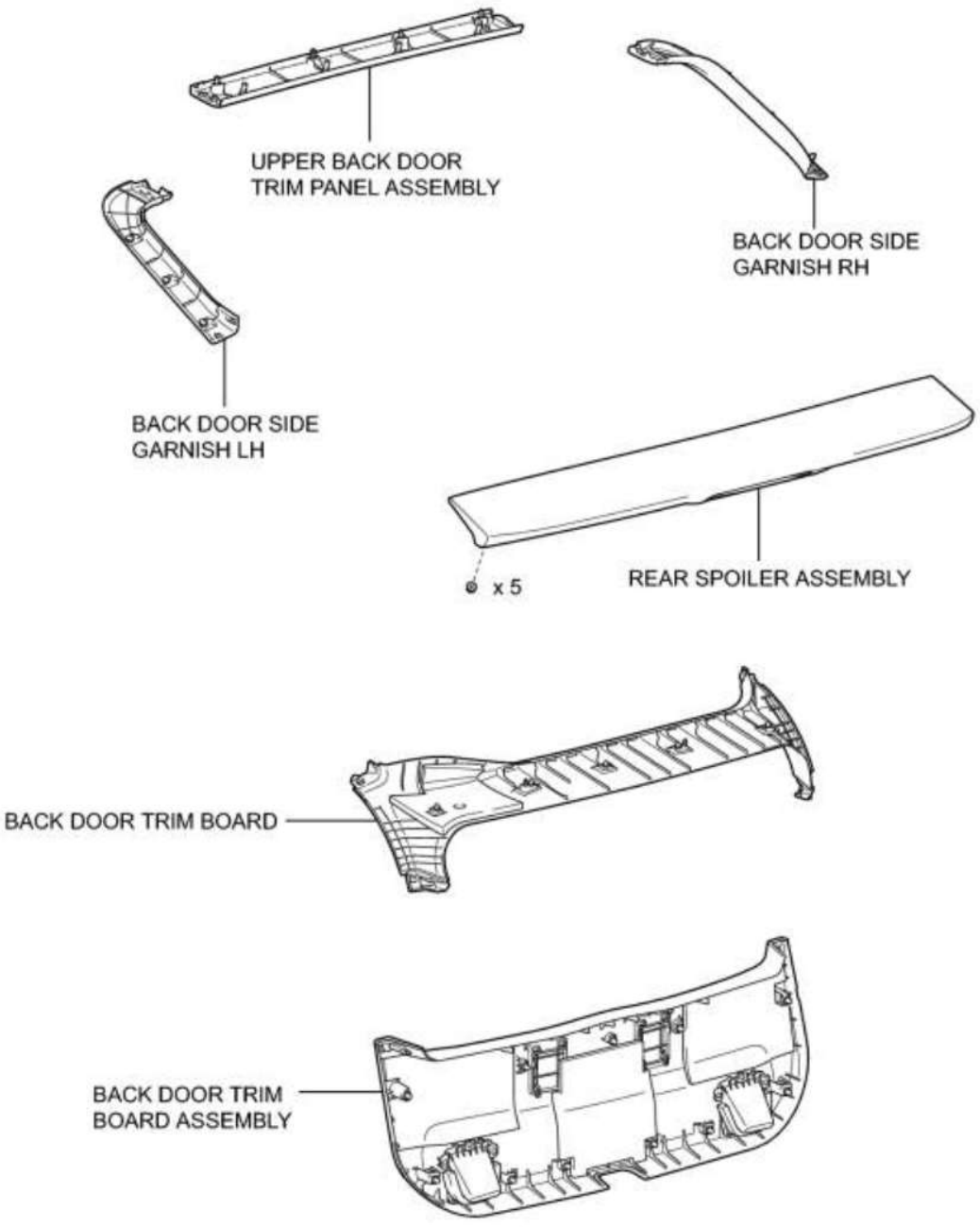
COMPONENTS

ILLUSTRATION



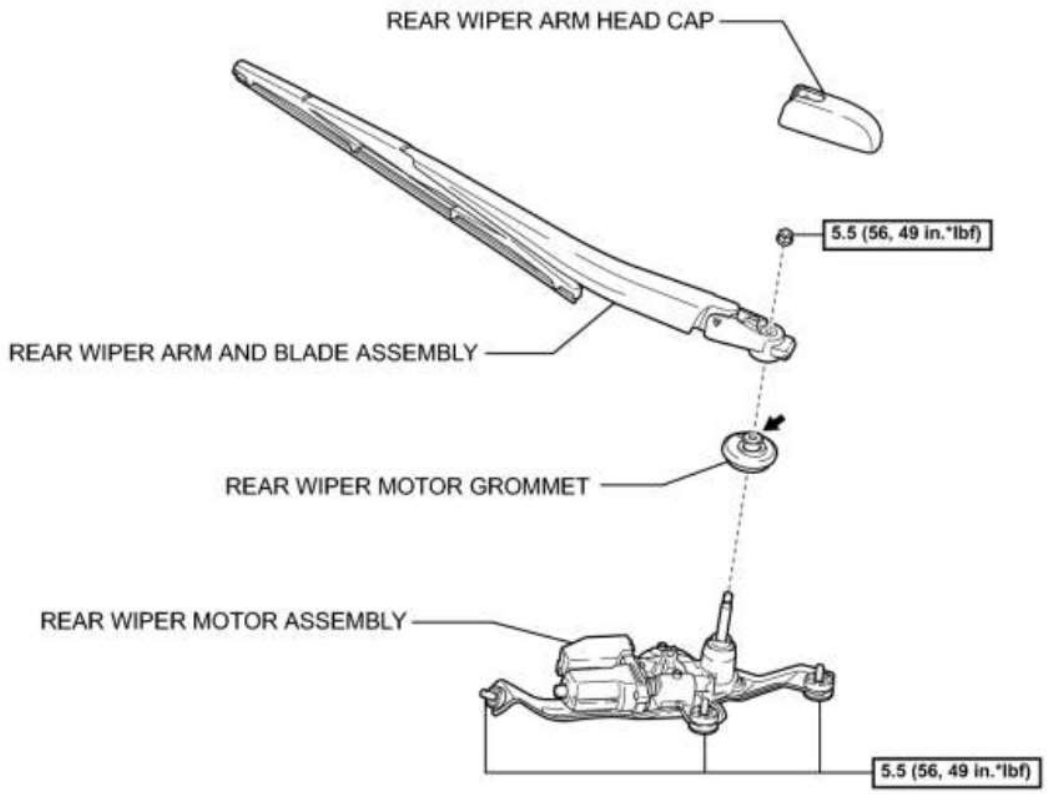
P

ILLUSTRATION

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w/ Rear Wiper:

for Back Door Glass:



N*m (kgf*cm, ft.*lbf) : Specified torque

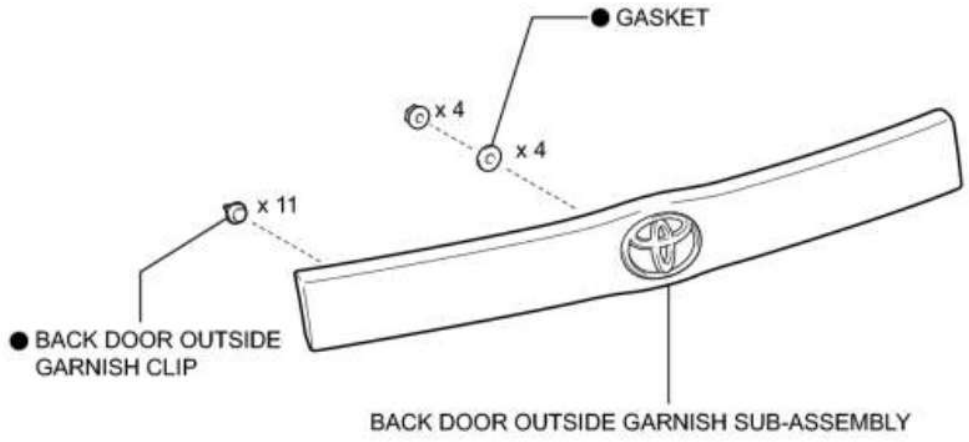
MP grease

P

ILLUSTRATION

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for Back Window Fix Glass:

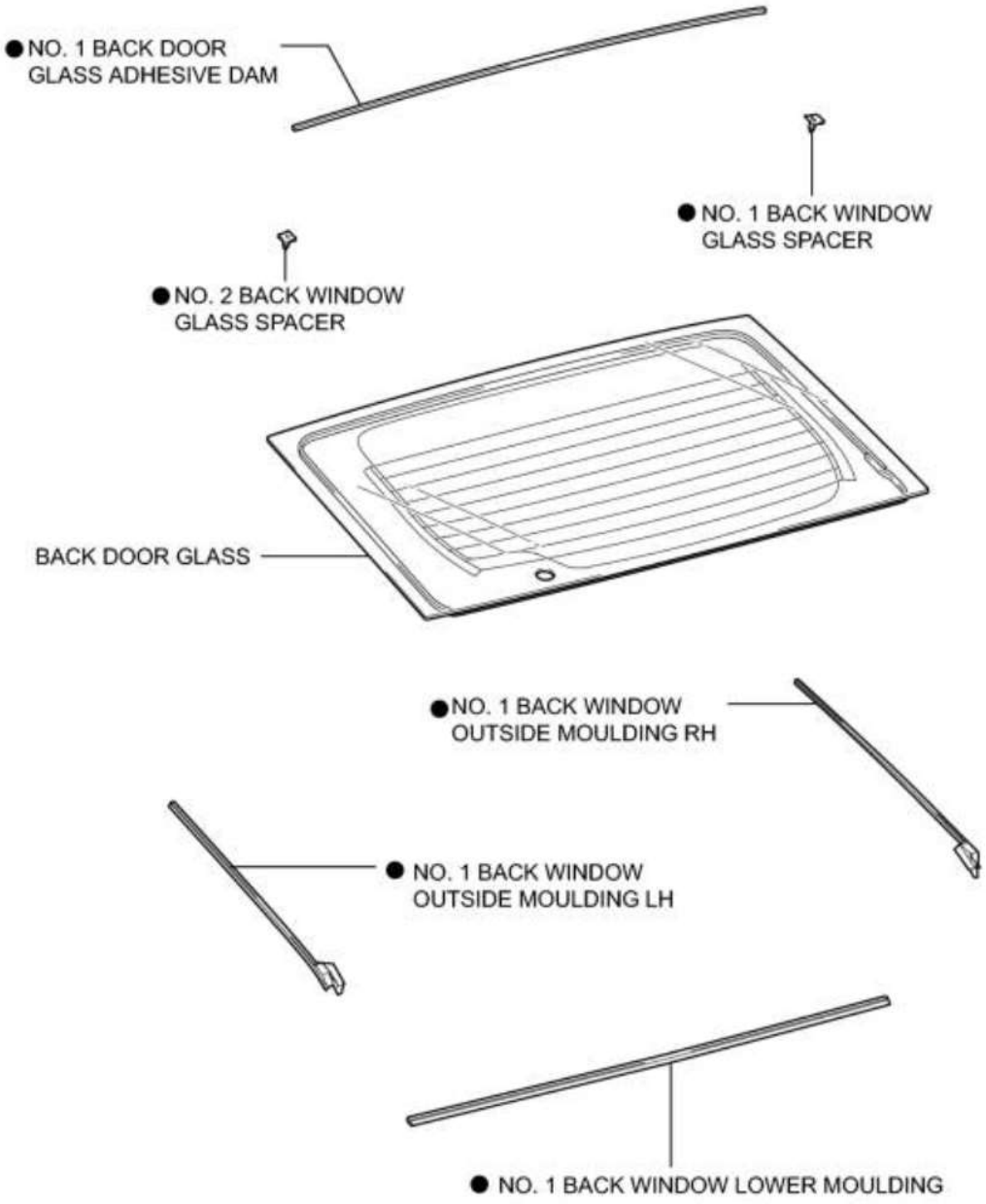


● Non-reusable part

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ILLUSTRATION

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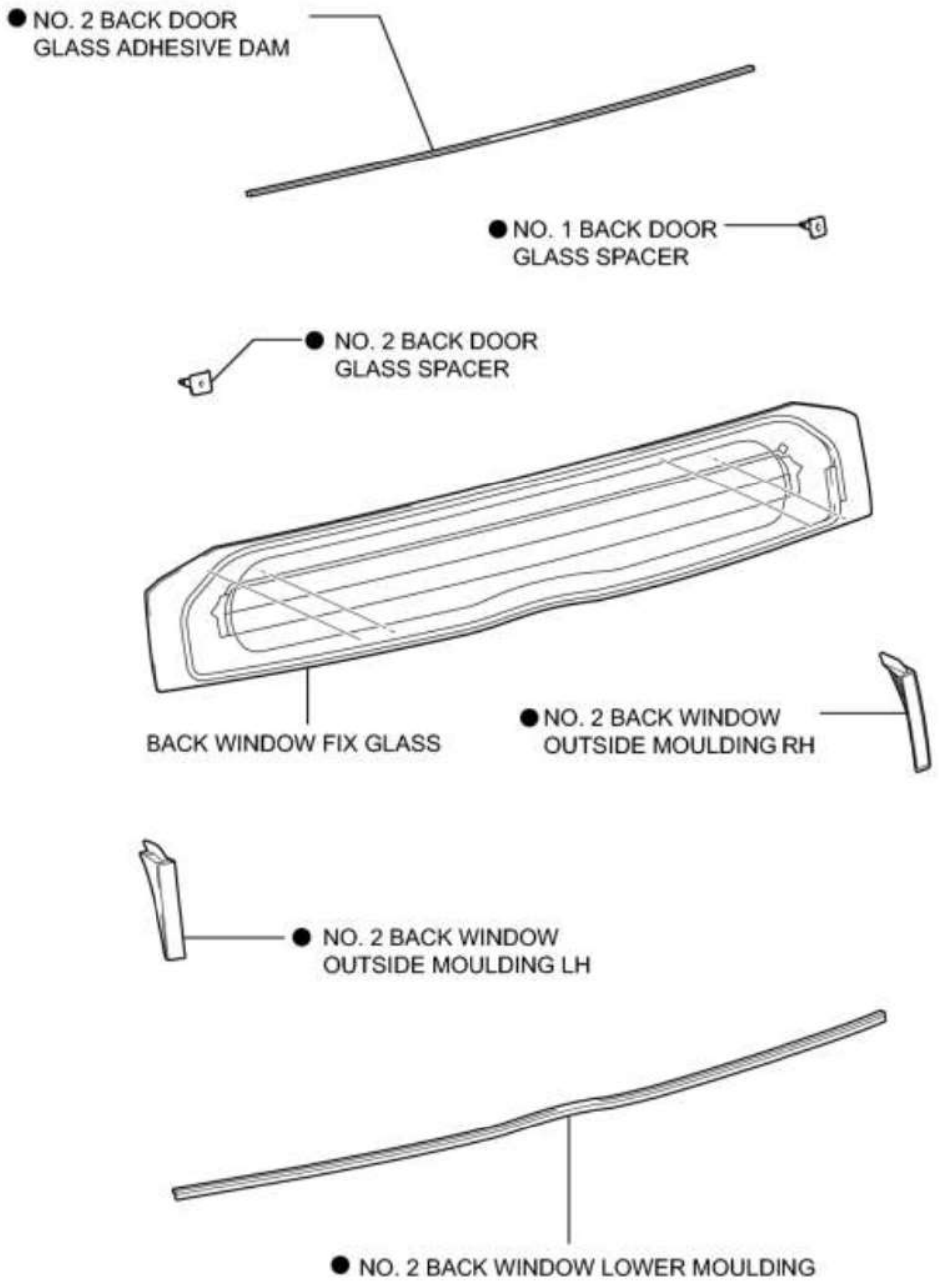
● Non-reusable part

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ILLUSTRATION

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● Non-reusable part

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REMOVAL

1. REMOVE UPPER BACK DOOR TRIM PANEL ASSEMBLY INFO

2. REMOVE BACK DOOR SIDE GARNISH RH INFO

3. REMOVE BACK DOOR SIDE GARNISH LH INFO

4. REMOVE BACK DOOR TRIM BOARD ASSEMBLY INFO

5. REMOVE BACK DOOR TRIM BOARD INFO

6. REMOVE REAR SPOILER ASSEMBLY INFO

7. REMOVE REAR WIPER ARM HEAD CAP (w/ Rear Wiper)

(a) for Back Door Glass:

(1) Remove the rear wiper arm head cap INFO.

8. REMOVE REAR WIPER ARM AND BLADE ASSEMBLY (w/ Rear Wiper)

(a) for Back Door Glass:

(1) Remove the rear wiper arm and blade assembly INFO.

9. REMOVE REAR WIPER MOTOR GROMMET (w/ Rear Wiper)

(a) for Back Door Glass:

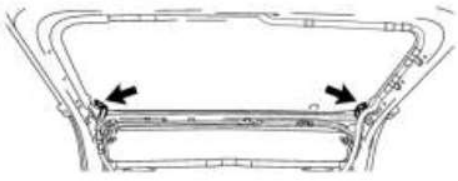
(1) Remove the rear wiper motor grommet INFO.

10. REMOVE REAR WIPER MOTOR ASSEMBLY (w/ Rear Wiper)

(a) for Back Door Glass:

(1) Remove the rear wiper motor assembly INFO.

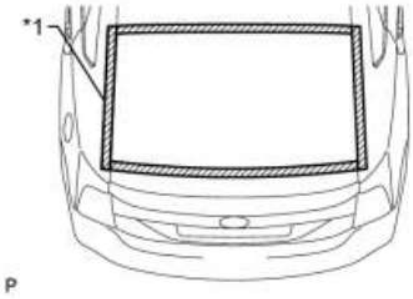
11. REMOVE BACK DOOR GLASS



(a) Disconnect the 2 connectors.

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(b) Apply protective tape to the outer surface of the vehicle body to prevent scratches.



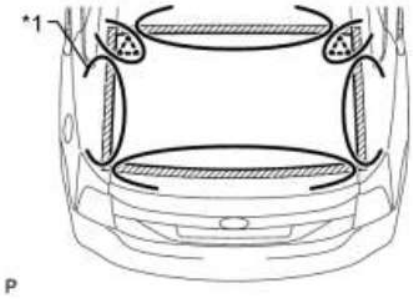
Text in Illustration

*1	Protective Tape

NOTICE:

When separating the back door glass from the vehicle, be careful not to damage the paint or interior and exterior ornaments.

(c) Pass a piano wire between the vehicle body and back door glass from the interior, as shown in the illustration.



HINT:

Do not allow the piano wire to interfere with the clips.

Text in Illustration

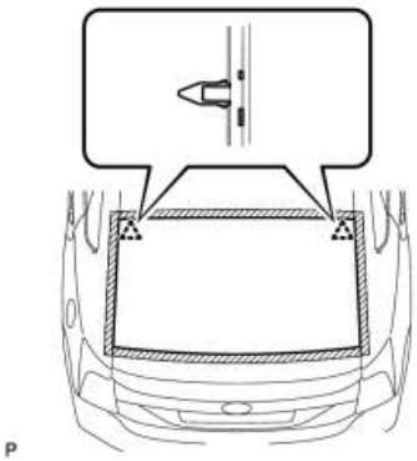
*1	Piano Wire

(d) Tie both wire ends to wooden blocks or similar objects that can serve as handles.

(e) Cut off the adhesive by pulling the piano wire around the back door glass.

NOTICE:

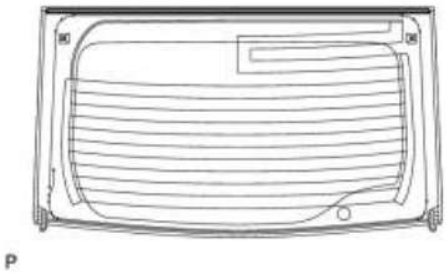
Leave as much adhesive on the vehicle body as possible when removing the back door glass.



(f) Using suction cups, disengage the 2 clips and remove the back door glass.

12. REMOVE NO. 1 BACK DOOR GLASS ADHESIVE DAM

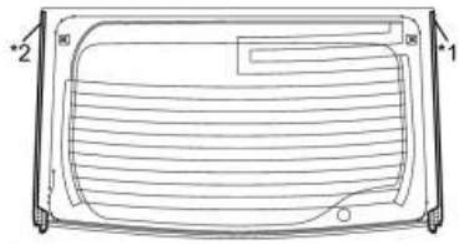
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(a) Remove the No. 1 back door glass adhesive dam.

13. REMOVE NO. 1 BACK WINDOW OUTSIDE MOULDING LH



P

(a) Remove the No. 1 back window outside moulding LH.

Text in Illustration

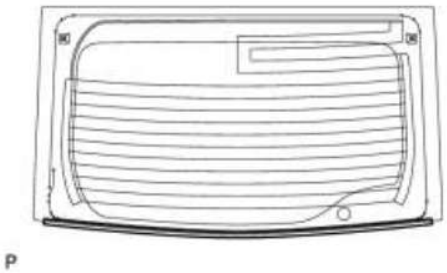
*1	LH Side
*2	RH Side

14. REMOVE NO. 1 BACK WINDOW OUTSIDE MOULDING RH

HINT:

Use the same procedure for the RH side and LH side.

15. REMOVE NO. 1 BACK WINDOW LOWER MOULDING



P

(a) Remove the No. 1 back window lower moulding.

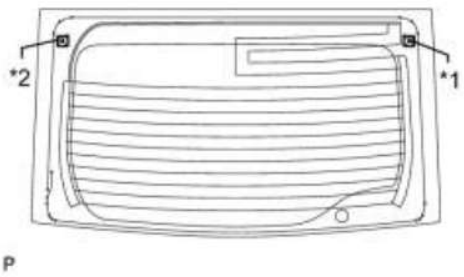
16. REMOVE NO. 2 BACK WINDOW GLASS SPACER

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

Text in Illustration

*1	No. 2 Back Window Glass Spacer

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*2	No. 1 Back Window Glass Spacer

- Be careful not to damage the back door glass.
- Be sure to replace the No. 1 back window glass spacer with a new one.

17. REMOVE NO. 1 BACK WINDOW GLASS SPACER

HINT:

Use the same procedure for the No. 1 spacer and No. 2 spacer.

18. CLEAN BACK DOOR GLASS



(a) Clean the outer edge of the back door glass with a non-residue solvent.

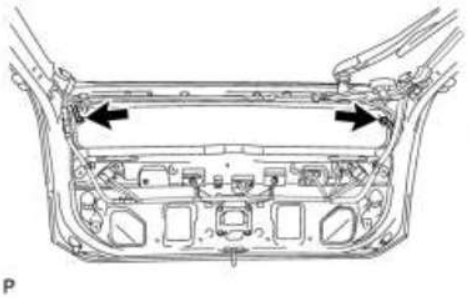
- Do not touch the back door glass surface after cleaning it.
- Be careful not to damage the glass.
- Even if using a new back door glass, clean the back door glass with a non-residue solvent.

19. REMOVE BACK DOOR OUTSIDE GARNISH SUB-ASSEMBLY

(a) for Back Door Window Fix Glass:

(1) Remove the back door outside garnish sub-assembly INFO.

20. REMOVE BACK WINDOW FIX GLASS

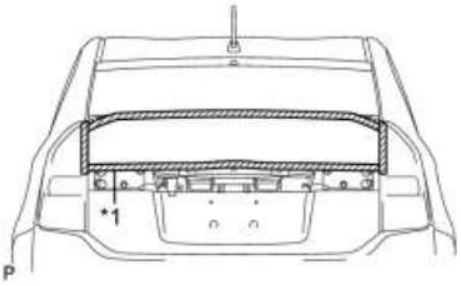

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(a) Disconnect the 2 connectors.

(b) Apply protective tape to the outer surface of the vehicle body to prevent scratches.

Text in Illustration

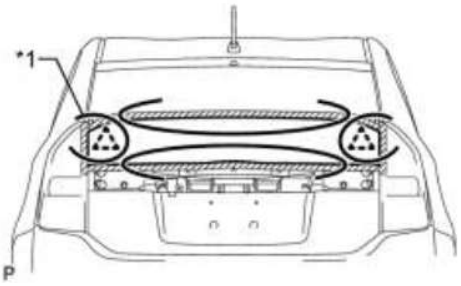
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*1	Protective Tape

NOTICE:

When separating the back door glass vehicle, be careful not to damage the interior and exterior ornaments.



(c) Pass a piano wire between the vehicle body and back window fix glass from the interior, as shown in the illustration.

Text in Illustration

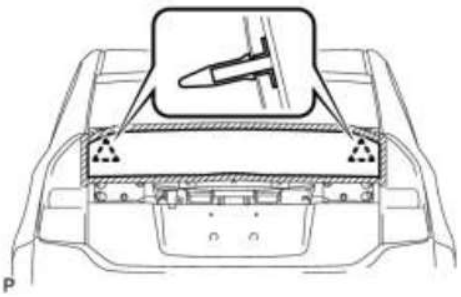
*1	Piano Wire

(d) Tie both wire ends to wooden blocks or similar objects that can serve as handles.

(e) Cut off the adhesive by pulling the piano wire around the back door glass.

NOTICE:

Leave as much adhesive on the vehicle body as possible when removing the back door glass.



(f) Using suction cups, disengage the 2 clips and remove the back door glass.

21. REMOVE NO. 2 BACK DOOR GLASS ADHESIVE DAM



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

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

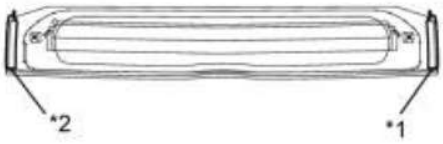
P

22. REMOVE NO. 2 BACK WINDOW OUTSIDE MOULDING LH

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(a) Using a scraper, remove the NO. 2 back window outside moulding LH.

Text in Illustration



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*1	LH Side
*2	RH Side

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

23. REMOVE NO. 2 BACK WINDOW OUTSIDE MOULDING RH

HINT:

Use the same procedure for the RH side and LH side.

24. REMOVE NO. 2 BACK WINDOW LOWER MOULDING

(a) Using a scraper, remove the back window lower moulding.



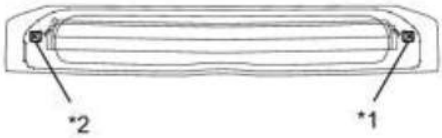
P

- Be careful not to damage the back window fix glass.
- Be sure to replace the back window lower moulding with a new one.

25. REMOVE NO. 2 BACK DOOR GLASS SPACER

(a) Using a scraper, remove the No. 2 back door glass spacer.

Text in Illustration



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*1	No. 2 Back Window Glass Spacer
*2	No. 1 Back Window Glass Spacer

- Be careful not to damage the back window fix glass.
- Be sure to replace the No. 2 back window glass spacer with a new one.

26. REMOVE NO. 1 BACK DOOR GLASS SPACER

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HINT:

Use the same procedure for the No. 1 spacer and No. 2 spacer.

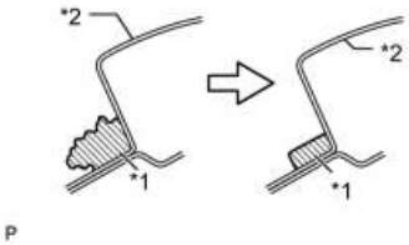
27. CLEAN BACK WINDOW FIX GLASS



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

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

28. CLEAN VEHICLE BODY



P

(a) Using a scraper, remove the moulding and adhesive from the back window fix glass.

Text in Illustration

*1	Adhesive
*2	Vehicle Body

(b) Clean and shape the contact surfaces of the vehicle body.

(1) Using a knife, cut away excess adhesive on the contact surfaces of the vehicle body, 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.

(2) Clean the contact surfaces of the vehicle body with a piece of cloth saturated with cleaner.

HINT:

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

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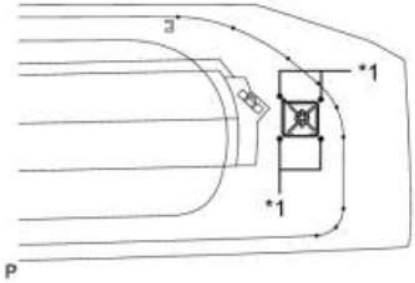
INSTALLATION

1. INSTALL NO. 2 BACK DOOR GLASS SPACER

(a) Apply Primer G to the installation part of a new No. 2 back door glass spacer.

HINT:

If primer is applied to an area that is not specified, wipe off the primer with a non-residue solvent before it dries.



(b) Install the new No. 2 back door glass spacer onto the back window fix glass, as shown in the illustration.

Text in Illustration

*1	Marking for Spacer Pasting

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

2. INSTALL NO. 1 BACK DOOR GLASS SPACER

HINT:

Use the same procedure for the No. 1 spacer and No. 2 spacer.

3. INSTALL NO. 2 BACK WINDOW LOWER MOULDING

(a) Apply Primer G to the installation part of a new No . 2 back window lower moulding.

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a non-residue solvent before it dries.

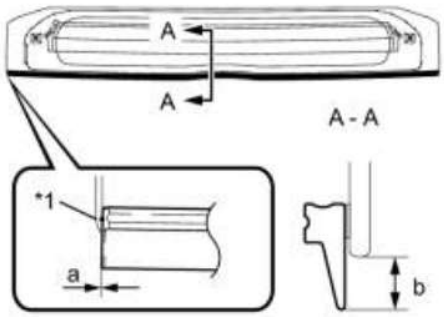
(b) Install the new back window lower moulding onto the back window fix glass, as shown in the illustration.

Text in Illustration

*1	Edge of Curved Surface

Standard Dimension:

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Item	Dimension
a	-1.5 to 1.5 mm (-0.0591 to 0.0591 in.)
b	5.7 to 8.3 mm (0.224 to 0.326 in.)

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

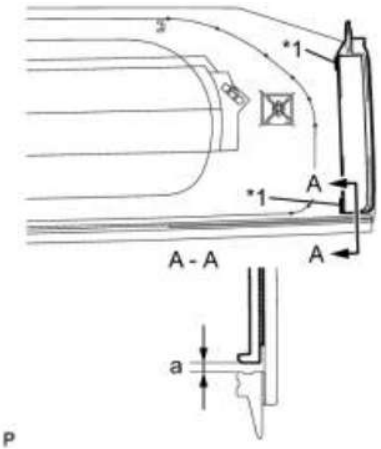
4. INSTALL NO. 2 BACK WINDOW OUTSIDE MOULDING LH

(a) Apply Primer G to the installation part of a new NO. 2 back window outside moulding LH.

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a non-residue solvent before it dries.

(b) Install the new NO. 2 back window outside moulding LH onto the back window fix glass, as shown in the illustration.



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Text in Illustration

*1	Marking for Moulding Pasting

Standard Dimension:

Item	Dimension
a	2.0 mm (0.0787 in.)

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

5. INSTALL NO. 2 BACK WINDOW OUTSIDE MOULDING RH

HINT:

Use the same procedure for the LH side and RH side.

6. INSTALL NO. 2 BACK DOOR GLASS ADHESIVE DAM

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(a) Apply Primer G to the installation part of a new NO. 2 back door glass adhesive dam.

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a non-residue solvent before it dries.



P

(b) Install the new NO . 2 back door glass adhesive dam onto the back window fix glass, as shown in the illustration.

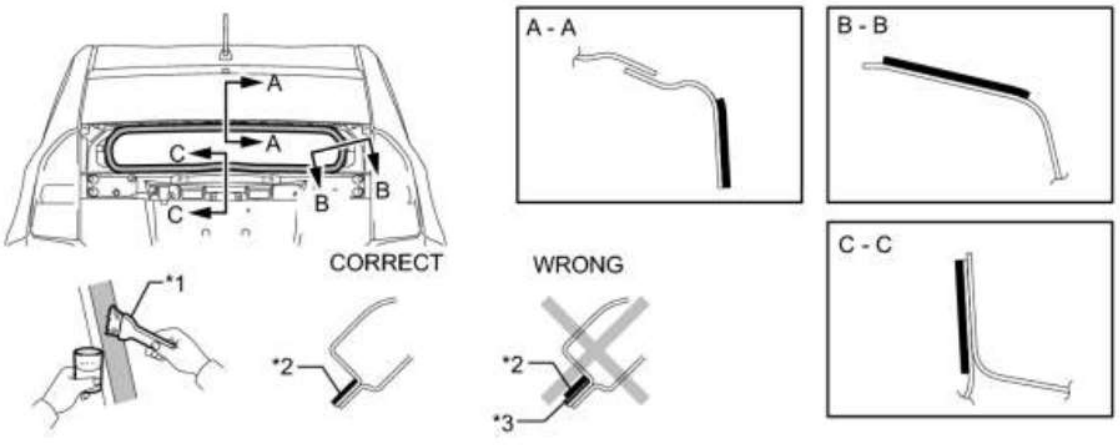
Text in Illustration

*1	Marking for Dam Pasting

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

7. INSTALL BACK WINDOW FIX GLASS

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



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Text in Illustration

*1	Brush	*2	Primer M
*3	Adhesive	-	-

NOTICE:

- Do not coat the adhesive with Primer M.

2010 Toyota Prius Repair Manual

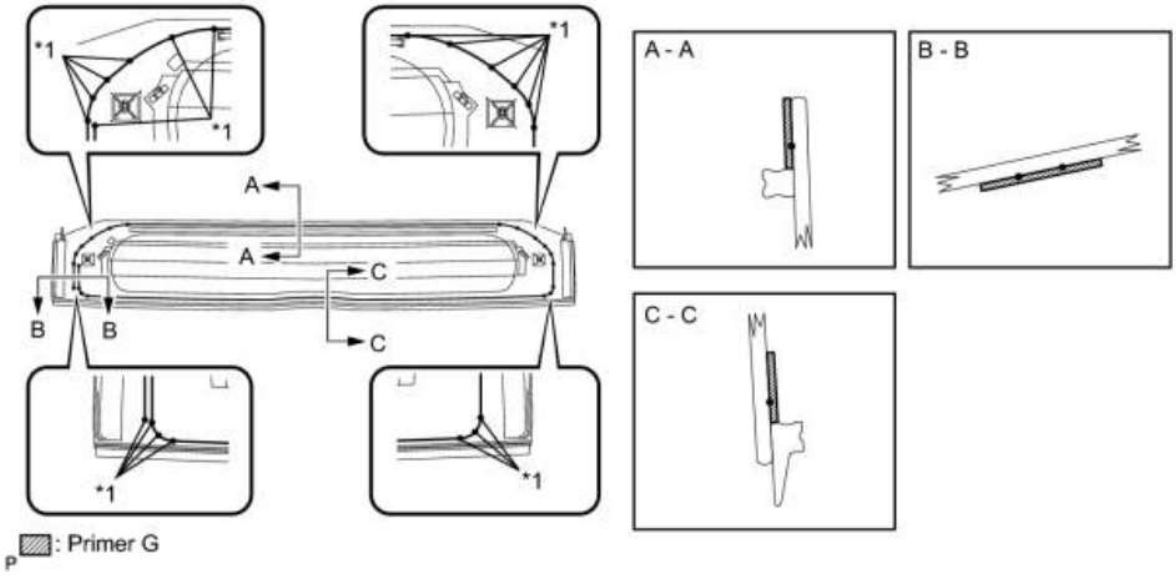
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- Do not apply too much primer.
- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a clean piece of cloth before it dries.

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



NOTICE:

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

HINT:

- Apply Primer G onto the ceramic notches.
- If an area other than that specified is coated by accident, wipe off the primer with a clean piece of cloth before it dries.

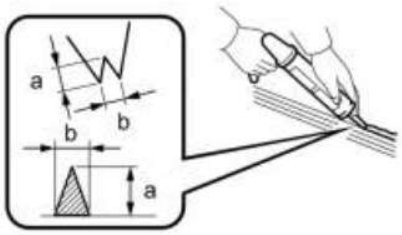
(c) Apply adhesive to the back window fix glass.

Adhesive:

Toyota Genuine Windshield Glass Adhesive or equivalent

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

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Standard Dimension:

Item	Dimension
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)

HINT:

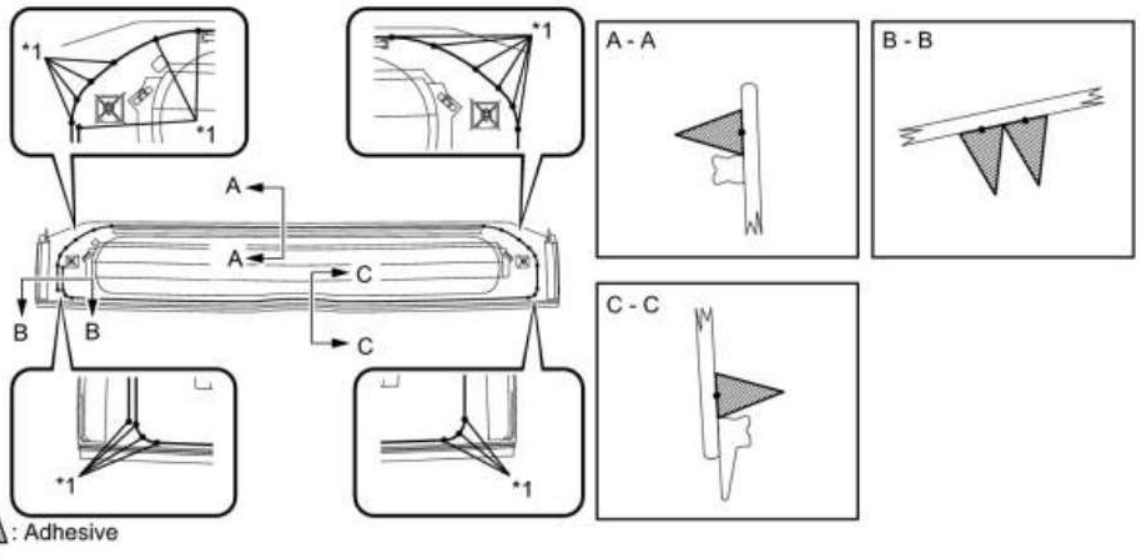
After cutting off the tip, use all the adhesive within the time described in the table below.

Usage Time Frame:

Temperature	Usage Time Frame
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 the cartridge.

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



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Text in Illustration

*1	Ceramic Notch	-	-

(d) Install the back window fix glass.

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(1) Using suction cups, engage the 2 clips to install the back window fix glass.

NOTICE:

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

(2) Lightly press the front surface of the back window fix glass to ensure that the back window fix glass is securely fit to the vehicle body.

HINT:

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

(3) Using a scraper, remove any excess or protruding adhesive.

HINT:

Apply adhesive onto the glass rim.

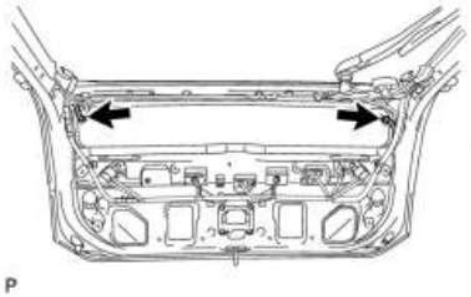
(4) Hold the back window fix glass using protective tape until applied adhesive becomes hard.

NOTICE:

Do not drive the vehicle within the 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



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(e) Connect the 2 connectors.

8. INSTALL BACK DOOR OUTSIDE GARNISH SUB-ASSEMBLY

(a) for Back Window Fix Glass:

(1) Install the back door outside garnish sub-assembly INFO.

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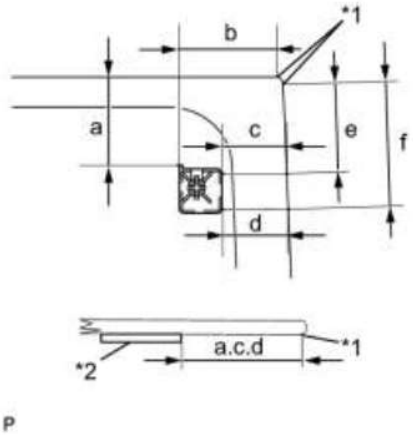
9. INSTALL NO. 2 BACK WINDOW GLASS SPACER

(a) Apply Primer G to the installation part of a new No. 2 back window glass spacer.

HINT:

If primer is applied to an area that is not specified, wipe off the primer with a non-residue solvent before it dries.

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



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Text in Illustration

*1	Edge of Curved Surface
*2	Back Window Glass Spacer

Standard Dimension:

Item	Dimension
a	69.0 mm (2.716 in.)
b	66.1 mm (2.602 in.)
c	48.7 mm (1.917 in.)
d	49.7 mm (1.956 in.)
e	69.9 mm (2.752 in.)
f	89.9 mm (3.539 in.)

- RH and LH spacers are different parts.
- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

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10. INSTALL NO. 1 BACK WINDOW GLASS SPACER

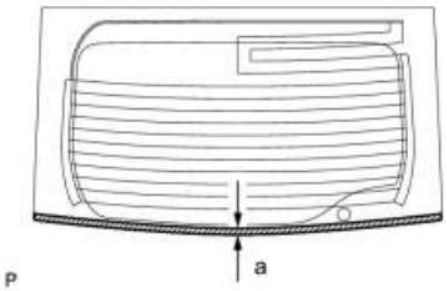
HINT:

Use the same procedure for the No. 1 spacer and No. 2 spacer.

11. INSTALL NO .1 BACK WINDOW LOWER MOULDING

(a) Apply Primer G to the installation part of a new NO. 1 back window lower moulding.

Standard Dimension:

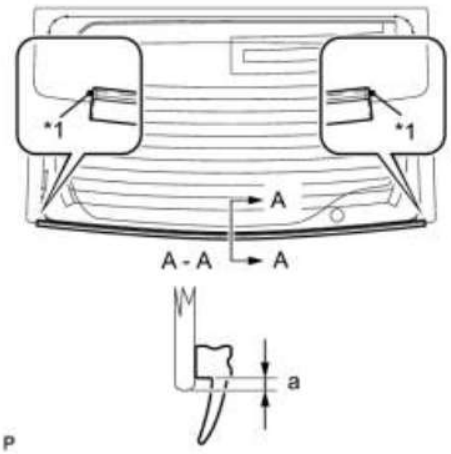


Item	Dimension
a	3.0 to 7.0 mm (0.118 to 0.275 in.)

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a non-residue solvent before it dries.

(b) Install the new NO. 1 back window lower moulding onto the back door glass, as shown in the illustration.



Text in Illustration

*1	Marking for Moulding Installation

Standard Dimension:

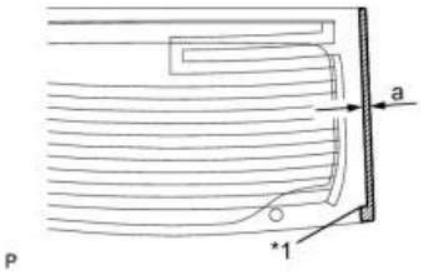
Item	Dimension
a	0.3 to 3.3 mm (0.0118 to 0.129 in.)

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

12. INSTALL NO. 1 BACK WINDOW OUTSIDE MOULDING LH

(a) Apply Primer G to the installation part of a new NO. 1 back window outside moulding LH.

Text in Illustration



*1	Print Mark

Standard Dimension:

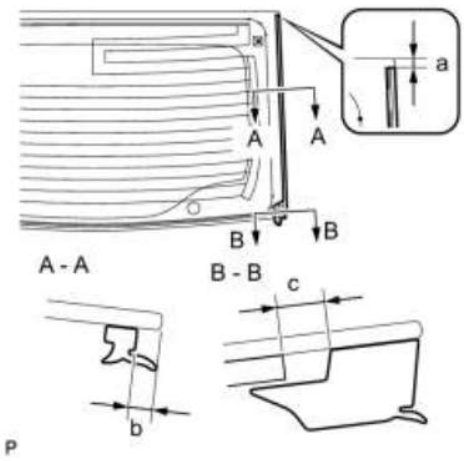
Item	Dimension
a	8.0 to 12.0 mm (0.315 to 0.472 in.)

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a non-residue solvent before it dries.

(b) Install the new NO. 1 back window outside moulding LH onto the

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back door glass, as shown in the illustration.

Standard Dimension:

Item	Dimension
a	8.5 to 11.5 mm (0.334 to 0.452 in.)
b	4.0 mm (0.157 in.)
c	8.0 to 14.0 mm (0.315 to 0.551 in.)

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

13. INSTALL NO. 1 BACK WINDOW OUTSIDE MOULDING RH

HINT:

Use the same procedure for the LH side and RH side.

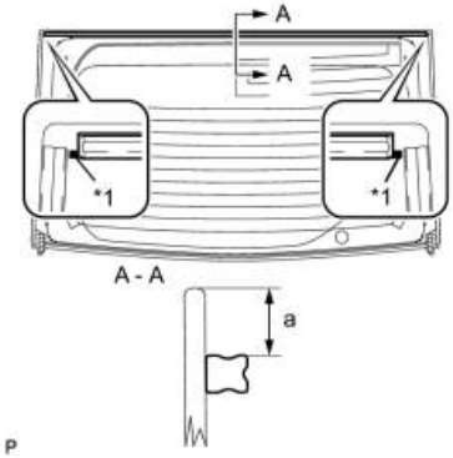
14. INSTALL NO. 1 BACK DOOR GLASS ADHESIVE DAM

(a) Apply Primer G to the installation part of a new NO. 1 back door glass adhesive dam.

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a non-residue solvent before it dries.

(b) Install the new NO. 1 back door glass adhesive dam onto the back door glass, as shown in the illustration.



Text in Illustration

*1	Marking for Dam Installation

Standard Dimension:

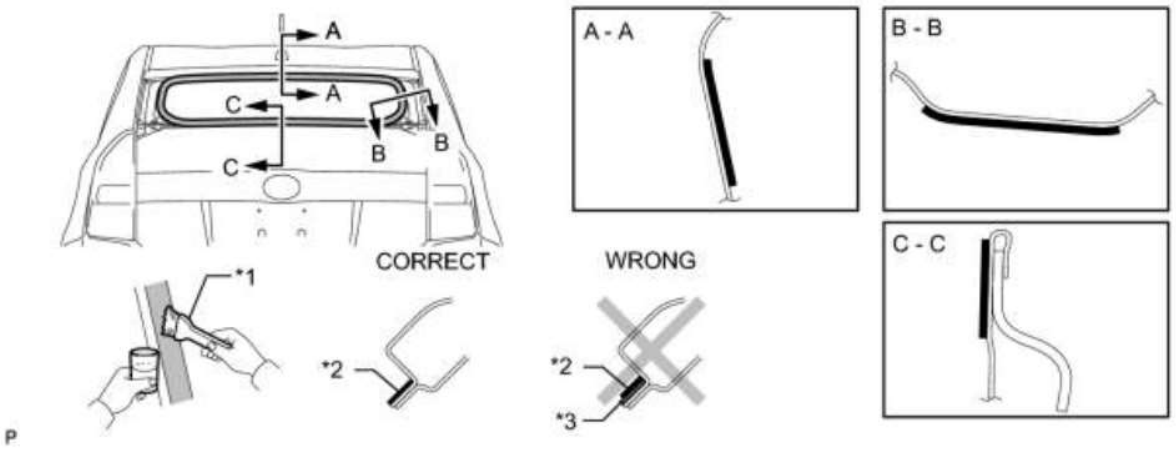
Item	Dimension
a	10.2 mm (0.401 in.)

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

15. INSTALL BACK DOOR GLASS

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



Text in Illustration

*1	Brush	*2	Primer M
*3	Adhesive	-	-

NOTICE:

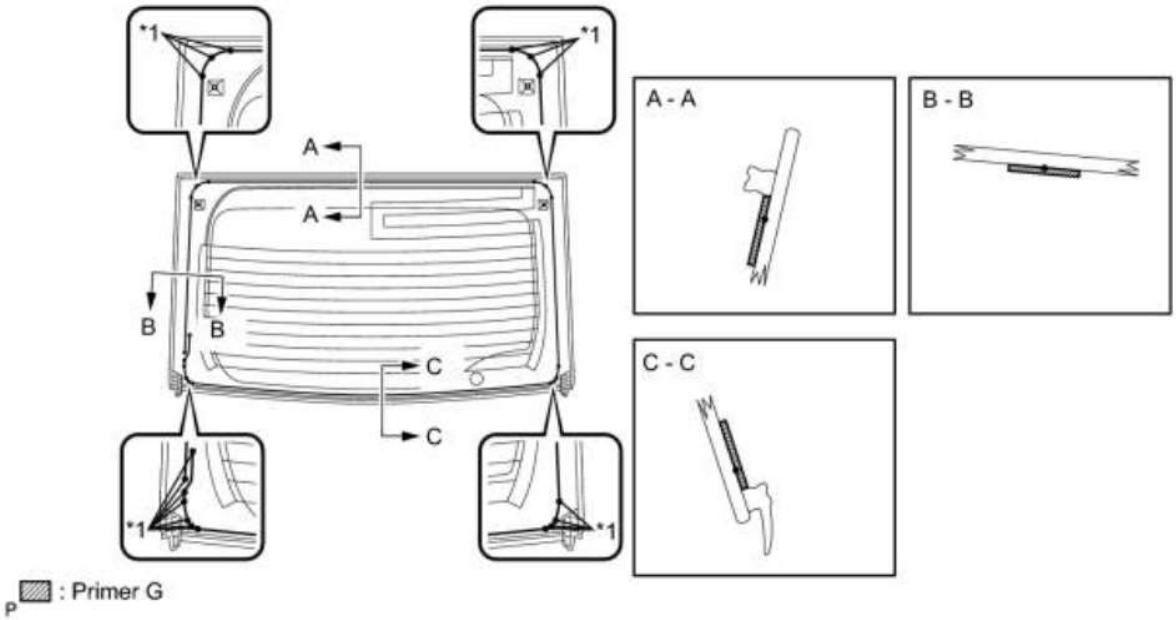
- Do not coat the adhesive with Primer M.
- Do not apply too much primer.
- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a clean piece of cloth before it dries.

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

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Text in Illustration

*1	Ceramic Notch	-	-

Standard Dimension:

Item	Dimension
a	14.0 mm (0.551 in.)

NOTICE:

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

HINT:

- Apply Primer G onto the ceramic notches.
- If an area other than that specified is coated by accident, wipe off the primer with a clean piece of cloth before it dries.

(c) Apply adhesive to the back door glass.

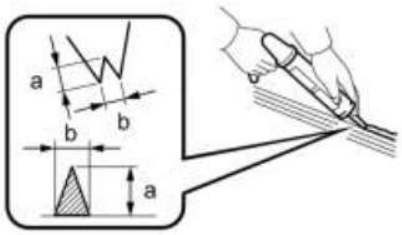
Adhesive:

Toyota Genuine Windshield Glass Adhesive or equivalent

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

Standard Dimension:

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Item	Dimension
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)

HINT:

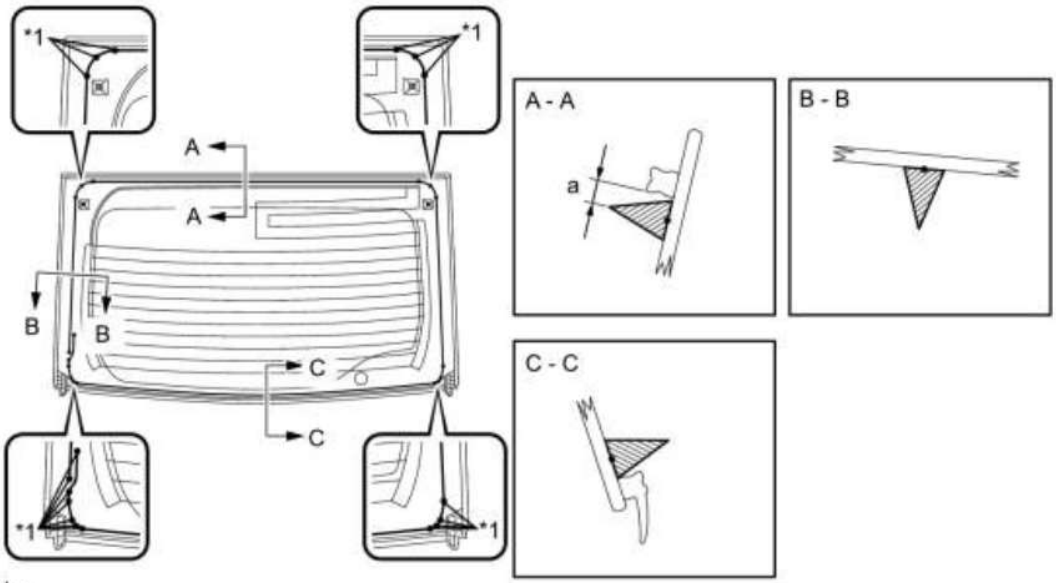
After cutting off the tip, use all the adhesive within the time described in the table below.

Usage Time Frame:

Temperature	Usage Time Frame
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 the cartridge.

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



P : Adhesive

Text in Illustration

*1	Ceramic Notch	-	-

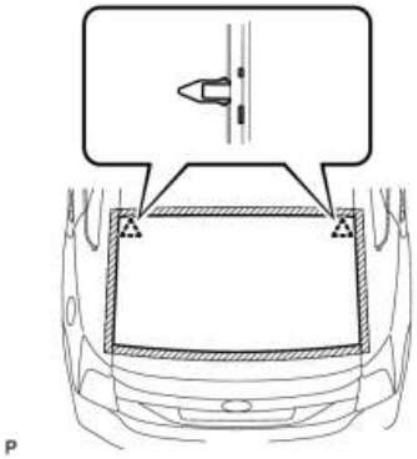
Standard Dimension:

Item	Dimension

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Item	Dimension
a	4.8 mm (0.189 in.)

(d) Install the back door glass.



