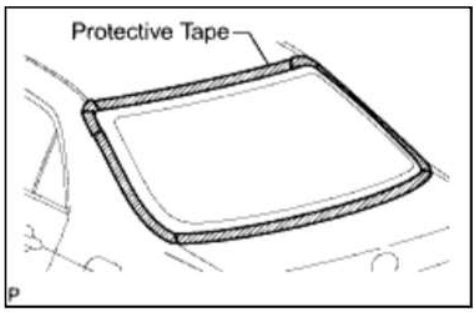


(b) Disconnect the connectors.

cardiagn.com

(c) Disengage the clamp.

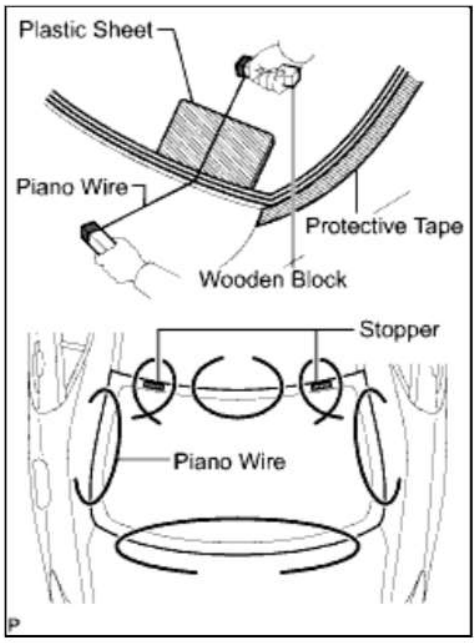
(d) Remove the bolt and disconnect the amplifier antenna assembly from the rear pillar RH.



(e) Apply protective tape to the installation position of the back window glass assembly on the vehicle body.

HINT:

Apply protective tape to the installation surface to prevent it from being scratched.



(f) Pass a piano wire between the vehicle body and back window glass assembly from the interior.

(g) Tie both wire ends to wooden blocks or similar objects.

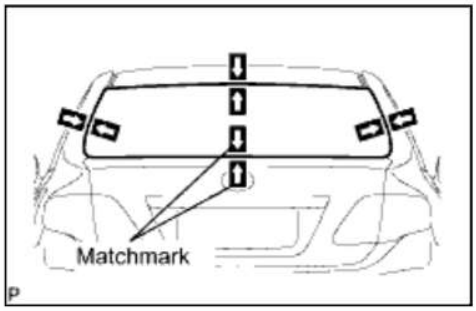
(h) Cut off the adhesive by pulling the piano wire around the back window glass assembly.

NOTICE:

- When separating the back window glass assembly from the vehicle, be careful not to damage the vehicle's paint or the interior exterior ornaments.
- To prevent the package tray from being scratched when removing the back window glass assembly, place a plastic sheet between the piano wire and package tray.
- There are stoppers on the back window glass assembly as shown in the illustration. Be careful not to damage the back window glass when cutting off the adhesive.

(i) Place matchmarks on the back window glass assembly and vehicle body on the locations indicated in the illustration.

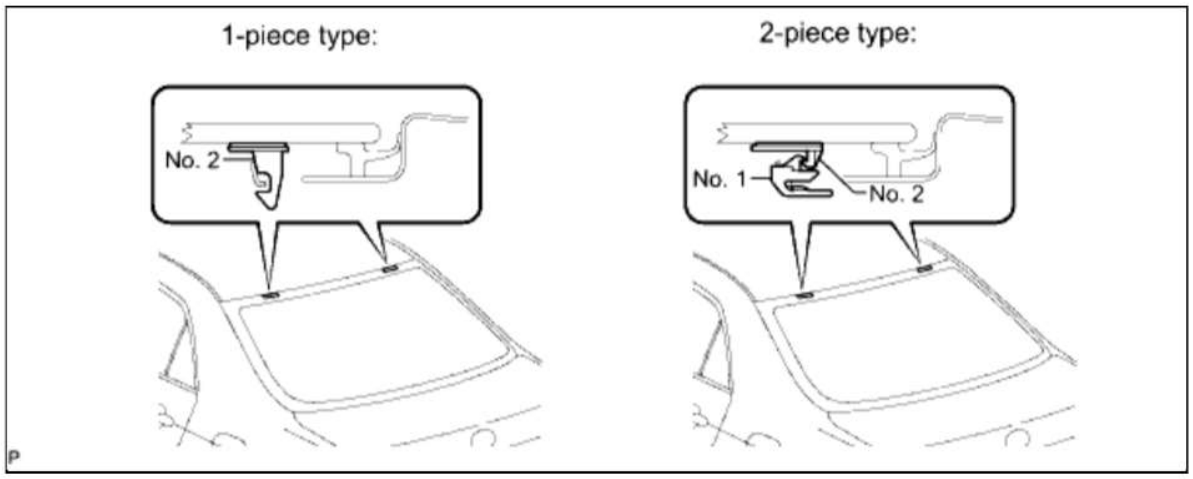
cardiagn.com



HINT:

Matchmarks do not need if the back window glass assembly is not going to be reused.

(j) Disconnect the back window glass stoppers.



NOTICE:

To prevent the back window glass assembly from dropping when performing this operation, be sure to hold the back window glass assembly using suction cups.

HINT:

Depending on vehicles, a 1-piece or 2-piece type stopper is used.

(k) Using a suction cup, remove the back window glass assembly.

NOTICE:

- Be careful not to drop the back window glass assembly.
- Leave as much adhesive on the vehicle body as possible when removing the back window glass assembly.

27. REMOVE BACK WINDOW GLASS ADHESIVE DAM

(a) Using a scraper, remove the back window glass adhesive dam.

NOTICE:

- Be careful not to damage the back window glass.
- Be sure to replace the back window glass adhesive dam with a new one.

28. REMOVE NO. 2 BACK WINDOW GLASS STOPPER

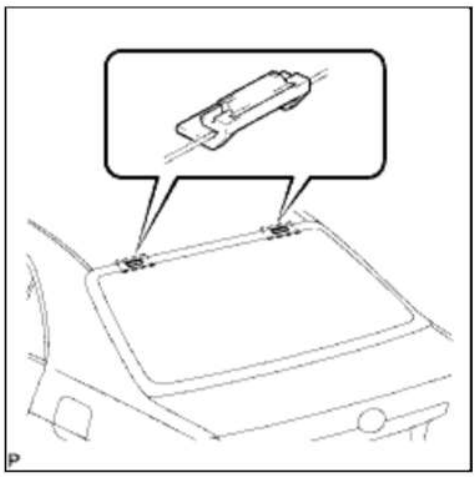
(a) Using a scraper, remove the 2 No. 2 back window glass stoppers.

cardiagn.com

NOTICE:

- Be careful not to damage the back window glass.
- Be sure to replace the 2 No. 2 back window glass stoppers with new ones.

29. REMOVE NO. 1 BACK WINDOW GLASS STOPPER (for 2-piece Type)

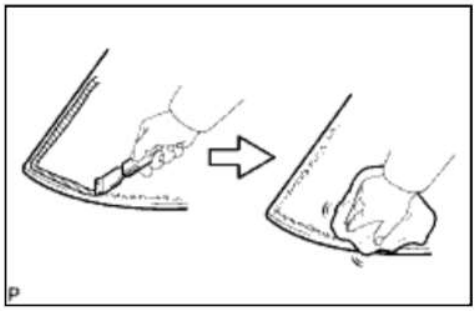


(a) Remove the 2 No. 1 back window glass stoppers.

NOTICE:

Be sure to replace the 2 No. 1 back window glass stoppers with new ones.

30. CLEAN BACK WINDOW GLASS



(a) Using a scraper, remove the adhesive tape and adhesive sticking to the back window glass.

NOTICE:

Be careful not to damage the back window glass.

(b) Clean the outer circumference of the back window glass with a non-residue solvent.

NOTICE:

- Do not touch it surface after cleaning it.
- Even if using a new back window glass, clean the back window glass with a non-residue solvent.

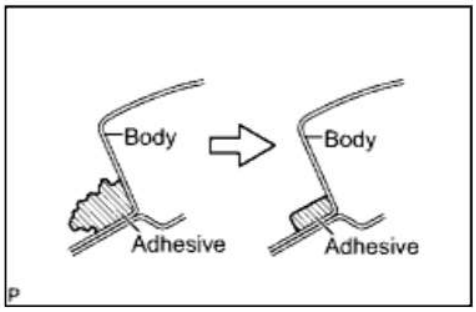
31. CLEAN VEHICLE BODY

(a) Clean and shape the contact surface of the vehicle body.

(1) On the contact surface of the vehicle body, use a knife to cut away excess adhesive as shown in the illustration.

NOTICE:

cardiagn.com



Be careful not to damage the vehicle body.

HINT:

Leave as much adhesive on the vehicle body as possible.

(2) Clean the contact surface of the vehicle body with cleaner.

HINT:

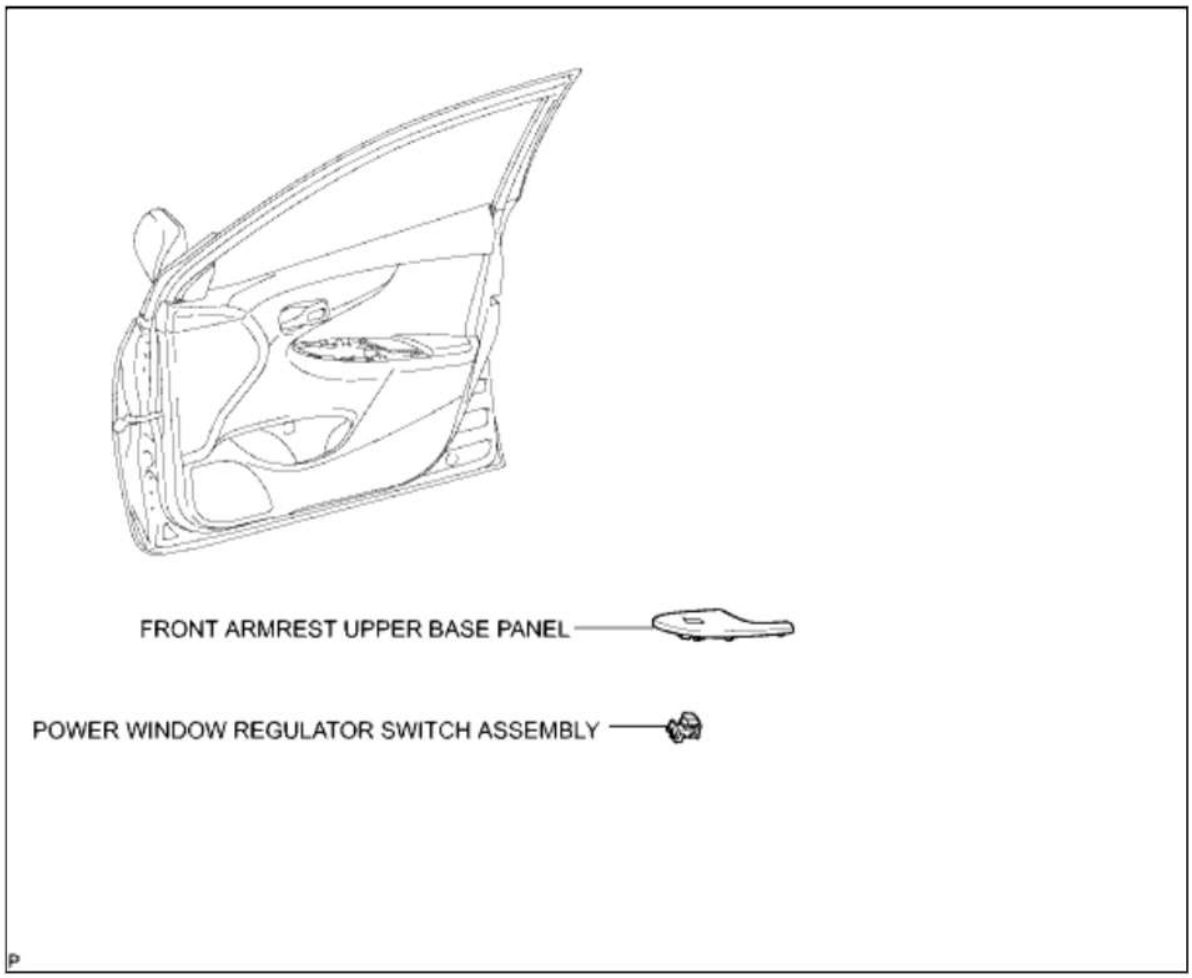
Even if all the adhesive has been removed, clean the vehicle body.

cardiagn.com

Last Modified: 3-10-2010	6.4 K	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002YA500DX
Title: WINDOW / GLASS: FRONT PASSENGER SIDE POWER WINDOW SWITCH: COMPONENTS (2010 Corolla)		

COMPONENTS

ILLUSTRATION



cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002YA600DX
Title: WINDOW / GLASS: FRONT PASSENGER SIDE POWER WINDOW SWITCH: REMOVAL (2010 Corolla)		

REMOVAL

1. REMOVE FRONT ARMREST UPPER BASE PANEL INFO

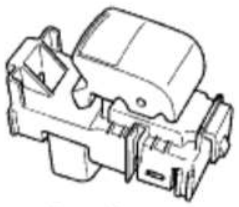
2. REMOVE POWER WINDOW REGULATOR SWITCH ASSEMBLY INFO

cardiagn.com

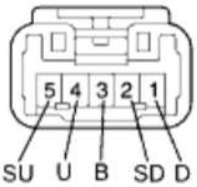
Last Modified: 3-10-2010	6.4 G	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000013O5028X
Title: WINDOW / GLASS: FRONT PASSENGER SIDE POWER WINDOW SWITCH: INSPECTION (2010 Corolla)		

INSPECTION

1. INSPECT POWER WINDOW SWITCH ASSEMBLY (for Front Passenger Side)



Component without harness connected: (Power Window Switch (Front Passenger Side))



(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 (D) - 2 (SD) 3 (B) - 4 (U)	UP	Below 1 Ω
1 (D) - 2 (SD) 4 (U) - 5 (SU)	OFF	Below 1 Ω
1 (D) - 3 (B) 4 (U) - 5 (SU)	DOWN	Below 1 Ω

If the result is not specified, replace the power window switch assembly.

cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002YA400DX
Title: WINDOW / GLASS: FRONT PASSENGER SIDE POWER WINDOW SWITCH: INSTALLATION (2010 Corolla)		

INSTALLATION

1. INSTALL POWER WINDOW REGULATOR SWITCH ASSEMBLY INFO

2. INSTALL FRONT ARMREST UPPER BASE PANEL INFO

cardiagn.com

Last Modified: 3-10-2010	6.4 L	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002YLT00BX
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: PRECAUTION (2010 Corolla)		

PRECAUTION

1. EXPRESSIONS OF IGNITION SWITCH

(a) The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this section.

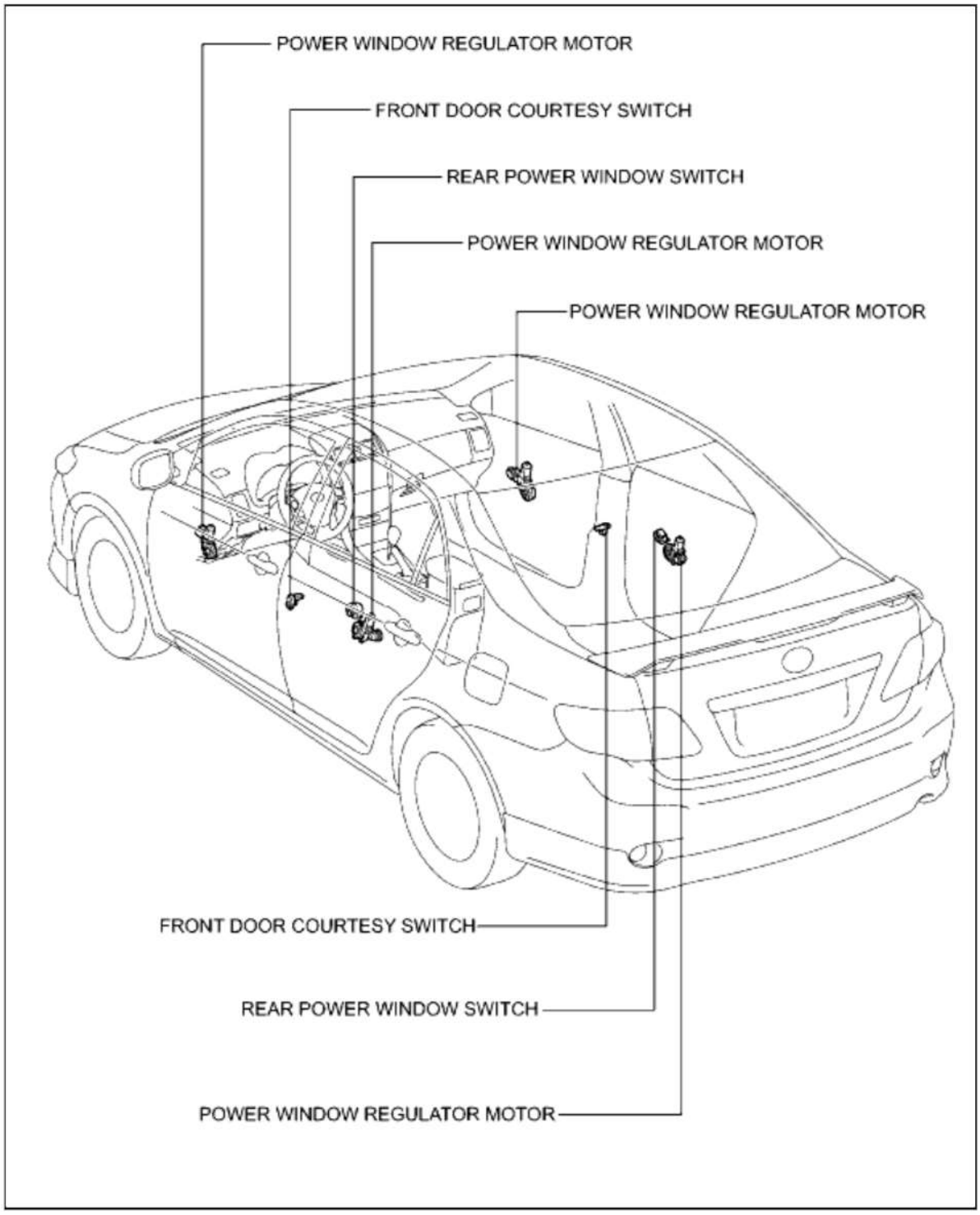
SWITCH TYPE		IGNITION SWITCH (POSITION)	ENGINE SWITCH (CONDITION)
Expression	Ignition switch off	LOCK	Off
	Ignition switch ON	ON	On (IG)
	Ignition switch ACC	ACC	On (ACC)
	Engine Start	START	Start

cardiagn.com

Last Modified: 3-10-2010	6.4 R	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000010ZB01DX
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: PARTS LOCATION (2010 Corolla)		

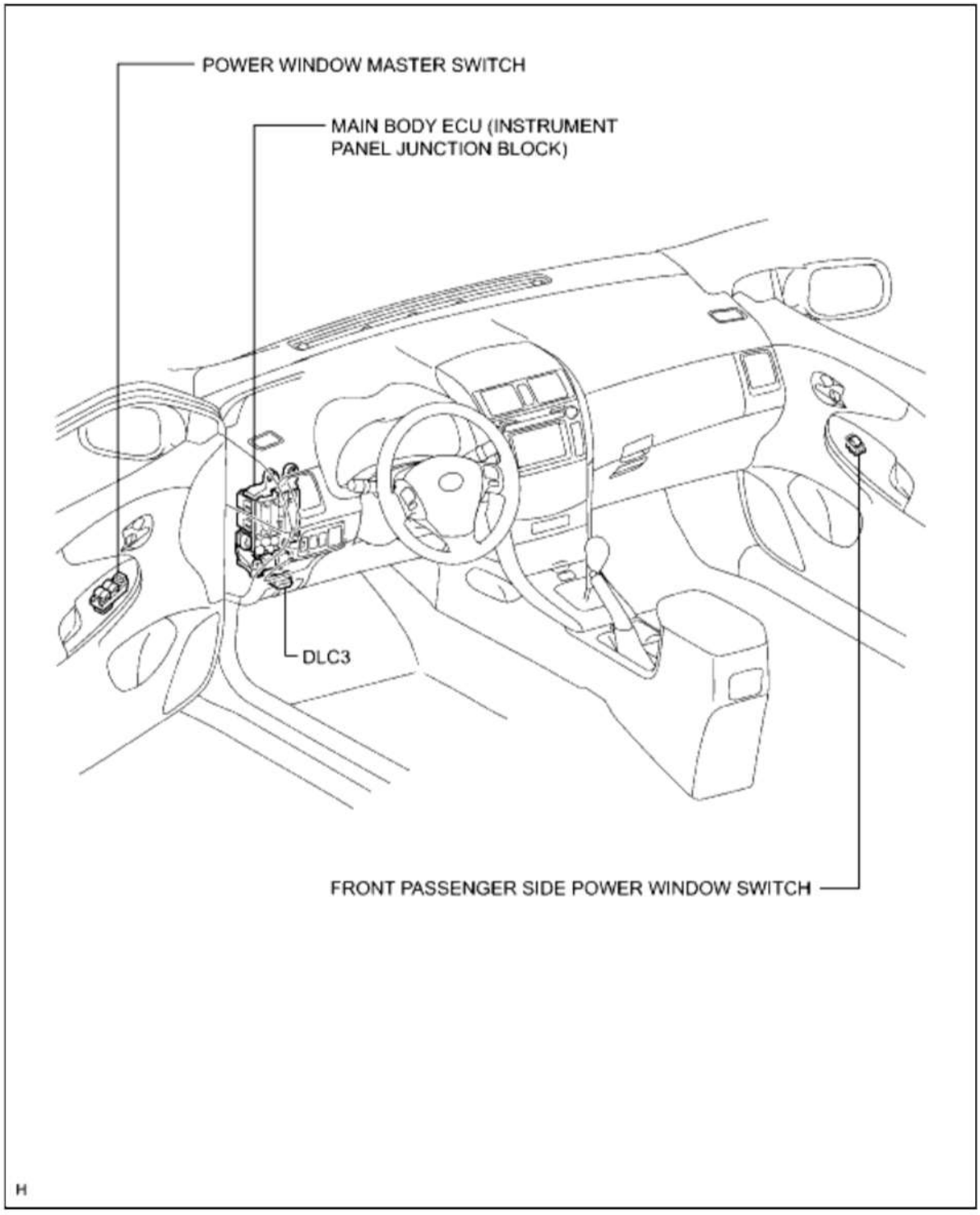
PARTS LOCATION

ILLUSTRATION



cardiagn.com

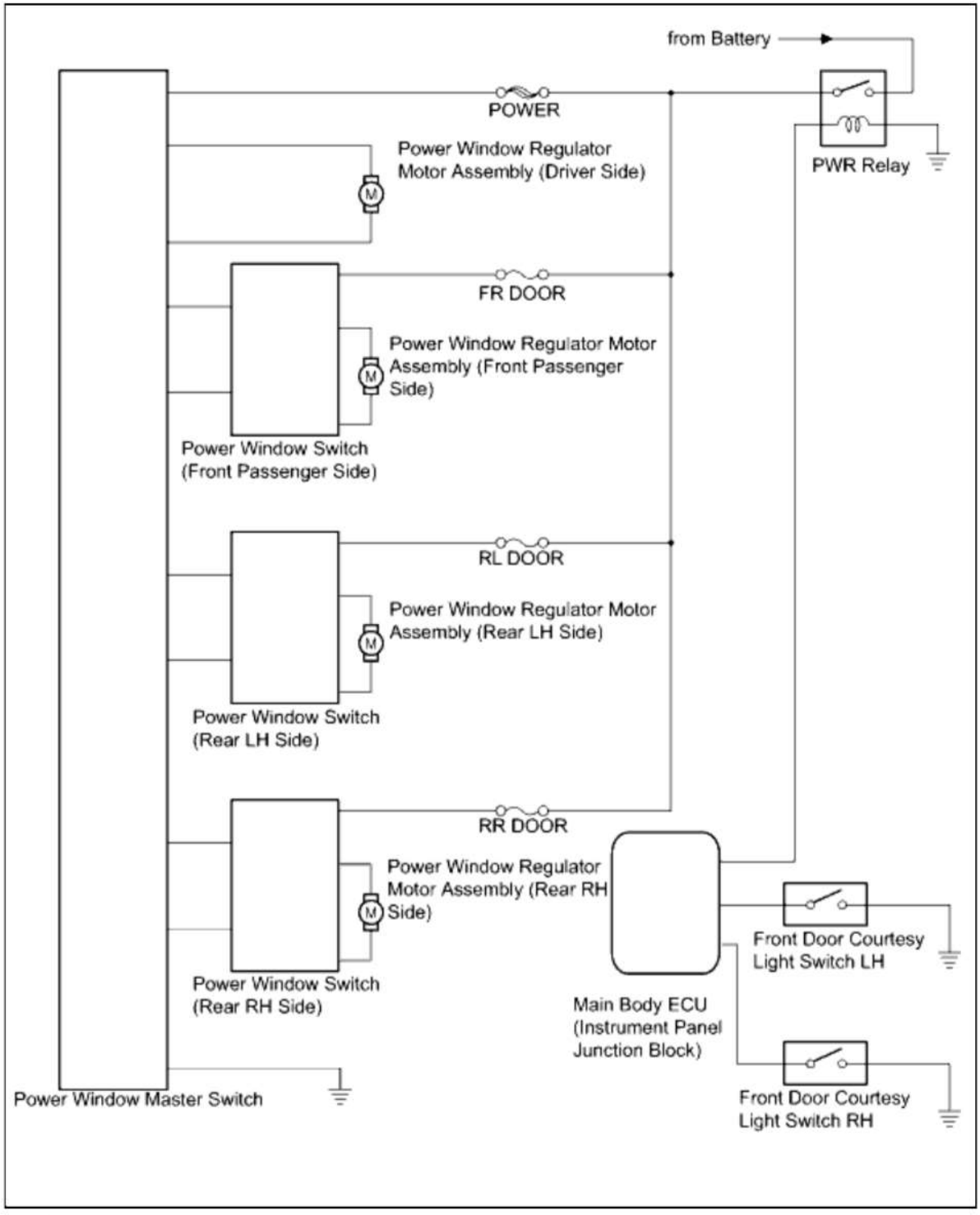
ILLUSTRATION



cardiagn.com

Last Modified: 3-10-2010	6.4 U	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000010ZF01LX
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: SYSTEM DIAGRAM (2010 Corolla)		

SYSTEM DIAGRAM



cardiagn.com

Last Modified: 3-10-2010	6.4 D	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000011UW03TX
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING (2010 Corolla)		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedure to troubleshoot the power window control system.
- *: Using the Techstream.

1.	**VEHICLE BROUGHT TO WORKSHOP**

NEXT

2.	**CUSTOMER PROBLEM ANALYSIS**

- In troubleshooting, confirm that the problem symptoms have been accurately identified. Preconceptions should be discarded in order to make an accurate judgment. To clearly understand what the problem symptoms are, it is extremely important to ask the customer about the problem and the conditions at the time the malfunction occurred.
- Gather as much information as possible for reference. Past problems that seem unrelated may also help in some cases.
- The following 5 items are important points in the problem analysis:

What	Vehicle model, system name
When	Date, time, occurrence frequency
Where	Road conditions
Under what conditions?	Driving conditions, weather conditions
How did it happen?	Problem symptoms

NEXT

cardiagn.com

3.	INSPECT BATTERY VOLTAGE

(a) Measure the battery voltage.

Standard Voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to the next step.

NEXT

4.	PROBLEM SYMPTOMS TABLE

(a) Refer to Problem Symptoms Table INFO.

Result:

RESULT	PROCEED TO
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B ▶ **Go to step 6**

A

5.	OVERALL ANALYSIS AND TROUBLESHOOTING*

(a) Data List/Active Test INFO

(b) Operation Check INFO

(c) Terminals of ECU INFO

cardiagn.com

NEXT

6.	REPAIR OR REPLACE

NEXT

7.	CONFIRMATION TEST

NEXT END

cardiagn.com

Last Modified: 3-10-2010	6.4 D	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000010ZE01DX
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: SYSTEM DESCRIPTION (2010 Corolla)		

SYSTEM DESCRIPTION

1. POWER WINDOW CONTROL SYSTEM DESCRIPTION

The power window control system controls the power window UP and DOWN function using the regulator motors.

The main controls of this system are: the power window master switch which is built into the driver side door, and the power window switches which are built into the front passenger side door and rear doors. Pressing the switch or any of the switches on the master switch transmits an UP or DOWN signal to the corresponding power window regulator motor.

2. FUNCTION OF MAIN COMPONENTS

COMPONENT	OUTLINE
Power Window Master Switch	• Controls window operations for all windows • When window lock switch is set to lock position, window operation is only possible with master switch
Power Window Switch	• Located on passenger side door and rear doors • Each regulator switch controls window operations for its respective window
Power Window Regulator Motor Assembly	Receives switch signals and changes signals into motor activation to change window position
Main Body ECU (Instrument Panel Junction Block)	Main body ECU (instrument panel junction block) controls the PWR relay (operation)

3. SYSTEM FUNCTION

The power window control system has the following functions.

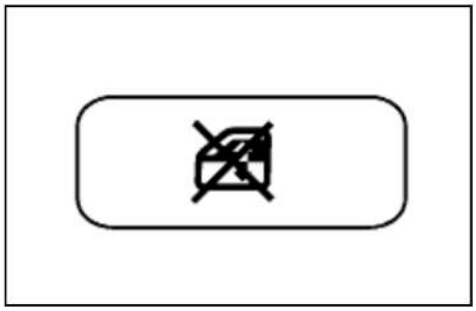
FUNCTION	OUTLINE
Manual UP and DOWN function	• Driver side power window: Function that raises window while power window switch is pulled up, and lowers window while pushed halfway down (window stops as soon as switch is released) • Other power windows: Function that raises window while power window switch is pulled up, and lowers window while pushed down (window stops as soon as switch is released)
AUTO DOWN	Function that enables window of driver side door to be fully opened by one full

cardiagn.com

Last Modified: 3-10-2010	6.4 D	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000003EK8003X
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: OPERATION CHECK (2010 Corolla)		

OPERATION CHECK

1. CHECK POWER WINDOW MASTER SWITCH (WINDOW LOCK SWITCH)



(a) Check that the passenger side power window and rear windows cannot be operated when the window lock switch of the power window master switch is pressed.

(b) Check that the passenger side power window and rear windows can be operated when the window lock switch is pressed again.

2. CHECK MANUAL UP / DOWN FUNCTION

(a) Check that the driver side power window operates as follows:

OK

CONDITION	MASTER SWITCH	SWITCH OPERATION	POWER WINDOW
Ignition switch ON	Driver side	Pulled up	UP (closes)
Ignition switch ON	Driver side	Pushed halfway down	DOWN (opens)

(b) Check that the passenger side power window operates as follows:

OK

CONDITION	REGULATOR SWITCH	SWITCH OPERATION	POWER WINDOW
• Ignition switch ON • Window lock switch OFF	Passenger side	Pulled up	UP (closes)
• Ignition switch ON • Window lock switch OFF	Passenger side	Pushed down	DOWN (opens)

(c) Check that the rear LH power window operates as follows:

OK

cardiagn.com

CONDITION	REGULATOR SWITCH	SWITCH OPERATION	POWER WINDOW
• Ignition switch ON • Window lock switch OFF	Rear LH	Pulled up	UP (closes)
• Ignition switch ON • Window lock switch OFF	Rear LH	Pushed down	DOWN (opens)

(d) Check that the rear RH power window operates as follows:

OK

CONDITION	REGULATOR SWITCH	SWITCH OPERATION	POWER WINDOW
• Ignition switch ON • Window lock switch OFF	Rear RH	Pulled up	UP (closes)
• Ignition switch ON • Window lock switch OFF	Rear RH	Pushed down	DOWN (opens)

3. CHECK AUTO DOWN FUNCTION

(a) Check that the driver side power window operates as follows:

OK

CONDITION	MASTER SWITCH	SWITCH OPERATION	POWER WINDOW
Ignition switch ON	Driver side	Fully pushed down	AUTO DOWN (fully opens)

4. CHECK REMOTE UP / DOWN FUNCTION

(a) Check that the passenger side power window operates as follows:

OK

CONDITION	MASTER SWITCH	SWITCH OPERATION	POWER WINDOW
• Ignition switch ON • Window lock switch OFF	Passenger side	Pulled up	UP (closes)
• Ignition switch ON • Window lock switch OFF	Passenger side	Pushed down	DOWN (opens)

(b) Check that the rear LH power window operates as follows:

OK

cardiagn.com

CONDITION	MASTER SWITCH	SWITCH OPERATION	POWER WINDOW
• Ignition switch ON • Window lock switch OFF	Rear LH	Pulled up	UP (closes)
• Ignition switch ON • Window lock switch OFF	Rear LH	Pushed down	DOWN (opens)

(c) Check that the rear RH power window operates as follows:

OK

CONDITION	MASTER SWITCH	SWITCH OPERATION	POWER WINDOW
• Ignition switch ON • Window lock switch OFF	Rear RH	Pulled up	UP (closes)
• Ignition switch ON • Window lock switch OFF	Rear RH	Pushed down	DOWN (opens)

5. CHECK POWER WINDOW OPERATION FUNCTION AFTER IGNITION SWITCH IS TURNED OFF

(a) Check that all the power windows can be operated with the power window master switch after the ignition switch is turned off.

(b) Check that the key-off operation function does not operate after the driver or passenger side door is opened.

(c) Check that all the power windows cannot be operated after more than approximately 45 seconds elapse after the ignition switch is turned off.

6. CHECK PTC OPERATION

HINT:

PTC operation is a function that prevents overloading of the power window regulator by stopping the motor.
PTC operation activates when the power window switch is operated for a predetermined amount of time.

(a) Pull up and hold the power window switch for more than 90 seconds. Then release the switch.

(b) Check that pressing the switch does not move the window.

(c) Wait until 60 seconds have passed since the switch was released in the first step. Check that pressing the switch results in normal window movement.

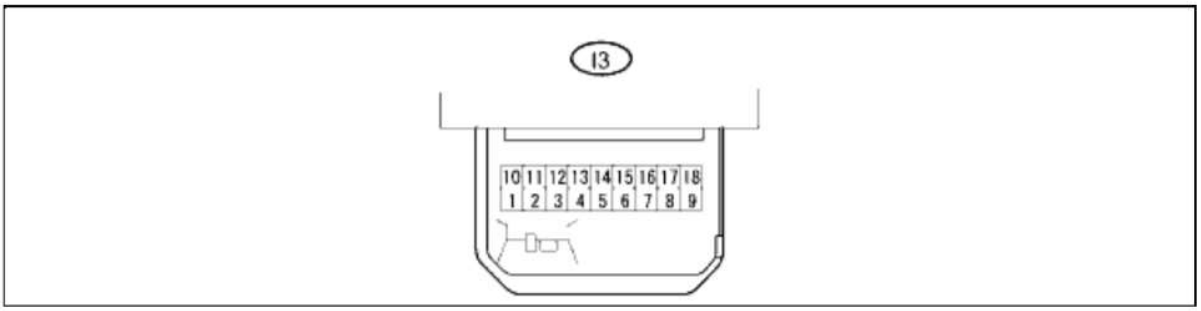
cardiagn.com

Last Modified: 3-10-2010	6.4 U	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000010ZC01OX
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: TERMINALS OF ECU (2010 Corolla)		

TERMINALS OF ECU

1. CHECK POWER WINDOW MASTER SWITCH

(a) Measure the voltage and resistance according to the value(s) in the table below.



TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	SWITCH CONDITION	SPECIFIED CONDITION
I3-1 (E) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
I3-3 (U) - I3-1 (E)	P - W-B*1 G - W-B*2	Power window motor UP output (driver side)	Ignition switch ON, driver side power window switch OFF	Below 1 V
I3-3 (U) - I3-1 (E)	P - W-B*1 G - W-B*2	Power window motor UP output (driver side)	Ignition switch ON, driver side power window switch UP (manual operation)	11 to 14 V
I3-4 (D) - I3-1 (E)	W - W-B*1 Y - W-B*2	Power window motor DOWN output (driver side)	Ignition switch ON, driver side power window switch OFF	Below 1 V
I3-4 (D) - I3-1 (E)	W - W-B*1 Y - W-B*2	Power window motor DOWN output (driver side)	Ignition switch ON, driver side power window switch DOWN (manual operation)	11 to 14 V
I3-4 (D) - I3-1 (E)	W - W-B*1 Y - W-B*2	Power window motor DOWN output (driver side)	Ignition switch ON, driver side power window switch OFF	Below 1 V
I3-4 (D) - I3-1 (E)	W - W-B*1 Y - W-B*2	Power window motor DOWN output (driver side)	Ignition switch ON, driver side power window switch fully DOWN (AUTO operation)	11 to 14 V
I3-6 (B) - Body ground	L - Body ground*1	Ignition power supply	Ignition switch off	Below 1 V

cardiagn.com

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	SWITCH CONDITION	SPECIFIED CONDITION
	W - Body ground*2			
I3-6 (B) - Body ground	L - Body ground*1 W - Body ground*2	Ignition power supply	Ignition switch ON	11 to 14 V
I3-10 (U) - I3-1 (E)	G - W-B*1 B - W-B*2	Power window motor UP output (rear RH)	Ignition switch ON, rear RH side power window switch OFF	Below 1 V
I3-10 (U) - I3-1 (E)	G - W-B*1 B - W-B*2	Power window motor UP output (rear RH)	Ignition switch ON, rear RH side power window switch UP	11 to 14 V
I3-12 (U) - I3-1 (E)	R - W-B	Power window motor UP output (rear LH)	Ignition switch ON, rear LH side power window switch OFF	Below 1 V
I3-12 (U) - I3-1 (E)	R - W-B	Power window motor UP output (rear LH)	Ignition switch ON, rear LH side power window switch UP	11 to 14 V
I3-13 (D) - I3-1 (E)	L - W-B	Power window motor DOWN output (rear LH)	Ignition switch ON, rear LH side power window switch OFF	Below 1 V
I3-13 (D) - I3-1 (E)	L - W-B	Power window motor DOWN output (rear LH)	Ignition switch ON, rear LH side power window switch DOWN	11 to 14 V
I3-15 (D) - I3-1 (E)	BR - W-B	Power window motor DOWN output (passenger side)	Ignition switch ON, passenger side power window switch OFF	Below 1 V
I3-15 (D) - I3-1 (E)	BR - W-B	Power window motor DOWN output (passenger side)	Ignition switch ON, passenger side power window switch DOWN	11 to 14 V
I3-16 (U) - I3-1 (E)	G - W-B	Power window motor UP output (passenger side)	Ignition switch ON, passenger side power window switch OFF	Below 1 V
I3-16 (U) - I3-1 (E)	G - W-B	Power window motor UP output (passenger side)	Ignition switch ON, passenger side power window switch UP	11 to 14 V
I3-18 (D) - I3-1 (E)	BR - W-B*1 Y - W-B*2	Power window motor DOWN output (rear RH)	Ignition switch ON, rear RH side power window switch OFF	Below 1 V

cardiagn.com

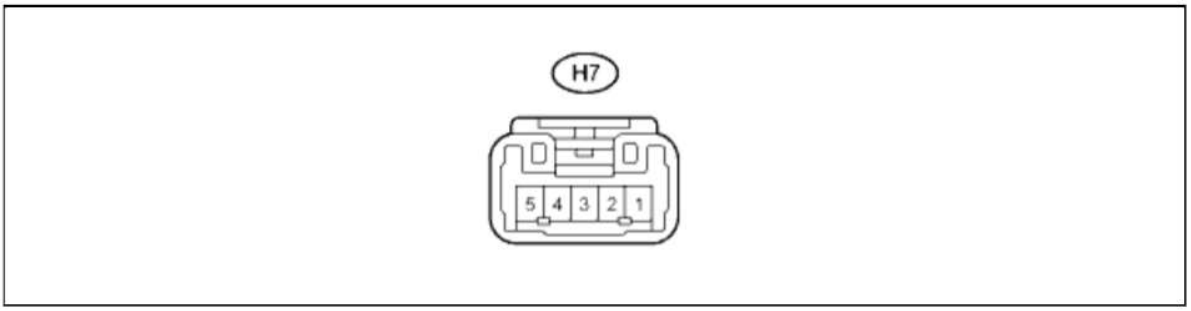
TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	SWITCH CONDITION	SPECIFIED CONDITION
I3-18 (D) - I3-1 (E)	BR - W-B*1 Y - W-B*2	Power window motor DOWN output (rear RH)	Ignition switch ON, rear RH side power window switch DOWN	11 to 14 V

- *1: for TMC Made
- *2: Except for TMC made

If the result is not as specified, the master switch or wire harness may have a malfunction.

2. CHECK POWER WINDOW SWITCH (PASSENGER SIDE)

(a) Measure the voltage according to the value(s) in the table below.



TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	SWITCH CONDITION	SPECIFIED CONDITION
H7-1 (D) - Body ground	B - Body ground	Power window motor DOWN output	Ignition switch ON, power window switch OFF	Below 1 V
H7-1 (D) - Body ground	B - Body ground	Power window motor DOWN output	Ignition switch ON, power window switch DOWN	11 to 14 V
H7-2 (SD) - Body ground	BR - Body ground	Power window motor DOWN input (Remote)	Ignition switch ON, power window master switch OFF	Below 1 V
H7-3 (B) - Body ground	L - Body ground*1 Y - Body ground*2	Ignition power supply	Ignition switch OFF	Below 1 V
H7-3 (B) - Body ground	L - Body ground*1 Y - Body ground*2	Ignition power supply	Ignition switch ON	11 to 14 V
H7-2 (SD) - Body ground	BR - Body ground	Power window motor DOWN input (Remote)	Ignition switch ON, power window master switch DOWN (Remote)	11 to 14 V

cardiagn.com

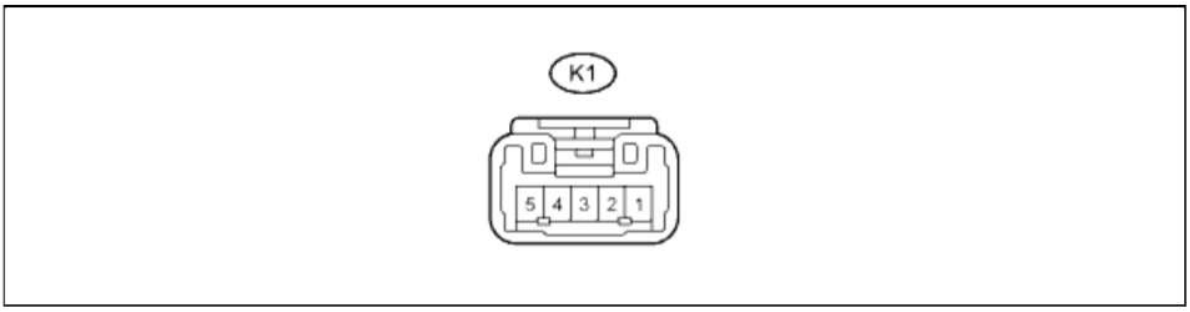
TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	SWITCH CONDITION	SPECIFIED CONDITION
H7-4 (U) - Body ground	Y - Body ground*1 L - Body ground*2	Power window motor UP output	Ignition switch ON, power window switch OFF	Below 1 V
H7-4 (U) - Body ground	Y - Body ground*1 L - Body ground*2	Power window motor UP output	Ignition switch ON, power window switch UP	11 to 14 V
H7-5 (SU) - Body ground	G - Body ground	Power window motor UP input (Remote)	Ignition switch ON, power window master switch OFF	Below 1 V
H7-5 (SU) - Body ground	G - Body ground	Power window motor UP input (Remote)	Ignition switch ON, power window master switch UP (Remote)	11 to 14 V

- *1: for TMC Made
- *2: Except for TMC made

If the result is not as specified, the switch or wire harness may have a malfunction.

3. CHECK POWER WINDOW SWITCH (REAR LH SIDE)

(a) Measure the voltage according to the value(s) in the table below.



TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	SWITCH CONDITION	SPECIFIED CONDITION
K1-1 (D) - Body ground	Y - Body ground	Power window motor DOWN output	Ignition switch ON, power window switch OFF	Below 1 V
K1-1 (D) - Body ground	Y - Body ground	Power window motor DOWN output	Ignition switch ON, power window switch DOWN	11 to 14 V
K1-2 (SD) - Body ground	L - Body ground	Power window motor DOWN input (Remote)	Ignition switch ON, power window master switch OFF	Below 1 V
K1-2 (SD) - Body ground	L - Body ground	Power window motor DOWN input (Remote)	Ignition switch ON, power window master switch DOWN (Remote)	11 to 14 V

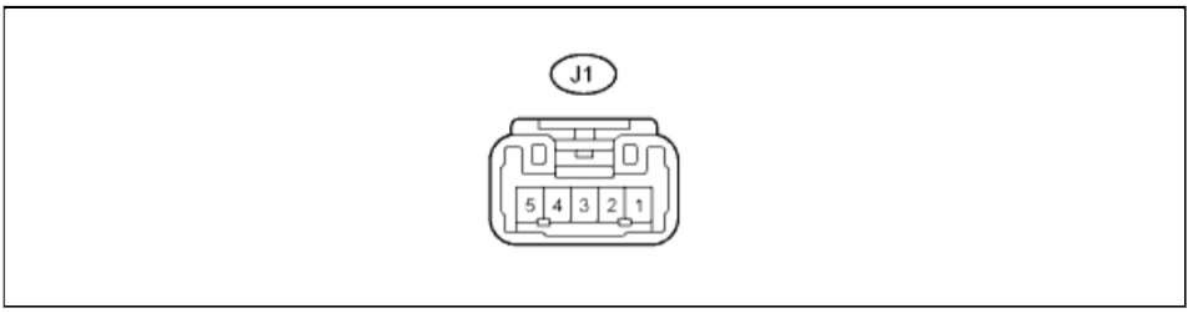
cardiagn.com

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	SWITCH CONDITION	SPECIFIED CONDITION
K1-3 (B) - Body ground	P - Body ground	Ignition power supply	Ignition switch off	Below 1 V
K1-3 (B) - Body ground	P - Body ground	Ignition power supply	Ignition switch ON	11 to 14 V
K1-4 (U) - Body ground	G - Body ground	Power window motor UP output	Ignition switch ON, power window switch OFF	Below 1 V
K1-4 (U) - Body ground	G - Body ground	Power window motor UP output	Ignition switch ON, power window switch UP	11 to 14 V
K1-5 (SU) - Body ground	R - Body ground	Power window motor UP input (Remote)	Ignition switch ON, power window master switch OFF	Below 1 V
K1-5 (SU) - Body ground	R - Body ground	Power window motor UP input (Remote)	Ignition switch ON, power window master switch UP (Remote)	11 to 14 V

If the result is not as specified, the switch or wire harness may have a malfunction.

4. CHECK POWER WINDOW SWITCH (REAR RH SIDE)

(a) Measure the voltage according to the value(s) in the table below.



TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	SWITCH CONDITION	SPECIFIED CONDITION
J1-1 (D) - Body ground	G - Body ground	Power window motor DOWN output	Ignition switch ON, power window switch OFF	Below 1 V
J1-1 (D) - Body ground	G - Body ground	Power window motor DOWN output	Ignition switch ON, power window switch DOWN	11 to 14 V
J1-2 (SD) - Body ground	BR - Body ground*1 Y - Body ground*2	Power window motor DOWN input (Remote)	Ignition switch ON, power window master switch OFF	Below 1 V
J1-2 (SD) - Body ground	BR - Body ground*1 Y - Body	Power window motor DOWN input (Remote)	Ignition switch ON, power window master switch DOWN (Remote)	11 to 14 V

cardiagn.com

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	SWITCH CONDITION	SPECIFIED CONDITION
	ground*2			
J1-3 (B) - Body ground	L - Body ground*1 BE - Body ground*2	Ignition power supply	Ignition switch off	Below 1 V
J1-3 (B) - Body ground	L - Body ground*1 BE - Body ground*2	Ignition power supply	Ignition switch ON	11 to 14 V
J1-4 (U) - Body ground	R - Body ground	Power window motor UP output	Ignition switch ON, power window switch OFF	Below 1 V
J1-4 (U) - Body ground	R - Body ground	Power window motor UP output	Ignition switch ON, power window switch UP	11 to 14 V
J1-5 (SU) - Body ground	G - Body ground*1 B - Body ground*2	Power window motor UP input (Remote)	Ignition switch ON, power window master switch OFF	Below 1 V
J1-5 (SU) - Body ground	G - Body ground*1 B - Body ground*2	Power window motor UP input (Remote)	Ignition switch ON, power window master switch UP (Remote)	11 to 14 V
J1-2 (SD) - Body ground	BR - Body ground*1 Y - Body ground*2	Power window motor DOWN input (Remote)	Ignition switch ON, power window master switch OFF	Below 1 V

- *1: for TMC Made
- *2: Except for TMC made

If the result is not as specified, the switch or wire harness may have a malfunction.



cardiagn.com

Last Modified: 3-10-2010	6.4 T	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000010ZD01DX
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: PROBLEM SYMPTOMS TABLE (2010 Corolla)		

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

Power Window Control System

SYMPTOM	SUSPECTED AREA	SEE PAGE
Remote Up / Down Function does not Operate	Power window master switch	INFO
	Power window switch (applicable location)	-
	Wire harness or connector	-
Driver Side Power Window does not Operate with Power Window Master Switch	Power window master switch	INFO
	Power window regulator motor assembly (driver side)	-
	Wire harness or connector	-
Front Passenger Side Power Window does not Operate with Front Passenger Side Power Window Switch	Power window switch (passenger side)	INFO
	Power window regulator motor assembly (passenger side)	-
	Power window master switch	-
	Wire harness or connector	-
Rear Power Window LH does not Operate with Rear Power Window Switch LH	Power window switch (rear LH)	INFO
	Power window regulator motor assembly (rear LH)	-
	Power window master switch	-
	Wire harness or connector	-
Rear Power Window RH does not Operate with Rear Power Window Switch RH	Power window switch (rear RH)	INFO
	Power window regulator motor assembly (rear RH)	-

cardiagn.com

SYMPTOM	SUSPECTED AREA	SEE PAGE
	Power window master switch	-
	Wire harness or connector	-
Power Windows do not Operate at All	Main body ECU (instrument panel junction block)	INFO
	Power window master switch	-
	Wire harness or connector	-
Key-off Operation Function Operates even if Operating Conditions are not Satisfied	Main body ECU (instrument panel junction block)	INFO
	Lighting system	-



cardiagn.com

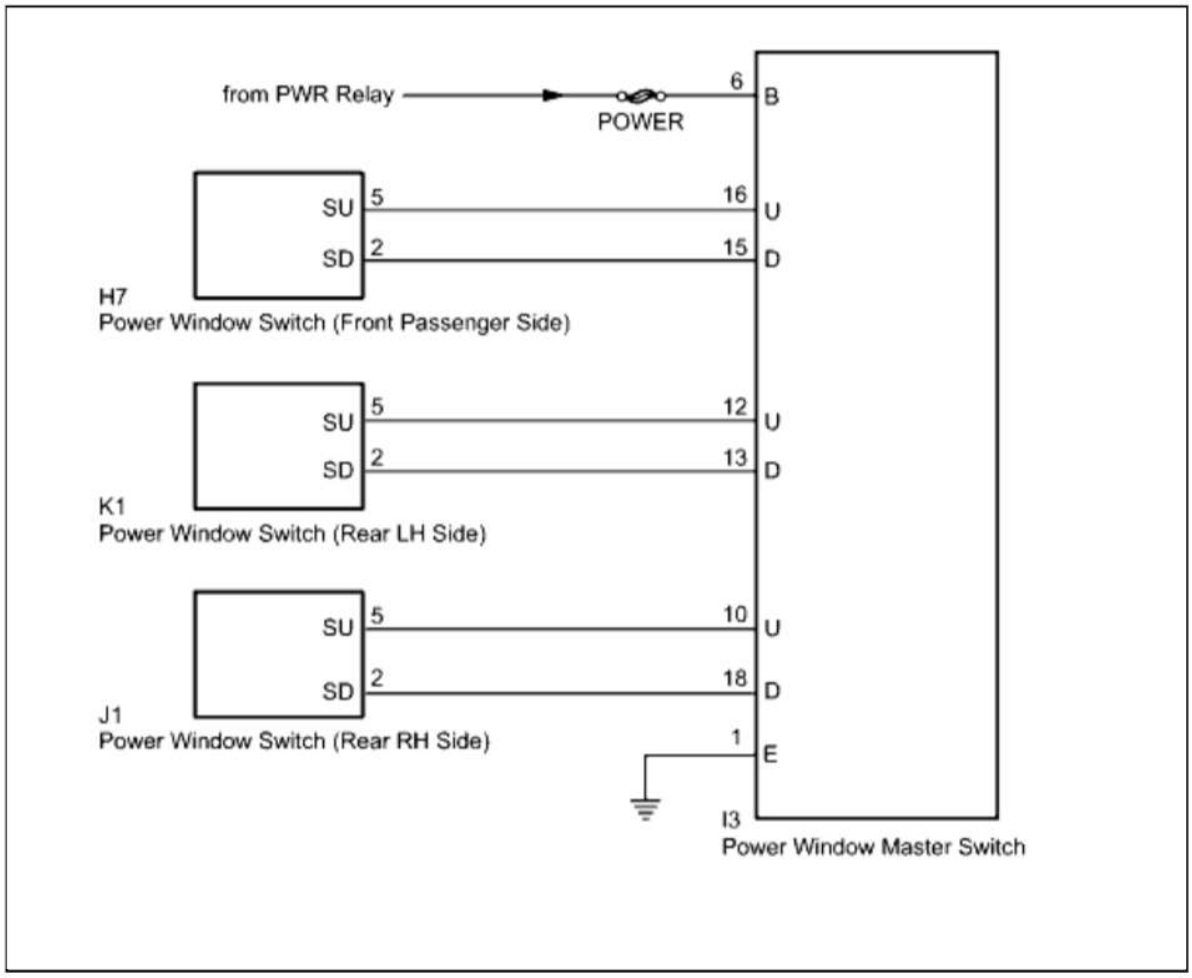
Last Modified: 3-10-2010	6.4 J	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000010ZI01WX
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: Remote Up / Down Function does not Operate (2010 Corolla)		

Remote Up / Down Function does not Operate

DESCRIPTION

With the ignition switch ON, the power window master switch transmits remote switch signals to the switches of the front passenger door power window and rear door power windows. Then, each regulator switch drives its respective power window regulator motor.

WIRING DIAGRAM

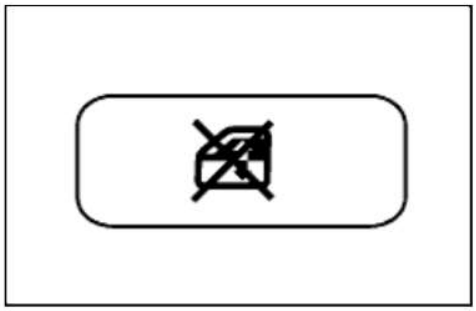


INSPECTION PROCEDURE

PROCEDURE

cardiagn.com

1.	CHECK POWER WINDOW MASTER SWITCH



(a) Turn the window lock switch OFF and operate the switches on the master switch. Check that the remote UP and DOWN function operates normally.

OK:

Remote UP and DOWN function operates normally.

NG ▶ **CHECK MANUAL UP / DOWN FUNCTION**

OK ▶ **END**

2.	CHECK MANUAL UP / DOWN FUNCTION

(a) Check that the passenger door power window and rear door power window manual UP and DOWN function operates normally.

OK:

Manual UP and DOWN function operates normally.

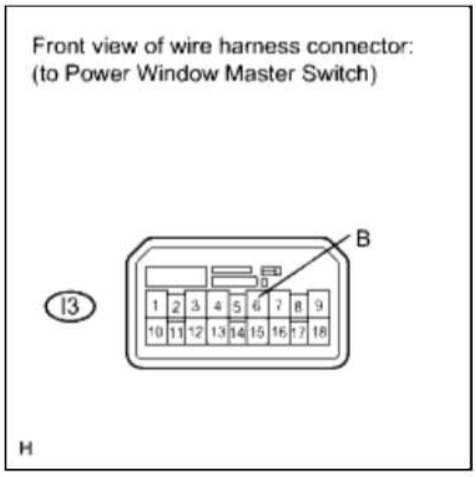
NG ▶ **CHECK HARNESS AND CONNECTOR (POWER WINDOW MASTER SWITCH - BATTERY)**

OK ▶ **REPLACE POWER WINDOW MASTER SWITCH**

3.	CHECK HARNESS AND CONNECTOR (POWER WINDOW MASTER SWITCH - BATTERY)

(a) Disconnect the power window master switch connector.

cardiagn.com



(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
I3-6 (B) - Body ground	Ignition switch ON	11 to 14 V

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

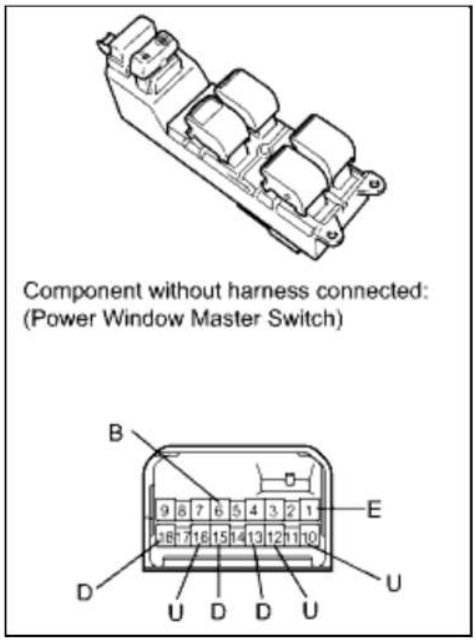
4.	**INSPECT POWER WINDOW MASTER SWITCH**

(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
6 (B) - 16 (U) 15 (D) - 1 (E)	UP (Passenger side)	Below 1 Ω
6 (B) - 15 (D) 16 (U) - 1 (E)	DOWN (Passenger side)	Below 1 Ω
6 (B) - 12 (U) 13 (D) - 1 (E)	UP (Rear LH)	Below 1 Ω

cardiagn.com



6 (B) - 13 (D) 12 (U) - 1 (E)	DOWN (Rear LH)	Below 1 Ω
6 (B) - 10 (U) 18 (D) - 1 (E)	UP (Rear RH)	Below 1 Ω
6 (B) - 18 (D) 10 (U) - 1 (E)	DOWN (Rear RH)	Below 1 Ω

NG ▶ **REPLACE POWER WINDOW MASTER SWITCH**

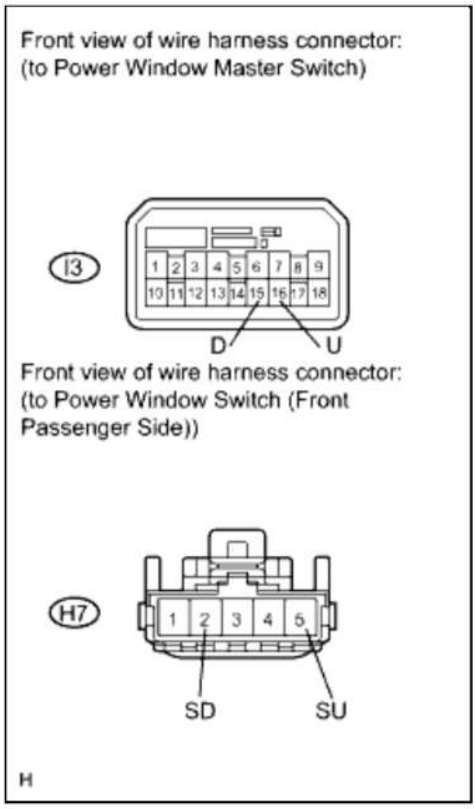
OK ▼

5.	**CHECK HARNESS AND CONNECTOR (MASTER SWITCH - FRONT PASSENGER, REAR LH/RH SWITCH)**

(a) Front passenger side:

(1) Disconnect the power window switch (passenger side) connector.

cardiagn.com



(2) Measure the resistance according to the value(s) in the table below.

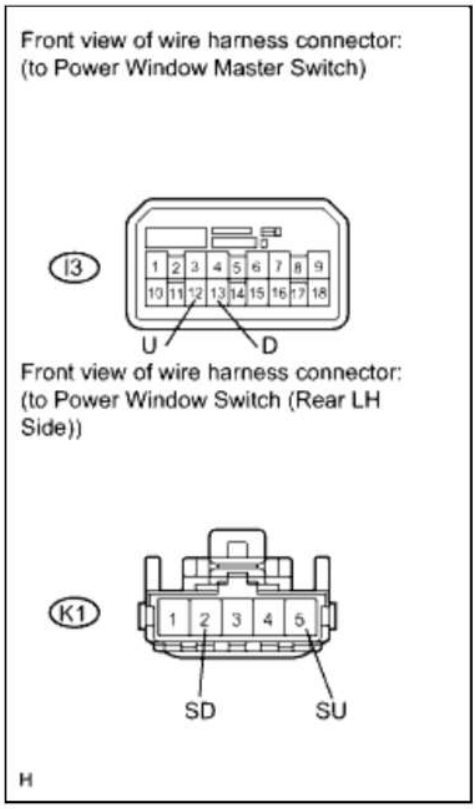
Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I3-16 (U) - H7-5 (SU)	Always	Below 1 Ω
I3-15 (D) - H7-2 (SD)	Always	Below 1 Ω
I3-16 (U) - Body ground	Always	10 kΩ or higher
I3-15 (D) - Body ground	Always	10 kΩ or higher

(b) Rear LH side:

(1) Disconnect the power window switch (rear LH side) connector.

cardiagn.com



(2) Measure the resistance according to the value(s) in the table below.

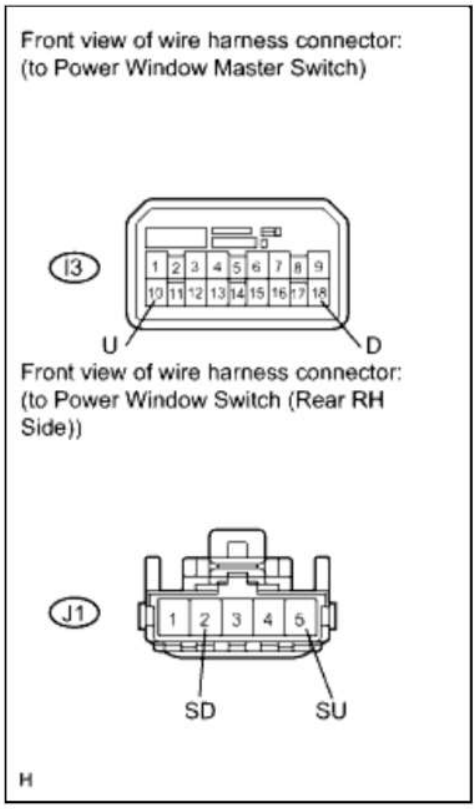
Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I3-12 (U) - K1-5 (SU)	Always	Below 1 Ω
I3-13 (D) - K1-2 (SD)	Always	Below 1 Ω
I3-12 (U) - Body ground	Always	10 kΩ or higher
I3-13 (D) - Body ground	Always	10 kΩ or higher

(c) Rear RH side:

(1) Disconnect the power window switch (rear RH side) connector.

cardiagn.com



(2) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I3-10 (U) - J1-5 (SU)	Always	Below 1 Ω
I3-18 (D) - J1-2 (SD)	Always	Below 1 Ω
I3-10 (U) - Body ground	Always	10 kΩ or higher
I3-18 (D) - Body ground	Always	10 kΩ or higher

Result:

RESULT	PROCEED TO
NG	A
OK (Front passenger side)	B
OK (Rear LH side)	C
OK (Rear RH side)	D

D ▶ **REPLACE POWER WINDOW SWITCH (REAR RH SIDE)**

C ▶ **REPLACE POWER WINDOW SWITCH (REAR LH SIDE)**

cardiagn.com

B ▶ REPLACE POWER WINDOW SWITCH (FRONT PASSENGER SIDE)

A ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR



cardiagn.com

Last Modified: 3-10-2010	6.4 D	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000012GX04LX
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: DIAGNOSIS SYSTEM (2010 Corolla)		

DIAGNOSIS SYSTEM

1. CHECK DLC3

(a) Check the DLC3 INFO .

2. INSPECT BATTERY VOLTAGE

(a) Measure the battery voltage.

Standard Voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to the next step.

cardiagn.com

Last Modified: 3-10-2010	6.4 U	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000011V1030X
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: DATA LIST / ACTIVE TEST (2010 Corolla)		

DATA LIST / ACTIVE TEST

1. DATA LIST

HINT:

Using the Techstream to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

(a) Connect the Techstream to the DLC3.

(b) Turn the ignition switch to ON.

(c) Turn the Techstream on.

(d) Enter the following menu: Body Electrical / Main Body / Data List.

(e) Read the Data List according to the display on the Techstream.

Main Body

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
D Door Courtesy SW	Driver side door courtesy switch signal/ON or OFF	ON: Driver side door is open OFF: Driver side door is closed	-

2. ACTIVE TEST

HINT:

Using the Techstream to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

(a) Connect the Techstream to the DLC3.

(b) Turn the ignition switch to ON.

(c) Turn the Techstream on.

(d) Enter the following menu: Body Electrical / Main Body / Active Test.

(e) Perform the Active Test according to the display on the Techstream.

cardiagn.com

Main Body

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
IG OFF P/W Control Permission Output	Power window	ON or OFF (After ignition switch is turned off)	-



cardiagn.com

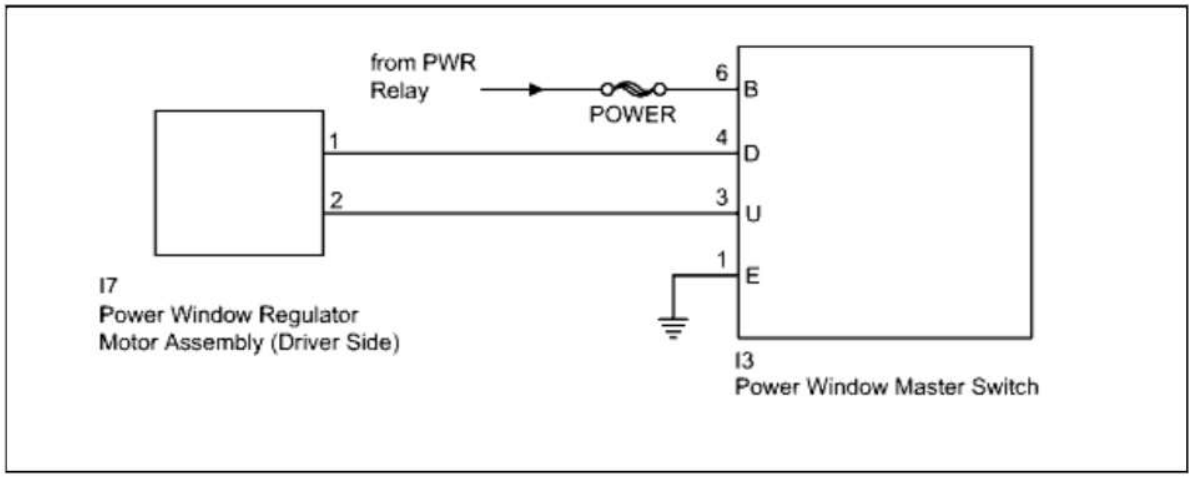
Last Modified: 3-10-2010	6.4 J	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000010ZK016X
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: Driver Side Power Window does not Operate with Power Window Master Switch (2010 Corolla)		

Driver Side Power Window does not Operate with Power Window Master Switch

DESCRIPTION

If the manual UP or DOWN and AUTO DOWN functions do not operate, a malfunction may exist in the power window master switch, power window regulator motor or wire harness.

WIRING DIAGRAM



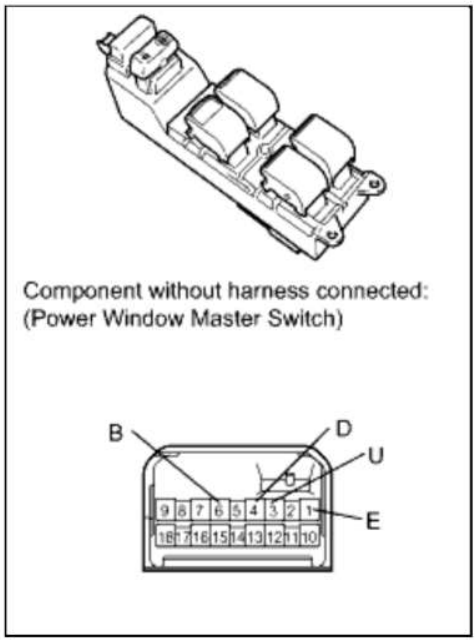
INSPECTION PROCEDURE

PROCEDURE

1.	**INSPECT POWER WINDOW MASTER SWITCH (DRIVER SWITCH)**

(a) Remove the power window master switch INFO .

cardiagn.com



(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 (E) - 4 (D) 3 (U) - 6 (B)	UP	Below 1 Ω
1 (E) - 3 (U) 1 (E) - 4 (D)	OFF	Below 1 Ω
1 (E) - 3 (U) 6 (B) - 4 (D)	DOWN	Below 1 Ω
1 (E) - 3 (U) 6 (B) - 4 (D)	AUTO DOWN	Below 1 Ω

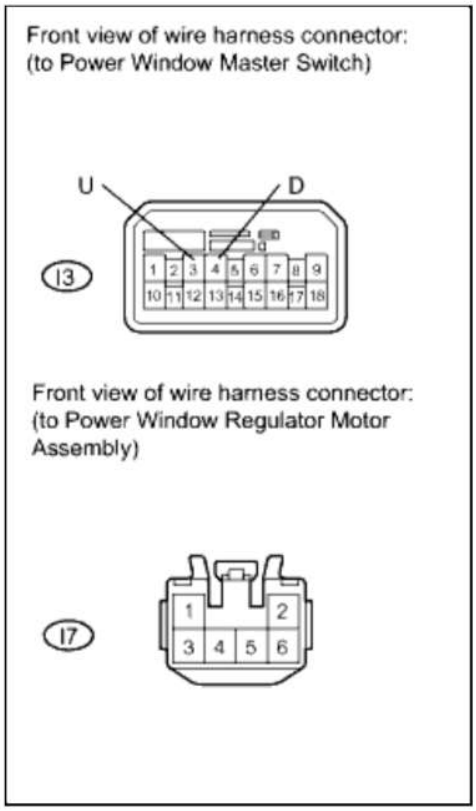
NG ▶ **REPLACE POWER WINDOW MASTER SWITCH**

OK ▼

2.	**CHECK HARNESS AND CONNECTOR (MASTER SWITCH - MOTOR (DRIVER SIDE))**

(a) Disconnect the power window regulator motor assembly (driver side) motor connector.

cardiagn.com



(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I3-4 (D) - I7-1	Always	Below 1 Ω
I3-3 (U) - I7-2	Always	Below 1 Ω
I3-4 (D) - Body ground	Always	10 kΩ or higher
I3-3 (U) - Body ground	Always	10 kΩ or higher

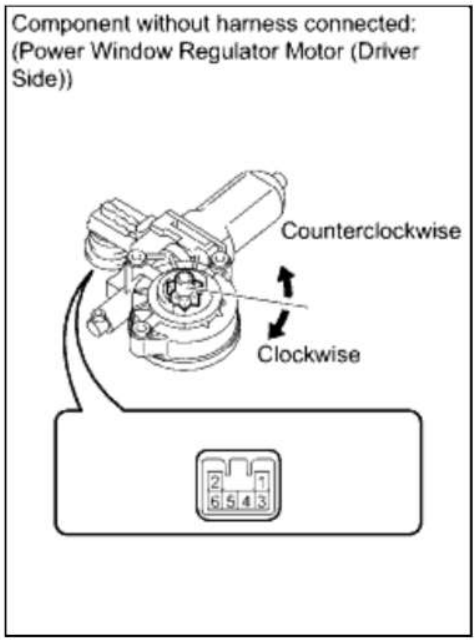
NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

3.	INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY (DRIVER SIDE)

(a) Remove the power window regulator motor assembly INFO .

cardiagn.com



(b) Check power window regulator motor operation:

(1) Apply battery voltage to connector terminals 1 and 2.

NOTICE:

Do not apply battery voltage to any terminals except terminals 1 and 2.

(2) Check that the motor gear rotates smoothly as follows.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1 Battery negative (-) → 2	Motor gear rotates counterclockwise
Battery positive (+) → 2 Battery negative (-) → 1	Motor gear rotates clockwise

(c) Check PTC operation:

NOTICE:

This check must be performed with the power window regulator and door glass installed on the vehicle.

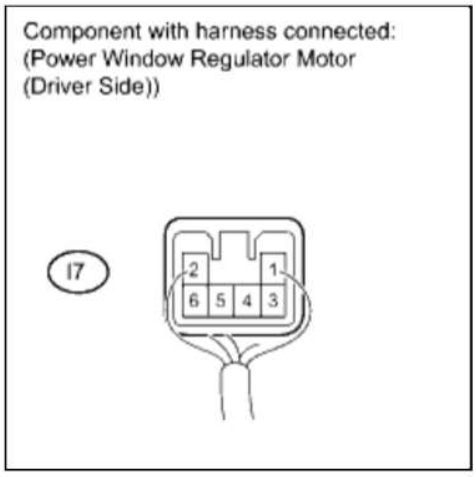
(1) Install the power window regulator motor INFO .

(2) Connect an electrical tester DC 400 A probe to the wire harness of terminal 2.

NOTICE:

Match the arrow mark of the probe with the direction of the current flow.

cardiagn.com



(3) Fully close the door glass by pulling up the power window switch. Wait for approximately 60 seconds.

(4) Continue to pull up the power window switch and measure how long it takes for the electrical current to change from a range of 16 to 28 A to approximately 1 A (current shut-off inspection).

Standard:

4 to 90 seconds

(5) Wait for 60 seconds after the previous step, and then push down press the power window switch (driver side).

OK:

The driver side window goes down.

