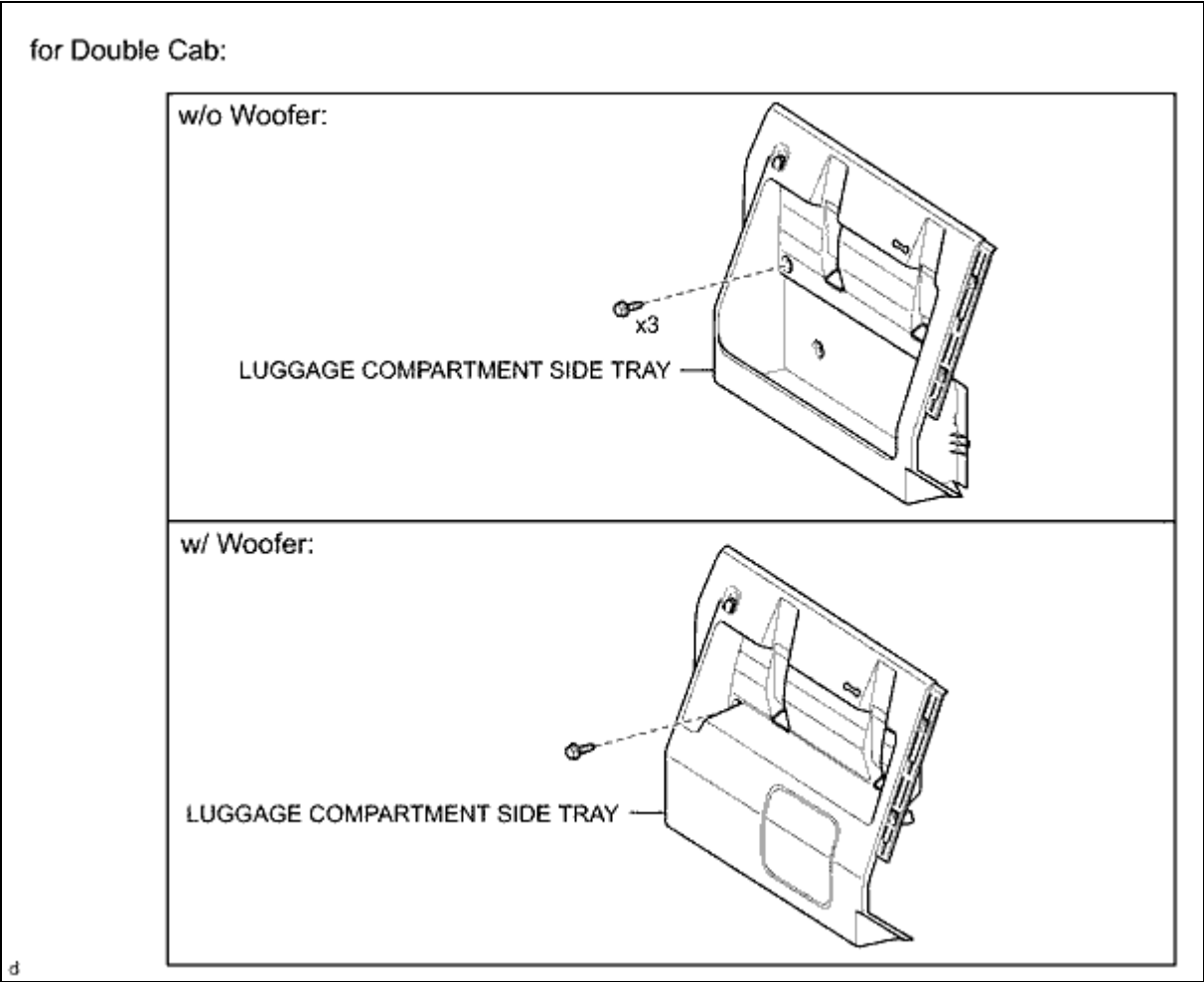


Last Modified: 11-13-2015	6.6 K	Doc ID: RM0000016Z400AX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: BACK WINDOW GLASS: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