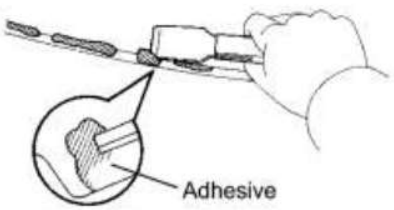
(1) Using suction cups, engage the 2 clips to install the back door glass.

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

(2) Lightly press the front surface of the back door glass to ensure that the back door glass is securely fit to the vehicle body.

HINT:

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



(3) Using a scraper, remove any excess or protruding adhesive.

HINT:

Apply adhesive onto the glass rim.

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

NOTICE:

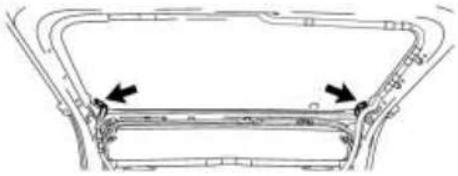
Do not drive the vehicle within the time described in the table below.

Minimum Time:

Temperature	Minimum Time prior to Driving Vehicle

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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



(e) Connect the 2 connectors.

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16. 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.

17. INSTALL REAR WIPER MOTOR ASSEMBLY (w/ Rear Wiper)

(a) for Back Door Glass:

(1) Install the rear wiper motor assembly INFO.

18. INSTALL REAR WIPER MOTOR GROMMET (w/ Rear Wiper)

(a) for Back Door Glass:

(1) Install the rear wiper motor grommet INFO.

19. INSTALL REAR WIPER ARM AND BLADE ASSEMBLY (w/ Rear Wiper)

(a) for Back Door Glass:

(1) Install the rear wiper arm and blade assembly INFO.

20. INSTALL REAR WIPER ARM HEAD CAP (w/ Rear Wiper)

(a) for Back Door Glass:

(1) Install the rear wiper arm head cap INFO.

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21. INSTALL REAR SPOILER ASSEMBLY INFO

22. INSTALL BACK DOOR TRIM BOARD INFO

23. INSTALL BACK DOOR TRIM BOARD ASSEMBLY INFO

24. INSTALL BACK DOOR SIDE GARNISH LH INFO

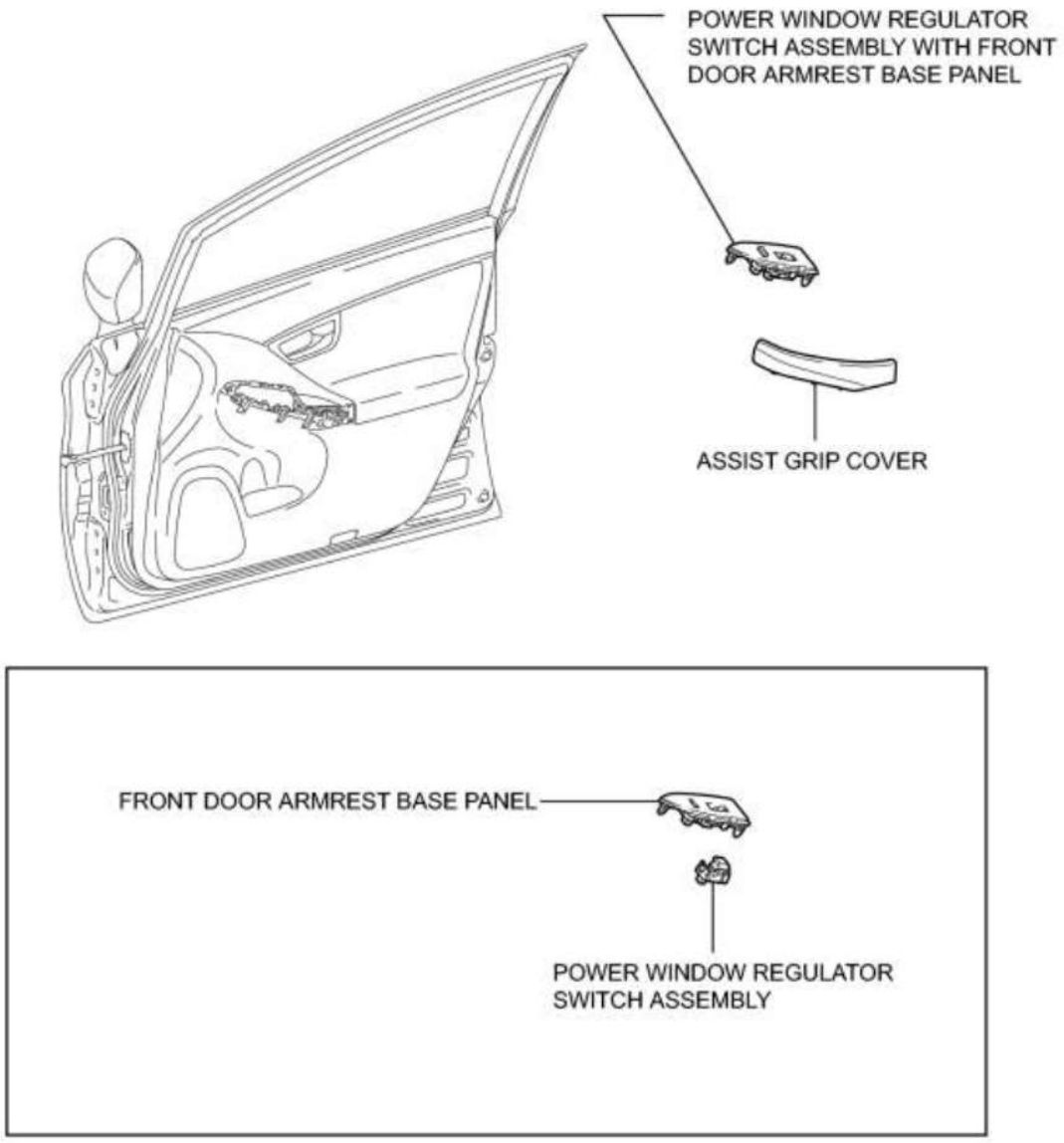
25. INSTALL BACK DOOR SIDE GARNISH RH INFO

26. INSTALL UPPER BACK DOOR TRIM PANEL ASSEMBLY INFO

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COMPONENTS

ILLUSTRATION



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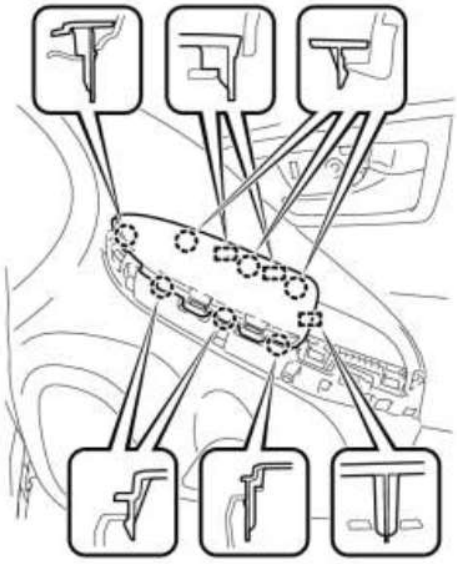
REMOVAL

1. REMOVE ASSIST GRIP COVER

HINT:

Use the same procedure for the RH side and LH side INFO.

2. REMOVE POWER WINDOW REGULATOR SWITCH ASSEMBLY WITH FRONT DOOR ARMREST BASE PANEL

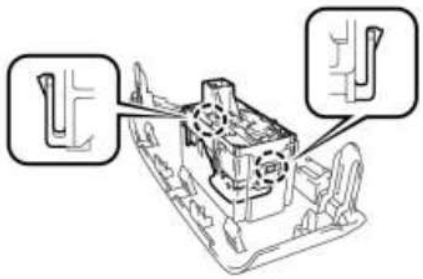


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(a) Disengage the 7 claws and 3 guides.

(b) Disconnect each connector and remove the power window regulator switch assembly with front door armrest base panel.

3. REMOVE POWER WINDOW REGULATOR SWITCH ASSEMBLY



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(a) Disengage the 2 claws and remove the power window regulator switch assembly.

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INSPECTION

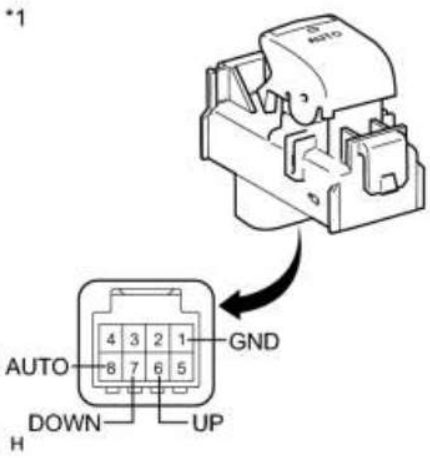
1. INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY

(a) Check the switch function.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6 (UP) - 1 (GND)	Auto up or up position	Below 1 Ω
7 (DOWN) - 1 (GND)	Auto down or down position	Below 1 Ω
8 (AUTO) - 1 (GND)	Auto up or auto down position	Below 1 Ω
6 (UP) - 1 (GND)	Free	10 kΩ or higher
7 (DOWN) - 1 (GND)	Free	10 kΩ or higher
8 (AUTO) - 1 (GND)	Free	10 kΩ or higher



Text in Illustration

*1	Component without harness connected (to Power Window Regulator Switch Assembly (for Front Passenger Side))

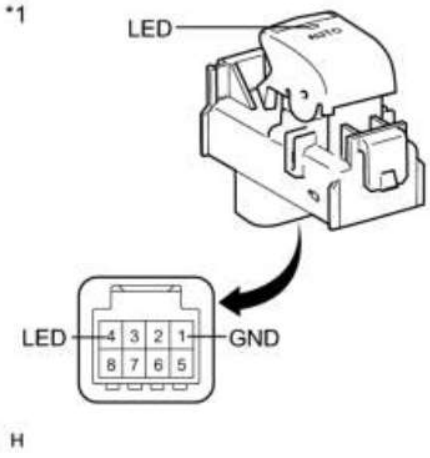
If the result is not as specified, replace the power window regulator switch assembly (for front passenger side).

(b) Check that the LED illuminates.

(1) Apply battery voltage to the power window regulator switch assembly and check that the LED illuminates.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → 4 (LED) Battery negative (-) → 1 (GND)	LED illuminates



Text in Illustration

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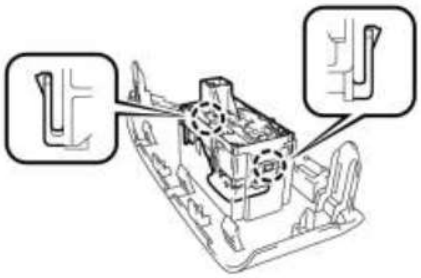
*1	Component without harness connected (to Power Window Regulator Switch Assembly (for Front Passenger Side))

If the result is not as specified, replace the power window regulator switch assembly (for front passenger side).

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INSTALLATION

1. INSTALL POWER WINDOW REGULATOR SWITCH ASSEMBLY

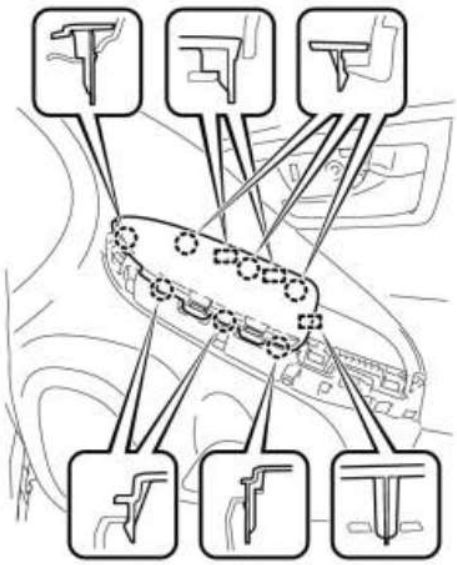


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(a) Engage the 2 claws to install the power window regulator switch assembly.

2. INSTALL POWER WINDOW REGULATOR SWITCH ASSEMBLY WITH FRONT DOOR ARMREST BASE PANEL

(a) Connect each connector.



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(b) Engage the 7 claws and 3 guides, and install the power window regulator switch assembly with front door armrest base panel.

3. INSTALL ASSIST GRIP COVER

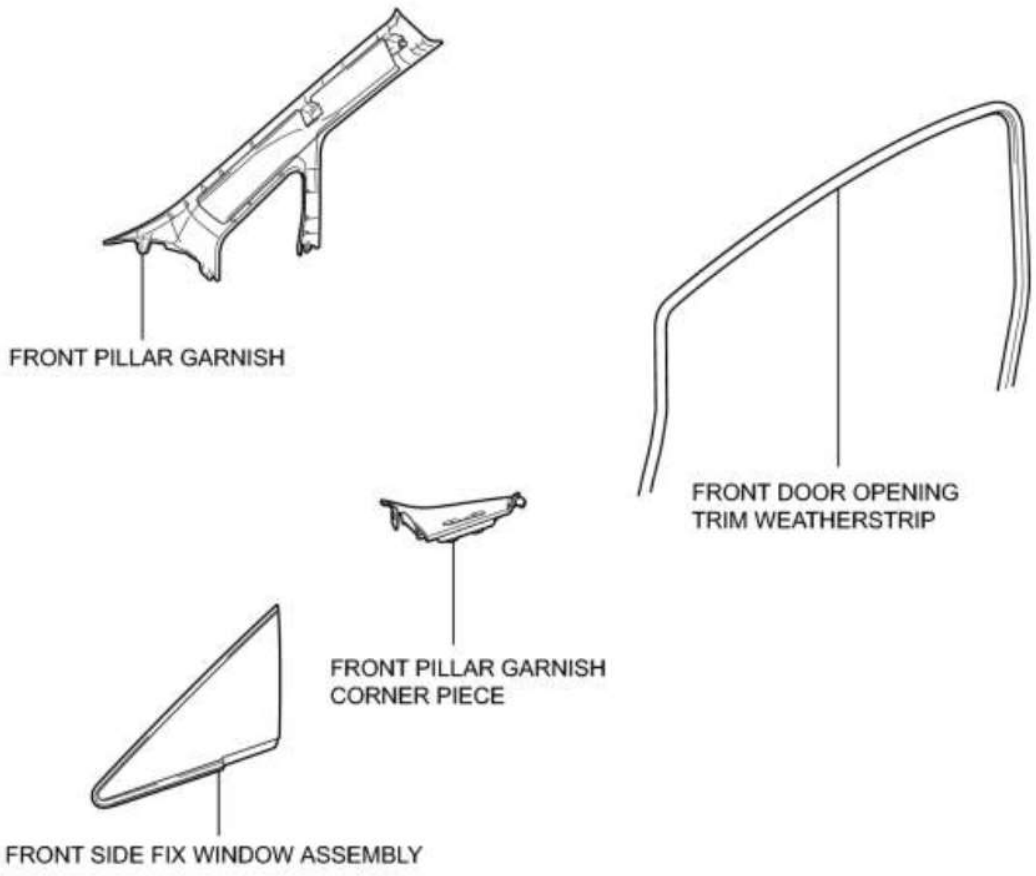
HINT:

Use the same procedure for the LH side and RH side INFO.

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COMPONENTS

ILLUSTRATION



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REMOVAL

HINT:

- The front side fix window assembly can be reused. When installing the window, if any of the clips on the front side fix window assembly are broken, butyl tape can be used to support the glass until the applied adhesive hardens.
- When using butyl tape to temporarily secure the window, make sure that the butyl tape is not applied exactly at the original clip location. If the butyl tape is applied exactly at the clip location, it will cause the window to protrude.
- Use the same procedure for the RH side and LH side.
- The procedure listed below is for the LH side.

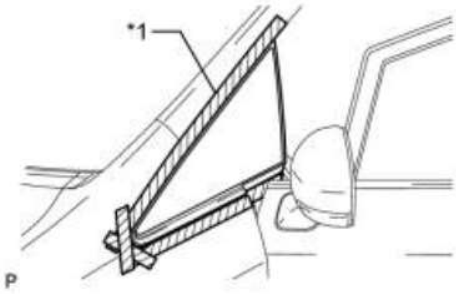
1. DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP

(a) Remove the front part of the front door opening trim weatherstrip to the extent that allows removal of the front pillar garnish.

2. REMOVE FRONT PILLAR GARNISH INFO

3. REMOVE FRONT PILLAR GARNISH CORNER PIECE INFO

4. REMOVE FRONT SIDE FIX WINDOW ASSEMBLY

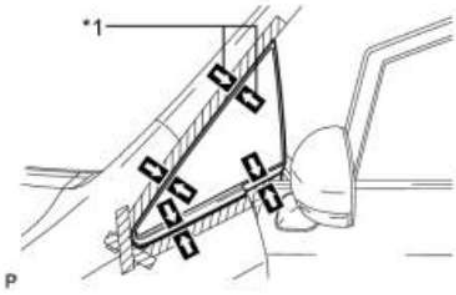


(a) Apply protective tape to the installation position of the front side fix window assembly on the vehicle body.

Text in Illustration

*1	Protective Tape

(b) Place matchmarks on the front side fix window assembly and vehicle body on the locations indicated in the illustration.



Text in Illustration

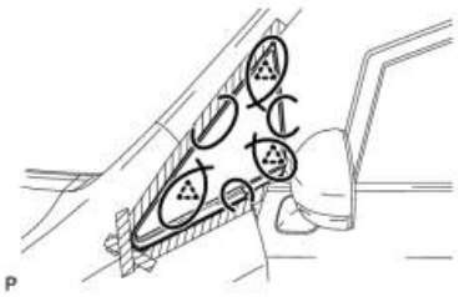
*1	Matchmark

HINT:

Matchmarks are not necessary if the front side fix window assembly is not going to be reused.

(c) Pass a piano wire between the interior vehicle body and glass from the interior as shown in the illustration.

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HINT:

Do not allow the piano wire to interfere with the clips.

(d) Tie both wire ends to wooden blocks or similar objects that can serve as handles.

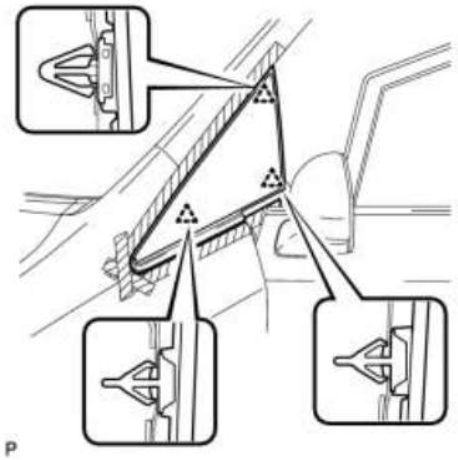
NOTICE:

When separating the front side fix window assembly from the vehicle, be careful not to damage the paint or interior and exterior ornaments.

(e) Cut off the adhesive by pulling the piano wire around the front side fix window assembly.

NOTICE:

Leave as much adhesive on the vehicle body as possible when cutting through the adhesive.



(f) Disengage the 3 clips.

(g) Using suction cups, remove the glass.

NOTICE:

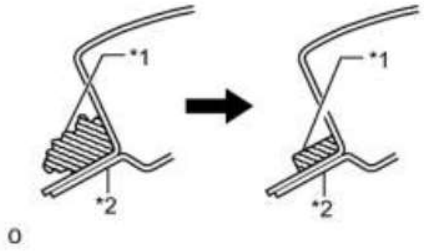
Be careful not to drop the glass.

5. CLEAN VEHICLE BODY

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

Text in Illustration

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*1	Adhesive
*2	Vehicle Body

(1) Using a knife, cut away excess adhesive on the contact surfaces of the vehicle body 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.

(b) Clean the contact surfaces of the vehicle body with a piece of cloth saturated with cleaner.

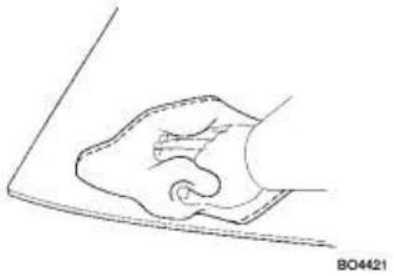
HINT:

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

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INSTALLATION

1. CLEAN FRONT SIDE FIX WINDOW ASSEMBLY

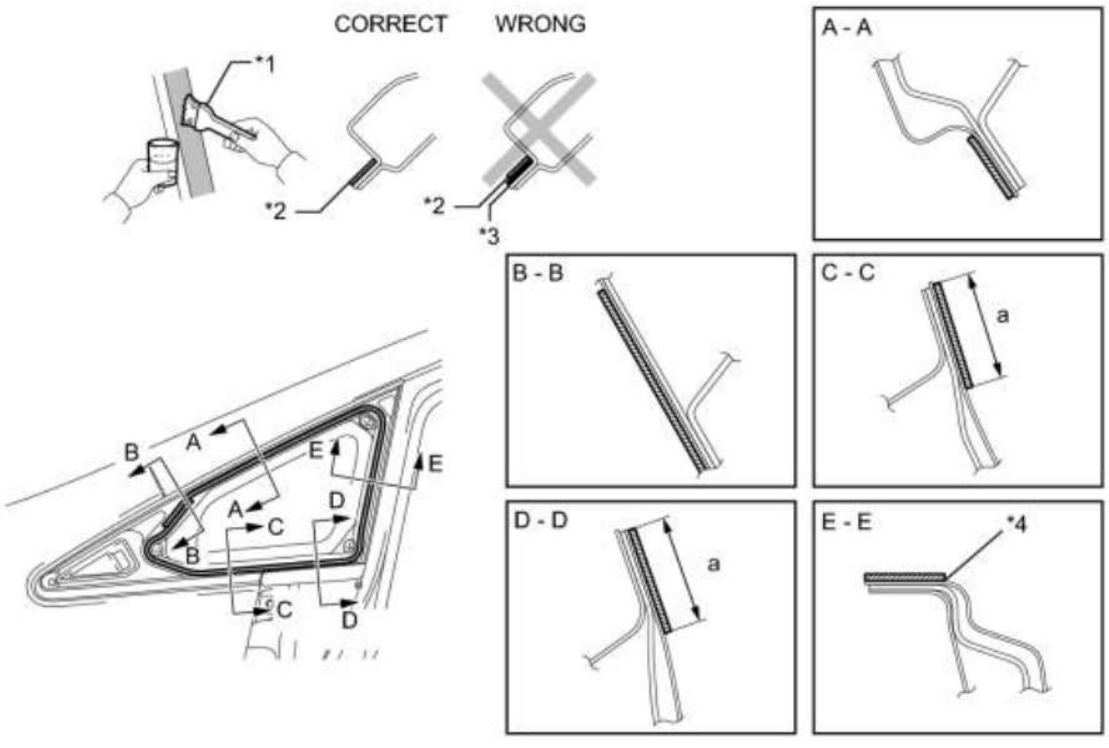


(a) Clean the outer edges of the front side fix window assembly with a non-residue solvent.

- Do not touch the glass surface after cleaning it.
- Be careful not to damage the glass or clips.

2. INSTALL FRONT SIDE FIX WINDOW ASSEMBLY

(a) Using a brush or a sponge, apply Primer M to the exposed part of the vehicle body.



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Text in Illustration

*1	Brush	*2	Primer M
*3	Adhesive	*4	Edge of Curved Surface

Standard Dimension:

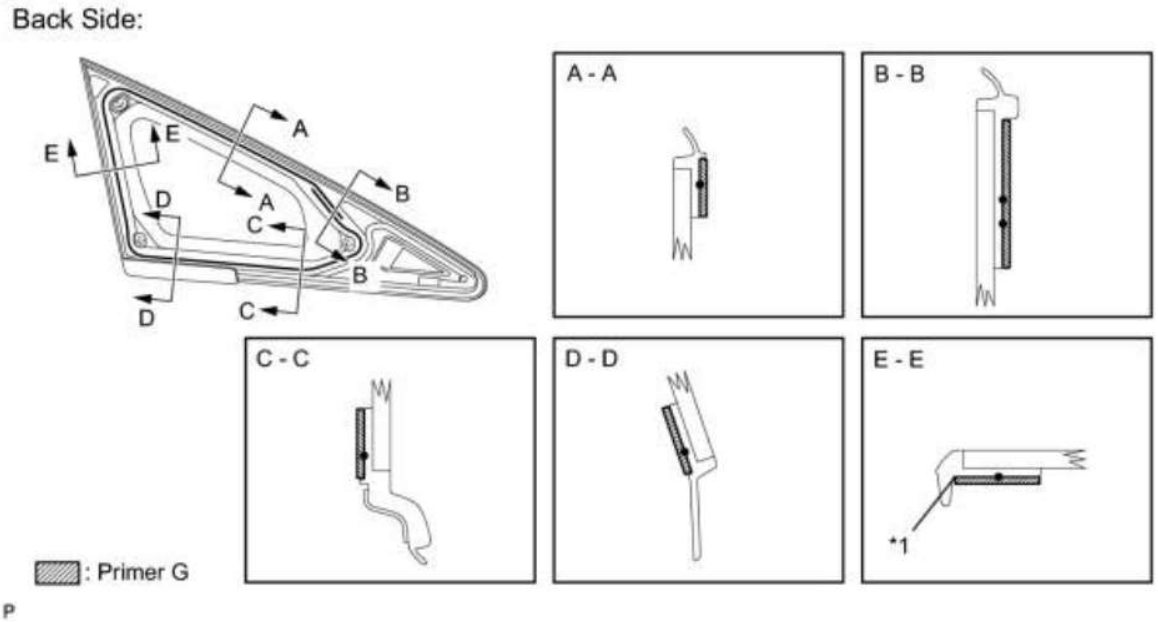
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Item	Dimension
a	25 mm (0.984 in.) or more

NOTICE:

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

(b) Using a brush or a sponge, apply Primer G to the contact surface of the front side fix window assembly.



Text in Illustration

*1	Edge of Curved Surface	-	-

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a non-residue solvent before it dries.

NOTICE:

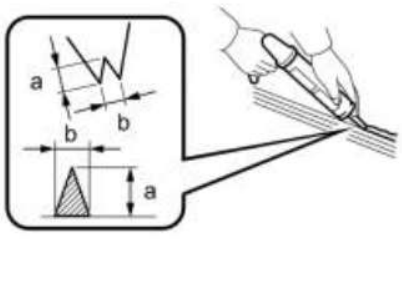
- To prevent the glass from breaking at low temperatures, ensure that no primer adheres to the contact surface between the moulding and glass during application.
- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

(c) Apply adhesive to the front side fix window assembly.

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Adhesive:

Toyota Genuine Windshield Glass Adhesive or equivalent



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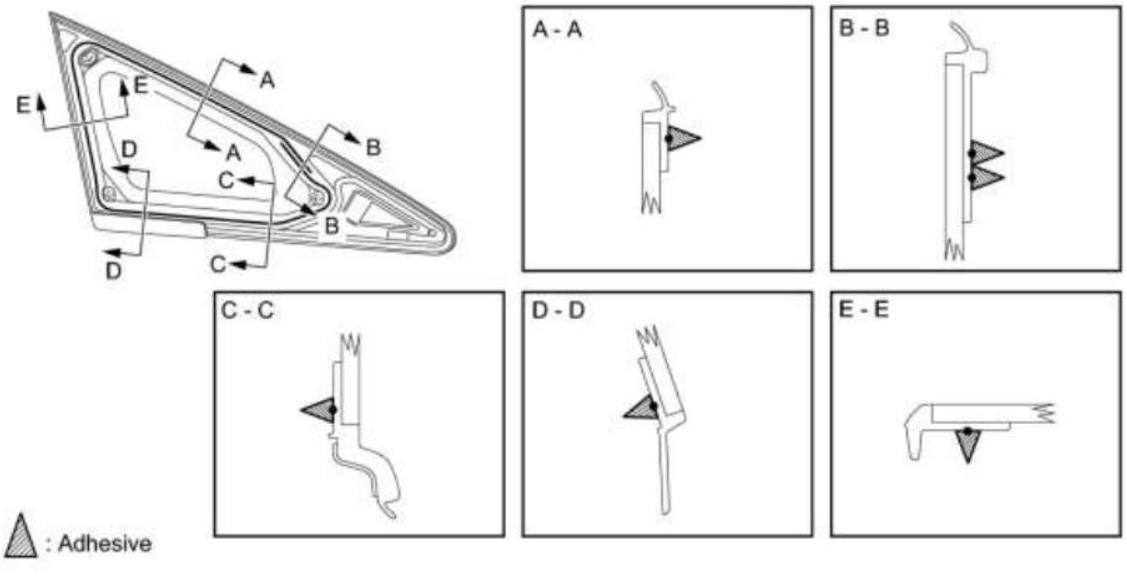
(1) Cut off the tip of the cartridge nozzle as shown in the illustration.

Standard Dimension:

Item	Dimension
a	6.0 mm (0.236 in.)
d	8.0 mm (0.315 in.)

(2) Load the sealer gun with the cartridge.

(3) Apply adhesive to the front side fix window assembly as shown in the illustration.



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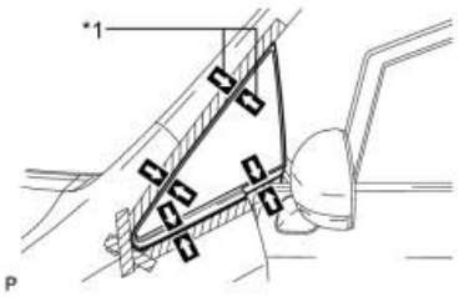
(d) Install the front side fix window assembly to the vehicle body.

(1) Position the front side fix window assembly so that the matchmarks are aligned, and press it in gently along the rim (when a window with missing clips is used).

Text in Illustration

*1	Matchmark

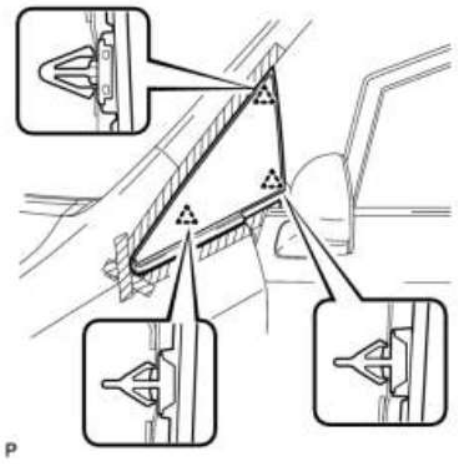
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(2) Lightly press the front side fix window assembly to ensure that the front side fix window assembly is securely fit to the vehicle body (when a window with missing clips is used).

HINT:

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



(3) Engage the 3 clips to install the front side fix window assembly (when a window without missing clips is used).

(4) Hold the front side fix window assembly in place securely with protective tape or equivalent until the adhesive hardens.

NOTICE:

- Allow the primer to dry for 3 minutes or more.
- Check that the clips are attached to the body correctly.
- Check the clearance between the body and glass.

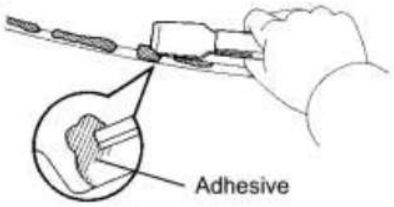
(5) Lightly press the outer surface of the glass to ensure that the glass is securely fit to the vehicle body.

(6) Using a scraper, remove any excess or protruding adhesive.

HINT:

Apply adhesive onto the glass rim.

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NOTICE:

Do not drive the vehicle within the 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

3. 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.

4. INSTALL FRONT PILLAR GARNISH CORNER PIECE INFO

5. INSTALL FRONT PILLAR GARNISH INFO

6. CONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP INFO

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PRECAUTION

1. PRECAUTION FOR DISCONNECTING CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable from the negative (-) battery terminal, initialize the following systems after the cable is reconnected:

System Name	See Procedure
Advanced Parking Guidance System	INFO

2. POWER WINDOW CONTROL SYSTEM PRECAUTIONS

CAUTION:

- The power window control system prohibits the auto up and down function when the jam protection function malfunctions. Therefore, troubleshoot the power window control system after confirming that no trouble codes are output.
- When a power window regulator or a power window regulator motor assembly is replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operation at least 5 times:
    a. Close the power window by fully pulling up the multiplex network master switch assembly or power window regulator switch assembly and holding it at the auto up position.
    b. Open the power window by fully pushing down the multiplex network master switch assembly or power window regulator switch assembly.
- The jam protection function may operate unexpectedly even when the power window control system is normal due to detection of a value different from the operation learned value when the door glass moving speed changes sharply under any of the following conditions:
    a. A power window is being opened or closed while the vehicle is driven on a rough road.
    b. A power window is being opened or closed while the door is being opened or closed.
    c. The voltage changes abruptly.

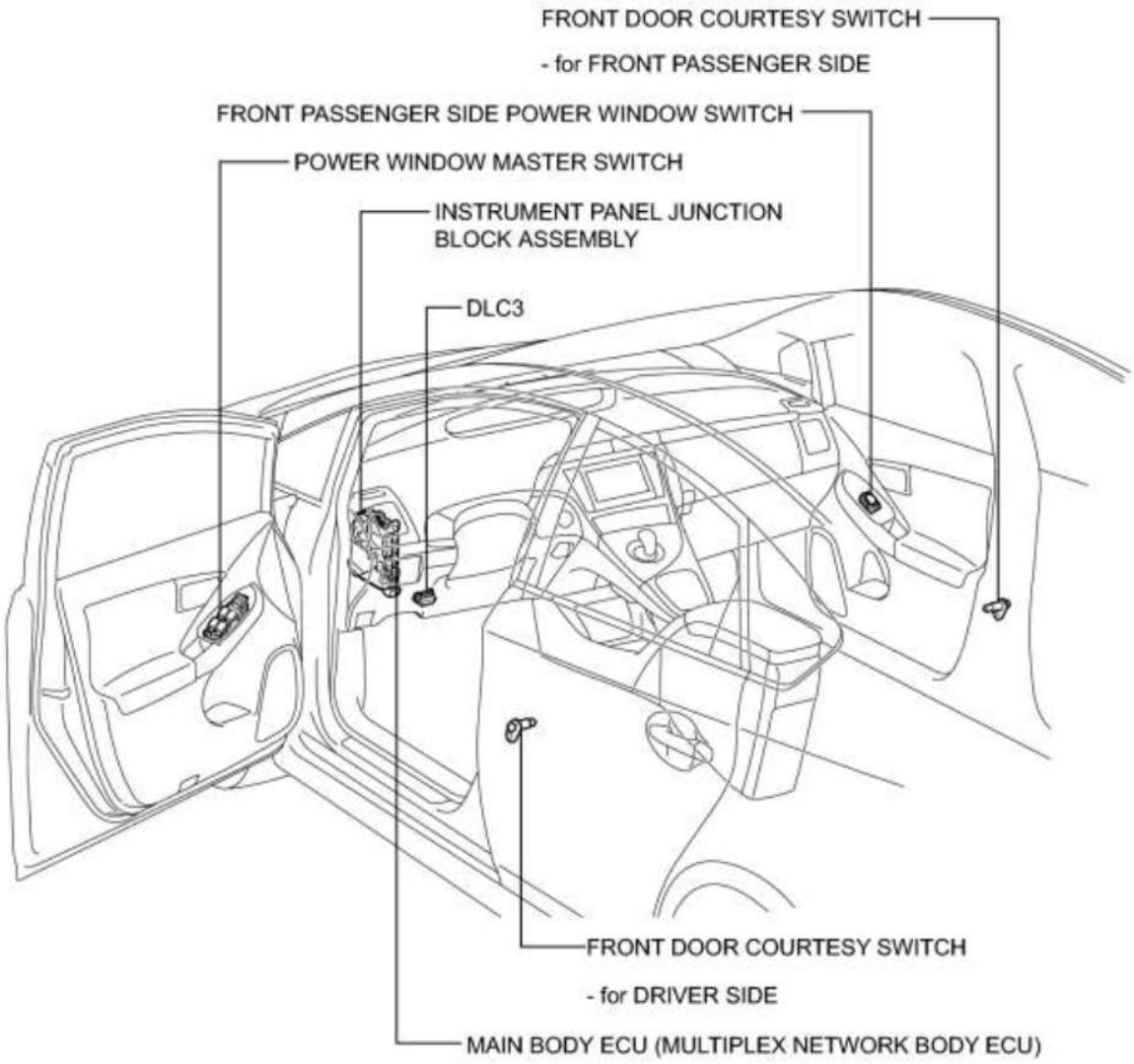
NOTICE:

Do not disconnect the battery while the power switch is on (IG). Otherwise, DTC B2311 will be output.

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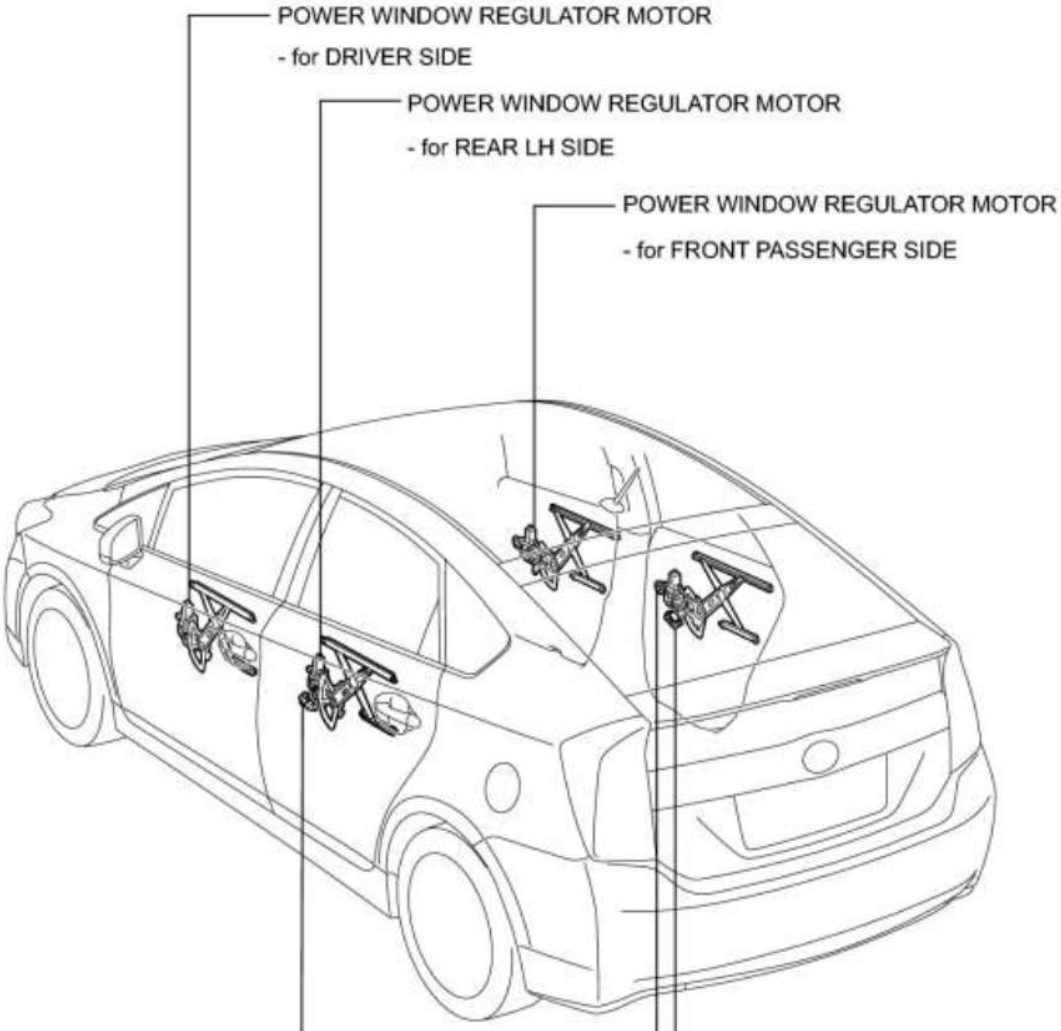
PARTS LOCATION

ILLUSTRATION



ILLUSTRATION

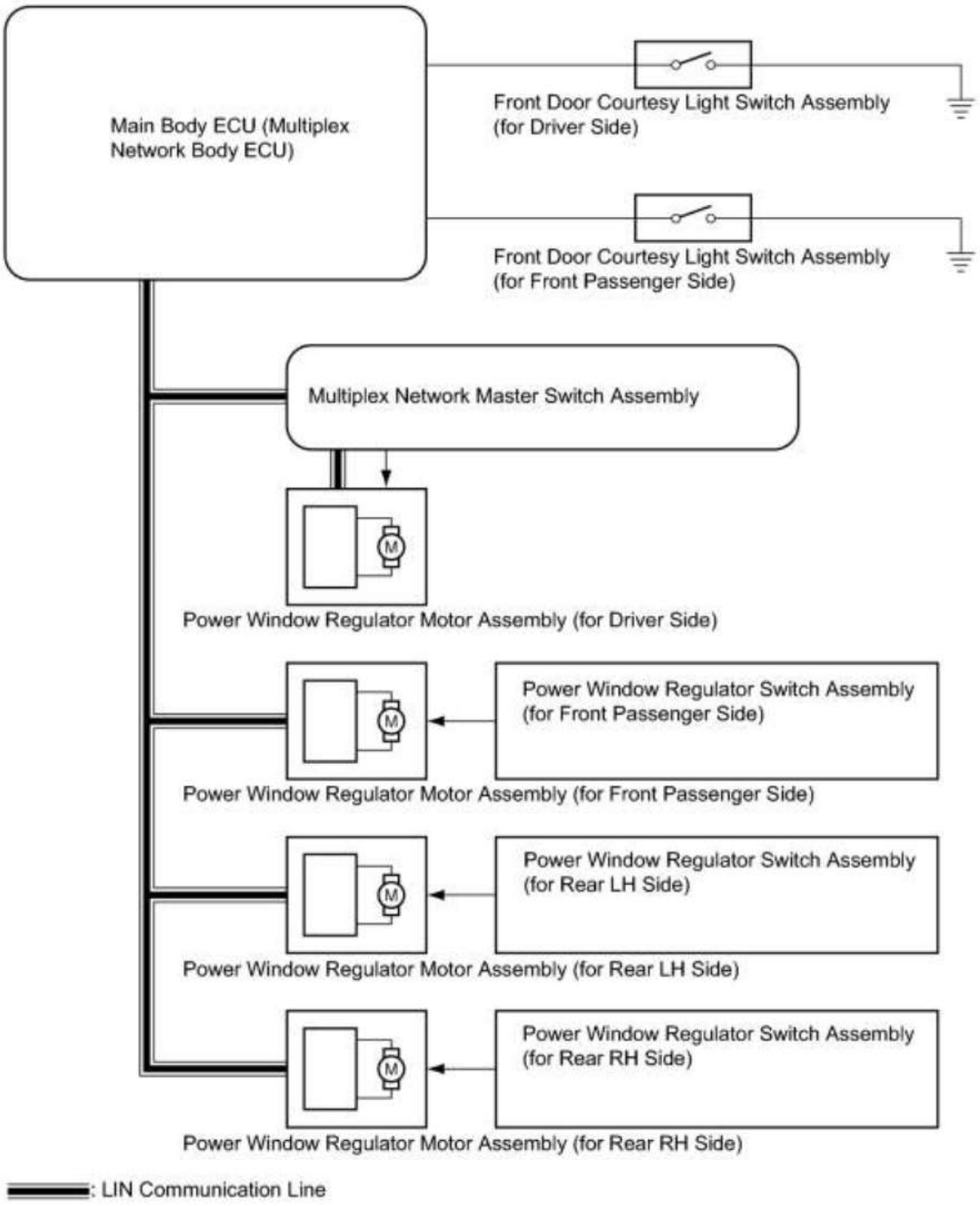
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SYSTEM DIAGRAM



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Communication Table

Transmitting ECU	Receiving ECU	Signal	Communication Method
Multiplex network master	Power window regulator motor	Power window auto up	LIN

Transmitting ECU	Receiving ECU	Signal	Communication Method
switch assembly	assembly (for driver side)	and down signal	
	• Power window regulator motor assembly (for front passenger side) • Power window regulator motor assembly (for rear LH side) • Power window regulator motor assembly (for rear RH side)	Power window remote up and down signal	LIN
Main body ECU (multiplex network body ECU)	• Power window regulator motor assembly (for driver side) • Power window regulator motor assembly (for front passenger side) • Power window regulator motor assembly (for rear LH side) • Power window regulator motor assembly (for rear RH side)	Power window operation permission signal	LIN

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SYSTEM DESCRIPTION

1. POWER WINDOW CONTROL SYSTEM DESCRIPTION

(a) The power window control system controls the power window operation using the power window regulator motors. The main controls of this system are the multiplex network master switch assembly, which is mounted on the driver side door, and the power window regulator switch assembly (for front passenger side), which are mounted on the front passenger door, and the power window regulator switches, which are mounted on the rear doors. Operating a window switch results in electrical power being transmitted to the corresponding power window regulator motor.

2. FUNCTION OF MAIN COMPONENTS

The power window control system consists of the following components:

Component	Outline
Multiplex Network Master Switch Assembly	• Controls power window operation for all seats. • When the lock switch is set to the lock position, window operation will be possible only for the driver door power window.
Power Window Regulator Switch Assembly • Front Passenger Side	• Located on the front passenger door. • Controls front passenger window operation.
Power Window Regulator Switch Assembly • Rear LH Side • Rear RH Side	• Located on the rear doors. • Each switch controls window operation for its respective window.
Power Window Regulator Motor Assembly	• Receives switch signals and changes signals into motor activation. As a result, the window position changes. • Uses the Hall-ICs in the regulator motor with the ECU to detect the window position and jamming.

3. SYSTEM FUNCTION

The power window control system has the following functions:

Function	Outline
Manual up-and-down function	Function that causes the window to go up while the power window switch is being pulled halfway up and to go down while pushed halfway down. The window stops as soon as the switch is released.
All door auto up-and-down	Function that enables the windows of all doors to be fully opened or closed by one full pull or push of the multiplex network master switch assembly or power window regulator switch

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Function	Outline
function	assembly.
Window lock function	• Function that disables the power window regulator switch assembly operation when the window lock switch is pressed. • The power window regulator switch assemblies can be operated when the window lock switch is pressed again.
Jam protection function	Function that automatically stops the power window and moves it downward if a foreign object gets jammed in the door window during auto up and manual up operation.
Remote control function	Function that allows the multiplex network master switch assembly to control manual and auto up-and-down operations of the front passenger door window and rear door windows.
Key-off operation function	• Function that makes it possible to operate all power windows for approximately 45 sec. after the power switch is turned off when the driver door or front passenger door has not been opened. • When 45 sec. have elapsed, or the driver door or front passenger door is opened after the power switch is turned off, the key-off operation function will be disabled. HINT: • If the window lock switch is off, the windows can be operated using any of the power window regulator switch assemblies. If the window lock switch is on, only the multiplex network master switch assembly can be used to operate the windows (remote operation remains possible). • If the driver door or front passenger door is opened during automatic window operation while the key-off operation function is on, the window will stop operating.
Diagnosis	Function that allows diagnosis of the power window control system if any of the power window ECUs (built into each power window regulator motor assembly) detect a malfunction in the system. If a malfunction is detected, the power window ECU will illuminate the LEDs on the multiplex network master switch assembly and the respective power window regulator switch assemblies to inform the driver and passenger of the malfunction.
Fail-safe	A fail-safe function to disable a part of power window functions if the pulse sensor in the power window motor has a malfunction. Auto up-and-down function and remote control function are disabled.

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HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

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

3.	PRE-CHECK

(a) Measure the battery voltage with the power switch off.

Standard Voltage:

11 to 14 V

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

(b) Check the fuses and relays.

(c) Check the connector connections and terminals to make sure that there are no abnormalities such as loose connections, deformation, etc.

NEXT

4.	INSPECT COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*

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(a) Use the Techstream to check if the CAN communication system is functioning normally.

Result:

Result	Proceed to
ECU connected, communication line is functioning normally	A
ECU connected, communication line is malfunctioning	B

B ▶ INFO GO TO CAN COMMUNICATION SYSTEM

A ▼

5.	INSPECT COMMUNICATION FUNCTION OF LIN COMMUNICATION SYSTEM*

(a) Use the Techstream to check if the LIN communication system is functioning normally INFO.

Result:

Result	Proceed to
No DTCs output	A
DTCs output	B

B ▶ INFO GO TO LIN COMMUNICATION SYSTEM

A ▼

6.	CHECK FOR DTC*

(a) Check for DTCs and note any codes that are output INFO.

(b) Clear the DTCs.

(c) Recheck for DTCs.

Result:

Result	Proceed to
No DTCs output	A
DTCs output	B

B ▶ INFO GO TO DIAGNOSTIC TROUBLE CODE CHART

A ▼

7.	PROBLEM SYMPTOMS TABLE

(a) Refer to Problem Symptoms Table INFO.

Result:

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Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B ▶ Go to step 9

A ▼

8.	OVERALL ANALYSIS AND TROUBLESHOOTING*

(a) Operation Check INFO

(b) Data List / Active Test INFO

(c) Terminals of ECU INFO

NEXT ▼

9.	ADJUST, REPAIR OR REPLACE

(a) Check if any of the door window regulators or power window regulator motor assemblies have been removed and reinstalled.

Result:

Result	Proceed to
Any of the door window regulators or power window regulator motor assemblies have been removed and reinstalled.	A
None of the door window regulators or power window regulator motor assemblies has been removed and reinstalled.	B

B ▶ Go to step 11

A ▼

10.	INITIALIZE POWER WINDOW REGULATOR MOTOR

(a) If any of the door window regulators or power window regulator motor assemblies have been removed and reinstalled, perform "Initialize Power Window Control System" (initialization of the pulse sensor) for the applicable door glass INFO.

HINT:

If "Initialize Power Window Control System" (initialization of the pulse sensor) has not been performed, the auto operation function, jam protection function and key-off operation function will not operate or will operate incorrectly.

NEXT

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11.	CONFIRMATION TEST

NEXT **END**

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OPERATION CHECK

1. CHECK WINDOW LOCK SWITCH

HINT:

Before performing the window lock switch operation check, make sure that the window lock switch is off (the switch is not pushed in).

(a) Check that the front passenger and rear windows cannot be operated from each power window regulator switch assembly (front passenger side, rear LH side or rear RH side) when the window lock switch of the multiplex network master switch assembly is pushed in.



OK:

Front passenger and rear windows are disabled.

HINT:

Even when the window lock switch of the multiplex network master switch assembly is pushed in, remote manual up and down and auto up and down functions can be operated.

(b) Check that the front passenger and rear windows can be operated from each power window regulator switch assembly (front passenger side, rear LH side or rear RH side) when the window lock switch of the multiplex network master switch assembly is pushed in again to release it.

OK:

Front passenger and rear windows operate normally.

2. CHECK MANUAL UP / DOWN FUNCTION

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

OK

Condition	Master Switch	Switch Operation	Power Window
Power switch on (IG)	Driver side	Pulled halfway up	UP (Closes)
		Pushed halfway down	DOWN (Opens)

(b) Check that the front passenger side window and rear power windows operate as follows:

OK

Condition	Regulator Switch	Switch Operation	Power Window
• Power switch on (IG)	Front passenger side	Pulled halfway up	UP (Closes)

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Condition	Regulator Switch	Switch Operation	Power Window
• Window lock switch off		Pushed halfway down	DOWN (Opens)
	Rear LH side	Pulled halfway up	UP (Closes)
		Pushed halfway down	DOWN (Opens)
	Rear RH side	Pulled halfway up	UP (Closes)
		Pushed halfway down	DOWN (Opens)

3. CHECK AUTO UP / DOWN FUNCTION

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

OK

Condition	Master Switch	Switch Operation	Power Window
Power switch on (IG)	Driver side	Pulled up (One touch operation)	AUTO UP (Closes)
		Pushed down (One touch operation)	AUTO DOWN (Opens)

(b) Check that the front passenger side window and rear power windows operate as follows:

OK

Condition	Regulator Switch	Switch Operation	Power Window
• Power switch on (IG) • Window lock switch off	Front passenger side	Pulled up (One touch operation)	AUTO UP (Closes)
		Pushed down (One touch operation)	AUTO DOWN (Opens)
	Rear LH side	Pulled up (One touch operation)	AUTO UP (Closes)
		Pushed down (One touch operation)	AUTO DOWN (Opens)
	Rear RH side	Pulled up (One touch operation)	AUTO UP (Closes)
		Pushed down (One touch operation)	AUTO DOWN (Opens)

4. CHECK REMOTE MANUAL UP / DOWN FUNCTION

(a) Check that the front passenger side window and rear power windows operate as follows:

OK

Condition	Master Switch	Switch Operation	Power Window
Power switch on (IG)	Front passenger side	Pulled halfway up	UP (Closes)
		Pushed halfway down	DOWN (Opens)
	Rear LH side	Pulled halfway up	UP (Closes)
		Pushed halfway down	DOWN (Opens)
	Rear RH side	Pulled halfway up	UP (Closes)
		Pushed halfway down	DOWN (Opens)

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5. CHECK REMOTE AUTO UP / DOWN FUNCTION

(a) Check that the front passenger side window and rear power windows operate as follows:

OK

Condition	Master Switch	Switch Operation	Power Window
Power switch on (IG)	Front passenger side	Pulled up (One touch operation)	AUTO UP (Closes)
		Pushed down (One touch operation)	AUTO DOWN (Opens)
	Rear LH side	Pulled up (One touch operation)	AUTO UP (Closes)
		Pushed down (One touch operation)	AUTO DOWN (Opens)
	Rear RH side	Pulled up (One touch operation)	AUTO UP (Closes)
		Pushed down (One touch operation)	AUTO DOWN (Opens)

6. CHECK POWER WINDOW OPERATION FUNCTION AFTER POWER SWITCH IS TURNED OFF

(a) Check that all the power windows can be operated with the multiplex network master switch assembly and power window regulator switch assemblies (for front passenger, rear LH and RH sides) after the power switch is turned off.