NG ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (DRIVER SIDE)**

OK ▶ **REPLACE POWER WINDOW MASTER SWITCH**

cardiagn.com

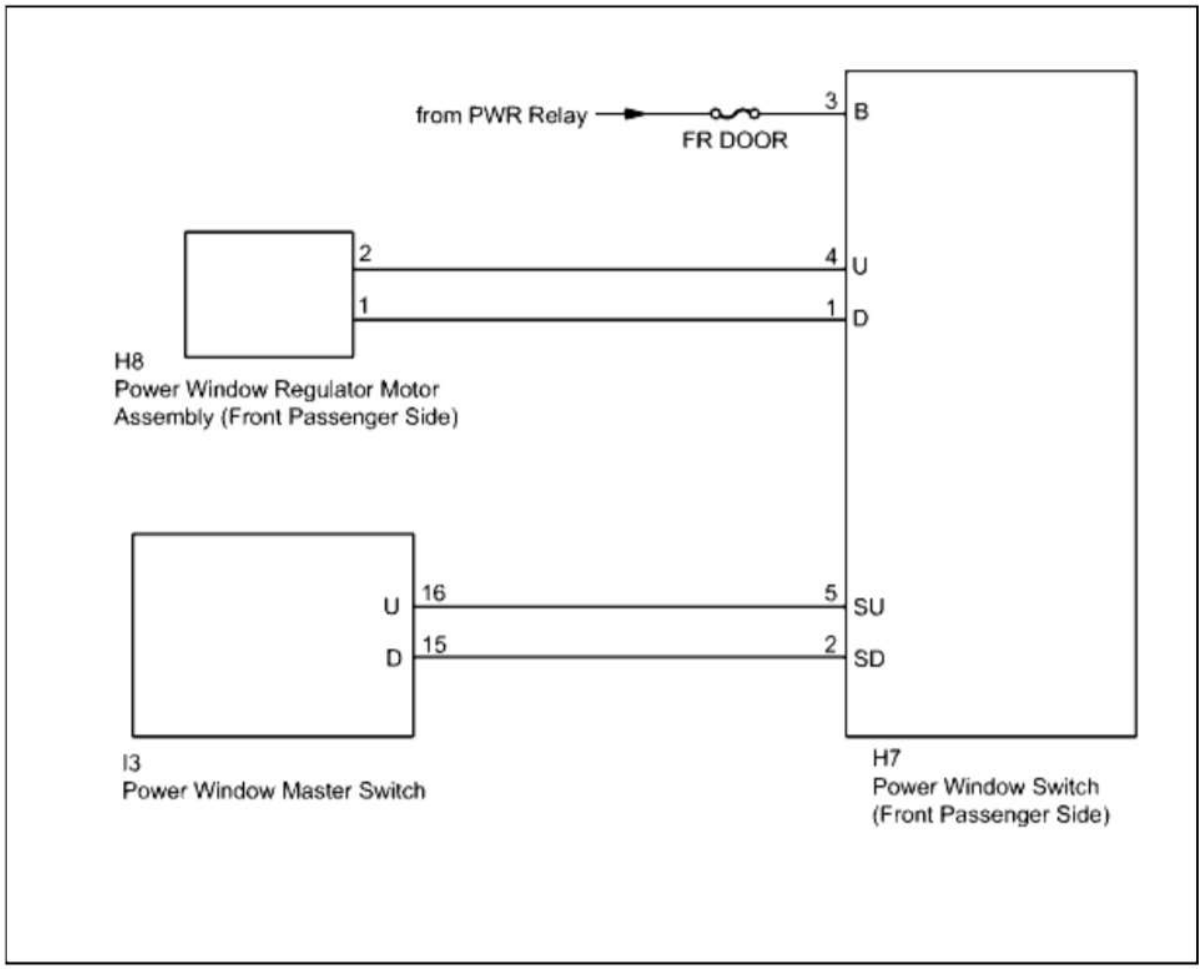
Last Modified: 3-10-2010	6.4 J	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000010ZL01RX
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: Front Passenger Side Power Window does not Operate with Front Passenger Side Power Window Switch (2010 Corolla)		

Front Passenger Side Power Window does not Operate with Front Passenger Side Power Window Switch

DESCRIPTION

If the passenger side manual UP or DOWN function does not operate, a malfunction may exist in the power window regulator motor, power window switch, power window master switch or wire harness.

WIRING DIAGRAM

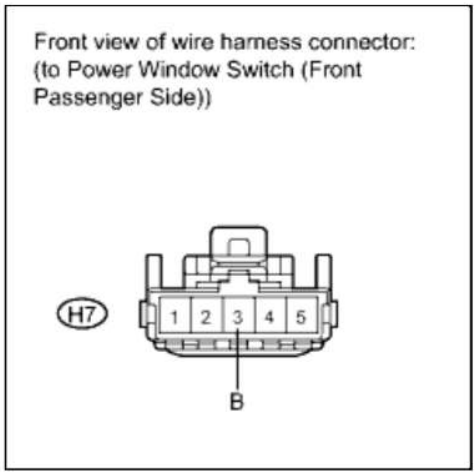


INSPECTION PROCEDURE

PROCEDURE

cardiagn.com

1.	CHECK HARNESS AND CONNECTOR (POWER SOURCE)



(a) Disconnect the power window switch (front passenger side) connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
H7-3 (B) - Body ground	Ignition switch ON	11 to 14 V

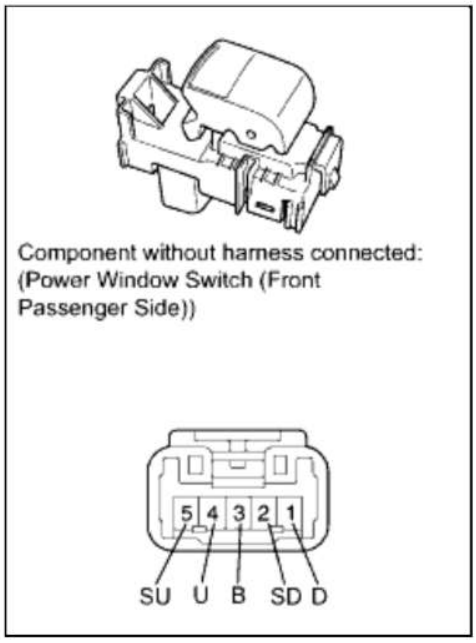
NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

2.	INSPECT POWER WINDOW SWITCH (FRONT PASSENGER SIDE)

(a) Remove the power window switch INFO .

cardiagn.com



(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
3 (B) - 4 (U) 2 (SD) - 1 (D)	UP	Below 1 Ω
5 (SU) - 4 (U) 2 (SD) - 1 (D)	OFF	Below 1 Ω
5 (SU) - 4 (U) 3 (B) - 1 (D)	DOWN	Below 1 Ω

NG ▶ **REPLACE POWER WINDOW SWITCH (FRONT PASSENGER SIDE)**

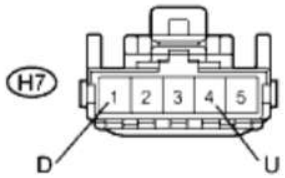
OK ▼

3.	**CHECK HARNESS AND CONNECTOR (SWITCH (PASSENGER SIDE) - MOTOR (PASSENGER SIDE))**

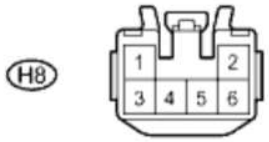
(a) Disconnect the power window regulator motor assembly (front passenger side) connector.

cardiagn.com

Front view of wire harness connector:
(to Power Window Switch (Front Passenger Side))



Front view of wire harness connector:
(to Power Window Regulator Motor Assembly (Front Passenger Side))



(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
H7-1 (D) - H8-1	Always	Below 1 Ω
H7-4 (U) - H8-2	Always	Below 1 Ω
H7-1 (D) - Body ground	Always	10 kΩ or higher
H7-4 (U) - Body ground	Always	10 kΩ or higher

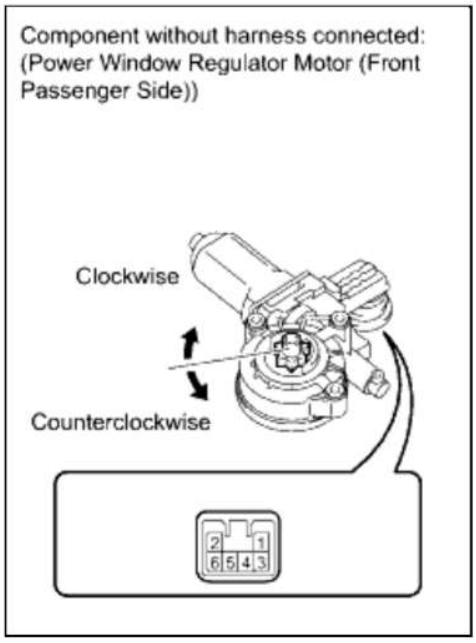
NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

4.	**INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY (FRONT PASSENGER SIDE)**

(a) Remove the power window regulator motor assembly INFO .

cardiagn.com



(b) Check power window regulator motor operation:

(1) Apply battery voltage to connector terminals 1 and 2.

NOTICE:

Do not apply battery voltage to any terminals except terminals 1 and 2.

(2) Check that the motor gear rotates smoothly as follows.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1 Battery negative (-) → 2	Motor gear rotates clockwise
Battery positive (+) → 2 Battery negative (-) → 1	Motor gear rotates counterclockwise

(c) Check PTC operation:

NOTICE:

This check must be performed with the power window regulator and door glass installed on the vehicle.

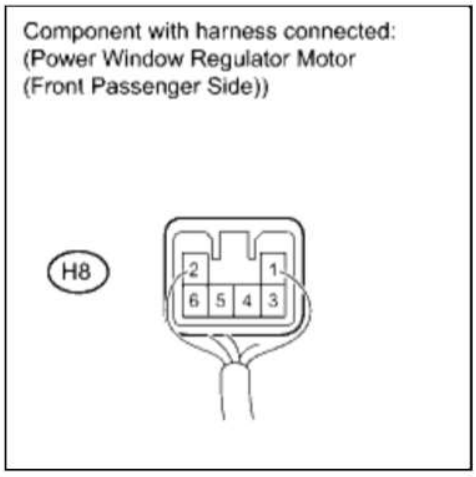
(1) Install the power window regulator motor INFO .

(2) Connect an electrical tester DC 400 A probe to the wire harness of terminal 2.

NOTICE:

Match the arrow mark of the probe with the direction of the current flow.

cardiagn.com



(3) Fully close the door glass by pulling up the power window switch. Wait for approximately 60 seconds.

(4) Continue to pull up the power window switch and measure how long it takes for the electrical current to change from a range of 16 to 28 A to approximately 1 A (current shut-off inspection).

Standard:

4 to 90 seconds

(5) Wait for 60 seconds after the previous step, and then push down the power window switch (passenger side).

OK:

The passenger side window goes down.

NG ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (FRONT PASSENGER SIDE)**

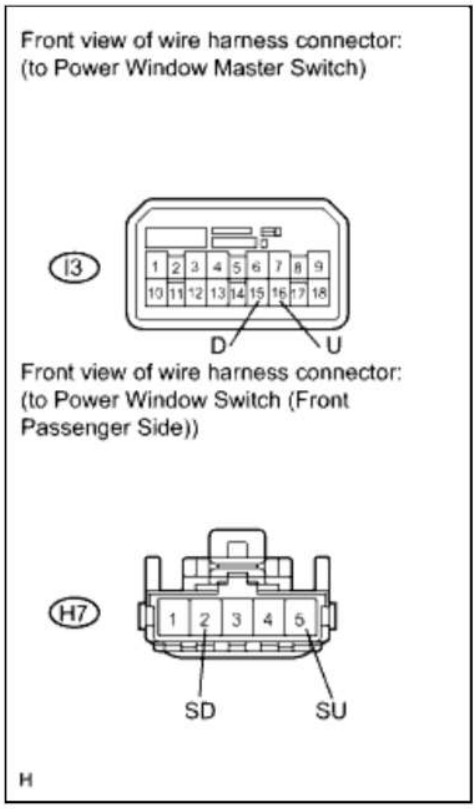
OK ▼

5.	**CHECK HARNESS AND CONNECTOR (MASTER SWITCH - SWITCH (FRONT PASSENGER SIDE))**

(a) Disconnect the power window master switch connector.

(b) Disconnect the power window switch (front passenger side) connector.

cardiagn.com



(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I3-16 (U) - H7-5 (SU)	Always	Below 1 Ω
I3-15 (D) - H7-2 (SD)	Always	Below 1 Ω
I3-16 (U) - Body ground	Always	10 kΩ or higher
I3-15 (D) - Body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▶ **REPLACE POWER WINDOW MASTER SWITCH**

cardiagn.com

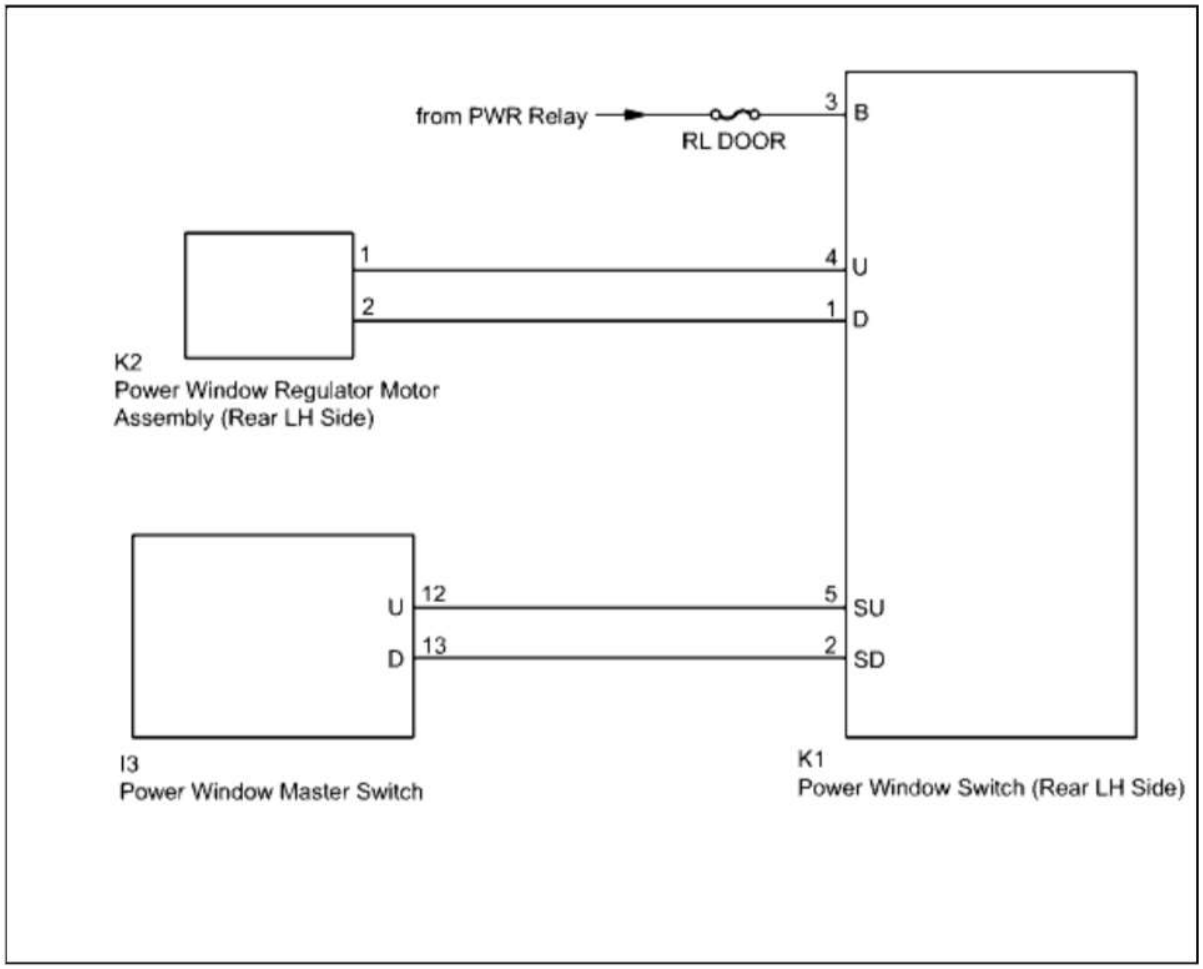
Last Modified: 3-10-2010	6.4 J	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000010ZM025X
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: Rear Power Window LH does not Operate with Rear Power Window Switch LH (2010 Corolla)		

Rear Power Window LH does not Operate with Rear Power Window Switch LH

DESCRIPTION

If the rear LH side manual UP or DOWN function does not operate, a malfunction may exist in the power window regulator motor, power window switch, power window master switch or wire harness.

WIRING DIAGRAM

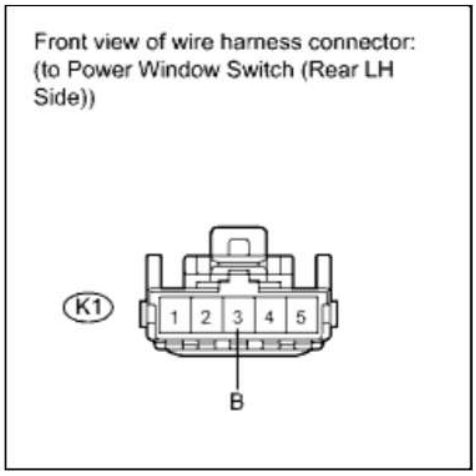


INSPECTION PROCEDURE

PROCEDURE

cardiagn.com

1.	CHECK HARNESS AND CONNECTOR (POWER SOURCE)



(a) Disconnect the power window switch (rear LH side) connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
K1-3 (B) - Body ground	Ignition switch ON	11 to 14 V

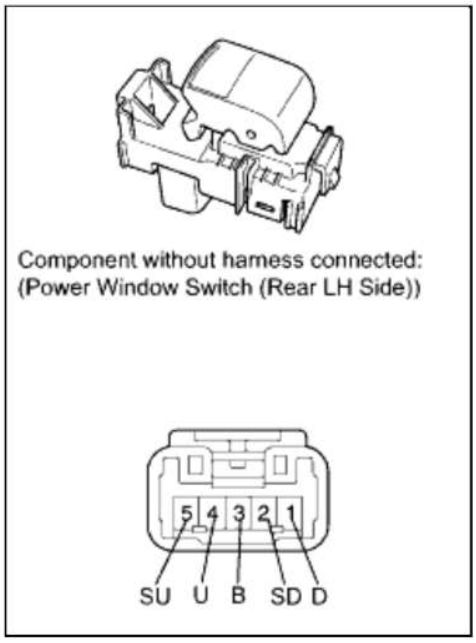
NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

2.	INSPECT POWER WINDOW SWITCH (REAR LH SIDE)

(a) Remove the power window switch INFO .

cardiagn.com



(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 (D) - 2 (SD) 3 (B) - 4 (U)	UP	Below 1 Ω
4 (U) - 5 (SU) 1 (D) - 2 (SD)	OFF	Below 1 Ω
2 (SD) - 3 (B) 4 (U) - 5 (SU)	DOWN	Below 1 Ω

NG ▶ **REPLACE POWER WINDOW SWITCH (REAR LH SIDE)**

OK ▼

3.	**CHECK HARNESS AND CONNECTOR (SWITCH (REAR LH SIDE) - MOTOR (REAR LH SIDE))**

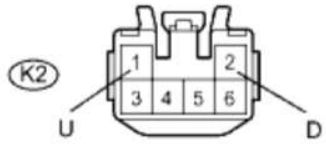
(a) Disconnect the power window regulator motor assembly (rear LH side) connector.

cardiagn.com

Front view of wire harness connector:
(to Power Window Switch (Rear LH Side))



Front view of wire harness connector:
(to Power Window Regulator Motor Assembly (Rear LH Side))



(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K1-4 (U) - K2-1 (U)	Always	Below 1 Ω
K1-1 (D) - K2-2 (D)	Always	Below 1 Ω
K1-4 (U) - Body ground	Always	10 kΩ or higher
K1-1 (D) - Body ground	Always	10 kΩ or higher

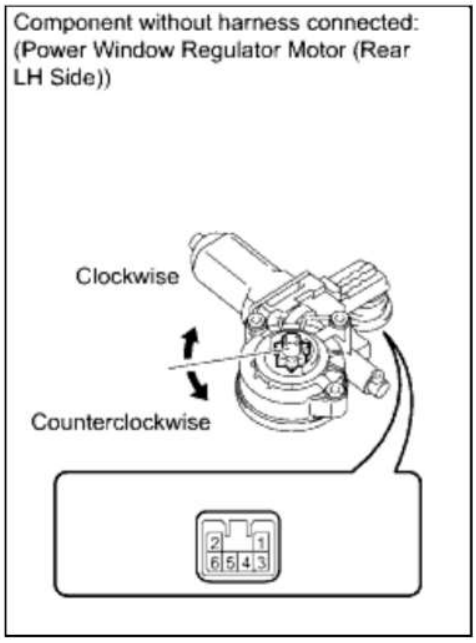
NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

4.	**INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY (REAR LH SIDE)**

(a) Remove the power window regulator motor assembly INFO .

cardiagn.com



(b) Check power window regulator motor operation:

(1) Apply battery voltage to connector terminals 1 and 2.

NOTICE:

Do not apply battery voltage to any terminals except terminals 1 and 2.

(2) Check that the motor gear rotates smoothly as follows.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1 Battery negative (-) → 2	Motor gear rotates clockwise
Battery positive (+) → 2 Battery negative (-) → 1	Motor gear rotates counterclockwise

(c) Check PTC operation:

NOTICE:

This check must be performed with the power window regulator and door glass installed on the vehicle.

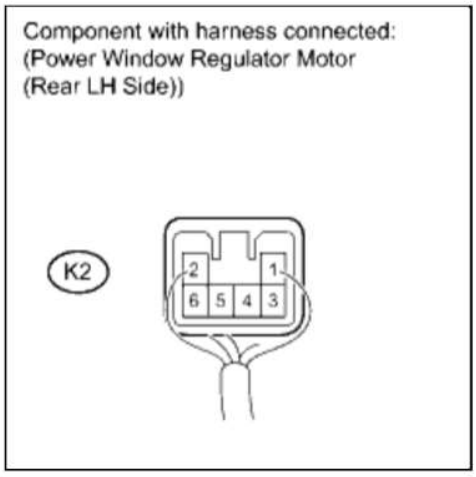
(1) Install the power window regulator motor INFO .

(2) Connect an electrical tester DC 400 A probe to the wire harness of terminal 1.

NOTICE:

Match the arrow mark of the probe with the direction of the current flow.

cardiagn.com



(3) Fully close the door glass by pulling up the power window switch. Wait for approximately 60 seconds.

(4) Continue to pull up the power window switch and measure how long it takes for the electrical current to change from a range of 16 to 28 A to approximately 1 A (current shut-off inspection).

Standard:

4 to 90 seconds

(5) Wait for 60 seconds after the previous step, and then push down the power window switch (rear LH side).

OK:

The rear LH side window goes down.

NG ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (REAR LH)**

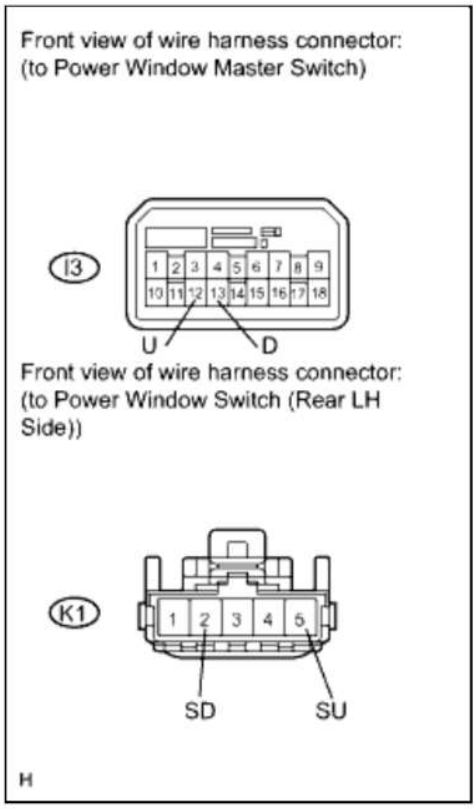
OK ▼

5.	**CHECK HARNESS AND CONNECTOR (MASTER SWITCH - SWITCH (REAR LH SIDE))**

(a) Disconnect the power window master switch connector.

(b) Disconnect the power window switch (rear LH side) connector.

cardiagn.com



(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I3-12 (U) - K1-5 (SU)	Always	Below 1 Ω
I3-13 (D) - K1-2 (SD)	Always	Below 1 Ω
I3-12 (U) - Body ground	Always	10 kΩ or higher
I3-13 (D) - Body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▶ **REPLACE POWER WINDOW MASTER SWITCH**

cardiagn.com

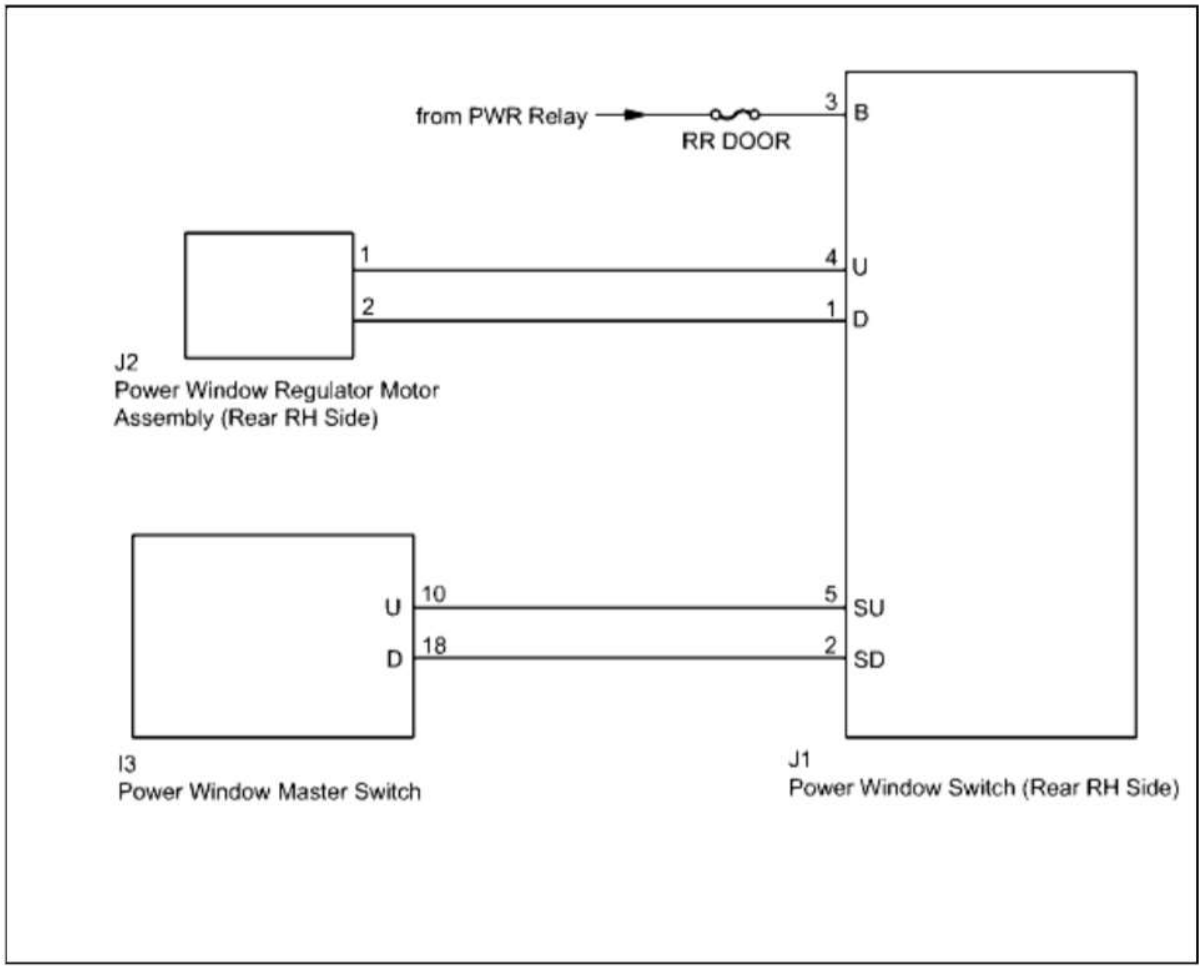
Last Modified: 3-10-2010	6.4 J	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000010ZH022X
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: Rear Power Window RH does not Operate with Rear Power Window Switch RH (2010 Corolla)		

Rear Power Window RH does not Operate with Rear Power Window Switch RH

DESCRIPTION

If the rear RH side manual UP or DOWN function does not operate, a malfunction may exist in the power window regulator motor, power window switch, power window master switch or wire harness.

WIRING DIAGRAM

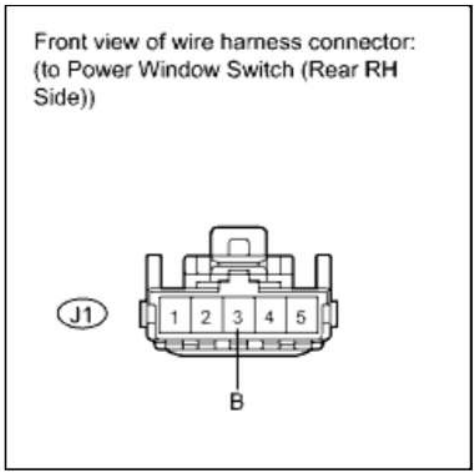


INSPECTION PROCEDURE

PROCEDURE

cardiagn.com

1.	CHECK HARNESS AND CONNECTOR (POWER SOURCE)



(a) Disconnect the power window switch (rear RH side) connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
J1-3 (B) - Body ground	Ignition switch ON	11 to 14 V

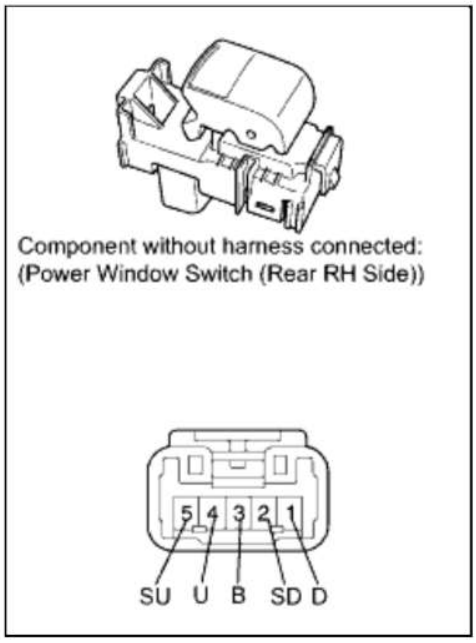
NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

2.	INSPECT POWER WINDOW SWITCH (REAR RH SIDE)

(a) Remove the power window switch INFO .

cardiagn.com



(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 (D) - 2 (SD) 3 (B) - 4 (U)	UP	Below 1 Ω
1 (D) - 2 (SD) 4 (U) - 5 (SU)	OFF	Below 1 Ω
2 (SD) - 3 (B) 4 (U) - 5 (SU)	DOWN	Below 1 Ω

NG ▶ **REPLACE POWER WINDOW SWITCH (REAR RH SIDE)**

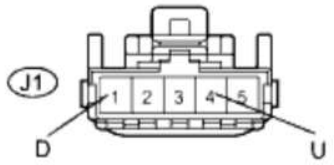
OK ▼

3.	**CHECK HARNESS AND CONNECTOR (SWITCH (REAR RH SIDE) - MOTOR (REAR RH SIDE))**

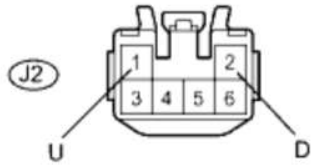
(a) Disconnect the power window regulator motor assembly (rear RH side) connector.

cardiagn.com

Front view of wire harness connector:
(to Power Window Switch (Rear RH Side))



Front view of wire harness connector:
(to Power Window Regulator Motor Assembly (Rear RH Side))



(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
J1-4 (U) - J2-1 (U)	Always	Below 1 Ω
J1-1 (D) - J2-2 (D)	Always	Below 1 Ω
J1-4 (U) - Body ground	Always	10 kΩ or higher
J1-1 (D) - Body ground	Always	10 kΩ or higher

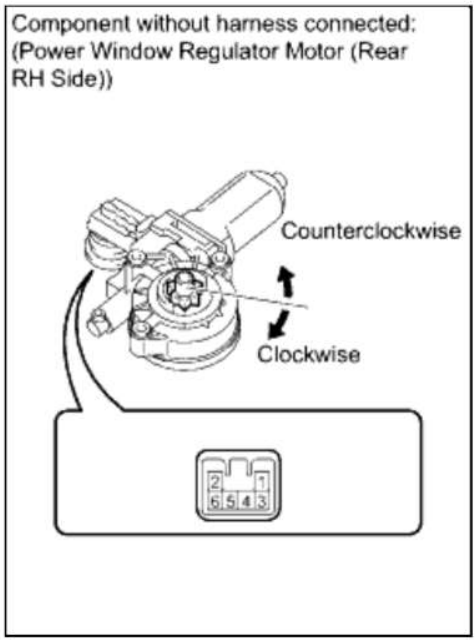
NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

4.	**INSPECT POWER WINDOW REGULATOR MOTOR ASSEMBLY (REAR RH SIDE)**

(a) Remove the power window regulator motor assembly INFO .

cardiagn.com



(b) Check power window regulator motor operation:

(1) Apply battery voltage to connector terminals 1 and 2.

NOTICE:

Do not apply battery voltage to any terminals except terminals 1 and 2.

(2) Check that the motor gear rotates smoothly as follows.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1 Battery negative (-) → 2	Motor gear rotates counterclockwise
Battery positive (+) → 2 Battery negative (-) → 1	Motor gear rotates clockwise

(c) Check PTC operation:

NOTICE:

This check must be performed with the power window regulator and door glass installed on the vehicle.

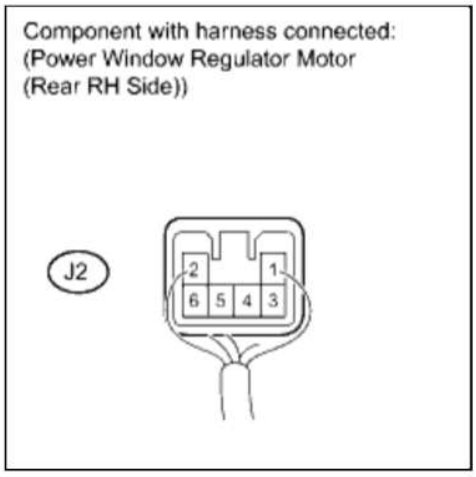
(1) Install the power window regulator motor INFO .

(2) Connect an electrical tester DC 400 A probe to the wire harness of terminal 1.

NOTICE:

Match the arrow mark of the probe with the direction of the current flow.

cardiagn.com



(3) Fully close the door glass by pulling up the power window switch. Wait for approximately 60 seconds.

(4) Continue to pull up the power window switch and measure how long it takes for the electrical current to change from a range of 16 to 28 A to approximately 1 A (current shut-off inspection).

Standard:

4 to 90 seconds

(5) Wait for 60 seconds after the previous step, and then push down the power window switch (rear RH side).

OK:

The rear RH side window goes down.

NG ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (REAR RH)**

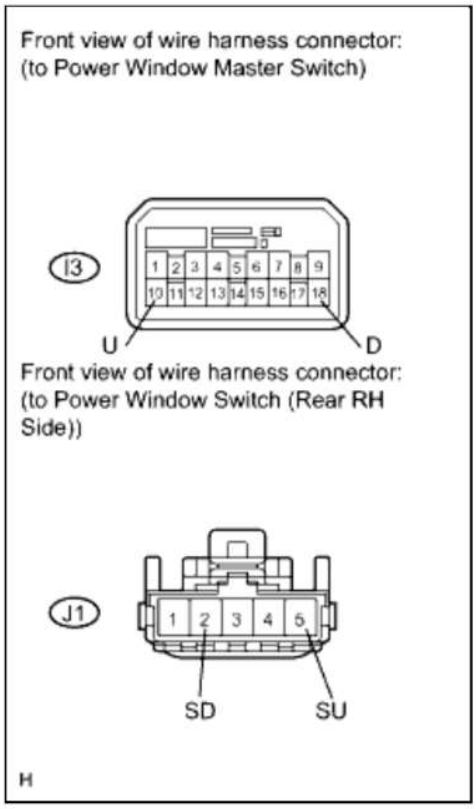
OK ▼

5.	**CHECK HARNESS AND CONNECTOR (MASTER SWITCH - SWITCH (REAR RH SIDE))**

(a) Disconnect the power window master switch connector.