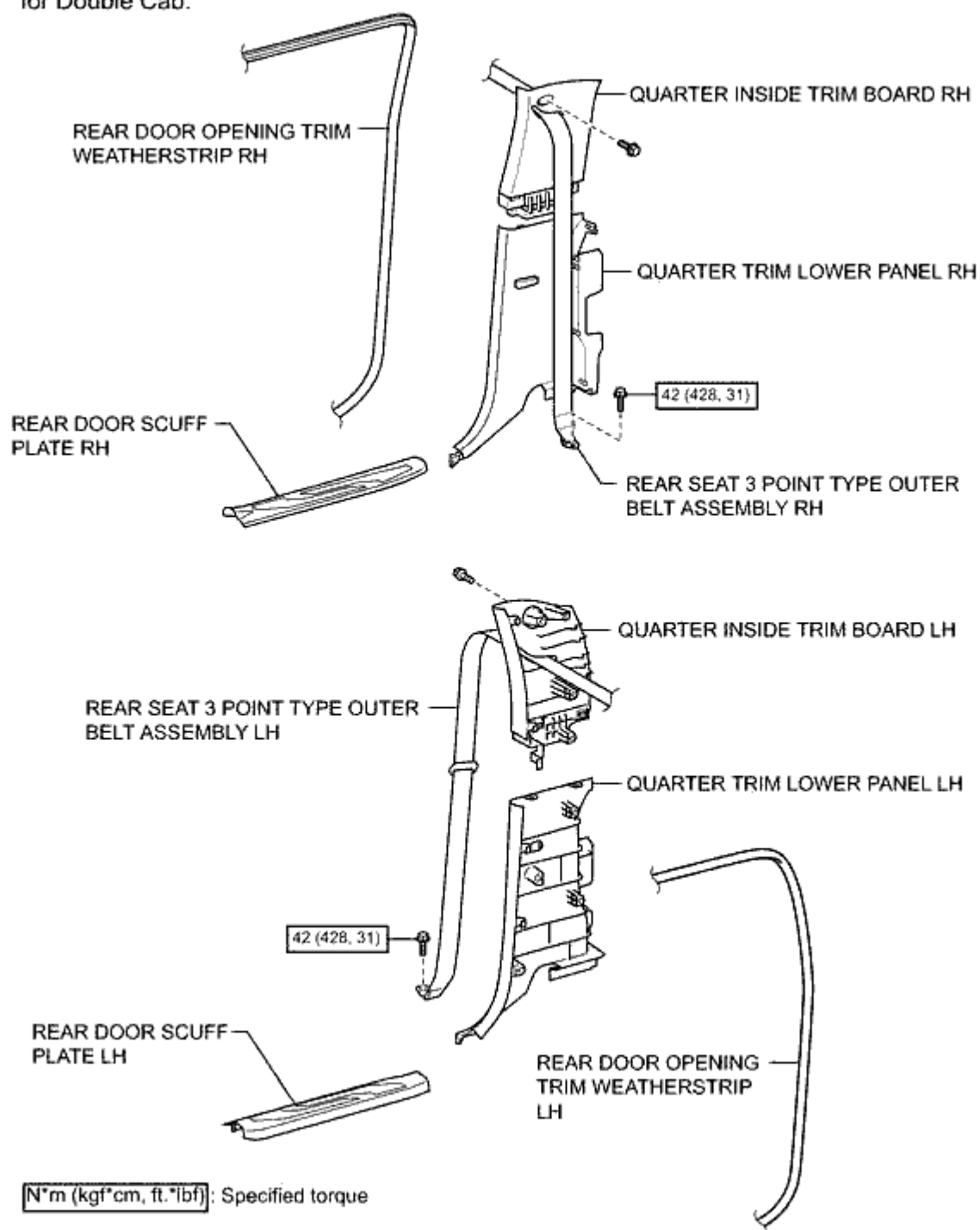
COMPONENTS

ILLUSTRATION

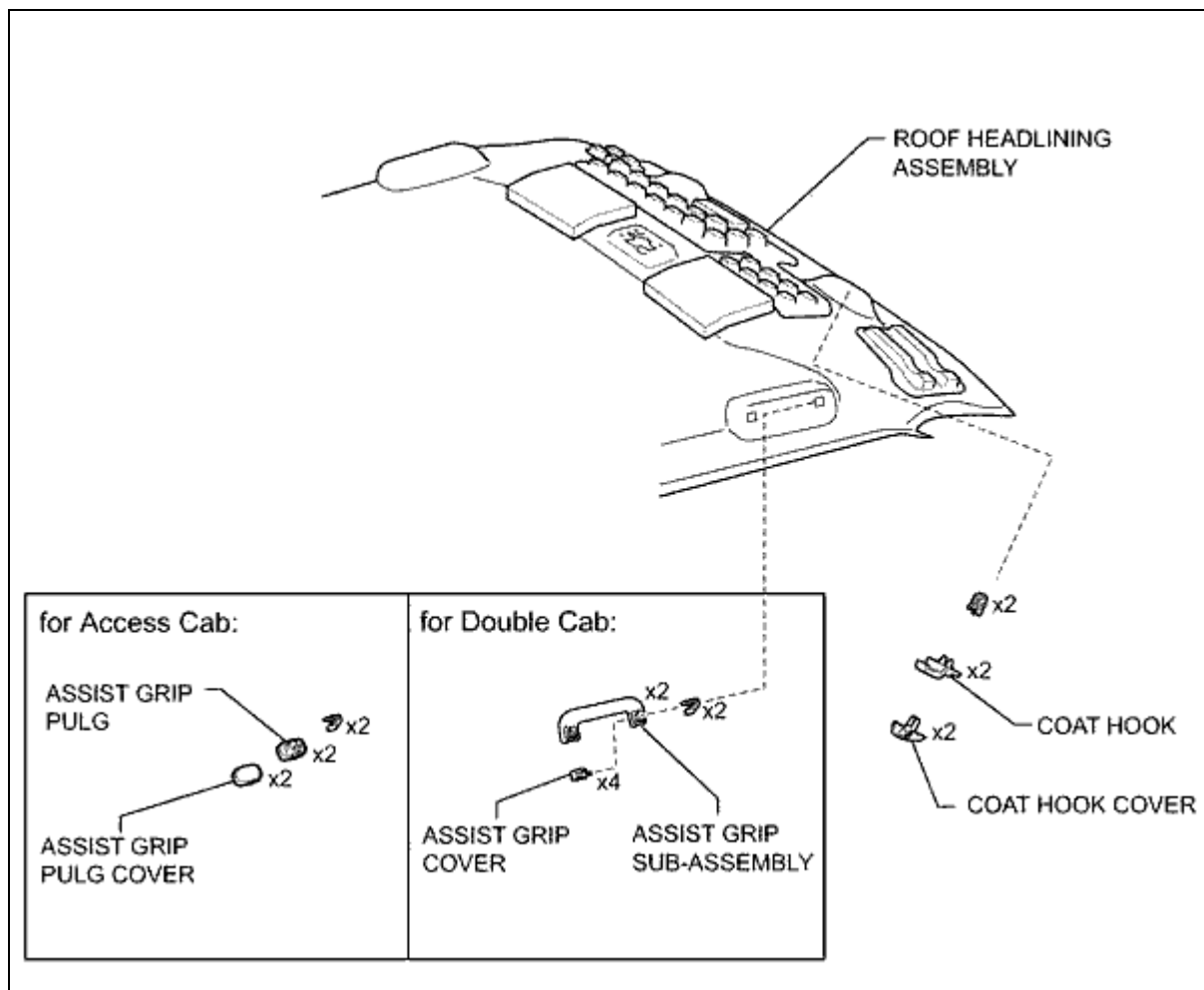


ILLUSTRATION

for Double Cab:

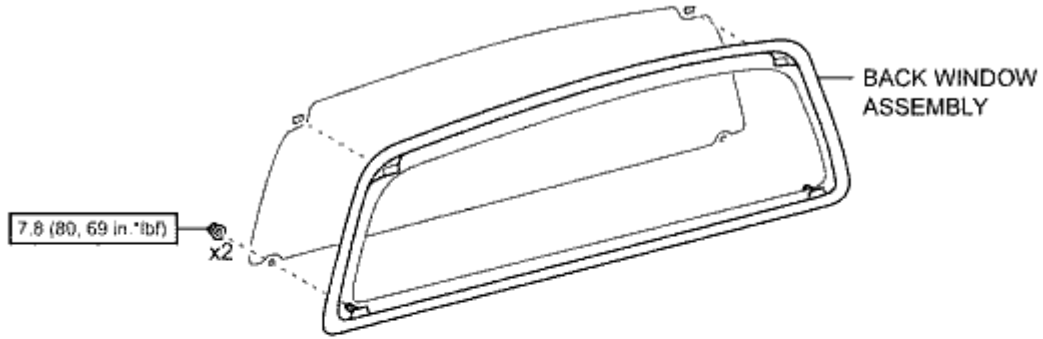


ILLUSTRATION

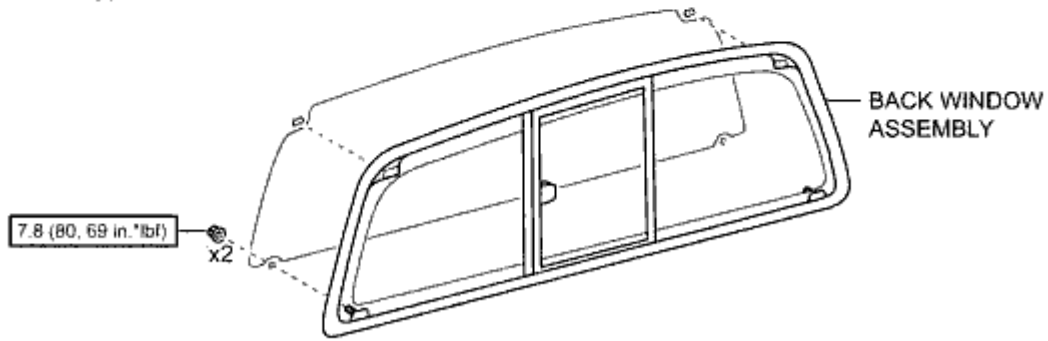


ILLUSTRATION

for Fixed Type:



for Slide Type:



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



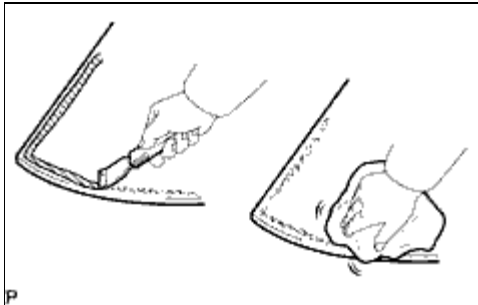
Last Modified: 11-13-2015	6.6 A	Doc ID: RM0000016Z300AX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: BACK WINDOW GLASS: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

1. CLEAN BACK WINDOW ASSEMBLY

- (a) When reusing the back window assembly:
 - (1) Using a scraper, remove any remaining adhesive residue from the back window assembly.

NOTICE:
 Be careful not to damage the back window glass.



2. INSTALL BACK WINDOW ASSEMBLY

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

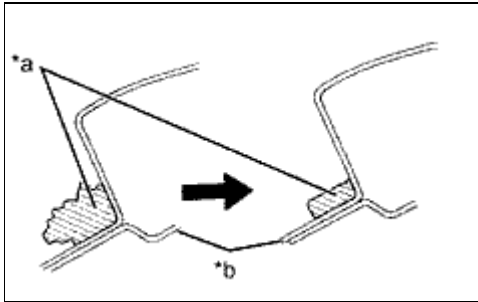
Text in Illustration

*a	Adhesive
*b	Vehicle Body

- (1) Using a knife, cut away excess adhesive on the contact surface of the vehicle body as shown in the illustration.

HINT:
 Leave as much adhesive on the vehicle body as possible.

- (2) Clean the contact surface of the vehicle body with a piece of cloth saturated with non-residue solvent.

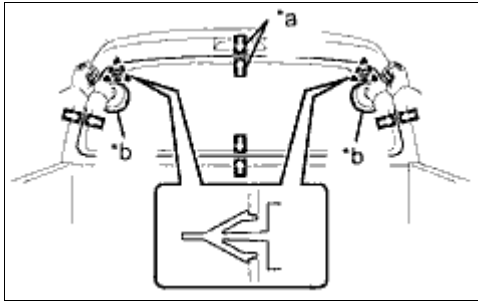


- (b) Back window assembly preliminary installation procedures.

- (1) Install the suction cups to the back window assembly.

Text in Illustration

*a	Matchmarks
*b	Suction Cups



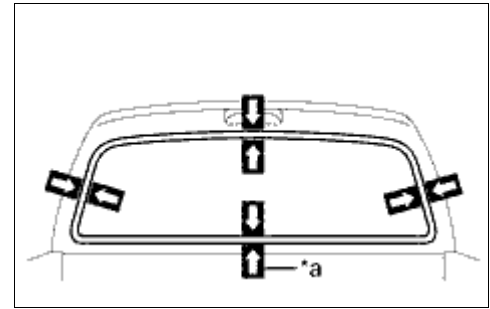
- (2) Temporarily place the back window assembly onto the vehicle body and set it so that the gap between the body and the upper portion and sides of the back window assembly is even.

(3) When using a new back window assembly:

Place matchmarks on the back window assembly and vehicle body at the locations indicated in the illustration.

Text in Illustration

*a	Matchmarks
----	------------



(4) When reusing the back window assembly:

check the position of the matchmarks and make adjustments.

(5) Remove the back window assembly.

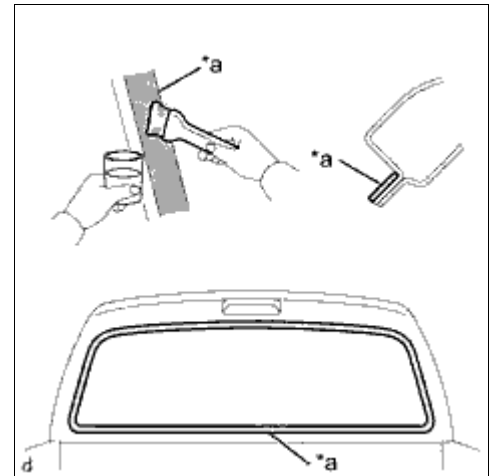
(c) Apply Primer M to the exposed part of the vehicle body.