HINT:

If the window lock switch is on, the windows cannot be operated using the power window regulator switch assemblies (for front passenger, rear LH and RH sides). Therefore, turn the window lock switch off before checking the window operation.

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

HINT:

If the driver door or front passenger door is opened during automatic window operation while the key-off operation function is on, the window will stop operating.

(c) Check that all the power windows cannot be operated after more than approximately 45 seconds have elapsed since the power switch was turned off.

7. CHECK JAM PROTECTION FUNCTION

(a) Check the basic function.

CAUTION:

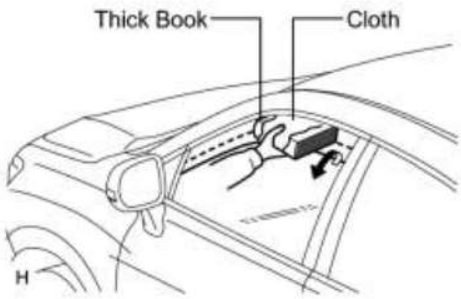
Do not put your fingers between the door frame and door glass to check the jam protection function. Also, prevent any part of your body from being caught during inspection.

HINT:

The jam protection function is operative during both the auto up and manual up operations.

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(1) Fully open the window.



(2) Set a thick book wrapped with a piece of cloth near the window fully closed position.

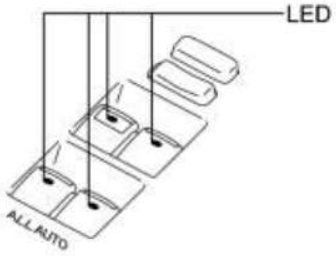
(3) Operate the auto up or manual up function to check that the power window goes down after the book is caught between the window and door frame, and stops when the opening reaches approximately 200 mm (7.87 in.).

HINT:

The power window moves down approximately 125 mm (4.93 in.). However, when the opening does not reach 200 mm (7.87 in.), the power window continues to go down until the opening reaches 200 mm (7.87 in.) or until approximately 5 seconds elapse.

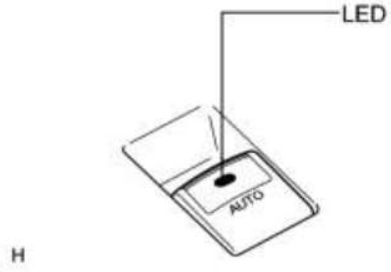
(4) While the power window is moving down, check that the door glass cannot be raised when the power window switch is used.

8. CHECK POWER WINDOW SWITCH LED ILLUMINATION



(a) Check the LED illumination (multiplex network master switch assembly).

(1) Check that the LEDs located on the multiplex network master switch assembly illuminate when the power switch is turned on (IG).



(b) Check the LED illumination (power window regulator switch assembly).

(1) Check that the LEDs located on the power window regulator switch assembly illuminate when the power switch is turned on (IG).

HINT:

If the window lock switch is on, the LEDs located on the power window regulator switch assemblies (for front passenger, rear LH and RH sides) do not illuminate. Therefore, turn the window lock switch off before

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checking the LED illumination.

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INITIALIZATION

1. INITIALIZE POWER WINDOW CONTROL SYSTEM (POWER WINDOW REGULATOR MOTOR ASSEMBLY (ALL DOORS))

CAUTION:

When the power window regulator motor assembly is reinstalled or replaced, the power window control system must be initialized. Functions such as the auto up and down, jam protection, remote control and key-off operation do not operate if the initialization is not performed.

HINT:

When the battery is replaced, it is not necessary to initialize the power window regulator motor assembly.

NOTICE:

- When the power window regulator motor assembly is replaced, DTC B2313 is output. Clear the DTC after the initialization.
- When performing initialization, do not perform any other procedures.
- When performing initialization, use the power window switch of each door to initialize each door window.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used, due to detection of a value different from the operation learned value of the door glass movement speed. In such cases, the auto up function can be reinitialized by repeating the following operation at least 5 times:
    a. Open the power window by fully pushing down the multiplex network master switch assembly or power window regulator switch assembly.
    b. Close the power window by fully pulling up the multiplex network master switch assembly or power window regulator switch assembly and holding it at the auto up position.
- If the initialization is not completed properly, the LIN communication system may have a malfunction INFO.

(a) Initialization procedure when replacing the power window regulator motor assembly with a new one:

(1) Connect the battery and turn the power switch on (IG) (at this time, the LED on the multiplex network master switch assembly or power window regulator switch assembly blinks to indicate that it is ready for initialization).

(2) Fully open the window by fully pushing down the multiplex network master switch assembly or power window regulator switch assembly, and hold the switch for 1 second or more after the window is fully opened.

(3) Fully close the power window by fully pulling up the multiplex network master switch assembly or power window regulator switch assembly, and hold the switch for 1 second or more after the window is fully closed to reset the glass position. The LED on the multiplex network master switch assembly or power window regulator switch assembly stops blinking and illuminates to indicate that the initialization is complete.

(b) Initialization procedure when removing/installing the power window regulator motor assembly:

(1) Connect the battery and turn the power switch on (IG).

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(2) Fully close the power window by fully pulling up the multiplex network master switch assembly or power window regulator switch assembly, and hold the switch for 6 seconds or more after the window is fully closed (if the power window does not move or stops halfway even when the switch is fully pulled, release the switch and fully pull it again).

(3) Fully open the window by pushing down the multiplex network master switch assembly or power window regulator switch assembly, and hold the switch for 1 second or more after the window is fully opened.

(4) Release the multiplex network master switch assembly or power window regulator switch assembly. Then fully push down and hold the switch for 4 seconds or more.

(5) Fully close the power window by fully pulling up the multiplex network master switch assembly or power window regulator switch assembly, and hold the switch for 1 second or more after the window is fully closed to reset the glass position and complete the initialization.

(c) Initialization procedure when the power window does not fully open:

(1) Connect the battery and turn the power switch on (IG).

(2) Fully close the power window by fully pulling up the multiplex network master switch assembly or power window regulator switch assembly, and hold the switch for 6 seconds or more after the window is fully closed (if the power window does not move or stops halfway even when the switch is fully pulled, release the switch and fully pull it again).

(3) Fully open the window by pushing down the multiplex network master switch assembly or power window regulator switch assembly, and hold the switch for 1 second or more after the window is fully opened.

(4) Release the multiplex network master switch assembly or power window regulator switch assembly. Then fully push down and hold the switch for 4 seconds or more.

(5) Fully close the power window by fully pulling up the multiplex network master switch assembly or power window regulator switch assembly, and hold the switch for 1 second or more after the window is fully closed to reset the glass position and complete the initialization.

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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	LIN communication system	INFO
	Multiplex network master switch assembly	-
	Power window regulator motor assembly (for front passenger side)	-
	Power window regulator motor assembly (for rear LH side)	-
	Power window regulator motor assembly (for rear RH side)	-
Driver Side Power Window does not Operate with Power Window Master Switch	LIN communication system	INFO
	Power window regulator motor assembly (for driver side)	-
	Multiplex network master switch assembly	-
	Main body ECU (multiplex network body ECU)	-
	Wire harness or connector	-
Front Passenger Side Power Window does not Operate with Front Passenger Side Power Window Switch	LIN communication system	INFO
	Power window regulator motor assembly (for front passenger side)	-
	Power window regulator switch assembly (for front passenger side)	-
	Main body ECU (multiplex network body ECU)	-
	Wire harness or connector	-
Rear Power Window LH does not Operate with Rear Power Window Switch LH	LIN communication system	INFO
	Power window regulator motor assembly (for rear LH side)	-
	Power window regulator switch assembly (for rear LH side)	-
	Main body ECU (multiplex network	-

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Symptom	Suspected Area	See page
	body ECU)	
	Wire harness or connector	-
Rear Power Window RH does not Operate with Rear Power Window Switch RH	LIN communication system	INFO
	Power window regulator motor assembly (for rear RH side)	-
	Power window regulator switch assembly (for rear RH side)	-
	Main body ECU (multiplex network body ECU)	-
	Wire harness or connector	-
Driver Side Power Window Auto Up / Down Function does not Operate with Power Window Master Switch	Power window regulator motor assembly (for driver side)	INFO
	Multiplex network master switch assembly	-
	Glass position initialization	-
	Wire harness or connector	-
Front Passenger Side Power Window Auto Up / Down Function does not Operate with Front Passenger Side Power Window Switch	Power window regulator motor assembly (for front passenger side)	INFO
	Power window regulator switch assembly (for front passenger side)	-
	Glass position initialization	-
	Wire harness or connector	-
Rear Power Window LH Auto Up / Down Function does not Operate with Rear Power Window Switch LH	Power window regulator motor assembly (for rear LH side)	INFO
	Power window regulator switch assembly (for rear LH side)	-
	Glass position initialization	-
	Wire harness or connector	-
Rear Power Window RH Auto Up / Down Function does not Operate with Rear Power Window Switch RH	Power window regulator motor assembly (for rear RH side)	INFO
	Power window regulator switch assembly (for rear RH side)	-
	Glass position initialization	-
	Wire harness or connector	-
Key-off Operation Function Operates even if Operating Conditions are not Satisfied	LIN communication system	INFO
	Lighting system	-
	Power window regulator motor assembly (for driver side)	-
	Power window regulator motor assembly (for front passenger side)	-

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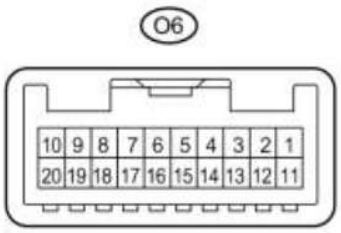
Symptom	Suspected Area	See page
	Power window regulator motor assembly (for rear LH side)	-
	Power window regulator motor assembly (for rear RH side)	-
	Main body ECU (multiplex network body ECU)	-
Auto Up Operation does not Fully Close Power Window (Jam Protection Function is Activated)	Glass position initialization (applicable location)	INFO
	Improper installation (applicable location)	-
	Power window regulator motor assembly (for driver side)	-
	Power window regulator motor assembly (for front passenger side)	-
	Power window regulator motor assembly (for rear LH side)	-
	Power window regulator motor assembly (for rear RH side)	-
Jam Protection Function does not Operate	Glass position initialization (applicable location)	INFO
	Power window regulator motor assembly (for driver side)	-
	Power window regulator motor assembly (for front passenger side)	-
	Power window regulator motor assembly (for rear LH side)	-
	Power window regulator motor assembly (for rear RH side)	-

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TERMINALS OF ECU

1. MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

(a) Disconnect the O6 multiplex network master switch assembly connector.



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

HINT:

Measure the values on the wire harness side with the connector disconnected.

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
O6-11 (B) - O6-12 (GND)	L - W-B	Power supply	Power switch off	11 to 14 V
O6-12 (GND) - 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.

(c) Reconnect the O6 multiplex network master switch assembly connector.

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

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
O6-15 (DOWN) - O6-12 (GND)	Y - W-B	Power window motor DOWN output	Power switch on (IG), driver door power window regulator switch OFF	11 to 14 V
O6-15 (DOWN) - O6-12 (GND)	Y - W-B	Power window motor DOWN output	Power switch on (IG), driver door power window switch DOWN (Manual operation)	Below 1 V
O6-18 (LED) - O6-12 (GND)	B - W-B	LED illumination signal	Power switch on (IG)	11 to 14 V
O6-18 (LED) - O6-12 (GND)	B - W-B	LED illumination signal	Approximately 45 seconds after power switch turned off	Below 1 V

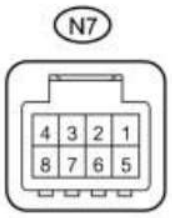
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Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
O6-20 (UP) - O6-12 (GND)	V - W-B	Power window motor UP output	Power switch on (IG), driver door power window switch OFF	11 to 14 V
O6-20 (UP) - O6-12 (GND)	V - W-B	Power window motor UP output	Power switch on (IG), driver door power window switch UP (Manual operation)	Below 1 V

If the result is not as specified, the multiplex network master switch assembly may have a malfunction.

2. CHECK POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Front Passenger Side)

(a) Disconnect the N7 power window regulator switch assembly (for front passenger side) connector.



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

HINT:

Measure the values on the wire harness side with the connector disconnected.

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
N7-1 (GND) - 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.

(c) Reconnect the N7 power window regulator switch assembly (for front passenger side) connector.

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

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
N7-6 (UP) - N7-1 (GND)	B - W-B	Power window motor UP output	Power switch on (IG), power window regulator switch assembly (for front passenger side) OFF	11 to 14 V
N7-6 (UP) - N7-1 (GND)	B - W-B	Power window motor UP output	Power switch on (IG), power window regulator switch assembly (for front passenger side) UP (Manual operation)	Below 1 V

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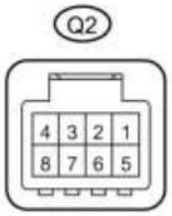
Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
N7-6 (UP) - N7-1 (GND)	B - W-B	Power window motor UP output	Power switch on (IG), front passenger side power window fully open	11 to 14 V
N7-6 (UP) - N7-1 (GND)	B - W-B	Power window motor UP output	Power switch on (IG), front passenger side power window fully UP (AUTO UP position)	Below 1 V
N7-6 (UP) - N7-1 (GND)	B - W-B	Power window motor UP output	Power switch on (IG), front passenger side power window fully stopped (UP)	11 to 14 V
N7-8 (AUTO) - N7-1 (GND)	L - W-B	Power window motor AUTO UP output	Power switch on (IG), front passenger side power window fully open	11 to 14 V
N7-8 (AUTO) - N7-1 (GND)	L - W-B	Power window motor AUTO UP output	Power switch on (IG), front passenger side power window fully UP (AUTO UP position)	Below 1 V
N7-8 (AUTO) - N7-1 (GND)	L - W-B	Power window motor AUTO UP output	Power switch on (IG), front passenger side power window fully stopped (UP)	11 to 14 V
N7-8 (AUTO) - N7-1 (GND)	L - W-B	Power window motor AUTO DOWN output	Power switch on (IG), front passenger side power window fully closed	11 to 14 V
N7-8 (AUTO) - N7-1 (GND)	L - W-B	Power window motor AUTO DOWN output	Power switch on (IG), front passenger side power window fully DOWN (AUTO DOWN position)	Below 1 V
N7-8 (AUTO) - N7-1 (GND)	L - W-B	Power window motor AUTO DOWN output	Power switch on (IG), front passenger side power window fully stopped (DOWN)	11 to 14 V
N7-4 (LED) - N7-1 (GND)	Y - W-B	LED illumination signal	Power switch on (IG)	11 to 14 V
N7-4 (LED) - N7-1 (GND)	Y - W-B	LED illumination signal	Approximately 45 seconds after the power switch is turned off	Below 1 V
N7-7 (DOWN) - N7-1 (GND)	G - W-B	Power window motor DOWN output	Power switch on (IG), power window regulator switch assembly (for front passenger side) OFF	11 to 14 V
N7-7 (DOWN) - N7-1 (GND)	G - W-B	Power window motor DOWN output	Power switch on (IG), power window regulator switch assembly (for front passenger side) DOWN (Manual operation)	Below 1 V
N7-7 (DOWN) - N7-1 (GND)	G - W-B	Power window motor DOWN output	Power switch on (IG), front passenger side power window fully closed	11 to 14 V
N7-7 (DOWN) - N7-1 (GND)	G - W-B	Power window motor DOWN output	Power switch on (IG), front passenger side power window fully DOWN (AUTO DOWN position)	Below 1 V
N7-7 (DOWN) - N7-1 (GND)	G - W-B	Power window motor DOWN output	Power switch on (IG), front passenger side power window fully stopped (DOWN)	11 to 14 V

If the result is not as specified, the power window regulator switch assembly (for front passenger side) may have a malfunction.

3. CHECK POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear LH Side)

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(a) Disconnect the Q2 power window regulator switch assembly (for rear LH side) connector.



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

HINT:

Measure the values on the wire harness side with the connector disconnected.

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
Q2-1 (GND) - 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.

(c) Reconnect the Q2 power window regulator switch assembly (for rear LH side) connector.

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

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
Q2-6 (UP) - Q2-1 (GND)	L - W-B	Power window motor UP output	Power switch on (IG), power window regulator switch assembly (for rear LH side) OFF	11 to 14 V
Q2-6 (UP) - Q2-1 (GND)	L - W-B	Power window motor UP output	Power switch on (IG), power window regulator switch assembly (for rear LH side) UP (Manual operation)	Below 1 V
Q2-6 (UP) - Q2-1 (GND)	L - W-B	Power window motor UP output	Power switch on (IG), rear LH side power window fully open	11 to 14 V
Q2-6 (UP) - Q2-1 (GND)	L - W-B	Power window motor UP output	Power switch on (IG), rear LH side power window fully UP (AUTO UP position)	Below 1 V
Q2-6 (UP) - Q2-1 (GND)	L - W-B	Power window motor UP output	Power switch on (IG), rear LH side power window fully stopped (UP)	11 to 14 V
Q2-8 (AUTO) - Q2-1 (GND)	V - W-B	Power window motor AUTO UP output	Power switch on (IG), rear LH side power window fully open	11 to 14 V
Q2-8 (AUTO) - Q2-1 (GND)	V - W-B	Power window motor AUTO UP output	Power switch on (IG), rear LH side power window fully UP (AUTO UP position)	Below 1 V

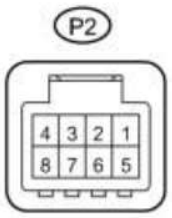
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Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
Q2-8 (AUTO) - Q2-1 (GND)	V - W-B	Power window motor AUTO UP output	Power switch on (IG), rear LH side power window fully stopped (UP)	11 to 14 V
Q2-8 (AUTO) - Q2-1 (GND)	V - W-B	Power window motor AUTO DOWN output	Power switch on (IG), rear LH side power window fully closed	11 to 14 V
Q2-8 (AUTO) - Q2-1 (GND)	V - W-B	Power window motor AUTO DOWN output	Power switch on (IG), rear LH side power window fully DOWN (AUTO DOWN position)	Below 1 V
Q2-8 (AUTO) - Q2-1 (GND)	V - W-B	Power window motor AUTO DOWN output	Power switch on (IG), rear LH side power window fully stopped (DOWN)	11 to 14 V
Q2-4 (LED) - Q2-1 (GND)	Y - W-B	LED illumination signal	Power switch on (IG)	11 to 14 V
Q2-4 (LED) - Q2-1 (GND)	Y - W-B	LED illumination signal	Approximately 45 seconds after the power switch is turned off	Below 1 V
Q2-7 (DOWN) - Q2-1 (GND)	GR - W-B	Power window motor DOWN output	Power switch on (IG), power window regulator switch assembly (for rear LH side) OFF	11 to 14 V
Q2-7 (DOWN) - Q2-1 (GND)	GR - W-B	Power window motor DOWN output	Power switch on (IG), power window regulator switch assembly (for rear LH side) DOWN (Manual operation)	Below 1 V
Q2-7 (DOWN) - Q2-1 (GND)	GR - W-B	Power window motor DOWN output	Power switch on (IG), rear LH side power window fully closed	11 to 14 V
Q2-7 (DOWN) - Q2-1 (GND)	GR - W-B	Power window motor DOWN output	Power switch on (IG), rear LH side power window fully DOWN (AUTO DOWN position)	Below 1 V
Q2-7 (DOWN) - Q2-1 (GND)	GR - W-B	Power window motor DOWN output	Power switch on (IG), rear LH side power window fully stopped (DOWN)	11 to 14 V

If the result is not as specified, the power window regulator switch assembly (for rear LH side) may have a malfunction.

4. CHECK POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear RH Side)

(a) Disconnect the P2 power window regulator switch assembly (for rear RH side) connector.



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

HINT:

Measure the values on the wire harness side with the connector disconnected.

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
P2-1 (GND) - 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.

(c) Reconnect the P2 power window regulator switch assembly (for rear RH side) connector.

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

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
P2-6 (UP) - P2-1 (GND)	V - W-B	Power window motor UP output	Power switch on (IG), power window regulator switch assembly (for rear RH side) OFF	11 to 14 V
P2-6 (UP) - P2-1 (GND)	V - W-B	Power window motor UP output	Power switch on (IG), power window regulator switch assembly (for rear RH side) UP (Manual operation)	Below 1 V
P2-6 (UP) - P2-1 (GND)	V - W-B	Power window motor UP output	Power switch on (IG), rear RH side power window fully open	11 to 14 V
P2-6 (UP) - P2-1 (GND)	V - W-B	Power window motor UP output	Power switch on (IG), rear RH side power window fully UP (AUTO UP position)	Below 1 V
P2-6 (UP) - P2-1 (GND)	V - W-B	Power window motor UP output	Power switch on (IG), rear RH side power window fully stopped (UP)	11 to 14 V
P2-8 (AUTO) - P2-1 (GND)	L - W-B	Power window motor AUTO UP output	Power switch on (IG), rear RH side power window fully open	11 to 14 V
P2-8 (AUTO) - P2-1 (GND)	L - W-B	Power window motor AUTO UP output	Power switch on (IG), rear RH side power window fully UP (AUTO UP position)	Below 1 V
P2-8 (AUTO) - P2-1 (GND)	L - W-B	Power window motor AUTO UP output	Power switch on (IG), rear RH side power window fully stopped (UP)	11 to 14 V
P2-8 (AUTO) - P2-1 (GND)	L - W-B	Power window motor AUTO DOWN output	Power switch on (IG), rear RH side power window fully closed	11 to 14 V
P2-8 (AUTO) - P2-1 (GND)	L - W-B	Power window motor AUTO DOWN output	Power switch on (IG), rear RH side power window fully DOWN (AUTO DOWN position)	Below 1 V
P2-8 (AUTO) - P2-1 (GND)	L - W-B	Power window motor AUTO DOWN output	Power switch on (IG), rear RH side power window fully stopped (DOWN)	11 to 14 V
P2-4 (LED) - P2-1 (GND)	GR - W-B	LED illumination signal	Power switch on (IG)	11 to 14 V
P2-4 (LED) - P2-	GR - W-	LED illumination	Approximately 45 seconds after the power	Below 1 V

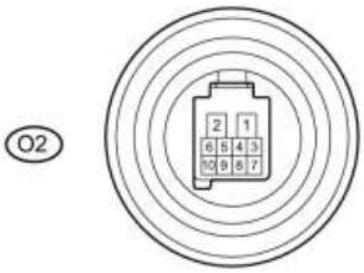
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Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
1 (GND)	B	signal	switch is turned off	
P2-7 (DOWN) - P2-1 (GND)	Y - W-B	Power window motor DOWN output	Power switch on (IG), power window regulator switch assembly (for rear RH side) OFF	11 to 14 V
P2-7 (DOWN) - P2-1 (GND)	Y - W-B	Power window motor DOWN output	Power switch on (IG), power window regulator switch assembly (for rear RH side) DOWN (Manual operation)	Below 1 V
P2-7 (DOWN) - P2-1 (GND)	Y - W-B	Power window motor DOWN output	Power switch on (IG), rear RH side power window fully closed	11 to 14 V
P2-7 (DOWN) - P2-1 (GND)	Y - W-B	Power window motor DOWN output	Power switch on (IG), rear RH side power window fully DOWN (AUTO DOWN position)	Below 1 V
P2-7 (DOWN) - P2-1 (GND)	Y - W-B	Power window motor DOWN output	Power switch on (IG), rear RH side power window fully stopped (DOWN)	11 to 14 V

If the result is not as specified, the power window regulator switch assembly (for rear RH side) may have a malfunction.

5. CHECK POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)

(a) Disconnect the O2 power window regulator motor assembly (for driver side) connector.



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

HINT:

Measure the values on the wire harness side with the connector disconnected.

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
O2-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
O2-2 (B) - Body ground	L - Body ground	Power supply	Power switch off	11 to 14 V

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

(c) Reconnect the O2 power window regulator motor assembly (for driver side) connector.

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

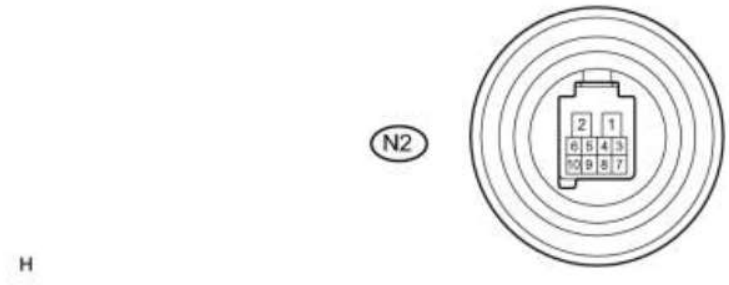
Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
O2-5 (LED) - O2-1 (GND)	B - W-B	LED illumination signal	Power switch on (IG)	11 to 14 V
O2-5 (LED) - O2-1 (GND)	B - W-B	LED illumination signal	Approximately 45 seconds after power switch turned off	Below 1 V
O2-7 (DOWN) - O2-1 (GND)	Y - W-B	Power window motor DOWN input	Power switch on (IG), driver door power window regulator switch OFF	11 to 14 V
O2-7 (DOWN) - O2-1 (GND)	Y - W-B	Power window motor DOWN input	Power switch on (IG), driver door power window switch DOWN (Manual operation)	Below 1 V
O2-7 (DOWN) - O2-1 (GND)	Y - W-B	Power window motor DOWN input	Power switch on (IG), driver door power window fully closed	11 to 14 V
O2-7 (DOWN) - O2-1 (GND)	Y - W-B	Power window motor DOWN input	Power switch on (IG), driver door power window switch fully DOWN (AUTO DOWN position)	Below 1 V
O2-7 (DOWN) - O2-1 (GND)	Y - W-B	Power window motor AUTO DOWN input	Power switch on (IG), driver door power window fully open (DOWN)	11 to 14 V
O2-10 (UP) - O2-1 (GND)	V - W-B	Power window motor UP input	Power switch on (IG), driver door power window switch OFF	11 to 14 V
O2-10 (UP) - O2-1 (GND)	V - W-B	Power window motor UP input	Power switch on (IG), driver door power window switch UP (Manual operation)	Below 1 V
O2-10 (UP) - O2-1 (GND)	V - W-B	Power window motor UP input	Power switch on (IG), driver door power window fully open	11 to 14 V
O2-10 (UP) - O2-1 (GND)	V - W-B	Power window motor UP input	Power switch on (IG), driver door power window switch fully UP (AUTO UP position)	Below 1 V
O2-10 (UP) - O2-1 (GND)	V - W-B	Power window motor UP input	Power switch on (IG), driver door power window fully closed (UP)	11 to 14 V

If the result is not as specified, the power window regulator motor assembly (for driver side) may have a malfunction.

6. CHECK POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)

(a) Disconnect the N2 power window regulator motor assembly (for front passenger side) connector.

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

HINT:

Measure the values on the wire harness side with the connector disconnected.

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
N2-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
N2-2 (B) - Body ground	R - Body ground	Power supply	Power switch off	11 to 14 V

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

(c) Reconnect the N2 power window regulator motor assembly (for front passenger side) connector.

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

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
N2-4 (AUTO) - N2-1 (GND)	L - W-B	Power window motor AUTO UP input	Power switch on (IG), front passenger side power window fully open	11 to 14 V
N2-4 (AUTO) - N2-1 (GND)	L - W-B	Power window motor AUTO UP input	Power switch on (IG), front passenger side power window switch fully UP (AUTO UP position)	Below 1 V
N2-4 (AUTO) - N2-1 (GND)	L - W-B	Power window motor AUTO UP input	Power switch on (IG), front passenger side power window fully closed (UP)	11 to 14 V
N2-4 (AUTO) - N2-1 (GND)	L - W-B	Power window motor AUTO DOWN input	Power switch on (IG), front passenger side power window fully closed	11 to 14 V
N2-4 (AUTO) - N2-1 (GND)	L - W-B	Power window motor AUTO DOWN input	Power switch on (IG), front passenger side power window switch fully DOWN (AUTO DOWN position)	Below 1 V

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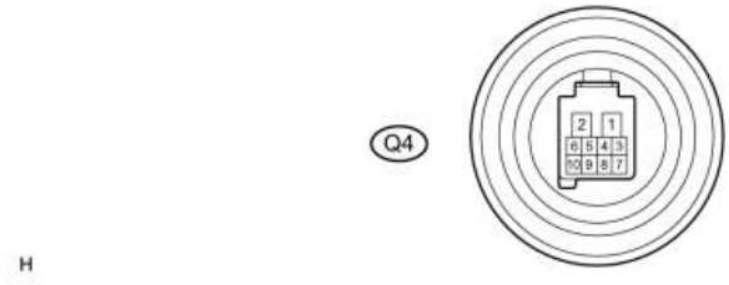
Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
N2-4 (AUTO) - N2-1 (GND)	L - W-B	Power window motor AUTO DOWN input	Power switch on (IG), front passenger side power window fully open (DOWN)	11 to 14 V
N2-5 (LED) - N2-1 (GND)	Y - W-B	LED illumination signal	Power switch on (IG)	11 to 14 V
N2-5 (LED) - N2-1 (GND)	Y - W-B	LED illumination signal	Approximately 45 seconds after power switch turned off	Below 1 V
N2-7 (DOWN) - N2-1 (GND)	G - W-B	Power window motor DOWN input	Power switch on (IG), power window regulator switch assembly (for front passenger side) OFF	11 to 14 V
N2-7 (DOWN) - N2-1 (GND)	G - W-B	Power window motor DOWN input	Power switch on (IG), power window regulator switch assembly (for front passenger side) DOWN (Manual operation)	Below 1 V
N2-7 (DOWN) - N2-1 (GND)	G - W-B	Power window motor DOWN input	Power switch on (IG), front passenger side power window fully closed	11 to 14 V
N2-7 (DOWN) - N2-1 (GND)	G - W-B	Power window motor DOWN input	Power switch on (IG), front passenger side power window switch fully DOWN (AUTO DOWN position)	Below 1 V
N2-7 (DOWN) - N2-1 (GND)	G - W-B	Power window motor DOWN input	Power switch on (IG), front passenger side power window fully open (DOWN)	11 to 14 V
N2-10 (UP) - N2-1 (GND)	B - W-B	Power window motor UP input	Power switch on (IG), power window regulator switch assembly (for front passenger side) OFF	11 to 14 V
N2-10 (UP) - N2-1 (GND)	B - W-B	Power window motor UP input	Power switch on (IG), power window regulator switch assembly (for front passenger side) UP (Manual operation)	Below 1 V
N2-10 (UP) - N2-1 (GND)	B - W-B	Power window motor UP input	Power switch on (IG), front passenger side power window fully open	11 to 14 V
N2-10 (UP) - N2-1 (GND)	B - W-B	Power window motor UP input	Power switch on (IG), front passenger side power window switch fully UP (AUTO UP position)	Below 1 V
N2-10 (UP) - N2-1 (GND)	B - W-B	Power window motor UP input	Power switch on (IG), front passenger side power window fully closed (UP)	11 to 14 V

If the result is not as specified, the power window regulator motor assembly (for front passenger side) may have a malfunction.

7. CHECK POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH Side)

(a) Disconnect the Q4 power window regulator motor assembly (for rear LH side) connector.

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

HINT:

Measure the values on the wire harness side with the connector disconnected.

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
Q4-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
Q4-2 (B) - Body ground	R - Body ground	Power supply	Power switch off	11 to 14 V

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

(c) Reconnect the Q4 power window regulator motor assembly (for rear LH side) connector.

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

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
Q4-4 (AUTO) - Q4-1 (GND)	V - W-B	Power window motor AUTO UP input	Power switch on (IG), rear LH side power window fully open	11 to 14 V
Q4-4 (AUTO) - Q4-1 (GND)	V - W-B	Power window motor AUTO UP input	Power switch on (IG), rear LH side power window switch fully UP (AUTO UP position)	Below 1 V
Q4-4 (AUTO) - Q4-1 (GND)	V - W-B	Power window motor AUTO UP input	Power switch on (IG), rear LH side power window fully closed (UP)	11 to 14 V
Q4-4 (AUTO) - Q4-1 (GND)	V - W-B	Power window motor AUTO DOWN input	Power switch on (IG), rear LH side power window fully closed	11 to 14 V
Q4-4 (AUTO) - Q4-1 (GND)	V - W-B	Power window motor AUTO DOWN input	Power switch on (IG), rear LH side power window switch fully DOWN (AUTO DOWN position)	Below 1 V
Q4-4 (AUTO) - Q4-1 (GND)	V - W-B	Power window motor AUTO DOWN input	Power switch on (IG), rear LH side power window fully open (DOWN)	11 to 14 V

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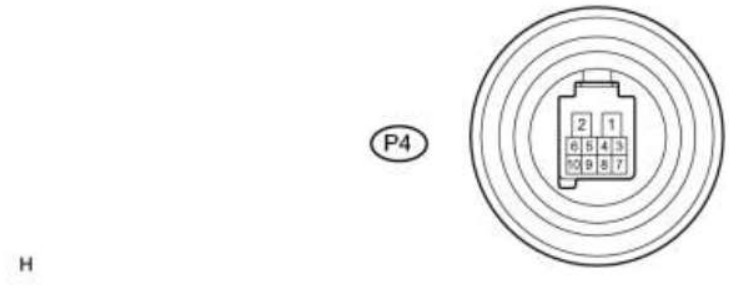
Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
Q4-5 (LED) - Q4-1 (GND)	Y - W-B	LED illumination signal	Power switch on (IG)	11 to 14 V
Q4-5 (LED) - Q4-1 (GND)	Y - W-B	LED illumination signal	Approximately 45 seconds after power switch turned off	Below 1 V
Q4-7 (DOWN) - Q4-1 (GND)	GR - W-B	Power window motor DOWN input	Power switch on (IG), power window regulator switch assembly (for rear LH side) OFF	11 to 14 V
Q4-7 (DOWN) - Q4-1 (GND)	GR - W-B	Power window motor DOWN input	Power switch on (IG), power window regulator switch assembly (for rear LH side) DOWN (Manual operation)	Below 1 V
Q4-7 (DOWN) - Q4-1 (GND)	GR - W-B	Power window motor DOWN input	Power switch on (IG), rear LH side power window fully closed	11 to 14 V
Q4-7 (DOWN) - Q4-1 (GND)	GR - W-B	Power window motor DOWN input	Power switch on (IG), rear LH side power window switch fully DOWN (AUTO DOWN position)	Below 1 V
Q4-7 (DOWN) - Q4-1 (GND)	GR - W-B	Power window motor DOWN input	Power switch on (IG), rear LH side power window fully open (DOWN)	11 to 14 V
Q4-10 (UP) - Q4-1 (GND)	L - W-B	Power window motor UP input	Power switch on (IG), power window regulator switch assembly (for rear LH side) OFF	11 to 14 V
Q4-10 (UP) - Q4-1 (GND)	L - W-B	Power window motor UP input	Power switch on (IG), power window regulator switch assembly (for rear LH side) UP (Manual operation)	Below 1 V
Q4-10 (UP) - Q4-1 (GND)	L - W-B	Power window motor UP input	Power switch on (IG), rear LH side power window fully open	11 to 14 V
Q4-10 (UP) - Q4-1 (GND)	L - W-B	Power window motor UP input	Power switch on (IG), rear LH side power window switch fully UP (AUTO UP position)	Below 1 V
Q4-10 (UP) - Q4-1 (GND)	L - W-B	Power window motor UP input	Power switch on (IG), rear LH side power window fully closed (UP)	11 to 14 V

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If the result is not as specified, the power window regulator motor assembly (for rear LH side) may have a malfunction.

8. CHECK POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH Side)

(a) Disconnect the P4 power window regulator motor assembly (for rear RH side) connector.



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

HINT:

Measure the values on the wire harness side with the connector disconnected.

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
P4-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
P4-2 (B) - Body ground	R - Body ground	Power supply	Power switch off	11 to 14 V

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

(c) Reconnect the P4 power window regulator motor assembly (for rear RH side) connector.

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

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
P4-4 (AUTO) - P4-1 (GND)	L - W-B	Power window motor AUTO UP input	Power switch on (IG), rear RH side power window fully open	11 to 14 V
P4-4 (AUTO) - P4-1 (GND)	L - W-B	Power window motor AUTO UP input	Power switch on (IG), rear RH side power window switch fully open (AUTO UP position)	Below 1 V
P4-4 (AUTO) - P4-1 (GND)	L - W-B	Power window motor AUTO UP input	Power switch on (IG), rear RH side power window fully closed (UP)	11 to 14 V
P4-4 (AUTO) - P4-1 (GND)	L - W-B	Power window motor AUTO DOWN input	Power switch on (IG), rear RH side power window fully closed	11 to 14 V
P4-4 (AUTO) - P4-1 (GND)	L - W-B	Power window motor AUTO DOWN input	Power switch on (IG), rear RH side power window switch fully DOWN (AUTO DOWN position)	Below 1 V
P4-4 (AUTO) - P4-1 (GND)	L - W-B	Power window motor AUTO DOWN input	Power switch on (IG), rear RH side power window fully open (DOWN)	11 to 14 V

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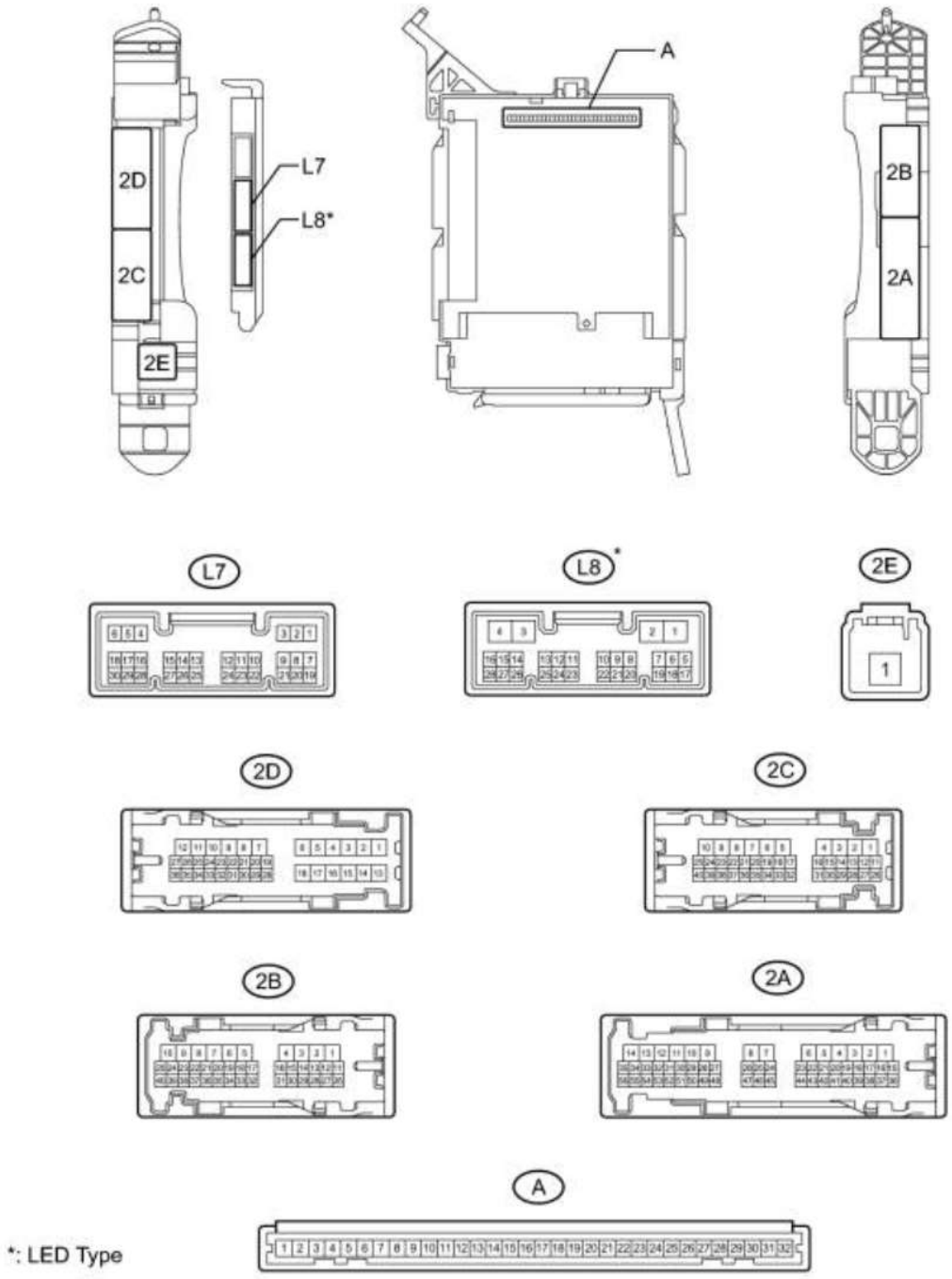
Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
P4-5 (LED) - P4-1 (GND)	GR - W-B	LED illumination signal	Power switch on (IG)	11 to 14 V
P4-5 (LED) - P4-1 (GND)	GR - W-B	LED illumination signal	Approximately 45 seconds after power switch turned off	Below 1 V
P4-7 (DOWN) - P4-1 (GND)	Y - W-B	Power window motor DOWN input	Power switch on (IG), power window regulator switch assembly (for rear RH side) OFF	11 to 14 V
P4-7 (DOWN) - P4-1 (GND)	Y - W-B	Power window motor DOWN input	Power switch on (IG), power window regulator switch assembly (for rear RH side) DOWN (Manual operation)	Below 1 V
P4-7 (DOWN) - P4-1 (GND)	Y - W-B	Power window motor DOWN input	Power switch on (IG), rear RH side power window fully closed	11 to 14 V
P4-7 (DOWN) - P4-1 (GND)	Y - W-B	Power window motor DOWN input	Power switch on (IG), rear RH side power window switch fully DOWN (AUTO DOWN position)	Below 1 V
P4-7 (DOWN) - P4-1 (GND)	Y - W-B	Power window motor DOWN input	Power switch on (IG), rear RH side power window switch fully open (DOWN)	11 to 14 V
P4-10 (UP) - P4-1 (GND)	V - W-B	Power window motor UP input	Power switch on (IG), power window regulator switch assembly (for rear RH side) OFF	11 to 14 V
P4-10 (UP) - P4-1 (GND)	V - W-B	Power window motor UP input	Power switch on (IG), power window regulator switch assembly (for rear RH side) UP (Manual operation)	Below 1 V
P4-10 (UP) - P4-1 (GND)	V - W-B	Power window motor UP input	Power switch on (IG), rear RH side power window fully open	11 to 14 V
P4-10 (UP) - P4-1 (GND)	V - W-B	Power window motor UP input	Power switch on (IG), rear RH side power window switch fully UP (AUTO UP position)	Below 1 V
P4-10 (UP) - P4-1 (GND)	V - W-B	Power window motor UP input	Power switch on (IG), rear RH side power window fully closed (UP)	11 to 14 V

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If the result is not as specified, the power window regulator motor assembly (for rear RH side) may have a malfunction.

9. CHECK INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY, MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)

(a) Disconnect the 2B and 2C junction block connectors.



(b) Disconnect the A main body ECU (multiplex network body ECU) connector.

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

HINT:

Measure the values on the wire harness side with the connectors disconnected.

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Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
2B-6 (GND1) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
2C-18 (BECU) - Body ground	Y - Body ground	Battery power supply	Power switch off	11 to 14 V
A-31 (ALTB) - Body ground	-	Battery power supply	Power switch off	11 to 14 V
A-32 (IG) - Body ground	-	IG power supply	Power switch off	Below 1 V
A-32 (IG) - Body ground	-	IG power supply	Power switch on (IG)	11 to 14 V

If the result is not as specified, there may be a malfunction in the wire harness or instrument panel junction block assembly.

(d) Reconnect the 2B and 2C junction block connectors.

(e) Reconnect the A main body ECU (multiplex network body ECU) connector.

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

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
2D-35 (FLCY) - Body ground	V - Body ground	Front door courtesy switch LH input	Front door LH open	Below 1 V
2D-35 (FLCY) - Body ground	V - Body ground	Front door courtesy switch LH input	Front door LH closed	11 to 14 V
2D-36 (FRCY) - Body ground	BR - Body ground	Front door courtesy switch RH input	Front door RH open	Below 1 V
2D-36 (FRCY) - Body ground	BR - Body ground	Front door courtesy switch RH input	Front door RH closed	11 to 14 V

If the result is not as specified, the main body ECU (multiplex network body ECU) or instrument panel junction block assembly may have a malfunction.

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DIAGNOSIS SYSTEM

1. DESCRIPTION

(a) The power window control system data can be read from the Data Link Connector 3 (DLC3) of the vehicle. When the system seems to be malfunctioning, use the Techstream to check for malfunctions and perform repairs.

2. CHECK DLC3

(a) Check the DLC3 INFO.

3. INSPECT BATTERY VOLTAGE

(a) Measure the battery voltage with the power switch off.

Standard Voltage:

11 to 14 V

If the voltage is below 11 V, recharge or replace the battery.

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DTC CHECK / CLEAR

1. CHECK DTC

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / (desired system) / Trouble Codes.

(e) Check the details of the DTC(s) INFO.

2. CLEAR DTC

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / (desired system) / Trouble Codes.

(e) Clear the DTCs.

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FAIL-SAFE CHART

1. POWER WINDOW OPERATION IN FAIL-SAFE MODE

HINT:

If the pulse sensor built into the power window regulator motor malfunctions, the power window control system enters fail-safe mode.

(a) The power window control system prohibits the following power window operations when the pulse sensor for the jam protection function has problems and the window position or the learned value is abnormal.

Multiplex Network Master Switch Assembly

Power Window Operation	Condition		
	Power switch on (IG)	Power switch off (Key-off operation permitted)	Power switch off (Key-off operation prohibited)
Manual up (Driver side door window)	X	X	-
Manual down (Driver side door window)	○	X	-
Auto up (Driver side door window) (hold switch at auto up position)	○*	X	-
Auto up (Driver side door window)	X	X	-
Auto down (Driver side door window)	X	X	-
Manual up (Remote switch operation)	X	X	-
Manual down (Remote switch operation)	X	X	-
Auto up (Remote switch operation) (hold switch at auto up position)	X	X	-
Auto up (Remote switch operation)	X	X	-
Auto down (Remote switch operation)	X	X	-

HINT:

- ○: Operates

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- X: Operation prohibited
- *: Operates in manual mode without jam protection

Power Window Regulator Switch Assembly (for Front Passenger, Rear LH and Rear RH Sides)

Power Window Operation	Condition		
	Power switch on (IG)	Power switch off (Key-off operation permitted)	Power switch off (Key-off operation prohibited)
Manual up	X	X	-
Manual down	○	X	-
Auto up (hold switch at auto up position)	○*	X	-
Auto up	X	X	-
Auto down	X	X	-

HINT:

- ○: Operates
- X: Operation prohibited
- *: Operates in manual mode without jam protection

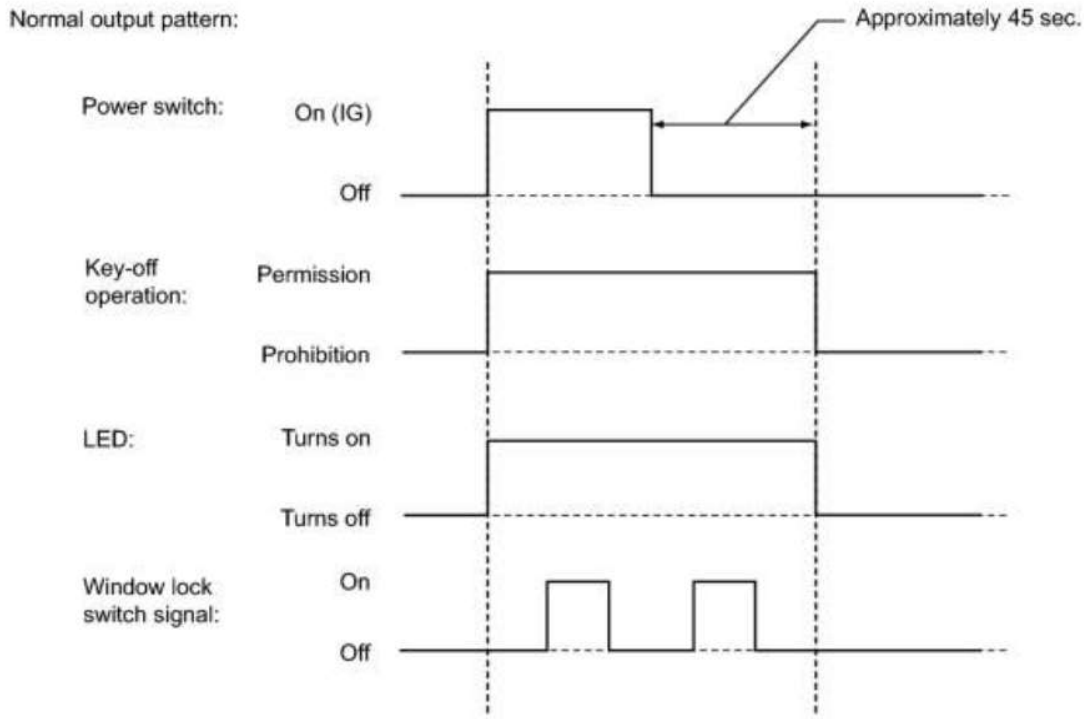
(1) Power window switch LED control

HINT:

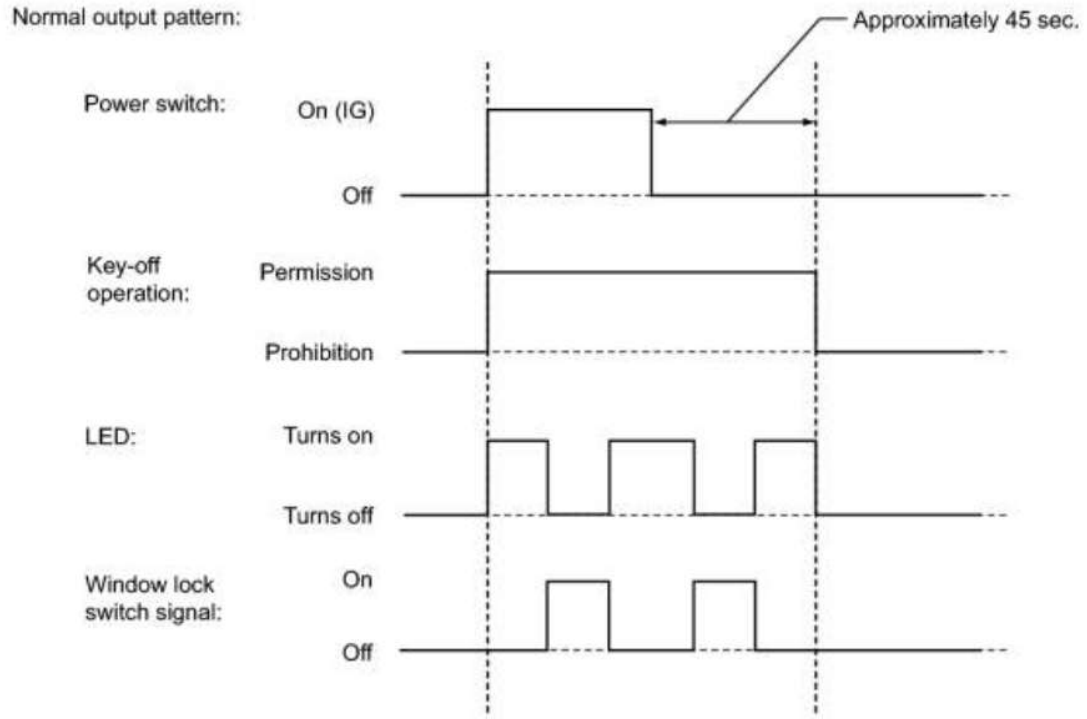
During normal operation (fail-safe is not operating), or during fail-safe mode when there is a pulse sensor malfunction or the window position or learned value is abnormal, the LED illuminates as shown in the illustration.

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1. For driver side:



2. For front passenger, rear LH and rear RH sides:



(2) Fail-safe deactivation condition

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- When the pulse sensor is normal, to deactivate fail-safe mode, pull up the power window switch to the auto up position and hold it for at least 1 second to fully close the window from the fully open position. As a result, the auto up and down function will return.