(b) Disconnect the power window switch (rear RH side) connector.

cardiagn.com



(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I3-10 (U) - J1-5 (SU)	Always	Below 1 Ω
I3-18 (D) - J1-2 (SD)	Always	Below 1 Ω
I3-10 (U) - Body ground	Always	10 kΩ or higher
I3-18 (D) - Body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▶ **REPLACE POWER WINDOW MASTER SWITCH**

cardiagn.com

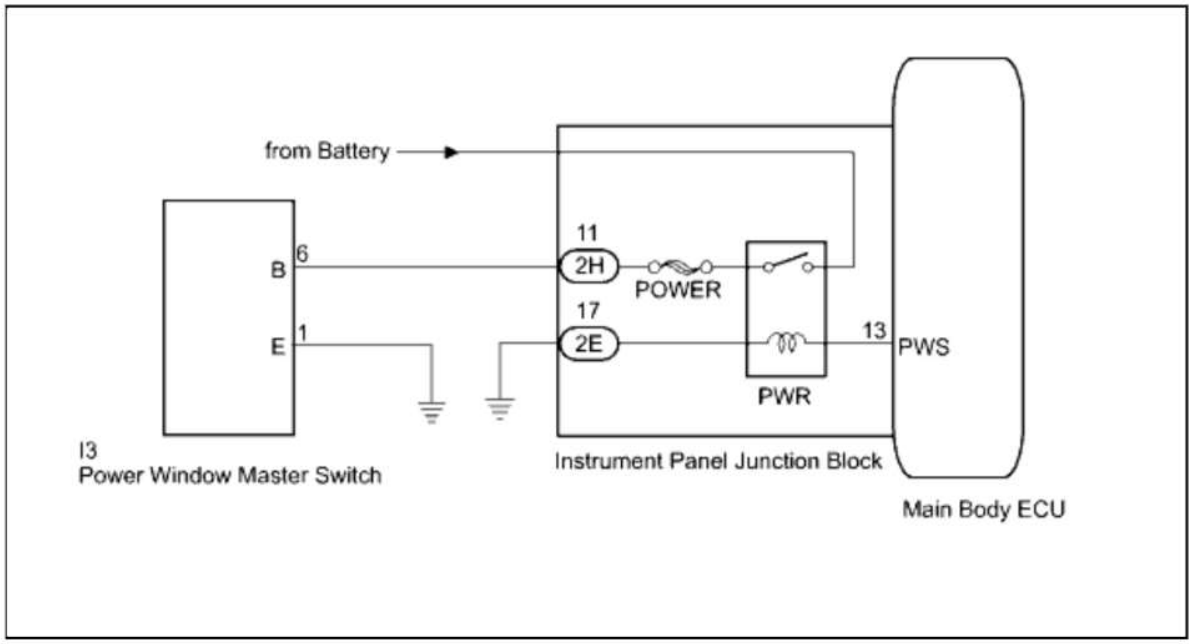
Last Modified: 3-10-2010	6.4 J	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000010ZJ022X
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: Power Windows do not Operate at All (2010 Corolla)		

Power Windows do not Operate at All

DESCRIPTION

If none of the power windows operate, a malfunction may exist in the power window master switch, main body ECU (instrument panel junction block) or wire harness.

WIRING DIAGRAM



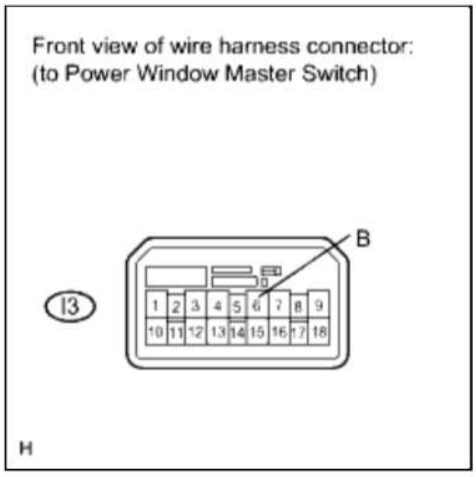
INSPECTION PROCEDURE

PROCEDURE

1.	**CHECK HARNESS AND CONNECTOR (POWER WINDOW POWER SOURCE)**

(a) Disconnect the power window master switch connector.

cardiagn.com



(b) Measure the voltage according to the value(s) table below.

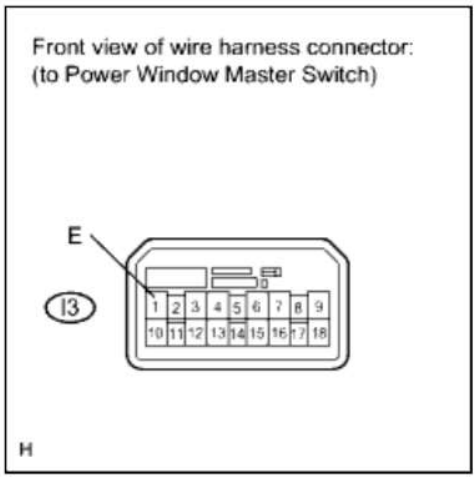
Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
I3-6 (B) - Body ground	Ignition switch ON	11 to 14 V

NG ▶ **CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BODY GROUND)**

OK ▼

2.	**CHECK HARNESS AND CONNECTOR (POWER WINDOW MASTER SWITCH - BODY GROUND)**



(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

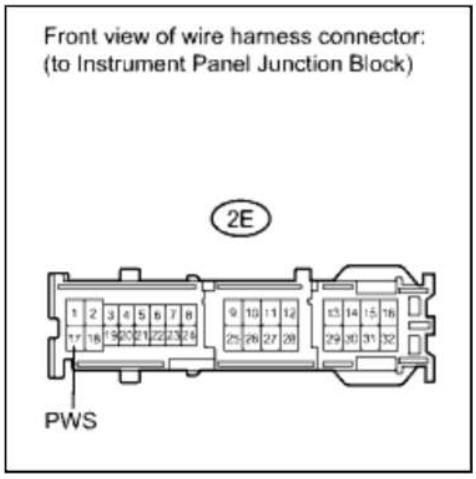
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
I3-1 (E) - Body ground	Always	Below 1 Ω

cardiagn.com

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▶ **REPLACE POWER WINDOW MASTER SWITCH**

3.	CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BODY GROUND)



(a) Disconnect the instrument panel junction block connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
2E-17 (PWS) - Body ground	Always	Below 1 Ω

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▶ **REPLACE MAIN BODY ECU (INSTRUMENT PANEL JUNCTION BLOCK)**

cardiagn.com

Last Modified: 3-10-2010	6.4 J	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000014PG01QX
Title: WINDOW / GLASS: POWER WINDOW CONTROL SYSTEM: Key-off Operation Function Operates even if Operating Conditions are not Satisfied (2010 Corolla)		

Key-off Operation Function Operates even if Operating Conditions are not Satisfied

DESCRIPTION

When the driver door has not been opened and closed, each door power window regulator motor can control its power window operation for approximately 45 seconds after the ignition switch is turned from ON to off (the key is removed) by receiving operation permission signals from the main body ECU. However, when approximately 45 seconds have elapsed, or the driver door or front passenger side door is opened within approximately 45 seconds of the ignition switch being turned off (the key is removed), the power window regulator motor stops operating.

INSPECTION PROCEDURE

PROCEDURE

1.	**CHECK OPERATION FUNCTION AFTER IGNITION SWITCH IS TURNED OFF**

(a) Check the power window operation function after the ignition switch is turned off.

Result

STATUS	PROCEED TO
When power window can still be operated even after approximately 45 seconds have elapsed after ignition switch is turned off	A
When power window can still be operated even after opening driver door or front passenger door within approximately 45 seconds of ignition switch being turned off	B

A ▶ **REPLACE MAIN BODY ECU (INSTRUMENT PANEL JUNCTION BLOCK)**

B ▼

cardiagn.com

2.	CHECK LIGHTING SYSTEM (ILLUMINATED ENTRY SYSTEM)

(a) Check the lighting system (illuminated entry system) operates normally.

HINT:

The illuminated entry system provides convenience when getting in or out of the vehicle at night. This system controls the interior light.

Both the key off operation function and lighting system (illuminated entry system) use same door courtesy switch signal.

OK:
Illuminated entry system function operates normally.

NG ▶ GO TO LIGHTING SYSTEM (Door Courtesy Switch Circuit)

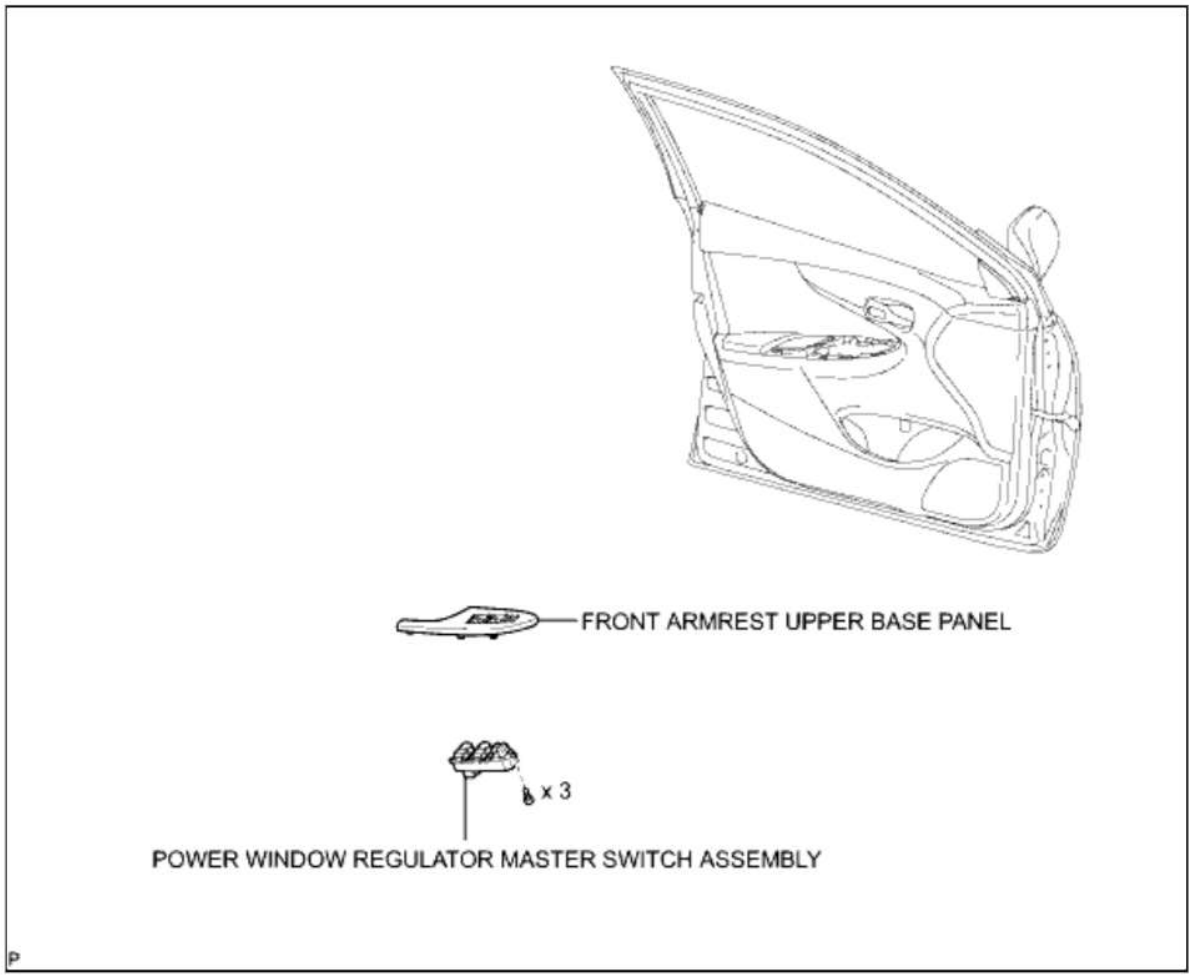
OK ▶ REPLACE MAIN BODY ECU (INSTRUMENT PANEL JUNCTION BLOCK)

cardiagn.com

Last Modified: 3-10-2010	6.4 K	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002I2P00WX
Title: WINDOW / GLASS: POWER WINDOW MASTER SWITCH: COMPONENTS (2010 Corolla)		

COMPONENTS

ILLUSTRATION



cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002AC903RX
Title: WINDOW / GLASS: POWER WINDOW MASTER SWITCH: REMOVAL (2010 Corolla)		

REMOVAL

1. REMOVE FRONT ARMREST UPPER BASE PANEL INFO

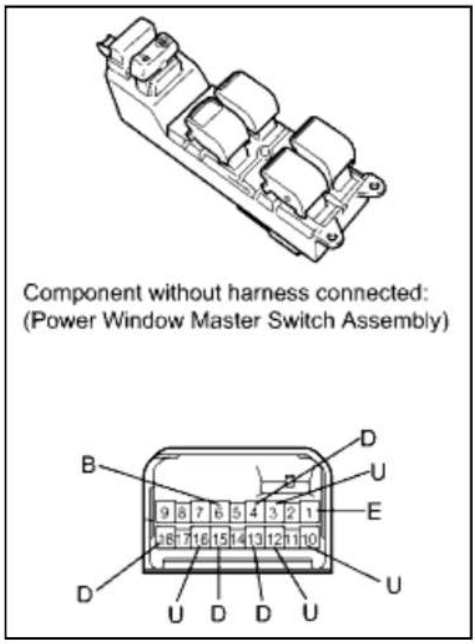
2. REMOVE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY INFO

cardiagn.com

Last Modified: 3-10-2010	6.4 G	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000WSX016X
Title: WINDOW / GLASS: POWER WINDOW MASTER SWITCH: INSPECTION (2010 Corolla)		

INSPECTION

1. INSPECT POWER WINDOW MASTER SWITCH ASSEMBLY



Component without harness connected:
(Power Window Master Switch Assembly)

(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 (E) - 4 (D) 3 (U) - 6 (B)	UP (Driver side)	Below 1 Ω
1 (E) - 3 (U) 6 (B) - 4 (D)	DOWN (Driver side)	Below 1 Ω
1 (E) - 3 (U) 6 (B) - 4 (D)	AUTO DOWN (Driver side)	Below 1 Ω
6 (B) - 16 (U) 15 (D) - 1 (E)	UP (Passenger side)	Below 1 Ω
6 (B) - 15 (D) 16 (U) - 1 (E)	DOWN (Passenger side)	Below 1 Ω
6 (B) - 12 (U) 13 (D) - 1 (E)	UP (Rear LH)	Below 1 Ω
6 (B) - 13 (D) 12 (U) - 1 (E)	DOWN (Rear LH)	Below 1 Ω
6 (B) - 10 (U) 18 (D) - 1 (E)	UP (Rear RH)	Below 1 Ω
6 (B) - 18 (D) 10 (U) - 1 (E)	DOWN (Rear RH)	Below 1 Ω

If the result is not as specified, replace the power window master switch assembly.

cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002AC803RX
Title: WINDOW / GLASS: POWER WINDOW MASTER SWITCH: INSTALLATION (2010 Corolla)		

INSTALLATION

1. INSTALL POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY INFO

2. INSTALL FRONT ARMREST UPPER BASE PANEL INFO

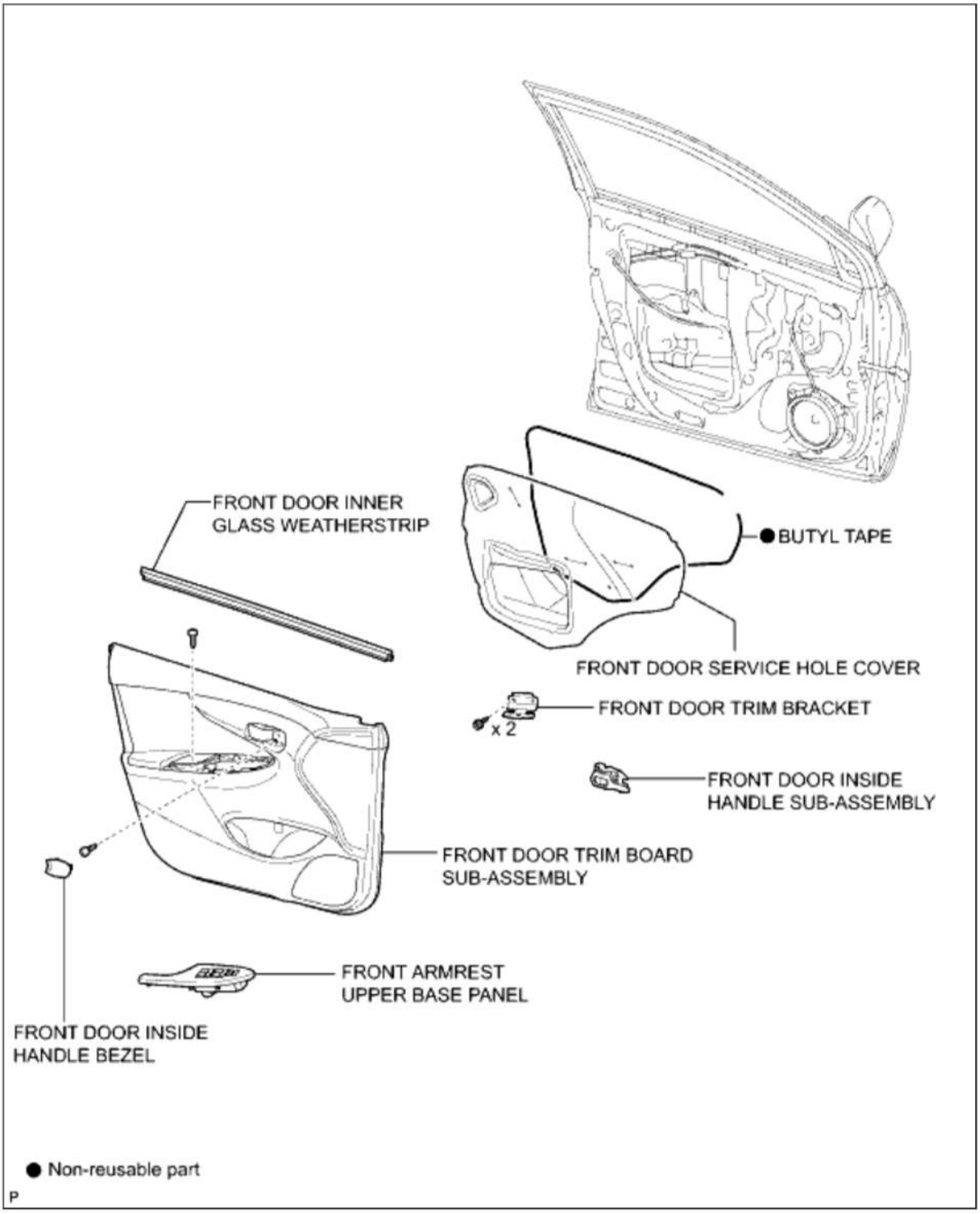
cardiagn.com

Last Modified: 3-10-2010	6.4 K	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002YF100RX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Front Door): COMPONENTS (2010 Corolla)		

COMPONENTS

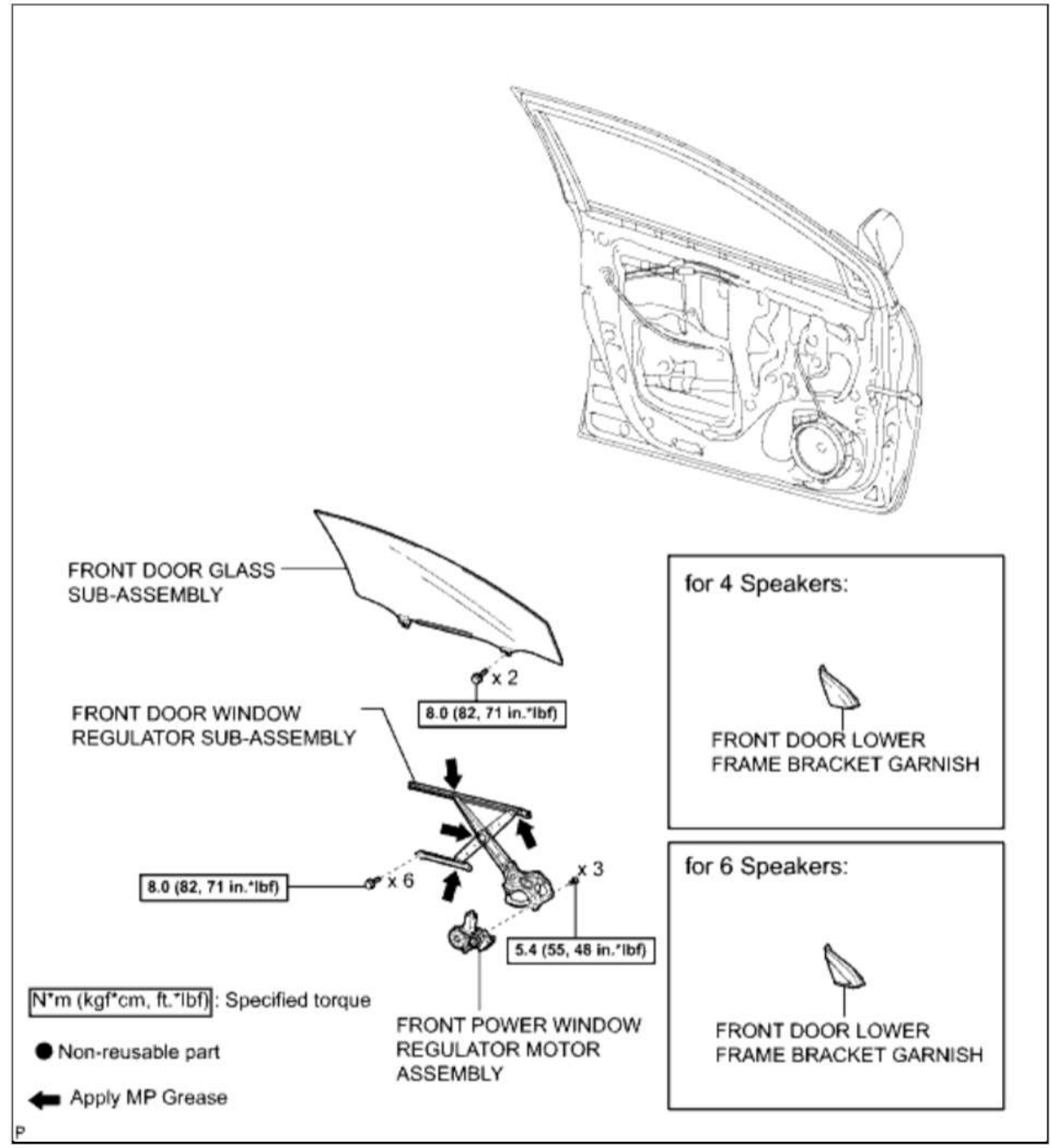
ILLUSTRATION

cardiagn.com



ILLUSTRATION

cardiagn.com



cardiagn.com

Last Modified: 3-10-2010	6.4 G	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000001HZC02CX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Front Door): ON-VEHICLE INSPECTION (2010 Corolla)		

ON-VEHICLE INSPECTION

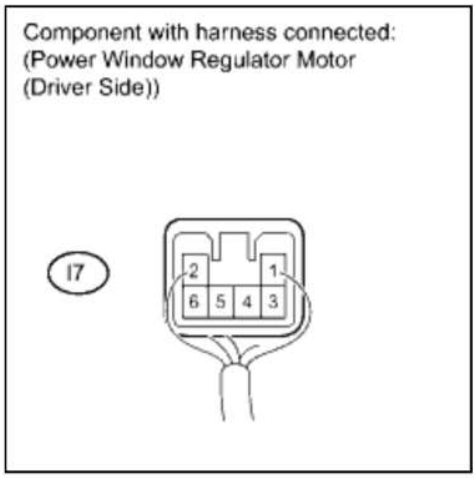
1. INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

(a) Inspect the operation of the PTC inside the power window regulator motor.

NOTICE:

This check must be performed with the power window regulator and door glass installed on the vehicle.

(1) Connect an electrical tester DC 400 A probe to the wire harness of terminal 2.



NOTICE:

Match the arrow mark of the probe with the direction of the current flow.

(2) Fully close the door glass by pulling up the power window switch. Wait for approximately 60 seconds.

(3) Continue to pull up the power window switch and measure how long it takes for the electrical current to change from a range of 16 to 28 A to approximately 1 A (current shut-off inspection).

Standard:

4 to 90 seconds

If the result is not as specified, replace the front power window regulator motor assembly LH.

(4) Wait for 60 seconds after the previous step, and then push down press the power window switch (driver side).

OK:

The driver side window goes down.

If the result is not as specified, replace the front power window regulator motor assembly LH.

2. INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

(a) Inspect the operation of the PTC inside the power window regulator motor.

NOTICE:

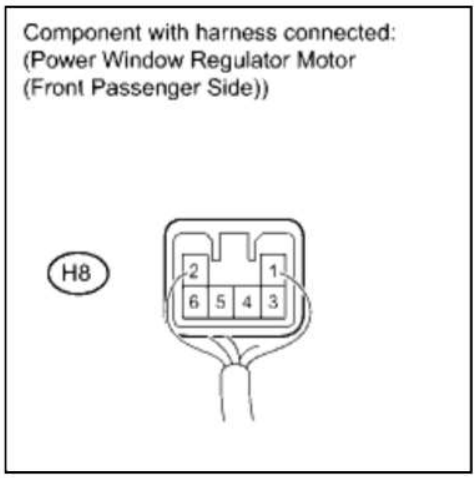
This check must be performed with the power window regulator and door glass installed on the vehicle.

cardiagn.com

(1) Connect an electrical tester DC 400 A probe to the wire harness of terminal 2.

NOTICE:

Match the arrow mark of the probe with the direction of the current flow.



(2) Fully close the door glass by pulling up the power window switch. Wait for approximately 60 seconds.

(3) Continue to pull up the power window switch and measure how long it takes for the electrical current to change from a range of 16 to 28 A to approximately 1 A (current shut-off inspection).

Standard:

4 to 90 seconds

If the result is not as specified, replace the front power window regulator motor assembly RH.

(4) Wait for 60 seconds after the previous step, and then push down the power window switch (front passenger side).

OK:

The front passenger side window goes down.

If the result is not as specified, replace the front power window regulator motor assembly RH.

cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002YF200RX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Front Door): REMOVAL (2010 Corolla)		

REMOVAL

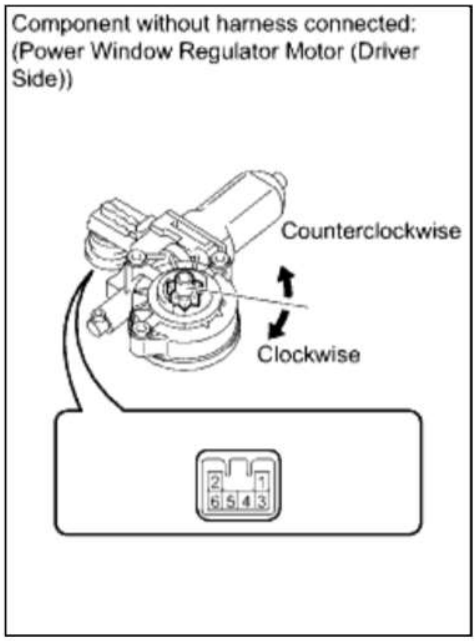
1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL
2. REMOVE FRONT DOOR INSIDE HANDLE BEZEL INFO
3. REMOVE FRONT ARMREST UPPER BASE PANEL INFO
4. REMOVE FRONT DOOR TRIM BOARD SUB-ASSEMBLY INFO
5. REMOVE FRONT DOOR INSIDE HANDLE SUB-ASSEMBLY INFO
6. REMOVE FRONT DOOR LOWER FRAME BRACKET GARNISH (w/o Front No. 2 Speaker) INFO
7. REMOVE FRONT DOOR LOWER FRAME BRACKET GARNISH (w/ Front No. 2 Speaker) INFO
8. REMOVE FRONT DOOR INNER GLASS WEATHERSTRIP INFO
9. REMOVE FRONT DOOR TRIM BRACKET INFO
10. REMOVE FRONT DOOR SERVICE HOLE COVER INFO
11. REMOVE FRONT DOOR GLASS SUB-ASSEMBLY INFO
12. REMOVE FRONT DOOR WINDOW REGULATOR SUB-ASSEMBLY INFO
13. REMOVE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY INFO

cardiagn.com

Last Modified: 3-10-2010	6.4 G	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000014 5I02VX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Front Door): INSPECTION (2010 Corolla)		

INSPECTION

1. INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH



(a) Apply battery voltage to connector terminals 1 and 2.

NOTICE:

Do not apply battery voltage to any terminals except terminals 1 and 2.

(b) Check that the motor gear rotates smoothly as follows.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Motor gear rotates counterclockwise
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1	Motor gear rotates clockwise

If the result is not specified, replace the front power window regulator motor assembly LH.

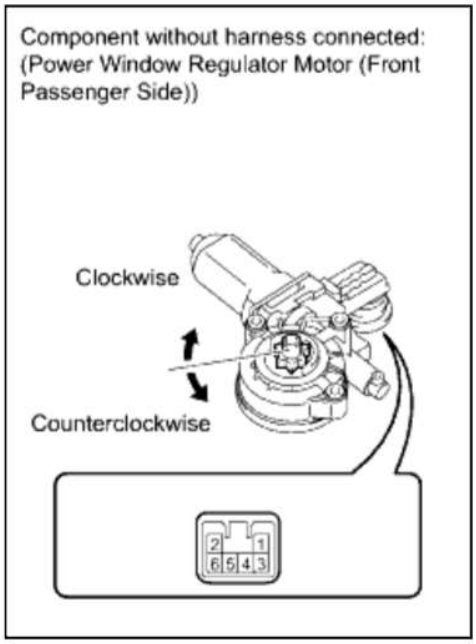
2. INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

(a) Apply battery voltage to connector terminals 1 and 2.

NOTICE:

Do not apply battery voltage to any terminals except terminals 1 and 2.

cardiagn.com



(b) Check that the motor gear rotates smoothly as follows.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Motor gear rotates counterclockwise
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1	Motor gear rotates clockwise

If the result is not specified, replace the front power window regulator motor assembly RH.

cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002YF000RX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Front Door): INSTALLATION (2010 Corolla)		

INSTALLATION

1. INSTALL FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY INFO
2. INSTALL FRONT DOOR WINDOW REGULATOR SUB-ASSEMBLY INFO
3. INSTALL FRONT DOOR GLASS SUB-ASSEMBLY INFO
4. INSTALL FRONT DOOR SERVICE HOLE COVER INFO
5. INSTALL FRONT DOOR TRIM BRACKET INFO
6. INSTALL FRONT DOOR INNER GLASS WEATHERSTRIP INFO
7. INSTALL FRONT DOOR LOWER FRAME BRACKET GARNISH (w/o Front No. 2 Speaker) INFO
8. INSTALL FRONT DOOR LOWER FRAME BRACKET GARNISH (w/ Front No. 2 Speaker) INFO
9. INSTALL FRONT DOOR INSIDE HANDLE SUB-ASSEMBLY INFO
10. INSTALL FRONT DOOR TRIM BOARD SUB-ASSEMBLY INFO
11. INSTALL FRONT ARMREST UPPER BASE PANEL INFO
12. INSTALL FRONT DOOR INSIDE HANDLE BEZEL INFO
13. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

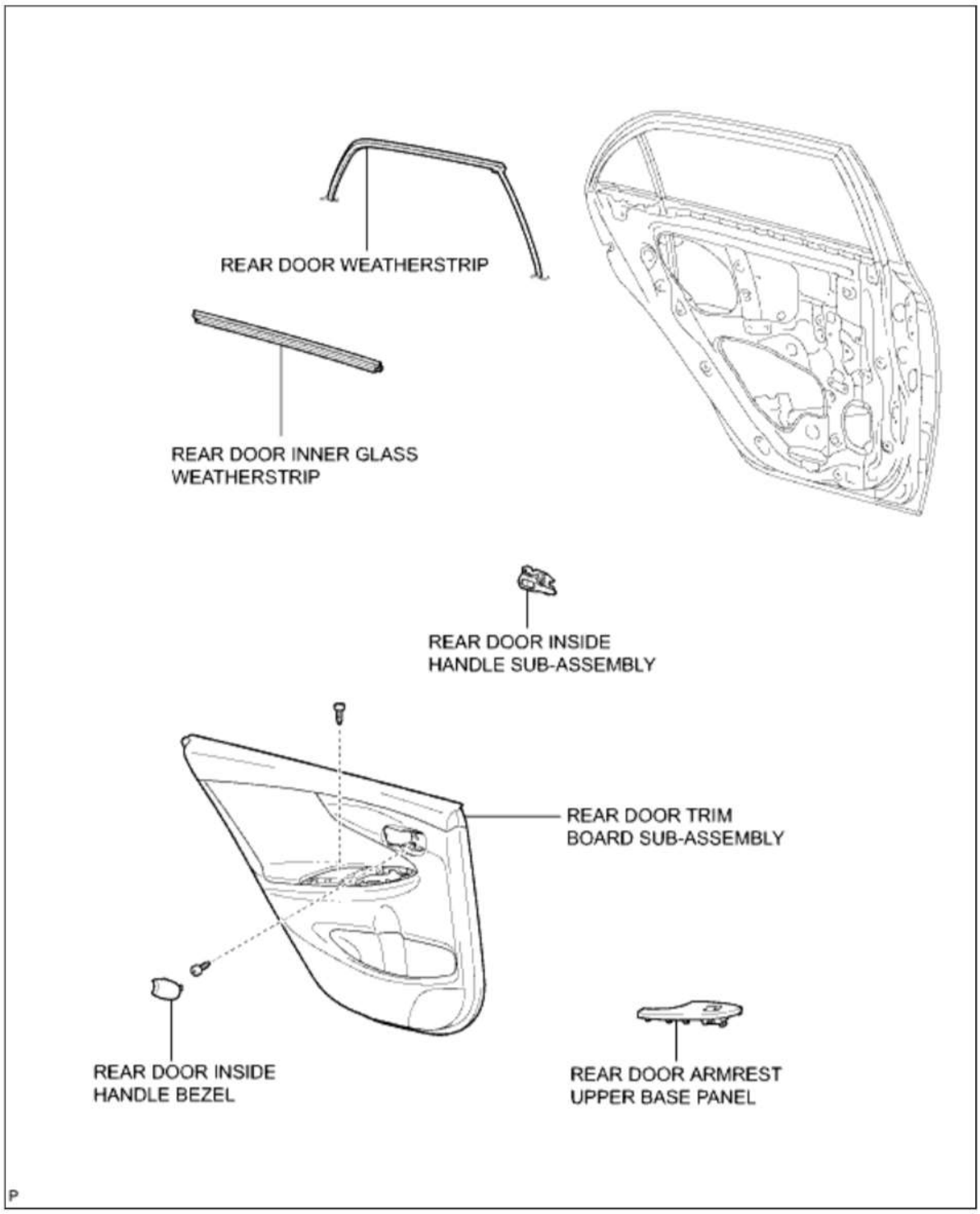
cardiagn.com

Last Modified: 3-10-2010	6.4 K	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002YF100SX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Rear Door): COMPONENTS (2010 Corolla)		

COMPONENTS

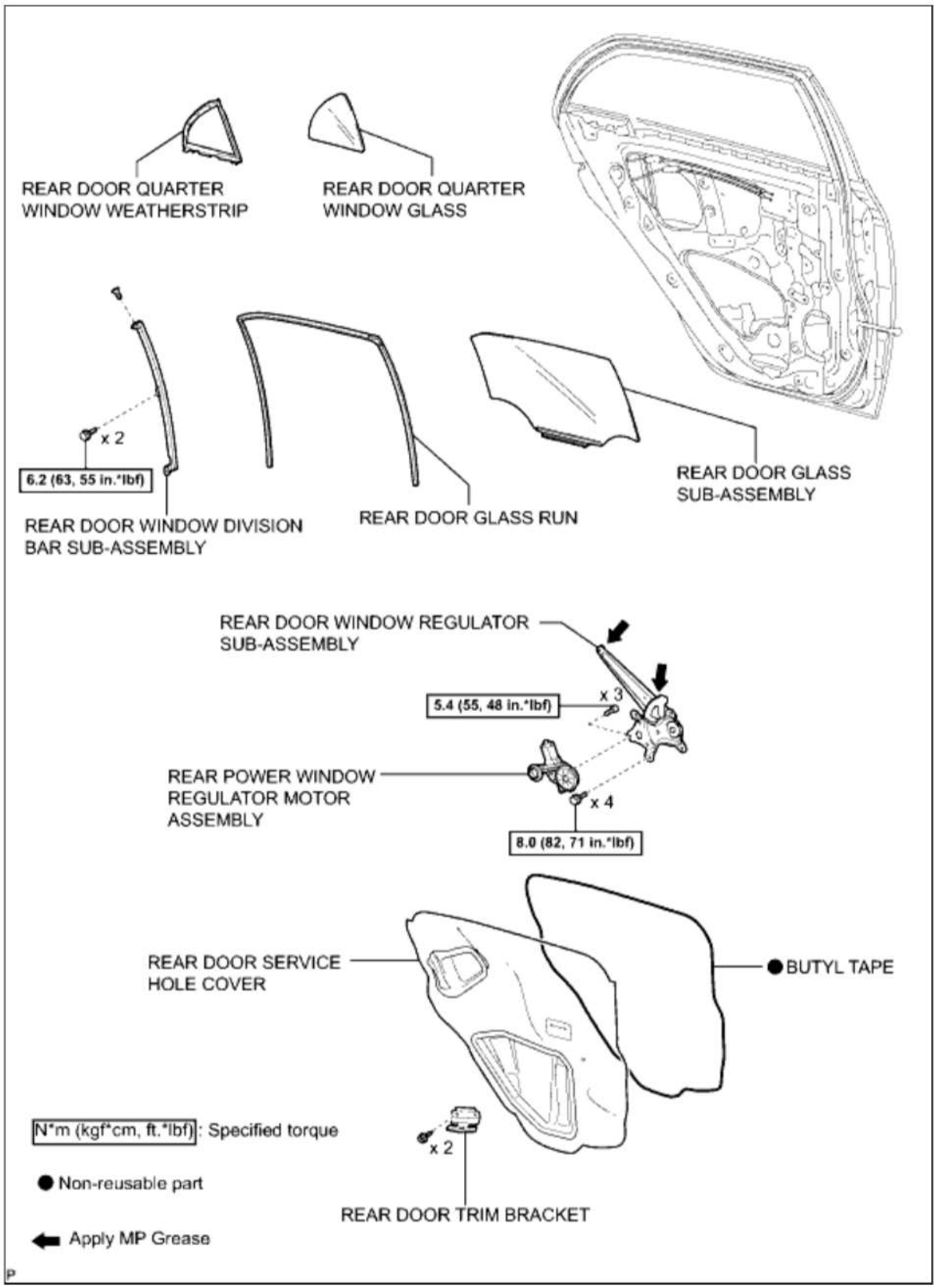
ILLUSTRATION

cardiagn.com



ILLUSTRATION

cardiagn.com



cardiagn.com

Last Modified: 3-10-2010	6.4 G	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000001HZC02DX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Rear Door): ON-VEHICLE INSPECTION (2010 Corolla)		

ON-VEHICLE INSPECTION

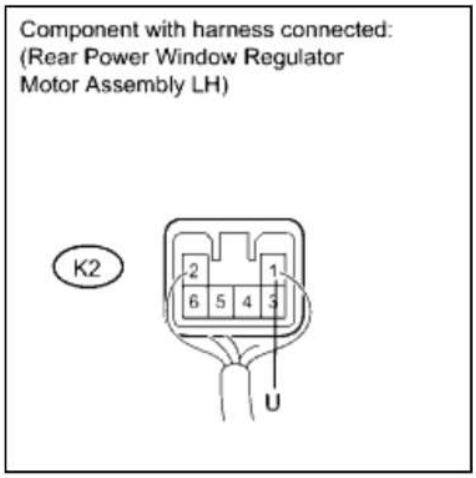
1. INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

(a) Inspect the operation of the PTC inside the power window regulator motor.