Text in Illustration

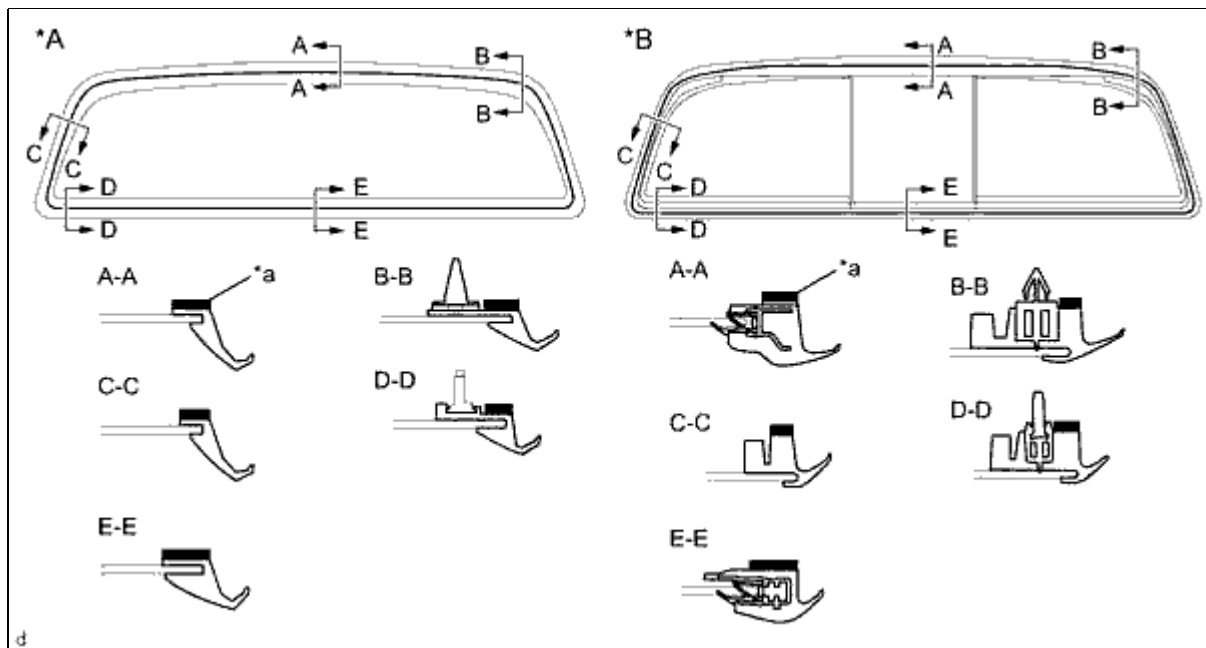
*a	Primer M
----	----------

NOTICE:

- Do not apply too much Primer M.
- Do not coat the adhesive with primer M.
- Be careful when applying primer to the panel joints and spot welds.



(d) Using a brush or sponge, coat the application area of adhesive with primer G as shown in the illustration.



Text in Illustration

*A	for Fixed Type	*B	for Slide Type
----	----------------	----	----------------

NOTICE:

Do not apply too much Primer G.

- (1) Cut off the tip of the sealer gun nozzle as shown in the illustration.

Text in Illustration

*a	Sealer Gun
*b	Cartridge Nozzle

Specification:

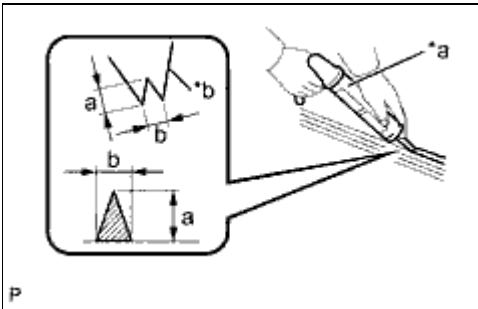
AREA	MEASUREMENT
a	6 mm (0.236 in.) or 8 mm (0.315 in.)
b	8 mm (0.315 in.) or 12 mm (0.472 in.)

HINT:

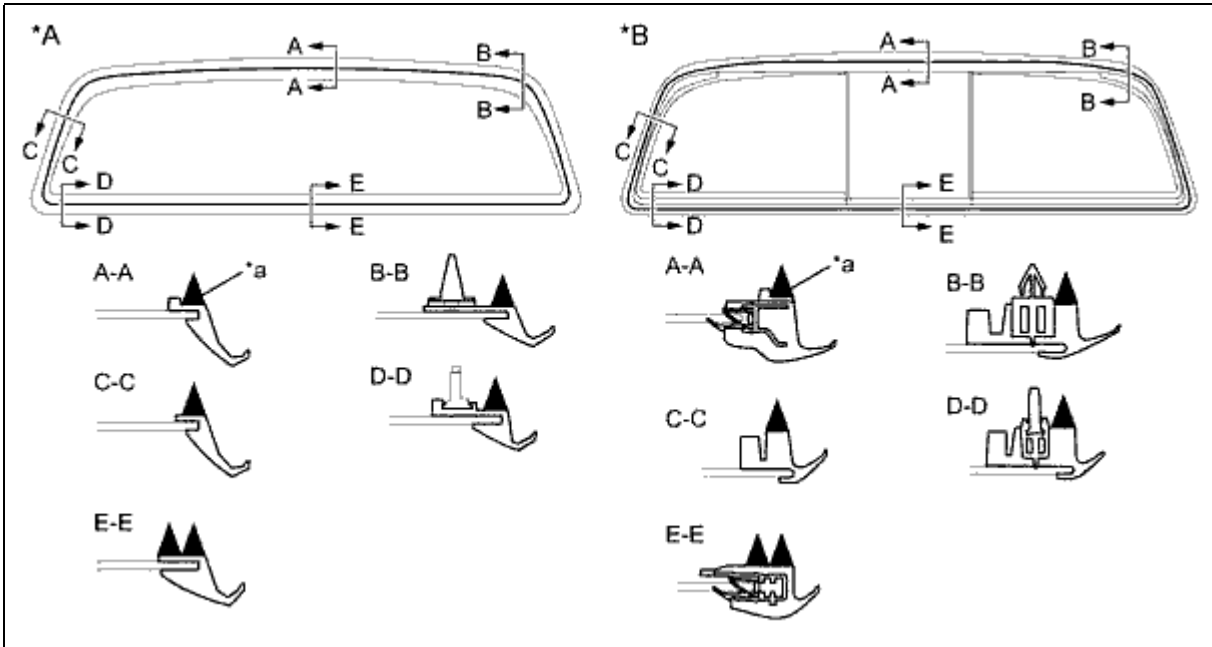
After cutting off the tip, use all adhesive within the time indicated in the table below.

Usage time frame:

TEMPERATURE	USAGE TIME FRAME
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours



- (2) Load the sealer gun with the cartridge.
- (3) Apply a bead of adhesive to the location shown in the illustration.



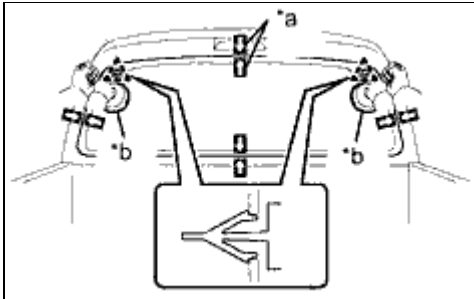
Text in Illustration

*A	for Fixed Type	*B	for Slide Type
*a	Adhesive	-	-

NOTICE:

Apply the adhesive after primer G has been allowed to dry (approximately 3 minutes).

(e) Install the back window assembly to the vehicle body.



Text in Illustration

*a	Matchmarks
*b	Suction Cups

(1) Using suction cups, position the back window assembly so that the matchmarks are aligned and install the back window assembly.

NOTICE:

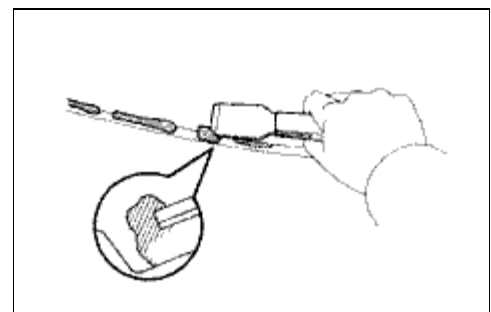
Install the back window assembly after Primer M on the vehicle body has been allowed to dry (approx. 3 min).

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

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

HINT:

Apply adhesive up to the back window assembly rim.



(f) Install the 2 nuts.

Torque:

7.8 N·m {80 kgf·cm, 69in·lbf}

(g) Hold the back window assembly in place securely with protective tape or equivalent until the adhesive hardens.

NOTICE:

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

Minimum Time:

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

3. CHECK FOR LEAKAGE 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 COAT HOOK INFO

5. INSTALL ASSIST GRIP PLUG (for Access Cab) INFO

6. INSTALL ASSIST GRIP SUB-ASSEMBLY (for Double Cab) INFO

7. INSTALL QUARTER INSIDE TRIM BOARD LH (for Access Cab)

INFO

8. INSTALL QUARTER INSIDE TRIM BOARD LH (for Double Cab) INFO

9. INSTALL QUARTER INSIDE TRIM BOARD RH (for Access Cab)

HINT:

Use the same procedure as for the LH side.

10. INSTALL QUARTER INSIDE TRIM BOARD RH (for Double Cab)

HINT:

Use the same procedure as for the LH side.

11. INSTALL QUARTER TRIM LOWER PANEL LH (for Double Cab) INFO

12. INSTALL QUARTER TRIM LOWER PANEL RH (for Double Cab)

HINT:

Use the same procedure as for the LH side.