(b) Initialization failure

HINT:

During initialization of the power window regulator motor ECU, when the window position or initialization complete status cannot be properly read from the EEPROM, the power window control system prohibits the operations as follows:

Multiplex Network Master Switch Assembly

Power Window Operation	Condition		
	Power switch on (IG)	Power switch off (Key-off operation permitted)	Power switch off (Key-off operation prohibited)
Manual up (Driver side door window)	X	X	-
Manual down (Driver side door window)	○	X	-
Auto up (Driver side door window) (hold switch at auto up position)	○*	X	-
Auto up (Driver side door window)	X	X	-
Auto down (Driver side door window)	X	X	-
Manual up (Remote switch operation)	X	X	-
Manual down (Remote switch operation)	X	X	-
Auto up (Remote switch operation) (hold switch at auto up position)	X	X	-
Auto up (Remote switch operation)	X	X	-
Auto down (Remote switch operation)	X	X	-

HINT:

- ○: Operates

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- X: Operation prohibited
- *: Operates in manual mode without jam protection

Power Window Regulator Switch Assembly (for Front Passenger, Rear LH and Rear RH Sides)

Power Window Operation	Condition		
	Power switch on (IG)	Power switch off (Key-off operation permitted)	Power switch off (Key-off operation prohibited)
Manual up	X	X	-
Manual down	○	X	-
Auto up (hold switch at auto up position)	○*	X	-
Auto up	X	X	-
Auto down	X	X	-

HINT:

- ○: Operates
- X: Operation prohibited
- *: Operates in manual mode without jam protection

(1) Power window switch LED control

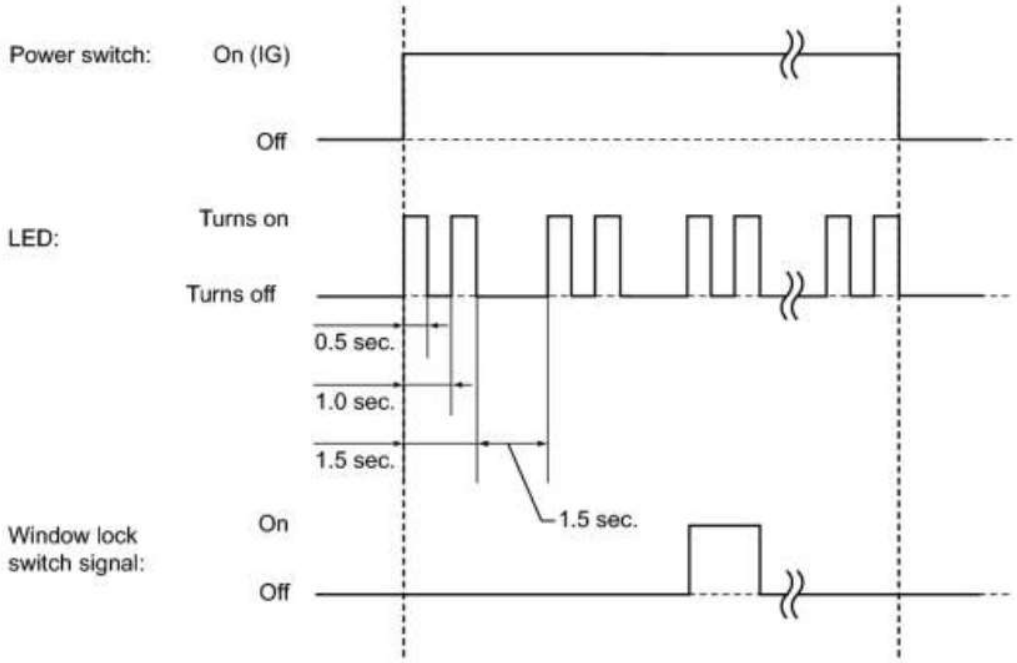
HINT:

During initialization of the power window regulator motor ECU, when the window position or initialization complete status cannot be properly read from the EEPROM during fail-safe mode, the LED illuminates as shown in the illustration.

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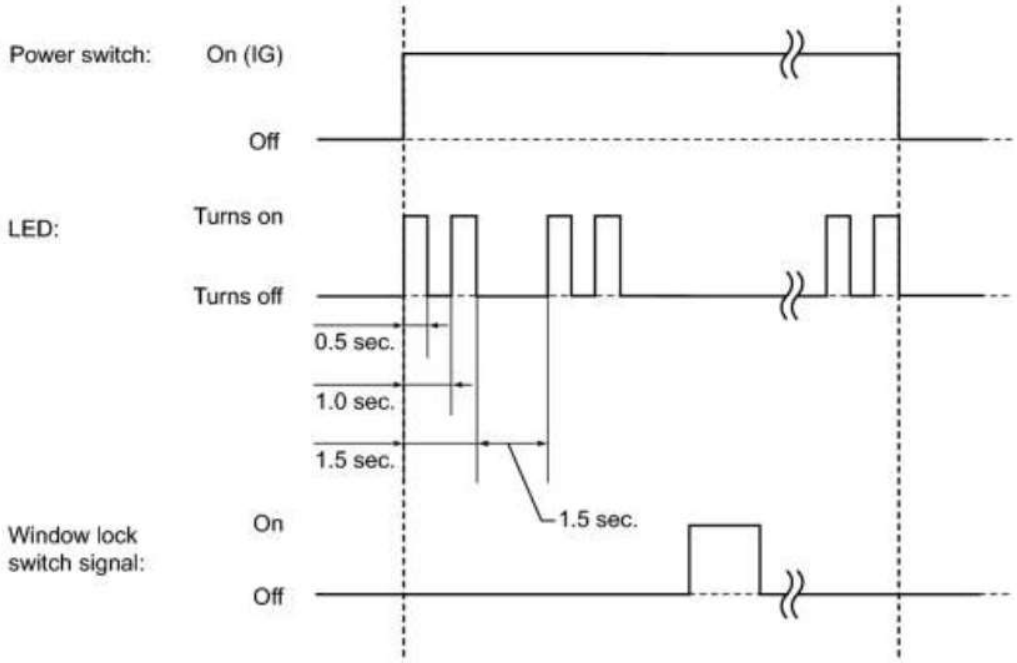
1. For driver side:

Initialization failure output pattern:



2. For front passenger, rear LH and rear RH sides:

Initialization failure output pattern:



(c) LIN communication failure

HINT:

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If the LIN communication line malfunctions (communication stop), the power window control system prohibits the operations as follows:

Multiplex Network Master Switch Assembly

Power Window Operation	Condition
	Power switch on (IG)
Manual up	○*
Manual down	○
Auto up (hold switch at auto up position)	X
Auto up	X
Auto down	X

HINT:

- ○: Operates
- X: Operation prohibited
- *: Jam protection can operate.
- Remote up and down function does not operate.

Power Window Regulator Switch Assembly (for Front Passenger, Rear LH and Rear RH Sides)

Power Window Operation	Condition
	Power switch on (IG)
Manual up	○*
Manual down	○
Auto up (hold switch at auto up position)	○*
Auto up	○*
Auto down	○

HINT:

- ○: Operates
- X: Operation prohibited
- *: Jam protection can operate.

(d) LIN communication failure and pulse sensor failure

HINT:

If the LIN communication line malfunctions (communication stop) and the pulse sensor for the jam protection function has problems, the power window control system prohibits the operations as follows:

Multiplex Network Master Switch Assembly

Power Window Operation	Condition
	Always
Manual up	X

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Power Window Operation	Condition
	Always
Manual down	X
Auto up (hold switch at auto up position)	X
Auto up	X
Auto down	X

HINT:

- ○: Operates
- X: Operation prohibited
- Driver door window: When the jam protection function does not operate due to a LIN communication failure, the manual up and auto up functions will not operate.
- Remote switch operation: Not operative during a LIN communication failure

Power Window Regulator Switch Assembly (for Front Passenger, Rear LH and Rear RH Sides)

Power Window Operation	Condition
	Always
Manual up	X
Manual down	X
Auto up (hold switch at auto up position)	X
Auto up	X
Auto down	X

HINT:

- ○: Operates
- X: Operation prohibited

(e) LIN communication failure and abnormal window position learned value or initialization failure

HINT:

If the LIN communication line malfunctions (communication stop) and the window position or the learned value is abnormal, the power window control system prohibits the operations as follows:

Multiplex Network Master Switch Assembly

Power Window Operation	Condition
	Always
Manual up	○*
Manual down	○
Auto up (hold switch at auto up position)	-
Auto up	-
Auto down	-

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HINT:

- ○: Operates
- *: Jam protection can operate and window reverses upon reaching the fully closed position.
- Remote switch operation: Operation is not possible during a LIN communication failure.

Power Window Regulator Switch Assembly (for Front Passenger, Rear LH and Rear RH Sides)

Power Window Operation	Condition
	Always
Manual up	○*
Manual down	○
Auto up (hold switch at auto up position)	○*
Auto up	X
Auto down	X

HINT:

- ○: Operates
- X: Operation prohibited
- *: Jam protection can operate and window reverses upon reaching the fully closed position.

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DATA LIST / ACTIVE TEST

1. READ 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 power switch on (IG).

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / (desired system) / Data List.

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

Master Switch (Multiplex Network Master Switch Assembly)

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Auto SW	Driver door power window auto switch signal / ON or OFF	ON: Driver door power window auto switch operated OFF: Driver door power window auto switch not operated	-
P Door P/W Auto SW	Front passenger side power window auto up and down switch signal / ON or OFF	ON: Front passenger door power window auto switch operated OFF: Front passenger door power window auto switch not operated	-
RR Door P/W Auto SW	Rear RH side power window auto up and down switch signal / ON or OFF	ON: Rear RH power window auto switch operated OFF: Rear RH power window auto switch not operated	-
RL Door P/W Auto SW	Rear LH side power window auto up and down switch signal / ON or OFF	ON: Rear LH power window auto switch operated OFF: Rear LH power window auto	-

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
		switch not operated	
P Door P/W Up SW	Front passenger side power window manual up switch signal / ON or OFF	ON: Front passenger door power window manual up switch operated OFF: Front passenger door power window manual up switch not operated	-
RR Door P/W up Switch	Rear RH side power window manual up switch signal / ON or OFF	ON: Rear RH power window manual up switch operated OFF: Rear RH power window manual up switch not operated	-
RL Door P/W up Switch	Rear LH side power window manual up switch signal / ON or OFF	ON: Rear LH power window manual up switch operated OFF: Rear LH power window manual up switch not operated	-
P Door P/W Down SW	Front passenger side power window manual down switch signal / ON or OFF	ON: Front passenger door power window manual down switch operated OFF: Front passenger door power window manual down switch not operated	-
RR Door P/W Down SW	Rear RH side power window manual down switch signal / ON or OFF	ON: Rear RH power window manual down switch operated OFF: Rear RH power window manual down switch not operated	-
RL Door P/W Down SW	Rear LH side power window manual down switch signal / ON or OFF	ON: Rear LH power window manual down switch operated OFF: Rear LH power window manual down switch not operated	-
Window Lock Switch Status	Window lock switch signal / ON or OFF	ON: Window lock switch LOCK position OFF: Window lock switch UNLOCK position	-
Number of Trouble Codes	Number of trouble codes / Min.: 0 or Max.: 255	Number of DTCs will be displayed	-

D-Door Motor (Power Window Regulator Motor Assembly (for Driver Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Auto SW	Driver door power window auto switch signal / ON or OFF	ON: Driver door power window auto switch operated OFF: Driver door power window auto switch not operated	-
D Door P/W Up SW	Driver door power window manual up switch signal / ON or OFF	ON: Driver door power window manual up switch operated OFF: Driver door power window manual up switch not operated	-
D Door P/W Down SW	Driver door power window manual down switch signal / ON or OFF	ON: Driver door power window manual down switch operated OFF: Driver door power window manual down switch not operated	-
Glass Position (Close - 1/4)	Margin for jam protection triggering force of window glass within range of fully closed to 1/4 open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected in the specified range	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.
Glass Position (1/4 - 2/4)	Margin for jam protection triggering force of window glass within range of 1/4 to 1/2 open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected in the specified range	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.
Glass Position (2/4 - 3/4)	Margin for jam protection triggering force of window glass within range of 1/2 to 3/4 open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected in the specified range	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.
Glass Position (3/4 - Open)	Margin for jam protection triggering force of window glass within range of 3/4 to fully open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected in the specified range	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.
Number of	Number of trouble codes / Min.: 0 or	Number of DTCs will	-

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Trouble Codes	Max.: 255	be displayed	

P-Door Motor (Power Window Regulator Motor Assembly (for Front Passenger Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
P Door P/W Auto SW	Front passenger side power window auto switch signal / ON or OFF	ON: Front passenger door power window auto switch operated OFF: Front passenger door power window auto switch not operated	-
P Door P/W Up SW	Front passenger side power window manual up switch signal / ON or OFF	ON: Front passenger door power window manual up switch operated OFF: Front passenger door power window manual up switch not operated	-
P Door P/W Down SW	Front passenger side power window manual down switch signal / ON or OFF	ON: Front passenger door power window manual down switch operated OFF: Front passenger door power window manual down switch not operated	-
Glass Position (Close - 1/4)	Margin for jam protection triggering force of window glass within range of fully closed to 1/4 open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected in the specified range	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.
Glass Position (1/4 - 2/4)	Margin for jam protection triggering force of window glass within range of 1/4 to 1/2 open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected in the specified range	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.
Glass Position (2/4 - 3/4)	Margin for jam protection triggering force of window glass within range of 1/2 to 3/4 open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
		in the specified range	
Glass Position (3/4 - Open)	Margin for jam protection triggering force of window glass within range of 3/4 to fully open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected in the specified range	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.
Number of Trouble Codes	Number of trouble codes / Min.: 0 or Max.: 255	Number of DTCs will be displayed	-

RL-Door Motor (Power Window Regulator Motor Assembly (for Rear LH Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RL Door P/W Auto SW	Rear LH side power window auto switch signal / ON or OFF	ON: Rear LH door power window auto switch operated OFF: Rear LH door power window auto switch not operated	-
RL Door P/W Up SW	Rear LH side power window manual up switch signal / ON or OFF	ON: Rear LH door power window manual up switch operated OFF: Rear LH door power window manual up switch not operated	-
RL Door P/W Down SW	Rear LH side power window manual down switch signal / ON or OFF	ON: Rear LH door power window manual down switch operated OFF: Rear LH door power window manual down switch not operated	-
Glass Position (Close - 1/4)	Margin for jam protection triggering force of window glass within range of fully closed to 1/4 open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected in the specified range	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.
Glass Position (1/4 - 2/4)	Margin for jam protection triggering force of window glass within range of 1/4 to 1/2 open window glass position /	OK: Normal manual up operation	Caution is displayed only while the power window ECU built into the power window regulator

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
	OK or Caution	Caution: Jam detected in the specified range	motor assembly detects a jam.
Glass Position (2/4 - 3/4)	Margin for jam protection triggering force of window glass within range of 1/2 to 3/4 open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected in the specified range	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.
Glass Position (3/4 - Open)	Margin for jam protection triggering force of window glass within range of 3/4 to fully open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected in the specified range	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.
Number of Trouble Codes	Number of trouble codes / Min.: 0 or Max.: 255	Number of DTCs will be displayed	-

RR-Door Motor (Power Window Regulator Motor Assembly (for Rear RH Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RR Door P/W Auto SW	Rear RH side power window auto switch signal / ON or OFF	ON: Rear RH door power window auto switch operated OFF: Rear RH door power window auto switch not operated	-
RR Door P/W Up SW	Rear RH side power window manual up switch signal / ON or OFF	ON: Rear RH door power window manual up switch operated OFF: Rear RH door power window manual up switch not operated	-
RR Door P/W Down SW	Rear RH side power window manual down switch signal / ON or OFF	ON: Rear RH door power window manual down switch operated OFF: Rear RH door power window manual down switch not operated	-
Glass Position	Margin for jam protection triggering force of window glass within range of	OK: Normal manual	Caution is displayed only while the power window ECU built into

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
(Close - 1/4)	fully closed to 1/4 open window glass position / OK or Caution	up operation Caution: Jam detected in the specified range	the power window regulator motor assembly detects a jam.
Glass Position (1/4 - 2/4)	Margin for jam protection triggering force of window glass within range of 1/4 to 1/2 open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected in the specified range	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.
Glass Position (2/4 - 3/4)	Margin for jam protection triggering force of window glass within range of 1/2 to 3/4 open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected in the specified range	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.
Glass Position (3/4 - Open)	Margin for jam protection triggering force of window glass within range of 3/4 to fully open window glass position / OK or Caution	OK: Normal manual up operation Caution: Jam detected in the specified range	Caution is displayed only while the power window ECU built into the power window regulator motor assembly detects a jam.
Number of Trouble Codes	Number of trouble codes / Min.: 0 or Max.: 255	Number of DTCs will be displayed	-

Main Body (Main Body ECU (Multiplex Network Body ECU))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
FR Door Courtesy SW	Front door courtesy switch RH signal / ON or OFF	ON: Front door RH open OFF: Front door RH closed	-
FL Door Courtesy SW	Front door courtesy switch LH signal / ON or OFF	ON: Front door LH open OFF: Front door LH closed	-
Communication D-Door Motor	Connection status between power window regulator motor (for driver side) and main body ECU (multiplex network body ECU) / OK or STOP	OK: Normal communication STOP: Communication stopped	-
Communication P-Door Motor	Connection status between power window regulator motor (for front passenger side) and main body ECU (multiplex network body ECU) / OK or STOP	OK: Normal communication	-

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
		STOP: Communication stopped	
Communication RR-Door Motor	Connection status between power window regulator motor (for rear RH) and main body ECU (multiplex network body ECU) / OK or STOP	OK: Normal communication STOP: Communication stopped	-
Communication RL-Door Motor	Connection status between power window regulator motor (for rear LH) and main body ECU (multiplex network body ECU) / OK or STOP	OK: Normal communication STOP: Communication stopped	-
Communication Master SW	Connection status between multiplex network master switch assembly and main body ECU (multiplex network body ECU) / OK or STOP	OK: Normal communication STOP: Communication stopped	-

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 power switch on (IG).

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / (desired system) / Active Test.

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

CAUTION:

Be careful to avoid injuries as this test causes vehicle parts to move. During the Active Test, the jam protection function will not operate.

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D-Door Motor (Power Window Regulator Motor Assembly (for Driver Side))

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Power window	OFF / UP / DOWN	-

P-Door Motor (Power Window Regulator Motor Assembly (for Front Passenger Side))

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Power window	OFF / UP / DOWN	-

RL-Door Motor (Power Window Regulator Motor Assembly (for Rear LH Side))

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Power window	OFF / UP / DOWN	-

RR-Door Motor (Power Window Regulator Motor Assembly (for Rear RH Side))

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Power window	OFF / UP / DOWN	-

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DIAGNOSTIC TROUBLE CODE CHART

Power Window Control System

DTC Code	Detection Item	Trouble Area	See page
B2311	Power Window Motor Malfunction	1. Battery disconnected when power switch on (IG) 2. Power window regulator motor assembly (for driver side) 3. Power window regulator motor assembly (for front passenger side) 4. Power window regulator motor assembly (for rear LH side) 5. Power window regulator motor assembly (for rear RH side) 6. Incorrect installation of power window components 7. Overheated power window regulator motor assembly	INFO
B2312	Power Window Switch Malfunction	1. Multiplex network master switch assembly 2. Power window regulator switch assembly (for front passenger side) 3. Power window regulator switch assembly (for rear LH side) 4. Power window regulator switch assembly (for rear RH side) 5. Power window regulator motor assembly (for driver side) 6. Power window regulator motor assembly (for front passenger side) 7. Power window regulator motor assembly (for rear LH side) 8. Power window regulator motor assembly (for rear RH side) 9. Wire harness or connector	INFO
B2313	Glass Position Initialization Incomplete	1. Power window regulator motor assembly (for driver side) not initialized 2. Power window regulator motor assembly (for front	

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DTC Code	Detection Item	Trouble Area	See page
		passenger side) not initialized 3. Power window regulator motor assembly (for rear LH side) not initialized 4. Power window regulator motor assembly (for rear RH side) not initialized 5. Power window regulator motor assembly (for driver side) 6. Power window regulator motor assembly (for front passenger side) 7. Power window regulator motor assembly (for rear LH side) 8. Power window regulator motor assembly (for rear RH side)	

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DTC	B2311	Power Window Motor Malfunction

DESCRIPTION

The power window regulator motor is operated by the multiplex network master switch assembly or power window regulator switch assembly. The power window regulator motor assembly has motor, regulator and ECU functions.

This DTC is output when the power window regulator motor assembly has a malfunction, or the ECU built into the regulator motor assembly determines that the fully closed window position has deviated approximately 20 mm (0.787 in.) or more from the normal position.

HINT:

DTC B2311 can be stored in each power window regulator motor assembly (power window ECU).

D-Door Motor (Power Window Regulator Motor Assembly (for Driver Side))

DTC No.	DTC Detection Condition	Trouble Area
B2311	• Either condition is met: a. Power window regulator motor assembly malfunctions b. When ECU in power window regulator motor assembly determines that fully closed window position has deviated approx. 20 mm (0.787 in.) or more from normal position	• Battery disconnected when power switch on (IG) • Power window regulator motor assembly (for driver side) • Incorrect installation of power window components • Overheated power window regulator motor assembly

P-Door Motor (Power Window Regulator Motor Assembly (for Front Passenger Side))

DTC No.	DTC Detection Condition	Trouble Area
B2311	• Either condition is met: a. Power window regulator motor assembly malfunctions b. When ECU in power window regulator motor assembly determines that fully closed window position has deviated approx. 20 mm (0.787 in.) or more from normal position	• Battery disconnected when power switch on (IG) • Power window regulator motor assembly (for front passenger side) • Incorrect installation of power window components • Overheated power window regulator motor assembly

RL-Door Motor (Power Window Regulator Motor Assembly (for Rear LH Side))

DTC No.	DTC Detection Condition	Trouble Area

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DTC No.	DTC Detection Condition	Trouble Area
B2311	• Either condition is met: a. Power window regulator motor assembly malfunctions b. When ECU in power window regulator motor assembly determines that fully closed window position has deviated approx. 20 mm (0.787 in.) or more from normal position	• Battery disconnected when power switch on (IG) • Power window regulator motor assembly (for rear LH side) • Incorrect installation of power window components • Overheated power window regulator motor assembly

RR-Door Motor (Power Window Regulator Motor Assembly (for Rear RH Side))

DTC No.	DTC Detection Condition	Trouble Area
B2311	• Either condition is met: a. Power window regulator motor assembly malfunctions b. When ECU in power window regulator motor assembly determines that fully closed window position has deviated approx. 20 mm (0.787 in.) or more from normal position	• Battery disconnected when power switch on (IG) • Power window regulator motor assembly (for rear RH side) • Incorrect installation of power window components • Overheated power window regulator motor assembly

INSPECTION PROCEDURE

NOTICE:

- When the power window regulator motor assembly is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operations at least 5 times:
  a. Close the power window by fully pulling up the multiplex network master switch assembly or power window regulator switch assembly and holding it in the auto up position.
  b. Open the power window by fully pushing down the switch.

PROCEDURE

1.	PERFORM ACTIVE TEST USING TECHSTREAM (APPLICABLE LOCATION)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

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(d) Enter the following menus: Body Electrical / (desired system) / Active Test.

HINT:

Perform the Active Test for the power window regulator motor assembly that has DTC B2311 stored in its ECU.

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

CAUTION:

Be careful to avoid injuries as this test causes vehicle parts to move. During the Active Test, the jam protection function will not operate.

D-Door Motor (Power Window Regulator Motor Assembly (for Driver Side))

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Power window	OFF / UP / DOWN	-

P-Door Motor (Power Window Regulator Motor Assembly (for Front Passenger Side))

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Power window	OFF / UP / DOWN	-

RL-Door Motor (Power Window Regulator Motor Assembly (for Rear LH Side))

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Power window	OFF / UP / DOWN	-

RR-Door Motor (Power Window Regulator Motor Assembly (for Rear RH Side))

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Power window	OFF / UP / DOWN	-

OK:

Each power window motor operates.

Result:

Result	Proceed to
OK	A
NG (Driver door power window)	B
NG (Front passenger side power window)	C
NG (Rear LH side power window)	D
NG (Rear RH side power window)	E

E ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH Side)

D ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH Side)

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C REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)

B REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)

A

2.	PERFORM INITIALIZATION (APPLICABLE LOCATION)

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

HINT:

Initialize the power window regulator motor assembly that has DTC B2311 stored in its ECU.

NEXT

3.	CHECK POWER WINDOW CONTROL SYSTEM (APPLICABLE LOCATION)

(a) Check that the power window operates normally by opening and closing the window INFO.

HINT:

Check the power window operation of the window where DTC B2311 has been stored.

OK:

Each power window operates normally.

Result:

Result	Proceed to
OK	A
NG (Driver door power window)	B
NG (Front passenger side power window)	C
NG (Rear LH side power window)	D
NG (Rear RH side power window)	E

E REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH Side)

D REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH Side)

C REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)

B REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)

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A

4.	CHECK WHETHER PARTS HAVE BEEN INSTALLED CORRECTLY

(a) Check that the power window components are installed correctly.

OK:

Power window components are installed correctly.

HINT:

When the power window components are installed correctly, the problem has occurred because the battery is disconnected while the power switch is on (IG), the power window components are installed improperly or the motor is overheated.

NG ▶ INSTALL PARTS CORRECTLY

OK ▶ **END**

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DTC	B2312	Power Window Switch Malfunction

DESCRIPTION

The power window regulator motor assembly is operated by the multiplex network master switch assembly or power window regulator switch assembly. The power window regulator motor assembly has motor, regulator and ECU functions.

This DTC is output when the ECU built into the regulator motor and master switch determines that the multiplex network master switch assembly or power window regulator switch assembly is stuck.

HINT:

DTC B2312 can be stored in the multiplex network master switch assembly and in each power window regulator motor assembly (power window ECU).

Master Switch (Multiplex Network Master Switch Assembly)

DTC No.	DTC Detection Condition	Trouble Area
B2312	• Multiplex network master switch assembly stuck • Multiplex network master switch assembly held in same position for more than 20 seconds	Multiplex network master switch assembly

D-Door Motor (Power Window Regulator Motor Assembly (for Driver Side))

DTC No.	DTC Detection Condition	Trouble Area
B2312	• Multiplex network master switch assembly stuck • Multiplex network master switch assembly held in same position for more than 20 seconds	• Multiplex network master switch assembly • Power window regulator motor assembly (for driver side) • Wire harness or connector

P-Door Motor (Power Window Regulator Motor Assembly (for Front Passenger Side))

DTC No.	DTC Detection Condition	Trouble Area
B2312	• Power window regulator switch assembly (for front passenger side) stuck • Power window regulator switch assembly (for front passenger side) held in same position for more than 20 seconds	• Power window regulator switch assembly (for front passenger side) • Power window regulator motor assembly (for front passenger side) • Wire harness or connector

RL-Door Motor (Power Window Regulator Motor Assembly (for Rear LH Side))

DTC No.	DTC Detection Condition	Trouble Area

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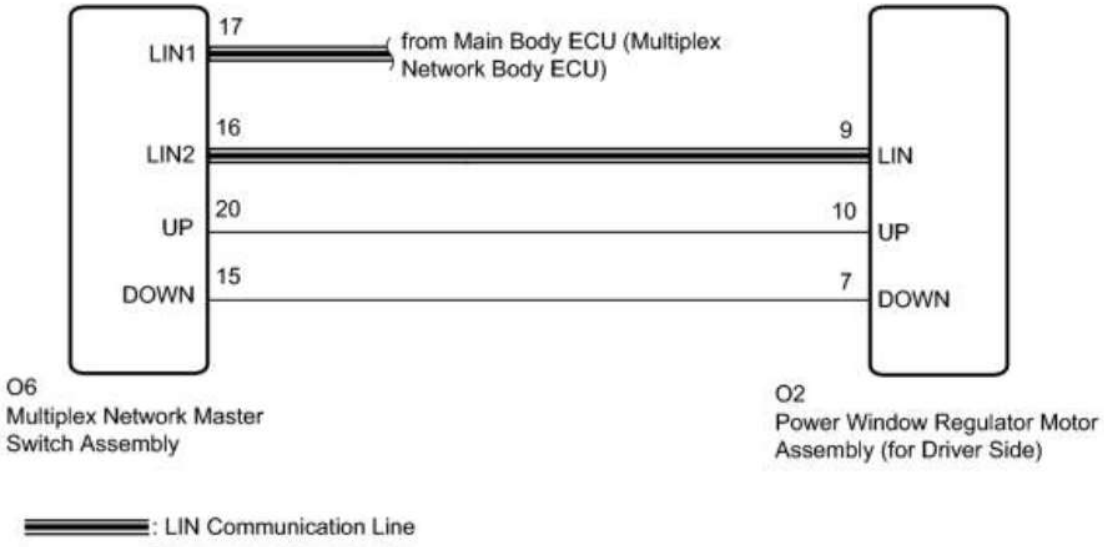
DTC No.	DTC Detection Condition	Trouble Area
B2312	• Power window regulator switch assembly (for rear LH side) stuck • Power window regulator switch assembly (for rear LH side) held in same position for more than 20 seconds	• Power window regulator switch assembly (for rear LH side) • Power window regulator motor assembly (for rear LH side) • Wire harness or connector

RR-Door Motor (Power Window Regulator Motor Assembly (for Rear RH Side))

DTC No.	DTC Detection Condition	Trouble Area
B2312	• Power window regulator switch assembly (for rear RH side) stuck • Power window regulator switch assembly (for rear RH side) held in same position for more than 20 seconds	• Power window regulator switch assembly (for rear RH side) • Power window regulator motor assembly (for rear RH side) • Wire harness or connector

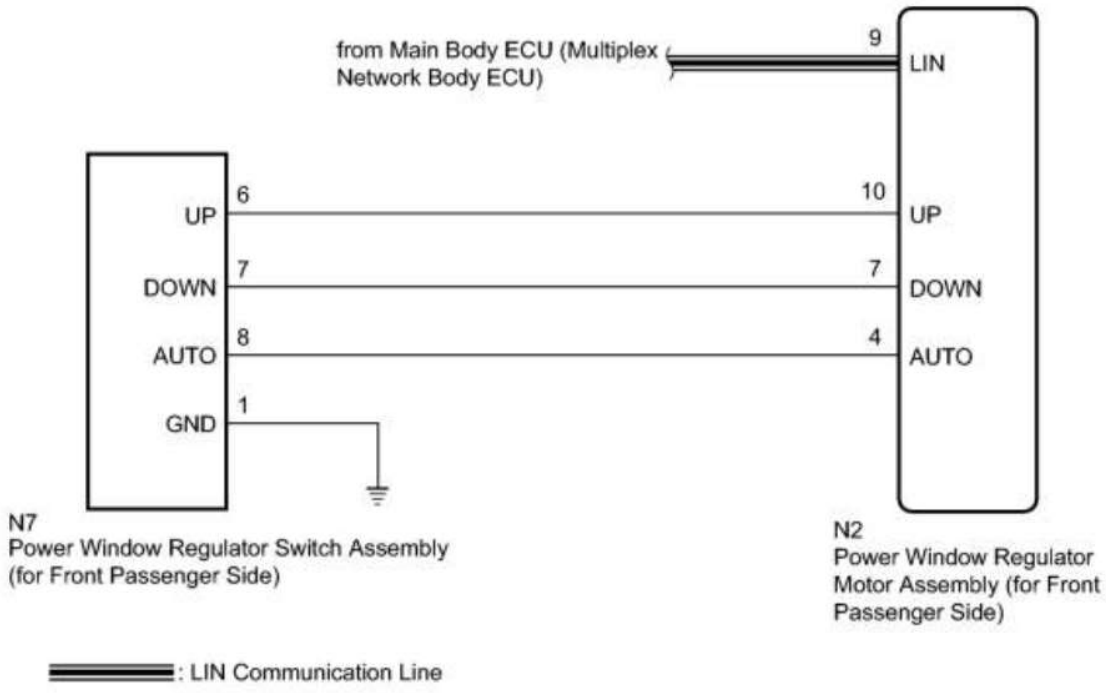
WIRING DIAGRAM

1. for Driver Side



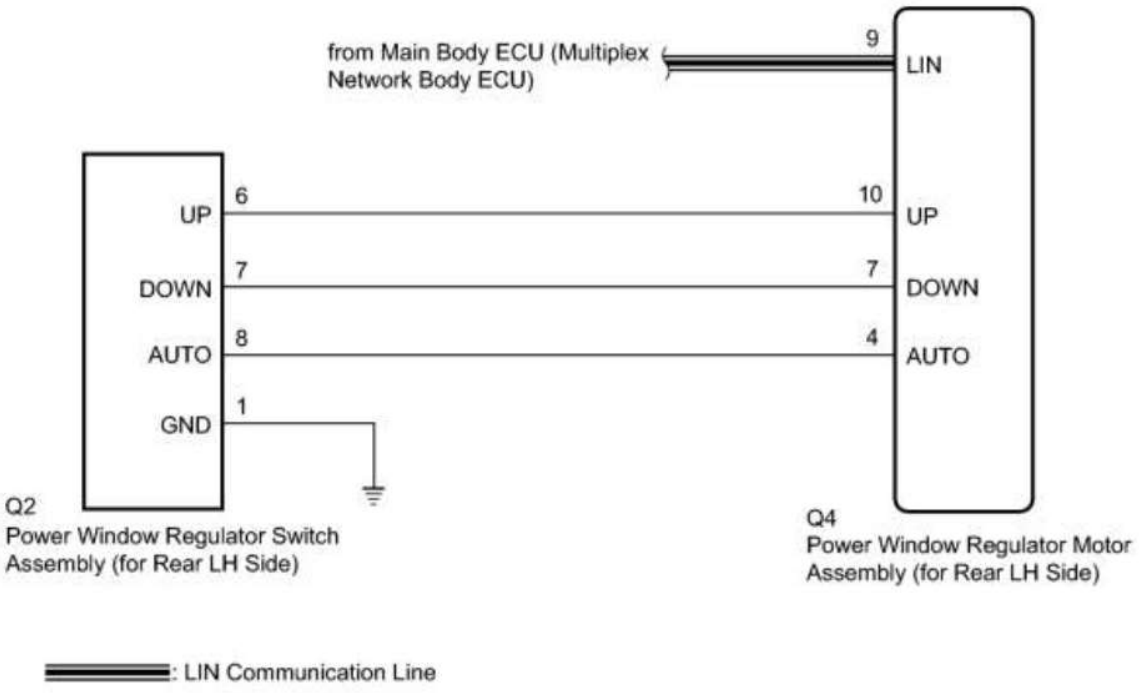
2. for Front Passenger Side

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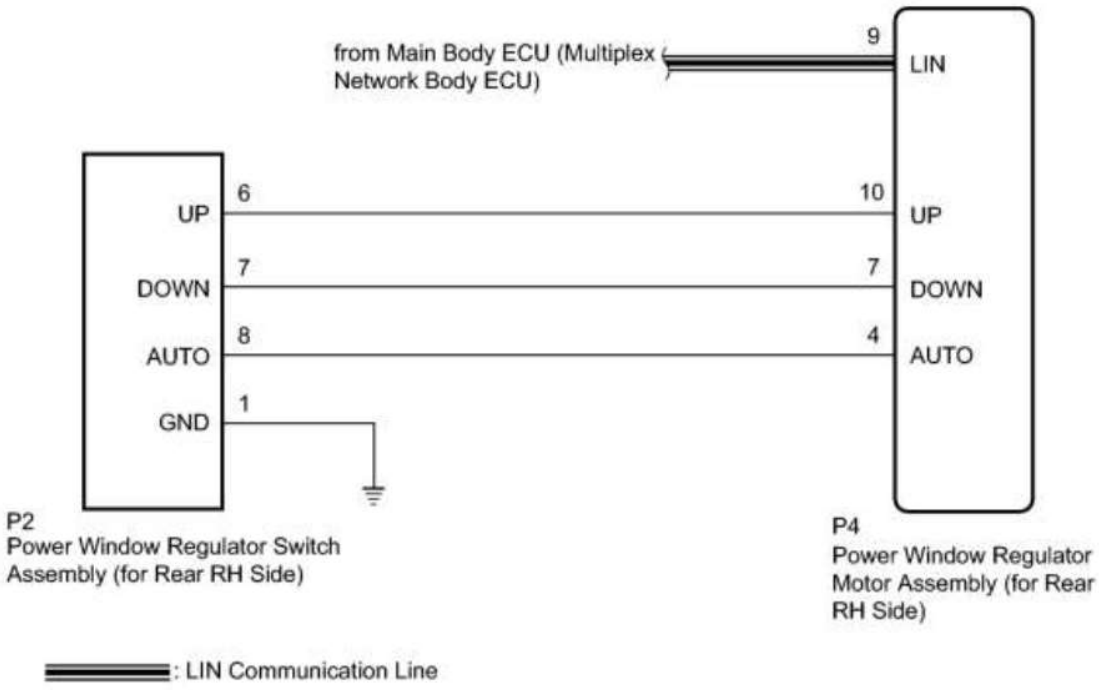
3. for Rear LH Side

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4. for Rear RH Side

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INSPECTION PROCEDURE

NOTICE:

- If DTC B2312 is not output again after the DTC has been cleared, the DTC was output due to the switch being held.
- When the power window regulator motor assembly is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operations at least 5 times:
    a. Close the power window by fully pulling up the multiplex network master switch assembly or power window regulator switch assembly and holding it at the auto up position.
    b. Open the power window by fully pushing down the switch.

PROCEDURE

1.	CHECK FOR DTC

(a) Clear the DTC INFO.

(b) Check for DTCs INFO.

OK:

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DTC B2312 is not output.

NG ▶ CHECK DTC OUTPUT

OK ▶ **END (DUE TO SWITCH BEING OPERATED FOR 20 SECONDS OR MORE)**

2.	CHECK DTC OUTPUT

(a) Check the parts which the DTCs have been output from.

Result:

Result	Proceed to
DTC output from multiplex network master switch assembly	A
DTC output from power window regulator motor assembly (for driver side)	B
DTC output from power window regulator motor assembly (for front passenger side)	C
DTC output from power window regulator motor assembly (for rear LH side)	D
DTC output from power window regulator motor assembly (for rear RH side)	E

E ▶ READ VALUE USING TECHSTREAM (RR-Door Motor)

D ▶ READ VALUE USING TECHSTREAM (RL-Door Motor)

C ▶ READ VALUE USING TECHSTREAM (P-Door Motor)

B ▶ READ VALUE USING TECHSTREAM (D-Door Motor)

A ▶ **REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY**

3.	READ VALUE USING TECHSTREAM (D-Door Motor)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / D-Door Motor / Data List.

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

D-Door Motor (Power Window Regulator Motor Assembly (for Driver Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Up SW	Driver door power window manual up switch signal / ON or OFF	ON: Driver door power window manual up switch operated OFF: Driver door power window manual up switch not operated	-

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Down SW	Driver door power window manual down switch signal / ON or OFF	ON: Driver door power window manual down switch operated OFF: Driver door power window manual down switch not operated	-

OK:

On the Techstream screen, ON or OFF is displayed accordingly.

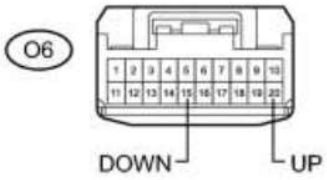
NG ▶ CHECK HARNESS AND CONNECTOR (MASTER SWITCH - DRIVER SIDE MOTOR)

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)**

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

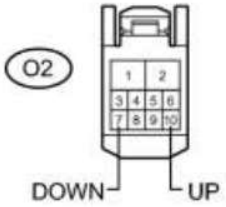
(a) Disconnect the multiplex network master switch assembly connector.

*1



*2

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



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

Standard Resistance:

Tester Connection	Condition	Specified Condition
O6-20 (UP) - Body ground	Always	10 kΩ or higher
O6-15 (DOWN) - Body ground	Always	10 kΩ or higher
O2-10 (UP) - Body ground	Always	10 kΩ or higher

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Tester Connection	Condition	Specified Condition
O2-7 (DOWN) - Body ground	Always	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Multiplex Network Master Switch Assembly)
*2	Front view of wire harness connector (to Power Window Regulator Motor Assembly (for Driver Side))

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)**

5.	READ VALUE USING TECHSTREAM (P-Door Motor)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / P-Door Motor / Data List.

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

P-Door Motor (Power Window Regulator Motor Assembly (for Front Passenger Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
P Door P/W Auto SW	Front passenger side power window auto up and down switch signal / ON or OFF	ON: Front passenger side door power window auto switch operated OFF: Front passenger side door power window auto switch not operated	-
P Door P/W Up SW	Front passenger side power window manual up switch signal / ON or OFF	ON: Front passenger side door power window manual up switch operated OFF: Front passenger side door power window manual up switch not operated	-
P Door P/W Down SW	Front passenger side power window manual down switch signal / ON or OFF	ON: Front passenger side door power window manual down switch operated OFF: Front passenger side door power window manual down switch not operated	-

OK:

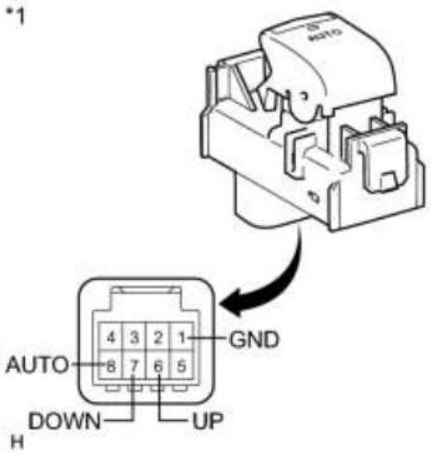
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On the Techstream screen, ON or OFF is displayed accordingly.

NG INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Front Passenger Side)

OK **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)**

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



(a) Remove the power window regulator switch assembly (for front passenger side) INFO.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6 (UP) - 1 (GND)	Auto up or up position	Below 1 Ω
7 (DOWN) - 1 (GND)	Auto down or down position	Below 1 Ω
8 (AUTO) - 1 (GND)	Auto up or auto down position	Below 1 Ω
6 (UP) - 1 (GND)	Free	10 kΩ or higher
7 (DOWN) - 1 (GND)	Free	10 kΩ or higher
8 (AUTO) - 1 (GND)	Free	10 kΩ or higher

Text in Illustration

*1	Component without harness connected (Power Window Regulator Switch Assembly (for Front Passenger Side))

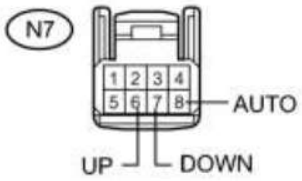
NG REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Front Passenger Side)

OK

7.	CHECK HARNESS AND CONNECTOR (FRONT PASSENGER SIDE SWITCH - FRONT PASSENGER SIDE MOTOR)

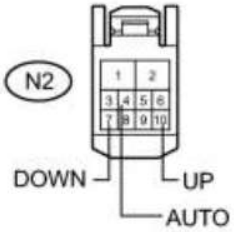
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*1



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

*2



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

Standard Resistance:

Tester Connection	Condition	Specified Condition
N7-6 (UP) - Body ground	Always	10 kΩ or higher
N7-7 (DOWN) - Body ground	Always	10 kΩ or higher
N7-8 (AUTO) - Body ground	Always	10 kΩ or higher
N2-10 (UP) - Body ground	Always	10 kΩ or higher
N2-7 (DOWN) - Body ground	Always	10 kΩ or higher
N2-4 (AUTO) - Body ground	Always	10 kΩ or higher

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Text in Illustration

*1	Front view of wire harness connector (to Power Window Regulator Switch Assembly (for Front Passenger Side))
*2	Front view of wire harness connector (to Power Window Regulator Motor Assembly (for Front Passenger Side))

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)**

8.	READ VALUE USING TECHSTREAM (RL-Door Motor)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / RL-Door Motor / Data List.

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

RL-Door Motor (Power Window Regulator Motor Assembly (for Rear LH Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RL Door P/W Auto SW	Rear LH side power window auto up and down switch signal / ON or OFF	ON: Rear LH door power window auto switch operated OFF: Rear LH door power window auto switch not operated	-
RL Door P/W Up SW	Rear LH side power window manual up switch signal / ON or OFF	ON: Rear LH door power window manual up switch operated OFF: Rear LH door power window manual up switch not operated	-
RL Door P/W Down SW	Rear LH side power window manual down switch signal / ON or OFF	ON: Rear LH door power window manual down switch operated OFF: Rear LH door power window manual down switch not operated	-

OK:

On the Techstream screen, ON or OFF is displayed accordingly.

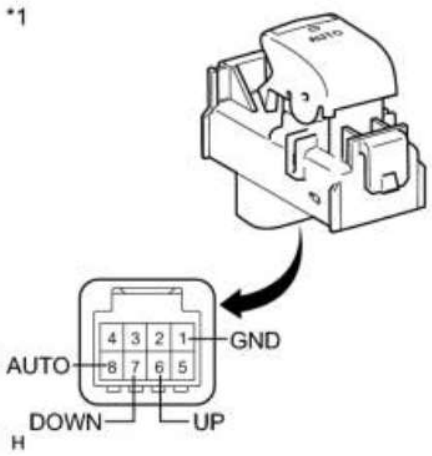
NG ▶ INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear LH Side)

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH side)**

9.	INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear LH Side)

(a) Remove the power window regulator switch assembly (for rear LH side) INFO.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6 (UP) - 1 (GND)	Auto up or up position	Below 1 Ω
7 (DOWN) - 1 (GND)	Auto down or down position	Below 1 Ω
8 (AUTO) - 1 (GND)	Auto up or auto down position	Below 1 Ω
6 (UP) - 1 (GND)	Free	10 kΩ or higher
7 (DOWN) - 1 (GND)	Free	10 kΩ or higher
8 (AUTO) - 1 (GND)	Free	10 kΩ or higher

Text in Illustration

*1	Component without harness connected (Power Window Regulator Switch Assembly (for Rear LH Side))

NG ▶ REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear LH side)

OK

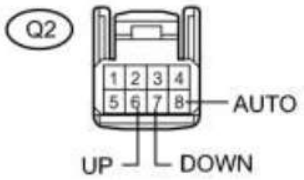
▼

10.	CHECK HARNESS AND CONNECTOR (REAR LH SWITCH - REAR LH MOTOR)

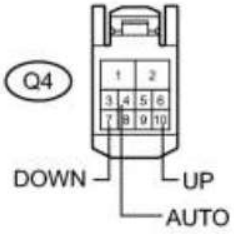
(a) Disconnect the power window regulator motor assembly (for rear LH side) connector.

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*1



*2



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

Standard Resistance:

Tester Connection	Condition	Specified Condition
Q2-6 (UP) - Body ground	Always	10 kΩ or higher
Q2-7 (DOWN) - Body ground	Always	10 kΩ or higher
Q2-8 (AUTO) - Body ground	Always	10 kΩ or higher
Q4-10 (UP) - Body ground	Always	10 kΩ or higher
Q4-7 (DOWN) - Body ground	Always	10 kΩ or higher
Q4-4 (AUTO) - Body ground	Always	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Power Window Regulator Switch Assembly (for Rear LH Side))
*2	Front view of wire harness connector (to Power Window Regulator Motor Assembly (for Rear LH Side))

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH side)**

11.	READ VALUE USING TECHSTREAM (RR-Door Motor)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

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(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / RR-Door Motor / Data List.

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

RR-Door Motor (Power Window Regulator Motor Assembly (for Rear RH Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RR Door P/W Auto SW	Rear RH side power window auto up and down switch signal / ON or OFF	ON: Rear RH door power window auto switch operated OFF: Rear RH door power window auto switch not operated	-
RR Door P/W Up SW	Rear RH side power window manual up switch signal / ON or OFF	ON: Rear RH door power window manual up switch operated OFF: Rear RH door power window manual up switch not operated	-
RR Door P/W Down SW	Rear RH side power window manual down switch signal / ON or OFF	ON: Rear RH door power window manual down switch operated OFF: Rear RH door power window manual down switch not operated	-

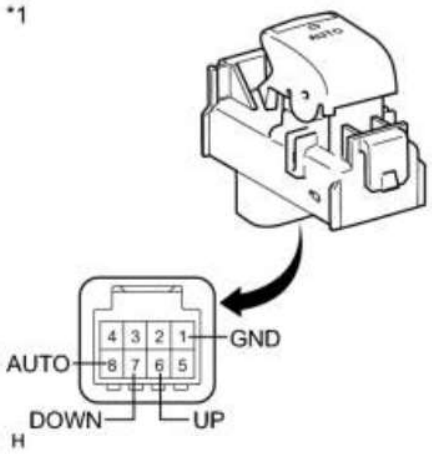
OK:

On the Techstream screen, ON or OFF is displayed accordingly.

NG ▶ INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear RH Side)

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH side)**

12.	INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear RH Side)



(a) Remove the power window regulator switch assembly (for rear RH side) INFO.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6 (UP) - 1 (GND)	Auto up or up position	Below 1 Ω
7 (DOWN) - 1 (GND)	Auto down or down position	Below 1 Ω
8 (AUTO) - 1 (GND)	Auto up or auto down position	Below 1 Ω
6 (UP) - 1 (GND)	Free	10 kΩ or higher
7 (DOWN) - 1 (GND)	Free	10 kΩ or higher
8 (AUTO) - 1 (GND)	Free	10 kΩ or higher

Text in Illustration

*1	Component without harness connected (Power Window Regulator Switch Assembly (for Rear RH Side))

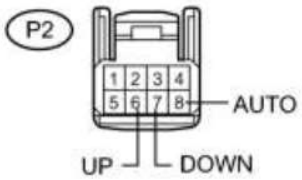
NG ▶ REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear RH side)

OK

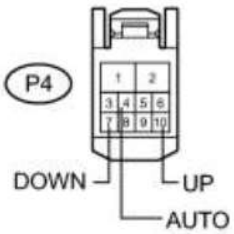
▼

13.	CHECK HARNESS AND CONNECTOR (REAR RH SWITCH - REAR RH MOTOR)

*1



*2



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

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

Standard Resistance:

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Tester Connection	Condition	Specified Condition
P2-6 (UP) - Body ground	Always	10 kΩ or higher
P2-7 (DOWN) - Body ground	Always	10 kΩ or higher
P2-8 (AUTO) - Body ground	Always	10 kΩ or higher
P4-10 (UP) - Body ground	Always	10 kΩ or higher
P4-7 (DOWN) - Body ground	Always	10 kΩ or higher
P4-4 (AUTO) - Body ground	Always	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Power Window Regulator Switch Assembly (for Rear RH Side))
*2	Front view of wire harness connector (to Power Window Regulator Motor Assembly (for Rear RH Side))

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH side)**

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DTC	B2313	Glass Position Initialization Incomplete

DESCRIPTION

The power window regulator motor assembly is operated by the multiplex network master switch or power window regulator switch assembly. The power window regulator motor assembly has motor, regulator and ECU functions.

When the ECU determines that the power window regulator motor assembly has not been initialized, DTC B2313 is set.

HINT:

DTC B2313 can be stored in each power window regulator motor assembly (power window ECU).

D-Door Motor (Power Window Regulator Motor Assembly (for Driver Side))

DTC No.	DTC Detection Condition	Trouble Area
B2313	• Power window regulator motor assembly not initialized • Power window regulator motor assembly malfunctions	• Power window regulator motor assembly (for driver side) not initialized • Power window regulator motor assembly (for driver side)

P-Door Motor (Power Window Regulator Motor Assembly (for Front Passenger Side))

DTC No.	DTC Detection Condition	Trouble Area
B2313	• Power window regulator motor assembly not initialized • Power window regulator motor assembly malfunctions	• Power window regulator motor assembly (for front passenger side) not initialized • Power window regulator motor assembly (for front passenger side)

RL-Door Motor (Power Window Regulator Motor Assembly (for Rear LH Side))

DTC No.	DTC Detection Condition	Trouble Area
B2313	• Power window regulator motor assembly not initialized • Power window regulator motor assembly malfunctions	• Power window regulator motor assembly (for rear LH side) not initialized • Power window regulator motor assembly (for rear LH side)

RR-Door Motor (Power Window Regulator Motor Assembly (for Rear RH Side))

DTC No.	DTC Detection Condition	Trouble Area
B2313	• Power window regulator motor assembly not initialized	• Power window regulator motor assembly (for rear RH side) not initialized

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DTC No.	DTC Detection Condition	Trouble Area
	• Power window regulator motor assembly malfunctions	• Power window regulator motor assembly (for rear RH side)

INSPECTION PROCEDURE

NOTICE:

- When the power window regulator motor assembly is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operations at least 5 times:
  a. Close the power window by fully pulling up the multiplex network master switch or power window regulator switch assembly and holding it at the auto up position.
  b. Open the power window by fully pushing down the switch.

PROCEDURE

1.	PERFORM INITIALIZATION (APPLICABLE LOCATION)

(a) Turn the power switch on (IG).

(b) Initialize the power window regulator motor assembly INFO.

HINT:

Initialize the power window regulator motor assembly that has DTC B2313 stored in its ECU.

NEXT

▼

2.	CHECK DTC OUTPUT

(a) Turn the power switch off.

(b) Wait for at least 10 seconds, and then turn the power switch on (IG).

(c) Check for DTCs INFO.

HINT:

Check for DTCs for the power window regulator motor assembly that has DTC B2313 stored in its ECU.

OK:

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DTC B2313 is not output.

Result:

Result	Proceed to
OK	A
NG (Driver door power window)	B
NG (Front passenger side power window)	C
NG (Rear LH side power window)	D
NG (Rear RH side power window)	E

E ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH Side)

D ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH Side)

C ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)

B ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)

A ▶ **END (POWER WINDOW CONTROL SYSTEM HAS NOT BEEN INITIALIZED)**

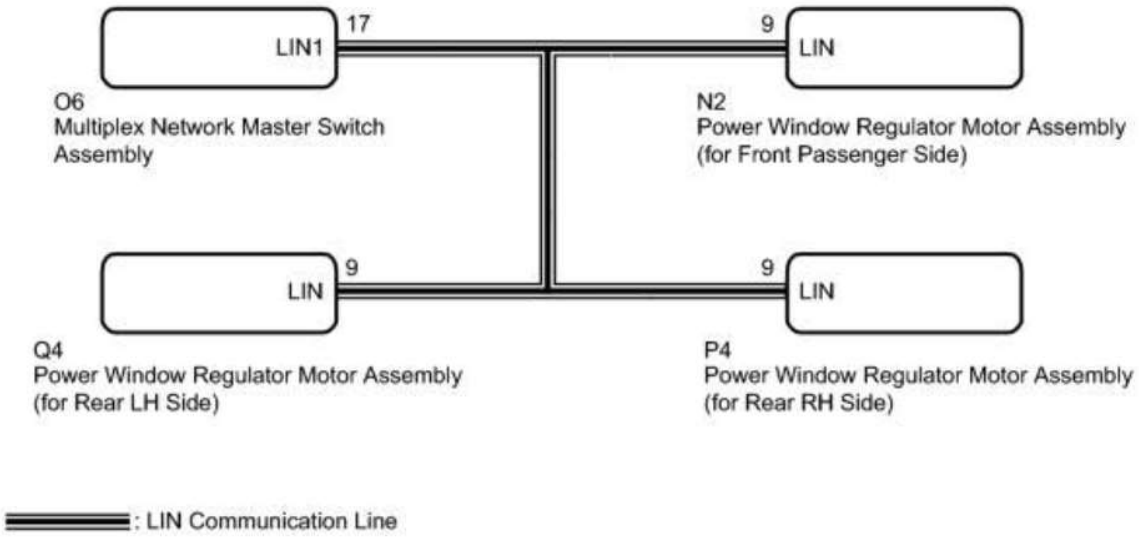
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Remote Up / Down Function does not Operate

DESCRIPTION

When the power switch is on (IG), the multiplex network master switch assembly sends remote up and down signals to each power window regulator motor assembly via the LIN communication line.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

The power window control system uses a multiplex communication system (LIN communication system). Inspect the communication function by following How to Proceed with Troubleshooting INFO. Troubleshoot the power window control system after confirming that the communication system is functioning properly.