NOTICE:

The work must be performed with the power window regulator and door glass installed on the vehicle.

(1) Connect an electrical tester DC 400 A probe to the wire harness of terminal 1.



NOTICE:

Match the arrow mark of the probe with the direction of the current flow.

(2) Fully close the door glass by pressing the power window UP switch. Wait for approximately 60 seconds.

(3) Continue to press the power window UP switch and measure how long it takes for the electrical current to change from a range of 16 to 28 A to approximately 1 A (Inspection of current shut-off).

Standard:

4 to 90 seconds

If the result is not as specified, replace the rear power window regulator motor assembly LH.

(4) 60 seconds after the previous step, press the power window DOWN switch (rear LH side).

OK:

The rear LH side window goes down.

If the result is not as specified, replace the rear power window regulator motor assembly LH.

2. INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

(a) Inspect the operation of the PTC inside the power window regulator motor.

NOTICE:

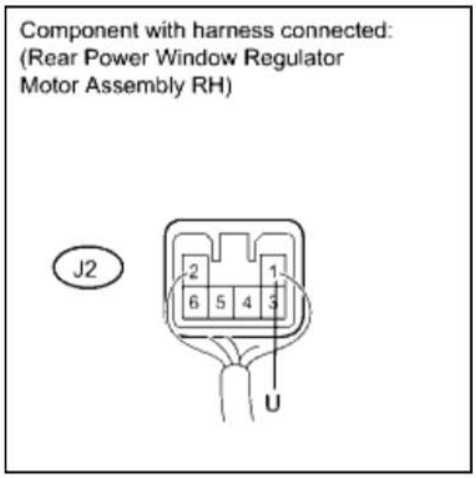
The work must be performed with the power window regulator and door glass installed on the vehicle.

cardiagn.com

(1) Connect an electrical tester DC 400 A probe to the wire harness of terminal 1.

NOTICE:

Match the arrow mark of the probe with the direction of the current flow.



(2) Fully close the door glass by pressing the power window UP switch. Wait for approximately 60 seconds.

(3) Continue to press the power window UP switch and measure how long it takes for the electrical current to change from a range of 16 to 28 A to approximately 1 A (Inspection of current shut-off).

Standard:

4 to 90 seconds

If the result is not as specified, replace the rear power window regulator motor assembly RH.

(4) 60 seconds after the previous step, press the power window DOWN switch (rear RH side).

OK:

The rear RH side window goes down.

If the result is not as specified, replace the rear power window regulator motor assembly RH.

cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002YF200SX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Rear Door): REMOVAL (2010 Corolla)		

REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

2. REMOVE REAR DOOR INSIDE HANDLE BEZEL INFO

3. REMOVE REAR DOOR ARMREST UPPER BASE PANEL INFO

4. REMOVE REAR DOOR TRIM BOARD SUB-ASSEMBLY INFO

5. REMOVE REAR DOOR INSIDE HANDLE SUB-ASSEMBLY INFO

6. REMOVE REAR DOOR INNER GLASS WEATHERSTRIP INFO

7. REMOVE REAR DOOR TRIM BRACKET INFO

8. REMOVE REAR DOOR SERVICE HOLE COVER INFO

9. REMOVE REAR DOOR WEATHERSTRIP



(a) Remove the upper part of the rear door weatherstrip to the extent that allows.

10. REMOVE REAR DOOR GLASS RUN INFO

11. REMOVE REAR DOOR WINDOW DIVISION BAR SUB-ASSEMBLY INFO

12. REMOVE REAR DOOR QUARTER WINDOW GLASS INFO

13. REMOVE REAR DOOR GLASS SUB-ASSEMBLY INFO

14. REMOVE REAR DOOR WINDOW REGULATOR SUB-ASSEMBLY INFO

cardiagn.com

15. REMOVE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY INFO

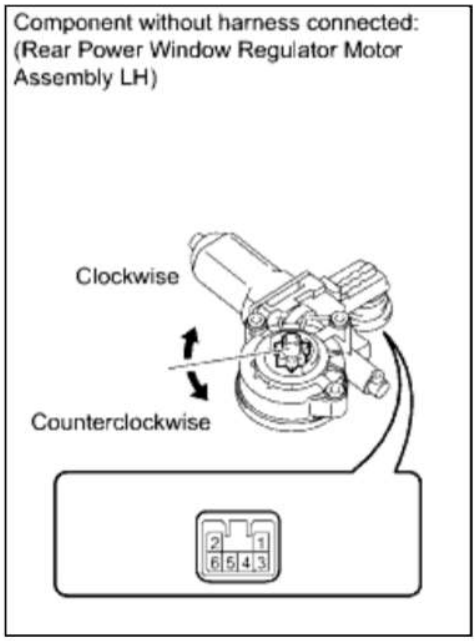


cardiagn.com

Last Modified: 3-10-2010	6.4 G	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000014 5I02WX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Rear Door): INSPECTION (2010 Corolla)		

INSPECTION

1. INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH



(a) Apply battery voltage to connector terminals 1 and 2.

NOTICE:

Do not apply battery voltage to any terminals except terminals 1 and 2.

(b) Check that the motor gear rotates smoothly as follows.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery negative (+) → Terminal 1 Battery positive (-) → Terminal 2	Motor gear rotates clockwise
Battery negative (+) → Terminal 2 Battery positive (-) → Terminal 1	Motor gear rotates counterclockwise

If the result is not specified, replace the rear power window regulator motor assembly LH.

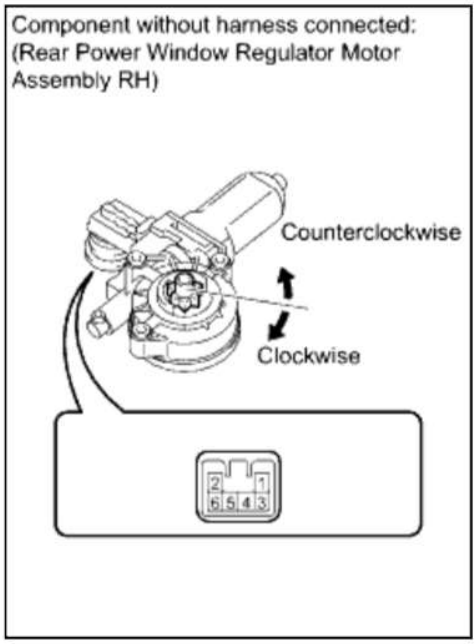
2. INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

(a) Apply battery voltage to connector terminals 1 and 2.

NOTICE:

Do not apply battery voltage to any terminals except terminals 1 and 2.

cardiagn.com



(b) Check that the motor gear rotates smoothly as follows.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery negative (+) → Terminal 1 Battery positive (-) → Terminal 2	Motor gear rotates counterclockwise
Battery negative (+) → Terminal 2 Battery positive (-) → Terminal 1	Motor gear rotates clockwise

If the result is not specified, replace the rear power window regulator motor assembly RH.

cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002YF000SX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Rear Door): INSTALLATION (2010 Corolla)		

INSTALLATION

1. INSTALL REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY INFO

2. INSTALL REAR DOOR WINDOW REGULATOR SUB-ASSEMBLY INFO

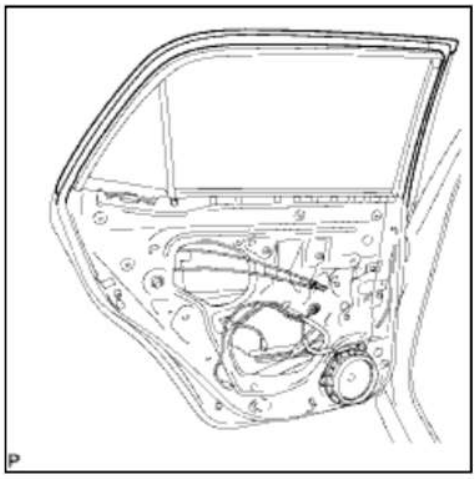
3. INSTALL REAR DOOR GLASS RUN INFO

4. INSTALL REAR DOOR GLASS SUB-ASSEMBLY INFO

5. INSTALL REAR DOOR QUARTER WINDOW GLASS INFO

6. INSTALL REAR DOOR WINDOW DIVISION BAR SUB-ASSEMBLY INFO

7. INSTALL REAR DOOR WEATHERSTRIP



(a) Install the rear door weatherstrip.

8. INSTALL REAR DOOR SERVICE HOLE COVER INFO

9. INSTALL REAR DOOR TRIM BRACKET INFO

10. INSTALL REAR DOOR INNER GLASS WEATHERSTRIP INFO

11. INSTALL REAR DOOR INSIDE HANDLE SUB-ASSEMBLY INFO

12. INSTALL REAR DOOR TRIM BOARD SUB-ASSEMBLY INFO

13. INSTALL REAR DOOR ARMREST UPPER BASE PANEL INFO

14. INSTALL REAR DOOR INSIDE HANDLE BEZEL INFO

cardiagn.com

15. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

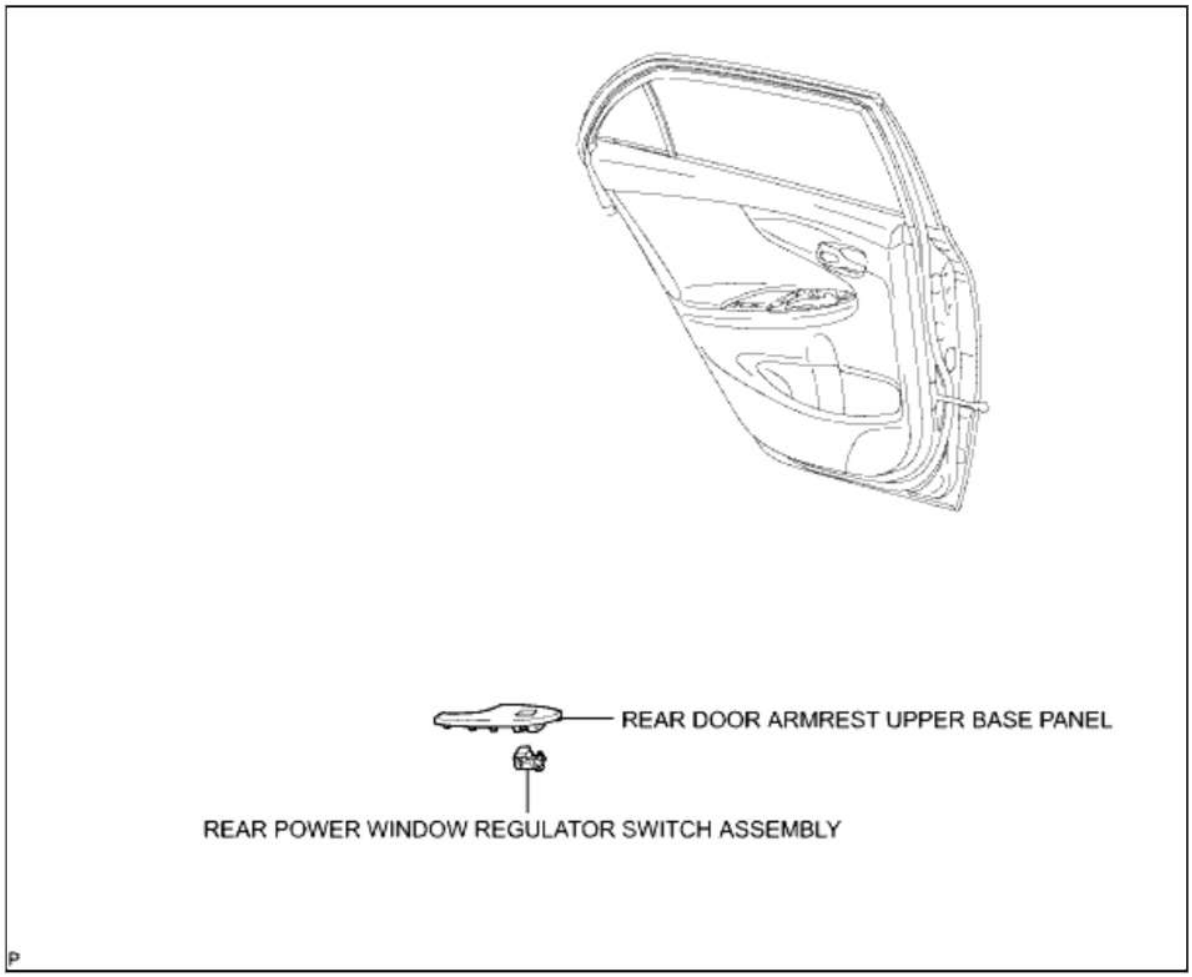


cardiagn.com

Last Modified: 3-10-2010	6.4 K	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002XXC00DX
Title: WINDOW / GLASS: REAR POWER WINDOW SWITCH: COMPONENTS (2010 Corolla)		

COMPONENTS

ILLUSTRATION



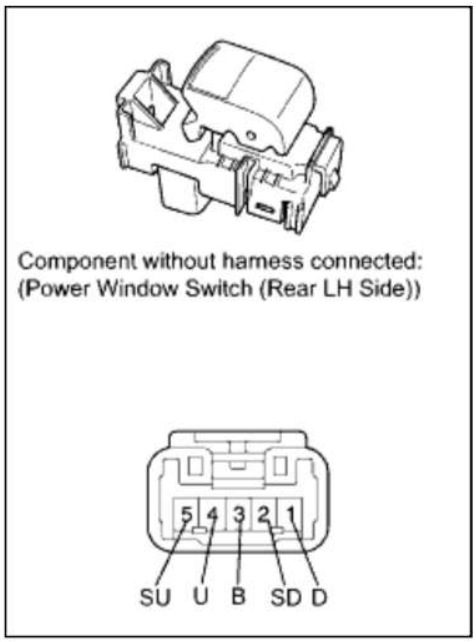
cardiagn.com

Last Modified: 3-10-2010	6.4 G	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000001305029X
Title: WINDOW / GLASS: REAR POWER WINDOW SWITCH: INSPECTION (2010 Corolla)		

INSPECTION

1. INSPECT REAR POWER WINDOW SWITCH ASSEMBLY

(a) for Rear LH Side:



Component without harness connected:
(Power Window Switch (Rear LH Side))

(1) Measure the resistance when the switch is operated according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 (D) - 2 (SD) 3 (B) - 4 (U)	UP	Below 1 Ω
1 (D) - 2 (SD) 4 (U) - 5 (SU)	OFF	Below 1 Ω
2 (SD) - 3 (B) 4 (U) - 5 (SU)	DOWN	Below 1 Ω

If the result is not specified, replace the rear power window switch assembly.

(b) for Rear RH Side:

(1) Measure the resistance when the switch is operated according to the value(s) in the table below.

Standard Resistance:

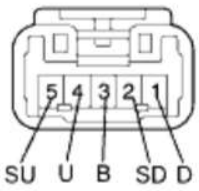
TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 (D) - 2 (SD) 3 (B) - 4 (U)	UP	Below 1 Ω
1 (D) - 2 (SD) 4 (U) - 5 (SU)	OFF	Below 1 Ω
2 (SD) - 3 (B) 4 (U) - 5 (SU)	DOWN	Below 1 Ω

If the result is not specified, replace the rear power

cardiagn.com



Component without harness connected:
(Power Window Switch (Rear RH Side))



window switch assembly.

cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002XXD00DX
Title: WINDOW / GLASS: REAR POWER WINDOW SWITCH: REMOVAL (2010 Corolla)		

REMOVAL

1. REMOVE REAR DOOR ARMREST UPPER BASE PANEL INFO

2. REMOVE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY INFO

cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002XXB00DX
Title: WINDOW / GLASS: REAR POWER WINDOW SWITCH: INSTALLATION (2010 Corolla)		

INSTALLATION

1. INSTALL REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY INFO

2. INSTALL REAR DOOR ARMREST UPPER BASE PANEL INFO

cardiagn.com

Last Modified: 3-10-2010	6.4 L	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002VRL00WX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Automatic Air Conditioning System): PRECAUTION (2010 Corolla)		

PRECAUTION

1. EXPRESSIONS OF IGNITION SWITCH

(a) The type of ignition switch used on this model differs according to the specifications of the vehicle.

The expressions listed in the table below are used in this section.

SWITCH TYPE		IGNITION SWITCH (POSITION)	ENGINE SWITCH (CONDITION)
Expression	Ignition switch off	LOCK	Off
	Ignition switch ON	ON	On (IG)
	Ignition switch ACC	ACC	On (ACC)
	Engine start	START	Start

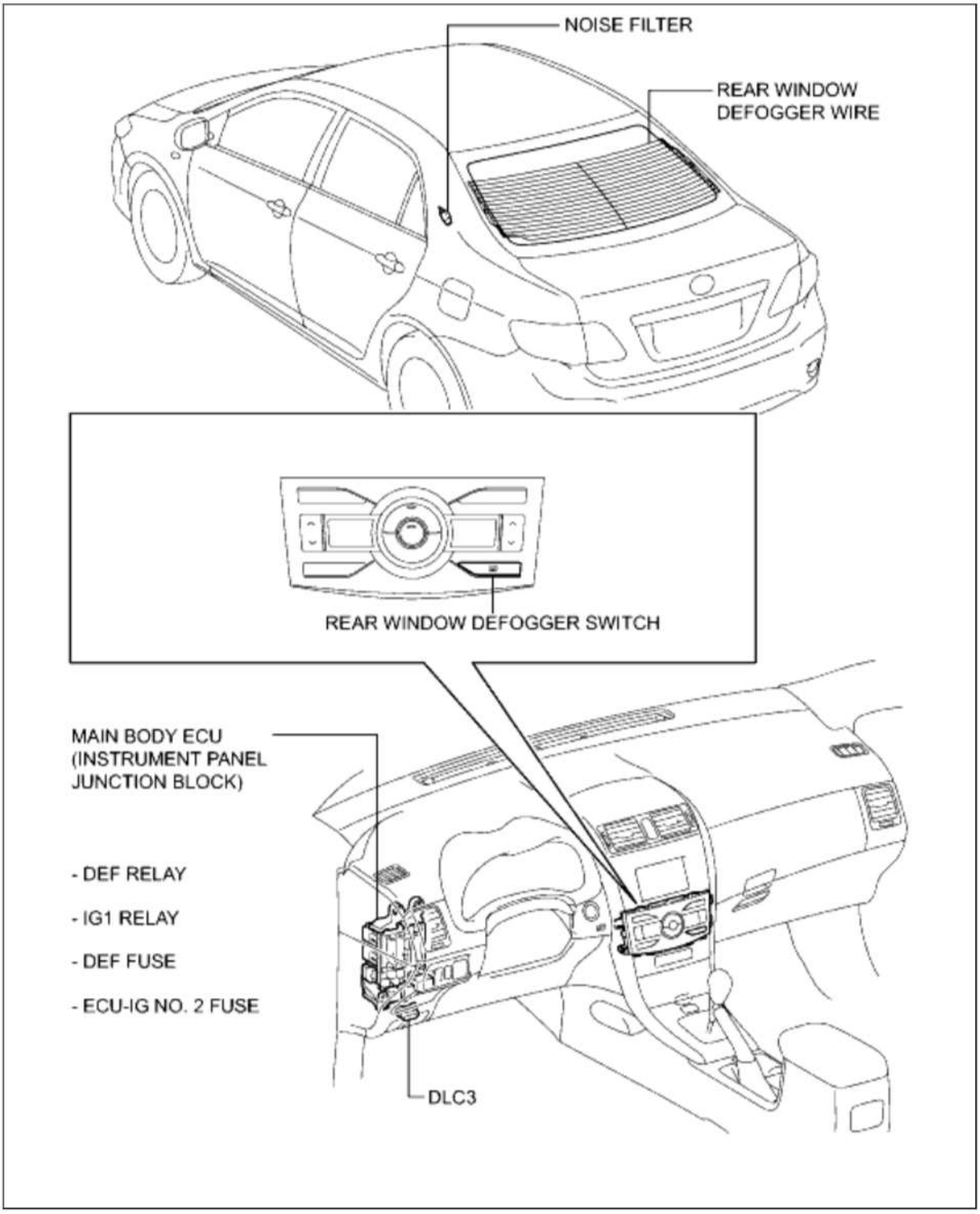
cardiagn.com

Last Modified: 3-10-2010	6.4 R	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000U8R038X
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Automatic Air Conditioning System): PARTS LOCATION (2010 Corolla)		

PARTS LOCATION

ILLUSTRATION

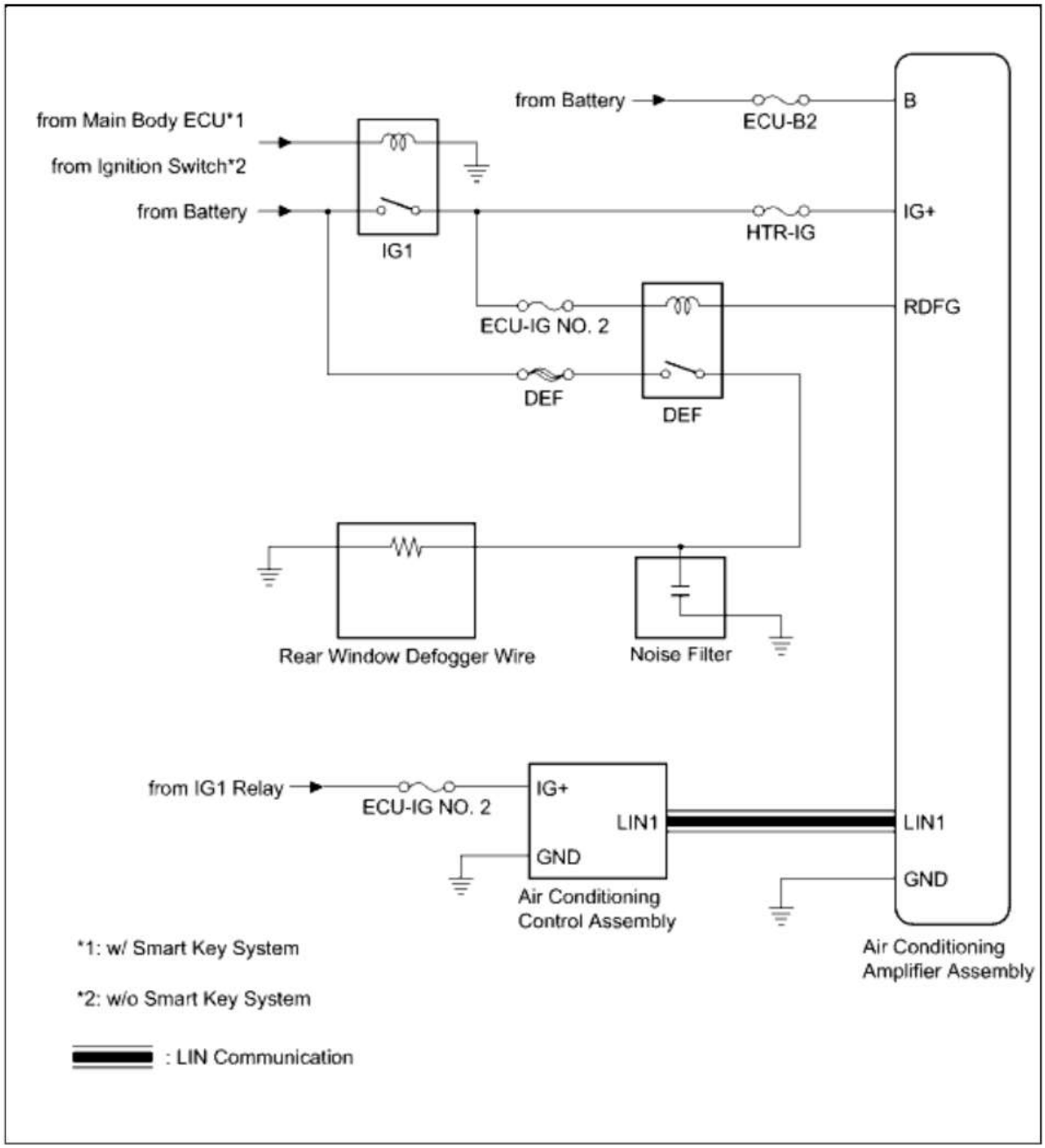
cardiagn.com



cardiagn.com

Last Modified: 3-10-2010	6.4 U	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000U8U036X
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Automatic Air Conditioning System): SYSTEM DIAGRAM (2010 Corolla)		

SYSTEM DIAGRAM



cardiagn.com

Last Modified: 3-10-2010	6.4 D	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000XSC03MX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Automatic Air Conditioning System): HOW TO PROCEED WITH TROUBLESHOOTING (2010 Corolla)		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedure to troubleshoot the defogger system.
- The Techstream should be used in step 5.

1.	**VEHICLE BROUGHT TO WORKSHOP**

NEXT

2.	**CUSTOMER PROBLEM ANALYSIS**

HINT:

- In troubleshooting, confirm that the problem symptoms have been accurately identified. Preconceptions should be discarded in order to make an accurate judgment. To clearly understand what the problem symptoms are, it is extremely important to ask the customer about the problem and the conditions at the time the malfunction occurred.
- Gather as much information as possible for reference. Past problems that seem unrelated may also help in some cases.
- The following 5 items are important points in the problem analysis:

What	Vehicle model, system name
When	Date, time, occurrence frequency
Where	Road conditions
Under what conditions?	Driving conditions, weather conditions
How did it happen?	Problem symptoms

NEXT

cardiagn.com

3.	INSPECT BATTERY VOLTAGE

(a) Measure the battery voltage.

Standard Voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to the next step.

NEXT

4.	PROBLEM SYMPTOMS TABLE

Result:

RESULT	PROCEED TO
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B ▶ **GO TO STEP 6**

A

5.	OVERALL ANALYSIS AND TROUBLESHOOTING

(a) Terminals of ECU INFO

(b) Data List / Active Test INFO

(c) On-vehicle Inspection INFO

NEXT

cardiagn.com

▼

6.	REPAIR OR REPLACE

NEXT
▼

7.	CONFIRMATION TEST

NEXT ▶ END

cardiagn.com

Last Modified: 3-10-2010	6.4 D	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000WPT03KX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Automatic Air Conditioning System): SYSTEM DESCRIPTION (2010 Corolla)		

SYSTEM DESCRIPTION

1. GENERAL

The defogger system thin heater wires are attached to the inside of the rear window and defog the window surface quickly. The indicator light illuminates while the system is operating. The system automatically turns off after approximately 15 minutes.

HINT:

The rear window defogger is linked with the mirror defogger (w/ mirror defogger).

2. FUNCTION OF MAIN COMPONENT

COMPONENT	OUTLINE
DEF Relay	Receives rear defogger activation request signals from the air conditioning amplifier assembly and supplies power to the rear window defogger.
Rear Window Defogger	Receives power from the DEF relay and heats the defogger wire.

3. DESCRIPTION

FUNCTION	OUTLINE
Defogs the rear window surface	• Receives rear defogger activation request signals from the air conditioning amplifier assembly and supplies power to the rear window defogger. • Receives power from the DEF relay and heats the defogger wire.

cardiagn.com

Last Modified: 3-10-2010	6.4 T	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000U8S03PX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Automatic Air Conditioning System): PROBLEM SYMPTOMS TABLE (2010 Corolla)		

PROBLEM SYMPTOMS TABLE

HINT:

Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Window Defogger System

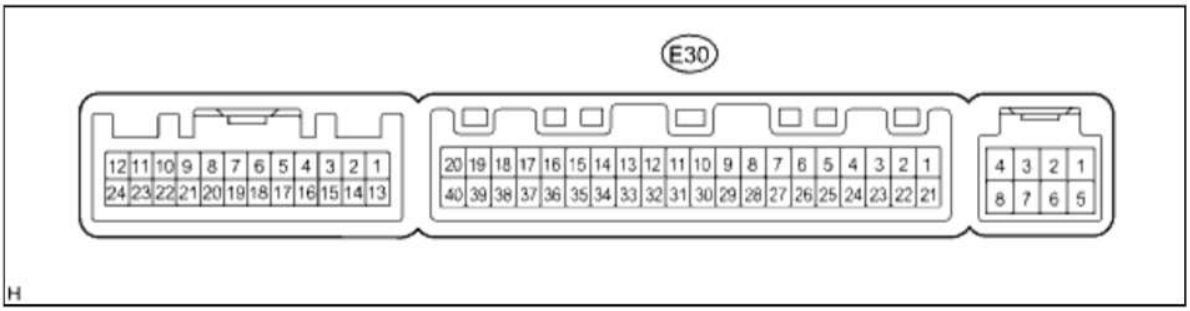
SYMPTOM	SUSPECTED AREA	SEE PAGE
Rear window defogger does not operate	IG power source circuit (air conditioning amplifier)	INFO
	Back-up power source circuit (air conditioning amplifier)	INFO
	Heater control panel power source circuit	INFO
	ECU-IG No. 2 and DEF fuses	INFO
	DEF and IG1 relays	INFO
	Wire harness	INFO
	Rear window defogger wire	INFO
	Air conditioning control assembly	INFO
	Air conditioning amplifier assembly	INFO
	Main body ECU (instrument panel junction block)	-

cardiagn.com

Last Modified: 3-10-2010	6.4 U	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000WPS03FX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Automatic Air Conditioning System): TERMINALS OF ECU (2010 Corolla)		

TERMINALS OF ECU

1. CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY



(a) Disconnect the E30 air conditioning amplifier connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
E30-38 (RDFG) - E30-14 (GND)	B - BR*1 BE - W-B*2	Rear defogger signal	Ignition switch ON, Rear window defogger switch OFF	11 to 14 V
E30-38 (RDFG) - E30-14 (GND)	B - BR*1 BE - W-B*2	Rear defogger signal	Ignition switch ON, Rear window defogger switch ON	Below 1 V
E30-1 (IG+) - E30-14 (GND)	Y - BR*1 R - W-B*2	Power source (IG)	Ignition switch ON	11 to 14 V
E30-1 (IG+) - E30-14 (GND)	Y - BR*1 R - W-B*2	Power source (IG)	Ignition switch off	Below 1 V
E30-21 (B) - E30-14 (GND)	W - BR*1 BR - W-B*2	Power source (Back-up)	Always	11 to 14 V

- *1: for TMC Made
- *2: Except for TMC made

If the result is not as specified, there may be a malfunction in the wire harness.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

cardiagn.com

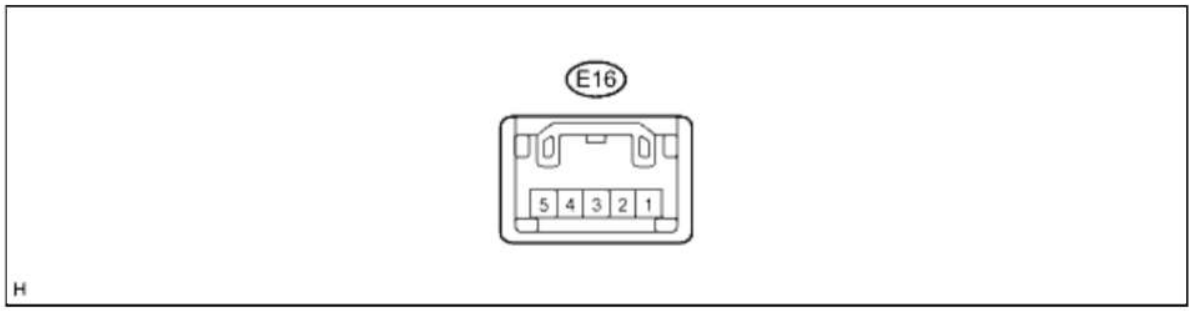
TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
E30-14 (GND) - Body ground	BR - Body ground*1 W-B - Body ground*2	Ground	Always	Below 1 Ω

- *1: for TMC Made
- *2: Except for TMC made

If the result is not as specified, there may be a malfunction in the wire harness.

2. CHECK AIR CONDITIONING CONTROL ASSEMBLY

(a) Disconnect the E16 air conditioning control connector.



(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
E16-5 (IG+) - E16-2 (GND)	B - W-B*1 V - W-B*2	Power source (IG)	Ignition switch ON	11 to 14 V
E16-5 (IG+) - E16-2 (GND)	B - W-B*1 V - W-B*2	Power source (IG)	Ignition switch off	Below 1 V

- *1: for TMC Made
- *2: Except for TMC made

If the result is not as specified, there may be a malfunction in the wire harness.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
E16-2 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

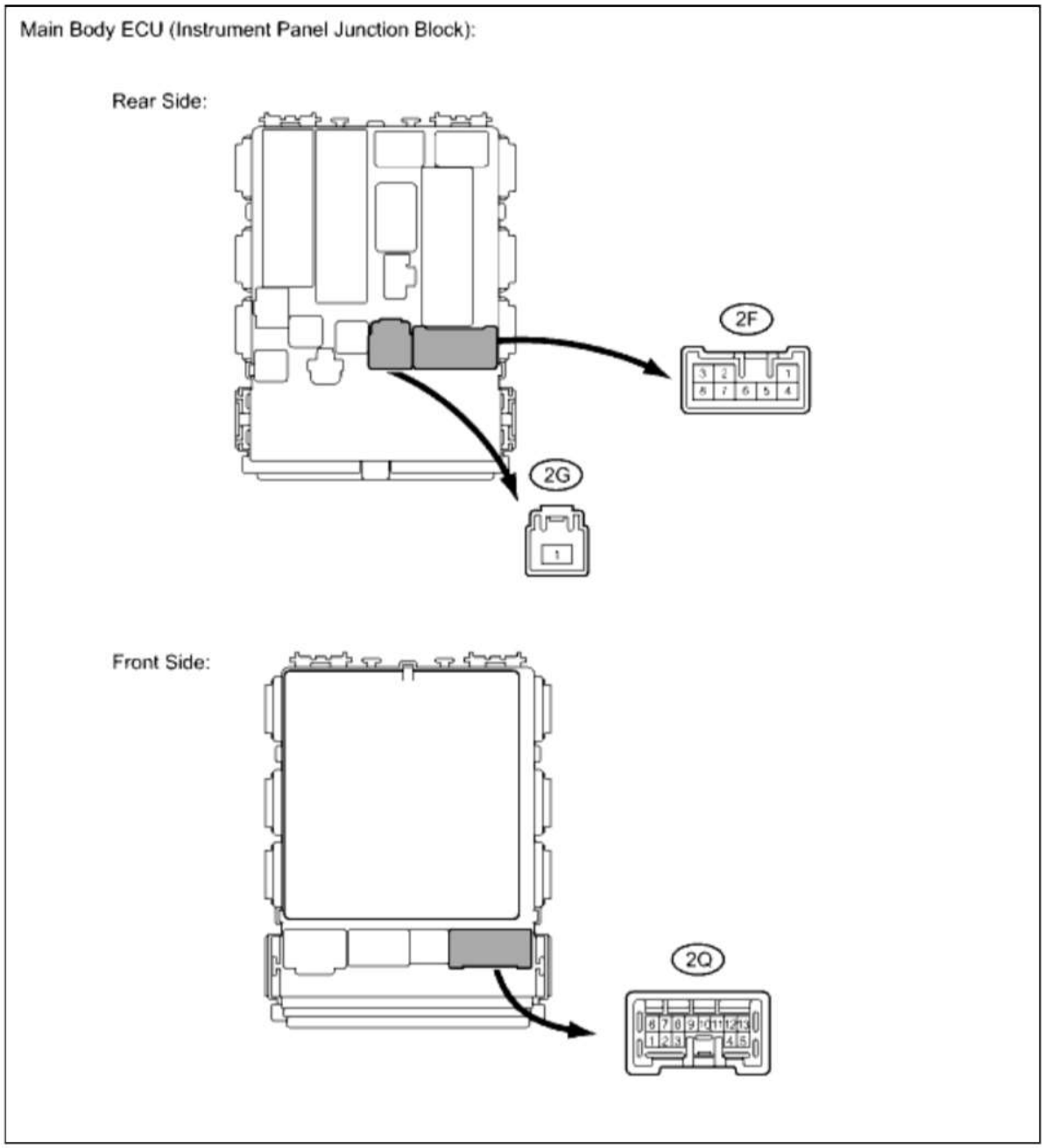
cardiagn.com

If the result is not as specified, there may be a malfunction in the wire harness.