13. INSTALL LUGGAGE COMPARTMENT SIDE TRAY (for Double Cab)

- for w/ Woofer:

INFO

- for w/o Woofer:

INFO

14. CONNECT REAR DOOR OPENING TRIM WEATHERSTRIP LH (for Double Cab) INFO

15. CONNECT REAR DOOR OPENING TRIM WEATHERSTRIP RH (for Double Cab)

HINT:

Use the same procedure as for the LH side.

16. INSTALL REAR DOOR SCUFF PLATE LH (for Double Cab)

17. INSTALL REAR DOOR SCUFF PLATE RH (for Double Cab)

HINT:

Use the same procedure as for the LH side.

18. INSTALL REAR SEAT ASSEMBLY LH (for Double Cab)



19. INSTALL REAR SEAT ASSEMBLY RH (for Double Cab)





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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: BACK WINDOW GLASS: REMOVAL; 2016 MY Tacoma [08/2015 -]		

REMOVAL

1. REMOVE REAR SEAT ASSEMBLY LH (for Double Cab)

INFO

2. REMOVE REAR SEAT ASSEMBLY RH (for Double Cab)

INFO

3. REMOVE REAR DOOR SCUFF PLATE LH (for Double Cab) INFO

4. REMOVE REAR DOOR SCUFF PLATE RH (for Double Cab)

HINT:

Use the same procedure as for the LH side.

5. DISCONNECT REAR DOOR OPENING TRIM WEATHERSTRIP LH (for Double Cab) INFO

6. DISCONNECT REAR DOOR OPENING TRIM WEATHERSTRIP RH (for Double Cab)

HINT:

Use the same procedure as for the LH side.

7. REMOVE LUGGAGE COMPARTMENT SIDE TRAY (for Double Cab)

- for w/ Woofer:

INFO

- for w/o Woofer:

INFO

8. REMOVE QUARTER TRIM LOWER PANEL LH (for Double Cab) INFO

9. REMOVE QUARTER TRIM LOWER PANEL RH (for Double Cab)

HINT:

Use the same procedure as for the LH side.

10. REMOVE QUARTER INSIDE TRIM BOARD LH (for Access Cab)

INFO

11. REMOVE QUARTER INSIDE TRIM BOARD LH (for Double Cab) INFO

12. REMOVE QUARTER INSIDE TRIM BOARD RH (for Access Cab)

HINT:

Use the same procedure as for the LH side.

13. REMOVE QUARTER INSIDE TRIM BOARD RH (for Double Cab)

HINT:

Use the same procedure as for the LH side.

14. REMOVE ASSIST GRIP SUB-ASSEMBLY (for Double Cab) INFO

15. REMOVE ASSIST GRIP PLUG (for Access Cab) INFO

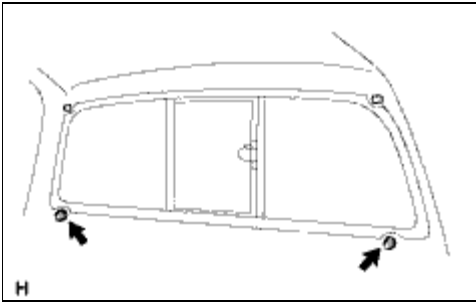
16. REMOVE COAT HOOK

17. REMOVE BACK WINDOW ASSEMBLY

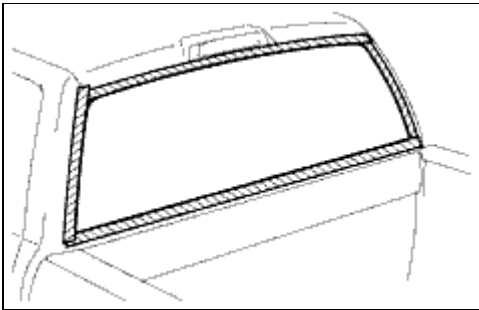
NOTICE:

The back window assembly may fall while performing this procedure. Therefore, use suction cups to hold the back window assembly from the outside of the vehicle.

(a) Remove the 2 nuts.



(b) Apply protective tape to the area around the installation position of the back window assembly on the vehicle body to prevent it from being scratched.