PROCEDURE

1.	READ VALUE USING TECHSTREAM (Main Body)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

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

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

Main Body (Main Body ECU (Multiplex Network Body ECU))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Communication P-Door Motor	Connection status between power window regulator motor (for front passenger side) and main body ECU (multiplex network body ECU) / OK or STOP	OK: Normal communication STOP: Communication stopped	-
Communication RL-Door Motor	Connection status between power window regulator motor (for rear LH) and main body ECU (multiplex network body ECU) / OK or STOP	OK: Normal communication STOP: Communication stopped	-
Communication RR-Door Motor	Connection status between power window regulator motor (for rear RH) and main body ECU (multiplex network body ECU) / OK or STOP	OK: Normal communication STOP: Communication stopped	-
Communication Master SW	Connection status between multiplex network master switch assembly and main body ECU (multiplex network body ECU) / OK or STOP	OK: Normal communication STOP: Communication stopped	-

OK:

On the Techstream screen, OK is displayed.

NG ▶ GO TO LIN COMMUNICATION SYSTEM (Proceed to How to Proceed with Troubleshooting)

OK

▼

2.	READ VALUE USING TECHSTREAM (Master Switch)

(a) Enter the following menus: Body Electrical / Master Switch / Data List.

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

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Master Switch (Multiplex Network Master Switch Assembly)

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
P Door P/W Auto SW	Front passenger side power window auto up and down switch signal / ON or OFF	ON: Front passenger door power window auto switch operated OFF: Front passenger door power window auto switch not operated	-
RL Door P/W Auto SW	Rear LH side power window auto up and down switch signal / ON or OFF	ON: Rear LH power window auto switch operated OFF: Rear LH power window auto switch not operated	-
RR Door P/W Auto SW	Rear RH side power window auto up and down switch signal / ON or OFF	ON: Rear RH power window auto switch operated OFF: Rear RH power window auto switch not operated	-
P Door P/W Up SW	Front passenger side power window manual up switch signal / ON or OFF	ON: Front passenger door power window manual up switch operated OFF: Front passenger door power window manual up switch not operated	-
RL Door P/W up Switch	Rear LH side power window manual up switch signal / ON or OFF	ON: Rear LH power window manual up switch operated OFF: Rear LH power window manual up switch not operated	-
RR Door P/W up Switch	Rear RH side power window manual up switch signal / ON or OFF	ON: Rear RH power window manual up switch operated OFF: Rear RH power window manual up switch not operated	-
P Door P/W Down SW	Front passenger side power window manual down switch signal / ON or OFF	ON: Front passenger door power window manual down switch operated OFF: Front passenger door power window manual down switch not operated	-
RL Door P/W Down SW	Rear LH side power window manual down switch signal / ON or OFF	ON: Rear LH power window manual down switch operated OFF: Rear LH power window manual down switch not operated	-
RR Door P/W	Rear RH side power window manual	ON: Rear RH power window manual	-

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Down SW	down switch signal / ON or OFF	down switch operated OFF: Rear RH power window manual down switch not operated	
Window Lock Switch Status	Window lock switch signal / ON or OFF	ON: Window lock switch LOCK position OFF: Window lock switch UNLOCK position	-

OK:

On the Techstream screen, ON or OFF is displayed accordingly.

Result:

Result	Proceed to
NG	A
OK (Front passenger side power window remote up and down function does not operate)	B
OK (Rear LH side power window remote up and down function does not operate)	C
OK (Rear RH side power window remote up and down function does not operate)	D

D ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH Side)

C ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH Side)

B ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)

A ▶ **REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY**

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

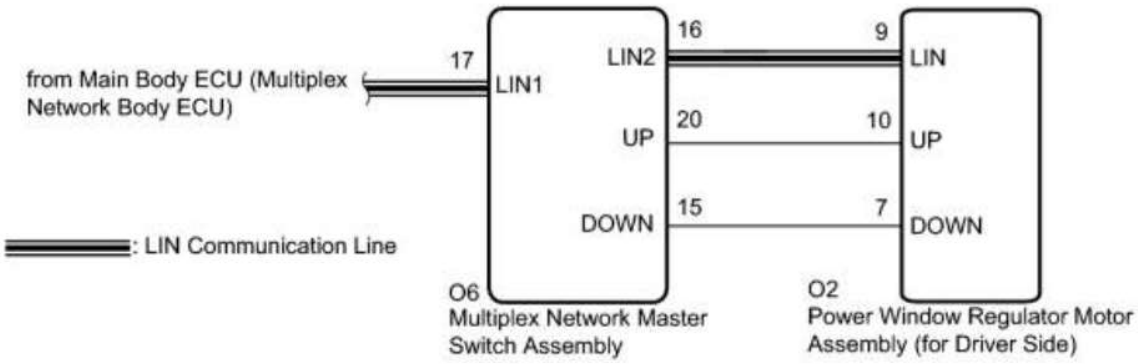
DESCRIPTION

When the hybrid vehicle control system is running or the power switch is on (IG), the power window regulator motor assembly (for driver side) is operated by the multiplex network master switch assembly. The power window regulator motor assembly (for driver side) has motor, regulator and ECU functions.

HINT:

If the pulse sensor built into the power window regulator motor assembly (for driver side) malfunctions, the power window control system enters fail-safe mode. The remote up and down and auto up and down functions cannot be operated during fail-safe mode. However, the power window can be closed by holding the multiplex network master switch assembly at the auto up position, and opened manually by pushing down the multiplex network master switch assembly.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- The power window control system uses a multiplex communication system (LIN communication system). Inspect the communication function by following How to Proceed with Troubleshooting INFO. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (for driver side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operations at least 5 times:
    a. Close the power window by fully pulling up the multiplex network master switch assembly and holding it at the auto up position.
    b. Open the power window by fully pushing down the multiplex network master switch assembly.

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- When the ECU determines that the power window regulator motor assembly (for driver side) has a malfunction, DTC B2311 is set.

PROCEDURE

1.	READ VALUE USING TECHSTREAM (Main Body)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

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

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

Main Body (Main Body ECU (Multiplex Network Body ECU))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Communication D-Door Motor	Connection status between power window regulator motor (for driver side) and main body ECU (multiplex network body ECU) / OK or STOP	OK: Normal communication STOP: Communication stopped	-

OK:

On the Techstream screen, OK is displayed.

NG ▶ GO TO LIN COMMUNICATION SYSTEM (Proceed to How to Proceed with Troubleshooting)

OK

▼

2.	READ VALUE USING TECHSTREAM (D-Door Motor)

(a) Enter the following menus: Body Electrical / D-Door Motor / Data List.

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

D-Door Motor (Power Window Regulator Motor Assembly (for Driver Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Up SW	Driver door power window manual up switch signal / ON or OFF	ON: Driver door power window	-

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
		manual up switch operated OFF: Driver door power window manual up switch not operated	
D Door P/W Down SW	Driver door power window manual down switch signal / ON or OFF	ON: Driver door power window manual down switch operated OFF: Driver door power window manual down switch not operated	-

OK:

On the Techstream screen, ON or OFF is displayed accordingly.

NG ▶ CHECK HARNESS AND CONNECTOR (MASTER SWITCH - DRIVER SIDE MOTOR)

OK

▼

3.	PERFORM ACTIVE TEST USING TECHSTREAM (D-Door Motor)

(a) Enter the following menus: Body Electrical / D-Door Motor / Active Test.

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

D-Door Motor (Power Window Regulator Motor Assembly (for Driver Side))

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Power window	OFF / UP / DOWN	-

OK:

Driver door power window operates normally.

CAUTION:

Be careful to avoid injuries as this test causes vehicle parts to move. During the Active Test, the jam protection function will not operate.

NG ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)

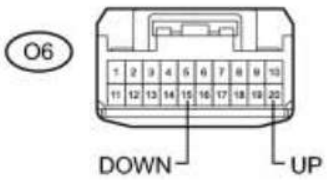
OK ▶ **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)**

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

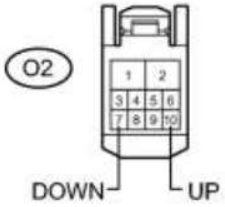
(a) Disconnect the multiplex network master switch assembly connector.

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*1



*2



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

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
O6-20 (UP) - O2-10 (UP)	Always	Below 1 Ω
O6-15 (DOWN) - O2-7 (DOWN)	Always	Below 1 Ω
O6-20 (UP) - Body ground	Always	10 kΩ or higher
O6-15 (DOWN) - Body ground	Always	10 kΩ or higher
O2-10 (UP) - Body ground	Always	10 kΩ or higher
O2-7 (DOWN) - Body ground	Always	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Multiplex Network Master Switch Assembly)
*2	Front view of wire harness connector (to Power Window Regulator Motor Assembly (for Driver Side))

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

▼

5.	REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

(a) Replace the multiplex network master switch assembly INFO.

NEXT

▼

6.	CHECK MANUAL UP / DOWN FUNCTION (for Driver Side)

(a) Check that the driver side door power window moves when the manual up and down function of the multiplex network master switch assembly is operated INFO.

OK:

Driver side manual up and down function is normal.

NG ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)

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OK ▶ **END (MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY WAS DEFECTIVE)**

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

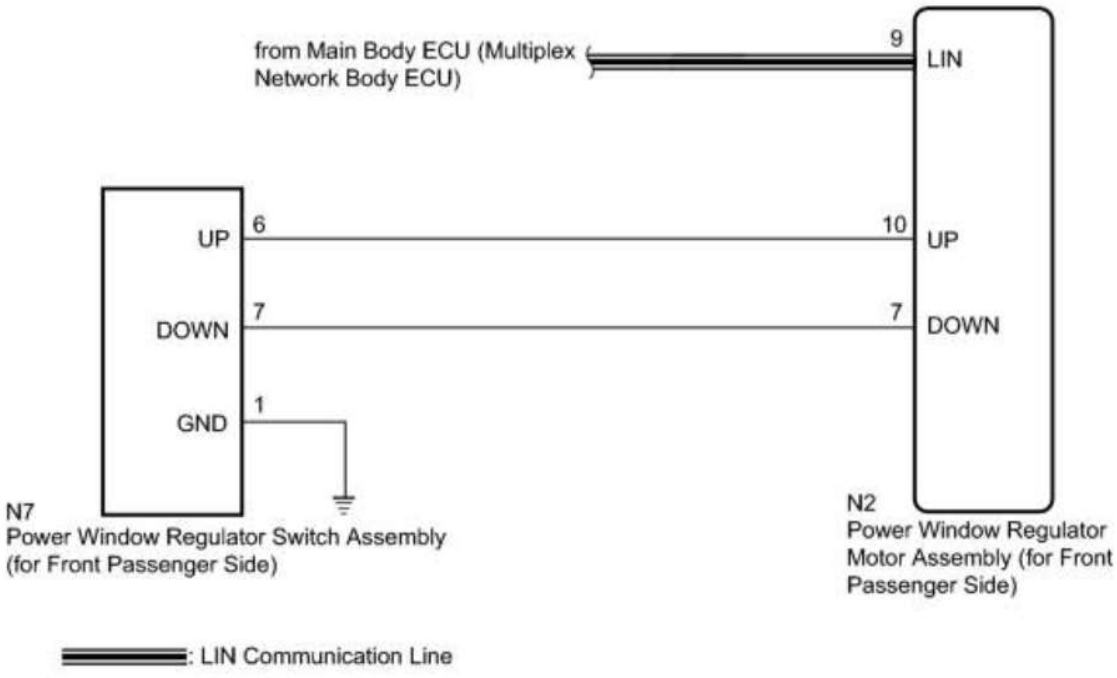
DESCRIPTION

When the hybrid vehicle control system is running or the power switch is on (IG), the power window regulator motor assembly (for front passenger side) is operated by the power window regulator switch assembly (for front passenger side). The power window regulator motor assembly (for front passenger side) has motor, regulator, and ECU functions.

HINT:

If the pulse sensor built into the power window regulator motor assembly (for front passenger side) malfunctions, the power window control system enters fail-safe mode. The remote up and down and auto up and down functions cannot be operated during fail-safe mode. However, the power window can be closed by holding the power window regulator switch assembly (for front passenger side) at the auto up position, and opened manually by pushing down the power window regulator switch assembly (for front passenger side).

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

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- The power window control system uses a multiplex communication system (LIN communication system). Inspect the communication function by following How to Proceed with Troubleshooting INFO. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (for front passenger side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operations at least 5 times:
    a. Close the power window by fully pulling up the power window regulator switch assembly (for front passenger side) and holding it at the auto up position.
    b. Open the power window by fully pushing down the power window regulator switch assembly (for front passenger side).
- When the ECU determines that the power window regulator motor assembly (for front passenger side) has a malfunction, DTC B2311 is set.

PROCEDURE

1.	READ VALUE USING TECHSTREAM (Main Body)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

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

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

Main Body (Main Body ECU (Multiplex Network Body ECU))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Communication P-Door Motor	Connection status between power window regulator motor (for front passenger side) and main body ECU (multiplex network body ECU) / OK or STOP	OK: Normal communication STOP: Communication stopped	-

OK:

On the Techstream screen, OK is displayed.

NG ▶ GO TO LIN COMMUNICATION SYSTEM (Proceed to How to Proceed with Troubleshooting)

OK

▼

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2.	READ VALUE USING TECHSTREAM (P-Door Motor)

(a) Enter the following menus: Body Electrical / P-Door Motor / Data List.

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

P-Door Motor (Power Window Regulator Motor Assembly (for Front Passenger Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
P Door P/W Up SW	Front passenger side power window manual up switch signal / ON or OFF	ON: Front passenger door power window manual up switch operated OFF: Front passenger power window manual up switch not operated	-
P Door P/W Down SW	Front passenger side power window manual down switch signal / ON or OFF	ON: Front passenger door power window manual down switch operated OFF: Front passenger power window manual down switch not operated	-

OK:

On the Techstream screen, ON or OFF is displayed accordingly.

NG ▶ INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Front Passenger Side)

OK

▼

3.	PERFORM ACTIVE TEST USING TECHSTREAM (P-Door Motor)

(a) Enter the following menus: Body Electrical / P-Door Motor / Active Test.

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

P-Door Motor (Power Window Regulator Motor Assembly (for Front Passenger Side))

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Power window	OFF / UP / DOWN	-

OK:

Front passenger side power window operates normally.

CAUTION:

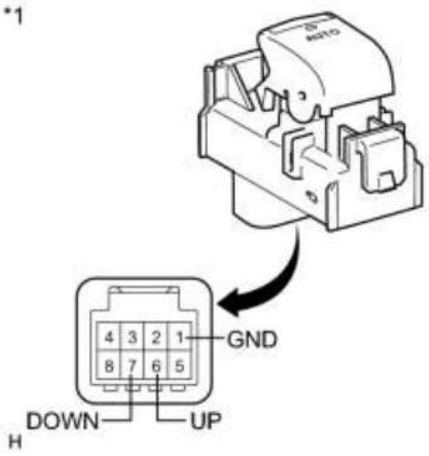
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Be careful to avoid injuries as this test causes vehicle parts to move. During the Active Test, the jam protection function will not operate.

NG ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)

OK ▶ **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)**

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



(a) Remove the power window regulator switch assembly (for front passenger side) INFO.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6 (UP) - 1 (GND)	Auto up or up position	Below 1 Ω
7 (DOWN) - 1 (GND)	Auto down or down position	Below 1 Ω

Text in Illustration

*1	Component without harness connected (Power Window Regulator Switch Assembly (for Front Passenger Side))

NG ▶ REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Front Passenger Side)

OK

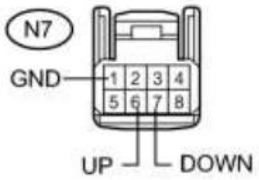
▼

5.	CHECK HARNESS AND CONNECTOR (FRONT PASSENGER SIDE SWITCH - MOTOR AND BODY GROUND)

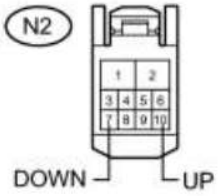
(a) Disconnect the power window regulator motor assembly (for front passenger side) connector.

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*1



*2



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

Standard Resistance:

Tester Connection	Condition	Specified Condition
N7-1 (GND) - Body ground	Always	Below 1 Ω
N7-6 (UP) - N2-10 (UP)	Always	Below 1 Ω
N7-7 (DOWN) - N2-7 (DOWN)	Always	Below 1 Ω
N7-6 (UP) - Body ground	Always	10 kΩ or higher
N7-7 (DOWN) - Body ground	Always	10 kΩ or higher
N2-10 (UP) - Body ground	Always	10 kΩ or higher
N2-7 (DOWN) - Body ground	Always	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Power Window Regulator Switch Assembly (for Front Passenger Side))
*2	Front view of wire harness connector (to Power Window Regulator Motor Assembly (for Front Passenger Side))

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)**

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

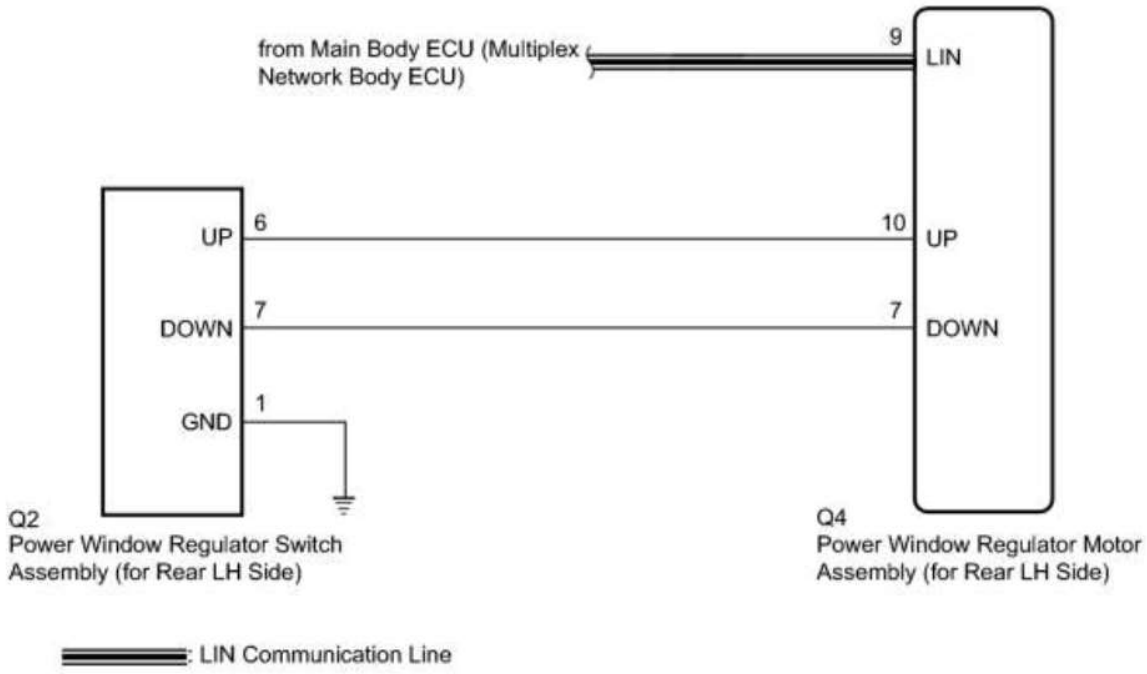
DESCRIPTION

When the hybrid vehicle control system is running or the power switch is on (IG), the power window regulator motor assembly (for rear LH side) is operated by the power window regulator switch assembly (for rear LH side). The power window regulator motor has motor, regulator, and ECU functions.

HINT:

If the pulse sensor built into the power window regulator motor assembly (for rear LH side) malfunctions, the power window control system enters fail-safe mode. The remote up and down and auto up and down functions cannot be operated during fail-safe mode. However, the power window can be closed by holding the power window regulator switch assembly (for rear LH side) at the auto up position, and opened manually by pushing down the power window regulator switch assembly (for rear LH side).

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

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- The power window control system uses a multiplex communication system (LIN communication system). Inspect the communication function by following How to Proceed with Troubleshooting INFO. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (for rear LH side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operations at least 5 times:
    a. Close the power window by fully pulling up the power window regulator switch assembly (for rear LH side) and holding it at the auto up position.
    b. Open the power window by fully pushing down the power window regulator switch assembly (for rear LH side).
- When the ECU determines that the power window regulator motor assembly (for rear LH side) has a malfunction, DTC B2311 is set.

PROCEDURE

1.	READ VALUE USING TECHSTREAM (Main Body)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

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

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

Main Body (Main Body ECU (Multiplex Network Body ECU))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Communication RL-Door Motor	Connection status between power window regulator motor (for rear LH) and main body ECU (multiplex network body ECU) / OK or STOP	OK: Normal communication STOP: Communication stopped	-

OK:

On the Techstream screen, OK is displayed.

NG ▶ GO TO LIN COMMUNICATION SYSTEM (Proceed to How to Proceed with Troubleshooting)

OK

▼

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2.	READ VALUE USING TECHSTREAM (RL-Door Motor)

(a) Enter the following menus: Body Electrical / RL-Door Motor / Data List.

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

RL-Door Motor (Power Window Regulator Motor Assembly (for Rear LH Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RL Door P/W Up SW	Rear LH side power window manual up switch signal / ON or OFF	ON: Rear LH door power window manual up switch operated OFF: Rear LH door power window manual up switch not operated	-
RL Door P/W Down SW	Rear LH side power window manual down switch signal / ON or OFF	ON: Rear LH door power window manual down switch operated OFF: Rear LH door power window manual down switch not operated	-

OK:

On the Techstream screen, ON or OFF is displayed accordingly.

NG ▶ INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear LH Side)

OK

▼

3.	PERFORM ACTIVE TEST USING TECHSTREAM (RL-Door Motor)

(a) Enter the following menus: Body Electrical / RL-Door Motor / Active Test.

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

RL-Door Motor (Power Window Regulator Motor Assembly (for Rear LH Side))

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Power window	OFF / UP / DOWN	-

OK:

Rear LH power window operates normally.

CAUTION:

Be careful to avoid injuries as this test causes vehicle parts to move. During the Active Test, the jam protection function will not operate.

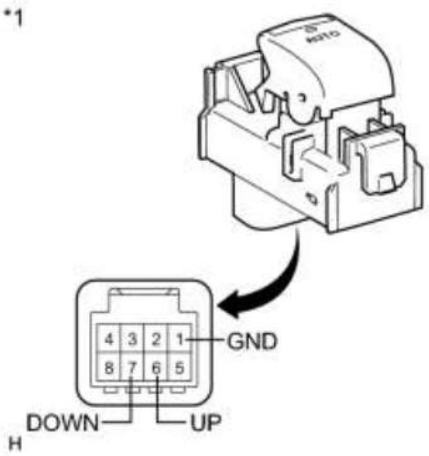
2010 Toyota Prius Repair Manual

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NG ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH side)

OK ▶ **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)**

4.	INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear LH Side)



(a) Remove the power window regulator switch assembly (for rear LH side) INFO.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6 (UP) - 1 (GND)	Auto up or up position	Below 1 Ω
7 (DOWN) - 1 (GND)	Auto down or down position	Below 1 Ω

Text in Illustration

*1	Component without harness connected (Power Window Regulator Switch Assembly (for Rear LH Side))

NG ▶ REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear LH side)

OK

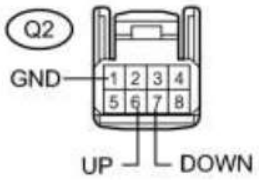
▼

5.	CHECK HARNESS AND CONNECTOR (REAR LH SIDE SWITCH - REAR LH SIDE MOTOR AND BODY GROUND)

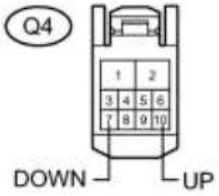
(a) Disconnect the power window regulator motor assembly (for rear LH side) connector.

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*1



*2



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

Standard Resistance:

Tester Connection	Condition	Specified Condition
Q2-1 (GND) - Body ground	Always	Below 1 Ω
Q2-6 (UP) - Q4-10 (UP)	Always	Below 1 Ω
Q2-7 (DOWN) - Q4-7 (DOWN)	Always	Below 1 Ω
Q2-6 (UP) - Body ground	Always	10 kΩ or higher
Q2-7 (DOWN) - Body ground	Always	10 kΩ or higher
Q4-10 (UP) - Body ground	Always	10 kΩ or higher
Q4-7 (DOWN) - Body ground	Always	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Power Window Regulator Switch Assembly (for Rear LH Side))
*2	Front view of wire harness connector (to Power Window Regulator Motor Assembly (for Rear LH Side))

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH side)**

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

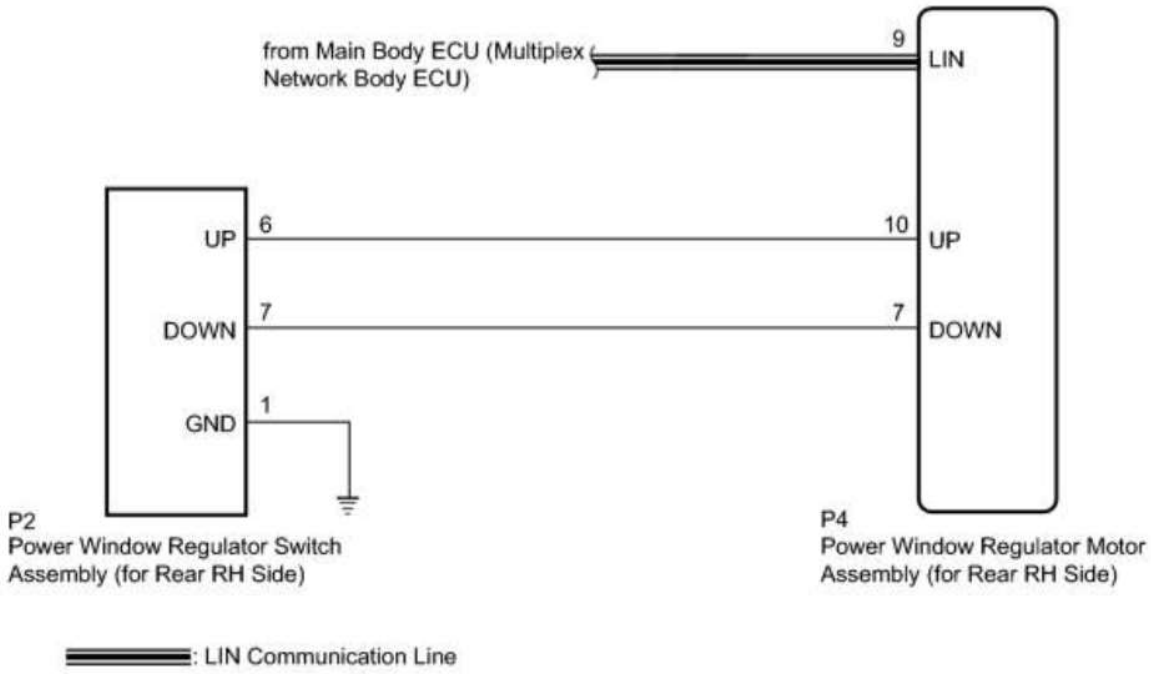
DESCRIPTION

When the hybrid vehicle control system is running or the power switch is on (IG), the power window regulator motor assembly (for rear RH side) is operated by the power window regulator switch assembly (for rear RH side). The power window regulator motor assembly (for rear RH side) has motor, regulator, and ECU functions.

HINT:

If the pulse sensor built into the power window regulator motor (for rear RH side) malfunctions, the power window control system enters fail-safe mode. The remote up and down and auto up and down functions cannot be operated during fail-safe mode. However, the power window can be closed by holding the power window regulator switch assembly (for rear RH side) at the auto up position, and opened manually by pushing down the power window regulator switch assembly (for rear RH side).

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

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- The power window control system uses a multiplex communication system (LIN communication system). Inspect the communication function by following How to Proceed with Troubleshooting INFO. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (for rear RH side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operations at least 5 times:
    a. Close the power window by fully pulling up the power window regulator switch assembly (for rear RH side) and holding it at the auto up position.
    b. Open the power window by fully pushing down the power window regulator switch assembly (for rear RH side).
- When the ECU determines that the power window regulator motor assembly (for rear RH side) has a malfunction, DTC B2311 is set.

PROCEDURE

1.	READ VALUE USING TECHSTREAM (Main Body)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

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

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

Main Body (Main Body ECU (Multiplex Network Body ECU))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Communication RR-Door Motor	Connection status between power window regulator motor (for rear RH) and main body ECU (multiplex network body ECU) / OK or STOP	OK: Normal communication STOP: Communication stopped	-

OK:

On the Techstream screen, OK is displayed.

NG ▶ GO TO LIN COMMUNICATION SYSTEM (Proceed to How to Proceed with Troubleshooting)

OK

▼

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2.	READ VALUE USING TECHSTREAM (RR-Door Motor)

(a) Enter the following menus: Body Electrical / RR-Door Motor / Data List.

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

RR-Door Motor (Power Window Regulator Motor Assembly (for Rear RH Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RR Door P/W Up SW	Rear RH side power window manual up switch signal / ON or OFF	ON: Rear RH door power window manual up switch operated OFF: Rear RH door power window manual up switch not operated	-
RR Door P/W Down SW	Rear RH side power window manual down switch signal / ON or OFF	ON: Rear RH door power window manual down switch operated OFF: Rear RH door power window manual down switch not operated	-

OK:

On the Techstream screen, ON or OFF is displayed accordingly.

NG ▶ INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear RH Side)

OK

▼

3.	PERFORM ACTIVE TEST USING TECHSTREAM (RR-Door Motor)

(a) Enter the following menus: Body Electrical / RR-Door Motor / Active Test.

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

RR-Door Motor (Power Window Regulator Motor Assembly (for Rear RH Side))

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Power window	OFF / UP / DOWN	-

OK:

Rear RH power window operates normally.

CAUTION:

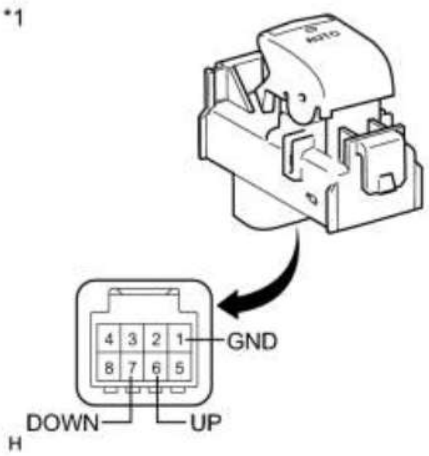
Be careful to avoid injuries as this test causes vehicle parts to move. During the Active Test, the jam protection function will not operate.

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NG ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH side)

OK ▶ **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)**

4.	INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear RH Side)



(a) Remove the power window regulator switch assembly (for rear RH side) INFO.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6 (UP) - 1 (GND)	Auto up or up position	Below 1 Ω
7 (DOWN) - 1 (GND)	Auto down or down position	Below 1 Ω

Text in Illustration

*1	Component without harness connected (Power Window Regulator Switch Assembly (for Rear RH Side))

NG ▶ REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear RH side)

OK

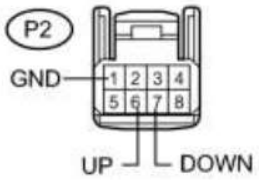
▼

5.	CHECK HARNESS AND CONNECTOR (REAR RH SIDE SWITCH - REAR RH SIDE MOTOR AND BODY GROUND)

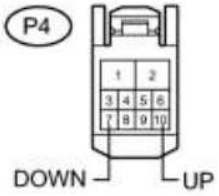
(a) Disconnect the power window regulator motor assembly (for rear RH side) connector.

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*1



*2



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

Standard Resistance:

Tester Connection	Condition	Specified Condition
P2-1 (GND) - Body ground	Always	Below 1 Ω
P2-6 (UP) - P4-10 (UP)	Always	Below 1 Ω
P2-7 (DOWN) - P4-7 (DOWN)	Always	Below 1 Ω
P2-6 (UP) - Body ground	Always	10 kΩ or higher
P2-7 (DOWN) - Body ground	Always	10 kΩ or higher
P4-10 (UP) - Body ground	Always	10 kΩ or higher
P4-7 (DOWN) - Body ground	Always	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Power Window Regulator Switch Assembly (for Rear RH Side))
*2	Front view of wire harness connector (to Power Window Regulator Motor Assembly (for Rear RH Side))

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH side)**

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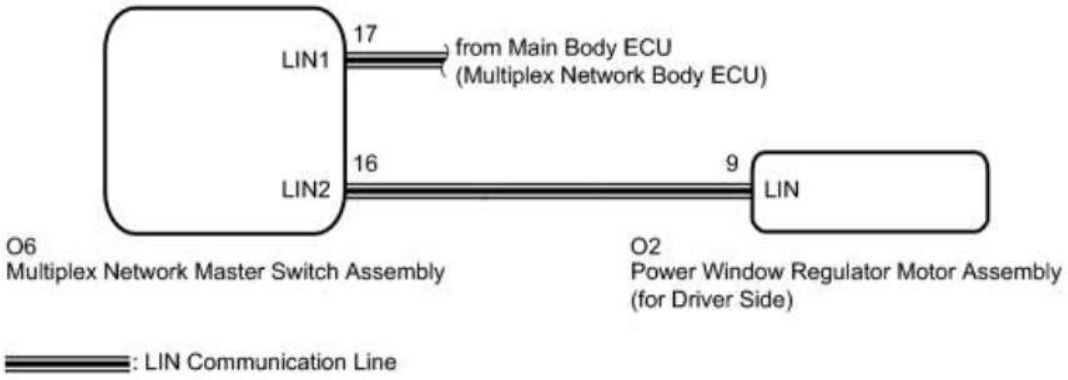
Driver Side Power Window Auto Up / Down Function does not Operate with Power Window Master Switch

DESCRIPTION

If the manual up and down function can be performed but the auto up and down function cannot, then the fail-safe mode may be functioning.

If the power window initialization INFO has not been performed, the auto up and down function will not operate.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- The power window control system uses a multiplex communication system (LIN communication system). Inspect the communication function by following How to Proceed with Troubleshooting INFO. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (for driver side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operations at least 5 times:
    a. Close the power window by fully pulling up the multiplex network master switch assembly and holding it at the auto up position.
    b. Open the power window by fully pushing down the multiplex network master switch assembly.
- When the ECU determines that the power window regulator motor assembly (for driver side) has a malfunction, DTC B2311 is set.

PROCEDURE

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1.	READ VALUE USING TECHSTREAM (Master Switch)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / Master switch / Data List.

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

Master Switch (Multiplex Network Master Switch Assembly)

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Auto SW	Driver door power window auto up and down switch signal / ON or OFF	ON: Driver door power window auto switch operated OFF: Driver door power window auto switch not operated	-

OK:

On the Techstream screen, ON or OFF is displayed accordingly.

NG ▶ REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

OK

▼

2.	READ VALUE USING TECHSTREAM (D-Door Motor)

(a) Enter the following menus: Body Electrical / D-Door Motor / Data List.

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

D-Door Motor (Power Window Regulator Motor Assembly (for Driver Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Auto SW	Driver door power window auto up and down switch signal / ON or OFF	ON: Driver door power window auto switch operated OFF: Driver door power window auto switch not operated	-

OK:

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On the Techstream screen, ON or OFF is displayed accordingly.

NG ▶ REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

OK

▼

3.	PERFORM INITIALIZATION (for Driver Side)

(a) Initialize the power window regulator motor assembly (for driver side) INFO.

NEXT

▼

4.	CHECK POWER WINDOW CONTROL SYSTEM (AUTO UP/DOWN FUNCTION)

(a) Check that the driver side door power window moves when the auto up and down function of the multiplex network master switch assembly is operated INFO.

OK:

Driver side auto up and down function is normal.

NG ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)

OK ▶ **END (PROBLEM DUE TO INITIALIZATION FAILURE)**

5.	REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

(a) Replace the multiplex network master switch assembly INFO.

NEXT

▼

6.	CHECK POWER WINDOW CONTROL SYSTEM (AUTO UP/DOWN FUNCTION)

(a) Check that the driver side door power window moves when the auto up and down function of the multiplex network master switch assembly is operated INFO.

OK:

Driver side auto up and down function is normal.

NG ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)

OK ▶ **END (MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY WAS DEFECTIVE)**

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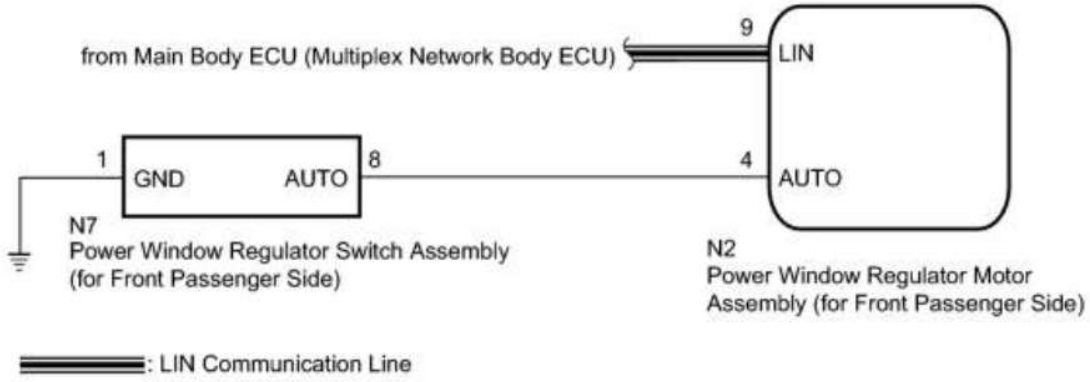
Front Passenger Side Power Window Auto Up / Down Function does not Operate with Front Passenger Side Power Window Switch

DESCRIPTION

If the manual up and down function can be performed but the auto up and down function cannot, the fail-safe mode may be functioning.

If the power window initialization INFO has not been performed, the auto up and down function will not operate.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- The power window control system uses a multiplex communication system (LIN communication system). Inspect the communication function by following How to Proceed with Troubleshooting INFO. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (for front passenger side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operations at least 5 times:
    a. Close the power window by fully pulling up the power window regulator switch assembly (for front passenger side) and holding it at the auto up position.
    b. Open the power window by fully pushing down the power window regulator switch assembly (for front passenger side).
- When the ECU determines that the power window regulator motor assembly (for front passenger side) has a malfunction, DTC B2311 is set.

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PROCEDURE

1.	READ VALUE USING TECHSTREAM (P-Door Motor)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / P-Door Motor / Data List.

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

P-Door Motor (Power Window Regulator Motor Assembly (for Front Passenger Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
P Door P/W Auto SW	Front passenger side power window auto switch signal / ON or OFF	ON: Front passenger door power window auto switch operated OFF: Front passenger door power window auto switch not operated	-

OK:

On the Techstream screen, ON or OFF is displayed accordingly.

NG ▶ INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Front Passenger Side)

OK

▼

2.	PERFORM INITIALIZATION (for Front Passenger Side)

(a) Initialize the power window regulator motor assembly (for front passenger side) INFO.

NEXT

▼

3.	CHECK POWER WINDOW CONTROL SYSTEM (AUTO UP/DOWN FUNCTION)

(a) Check that the front passenger side door power window moves when the auto up and down function of the power window regulator switch assembly (for front passenger side) is operated INFO.

OK:

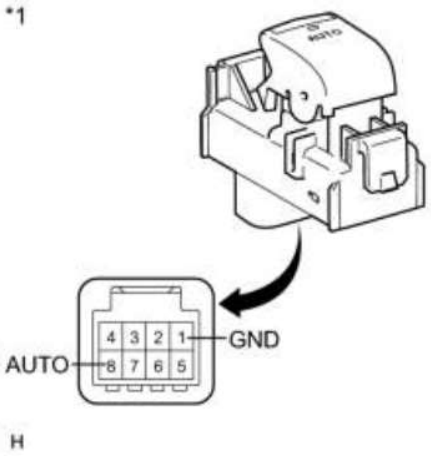
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Front passenger side auto up and down function is normal.

NG ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)

OK ▶ **END (PROBLEM DUE TO INITIALIZATION FAILURE)**

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



(a) Remove the power window regulator switch assembly (for front passenger side) INFO.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
8 (AUTO) - 1 (GND)	Auto up or auto down position	Below 1 Ω

Text in Illustration

*1	Component without harness connected (Power Window Regulator Switch Assembly (for Front Passenger Side))

NG ▶ REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Front Passenger Side)

OK

▼

5.	CHECK HARNESS AND CONNECTOR (POWER WINDOW SWITCH - REGULATOR MOTOR)

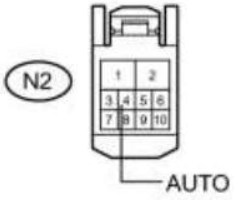
(a) Disconnect the power window regulator motor assembly (for front passenger side) connector.

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*1



*2



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

Standard Resistance:

Tester Connection	Condition	Specified Condition
N7-8 (AUTO) - N2-4 (AUTO)	Always	Below 1 Ω
N7-8 (AUTO) - Body ground	Always	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Power Window Regulator Switch Assembly (for Front Passenger Side))
*2	Front view of wire harness connector (to Power Window Regulator Motor Assembly (for Front Passenger Side))

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)**

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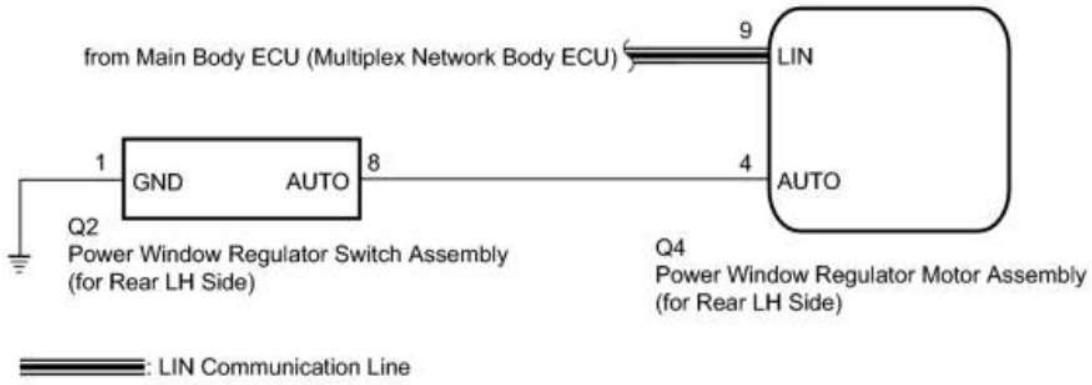
Rear Power Window LH Auto Up / Down Function does not Operate with Rear Power Window Switch LH

DESCRIPTION

If the manual up and down function can be performed but the auto up and down function cannot, the fail-safe mode may be functioning.

If the power window initialization INFO has not been performed, the auto up and down function will not operate.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- The power window control system uses a multiplex communication system (LIN communication system). Inspect the communication function by following How to Proceed with Troubleshooting INFO. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (for rear LH side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operations at least 5 times:
    a. Close the power window by fully pulling up the power window regulator switch assembly (for rear LH side) and holding it at the auto up position.
    b. Open the power window by fully pushing down the power window regulator switch assembly (for rear LH side).
- When the ECU determines that the power window regulator motor assembly (for rear LH side) has a malfunction, DTC B2311 is set.

PROCEDURE

2010 Toyota Prius Repair Manual

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1.	READ VALUE USING TECHSTREAM (RL-Door Motor)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / RL-Door Motor / Data List.

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

RL-Door Motor (Power Window Regulator Motor Assembly (for Rear LH Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RL Door P/W Auto SW	Rear LH side power window auto switch signal / ON or OFF	ON: Rear LH power window auto switch operated OFF: Rear LH power window auto switch not operated	-

OK:

On the Techstream screen, ON or OFF is displayed accordingly.

NG ▶ INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear LH Side)

OK

▼

2.	PERFORM INITIALIZATION (for Rear LH Side)

(a) Initialize the power window regulator motor assembly (for rear LH side) INFO.

NEXT

▼

3.	CHECK POWER WINDOW CONTROL SYSTEM (AUTO UP/DOWN FUNCTION)

(a) Check that the rear LH side door power window moves when the auto up and down function of the power window regulator switch assembly (for rear LH side) is operated INFO.

OK:

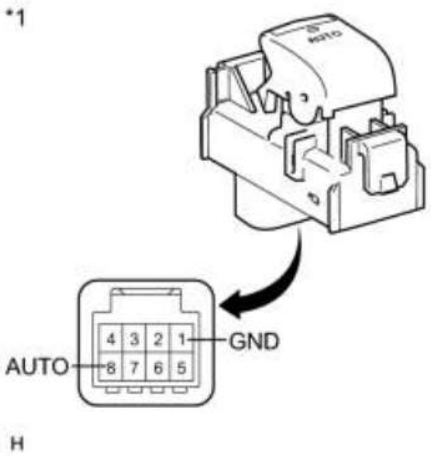
Rear LH side auto up and down function is normal.

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NG ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH Side)

OK ▶ **END (PROBLEM DUE TO INITIALIZATION FAILURE)**

4.	INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear LH Side)



(a) Remove the power window regulator switch assembly (for rear LH side) INFO.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
8 (AUTO) - 1 (GND)	Auto up or auto down position	Below 1 Ω

Text in Illustration

*1	Component without harness connected (Power Window Regulator Switch Assembly (for Rear LH Side))

NG ▶ REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear LH Side)

OK

▼

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

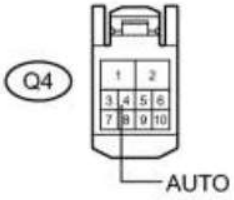
(a) Disconnect the power window regulator motor assembly (for rear LH side) connector.

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*1



*2



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

Standard Resistance:

Tester Connection	Condition	Specified Condition
Q2-8 (AUTO) - Q4-4 (AUTO)	Always	Below 1 Ω
Q2-8 (AUTO) - Body ground	Always	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Power Window Regulator Switch Assembly (for Rear LH Side))
*2	Front view of wire harness connector (to Power Window Regulator Motor Assembly (for Rear LH Side))

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH Side)**

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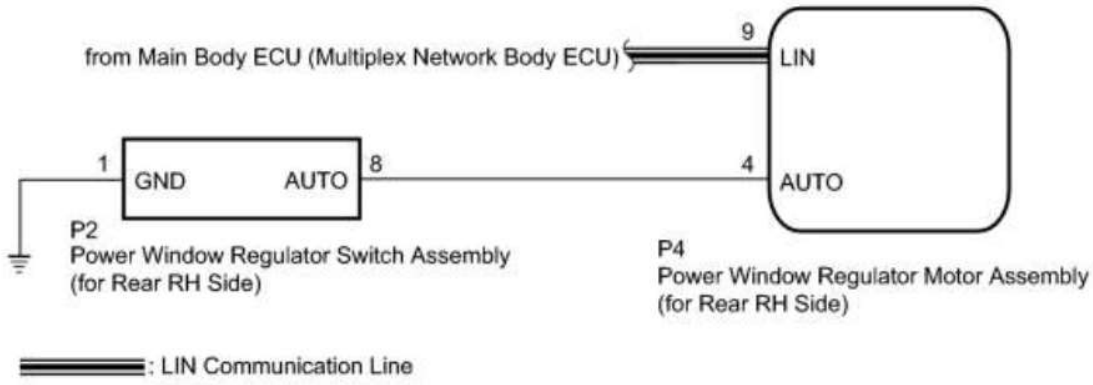
Rear Power Window RH Auto Up / Down Function does not Operate with Rear Power Window Switch RH

DESCRIPTION

If the manual up and down function can be performed but the auto up and down function cannot, the fail-safe mode may be functioning.

If the power window initialization INFO has not been performed, the auto up and down function will not operate.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- The power window control system uses a multiplex communication system (LIN communication system). Inspect the communication function by following How to Proceed with Troubleshooting INFO. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly (for rear RH side) is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operations at least 5 times:
    a. Close the power window by fully pulling up the power window regulator switch assembly (for rear RH side) and holding it at the auto up position.
    b. Open the power window by fully pushing down the power window regulator switch assembly (for rear RH side).
- When the ECU determines that the power window regulator motor assembly (for rear RH side) has a malfunction, DTC B2311 is set.

PROCEDURE

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1.	READ VALUE USING TECHSTREAM (RR-Door Motor)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / RR-Door Motor / Data List.

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

RR-Door Motor (Power Window Regulator Motor Assembly (for Rear RH Side))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RR Door P/W Auto SW	Rear RH side power window auto switch signal / ON or OFF	ON: Rear RH power window auto switch operated OFF: Rear RH power window auto switch not operated	-

OK:

On the Techstream screen, ON or OFF is displayed accordingly.

NG ▶ INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear RH Side)

OK

▼

2.	PERFORM INITIALIZATION (for Rear RH Side)

(a) Initialize the power window regulator motor assembly (for rear RH side) INFO.

NEXT

▼

3.	CHECK POWER WINDOW CONTROL SYSTEM (AUTO UP/DOWN FUNCTION)

(a) Check that the rear RH side door power window moves when the auto up and down function of the power window regulator switch assembly (for rear RH side) is operated INFO.

OK:

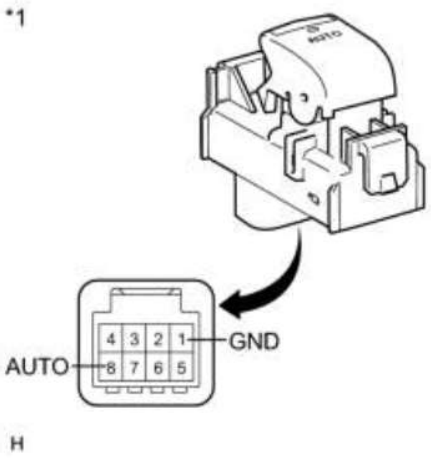
Rear RH side auto up and down function is normal.

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NG ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH Side)

OK ▶ **END (PROBLEM DUE TO INITIALIZATION FAILURE)**

4.	INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear RH Side)



(a) Remove the power window regulator switch assembly (for rear RH side) INFO.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
8 (AUTO) - 1 (GND)	Auto up or auto down position	Below 1 Ω

Text in Illustration

*1	Component without harness connected (Power Window Regulator Switch Assembly (for Rear RH Side))

NG ▶ REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Rear RH Side)

OK

▼

5.	CHECK HARNESS OR CONNECTOR (REAR RH SIDE SWITCH - REAR RH SIDE MOTOR)

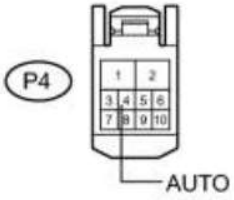
(a) Disconnect the power window regulator motor assembly (for rear RH side) connector.

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*1



*2



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

Standard Resistance:

Tester Connection	Condition	Specified Condition
P2-8 (AUTO) - P4-4 (AUTO)	Always	Below 1 Ω
P2-8 (AUTO) - Body ground	Always	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Power Window Regulator Switch Assembly (for Rear RH Side))
*2	Front view of wire harness connector (to Power Window Regulator Motor Assembly (for Rear RH Side))

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH Side)**

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

DESCRIPTION

- When the front doors are closed, each power window regulator motor assembly can control its power window operation for approximately 45 seconds after the power switch is turned from on (IG) to off by receiving operation permission signals from the main body ECU (multiplex network body ECU).
- However, when approximately 45 seconds have elapsed, or the driver side door or front passenger side door is opened within approximately 45 seconds of the power switch being turned off, the power window regulator motor assembly stops operating.
- During an auto operation, when 45 seconds have passed and key-off operation is prohibited, the window operation stops immediately.

INSPECTION PROCEDURE

NOTICE:

The power window control system uses a multiplex communication system (LIN communication system). Inspect the communication function by following How to Proceed with Troubleshooting INFO. Troubleshoot the power window control system after confirming that the communication system is functioning properly.

PROCEDURE

1.	CHECK MANUAL UP / DOWN FUNCTION

(a) Check that the manual up and down function using the multiplex network master switch assembly and power window regulator switch assemblies can operate all the power windows INFO.

OK:

Manual up and down function is normal.

NG ▶ GO TO OTHER PROBLEM (Proceed to Problem Symptoms Table)

OK

▼

2.	CHECK REMOTE UP / DOWN FUNCTION

(a) Check that the remote up and down function using the multiplex network master switch assembly operates the power windows INFO.

OK:

Remote up and down function is normal.