3. CHECK MAIN BODY ECU (INSTRUMENT PANEL JUNCTION BLOCK)

(a) Disconnect the 2G, 2F and 2Q instrument panel junction block connector.

Main Body ECU (Instrument Panel Junction Block):



(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
2G-1 - Body ground	W - Body ground	Power source	Always	11 to 14 V
	B - Body			

- *1: for TMC Made

cardiagn.com

- *2: Except for TMC made

If the result is not as specified, there may be a malfunction in the wire harness.



cardiagn.com

Last Modified: 3-10-2010	6.4 J	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000020LP02RX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Automatic Air Conditioning System): Rear Window Defogger System does not Operate (2010 Corolla)		

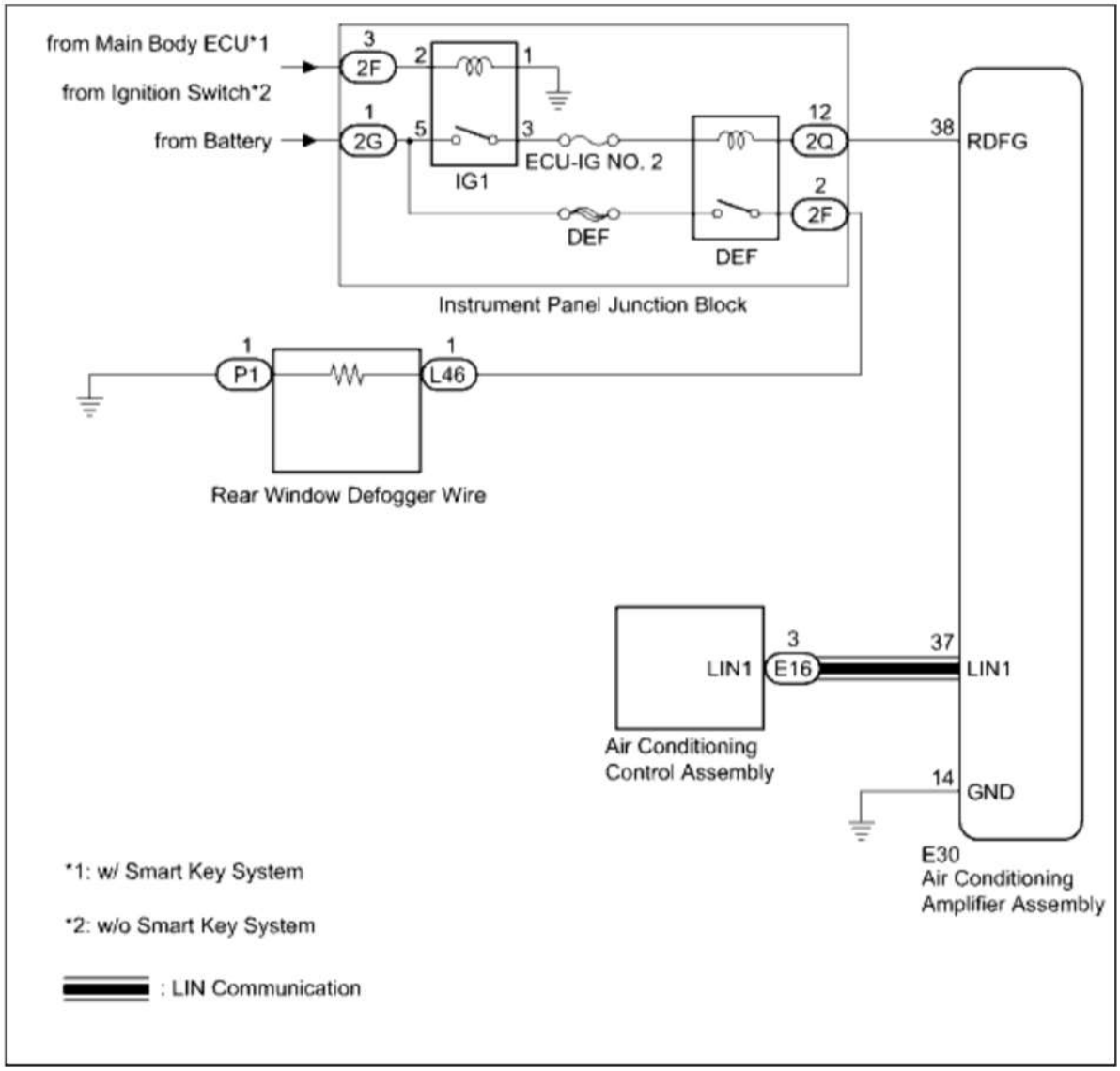
Rear Window Defogger System does not Operate

DESCRIPTION

When the rear window defogger switch, which is built into the air conditioning control assembly, is operated, the operation signals are transmitted to the air conditioning amplifier assembly through LIN. When the air conditioning amplifier assembly receives the signals, it turns on the DEF relay to operate the rear window defogger.

WIRING DIAGRAM

cardiagn.com



INSPECTION PROCEDURE

PROCEDURE

1.	**PERFORM ACTIVE TEST USING TECHSTREAM**

(a) Connect the Techstream to the DLC3.

(b) Turn the ignition switch to ON.

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / Air Conditioner / Active Test.

(e) Select the Active Test, use the Techstream to issue a control command, and then check the window defogger operation.

cardiagn.com

Air Conditioner

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Defogger Relay	Turns rear window defogger	OFF/ON	-

(f) Check that operation sound of the DEF relay is heard.

Result:

RESULT	PROCEED TO
The window defogger system operates normally when operating it through the Techstream.	A
The window defogger system does not operate normally when operating it through the Techstream and relay operating sound is not heard.	B
The window defogger system does not operate normally when operating it through the Techstream and relay operating sound is heard.	C

C ▶ **CHECK HARNESS AND CONNECTOR (REAR WINDOW DEFOGGER WIRE - INSTRUMENT PANEL JUNCTION BLOCK)**

B ▶ **CHECK FUSES (DEF, ECU-IG NO. 2)**

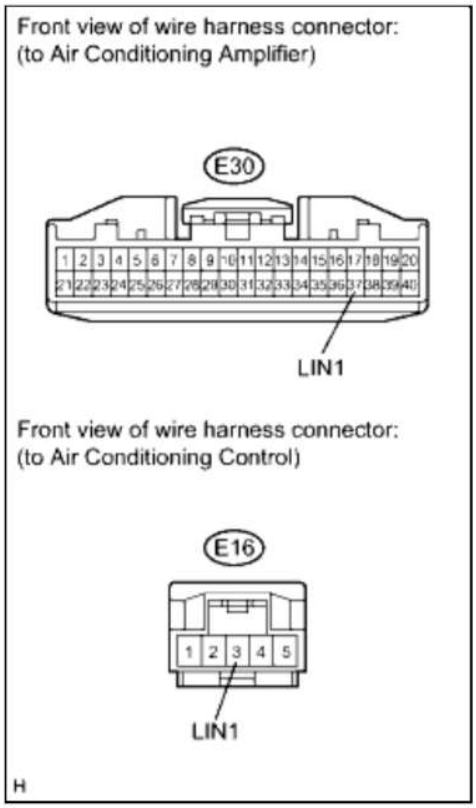
A

▼

2.	**CHECK HARNESS AND CONNECTOR (LIN COMMUNICATION LINE)**

(a) Disconnect the E30 air conditioning amplifier and E16 air conditioning control connectors.

cardiagn.com



(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
E30-37 (LIN1) - E16-3 (LIN1)	Always	Below 1 Ω
E30-37 (LIN1) - Body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

3.	REPLACE AIR CONDITIONING CONTROL ASSEMBLY

(a) Replace the air conditioning control assembly INFO .

NEXT

cardiagn.com

▼

4.	CONFIRM REAR WINDOW DEFOGGER OPERATION

(a) Turn the ignition switch to ON, press the defogger switch, and check that the window defogger operates.

OK:

Window defogger system operates normally

NG ▶ REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY

OK ▶ END

5.	CHECK FUSES (DEF, ECU-IG NO. 2)

(a) Remove the DEF and ECU-IG No. 2 fuses from the instrument panel junction block.

(b) Measure the resistance of the fuses.

Standard Resistance:

ITEM	CONDITION	SPECIFIED CONDITION
DEF fuse	Always	Below 1 Ω
ECU-IG No. 2 fuse	Always	Below 1 Ω

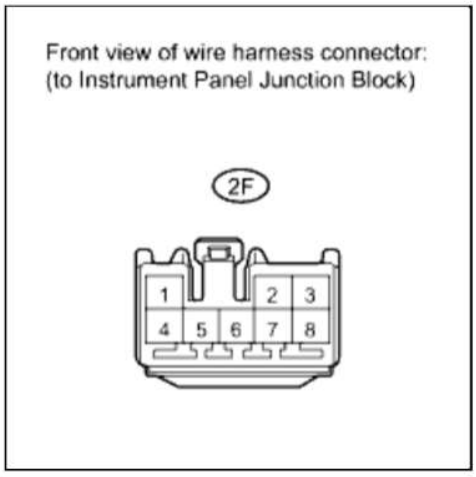
NG ▶ REPLACE FUSES

OK
▼

6.	CHECK HARNESS AND CONNECTOR (IG1 RELAY POWER SOURCE)

(a) Disconnect the 2F instrument panel junction block connector.

cardiagn.com



(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
2F-3 - Body ground	Ignition switch ON	11 to 14 V

Result:

RESULT	PROCEED TO
OK	A
NG (w/ Smart Key System)	B
NG (w/o Smart Key System)	C

C ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

B ▶ **GO TO SMART KEY SYSTEM**

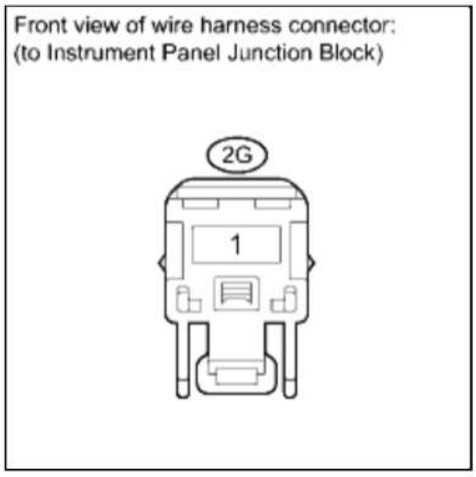
A

▼

7.	**CHECK HARNESS AND CONNECTOR (REAR WINDOW DEFOGGER SYSTEM POWER SOURCE)**

(a) Disconnect the 2G instrument panel junction block connector.

cardiagn.com



(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
2G-1 - Body ground	Ignition switch ON	11 to 14 V

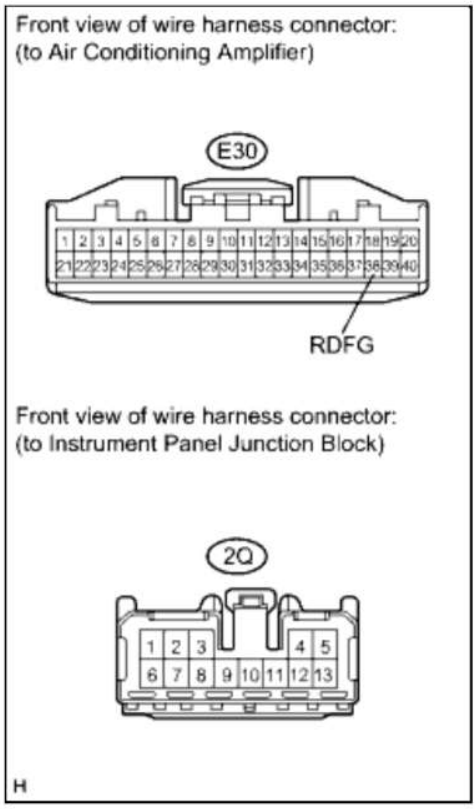
NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

8.	**CHECK HARNESS AND CONNECTOR (A/C AMPLIFIER ASSEMBLY - INSTRUMENT PANEL JUNCTION BLOCK)**

(a) Disconnect the E30 air conditioning amplifier and 2Q instrument panel junction block connectors.

cardiagn.com



(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
E30-38 (RDFG) - 2Q-12	Always	Below 1 Ω
E30-38 (RDFG) - Body ground	Always	10 kΩ or higher

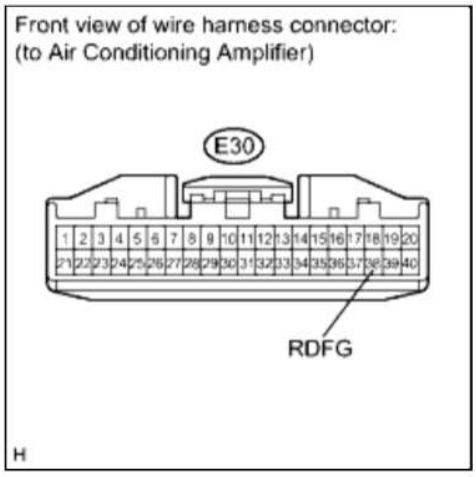
NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

9.	**CHECK HARNESS AND CONNECTOR (A/C AMPLIFIER ASSEMBLY - BATTERY)**

(a) Reconnect the 2Q instrument panel junction block connector.

cardiagn.com



(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
E30-38 (RDFG) - Body ground	Ignition switch ON	11 to 14 V

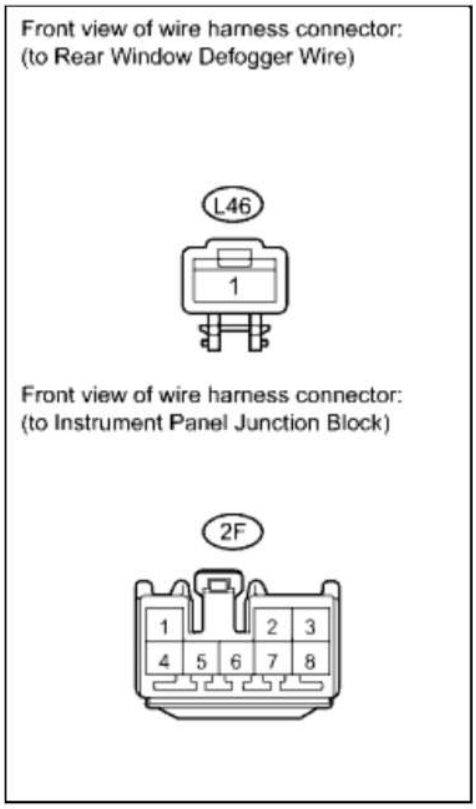
NG ▶ **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK ▶ **REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY**

10.	**CHECK HARNESS AND CONNECTOR (REAR WINDOW DEFOGGER WIRE - INSTRUMENT PANEL JUNCTION BLOCK)**

(a) Disconnect the 2F instrument panel junction block and L46 rear window defogger wire connectors.

cardiagn.com



(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
L46-1 - 2F-2	Always	Below 1 Ω
L46-1 - Body ground	Always	10 kΩ or higher

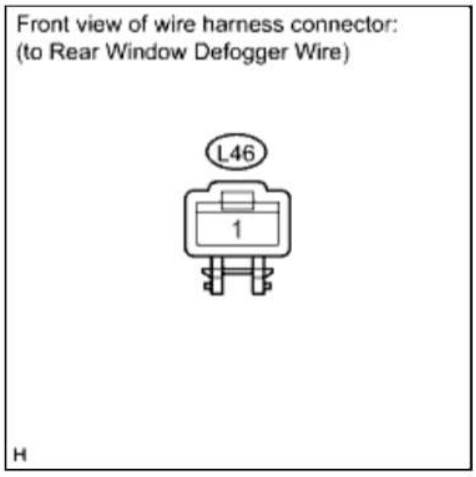
NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

11.	CHECK HARNESS AND CONNECTOR (REAR WINDOW DEFOGGER WIRE - BATTERY)

(a) Reconnect the 2F instrument panel junction block connector.

cardiagn.com



(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
L46-1 - Body ground	Ignition switch ON, Rear window defogger switch on	11 to 14 V

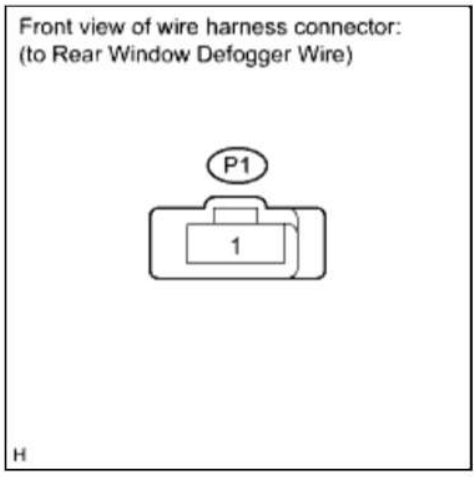
NG ▶ **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK ▼

12.	**CHECK HARNESS AND CONNECTOR (REAR WINDOW DEFOGGER WIRE - BODY GROUND)**

(a) Disconnect the P1 rear window defogger wire connector.

cardiagn.com



(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P1-1 - Body ground	Always	Below 1 Ω

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▶ **REPAIR OR REPLACE REAR WINDOW DEFOGGER WIRE**

cardiagn.com

Last Modified: 3-10-2010	6.4 D	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000WPU02DX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Automatic Air Conditioning System): DIAGNOSIS SYSTEM (2010 Corolla)		

DIAGNOSIS SYSTEM

1. CHECK DLC3

(a) Check the DLC3 INFO .

2. INSPECT BATTERY VOLTAGE

(a) Measure the battery voltage.

Standard Voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to the next step.

cardiagn.com

Last Modified: 3-10-2010	6.4 U	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000WPV02HX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Automatic Air Conditioning System): DATA LIST / ACTIVE TEST (2010 Corolla)		

DATA LIST / ACTIVE TEST

1. PERFORM ACTIVE TEST

HINT:

Using the Techstream to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in trouble shooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

(a) Connect the Techstream to the DLC3.

(b) Turn the ignition switch ON.

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / Air Conditioner / Active Test.

(e) Perform the Active Test according to the display on the Techstream.

Air Conditioner

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Defogger Relay	Turns rear window defogger	OFF/ON	-

cardiagn.com

Last Modified: 3-10-2010	6.4 G	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000U8V030X
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Automatic Air Conditioning System): ON-VEHICLE INSPECTION (2010 Corolla)		

ON-VEHICLE INSPECTION

1. CHECK REAR WINDOW DEFOGGER SYSTEM OPERATION

(a) When the ignition switch is turned to ON and the defogger switch is pressed, check that the rear window defogger operates.

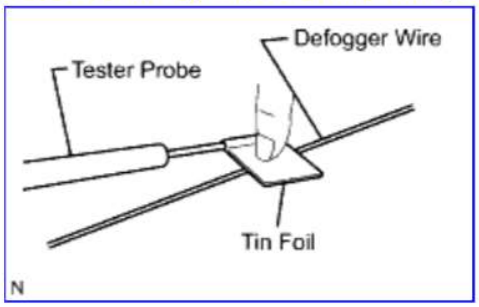
HINT:

After 15 minutes, check that the defogger automatically turns off.

2. INSPECT BACK WINDOW (DEFOGGER WIRE)

NOTICE:

- When cleaning the glass, wipe the glass along the wire using a soft and dry cloth. Take care not to damage the wires.
- Do not use detergents or glass cleaners that have abrasive ingredients.
- When measuring voltage, wrap a piece of tin foil around the tip of the negative tester probe and press the foil against the wire with your finger, as shown in the illustration.

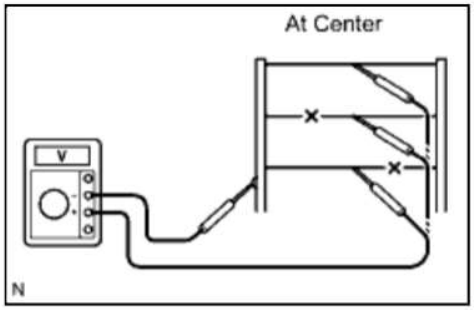


(a) Turn the ignition switch to ON.

(b) Turn the defogger switch on.

(c) Check the voltage at the center of each defogger wire, as shown in the illustration.

Standard Voltage:



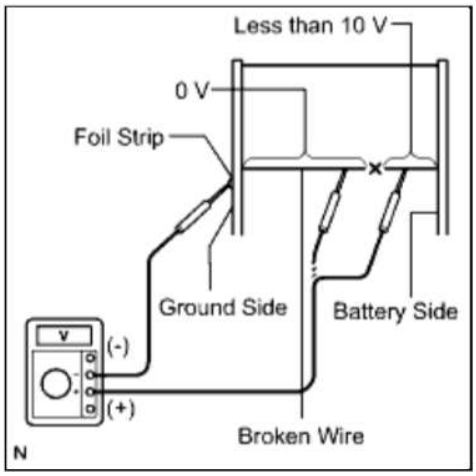
VOLTAGE	CRITERIA
Approx. 5 V	Wire is not broken
Approx. 10 or 0 V	Wire is broken

HINT:

If there is approximately 10 V, the wire may be faulty between the center of the wire and the wire end on the battery side. If there is no

cardiagn.com

voltage, the wire may be faulty between the center of the wire and the wire end on the ground side.



(d) Place a voltmeter positive (+) lead against the defogger wire on the battery side.

(e) Place a voltmeter negative (-) lead with the foil strip against the wire on the ground side.

(f) Slide the positive (+) lead from the battery side to the ground side.

(g) The point where the voltage drops from approximately 10 V to 0 V is the place where the defogger wire is broken.

HINT:

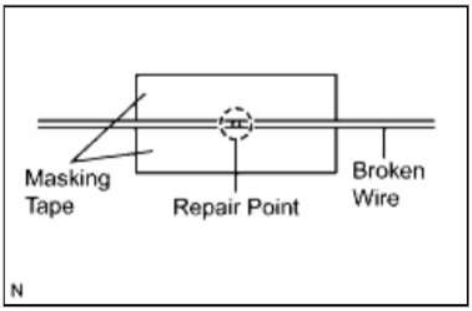
If the defogger wire is not broken, the voltmeter should indicate 0 V at the positive (+) end of the defogger wire but gradually increase to approximately 12 V as the meter probe moves to the other end.

cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000WYG02TX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Automatic Air Conditioning System): REPAIR (2010 Corolla)		

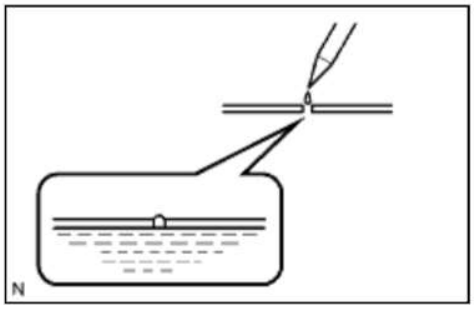
REPAIR

1. REPAIR WINDOW DEFOGGER WIRE



(a) Clean the broken wire tips with a grease, wax and silicone remover.

(b) Place the masking tape along both sides of the wire.



(c) Thoroughly mix the repair agent (Dupont paste No. 4817 or equivalent).

(d) Using a fine tip brush, apply a small amount of the agent to the wire.

(e) After a few minutes, remove the masking tape.

NOTICE:

Do not repair the defogger wire again for at least 24 hours.

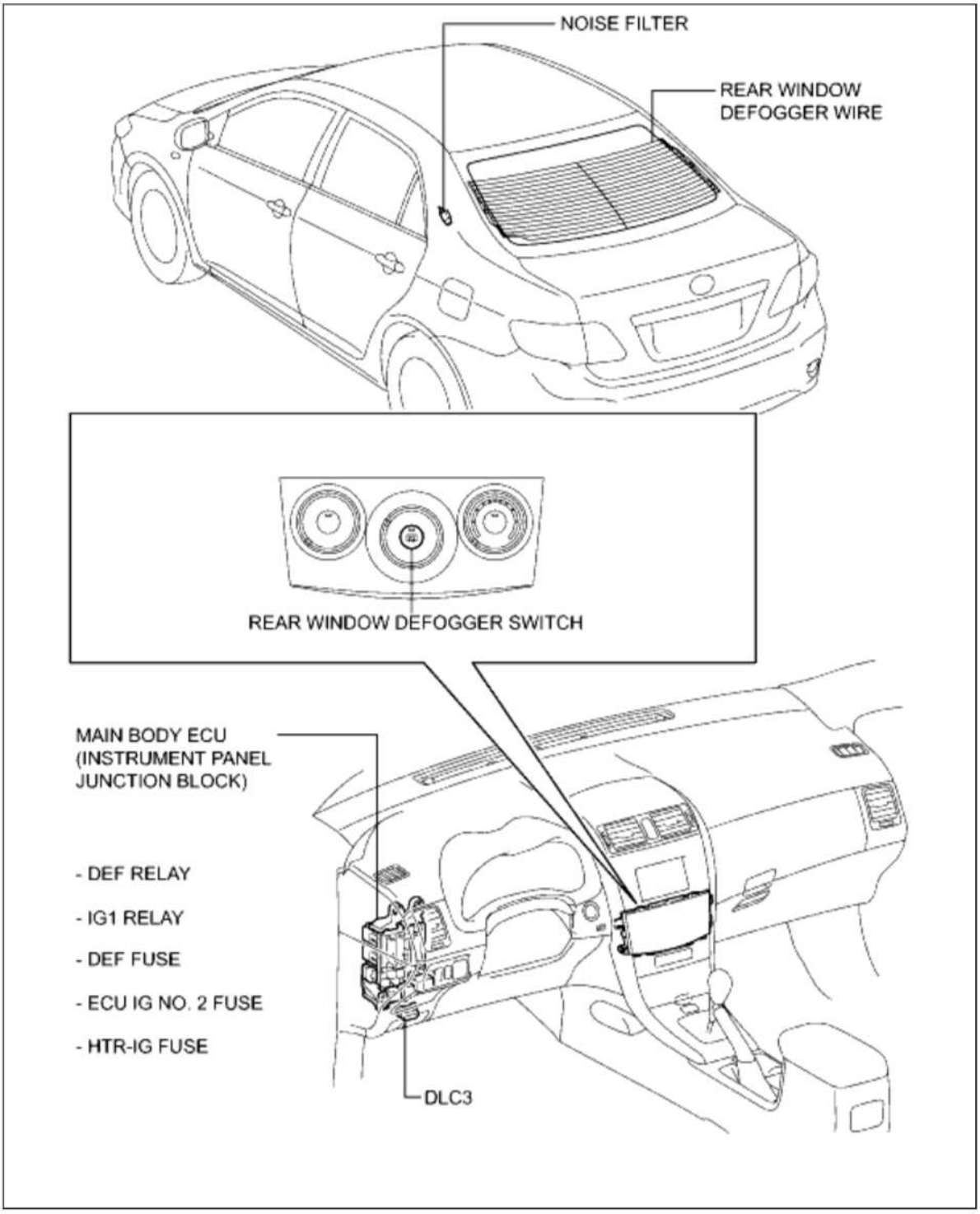
cardiagn.com

Last Modified: 3-10-2010	6.4 R	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000U8R039X
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Manual Air Conditioning System): PARTS LOCATION (2010 Corolla)		

PARTS LOCATION

ILLUSTRATION

cardiagn.com



cardiagn.com

Last Modified: 3-10-2010	6.4 L	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000002VRL00XX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Manual Air Conditioning System): PRECAUTION (2010 Corolla)		

PRECAUTION

1. EXPRESSIONS OF IGNITION SWITCH

(a) The type of ignition switch used on this model differs according to the specifications of the vehicle.

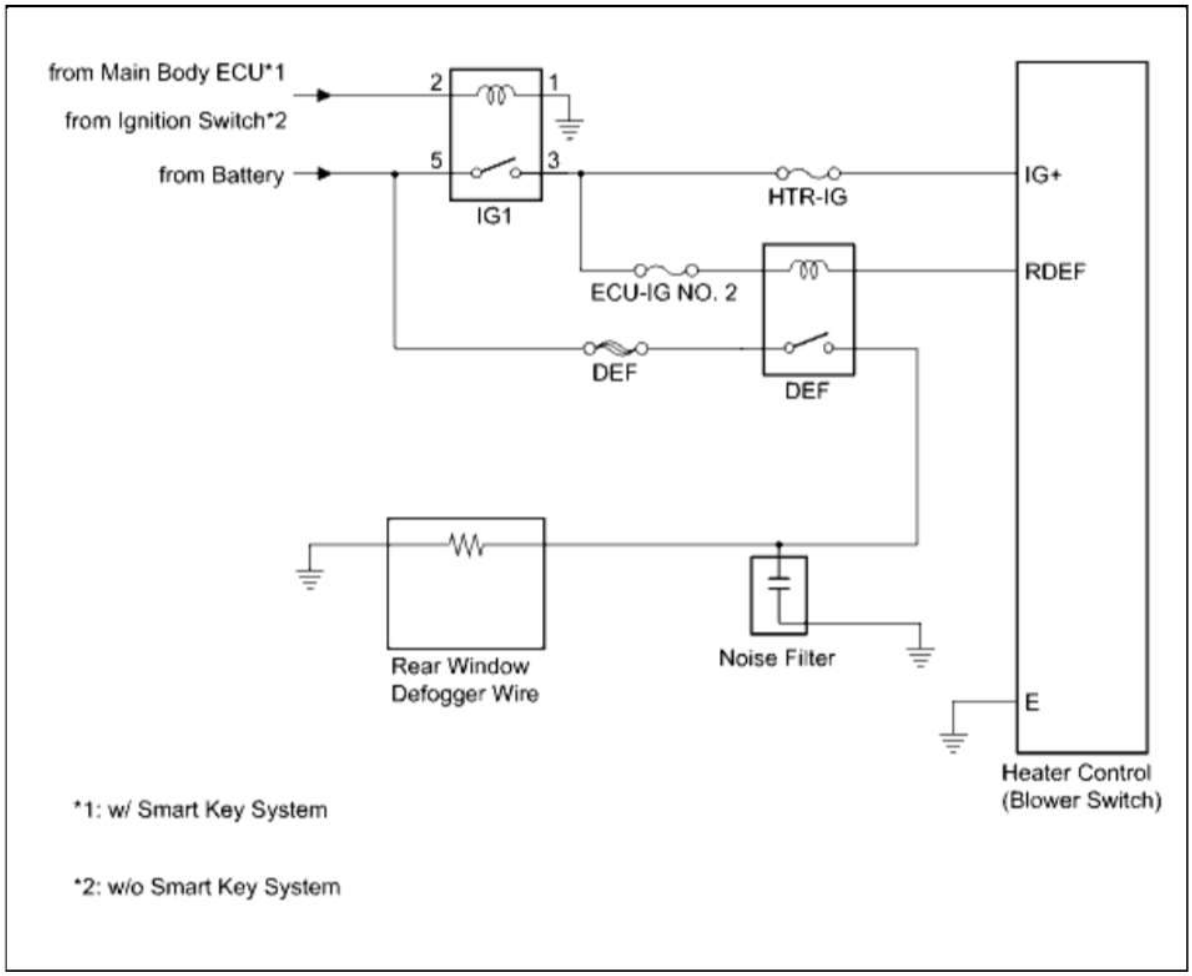
The expressions listed in the table below are used in this section.

SWITCH TYPE		IGNITION SWITCH (POSITION)	ENGINE SWITCH (CONDITION)
Expression	Ignition switch off	LOCK	Off
	Ignition switch ON	ON	On (IG)
	Ignition switch ACC	ACC	On (ACC)
	Engine start	START	Start

cardiagn.com

Last Modified: 3-10-2010	6.4 U	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000U8U037X
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Manual Air Conditioning System): SYSTEM DIAGRAM (2010 Corolla)		

SYSTEM DIAGRAM



cardiagn.com

Last Modified: 3-10-2010	6.4 D	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000XSC03NX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Manual Air Conditioning System): HOW TO PROCEED WITH TROUBLESHOOTING (2010 Corolla)		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

Use the following procedure to troubleshoot the defogger system.

1.	**VEHICLE BROUGHT TO WORKSHOP**

NEXT

2.	**CUSTOMER PROBLEM ANALYSIS**

HINT:

- In troubleshooting, confirm that the problem symptoms have been accurately identified. Preconceptions should be discarded in order to make an accurate judgment. To clearly understand what the problem symptoms are, it is extremely important to ask the customer about the problem and the conditions at the time the malfunction occurred.
- Gather as much information as possible for reference. Past problems that seem unrelated may also help in some cases.
- The following 5 items are important points in the problem analysis:

What	Vehicle model, system name
When	Date, time, occurrence frequency
Where	Road conditions
Under what conditions?	Driving conditions, weather conditions
How did it happen?	Problem symptoms

NEXT

cardiagn.com

3.	INSPECT BATTERY VOLTAGE

(a) Measure the battery voltage.

Standard Voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to the next step.

NEXT

4.	PROBLEM SYMPTOMS TABLE

Result:

RESULT	PROCEED TO
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B ▶ **GO TO STEP 6**

A

5.	OVERALL ANALYSIS AND TROUBLESHOOTING

(a) Terminals of ECU INFO

(b) On-vehicle Inspection INFO

NEXT

cardiagn.com

6.	REPAIR OR REPLACE

NEXT

7.	CONFIRMATION TEST

NEXT END

cardiagn.com

Last Modified: 3-10-2010	6.4 D	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000WPT03LX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Manual Air Conditioning System): SYSTEM DESCRIPTION (2010 Corolla)		

SYSTEM DESCRIPTION

1. GENERAL

The defogger system thin heater wires are attached to the inside of the rear window and defog the window surface quickly. The indicator light illuminates while the system is operating. The system automatically turns off after approximately 15 minutes.

HINT:

The rear window defogger is linked with the mirror defogger (w/ mirror defogger).

2. FUNCTION OF MAIN COMPONENT

COMPONENT	OUTLINE
DEF Relay	Receives rear defogger activation request signals from the heater control (blower switch) and supplies power to the rear window defogger.
Rear Window Defogger	Receives power from the DEF relay and heats the defogger wire.

cardiagn.com

Last Modified: 3-10-2010	6.4 T	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000U8S03QX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Manual Air Conditioning System): PROBLEM SYMPTOMS TABLE (2010 Corolla)		

PROBLEM SYMPTOMS TABLE

HINT:

Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Window Defogger System

SYMPTOM	SUSPECTED AREA	SEE PAGE
Rear window defogger does not operate	ECU-IG No. 2, DEF and HTR-IG fuses	INFO
	DEF and IG1 relays	INFO
	Wire harness	INFO
	Rear window defogger wire	INFO
	Heater control (Blower switch)	INFO
	Main body ECU (instrument panel junction block)	-

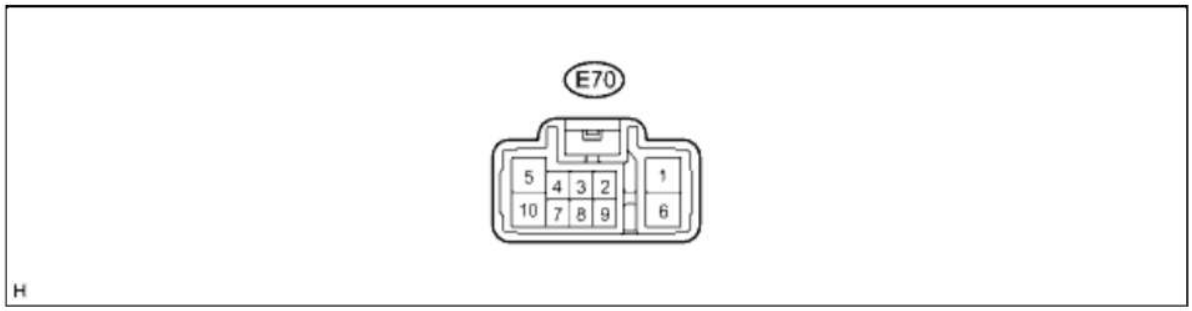
cardiagn.com

Last Modified: 3-10-2010	6.4 U	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000WPS03GX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Manual Air Conditioning System): TERMINALS OF ECU (2010 Corolla)		

TERMINALS OF ECU

1. CHECK HEATER CONTROL (BLOWER SWITCH)

(a) Disconnect the E70 heater control (blower switch) connector.