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NG ▶ GO TO OTHER PROBLEM (Proceed to Problem Symptoms Table)

OK

▼

3.	CHECK OPERATION FUNCTION AFTER POWER SWITCH IS TURNED OFF

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

Result:

Result	Proceed to
When power window can still be operated even after opening driver side door or front passenger side door within approximately 45 seconds of power switch being turned off	A
When power window can still be operated even after approximately 45 seconds have elapsed after power switch is turned off (for All Doors)	B
When power window can still be operated even after approximately 45 seconds have elapsed after power switch is turned off (for Driver Side, Front Passenger Side, Rear LH Side or Rear RH Side))	C*

HINT:

*: Replace the power window regulator motor assembly INFO for Front Door, INFO for Rear Door) for the window that still operates when more than 45 seconds have elapsed after the power switch was turned off.

C ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (APPLICABLE LOCATION)

B ▶ REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)

A

▼

4.	READ VALUE USING TECHSTREAM (Main Body)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

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

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

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Main Body (Main Body ECU (Multiplex Network Body ECU))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
FR Door Courtesy SW	Front door courtesy switch RH signal / ON or OFF	ON: Front door RH open OFF: Front door RH closed	-
FL Door Courtesy SW	Front door courtesy switch LH signal / ON or OFF	ON: Front door LH open OFF: Front door LH closed	-

OK:

On the Techstream screen, ON or OFF is displayed accordingly.

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

OK ▶ **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)**

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Auto Up Operation does not Fully Close Power Window (Jam Protection Function is Activated)

DESCRIPTION

If a door glass or a power window regulator motor assembly does not operate smoothly, the jam protection function may be triggered automatically, resulting in the auto up function being unable to fully close the window.

HINT:

This symptom may occur for any of the windows.

INSPECTION PROCEDURE

NOTICE:

- The power window control system uses a multiplex communication system (LIN communication system). Inspect the communication function by following How to Proceed with Troubleshooting INFO. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operations at least 5 times:
    a. Close the power window by fully pulling up the multiplex network master switch assembly or power window regulator switch assembly and holding it at the auto up position.
    b. Open the power window by fully pushing down the multiplex network master switch assembly or power window regulator switch assembly.

PROCEDURE

1.	PERFORM INITIALIZATION (APPLICABLE LOCATION)

(a) Initialize the power window regulator motor assembly (applicable location) INFO.

NEXT

2.	CHECK POWER WINDOW CONTROL SYSTEM (AUTO UP/DOWN FUNCTION (APPLICABLE LOCATION))

(a) Check that all the power windows move when the auto up and down function of the multiplex network master switch assembly and power window regulator switch assemblies are operated INFO.

OK:

Auto up and down function is normal (applicable location).

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NG ▶ CHECK WINDOW GLASS SLIDING MOVEMENT (APPLICABLE LOCATION)
OK ▶ **END (PROBLEM DUE TO INITIALIZATION FAILURE)**

3.	CHECK WINDOW GLASS SLIDING MOVEMENT (APPLICABLE LOCATION)

(a) Remove the window regulator.

(b) Install the window glass onto the door glass run.

(c) Check if the door window regulator operates smoothly.

(d) Check that the window glass slides smoothly when sliding it up by hand.

OK:

Door window glass slides smoothly.

Result:

Result	Proceed to
NG	A
OK (Driver door power window)	B
OK (Front passenger side power window)	C
OK (Rear LH side power window)	D
OK (Rear RH side power window)	E

HINT:

Ensure the following:

- The window glass fits with the glass run without improper contact or deformation.
- Foreign objects are not caught in the glass run.

CAUTION:

Perform initialization again.

E ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH Side)
D ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH Side)
C ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)
B ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)
A ▶ **FIT WINDOW GLASS CORRECTLY (REMOVE FOREIGN OBJECTS CAUSING IMPROPER FIT OR REPLACE PARTS)**

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Jam Protection Function does not Operate

DESCRIPTION

This symptom may occur for any of the windows.

The jam protection function operates within a specified range during the manual up or auto up operation.

INSPECTION PROCEDURE

NOTICE:

- The power window control system uses a multiplex communication system (LIN communication system). Inspect the communication function by following How to Proceed with Troubleshooting INFO. Troubleshoot the power window control system after confirming that the communication system is functioning properly.
- When the power window regulator motor assembly is reinstalled or replaced, the power window control system must be initialized.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be reinitialized by repeating the following operations at least 5 times:
  a. Close the power window by fully pulling up the multiplex network master switch assembly or power window regulator switch assembly and holding it at the auto up position.
  b. Open the power window by fully pushing down the multiplex network master switch assembly or power window regulator switch assembly.

PROCEDURE

1.	PERFORM INITIALIZATION (APPLICABLE LOCATION)

(a) Initialize the power window regulator motor assembly (applicable location) INFO.

NEXT

2.	CHECK POWER WINDOW CONTROL SYSTEM (AUTO UP/DOWN FUNCTION)

(a) Check if the power window auto up and down function operates normally INFO.

OK:

Auto up and down function is normal.

NG ▶ GO TO OTHER PROBLEM (Proceed to Problem Symptoms Table)

OK

3.	CHECK JAM PROTECTION FUNCTION OPERATING RANGE

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(a) Check if the jam protection function operates normally for the applicable power window.

HINT:

The jam protection function will not operate within 4 mm (0.157 in.) of the fully closed position.

OK:

Jam protection function operates normally.

Result:

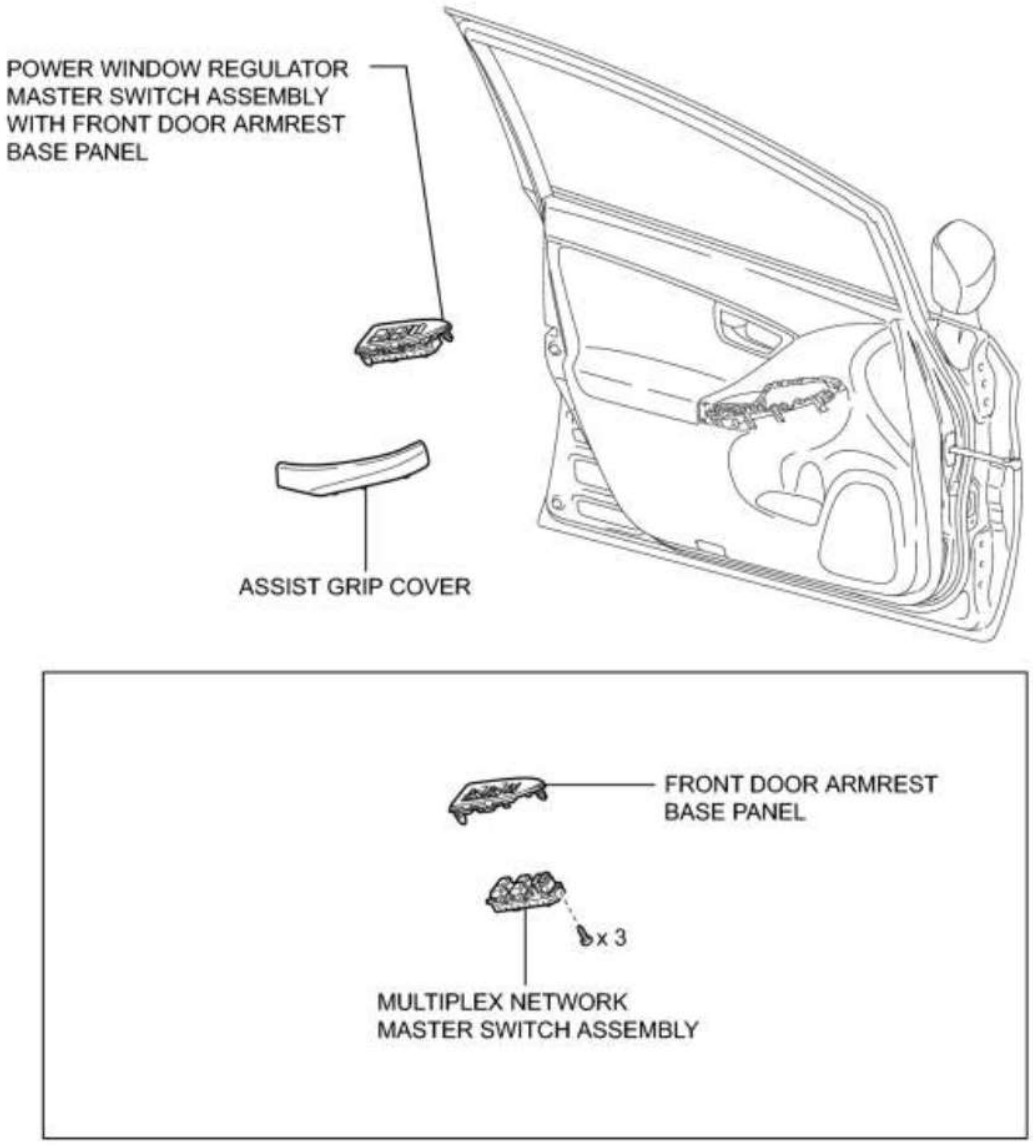
Result	Proceed to
OK	A
NG (Driver door power window)	B
NG (Front passenger side power window)	C
NG (Rear LH side power window)	D
NG (Rear RH side power window)	E

E ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear RH Side)
D ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Rear LH Side)
C ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Front Passenger Side)
B ▶ REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (for Driver Side)
A ▶ **END (PROBLEM DUE TO INITIALIZATION FAILURE)**

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COMPONENTS

ILLUSTRATION



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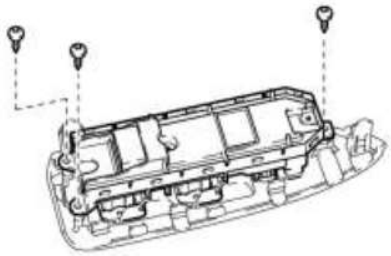
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REMOVAL

1. REMOVE ASSIST GRIP COVER INFO

2. REMOVE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY WITH FRONT DOOR ARMREST BASE PANEL INFO

3. REMOVE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY



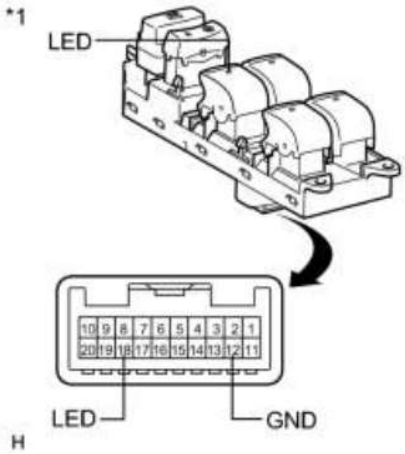
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(a) Remove the 3 screws and the multiplex network master switch assembly.

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INSPECTION

1. INSPECT MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY



(a) Check that the LED illuminates.

(1) Apply battery voltage to the multiplex network master switch assembly and check that the LED illuminates.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → 18 (LED) Battery negative (-) → 12 (GND)	LED illuminates

Text in Illustration

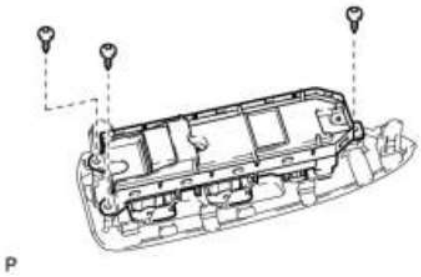
*1	Component without harness connected (to Multiplex Network Master Switch Assembly)

If the result is not as specified, replace the multiplex network master switch assembly.

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INSTALLATION

1. INSTALL MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY



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(a) Install the multiplex network master switch assembly with the 3 screws.

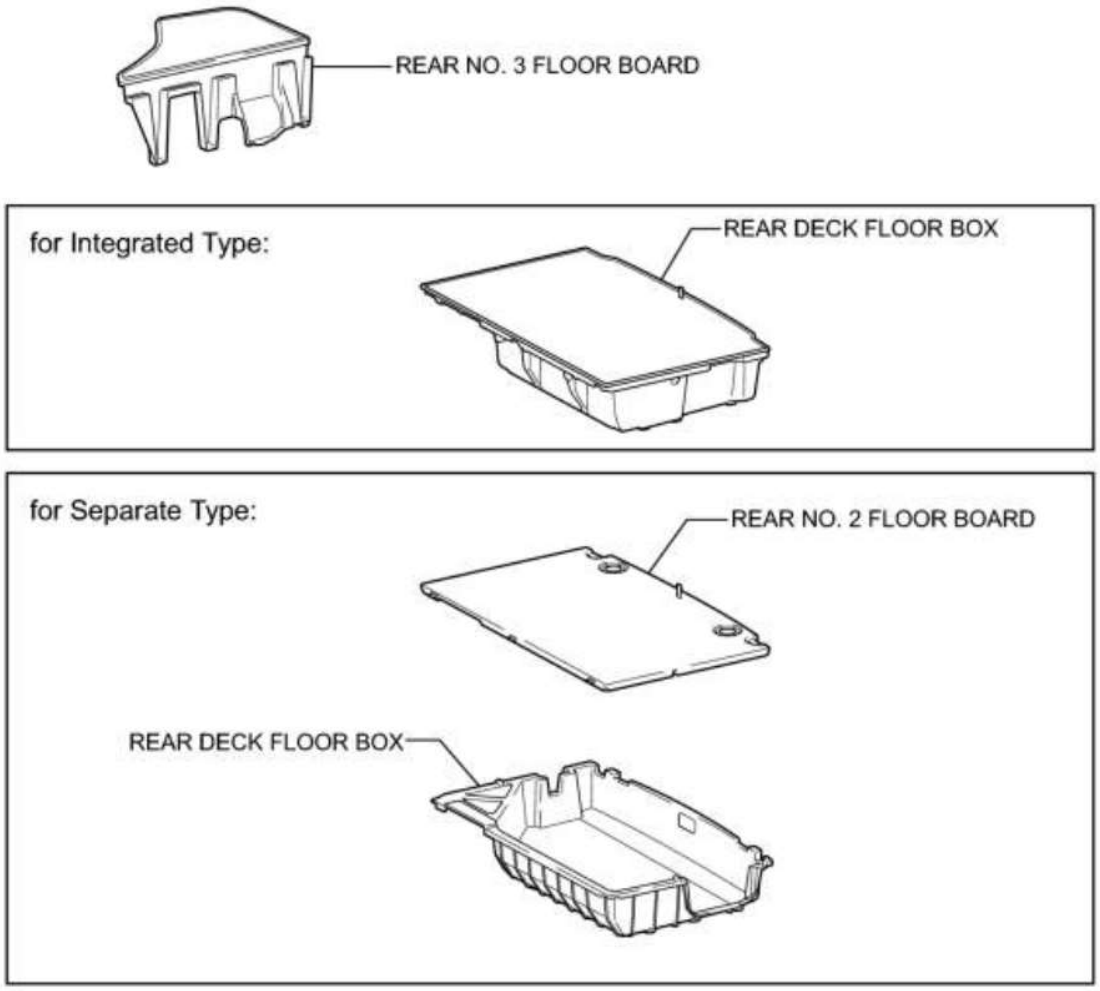
2. INSTALL POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY WITH FRONT DOOR ARMREST BASE PANEL INFO

3. INSTALL ASSIST GRIP COVER INFO

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COMPONENTS

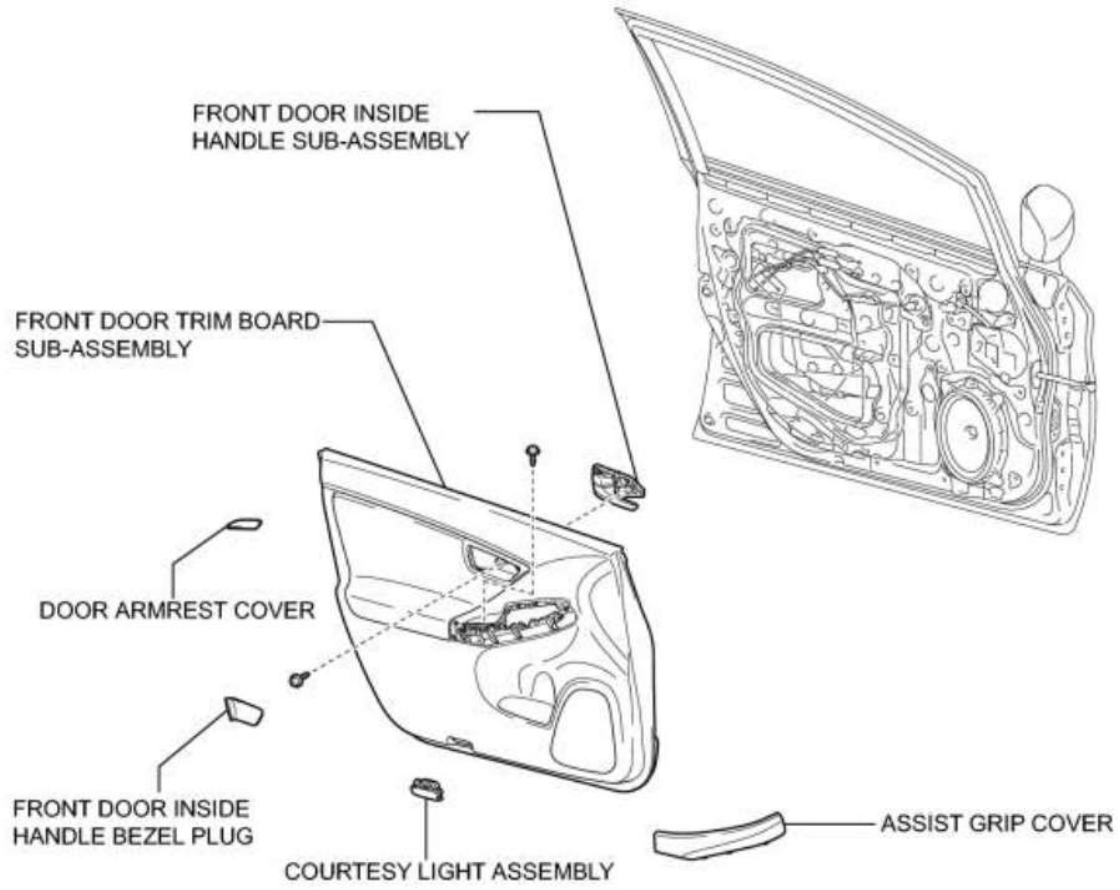
ILLUSTRATION

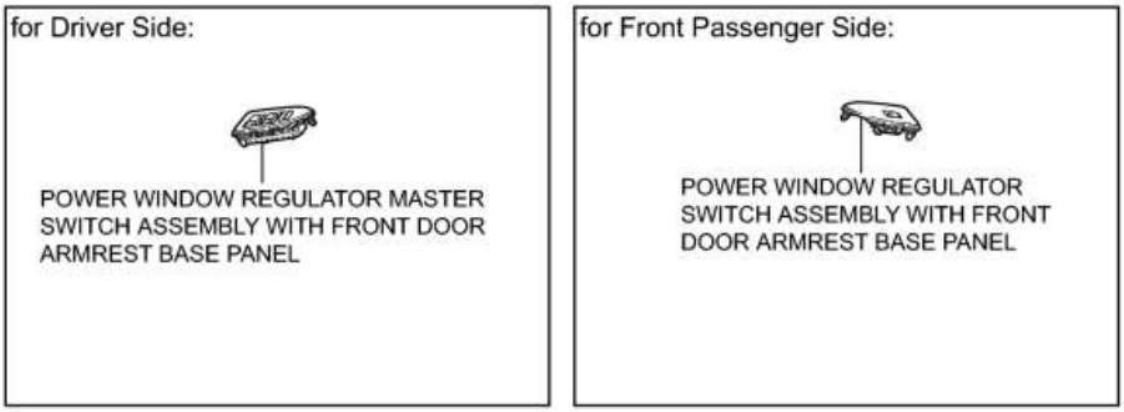


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ILLUSTRATION

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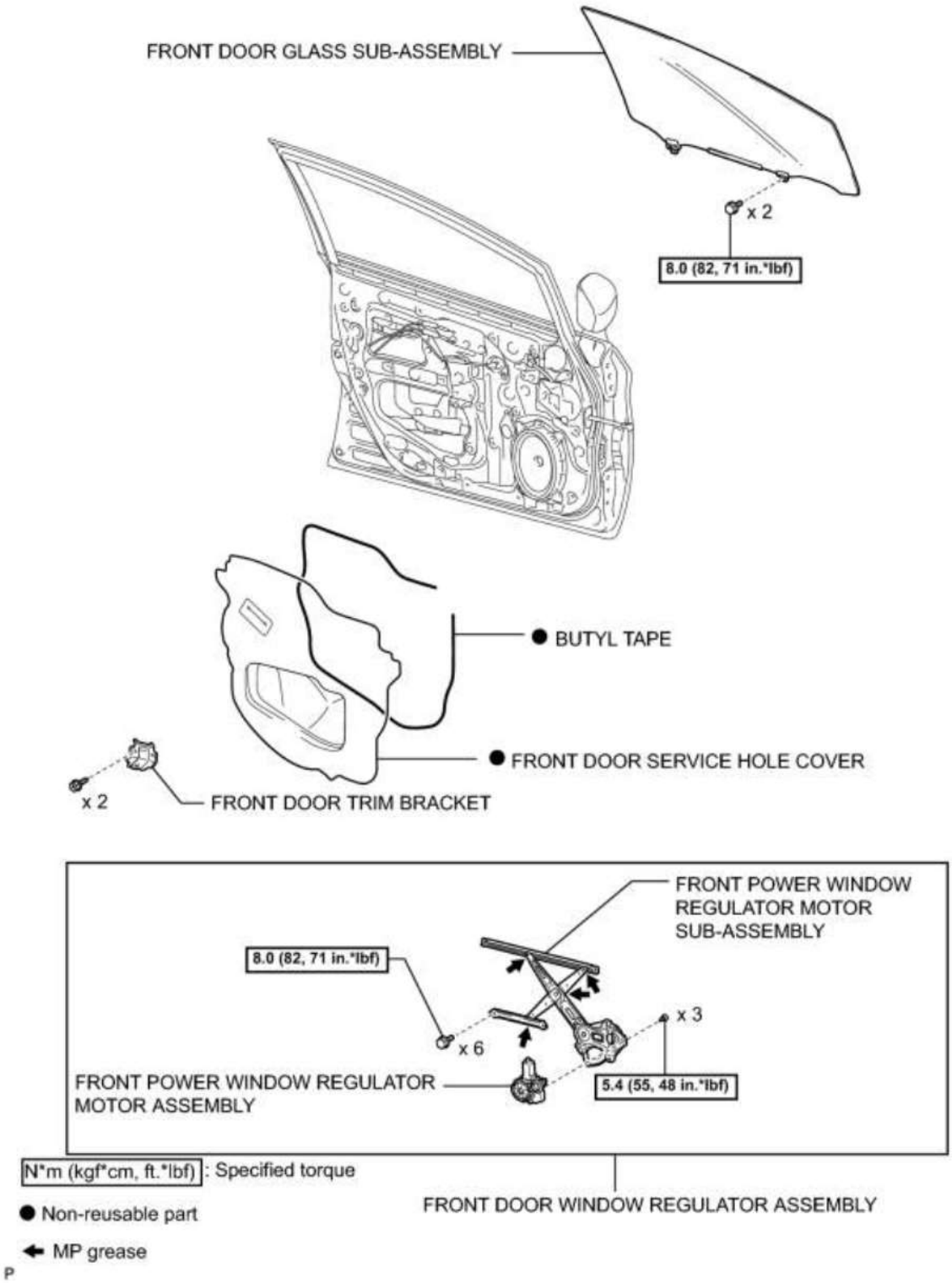




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ILLUSTRATION

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REMOVAL

HINT:

- Use the same procedure for the RH side and LH side.
- The procedure listed below is for the LH side.

1. REMOVE REAR NO. 2 FLOOR BOARD (for Separate Type) INFO

2. REMOVE REAR DECK FLOOR BOX INFO

3. REMOVE REAR NO. 3 FLOOR BOARD INFO

4. REMOVE FRONT DOOR INSIDE HANDLE BEZEL PLUG INFO

5. REMOVE ASSIST GRIP COVER INFO

6. REMOVE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY WITH FRONT DOOR ARMREST BASE PANEL (for Driver Side) INFO

7. REMOVE POWER WINDOW REGULATOR SWITCH ASSEMBLY WITH FRONT DOOR ARMREST BASE PANEL (for Front Passenger Side) INFO

8. REMOVE DOOR ARMREST COVER INFO

9. REMOVE COURTESY LIGHT ASSEMBLY INFO

10. REMOVE FRONT DOOR TRIM BOARD SUB-ASSEMBLY INFO

11. REMOVE FRONT DOOR INSIDE HANDLE SUB-ASSEMBLY INFO

12. REMOVE FRONT DOOR TRIM BRACKET INFO

13. REMOVE FRONT DOOR SERVICE HOLE COVER INFO

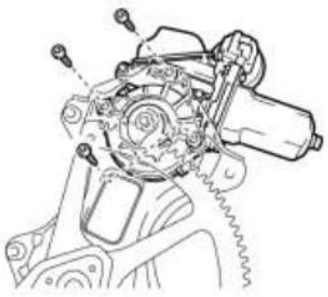
14. REMOVE FRONT DOOR GLASS SUB-ASSEMBLY INFO

15. REMOVE FRONT DOOR WINDOW REGULATOR ASSEMBLY INFO

16. REMOVE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY

(a) Using a T25 "TORX" driver, remove the 3 screws and the front power window regulator motor assembly.

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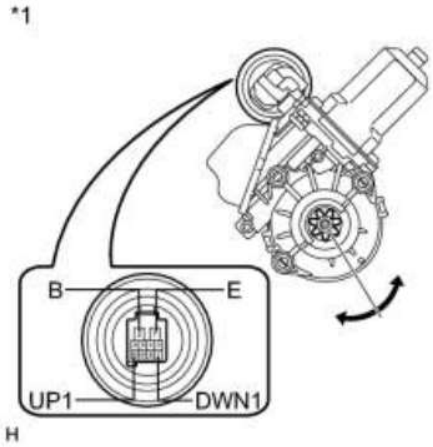


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INSPECTION

1. INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH



(a) Apply positive (+) battery voltage to connector terminal 2 (B).

NOTICE:

Do not apply positive (+) battery voltage to any terminals other than terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

(b) Connect a ground lead to connector terminals 1 (E) and 7 (DWN1) or 10 (UP1).

(c) Check that the motor gear rotates smoothly as follows:

OK:

Measurement Condition	Specified Condition
1. Connect a positive (+) battery lead to terminal 2 (B), connect a negative (-) battery lead to terminal 1 (E), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (E) connected, connect a negative (-) battery lead to terminal 10 (UP1). 3. Disconnect and reconnect the negative (-) battery lead to terminal 10 (UP1) within 1 second.	Motor gear rotates clockwise
1. Connect a positive (+) battery lead to terminal 2 (B), connect a negative (-) battery lead to terminal 1 (E), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (E) connected, connect a negative (-) battery lead to terminal 7 (DWN1). 3. Disconnect and reconnect the negative (-) battery lead to terminal 7 (DWN1) within 1 second.	Motor gear rotates counterclockwise

Text in Illustration

*1	Component without harness connected (to Front Power Window Regulator Motor Assembly LH)

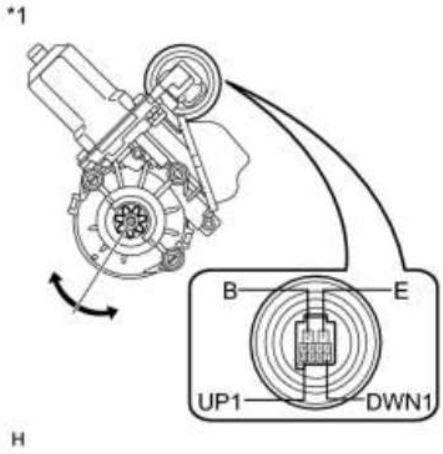
- If the result is not as specified, replace the front power window regulator motor assembly LH.

CAUTION:

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Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.

2. INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH



(a) Apply positive (+) battery voltage to connector terminal 2 (B).

NOTICE:

Do not apply positive (+) battery voltage to any terminals other than terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

(b) Connect a ground lead to connector terminals 1 (E) and 7 (DWN1) or 10 (UP1).

(c) Check that the motor gear rotates smoothly as follows:

OK:

Measurement Condition	Specified Condition
1. Connect a positive (+) battery lead to terminal 2 (B), connect a negative (-) battery lead to terminal 1 (E), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (E) connected, connect a negative (-) battery lead to terminal 10 (UP1). 3. Disconnect and reconnect the negative (-) battery lead to terminal 10 (UP1) within 1 second.	Motor gear rotates counterclockwise
1. Connect a positive (+) battery lead to terminal 2 (B), connect a negative (-) battery lead to terminal 1 (E), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (E) connected, connect a negative (-) battery lead to terminal 7 (DWN1). 3. Disconnect and reconnect the negative (-) battery lead to terminal 7 (DWN1) within 1 second.	Motor gear rotates clockwise

Text in Illustration

*1	Component without harness connected (to Front Power Window Regulator Motor Assembly RH)

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

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CAUTION:

Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.

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INSTALLATION

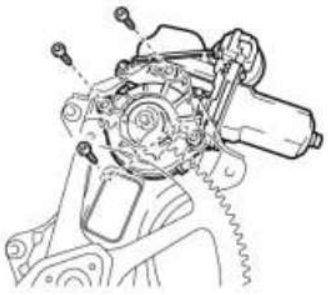
HINT:

- Use the same procedure for the RH side and LH side.
- The procedure listed below is for the LH side.

1. INSTALL FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY

NOTICE:

The regulator arm must be below the intermediate position when installing the front power window regulator motor assembly.



P

(a) Using a T25 "TORX" driver, install the front power window regulator motor assembly with the 3 screws.

Torque: **5.4 N·m (55 kgf·cm, 48in·lbf)**

HINT:

A new front window regulator uses self-tapping screws to thread new installation holes when the self-tapping screws are inserted.

2. INSTALL FRONT DOOR WINDOW REGULATOR 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 INSIDE HANDLE SUB-ASSEMBLY INFO

7. INSTALL FRONT DOOR TRIM BOARD SUB-ASSEMBLY INFO

8. INSTALL COURTESY LIGHT ASSEMBLY INFO

9. INSTALL DOOR ARMREST COVER INFO

10. INSTALL POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY WITH FRONT DOOR ARMREST BASE PANEL (for Driver Side) INFO

11. INSTALL POWER WINDOW REGULATOR SWITCH ASSEMBLY WITH FRONT DOOR ARMREST BASE PANEL (for Front Passenger Side) INFO

12. INSTALL ASSIST GRIP COVER INFO

13. INSTALL FRONT DOOR INSIDE HANDLE BEZEL PLUG INFO

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14. INSTALL REAR NO. 3 FLOOR BOARD INFO

15. INSTALL REAR DECK FLOOR BOX INFO

16. INSTALL REAR NO. 2 FLOOR BOARD (for Separate Type) INFO

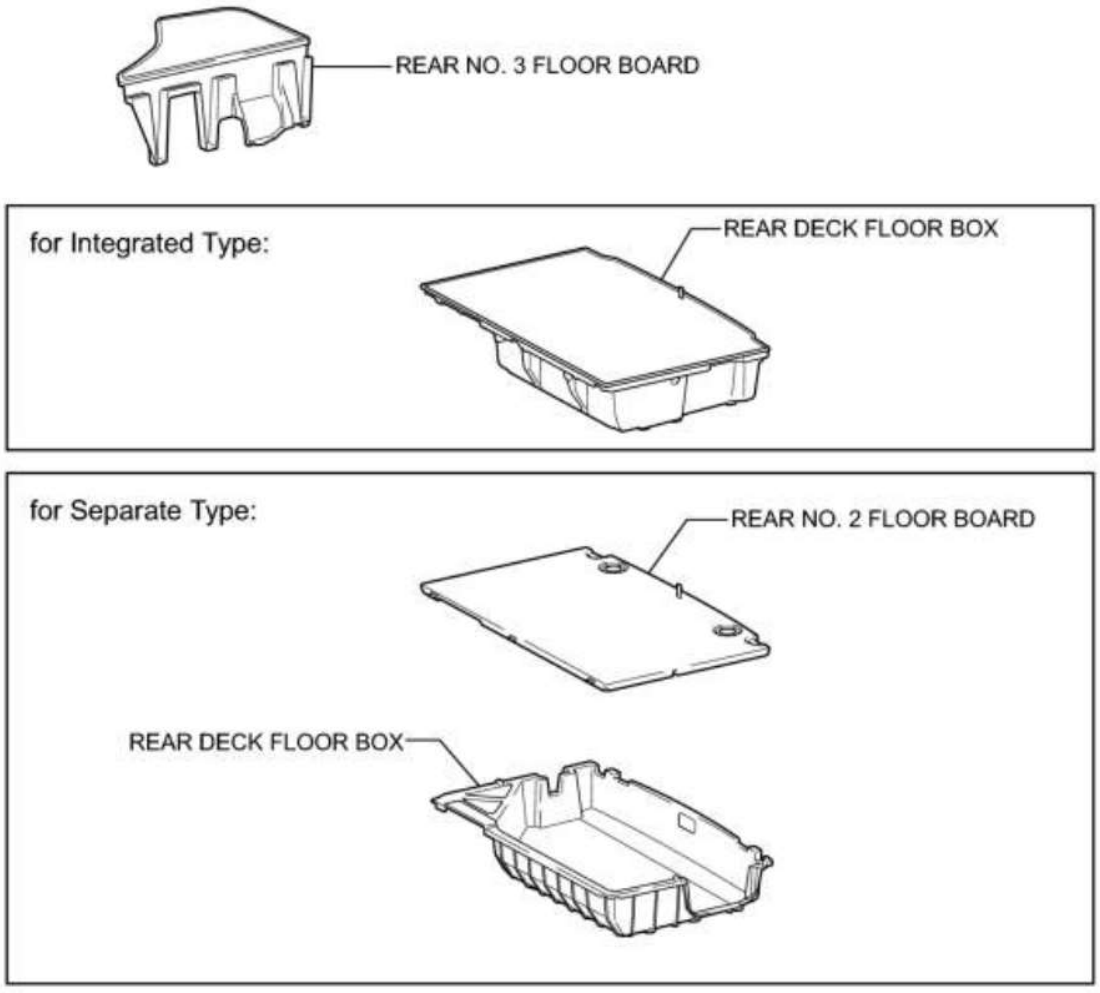
17. INITIALIZE POWER WINDOW CONTROL SYSTEM

INFO

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COMPONENTS

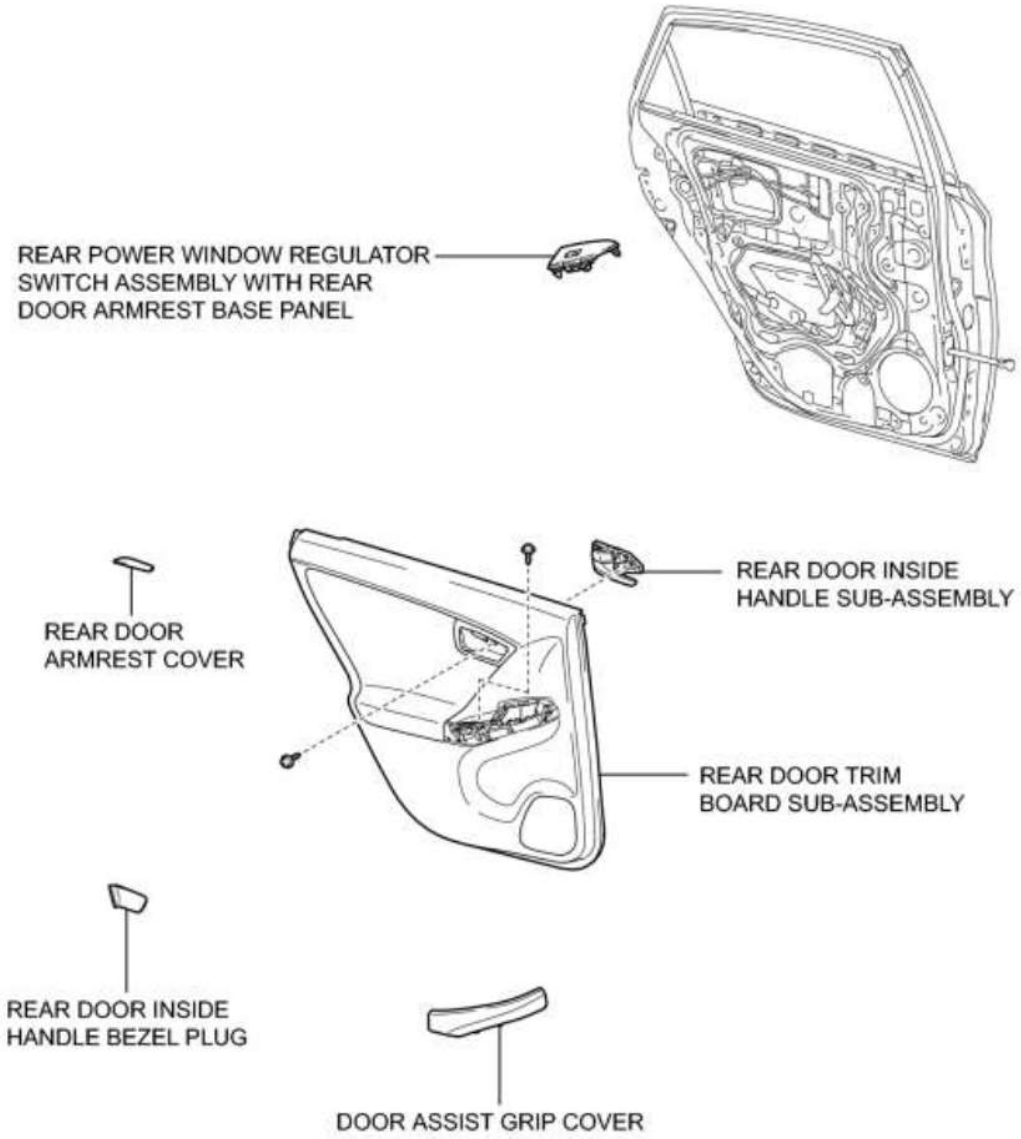
ILLUSTRATION



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ILLUSTRATION

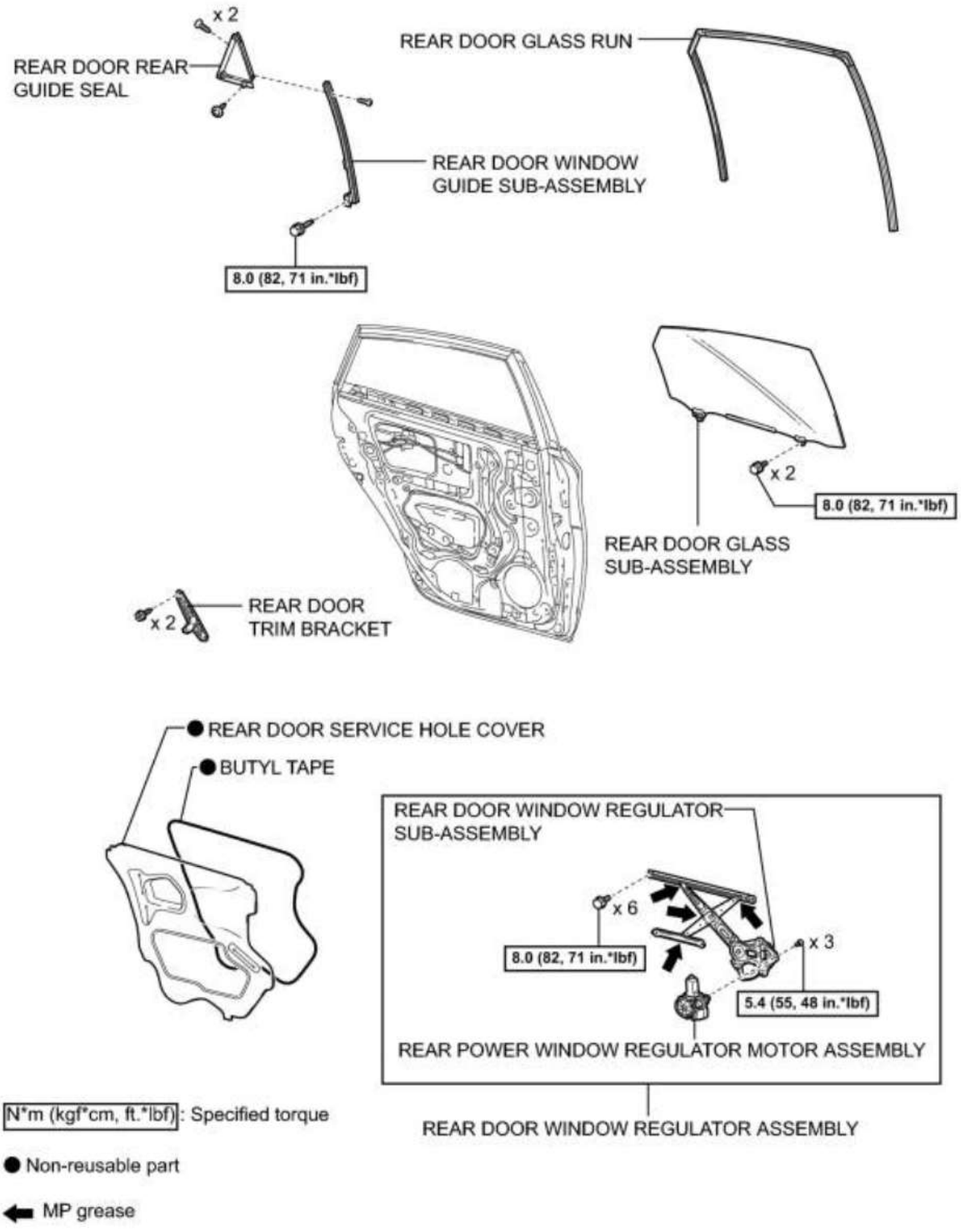
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REMOVAL

HINT:

- Use the same procedure for the RH side and LH side.
- The procedure listed below is for the LH side.

1. REMOVE REAR NO. 2 FLOOR BOARD (for Separate Type) INFO

2. REMOVE REAR DECK FLOOR BOX INFO

3. REMOVE REAR NO. 3 FLOOR BOARD INFO

4. REMOVE REAR DOOR INSIDE HANDLE BEZEL PLUG INFO

5. REMOVE DOOR ASSIST GRIP COVER INFO

6. REMOVE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY WITH REAR DOOR ARMREST BASE PANEL INFO

7. REMOVE REAR DOOR ARMREST COVER INFO

8. REMOVE REAR DOOR TRIM BOARD SUB-ASSEMBLY INFO

9. REMOVE REAR DOOR INSIDE HANDLE SUB-ASSEMBLY INFO

10. REMOVE REAR DOOR TRIM BRACKET INFO

11. REMOVE REAR DOOR SERVICE HOLE COVER INFO

12. REMOVE REAR DOOR GLASS RUN INFO

13. REMOVE REAR DOOR WINDOW GUIDE SUB-ASSEMBLY INFO

14. REMOVE REAR DOOR REAR GUIDE SEAL INFO

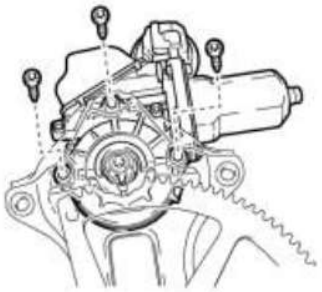
15. REMOVE REAR DOOR GLASS SUB-ASSEMBLY INFO

16. REMOVE REAR DOOR WINDOW REGULATOR ASSEMBLY INFO

17. REMOVE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY

(a) Using a T25 "TORX" driver, remove the 3 screws and the rear power window regulator motor assembly.

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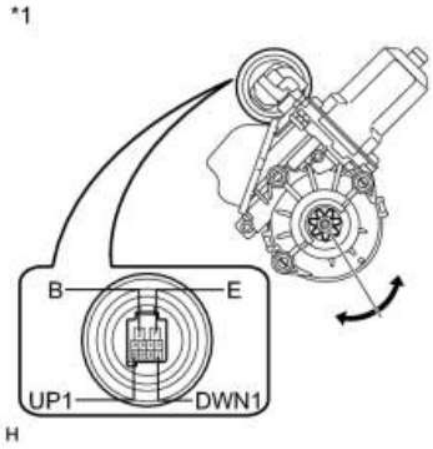


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INSPECTION

1. INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH



(a) Apply positive (+) battery voltage to connector terminal 2 (B).

NOTICE:

Do not apply positive (+) battery voltage to any terminals other than terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

(b) Connect a ground lead to connector terminals 1 (E) and 7 (DWN1) or 10 (UP1).

(c) Check that the motor gear rotates smoothly as follows:

OK:

Measurement Condition	Specified Condition
1. Connect a positive (+) battery lead to terminal 2 (B), connect a negative (-) battery lead to terminal 1 (E), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (E) connected, connect a negative (-) battery lead to terminal 10 (UP1). 3. Disconnect and reconnect the negative (-) battery lead to terminal 10 (UP1) within 1 second.	Motor gear rotates clockwise
1. Connect a positive (+) battery lead to terminal 2 (B), connect a negative (-) battery lead to terminal 1 (E), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (E) connected, connect a negative (-) battery lead to terminal 7 (DWN1). 3. Disconnect and reconnect the negative (-) battery lead to terminal 7 (DWN1) within 1 second.	Motor gear rotates counterclockwise

Text in Illustration

*1	Component without harness connected (to Rear Power Window Regulator Motor Assembly LH)

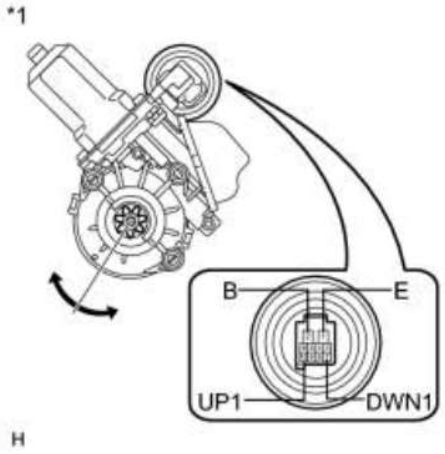
- If the result is not as specified, replace the rear power window regulator motor assembly LH.

CAUTION:

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Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.

2. INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH



(a) Apply positive (+) battery voltage to connector terminal 2 (B).

NOTICE:

Do not apply positive (+) battery voltage to any terminals other than terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

(b) Connect a ground lead to connector terminals 1 (E) and 7 (DWN1) or 10 (UP1).

(c) Check that the motor gear rotates smoothly as follows:

OK:

Measurement Condition	Specified Condition
1. Connect a positive (+) battery lead to terminal 2 (B), connect a negative (-) battery lead to terminal 1 (E), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (E) connected, connect a negative (-) battery lead to terminal 10 (UP1). 3. Disconnect and reconnect the negative (-) battery lead to terminal 10 (UP1) within 1 second.	Motor gear rotates counterclockwise
1. Connect a positive (+) battery lead to terminal 2 (B), connect the negative (-) battery lead to terminal 1 (E), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (E) connected, connect a negative (-) battery lead to terminal 7 (DWN1). 3. Disconnect and reconnect a negative (-) battery lead to terminal 7 (DWN1) within 1 second.	Motor gear rotates clockwise

Text in Illustration

*1	Component without harness connected (to Rear Power Window Regulator Motor Assembly RH)

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

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CAUTION:

Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.

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INSTALLATION

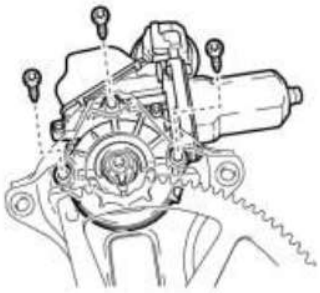
HINT:

- Use the same procedure for the RH side and LH side.
- The procedure listed below is for the LH side.

1. INSTALL REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY

NOTICE:

The regulator arm must be below the intermediate position when installing the rear power window regulator motor assembly.



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(a) Using a T25 "TORX" driver, install the rear power window regulator motor assembly with the 3 screws.

Torque: **5.4 N·m (55 kgf·cm, 48in·lbf)**

HINT:

A new rear window regulator uses self-tapping screws to thread new installation holes when the self-tapping screws are inserted.

2. INSTALL REAR DOOR WINDOW REGULATOR ASSEMBLY INFO

3. INSTALL REAR DOOR GLASS SUB-ASSEMBLY INFO

4. INSTALL REAR DOOR REAR GUIDE SEAL INFO

5. INSTALL REAR DOOR WINDOW GUIDE SUB-ASSEMBLY INFO

6. INSTALL REAR DOOR GLASS RUN INFO

7. INSTALL REAR DOOR SERVICE HOLE COVER INFO

8. INSTALL REAR DOOR TRIM BRACKET INFO

9. INSTALL REAR DOOR INSIDE HANDLE SUB-ASSEMBLY INFO

10. INSTALL REAR DOOR TRIM BOARD SUB-ASSEMBLY INFO

11. INSTALL REAR DOOR ARMREST COVER INFO

12. INSTALL REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY WITH REAR DOOR ARMREST BASE PANEL INFO

13. INSTALL DOOR ASSIST GRIP COVER INFO

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14. INSTALL REAR DOOR INSIDE HANDLE BEZEL PLUG INFO

15. INSTALL REAR NO. 3 FLOOR BOARD INFO

16. INSTALL REAR DECK FLOOR BOX INFO

17. INSTALL REAR NO. 2 FLOOR BOARD (for Separate Type) INFO

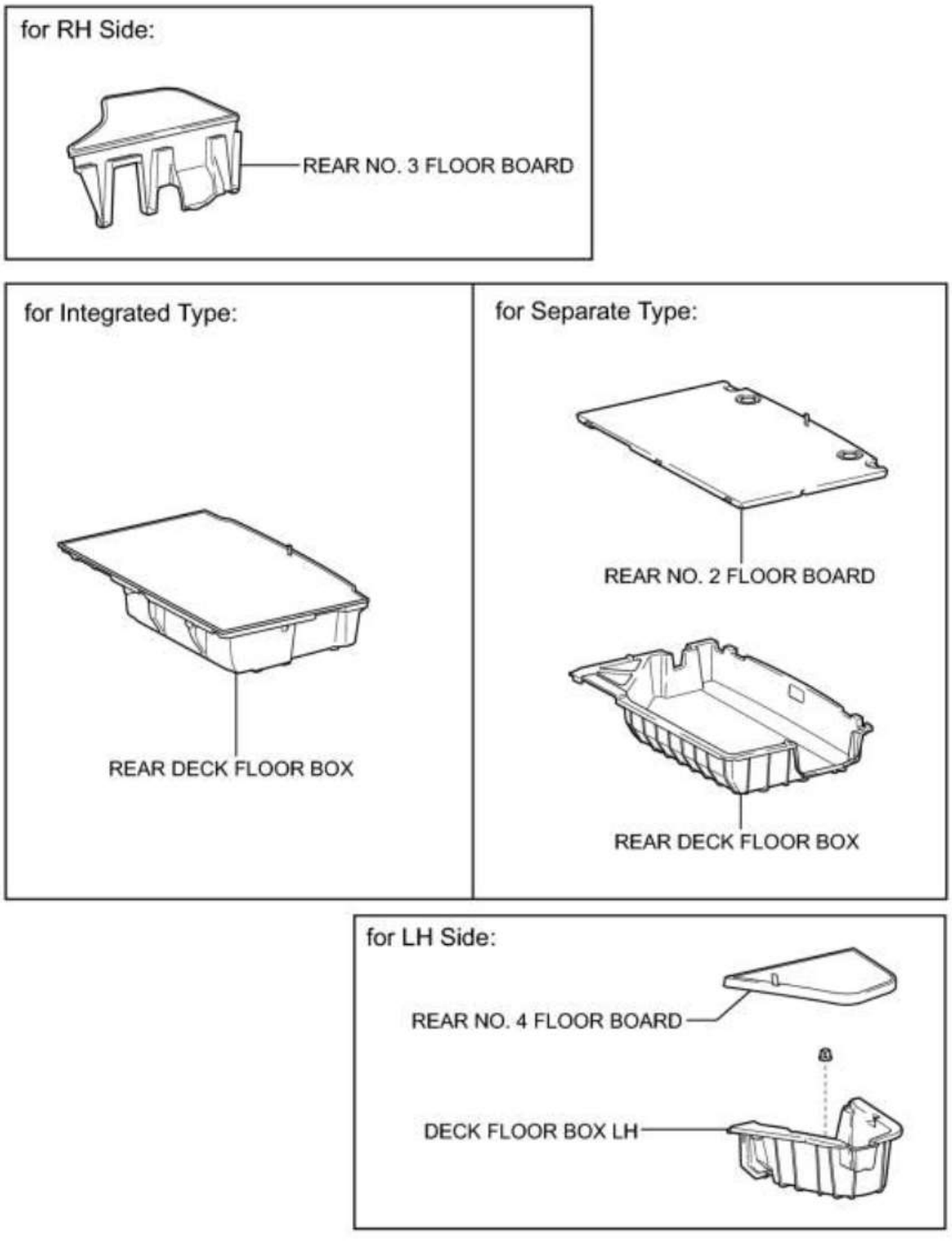
18. INITIALIZE POWER WINDOW CONTROL SYSTEM

INFO

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COMPONENTS

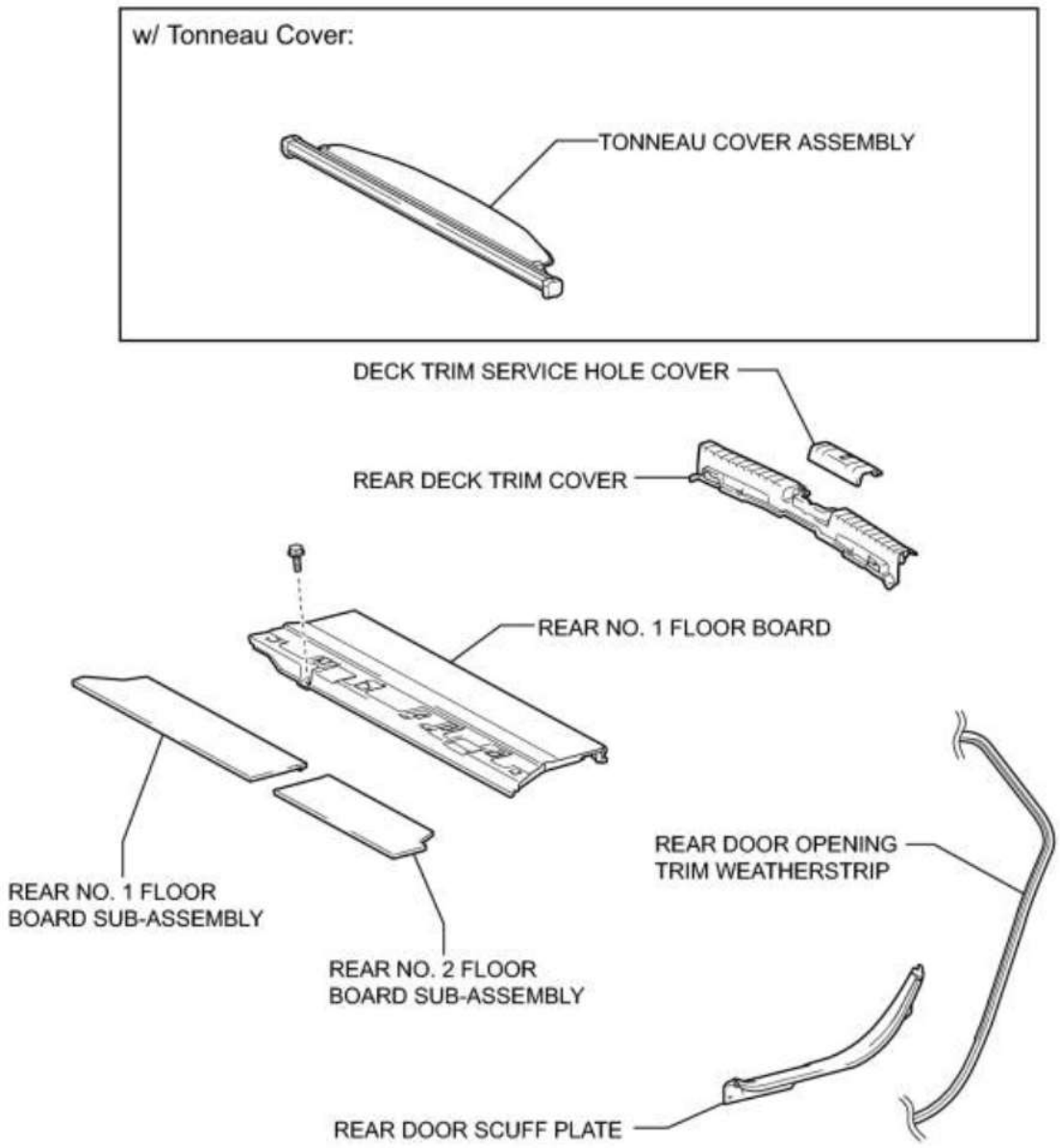
ILLUSTRATION



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ILLUSTRATION

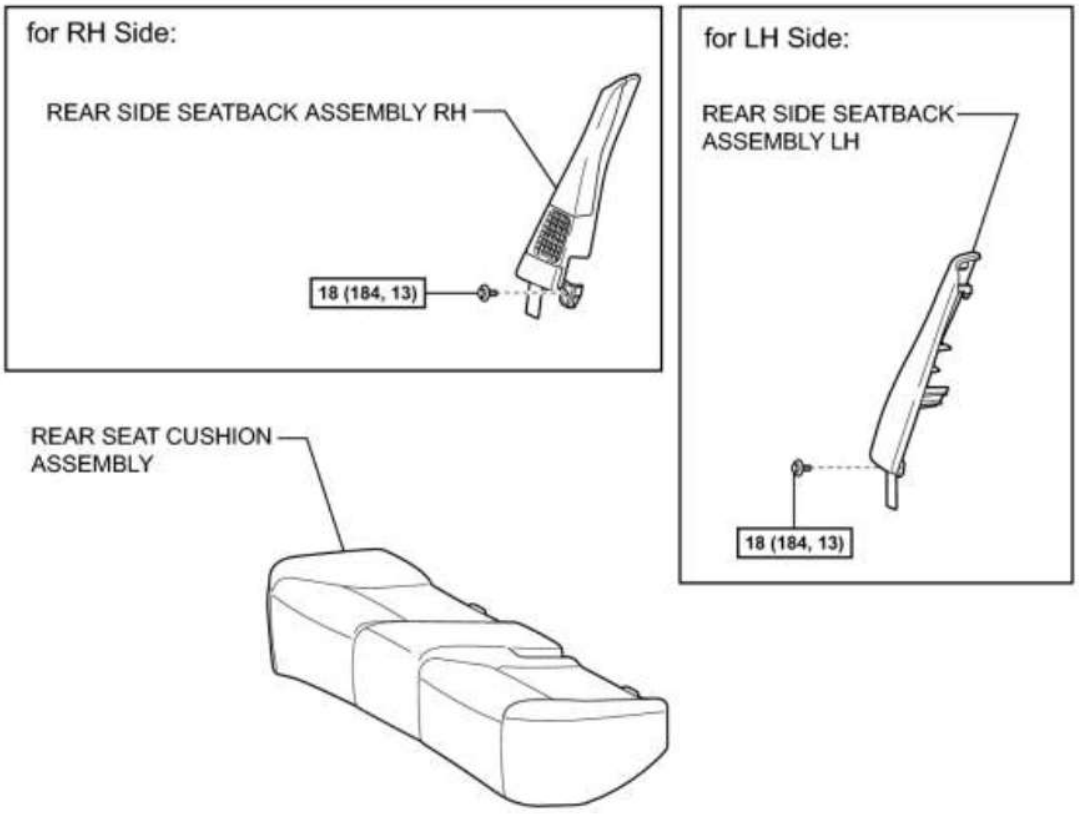
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ILLUSTRATION

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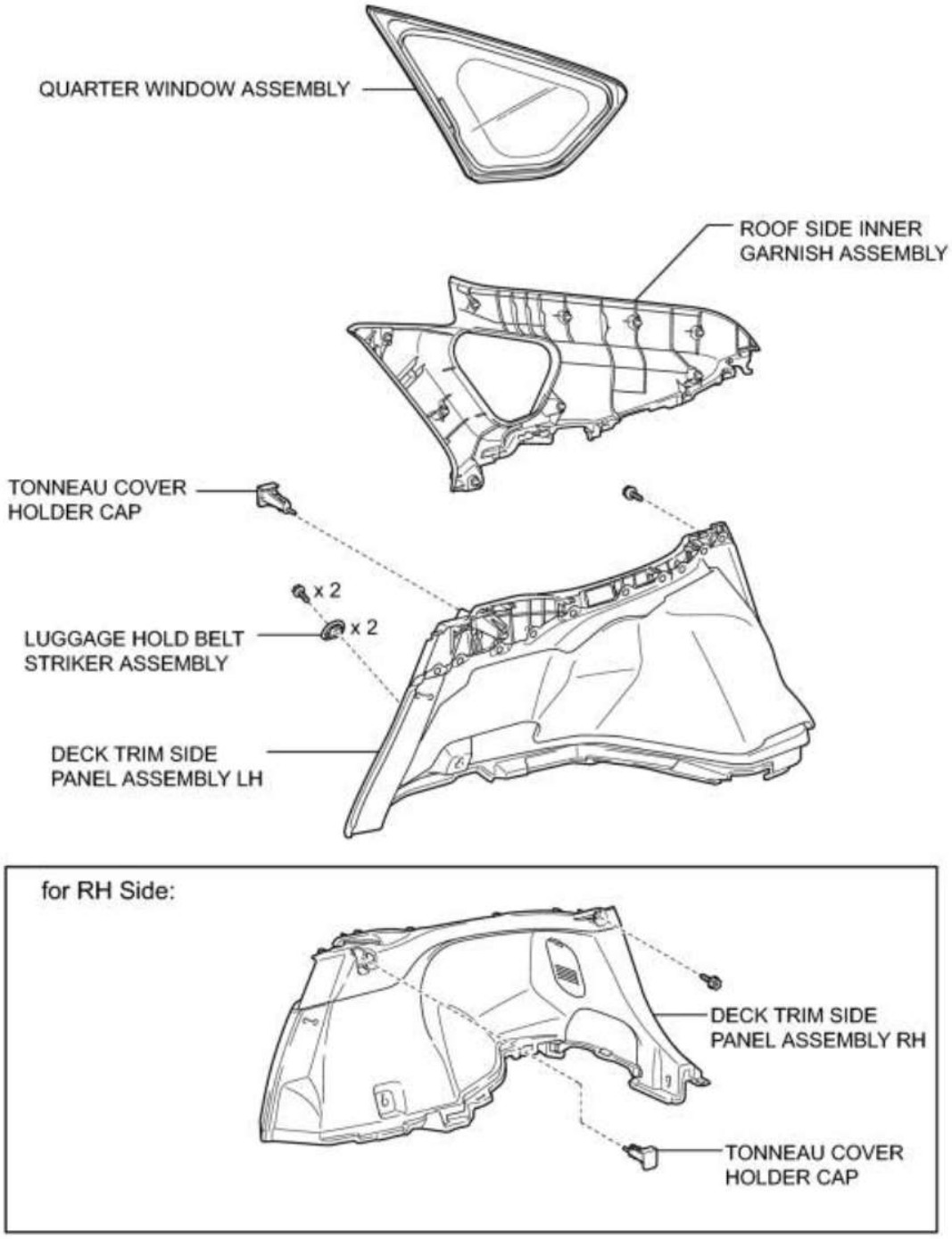


N*m (kgf*cm, ft.*lbf): Specified torque

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ILLUSTRATION

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REMOVAL

HINT:

- The front side fix window assembly can be reused. When installing the window, if any of the clips on the quarter window glass are broken, butyl tape can be used to support the glass until the applied adhesive hardens.
- When using butyl tape to temporarily secure the window, make sure that the butyl tape is not applied exactly at the original clip location. If the butyl tape is applied exactly at the clip location, it will cause the window to protrude
- Use the same procedure for the RH side and LH side.
- The procedure listed below is for the LH side.

1. REMOVE REAR NO. 2 FLOOR BOARD (for Separate Type) INFO

2. REMOVE REAR DECK FLOOR BOX INFO

3. REMOVE REAR NO. 3 FLOOR BOARD (for RH Side) INFO

4. REMOVE REAR DOOR SCUFF PLATE INFO

5. DISCONNECT REAR DOOR OPENING TRIM WEATHERSTRIP

6. REMOVE REAR SEAT CUSHION ASSEMBLY INFO

7. REMOVE REAR SIDE SEATBACK ASSEMBLY LH (for LH Side) INFO

8. REMOVE REAR SIDE SEATBACK ASSEMBLY RH (for RH Side) INFO

9. REMOVE TONNEAU COVER ASSEMBLY (w/ Tonneau Cover) INFO

10. REMOVE REAR NO. 4 FLOOR BOARD INFO

11. REMOVE DECK FLOOR BOX LH (for LH Side) INFO

12. REMOVE REAR NO. 1 FLOOR BOARD SUB-ASSEMBLY INFO

13. REMOVE REAR NO. 2 FLOOR BOARD SUB-ASSEMBLY INFO

14. REMOVE REAR NO. 1 FLOOR BOARD INFO

15. REMOVE DECK TRIM SERVICE HOLE COVER INFO

16. REMOVE REAR DECK TRIM COVER INFO

17. REMOVE LUGGAGE HOLD BELT STRIKER ASSEMBLY INFO

18. REMOVE TONNEAU COVER HOLDER CAP (for LH Side) INFO

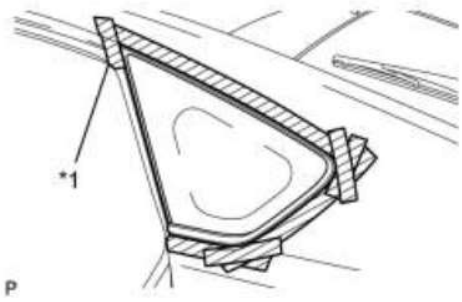
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19. REMOVE DECK TRIM SIDE PANEL ASSEMBLY LH (for LH Side) INFO

20. REMOVE DECK TRIM SIDE PANEL ASSEMBLY RH (for RH Side) INFO

21. REMOVE ROOF SIDE INNER GARNISH ASSEMBLY INFO

22. REMOVE QUARTER WINDOW ASSEMBLY

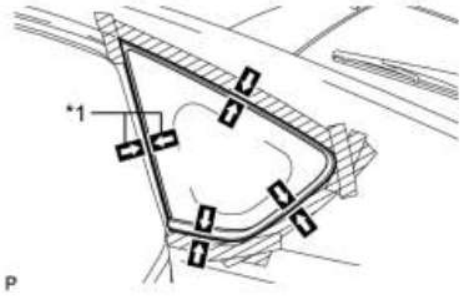


(a) Apply protective tape to the outer surface of the vehicle body to prevent scratches.

Text in Illustration

*1	Protective Tape

(b) Place matchmarks on the quarter window assembly and vehicle body on the locations indicated in the illustration.



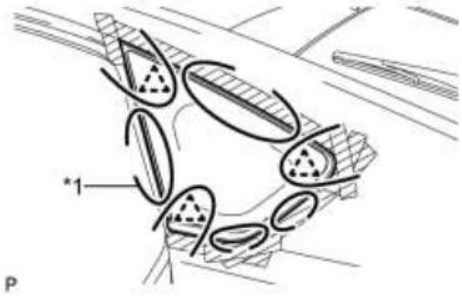
Text in Illustration

*1	Matchmark

HINT:

Do not allow the piano wire to interfere with the clips.

(c) Pass a piano wire between the vehicle body and glass from the interior as shown in the illustration.



HINT:

Ensure not to interfere with the clips when passing the piano wire.

Text in Illustration

*1	Piano Wire

(d) Tie both wire ends to wooden blocks or similar objects that can serve as handles.

NOTICE:

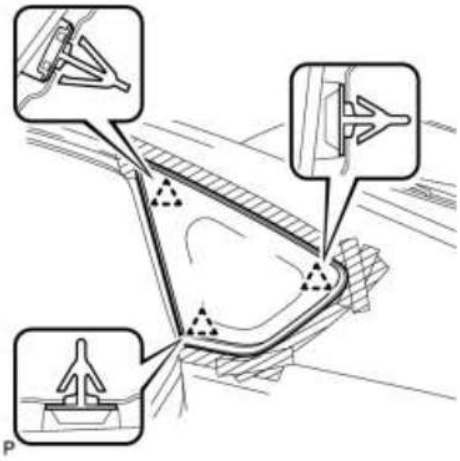
When separating the quarter window assembly from the vehicle, be careful not to damage the paint or interior and exterior ornaments.

(e) Cut off the adhesive by pulling the piano wire around the quarter window assembly.

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NOTICE:

Leave as much adhesive on the vehicle body as possible when cutting through the adhesive.



(f) Disengage the 3 clips.

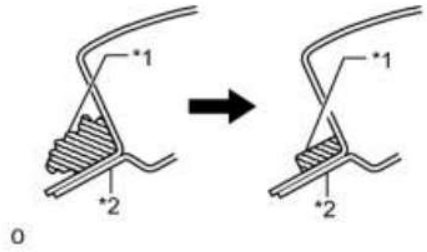
(g) Using suction cups, remove the glass.

NOTICE:

Be careful not to drop the glass.

23. CLEAN VEHICLE BODY

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



Text in Illustration

*1	Adhesive
*2	Vehicle Body

(1) Using a knife, cut away excess adhesive on the contact surfaces of the vehicle body 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.

(b) Clean the contact surfaces of the vehicle body with a piece of cloth saturated with cleaner.

HINT:

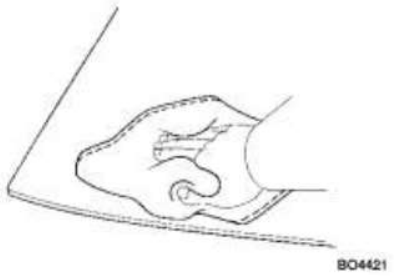
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Even if all the adhesive has been removed, clean the vehicle body.

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INSTALLATION

1. CLEAN QUARTER WINDOW ASSEMBLY

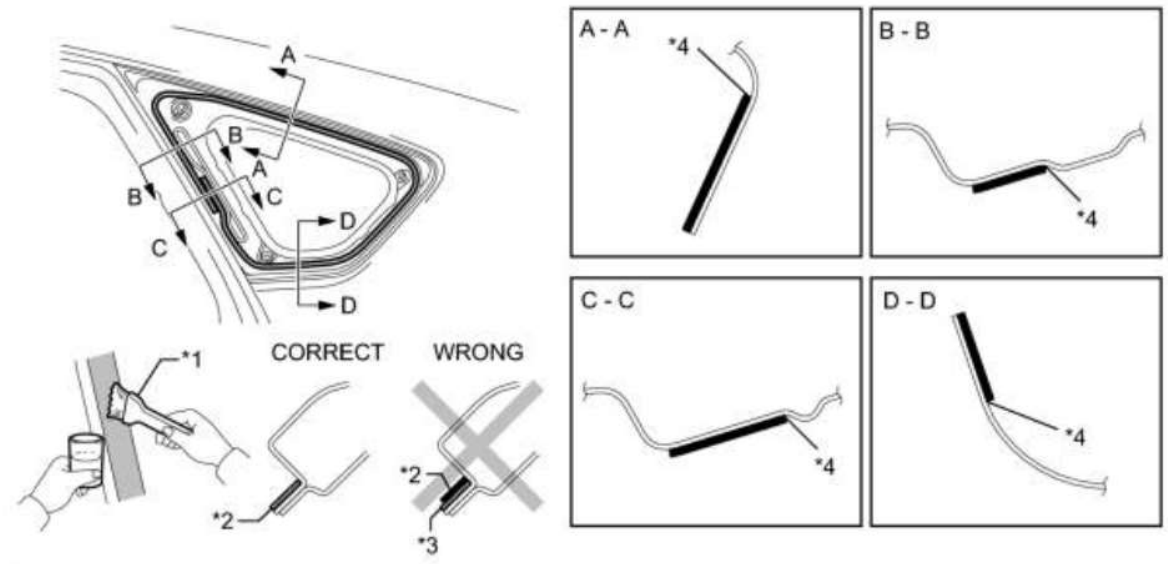


(a) Clean the outer edges of the quarter window assembly with a non-residue solvent.

- Do not touch the glass surface after cleaning it.
- Be careful not to damage the glass or clips.

2. INSTALL QUARTER WINDOW ASSEMBLY

(a) Using a brush or a sponge, apply Primer M to the exposed part of the vehicle body.



Text in Illustration

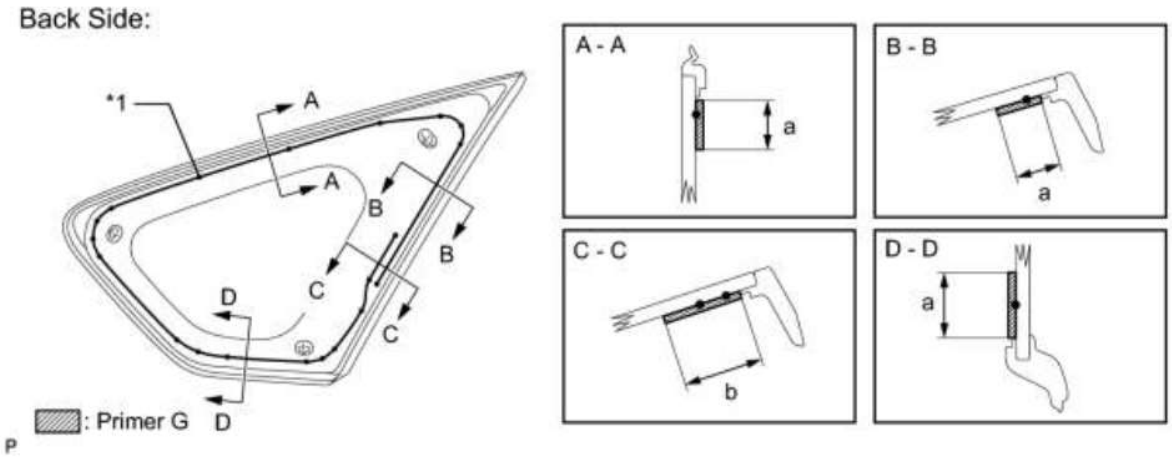
*1	Brush	*2	Primer M
*3	Adhesive	*4	Edge of Curved Surface

NOTICE:

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

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(b) Using a brush or a sponge, apply Primer G to the contact surface of the quarter window glass.



Text in Illustration

*1	Ceramic Notch x 20	-	-

Item	Dimension
a	11.0 mm (0.433 in.)
b	19.0 mm (0.748 in.)

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a non-residue solvent before it dries.

NOTICE:

- To prevent the glass from breaking at low temperatures, ensure that no primer adheres to the contact surface between the moulding and glass during application.
- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

(c) Apply adhesive to the quarter window assembly.

Adhesive:

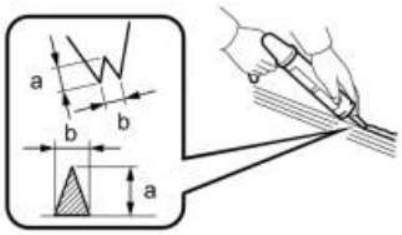
Toyota Genuine Windshield Glass Adhesive or equivalent

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

Standard Dimension:

Item	Dimension

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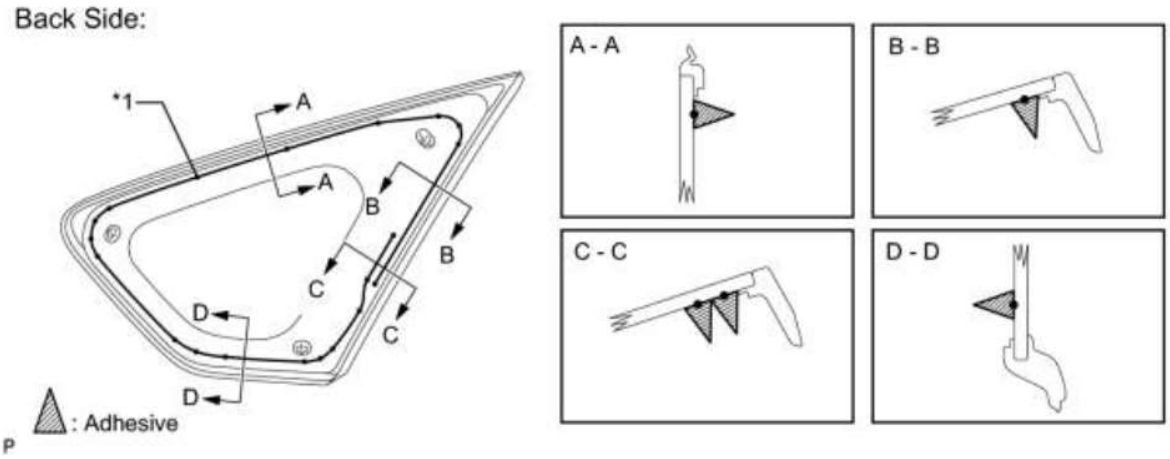


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a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)

(2) Load the sealer gun with cartridge.

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

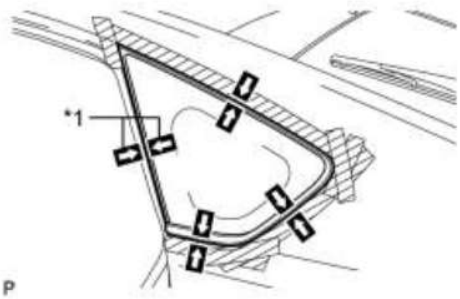


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Text in Illustration

*1	Ceramic Notch x 20	-	-

(d) Install the quarter window glass to the vehicle body.



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(1) Position the quarter window glass so that the matchmarks are aligned, and press it in gently along the rim (when a window with missing clips is used).

Text in Illustration

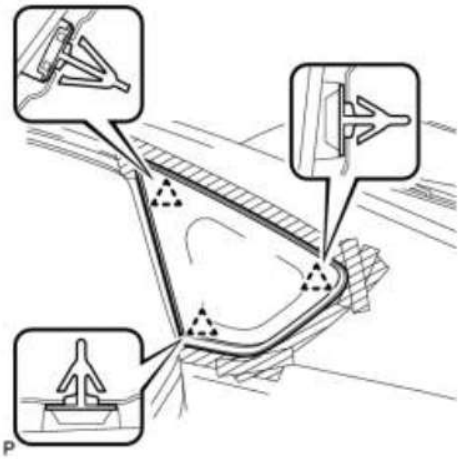
*1	Matchmark

(2) Lightly press the front surface of the windshield glass to ensure that the windshield glass is securely fit to the vehicle body (when a window with missing clips is used).

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HINT:

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



(3) Engage the 3 clips to install the quarter window glass (when a window without missing clips is used used).

(4) Hold the quarter window assembly in place securely with protective tape or equivalent until the adhesive hardens.

NOTICE:

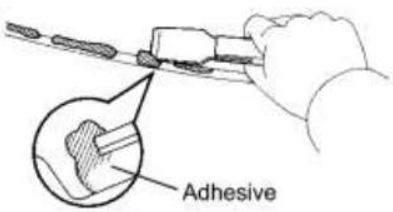
- Allow the primer to dry for 3 minutes or more.
- Check that the clips are attached to the body correctly.
- Check the clearance between the body and glass.

(5) Lightly press the outer surface of the glass to ensure that the glass is securely fit to the vehicle body.

(6) Using a scraper, remove any excess or protruding adhesive.

HINT:

Apply adhesive onto the glass rim.



NOTICE:

Do not drive the vehicle within the 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

3. INSPECT FOR LEAK AND REPAIR

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(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.

4. INSTALL ROOF SIDE INNER GARNISH ASSEMBLY INFO

5. INSTALL DECK TRIM SIDE PANEL ASSEMBLY LH (for LH Side) INFO

6. INSTALL DECK TRIM SIDE PANEL ASSEMBLY RH (for RH Side) INFO

7. INSTALL TONNEAU COVER HOLDER CAP INFO

8. INSTALL LUGGAGE HOLD BELT STRIKER ASSEMBLY INFO

9. INSTALL REAR DECK TRIM COVER INFO

10. INSTALL DECK TRIM SERVICE HOLE COVER INFO

11. INSTALL REAR NO. 1 FLOOR BOARD INFO

12. INSTALL REAR NO. 2 FLOOR BOARD SUB-ASSEMBLY INFO

13. INSTALL REAR NO. 1 FLOOR BOARD SUB-ASSEMBLY INFO

14. INSTALL DECK FLOOR BOX LH (for LH Side) INFO

15. INSTALL REAR NO. 4 FLOOR BOARD (for LH Side) INFO

16. INSTALL TONNEAU COVER ASSEMBLY (w/ Tonneau Cover) INFO

17. INSTALL REAR SIDE SEATBACK ASSEMBLY LH (for LH Side) INFO

18. INSTALL REAR SIDE SEATBACK ASSEMBLY RH (for RH Side) INFO

19. INSTALL REAR SEAT CUSHION ASSEMBLY INFO

20. CONNECT REAR DOOR OPENING TRIM WEATHERSTRIP INFO

21. INSTALL REAR DOOR SCUFF PLATE INFO

22. INSTALL REAR NO. 3 FLOOR BOARD (for RH Side) INFO

23. INSTALL REAR DECK FLOOR BOX INFO

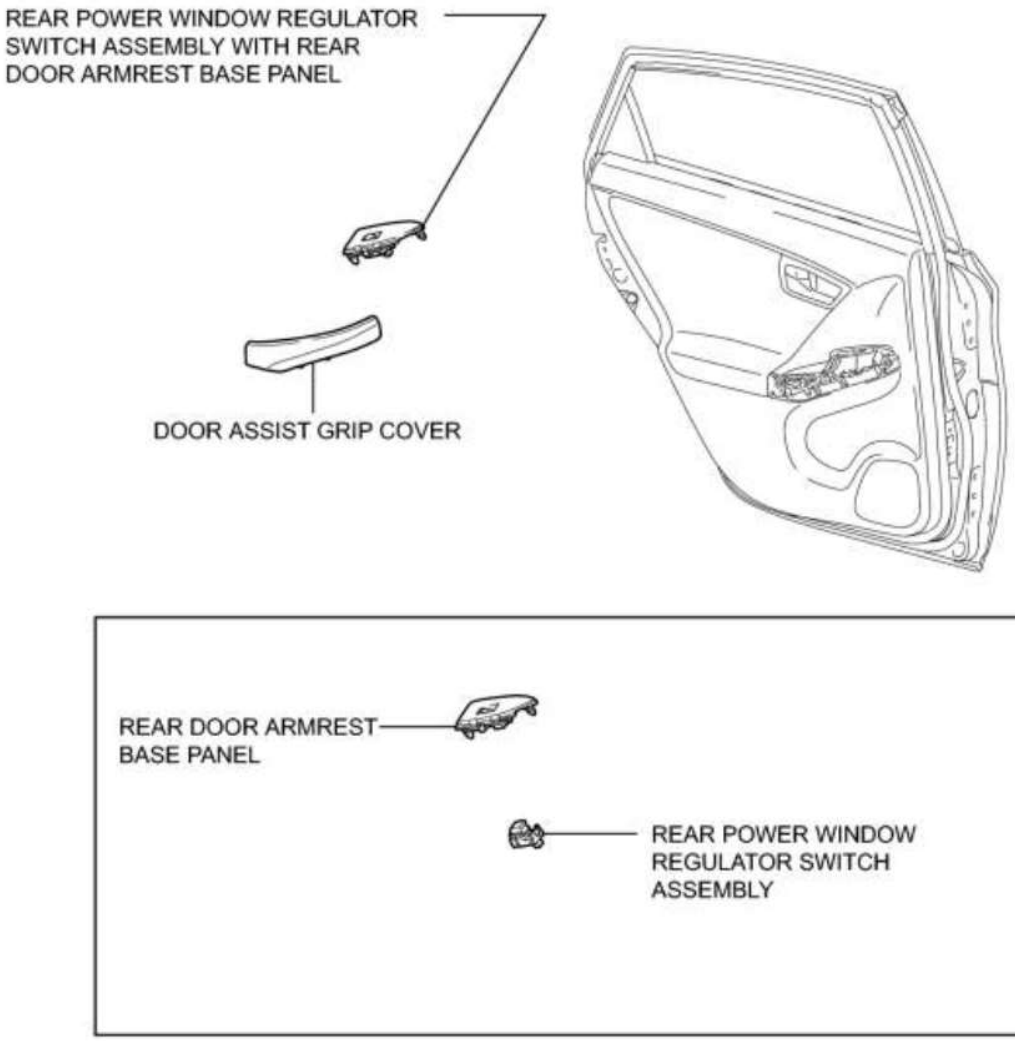
24. INSTALL REAR NO. 2 FLOOR BOARD (for Separate Type) INFO

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COMPONENTS

ILLUSTRATION



P

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REMOVAL

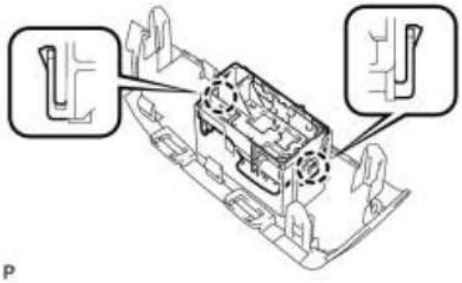
HINT:

- Use the same procedure for the RH side and LH side.
- The procedure listed below is for the LH side.

1. REMOVE DOOR ASSIST GRIP COVER INFO

2. REMOVE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY WITH REAR DOOR ARMREST BASE PANEL INFO

3. REMOVE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY



P

(a) Disengage the 2 claws and remove the rear power window regulator switch assembly.

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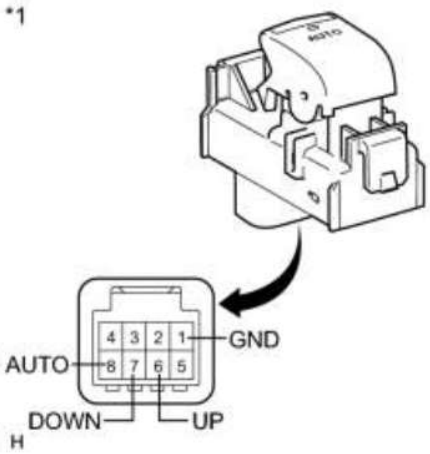
INSPECTION

1. INSPECT REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY (for LH Side)

(a) Check the switch function.

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

Standard Resistance:



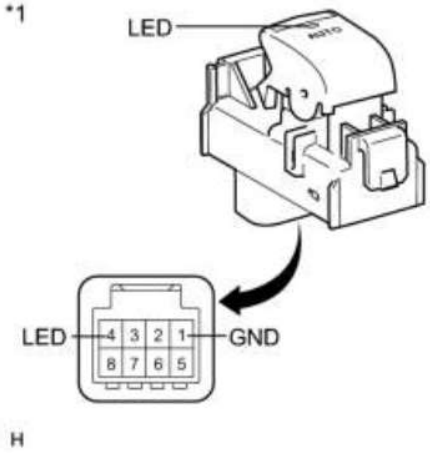
Tester Connection	Switch Condition	Specified Condition
6 (UP) - 1 (GND)	Auto up or up position	Below 1 Ω
7 (DOWN) - 1 (GND)	Auto down or down position	Below 1 Ω
8 (AUTO) - 1 (GND)	Auto up or auto down position	Below 1 Ω
6 (UP) - 1 (GND)	Free	10 kΩ or higher
7 (DOWN) - 1 (GND)	Free	10 kΩ or higher
8 (AUTO) - 1 (GND)	Free	10 kΩ or higher

Text in Illustration

*1	Component without harness connected (to Power Window Regulator Switch Assembly (for Rear LH Side))

If the result is not as specified, replace the power window regulator switch assembly (for rear LH side).

(b) Check that the LED illuminates.



(1) Apply battery voltage to the power window regulator switch assembly and check that the LED illuminates.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → 4 (LED) Battery negative (-) → 1 (GND)	LED illuminates

Text in Illustration

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*1	Component without harness connected (to Power Window Regulator Switch Assembly (for Rear LH Side))

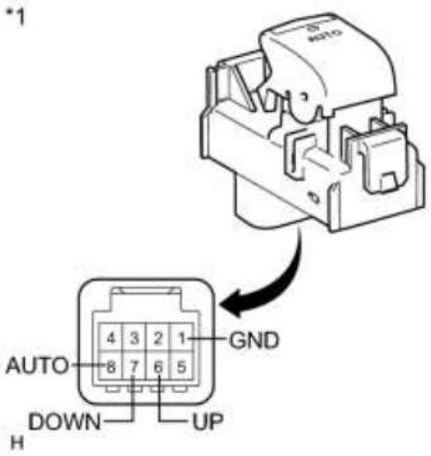
If the result is not as specified, replace the power window regulator switch assembly (for rear LH side).

2. INSPECT REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY (for RH Side)

(a) Check the switch function.

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

Standard Resistance:



Tester Connection	Switch Condition	Specified Condition
6 (UP) - 1 (GND)	Auto up or up position	Below 1 Ω
7 (DOWN) - 1 (GND)	Auto down or down position	Below 1 Ω
8 (AUTO) - 1 (GND)	Auto up or auto down position	Below 1 Ω
6 (UP) - 1 (GND)	Free	10 kΩ or higher
7 (DOWN) - 1 (GND)	Free	10 kΩ or higher
8 (AUTO) - 1 (GND)	Free	10 kΩ or higher

Text in Illustration

*1	Component without harness connected (to Power Window Regulator Switch Assembly (for Rear RH Side))

If the result is not as specified, replace the power window regulator switch assembly (for rear RH side).

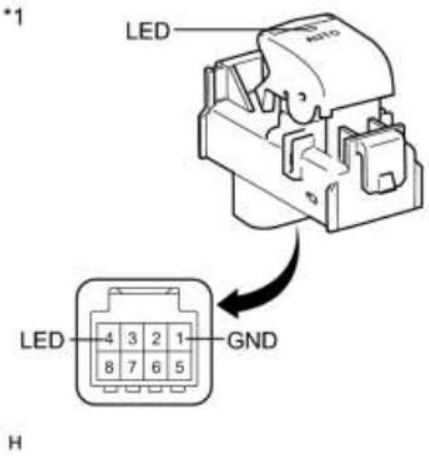
(b) Check that the LED illuminates.

(1) Apply battery voltage to the power window regulator switch assembly and check that the LED illuminates.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → 4 (LED)	LED illuminates

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Battery negative (-) → 1 (GND)	

Text in Illustration

*1	Component without harness connected (to Power Window Regulator Switch Assembly (for Rear RH Side))

If the result is not as specified, replace the power window regulator switch assembly (for rear RH side).

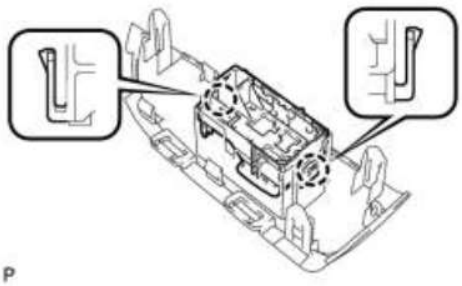
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INSTALLATION

HINT:

- Use the same procedure for the RH side and LH side.
- The procedure listed below is for the LH side.

1. INSTALL REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY



P

(a) Engage the 2 claws to install the rear power window regulator switch assembly.

2. INSTALL REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY WITH REAR DOOR ARMREST BASE PANEL INFO

3. INSTALL DOOR ASSIST GRIP COVER INFO

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PRECAUTION

1. NOTICE FOR INITIALIZATION

NOTICE:

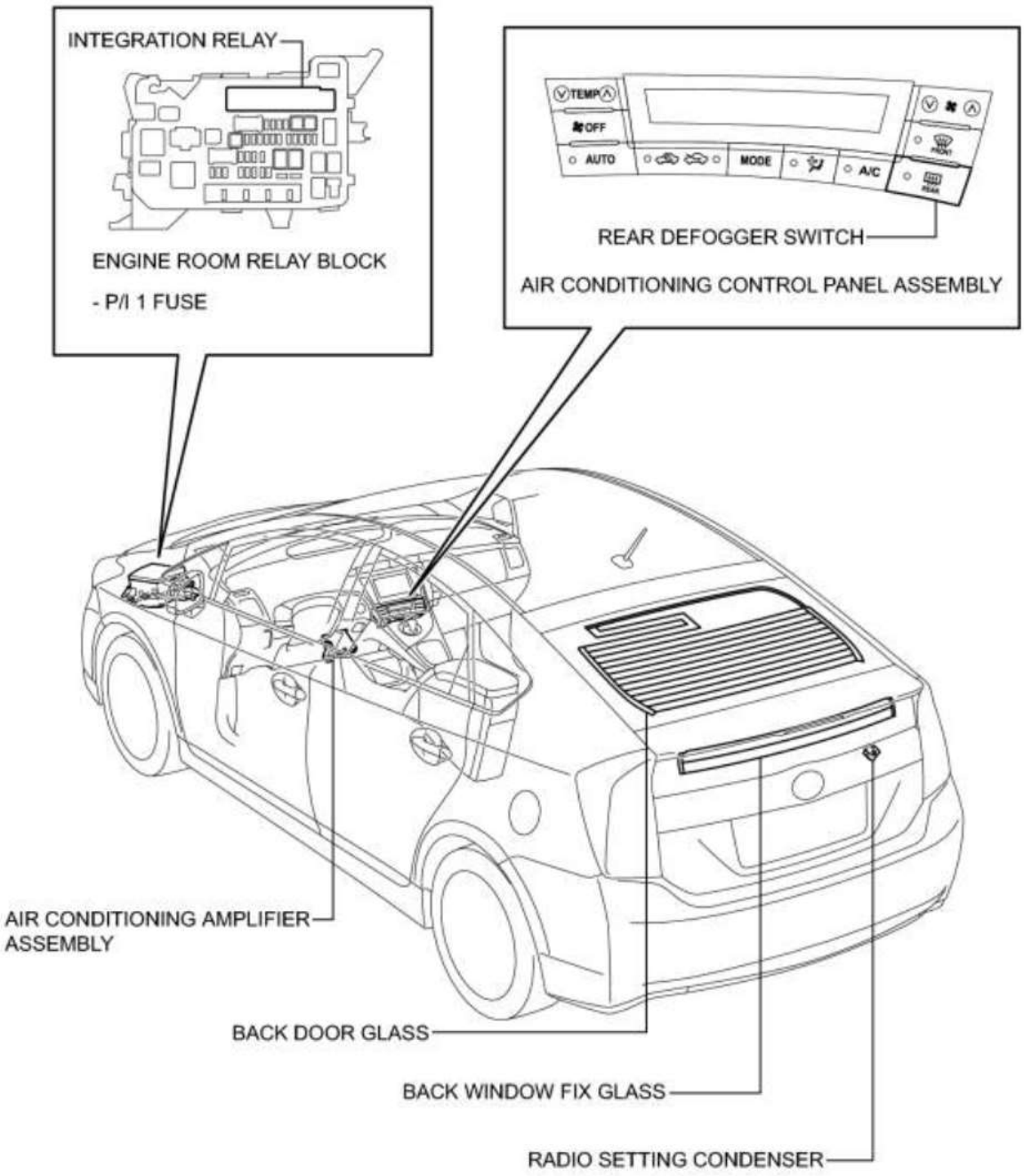
When disconnecting the cable from the negative (-) battery terminal, initialize the following systems after the cable is reconnected.

System Name	See Procedure
Advanced Parking Guidance System	INFO

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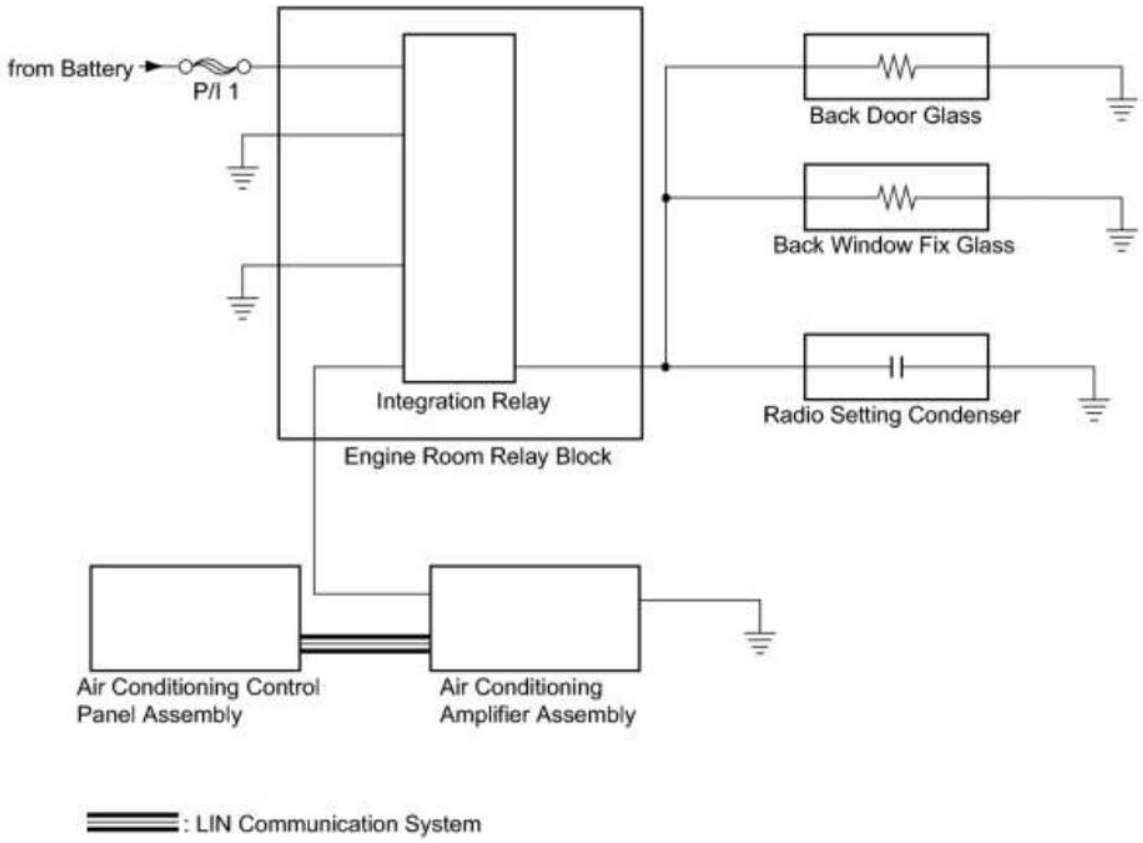
PARTS LOCATION

ILLUSTRATION



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SYSTEM DIAGRAM



Communication Table

Transmitting ECU	Receiving ECU	Signal	Communication Method
Air Conditioning Control Panel Assembly	Air Conditioning Amplifier Assembly	Rear window defogger switch signal	LIN

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SYSTEM DESCRIPTION

1. GENERAL

The rear window defogger wires are attached to the inside of the rear window and defog the window surface quickly by pressing the rear window defogger switch on the air conditioning control assembly. The indicator light illuminates while the system is operating. The system automatically turns off after approximately 15 minutes.

HINT:

If both of the following conditions are met after approximately 15 minutes from the rear window defogger was activated, the rear window defogger continues to operate up to approximately 45 minutes. If the following conditions are not met, the rear window defogger stops operating immediately.

- The outside temperature is -3°C (27°F) or below.
- The vehicle speed is 45 km/h (28 mph) or more.

HINT:

The rear window defogger is linked with the mirror defogger.

NOTICE:

If the battery voltage becomes low, window defogger operation is canceled to prioritize supplying power to the power steering system.

2. FUNCTION OF MAIN COMPONENT

Component	Outline
Integration Relay	Receives rear window defogger activation request signal from the air conditioning amplifier assembly and supplies power to the rear window defogger.
Rear Window Defogger	Receives power from the integration relay and heats the window using the rear window defogger wires.

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HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedure to troubleshoot the window defogger system.
- *: Use the Techstream.

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

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.	CHECK COMMUNICATION FUNCTION OF LIN COMMUNICATION SYSTEM*

(a) Check the LIN communication function to ensure there are no malfunctions in the communication system INFO.

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Result:

Result	Proceed to
DTC is not output.	A
DTC is output.	B

B ▶ INFO GO TO LIN COMMUNICATION SYSTEM

A ▼

5.	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 7

A ▼

6.	OVERALL ANALYSIS AND TROUBLESHOOTING*

(a) Terminals of ECU INFO

(b) Data List / Active Test INFO

(c) On-vehicle Inspection INFO

NEXT ▼

7.	REPAIR OR REPLACE

NEXT ▼

8.	CONFIRMATION TEST

NEXT ▶ **END**

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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 related to this system before inspecting the suspected areas below.

Window Defogger System

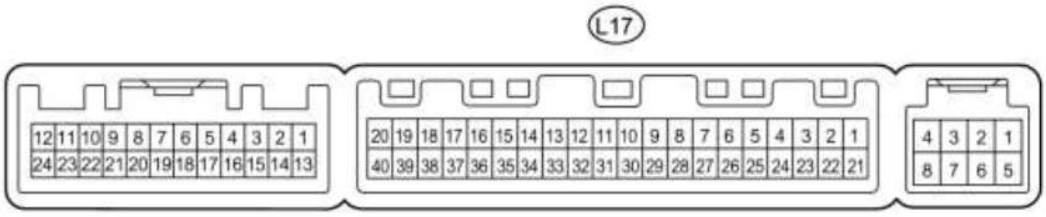
Symptom	Suspected Area	See page
Rear Window Defogger System does not Operate.	Back door glass	INFO
	Back window fix glass	-
	Air conditioning system	-
	Integration relay	-
	Wire harness or connector	-
	Air conditioning amplifier assembly	-
	Radio setting condenser	-

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TERMINALS OF ECU

1. CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY

(a) Disconnect the L17 air conditioning amplifier assembly connector.



H

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

HINT:

Measure the values on the wire harness side with the connector disconnected.

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
L17-1 (IG+) - L17-14 (GND)	B - W-B	Power source (IG)	Power switch on (IG)	11 to 14 V
L17-1 (IG+) - L17-14 (GND)	B - W-B	Power source (IG)	Power switch off	Below 1 V
L17-21 (B) - L17-14 (GND)	Y - W-B	Battery power supply	Always	11 to 14 V
L17-14 (GND) - 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.

(c) Reconnect the L17 air conditioning amplifier assembly connector.

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

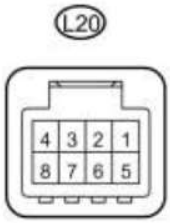
Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
L17-20 (RDEF) - L17-14 (GND)	Y - W-B	Rear window defogger signal	Power switch on (IG), rear window defogger switch off	11 to 14 V
L17-20 (RDEF) - L17-14 (GND)	Y - W-B	Rear window defogger signal	Power switch on (IG), rear window defogger switch on	Below 1 V

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If the result is not as specified, the air conditioning amplifier assembly may have a malfunction.

2. CHECK AIR CONDITIONING CONTROL PANEL ASSEMBLY

(a) Disconnect the L20 air conditioning control panel assembly connector.



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

HINT:

Measure the values on the wire harness side with the connector disconnected.

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
L20-5 (IG+) - L20-8 (GND)	B - W-B	Power supply	Power switch on (IG)	11 to 14 V
L20-8 (GND) - 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.

(c) Reconnect the L20 air conditioning control panel assembly connector.

(d) Check for pulses according to the value(s) in the table below.

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
L20-2 (TX+) - L20-8 (GND)	V - W-B	Rear window defogger signal	Power switch on (IG)	Pulse generation

If the result is not as specified, the air conditioning control panel assembly may have a malfunction.

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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.

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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.

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / EMPS / Data List.

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

EMPS

Tester Display	Test Part	Control Range	Diagnostic Note
Battery Voltage Lo Record	Battery voltage reduction history/ Min.: 0 times, Max.: 65535 times	0 to 65535	-

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 power switch on (IG).

(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.

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Air Conditioner

Tester Display	Test Part	Control Range	Diagnostic Note
Defogger Relay (Rear)	Rear window defogger	OFF/ON	-

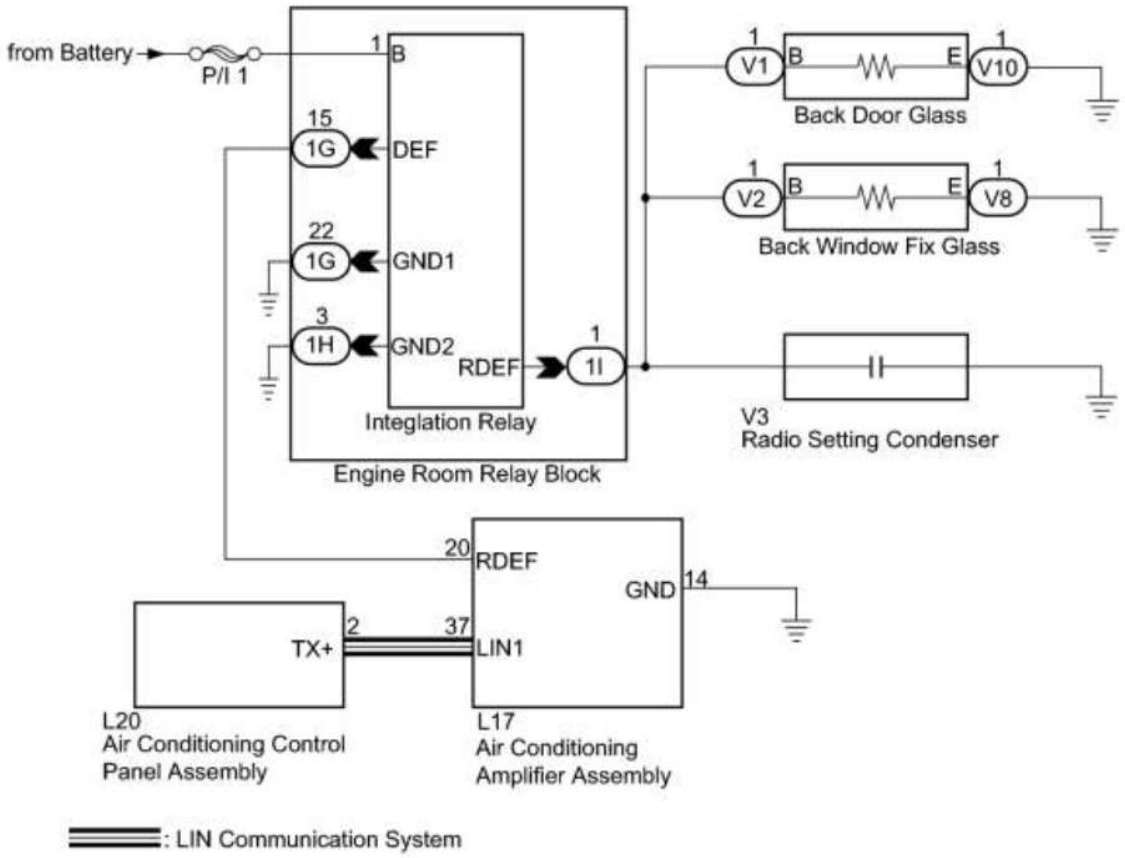
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Rear Window Defogger System does not Operate

DESCRIPTION

When the rear window defogger switch on the air conditioning control panel assembly is pressed, the operation signal is transmitted to the air conditioning amplifier assembly through a LIN communication line. When the air conditioning amplifier assembly receives the signal, it turns on the integration relay to operate the rear window defogger.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

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1.	CHECK REAR WINDOW DEFOGGER SYSTEM

(a) Active the rear defogger system and check the symptoms.