(1) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
E70-2 (RDEF) - E70-5 (E)	B - W-B*1 BE - W-B*2	Rear defogger signal	Ignition switch ON, Rear window defogger switch OFF	11 to 14 V
			Ignition switch ON, Rear window defogger switch ON	Below 1 V
E70-3 (IG+) - E70-5 (E)	Y - W-B*1 R - W-B*2	Power source (IG)	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V

- *1: for TMC Made
- *2: Except for TMC made

If the result is not as specified, there may be a malfunction in the wire harness.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

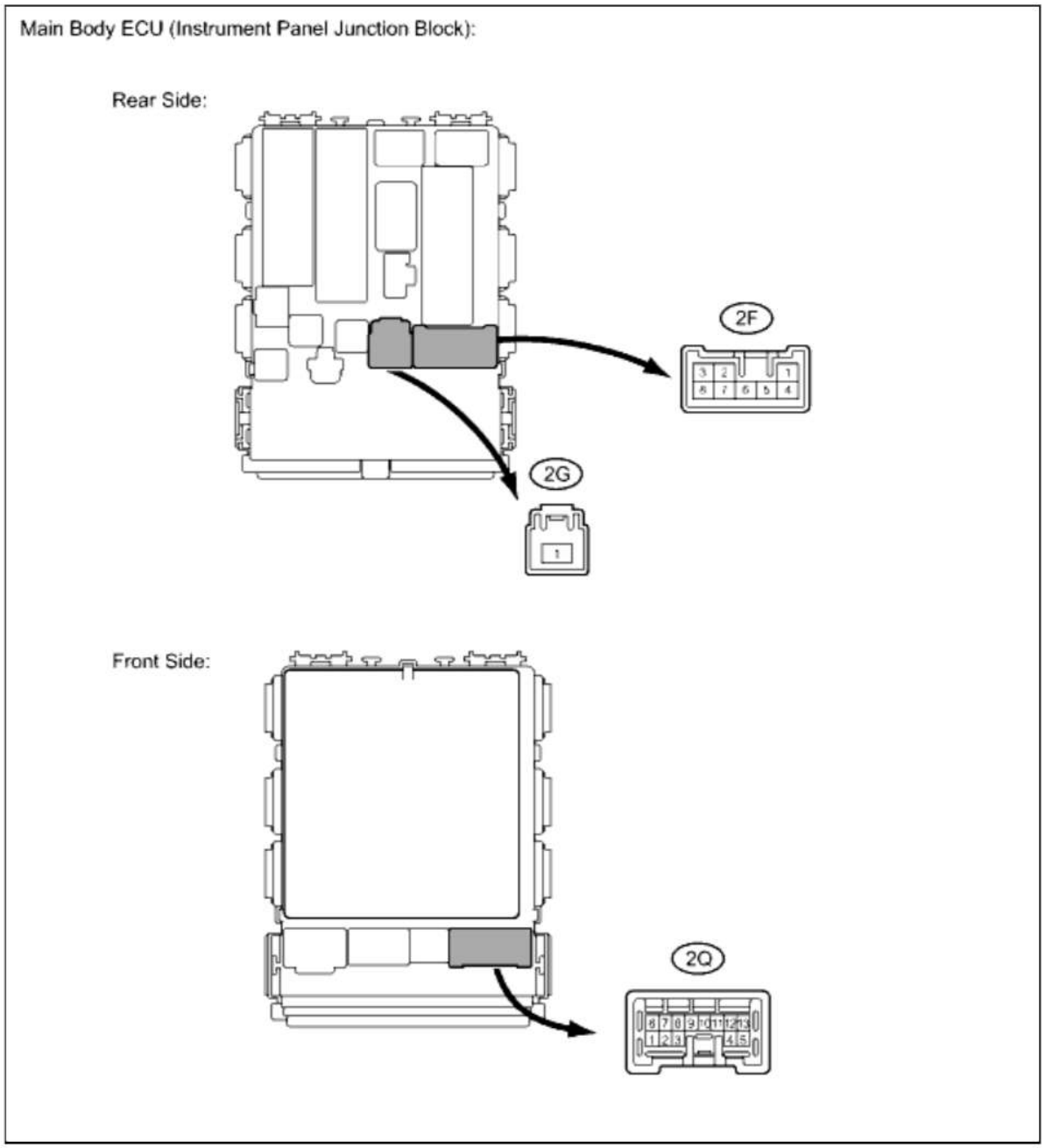
TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
E70-5 (E) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction in the wire harness.

cardiagn.com

2. CHECK MAIN BODY ECU (INSTRUMENT PANEL JUNCTION BLOCK)

(a) Disconnect the 2F, 2G and 2Q instrument panel junction block connectors.



(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
2G-1 - Body ground	W - Body ground	Power source	Always	11 to 14 V

cardiagn.com

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
2Q-12 - Body ground	B - Body ground*1 BE - Body ground*2	DEF Relay operation signal	Ignition switch ON, Rear window defogger switch OFF	11 to 14 V
			Ignition switch ON, Rear window defogger switch ON	Below 1 V
2F-2 - Body ground	B - Body ground	Defogger wire operation signal	Ignition switch ON, Rear window defogger switch OFF	Below 1 V
			Ignition switch ON, Rear window defogger switch ON	11 to 14 V

- *1: for TMC Made
- *2: Except for TMC made

If the result is not as specified, there may be a malfunction in the wire harness or main body ECU (instrument panel junction block).



cardiagn.com

Last Modified: 3-10-2010	6.4 G	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000U8V031X
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Manual Air Conditioning System): ON-VEHICLE INSPECTION (2010 Corolla)		

ON-VEHICLE INSPECTION

1. CHECK REAR WINDOW DEFOGGER SYSTEM OPERATION

(a) When the ignition switch is turned to ON and the defogger switch is pressed, check that the rear window defogger operates.

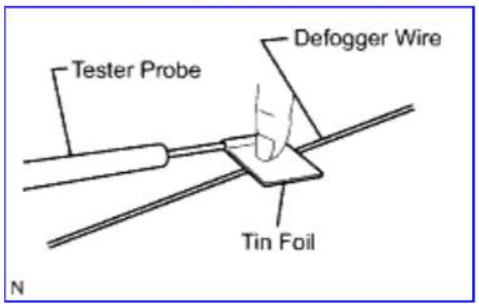
HINT:

After 15 minutes, check that the defogger automatically turns off.

2. INSPECT BACK WINDOW (DEFOGGER WIRE)

NOTICE:

- When cleaning the glass, wipe the glass along the wire using a soft and dry cloth. Take care not to damage the wires.
- Do not use detergents or glass cleaners that have abrasive ingredients.
- When measuring voltage, wrap a piece of tin foil around the tip of the negative tester probe and press the foil against the wire with your finger, as shown in the illustration.

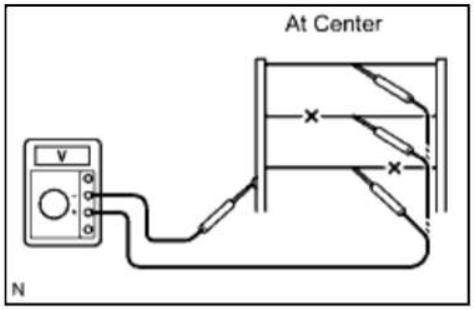


(a) Turn the ignition switch to ON.

(b) Turn the defogger switch on.

(c) Check the voltage at the center of each defogger wire, as shown in the illustration.

Standard Voltage:



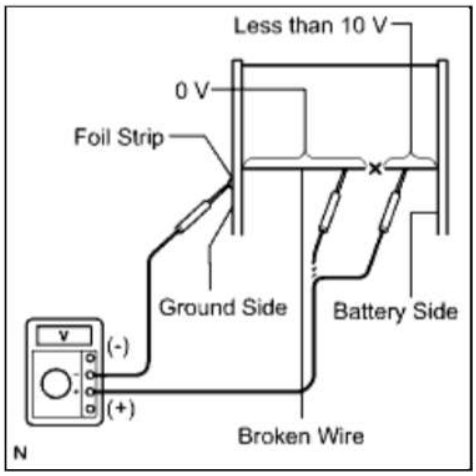
VOLTAGE	CRITERIA
Approx. 5 V	Wire is not broken
Approx. 10 or 0 V	Wire is broken

HINT:

If there is approximately 10 V, the wire may be faulty between the center of the wire and the wire end on the battery side. If there is no

cardiagn.com

voltage, the wire may be faulty between the center of the wire and the wire end on the ground side.



(d) Place a voltmeter positive (+) lead against the defogger wire on the battery side.

(e) Place a voltmeter negative (-) lead with the foil strip against the wire on the ground side.

(f) Slide the positive (+) lead from the battery side to the ground side.

(g) The point where the voltage drops from approximately 10 V to 0 V is the place where the defogger wire is broken.

HINT:

If the defogger wire is not broken, the voltmeter should indicate 0 V at the positive (+) end of the defogger wire but gradually increase to approximately 12 V as the meter probe moves to the other end.

cardiagn.com

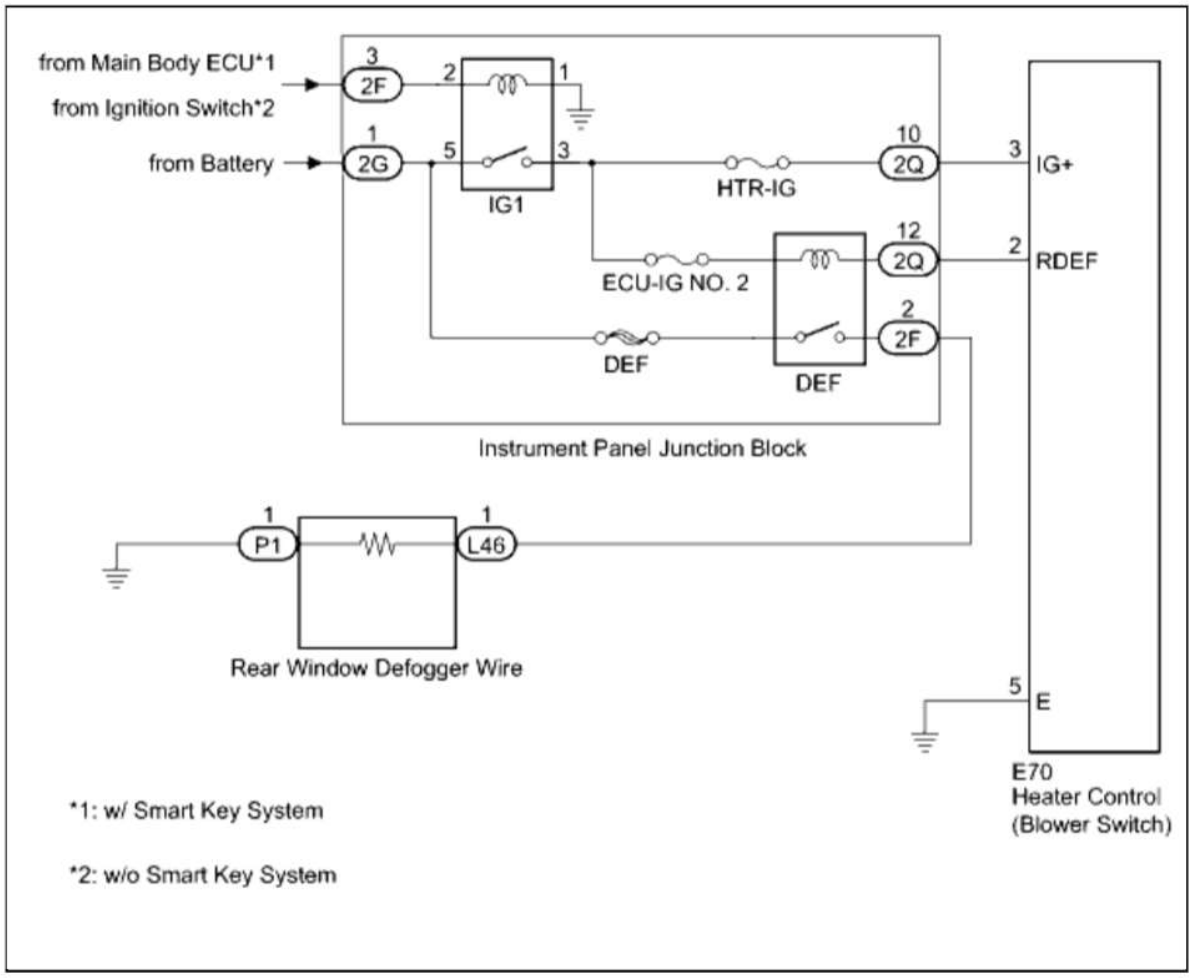
Last Modified: 3-10-2010	6.4 J	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000020LP02SX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Manual Air Conditioning System): Rear Window Defogger System does not Operate (2010 Corolla)		

Rear Window Defogger System does not Operate

DESCRIPTION

When the rear window defogger switch, which is built into the heater control (blower switch), is operated, the operation signals are transmitted to the DEF relay (coil side). When the DEF relay (coil side) receives the signals, it turns on the DEF relay (switch side) to operate the rear window defogger.

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

cardiagn.com

1.	**CHECK REAR WINDOW DEFOGGER SYSTEM**

(a) Turn the window defogger switch on.

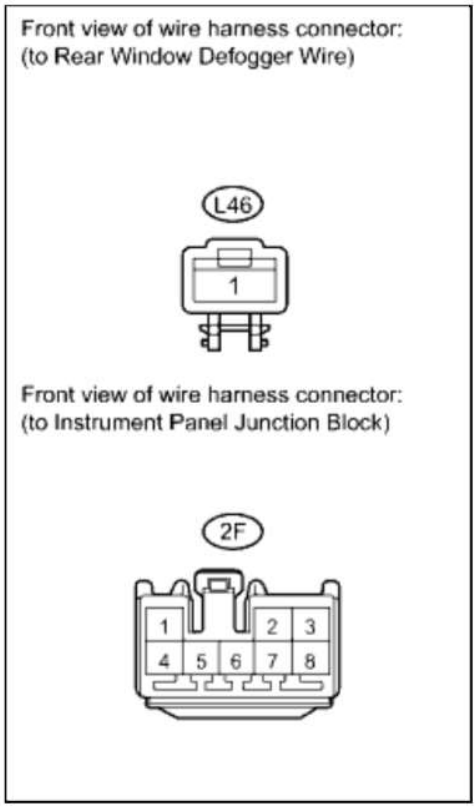
(b) Check that operation sound of the DEF relay is heard.

OK:
Relay operating sound is heard

NG ▶ **INSPECT FUSES (DEF, ECU-IG NO. 2, HTR-IG)**

OK ▼

2.	**CHECK HARNESS AND CONNECTOR (REAR WINDOW DEFOGGER WIRE - INSTRUMENT PANEL JUNCTION BLOCK)**



(a) Disconnect the 2F instrument panel junction block and L46 rear window defogger wire connectors.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

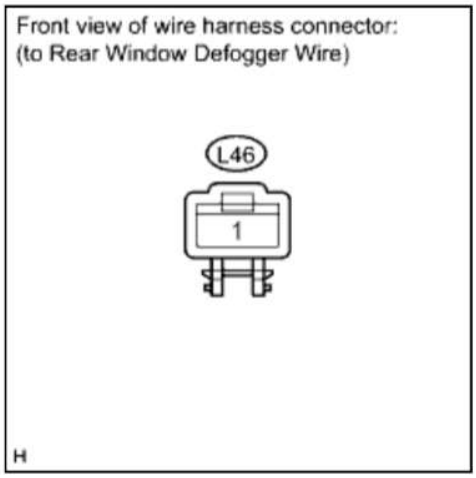
cardiagn.com

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
L46-1 - 2F-2	Always	Below 1 Ω
L46-1 - Body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK
▼

3.	CHECK HARNESS AND CONNECTOR (REAR WINDOW DEFOGGER WIRE - BATTERY)



(a) Reconnect the 2F instrument panel junction block connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

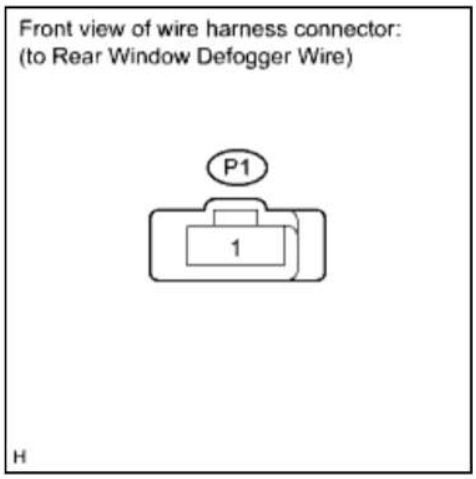
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
L46-1 - Body ground	Ignition switch ON, Rear window defogger switch ON	11 to 14 V

NG ▶ **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

cardiagn.com

4.	**CHECK HARNESS AND CONNECTOR (REAR WINDOW DEFOGGER WIRE - BODY GROUND)**



(a) Disconnect the P1 rear window defogger wire connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P1-1 - Body ground	Always	Below 1 Ω

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▶ **REPAIR OR REPLACE REAR WINDOW DEFOGGER WIRE**

5.	**INSPECT FUSES (DEF, ECU-IG NO. 2, HTR-IG)**

(a) Remove the DEF, ECU-IG No. 2 and HTR-IG fuses from the instrument panel junction block.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

ITEM	CONDITION	SPECIFIED CONDITION

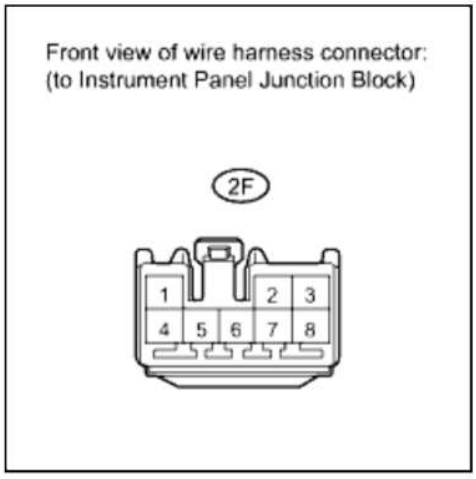
cardiagn.com

ITEM	CONDITION	SPECIFIED CONDITION
DEF fuse	Always	Below 1 Ω
ECU-IG No. 2 fuse	Always	Below 1 Ω
HTR-IG fuse	Always	Below 1 Ω

NG ▶ **REPLACE FUSES**

OK ▼

6.	CHECK HARNESS AND CONNECTOR (IG1 RELAY POWER SOURCE)



(a) Disconnect the 2F instrument panel junction block connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
2F-3 - Body Ground	Ignition switch ON	11 to 14 V

Result:

RESULT	PROCEED TO
OK	A
NG (w/ Smart Key System)	B
NG (w/o Smart Key System)	C

cardiagn.com

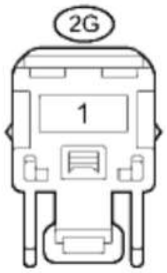
C ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

B ▶ **GO TO SMART KEY SYSTEM**

A
▼

7.	**CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL JUNCTION BLOCK - BATTERY)**

Front view of wire harness connector:
(to Instrument Panel Junction Block)



(a) Disconnect the 2G instrument panel junction block connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

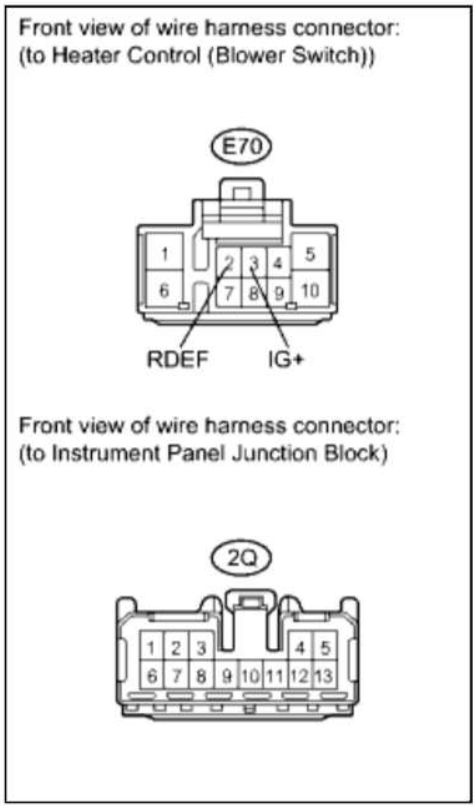
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
2G-1 - Body ground	Ignition switch ON	11 to 14 V

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK
▼

8.	**CHECK HARNESS AND CONNECTOR (HEATER CONTROL (BLOWER SWITCH) - INSTRUMENT PANEL J/B)**

cardiagn.com



(a) Disconnect the E70 heater control (blower switch) and 2Q instrument panel junction block connectors.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
E70-2 (RDEF) - 2Q-12	Always	Below 1 Ω
E70-3 (IG+) - 2Q-10	Always	Below 1 Ω
E70-2 (RDEF) - Body ground	Always	10 kΩ or higher
E70-3 (IG+) - Body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

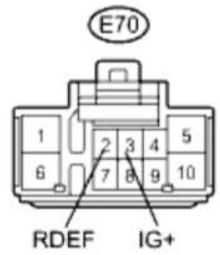
OK ▼

9.	**CHECK HARNESS AND CONNECTOR (HEATER CONTROL (BLOWER SWITCH) - BATTERY)**

(a) Reconnect the 2Q instrument panel junction block

cardiagn.com

Front view of wire harness connector:
(to Heater Control (Blower Switch))



connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
E70-2 (RDEF) - Body ground	Ignition switch ON	11 to 14 V
E70-3 (IG+) - Body ground	Ignition switch ON	11 to 14 V

NG ▶ **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK ▼

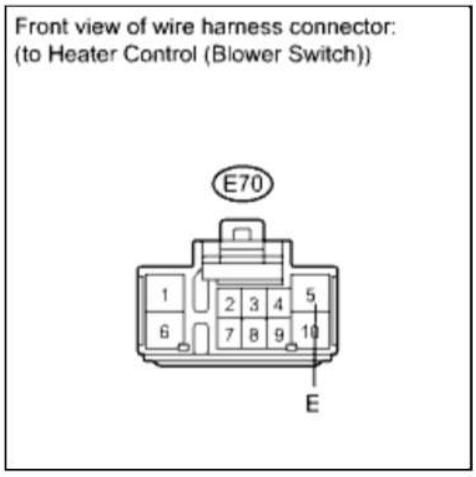
10.	**CHECK HARNESS AND CONNECTOR (HEATER CONTROL (BLOWER SWITCH) - BODY GROUND)**

(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
E70-5 (E) - Body ground	Always	Below 1 Ω

cardiagn.com



NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

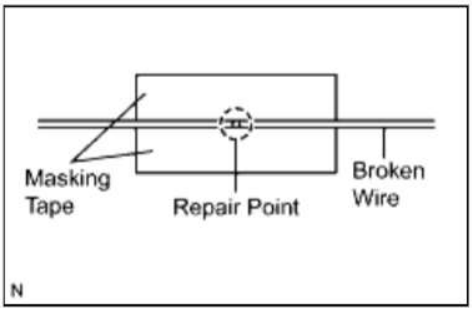
OK ▶ **REPLACE HEATER CONTROL (BLOWER SWITCH)**

cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000000WYG02UX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM (for Manual Air Conditioning System): REPAIR (2010 Corolla)		

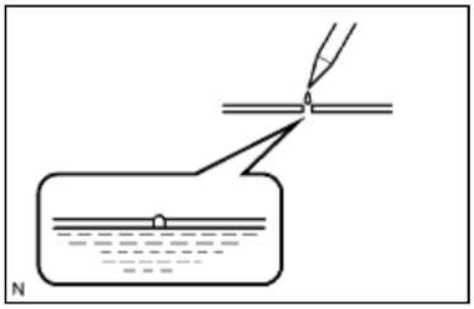
REPAIR

1. REPAIR WINDOW DEFOGGER WIRE



(a) Clean the broken wire tips with a grease, wax and silicone remover.

(b) Place the masking tape along both sides of the wire.



(c) Thoroughly mix the repair agent (Dupont paste No. 4817 or equivalent).

(d) Using a fine tip brush, apply a small amount of the agent to the wire.

(e) After a few minutes, remove the masking tape.

NOTICE:

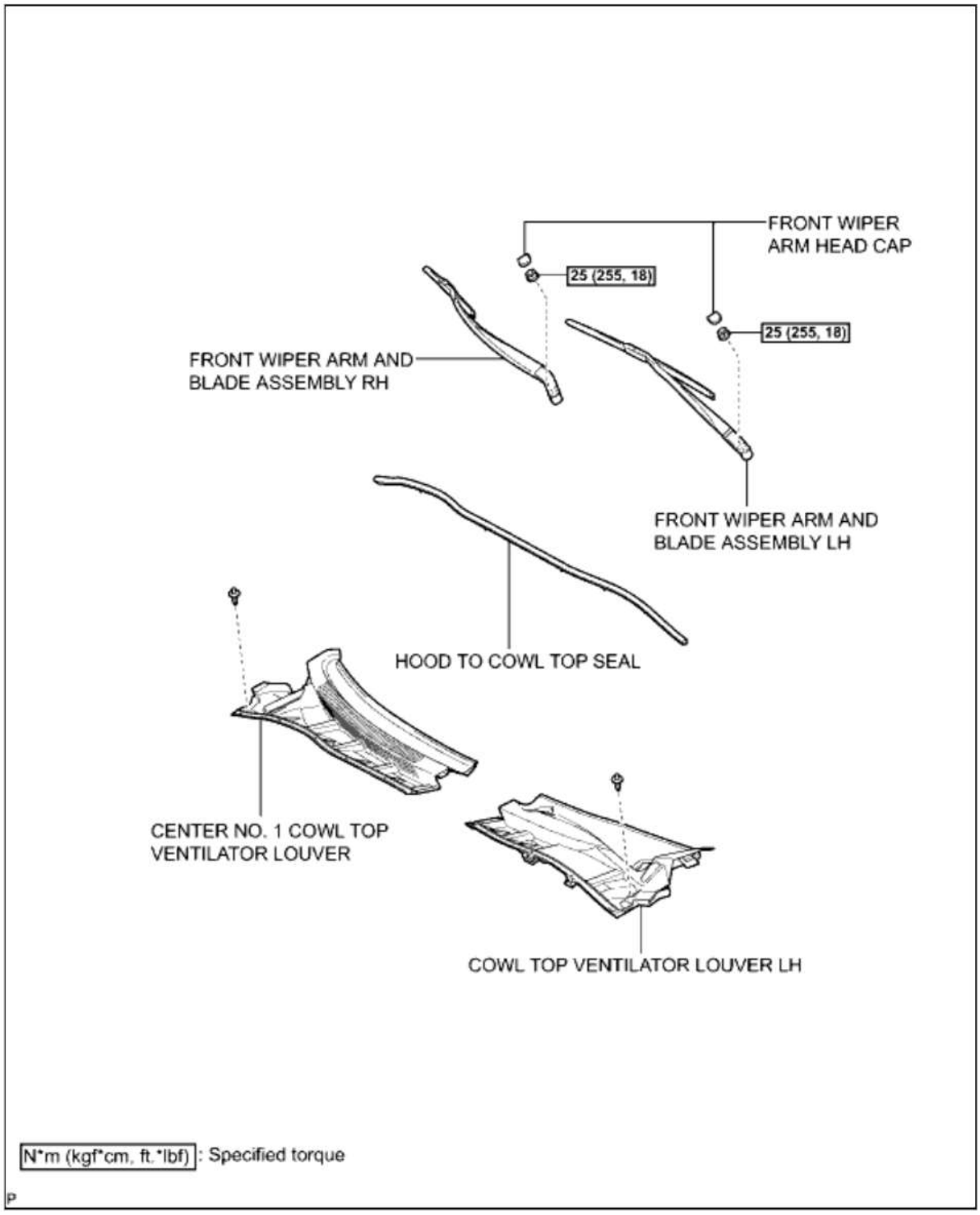
Do not repair the defogger wire again for at least 24 hours.

cardiagn.com

Last Modified: 3-10-2010	6.4 K	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM000001YRK00XX
Title: WINDOW / GLASS: WINDSHIELD GLASS: COMPONENTS (2010 Corolla)		

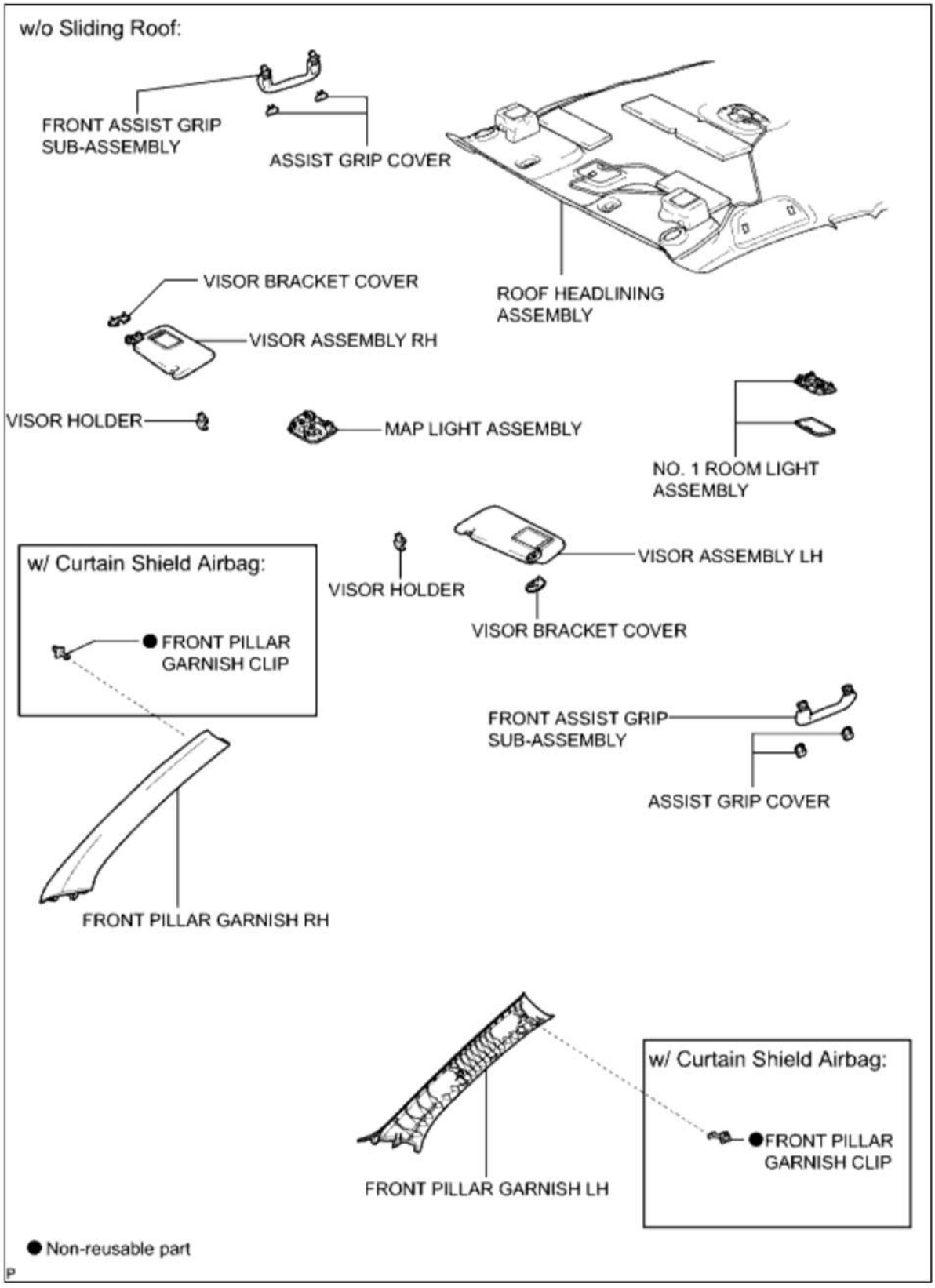
COMPONENTS

ILLUSTRATION



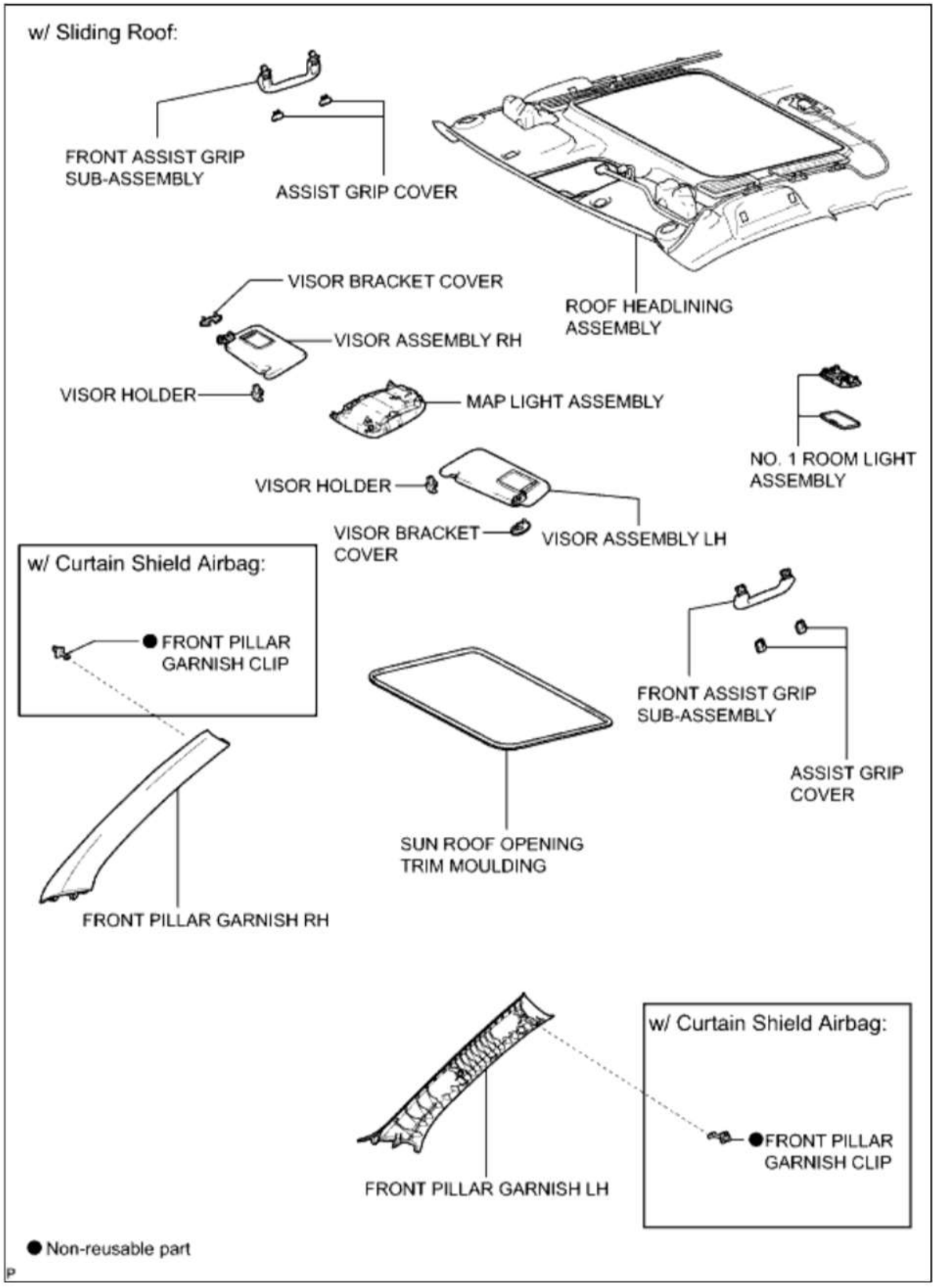
cardiagn.com

ILLUSTRATION



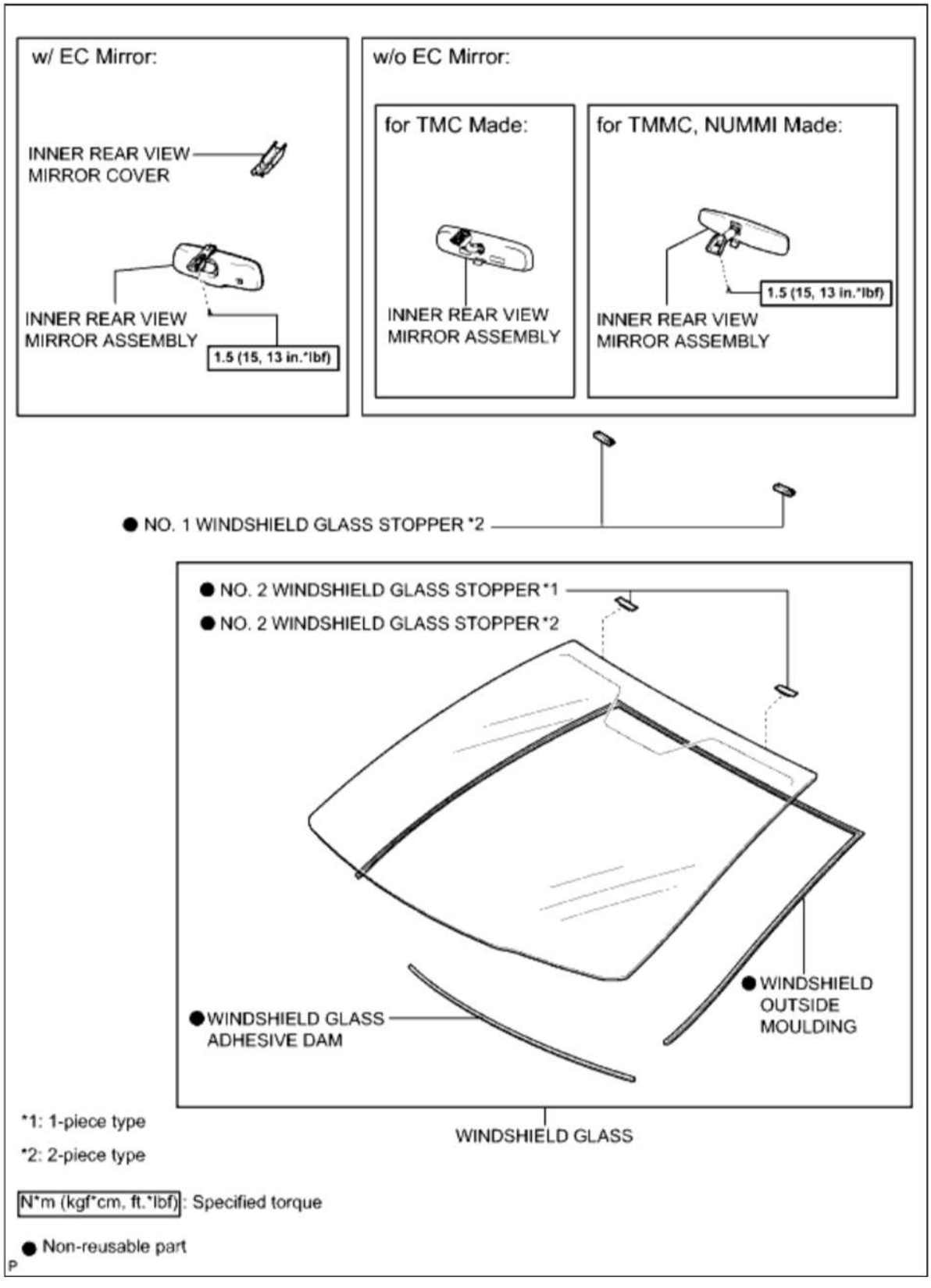
cardiagn.com

ILLUSTRATION



cardiagn.com

ILLUSTRATION



cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000013KE022X
Title: WINDOW / GLASS: WINDSHIELD GLASS: INSTALLATION (2010 Corolla)		

INSTALLATION

1. INSTALL NO. 2 WINDSHIELD GLASS STOPPER

(a) Using a brush or sponge, coat the application area of the 2 No. 2 windshield glass stoppers with Primer G.