Result:

Result	Proceed to
Both back window defoggers do not warm up.	A
The back door glass defogger does not warm up.	B
The back window fix glass defogger does not warm up.	C

C CHECK HARNESS AND CONNECTOR (INTEGRATION RELAY - BACK WINDOW FIX GLASS)

B CHECK HARNESS AND CONNECTOR (INTEGRATION RELAY - BACK DOOR GLASS)

A

2.	CHECK POWER STEERING SYSTEM (Battery Voltage Lo Record)

(a) Connect the Techstream to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the Techstream on.

(d) Enter the following menus: Chassis / EMPS / Data List.

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

EMPS

Tester Display	Measurement item/Range	Normal Condition	Diagnostic Note
Battery Voltage Lo Record	Battery voltage reduction history/ Min.: 0 times, Max.: 65535 times	0 to 65535	-

Result:

Result	Proceed to
No control history is stored.	A
Control history is stored.	B

B GO TO CHARGING SYSTEM

A

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3.	PERFORM ACTIVE TEST USING TECHSTREAM (DEFOGGER RELAY)

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

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

Air Conditioner

Tester Display	Test Part	Control Range	Diagnostic Note
Defogger Relay (Rear)	Rear window defogger	ON/OFF	-

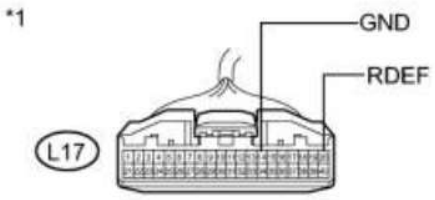
OK:

The window defogger system operates normally.

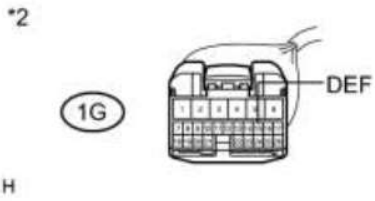
NG ▶ CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER ASSEMBLY - INTEGRATION RELAY)

OK ▶ **GO TO AIR CONDITIONING SYSTEM**

4.	CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER ASSEMBLY - INTEGRATION RELAY)



(a) Disconnect the 1G integration relay connector.



(b) Disconnect the L17 air conditioning amplifier assembly connector.

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
L17-20 (RDEF) - 1G-15 (DEF)	Always	Below 1 Ω
1G-15 (DEF) - Body ground	Always	10 kΩ or higher
L17-14 (GND) - Body ground	Always	Below 1 Ω

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Text in Illustration

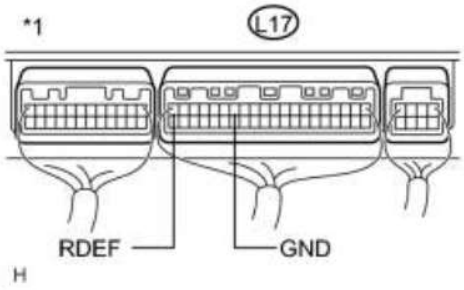
*1	Front view of wire harness connector (to Air Conditioning Amplifier Assembly)
*2	Front view of wire harness connector (to Integration Relay)

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

▼

5.	CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY



(a) Turn the power switch on (READY).

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
L17-20 (RDEF) - L17-14 (GND)	Rear defogger switch off	11 to 14 V
L17-20 (RDEF) - L17-14 (GND)	Rear defogger switch on	Below 1 V

Text in Illustration

*1	Rear view of wire harness connector (to Air Conditioning Amplifier Assembly)

NG ▶ REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY

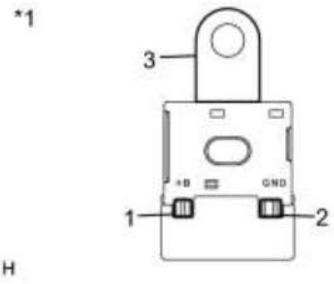
OK

▼

6.	INSPECT RADIO SETTING CONDENSER

(a) Remove the radio setting condenser.

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
1 - 2	Always	10 k Ω or higher
2 - 3	Always	Below 1 Ω

Text in Illustration

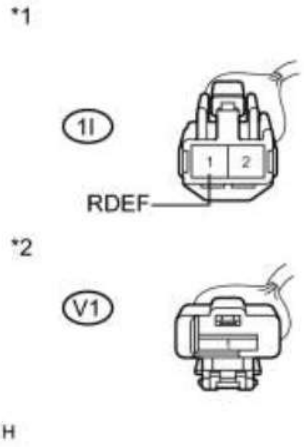
*1	Radio Setting Condenser

NG ▶ REPLACE RADIO SETTING CONDENSER

OK

▼

7.	CHECK HARNESS AND CONNECTOR (INTEGRATION RELAY - BODY GROUND)



(a) Disconnect the V1 back door glass battery side connector.

(b) Disconnect the V2 back window fix glass battery side connector.

(c) Disconnect the 1I integration relay connector.

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

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Standard Resistance:

Tester Connection	Condition	Specified Condition
1I-1 (RDEF) - Body ground	Always	10 k Ω or higher
1I-1 (RDEF) - V1-1	Always	Below 1 Ω

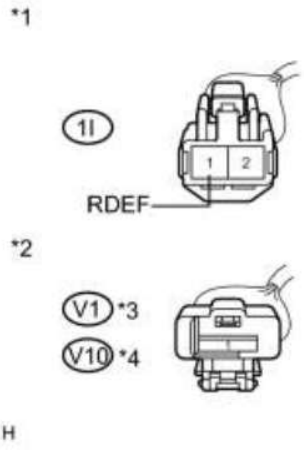
Text in Illustration

*1	Front view of wire harness connector (to Integration Relay)
*2	Front view of wire harness connector (to Back Door Glass)

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE INTEGRATION NO.1 RELAY**

8.	CHECK HARNESS AND CONNECTOR (INTEGRATION RELAY - BACK DOOR GLASS)



(a) Disconnect the V1 back door glass battery side connector.

(b) Disconnect the V10 back door glass body ground side connector.

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
1I-1 (RDEF) - V1-1	Always	Below 1 Ω
V10-1 - Body ground	Always	Below 1 Ω
1I-1 (RDEF) - Body ground	Always	10 k Ω or higher
V1-1 - Body ground	Always	10 k Ω or higher

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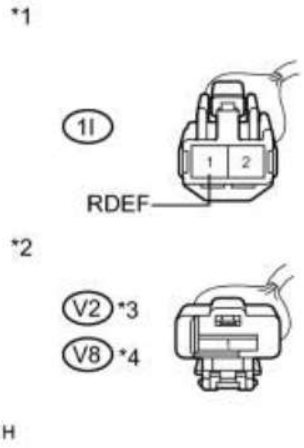
Text in Illustration

*1	Front view of wire harness connector (to Integration Relay)
*2	Front view of wire harness connector (to Back Door Glass)
*3	Back Door Glass Battery Side
*4	Back Door Glass Body Ground Side

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE BACK DOOR GLASS**

9.	CHECK HARNESS AND CONNECTOR (INTEGRATION RELAY - BACK WINDOW FIX GLASS)



(a) Disconnect the V2 back window fix glass battery side connector.

(b) Disconnect the V8 back window fix glass body ground side connector.

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
1I-1 (RDEF) - V2-1	Always	Below 1 Ω
V8-1 - Body ground	Always	Below 1 Ω
1I-1 (RDEF) - Body ground	Always	10 k Ω or higher
V2-1 - Body ground	Always	10 k Ω or higher

Text in Illustration

*1	Front view of wire harness connector (to Integration Relay)

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*2	Front view of wire harness connector (to Back Door Glass)
*3	Back Window Fix Glass Battery Side
*4	Back Window Fix Glass Body Ground Side

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE BACK WINDOW FIX GLASS**

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ON-VEHICLE INSPECTION

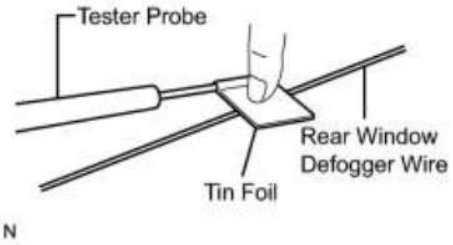
1. CHECK REAR WINDOW DEFOGGER OPERATION

(a) When the power switch is on (IG) and the rear window defogger switch is pressed, check that the rear window defogger operates.

2. INSPECT REAR WINDOW DEFOGGER WIRE (BACK DOOR GLASS)

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.

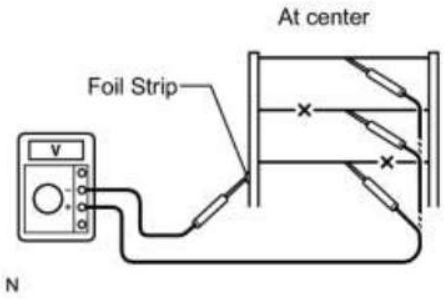


(a) Turn the power switch on (IG).

(b) Turn the rear window defogger switch on.

(c) Measure the voltage at the center of each rear window defogger wire to check the wire, as shown in the illustration.

Result:



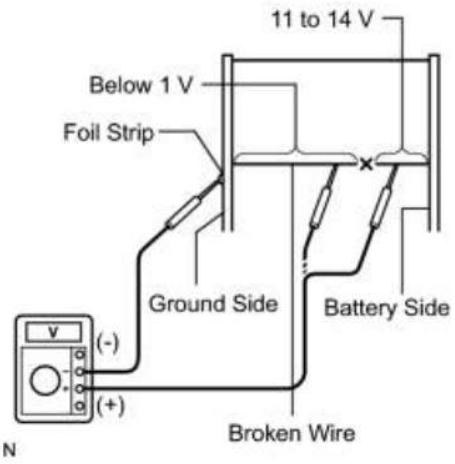
Voltage	Criteria
4 to 6 V	Wire is not broken
11 to 14 V	Wire is broken between the center and battery side end
Below 1 V	Wire is broken between the center and ground side end

HINT:

If the voltage is 11 to 14 V, the wire may be faulty between the center of the wire and the wire end on the battery side. If the voltage is below 1 V, the wire may be faulty between the center of the wire and the wire end on the ground side.

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

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

(f) Slide the positive (+) lead from the battery side to the ground side. The point where the voltage drops to below 1 V from 11 to 14 V is the place where the rear window defogger wire is broken.

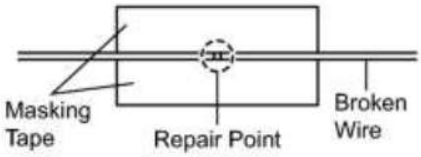
HINT:

If the rear window defogger wire is not broken, the voltmeter should indicate 11 to 14 V at the battery side. When the positive (+) lead slides to the ground side, the voltage gradually decreases to below 1 V.

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REPAIR

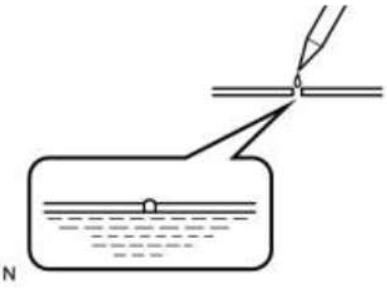
1. REPAIR REAR WINDOW DEFOGGER WIRE (BACK DOOR GLASS)



N

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

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



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(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.

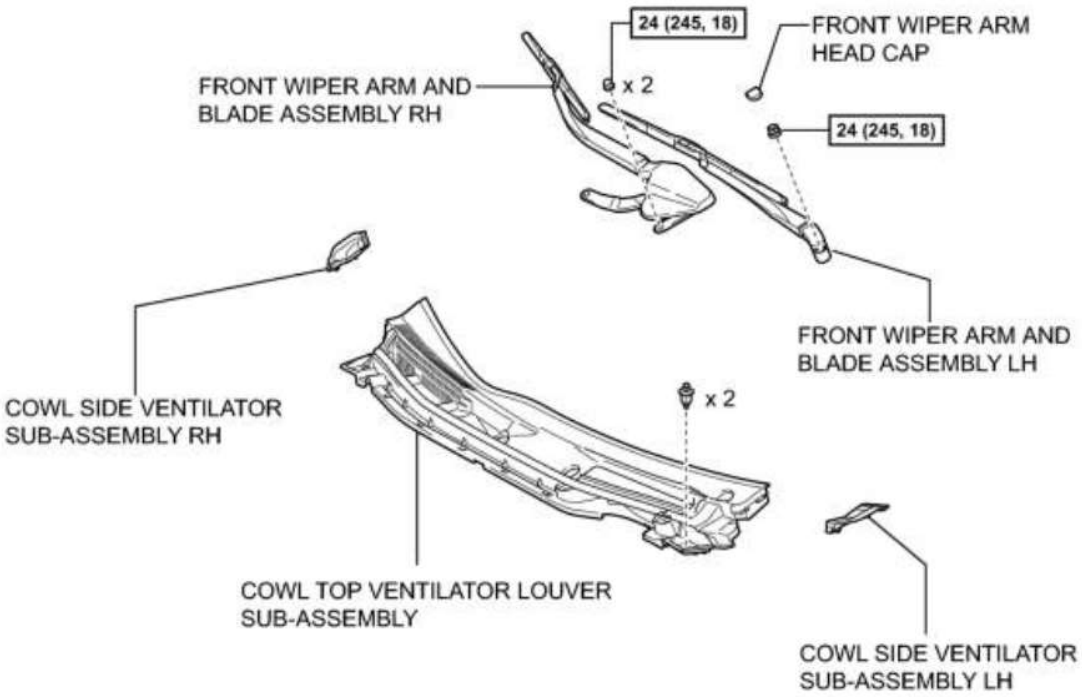
NOTICE:

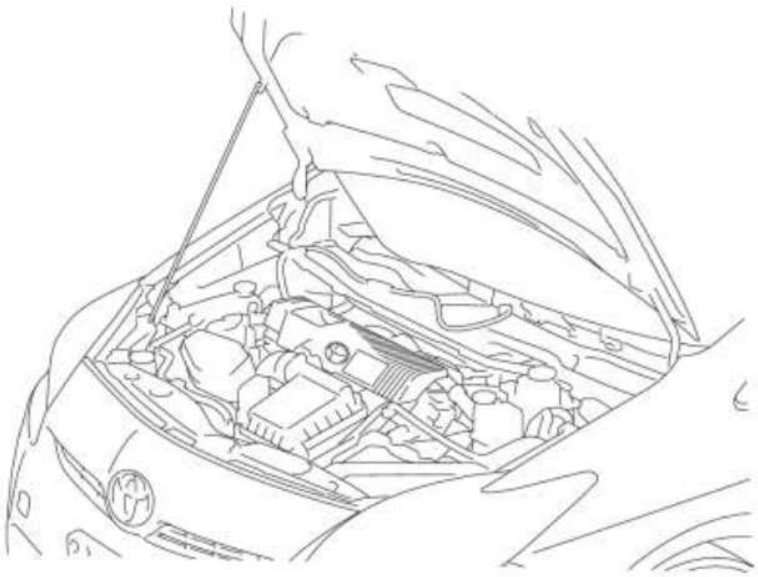
Do not use the rear window defogger for at least 24 hours after performing the repair.

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COMPONENTS

ILLUSTRATION



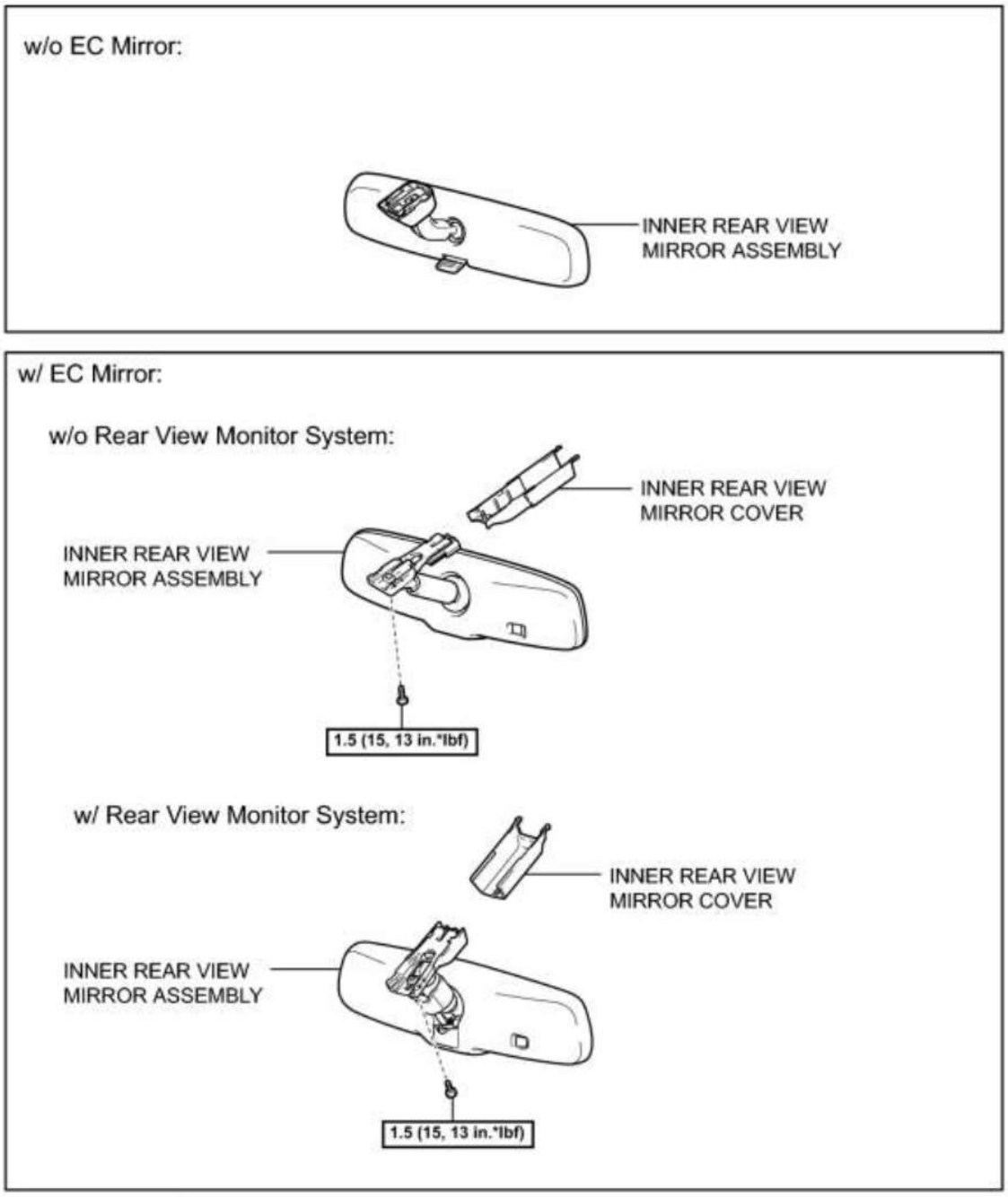


N*m (kgf*cm, ft.*lbf): Specified torque

P

ILLUSTRATION

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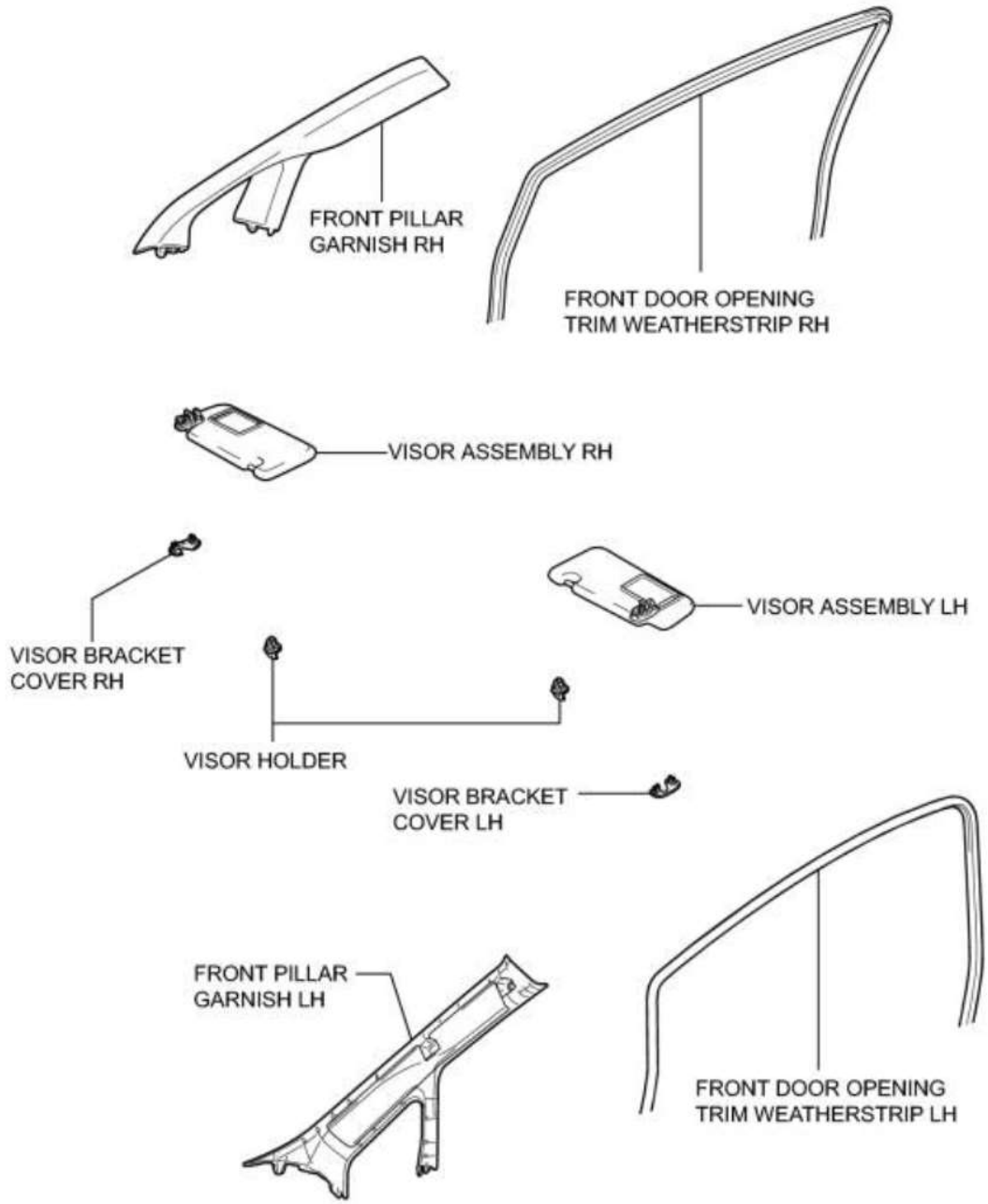


N*m (kgf*cm, ft.*lbf): Specified torque

P

ILLUSTRATION

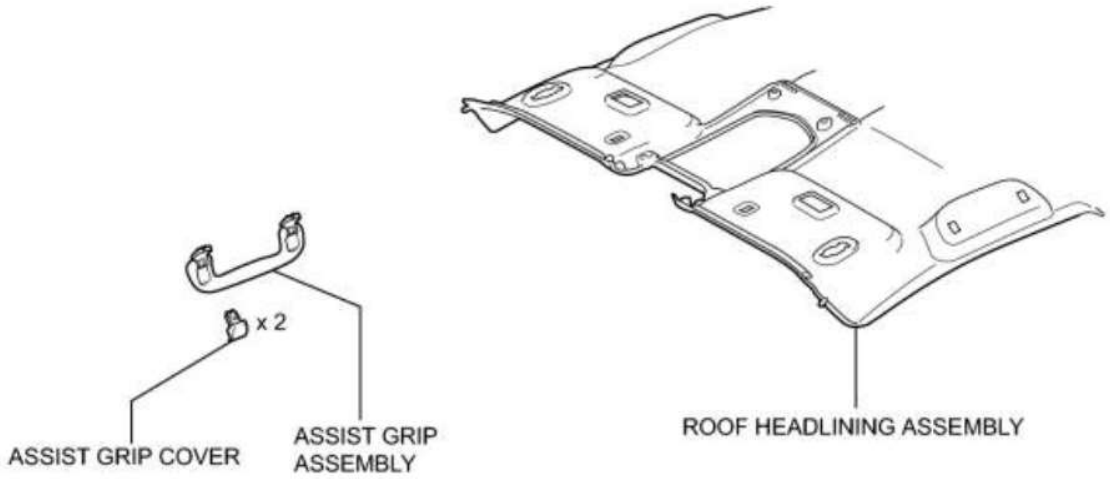
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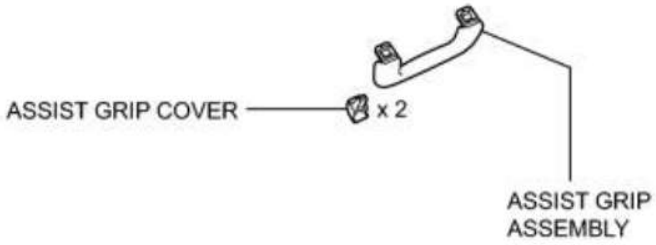


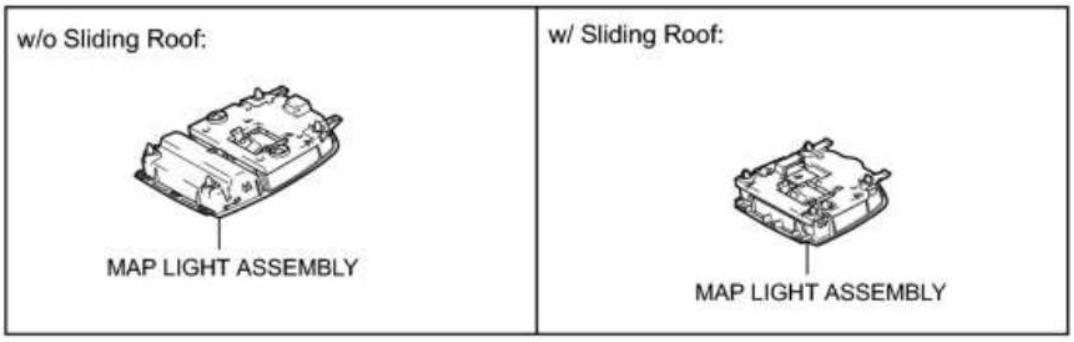
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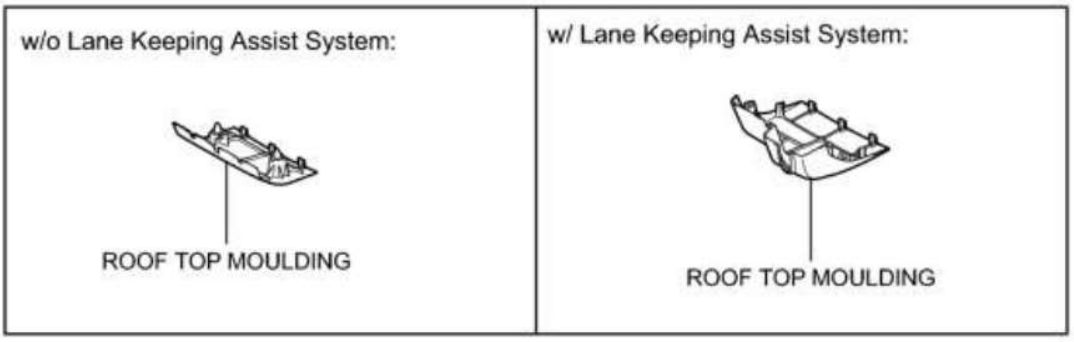
ILLUSTRATION

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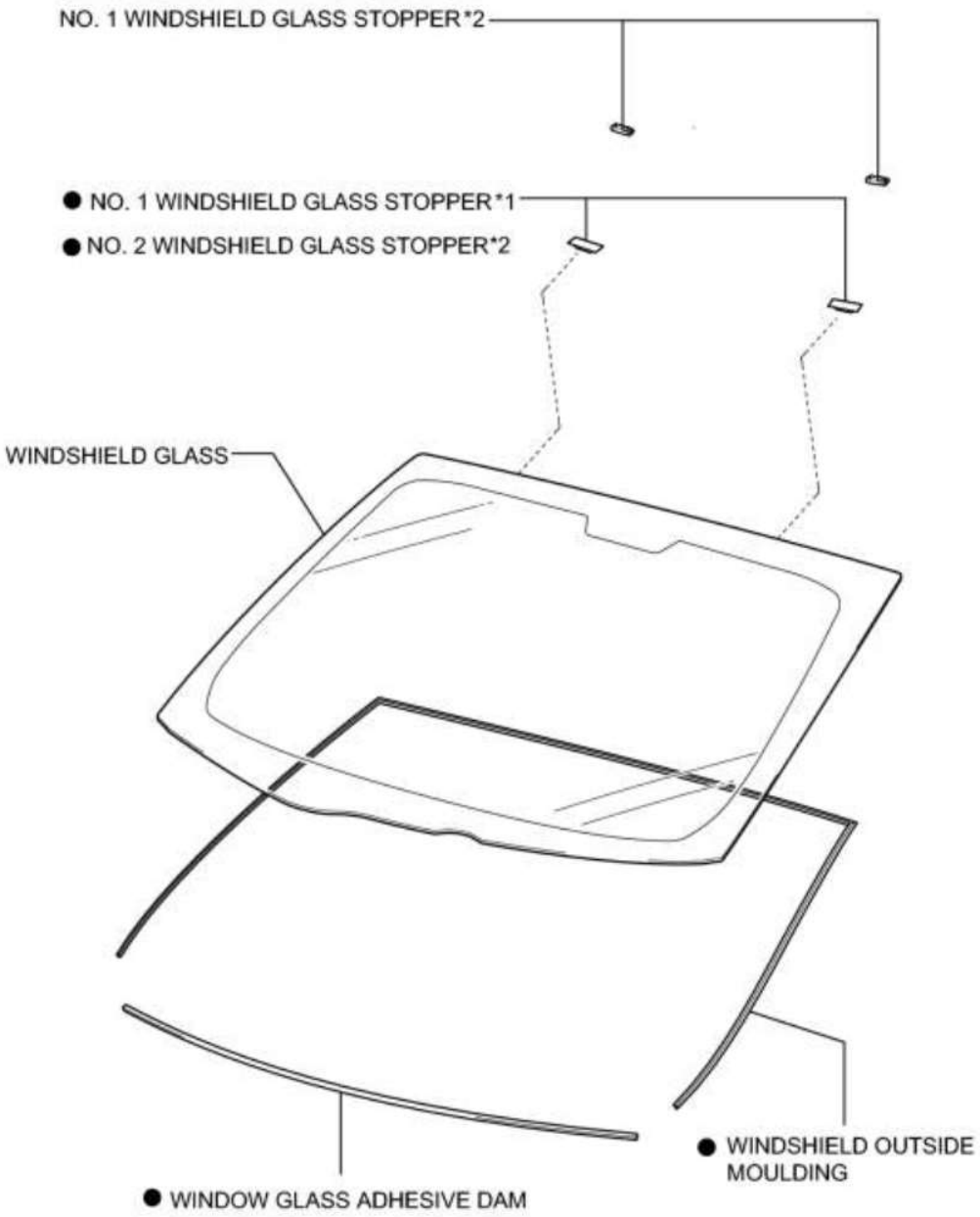


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ILLUSTRATION

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*1: 1-piece type

*2: 2-piece type

● Non-reusable part

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REMOVAL

1. REMOVE FRONT WIPER ARM HEAD CAP INFO

2. REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY LH INFO

3. REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY RH INFO

4. REMOVE COWL SIDE VENTILATOR SUB-ASSEMBLY LH INFO

5. REMOVE COWL SIDE VENTILATOR SUB-ASSEMBLY RH INFO

6. REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY INFO

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

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

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

10. DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH

11. REMOVE FRONT PILLAR GARNISH LH INFO

12. DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH

13. REMOVE FRONT PILLAR GARNISH RH INFO

14. REMOVE ROOF TOP MOULDING (w/o Lane Keeping Assist System) INFO

15. REMOVE ROOF TOP MOULDING (w/ Lane Keeping Assist System) INFO

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

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

18. REMOVE ASSIST GRIP ASSEMBLY INFO

19. REMOVE VISOR BRACKET COVER LH INFO

20. REMOVE VISOR ASSEMBLY LH INFO

21. REMOVE VISOR BRACKET COVER RH

HINT:

Use the same procedure for the RH side and LH side.

22. REMOVE VISOR ASSEMBLY RH

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HINT:

Use the same procedure for the RH side and LH side.

23. REMOVE VISOR HOLDER INFO

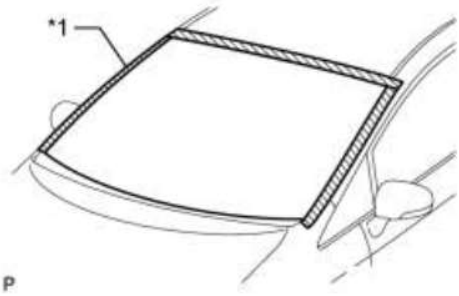
24. REMOVE ROOF HEADLINING ASSEMBLY

(a) Slightly lower the front section of the roof headlining assembly so that the windshield glass can be removed.

HINT:

It is not necessary to completely remove the roof headlining assembly.

25. REMOVE WINDSHIELD GLASS SUB-ASSEMBLY



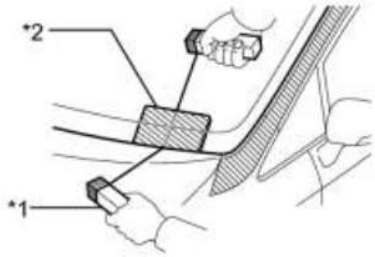
(a) Apply protective tape to the installation position of the windshield glass sub-assembly on the vehicle body.

Text in Illustration

*1	Protective Tape

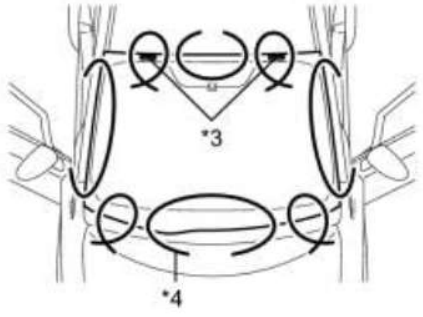
HINT:

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



(b) Pass a piano wire between the vehicle body and glass from the interior, as shown in the illustration.

Text in Illustration



*1	Wooden Block
*2	Plastic Sheet
*3	Stopper
*4	Piano Wire

(c) Tie both wire ends to wooden blocks or similar objects that can serve as handles.

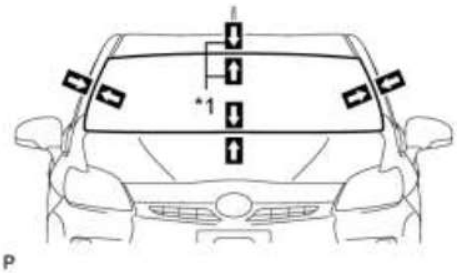
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(d) Cut off the adhesive by pulling the piano wire around the windshield glass sub-assembly.

NOTICE:

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

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



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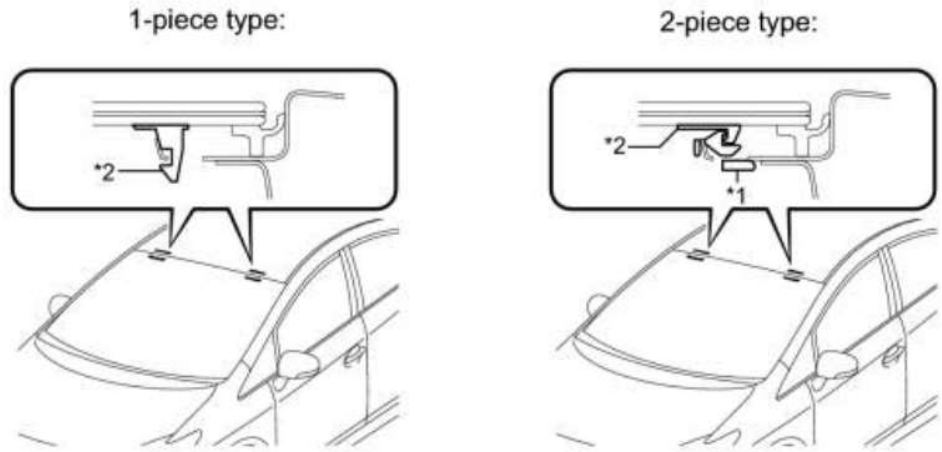
Text in Illustration

*1	Matchmark

HINT:

Matchmarks are not necessary if the windshield glass assembly is not going to be reused.

(f) Disconnect the windshield glass stoppers.



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Text in Illustration

*1	No. 1 Stopper	*2	No. 2 Stopper

NOTICE:

- There are 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 sub-assembly 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 using suction cups.

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HINT:

Depending on vehicles, 1-piece or 2-piece type stoppers are used.

(g) 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.

26. REMOVE WINDOW GLASS ADHESIVE DAM



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

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

27. REMOVE WINDSHIELD OUTSIDE MOULDING



P

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

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

28. REMOVE NO. 2 WINDSHIELD GLASS STOPPER



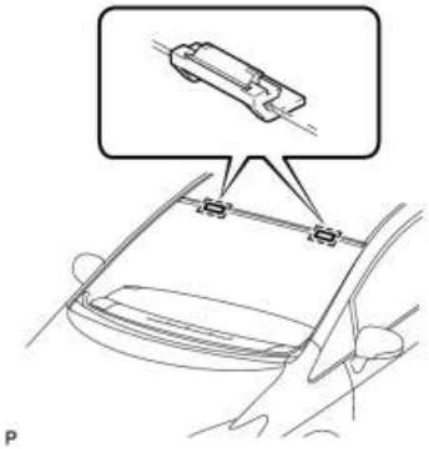
P

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

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

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



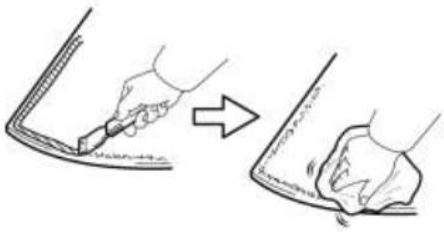
P

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

NOTICE:

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

30. CLEAN WINDSHIELD GLASS



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

NOTICE:

Be careful not to damage the windshield glass.

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

NOTICE:

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

31. CLEAN VEHICLE BODY

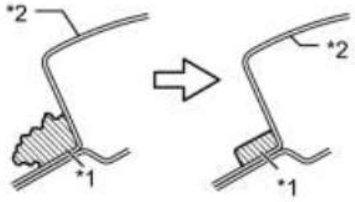
(a) Clean and shape the contact surfaces of the vehicle body.

Text in Illustration

*1	Adhesive
*2	Body

(1) Using a knife, cut away excess adhesive on the contact surfaces of the

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P

vehicle body, 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.

(2) Clean the contact surfaces of the vehicle body with a piece of cloth saturated with cleaner.

HINT:

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

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INSTALLATION

1. INSTALL NO. 2 WINDSHIELD GLASS STOPPER

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

NOTICE:

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

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a clean piece of cloth before it dries.

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

Back Side:



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Text in Illustration

*1	Ceramic Notch

Standard Dimension:

Area	Dimension
a	13.7 to 14.7 mm (0.539 to 0.578 in.)

NOTICE:

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

2. INSTALL NO. 1 WINDSHIELD GLASS STOPPER

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

NOTICE:

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

3. INSTALL WINDSHIELD OUTSIDE MOULDING

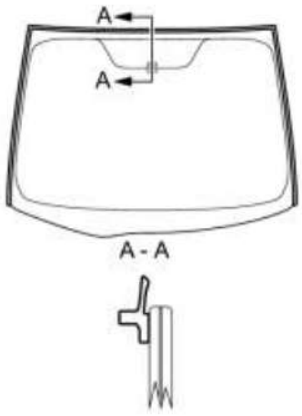
(a) Using a brush or a sponge, coat the application area of a new windshield outside moulding with Primer G.

NOTICE:

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

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a clean piece of cloth before it dries.



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

4. INSTALL WINDOW GLASS ADHESIVE DAM

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

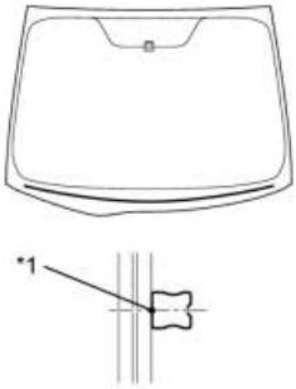
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NOTICE:

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

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a clean piece of cloth before it dries.



(b) Install the window glass adhesive dam onto the windshield glass, as shown in the illustration.

Text in Illustration

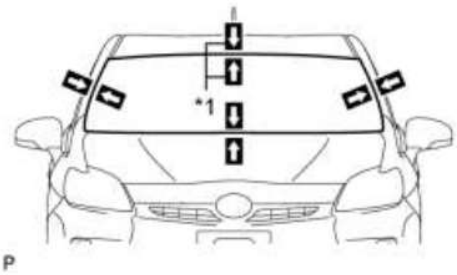
*1	Dam Center Line

5. INSTALL WINDSHIELD GLASS SUB-ASSEMBLY

(a) Position the windshield glass sub-assembly.

Text in Illustration

*1	Matchmark



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

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

(3) Align the matchmarks on the windshield glass sub-assembly and vehicle body.

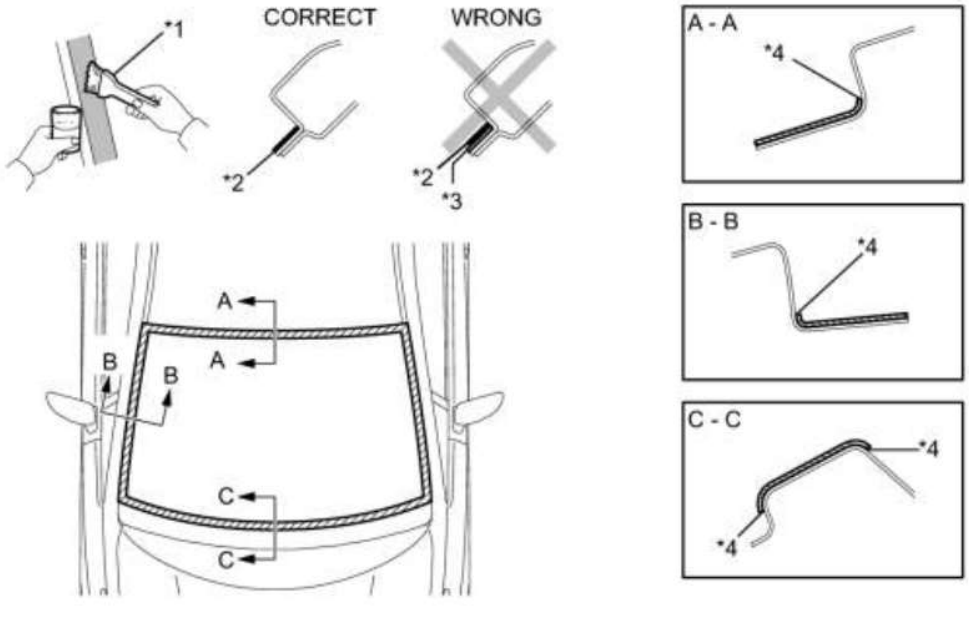
NOTICE:

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

(4) Remove the windshield glass sub-assembly.

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



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Text in Illustration

*1	Brush	*2	Primer M
*3	Adhesive	*4	Edge of Curved Surface

NOTICE:

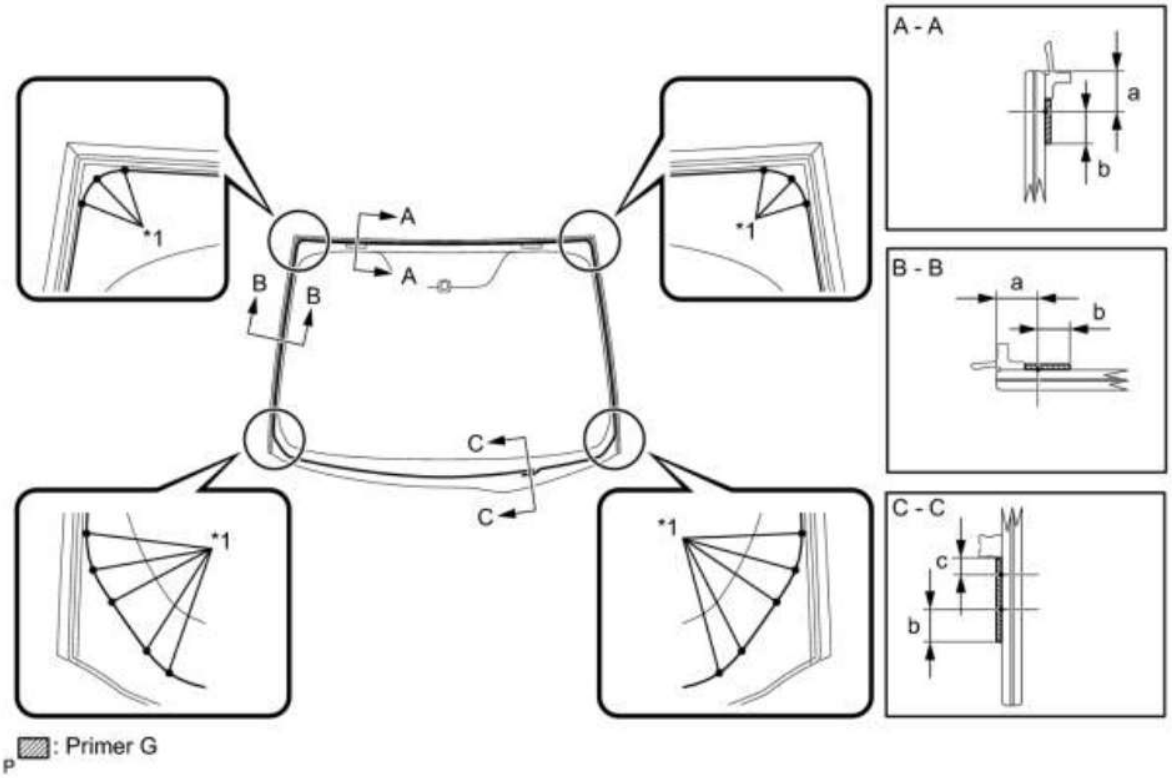
- Do not coat the adhesive with Primer M.
- Do not apply too much primer.
- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a clean piece of cloth before it dries.

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

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Text in Illustration

*1	Ceramic Notch	-	-

Standard Dimension:

Area	Dimension
a	9.5 mm (0.374 in.)
b	7.0 mm (0.275 in.)
c	4.0 mm (0.157 in.)

NOTICE:

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

HINT:

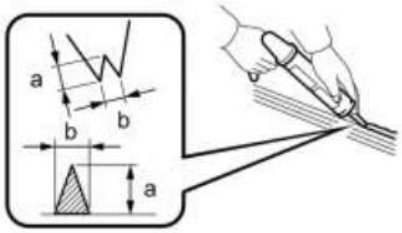
- Apply Primer G onto the ceramic notches.
- If an area other than that specified is coated by accident, wipe off the primer with a clean piece of cloth before it dries.

(d) Apply adhesive to the glass.

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Adhesive:

Toyota Genuine Windshield Glass Adhesive or equivalent



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

Standard Dimension:

Area	Dimension
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)

HINT:

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

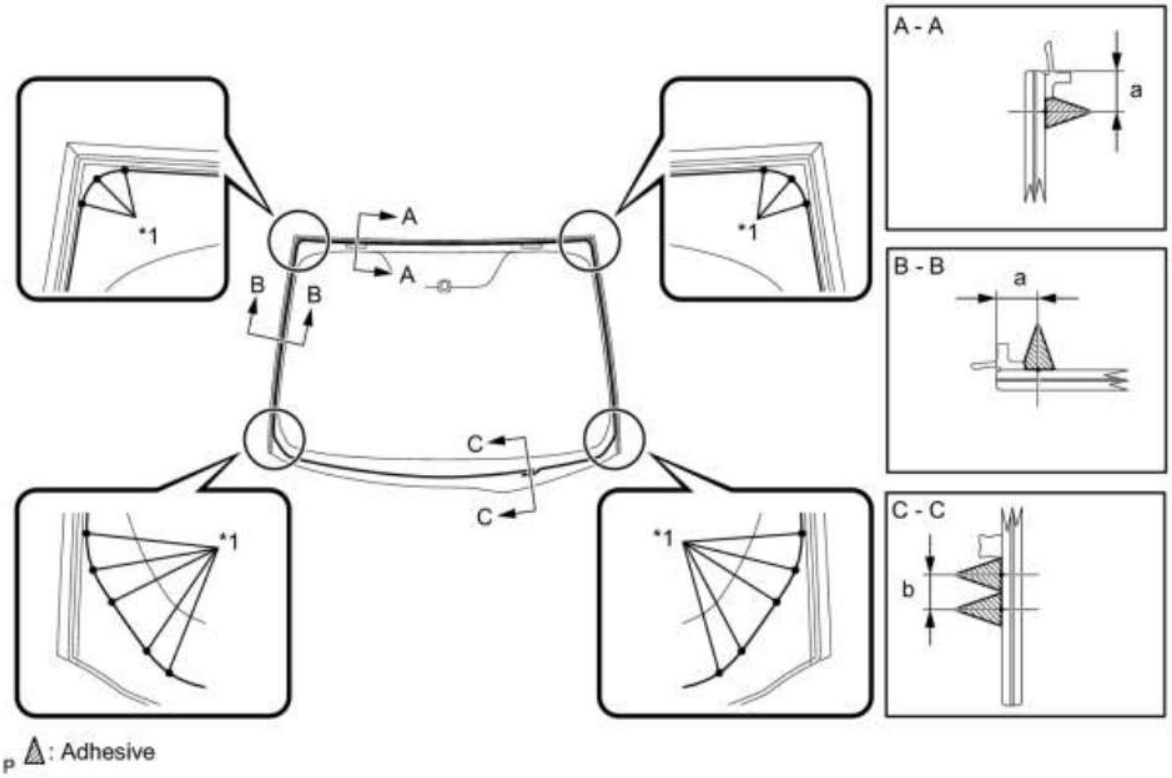
Usage Time Frame:

Temperature	Usage Time Frame
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 cartridge.

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

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Text in Illustration

*1	Ceramic Notch	-	-

Standard Dimension:

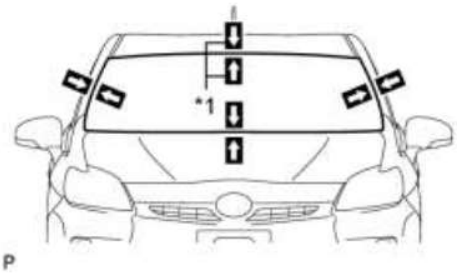
Area	Dimension
a	9.5 mm (0.374 in.)
b	8.0 mm (0.315 in.)

HINT:

Apply adhesive onto the ceramic notches.

(e) Install the windshield glass sub-assembly.

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Text in Illustration

*1	Matchmark

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

NOTICE:

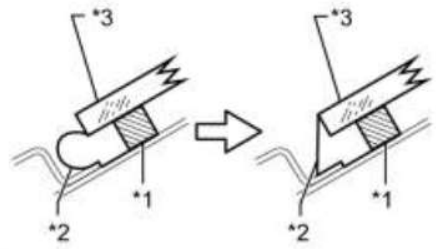
- Check that the windshield glass stoppers are attached to the vehicle body correctly.
- Check the clearance between the vehicle body and windshield glass.

(2) Lightly press the front surface of the windshield glass sub-assembly to ensure that the windshield glass sub-assembly is securely fit to the vehicle body.

HINT:

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

(3) Using a scraper, remove any excess or protruding adhesive.



P

Text in Illustration

*1	Dam
*2	Adhesive
*3	Windshield

HINT:

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 time described in the table below.

Minimum Time:

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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

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

8. INSTALL VISOR HOLDER INFO

9. INSTALL VISOR ASSEMBLY LH INFO

10. INSTALL VISOR BRACKET COVER LH INFO

11. INSTALL VISOR ASSEMBLY RH

HINT:

Use the same procedure for the RH side and LH side.

12. INSTALL VISOR BRACKET COVER RH

HINT:

Use the same procedure for the RH side and LH side.

13. INSTALL ASSIST GRIP ASSEMBLY INFO

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

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

16. INSTALL ROOF TOP MOULDING (w/o Lane Keeping Assist System) INFO

17. INSTALL ROOF TOP MOULDING (w/ Lane Keeping Assist System) INFO

18. INSTALL FRONT PILLAR GARNISH LH INFO

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19. INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP LH INFO

20. INSTALL FRONT PILLAR GARNISH RH

HINT:

Use the same procedure for the RH side and LH side.

21. INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP RH INFO

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

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

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

25. INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY INFO

26. INSTALL COWL SIDE VENTILATOR SUB-ASSEMBLY LH INFO

27. INSTALL COWL SIDE VENTILATOR SUB-ASSEMBLY RH INFO

28. INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY RH INFO

29. INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY LH INFO

30. INSTALL FRONT WIPER ARM HEAD CAP INFO

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