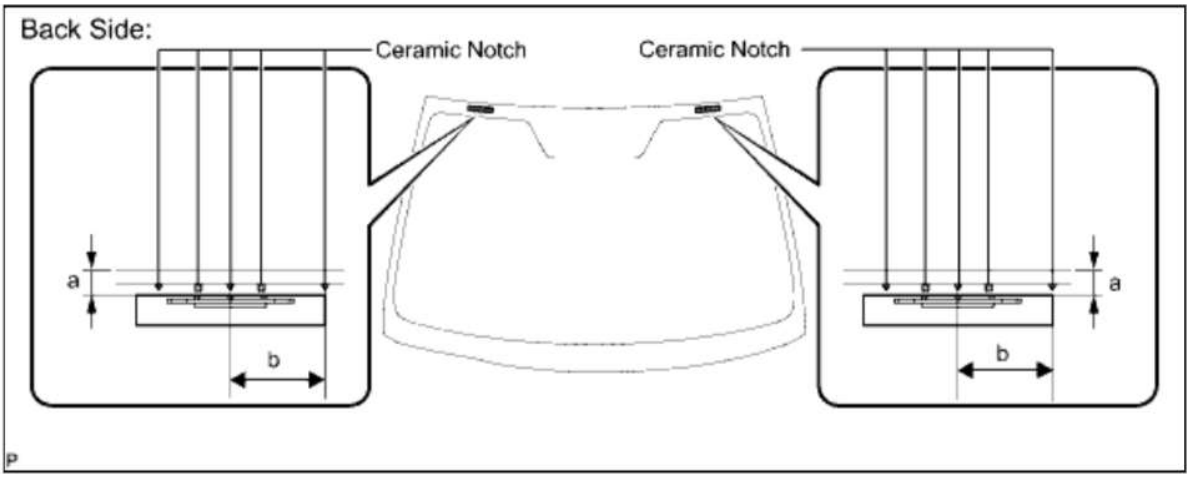
NOTICE:

- Do not apply too much primer.
- Allow the primer coating to dry for 3 minutes or more.
- Throw away any leftover Primer G.

HINT:

If an area other than that specified is coated by accident, apply a non-reusable part solvent to a clean cloth and wipe off the primer.

(b) Install 2 new No. 2 windshield glass stoppers onto the windshield glass as shown in the illustration.



HINT:

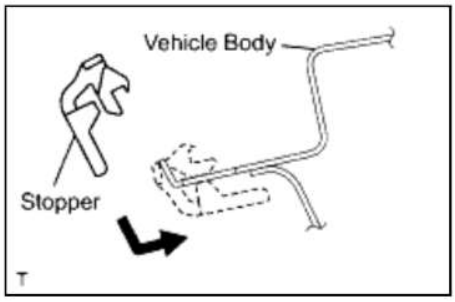
Only 2-piece type No. 2 windshield glass stoppers are supplied. Use the 2-piece type stoppers even if a 1-piece type was used.

Standard Dimension:

AREA	DIMENSION
a	13.6 mm (0.535 in.)
b	40.0 mm (1.57 in.)

2. INSTALL NO. 1 WINDSHIELD GLASS STOPPER (for 2-piece Type)

cardiagn.com



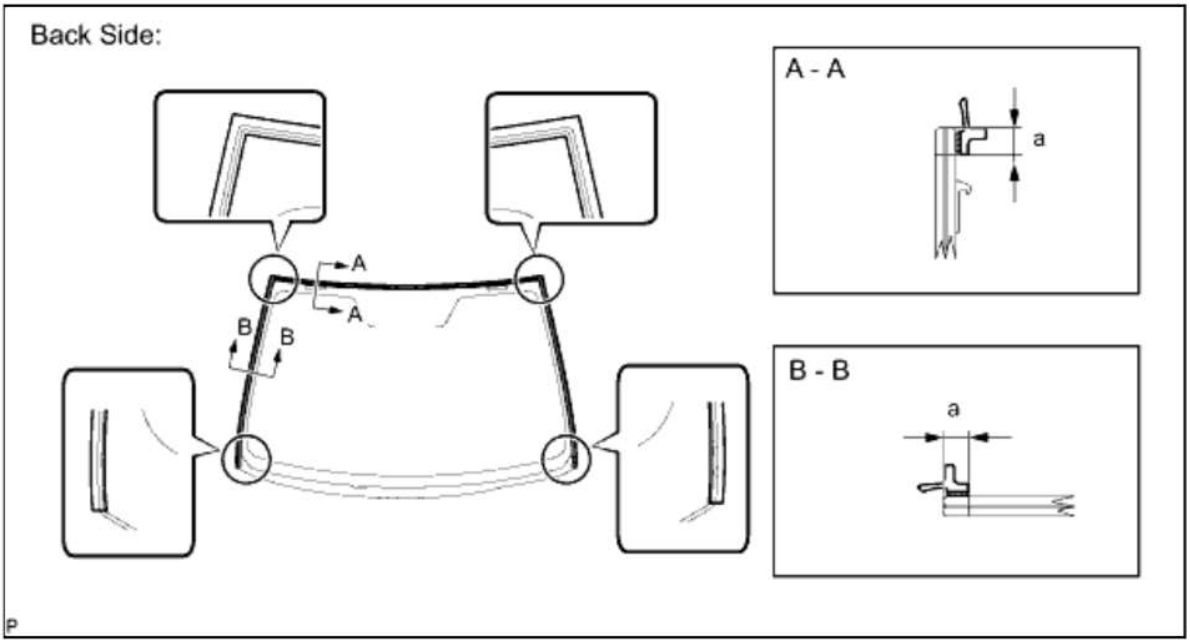
(a) Install 2 new No. 1 windshield glass stoppers to the vehicle body as shown in the illustration.

HINT:

Only 2-piece type No. 1 windshield glass stoppers are supplied. Use the 2-piece type stoppers even if a 1-piece type was used.

3. INSTALL WINDSHIELD OUTSIDE MOULDING

(a) Using a brush or sponge, coat the application area of the windshield outside moulding with Primer G.



Standard Dimension:

AREA	DIMENSION
a	7.0 mm (0.276 in.)

NOTICE:

- Do not apply too much primer.
- Allow the primer coating to dry for 3 minutes or more.
- Throw away any leftover Primer G.

HINT:

If an area other than that specified is coated by accident, apply a non-residue solvent to a clean cloth and wipe off the excess primer.

(b) Install a new windshield outside moulding onto the windshield glass as shown in the illustration.

cardiagn.com

4. INSTALL WINDSHIELD GLASS ADHESIVE DAM

(a) Using a brush or sponge, coat the application area of the windshield glass adhesive dam with Primer G.

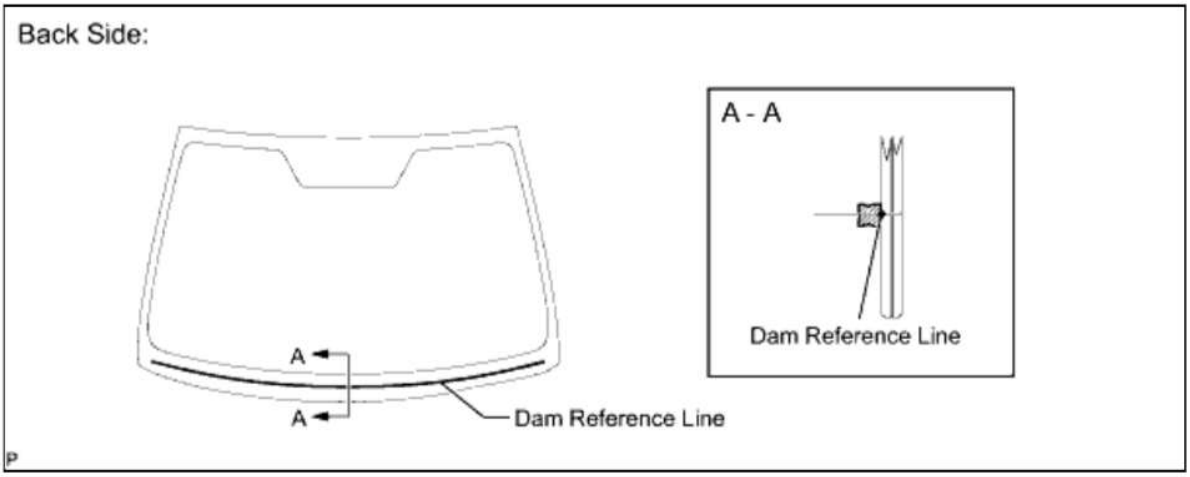
NOTICE:

- Do not apply too much primer.
- Allow the primer coating to dry for 3 minutes or more.
- Throw away any leftover Primer G.

HINT:

If the primer is applied to an area that specified is coated by accident, apply a non-residue solvent to a clean cloth and wipe off the excess primer.

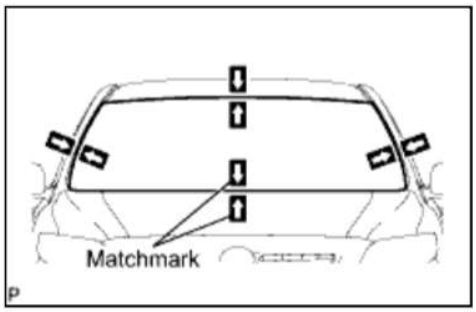
(b) Install a new windshield glass adhesive dam onto the windshield glass as shown in the illustration.



NOTICE:

Install the a adhesive dam along the dam reference line.

5. INSTALL WINDSHIELD GLASS



(a) Position the windshield glass assembly.

(1) Using suction cups, place the windshield glass assembly in the correct position.

(2) Check that the entire contact surface of the windshield glass rim is perfectly even.

(3) Place matchmarks on the windshield glass and vehicle body on the locations indicated in the illustration.

HINT:

- Placing matchmarks is necessary only when installing a new glass. If it is the reused glass, matchmarks should already be present.
- When reusing the glass, check and correct the matchmark

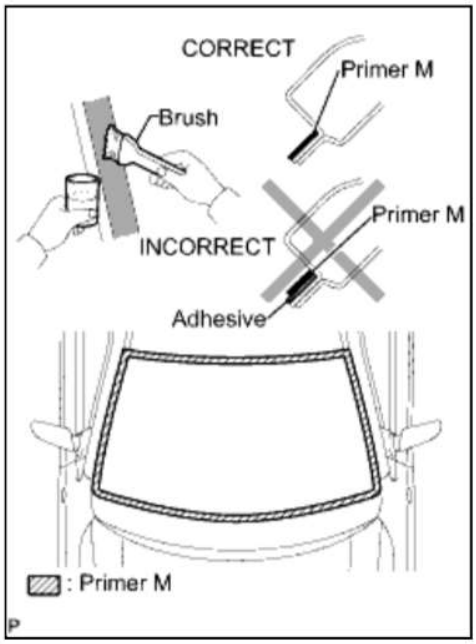
cardiagn.com

positions.

NOTICE:

Check that the stoppers are attached to the vehicle body correctly.

(4) Using suction cups, remove the windshield glass assembly.



(b) Using a brush, coat the installation surface on the vehicle body with Primer M.

NOTICE:

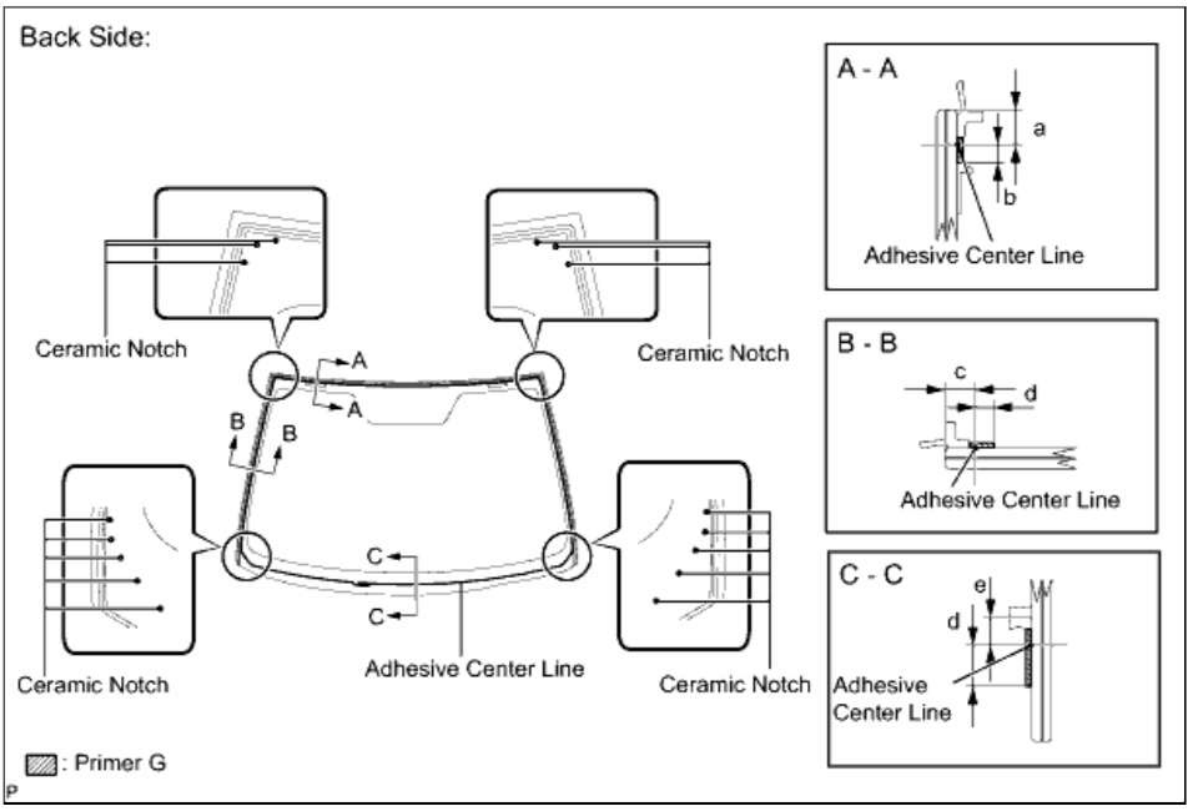
- Do not coat the adhesive with Primer M.
- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover Primer G.

HINT:

If an area other than that specified is coated by accident, apply a non-residue solvent to a clean cloth and wipe off the excess primer.

(c) Using a brush or sponge, coat the application area of adhesive with Primer G.

cardiagn.com



Standard Dimension:

AREA	DIMENSION
a	9.5 mm (0.374 in.)
b	4.6 mm (0.181 in.)
c	9.5 mm (0.374 in.)
d	7.0 mm (0.276 in.)
e	7.5 mm (0.295 in.)

NOTICE:

- Do not apply too much primer.
- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover Primer G.

HINT:

If an area other than that specified is coated by accident, apply a non-residue solvent to a clean cloth and wipe off the excess primer.

(1) Apply adhesive to the glass.

Adhesive:
Toyota Genuine Windshield Glass Adhesive or equivalent

(2) Cut off the tip of the cartridge nozzle, as shown in the illustration.

HINT:

cardiagn.com

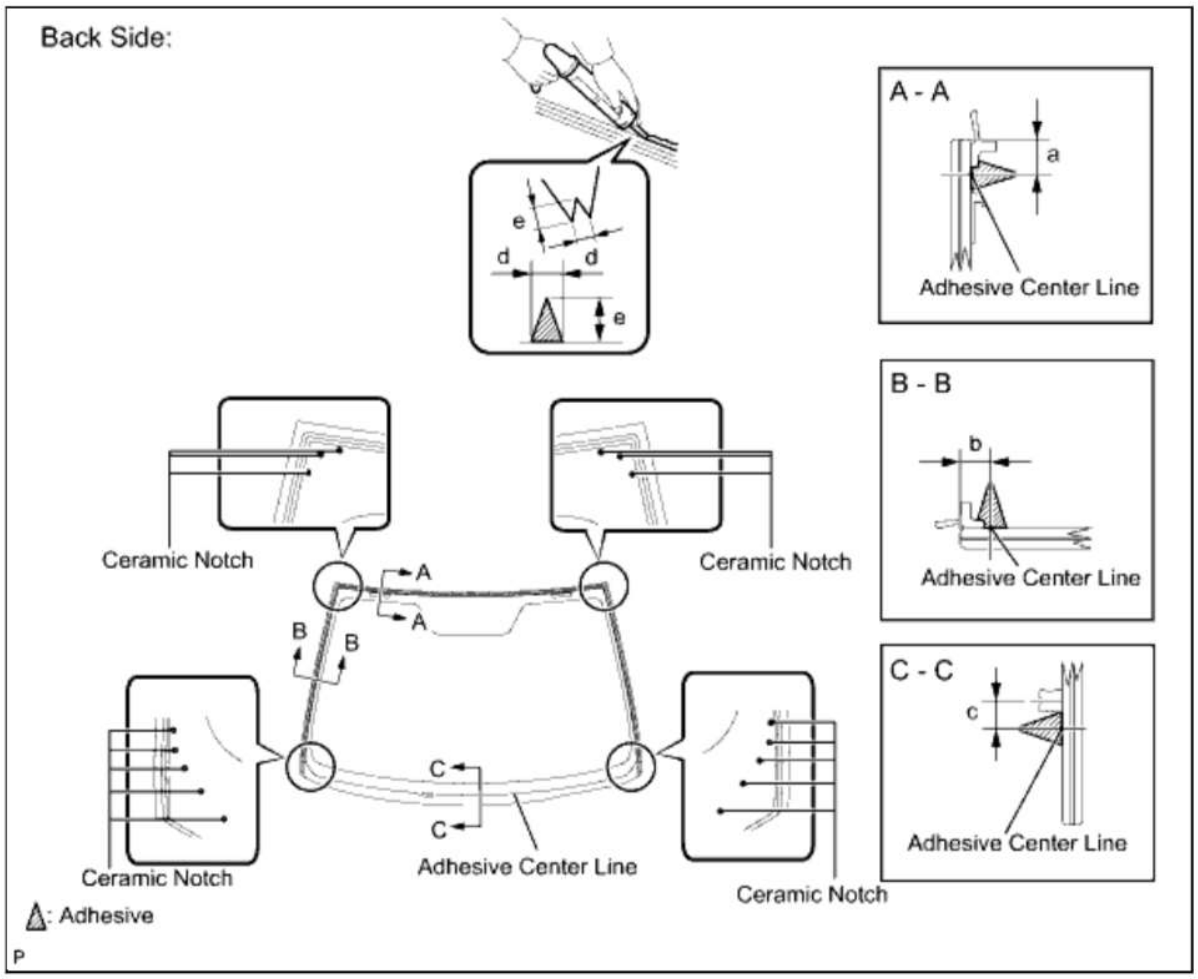
After cutting off the tip, use all adhesive within the time described in the table below.

Tack-Free Time:

TEMPERATURE	TACK-FREE TIME
35°C (95°F)	15 minutes
20°C (68°F)	1 hour and 40 minutes
5°C (41°F)	8 hours

(3) Load the sealer gun with the cartridge.

(4) Apply adhesive to the windshield glass as shown in the illustration.



Standard Dimension:

AREA	DIMENSION
a	9.5 mm (0.374 in.)
b	9.5 mm (0.374 in.)
c	7.5 mm (0.295 in.)

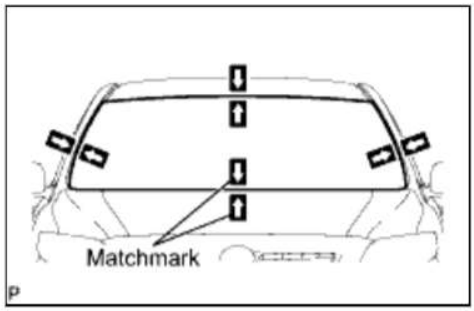
cardiagn.com

AREA	DIMENSION
d	8.0 mm (0.315 in.)
e	12.0 mm (0.472 in.)

HINT:

Apply adhesive onto the ceramic notches.

(d) Install the windshield glass assembly.



(1) Using suction cups, position the glass so that the matchmarks are aligned and press it in gently along the rim.

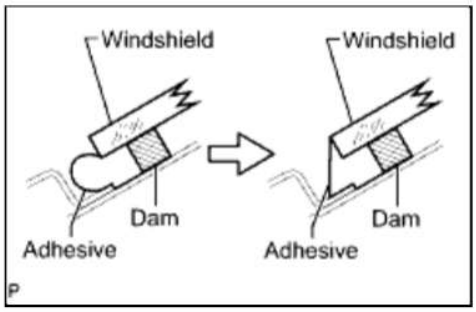
(2) Lightly press the outer surface of the windshield glass to ensure that it is securely attached to the vehicle body.

NOTICE:

- Check that the windshield glass stoppers are attached to the vehicle body correctly.
- Check the clearance between the vehicle body and windshield glass.

HINT:

Press the glass with force of 98 N (10 kgf, 22 lbf) or more.



(3) If necessary, use a scraper to correct the level or position of adhesive that has been applied.

NOTICE:

Apply adhesive onto the windshield glass rim.

(4) Hold the windshield glass using protective tape until applied adhesive becomes hard.

NOTICE:

Do not drive the vehicle for the amount of time described in the table below.

Minimum Time:

cardiagn.com

TEMPERATURE	MINIMUM TIME PRIOR TO DRIVING VEHICLE
35°C (95°F)	1 hour and 30 minutes
20°C (68°F)	5 hours
5°C (41°F)	24 hours

6. INSPECT FOR LEAK AND REPAIR

(a) After the adhesive has hardened, apply water from the outside of the vehicle. Check that no water leaks into the cabin.

(b) If water leaks into the cabin, allow the water to dry and add adhesive.

(c) Remove the protective tape.

7. INSTALL ROOF HEADLINING ASSEMBLY

Return the front section of the roof headlining assembly to the original position.

8. INSTALL SUN ROOF OPENING TRIM MOULDING (w/ Sliding Roof) INFO

9. INSTALL INNER REAR VIEW MIRROR ASSEMBLY (w/o EC Mirror)

for TMC Made: INFO

for TMMC, NUMMI Made: INFO

10. INSTALL INNER REAR VIEW MIRROR ASSEMBLY (w/ EC Mirror) INFO

11. INSTALL INNER REAR VIEW MIRROR COVER (w/ EC Mirror) INFO

12. INSTALL VISOR HOLDER INFO

13. INSTALL NO. 1 ROOM LIGHT ASSEMBLY INFO

14. INSTALL FRONT ASSIST GRIP SUB-ASSEMBLY INFO

15. INSTALL VISOR ASSEMBLY LH INFO

16. INSTALL VISOR ASSEMBLY RH INFO

17. INSTALL MAP LIGHT ASSEMBLY (w/o Sliding Roof) INFO

18. INSTALL MAP LIGHT ASSEMBLY (w/ Sliding Roof) INFO

19. INSTALL FRONT PILLAR GARNISH LH (w/o Curtain Shield Airbag) INFO

20. INSTALL FRONT PILLAR GARNISH LH (w/ Curtain Shield Airbag) INFO

21. INSTALL FRONT PILLAR GARNISH RH (w/o Curtain Shield Airbag) INFO

22. INSTALL FRONT PILLAR GARNISH RH (w/ Curtain Shield Airbag) INFO

23. INSTALL COWL TOP VENTILATOR LOUVER LH INFO

cardiagn.com

24. INSTALL CENTER NO. 1 COWL TOP VENTILATOR LOUVER INFO

25. INSTALL HOOD TO COWL TOP SEAL INFO

26. INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY RH INFO

27. INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY LH INFO

28. INSTALL FRONT WIPER ARM HEAD CAP INFO

29. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL



cardiagn.com

Last Modified: 3-10-2010	6.4 A	**From:** 200901
Model Year: 2010	**Model:** Corolla	**Doc ID:** RM0000013KG021X
Title: WINDOW / GLASS: WINDSHIELD GLASS: REMOVAL (2010 Corolla)		

REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

2. REMOVE FRONT WIPER ARM HEAD CAP INFO

3. REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY LH INFO

4. REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY RH INFO

5. REMOVE HOOD TO COWL TOP SEAL INFO

6. REMOVE CENTER NO. 1 COWL TOP VENTILATOR LOUVER INFO

7. REMOVE COWL TOP VENTILATOR LOUVER LH INFO

8. REMOVE FRONT PILLAR GARNISH LH (w/o Curtain Shield Airbag) INFO

9. REMOVE FRONT PILLAR GARNISH LH (w/ Curtain Shield Airbag) INFO

10. REMOVE FRONT PILLAR GARNISH RH (w/o Curtain Shield Airbag) INFO

11. INSTALL FRONT PILLAR GARNISH RH (w/ Curtain Shield Airbag) INFO

12. REMOVE MAP LIGHT ASSEMBLY (w/o Sliding Roof) INFO

13. REMOVE MAP LIGHT ASSEMBLY (w/ Sliding Roof) INFO

14. REMOVE VISOR ASSEMBLY LH INFO

15. REMOVE VISOR ASSEMBLY RH INFO

16. REMOVE FRONT ASSIST GRIP SUB-ASSEMBLY INFO

17. REMOVE NO. 1 ROOM LIGHT ASSEMBLY INFO

18. REMOVE VISOR HOLDER INFO

19. REMOVE INNER REAR VIEW MIRROR COVER (w/ EC Mirror) INFO

20. REMOVE INNER REAR VIEW MIRROR ASSEMBLY (w/o EC Mirror)

for TMC Made: INFO

for TMMC, NUMMI Made: INFO

cardiagn.com

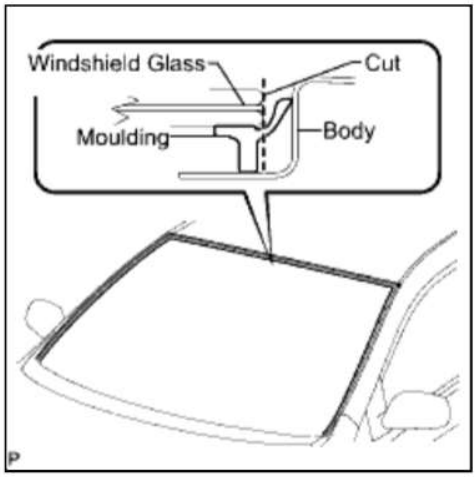
21. REMOVE INNER REAR VIEW MIRROR ASSEMBLY (w/ EC Mirror) INFO

22. REMOVE SUN ROOF OPENING TRIM MOULDING (w/ Sliding Roof) INFO

23. REMOVE ROOF HEADLINING ASSEMBLY

It is not necessary to completely remove the roof headlining assembly. Slightly lower the front section of the roof headlining assembly so that the windshield glass can be removed.

24. REMOVE WINDSHIELD GLASS



(a) Using a knife, cut off the upper windshield outside moulding as shown in the illustration.

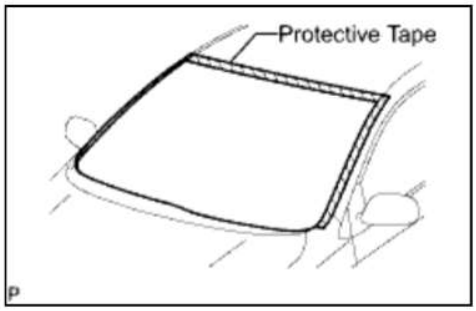
NOTICE:

Be careful not to damage the vehicle body.

(b) Remove the remaining windshield outside moulding.

HINT:

Make a partial cut in the windshield outside moulding, then pull and remove it by hand.



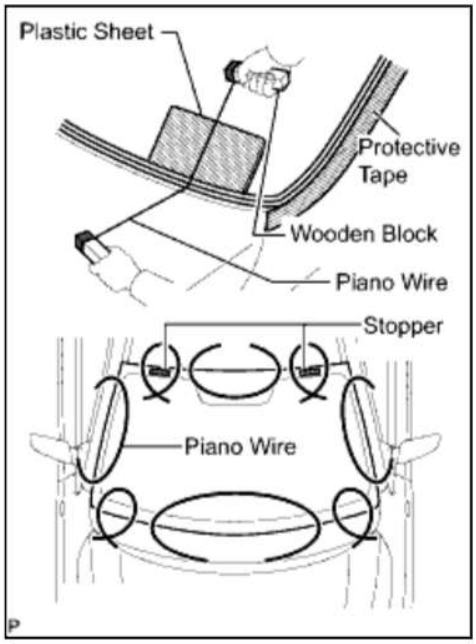
(c) Apply protective tape to the installation position of the windshield glass sub-assembly on the vehicle body.

NOTICE:

Apply protective tape to the installation surface to prevent it from being scratched.

(d) Pass a piano wire between the vehicle body and windshield glass sub-assembly from the interior.

cardiagn.com

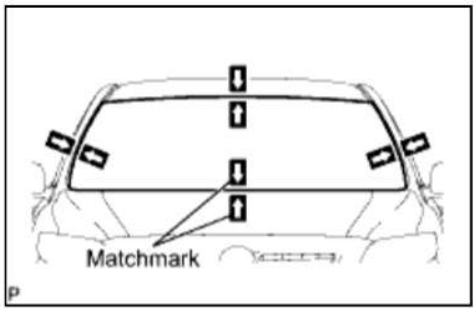


(e) Tie both wire ends to wooden blocks or similar objects.

(f) Cut off the adhesive by pulling the piano wire around the windshield glass sub-assembly.

NOTICE:

- When separating the windshield glass sub-assembly from the vehicle, be careful not to damage the vehicle's paint or interior/exterior ornaments.
- To prevent the instrument panel from being scratched when removing the windshield glass sub-assembly, place a plastic sheet between the piano wire and instrument panel.



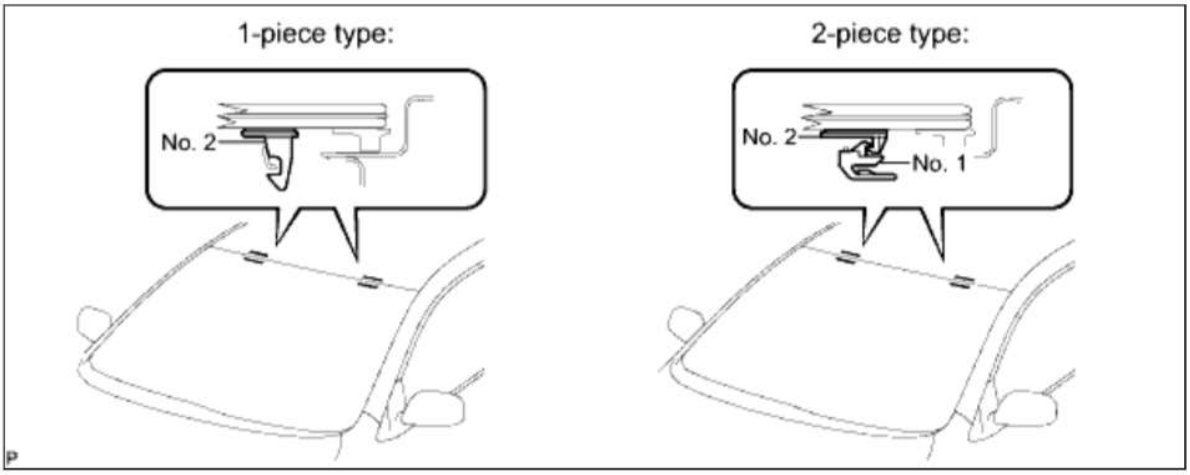
(g) Place matchmarks on the windshield glass sub-assembly and vehicle body on the locations indicated in the illustration.

HINT:

Matchmarks do not need if the windshield glass sub-assembly is not going to be reused.

(h) Disconnect the windshield glass stoppers.

cardiagn.com



NOTICE:

- There are the No. 1 and No. 2 stoppers on the windshield glass sub-assembly as shown in the illustration. Be careful not to damage the windshield glass when cutting off the adhesive.
- To prevent the windshield glass sub-assembly from dropping when performing this operation, be sure to hold the windshield glass sub-assembly using suction cups.

HINT:

Depending on vehicles, a 1-piece or 2-piece type stopper is used.

(i) Using suction cups, remove the windshield glass sub-assembly.

NOTICE:

- Be careful not to drop the windshield glass sub-assembly.
- Leave as much adhesive on the vehicle body as possible when removing the windshield glass sub-assembly.

25. REMOVE WINDSHIELD OUTSIDE MOULDING

(a) Using a scraper, remove the windshield outside moulding.

NOTICE:

- Be careful not to damage the windshield glass.
- Be sure to replace the outside moulding with a new one.

26. REMOVE WINDSHIELD GLASS ADHESIVE DAM

(a) Using a scraper, remove the windshield glass adhesive dam.

NOTICE:

- Be careful not to damage the windshield glass.
- Be sure to replace the adhesive dam with a new one.

27. REMOVE NO. 2 WINDSHIELD GLASS STOPPER

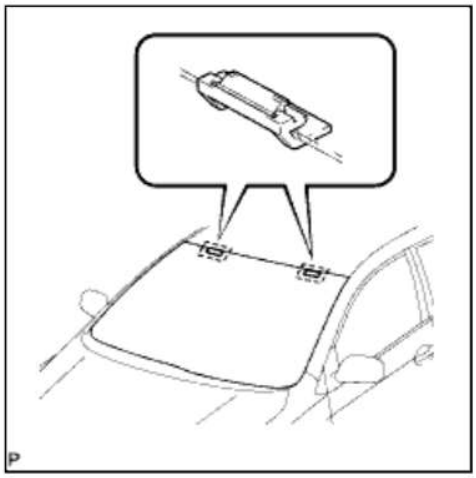
(a) Using a scraper, remove the 2 No. 2 windshield glass stoppers.

NOTICE:

- Be careful not to damage the windshield glass.
- Be sure to replace the 2 No. 2 windshield glass stoppers with new ones.

28. REMOVE NO. 1 WINDSHIELD GLASS STOPPER (for 2-piece Type)

cardiagn.com

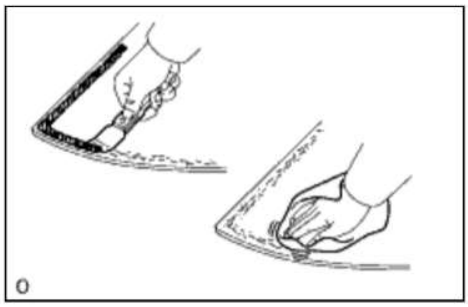


(a) Remove the 2 No. 1 windshield glass stoppers.

NOTICE:

Be sure to replace the 2 No. 1 windshield glass stoppers with new ones.

29. CLEAN WINDSHIELD GLASS

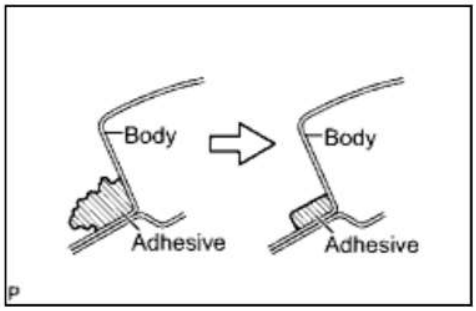


(a) Using a scraper, remove the damaged stoppers, dams and adhesive sticking to the windshield glass.

(b) Clean the outer edges of the glass with a non-residue solvent.

- Do not touch the glass surface after cleaning it.
- Even if using a new windshield glass, clean it with a non-residue solvent.

30. CLEAN VEHICLE BODY



(a) Clean and shape the contact surface of the vehicle body.

(1) On the contact surface of the vehicle body, use a knife to cut away excess adhesive as shown in the illustration.

NOTICE:

Be careful not to damage the vehicle body.

HINT:

Leave as much adhesive on the vehicle body as possible.

cardiagn.com

(b) Clean the contact surface of the vehicle body with cleaner.

HINT:

Even if all the adhesive has been removed, clean the vehicle body.



cardiagn.com