Text in Illustration

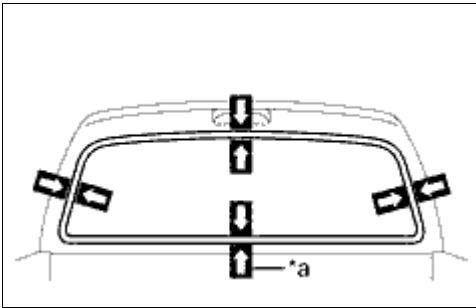
	Protective Tape
---	-----------------

(c) When reusing the windshield glass:

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

Text in Illustration

*a	Matchmark
----	-----------

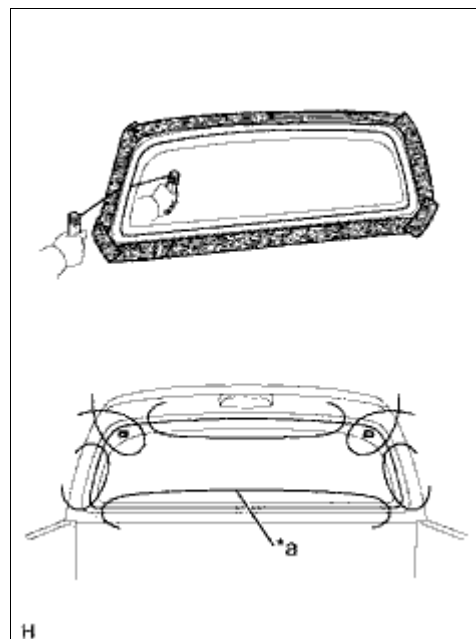


(d) Install the suction cups to the back window assembly.

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

Text in Illustration

*a	Piano Wire
----	------------



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

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

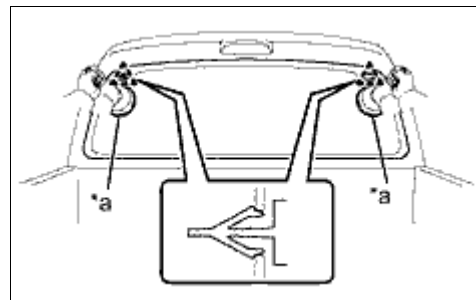
NOTICE:

Do not forcefully brush the piano wire against the back window assembly.

(h) Using suction cups, disengage the 2 clips to remove the back window assembly.

Text in Illustration

*a	Suction Cup
----	-------------



Last Modified: 11-13-2015	6.6 J	Doc ID: RM000005PS300GX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): Auto Down Operation does not Fully Open Power Window (Catch Protection Function is Activated); 2016 MY Tacoma [08/2015 -]		

Auto Down Operation does not Fully Open Power Window (Catch Protection Function is Activated)

DESCRIPTION

If a front door glass or the power window regulator motor assembly (for driver door) or power window regulator motor assembly (front passenger door) does not operate smoothly, the catch protection function may be triggered automatically, resulting in the auto down operation being unable to fully open the window.

INSPECTION PROCEDURE

NOTICE:

- If a power window regulator motor assembly has been replaced with a new one, initialize the power window control system .
- If a power window regulator motor assembly and door window regulator sub-assembly have been removed and installed, or if a power window regulator motor assembly was reused when a door glass or door glass run was replaced, initialize the power window control system .

HINT:

This symptom may occur for either any of the front power windows.

PROCEDURE

1.	PERFORM INITIALIZATION (APPLICABLE LOCATION)
-----------	---

- (a) Initialize the power window regulator motor assembly (applicable location) .

NEXT

2.	CHECK POWER WINDOW CONTROL SYSTEM (AUTO UP / DOWN FUNCTION (APPLICABLE LOCATION))
-----------	--

- (a) Check that each front power window moves when the auto up and down function of the power window regulator master switch assembly or power window regulator switch assembly are operated .

OK:

Auto up and down functions are normal (applicable location).

NG  **GO TO STEP 3**

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 down by hand.

NOTICE:

Make sure to perform initialization  .

HINT:

Ensure the following:

- The window glass fits in the glass run without improper contact or deformation.
- Foreign matter is not caught in the glass run.
- The glass run is not misaligned.
- The belt moulding or inner weatherstrip is not caught.
- The glass is not tilted and does not catch.

OK:

Door window glass slides smoothly.

NG ► **FIT WINDOW GLASS CORRECTLY (REMOVE FOREIGN MATTER CAUSING IMPROPER FIT OR REPLACE)**

OK ► **REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (FOR DRIVER DOOR OR FRONT PASSENGER DOOR)**



Last Modified: 11-13-2015	6.6 J	Doc ID: RM0000027QU098X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): Auto Up Operation does not Fully Close Power Window (Jam Protection Function is Activated); 2016 MY Tacoma [08/2015 -]		

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:

- If a power window regulator motor assembly has been replaced with a new one, initialize the power window control system [INFO](#) .
- If a power window regulator motor assembly and door window regulator sub-assembly have been removed and installed, or if a power window regulator motor assembly was reused when a door glass or door glass run was replaced, initialize the power window control system [INFO](#) .

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 door power windows move when the auto up/down function of the multiplex network master switch assembly and power window regulator switch assembly (for front passenger, rear LH and rear RH sides) is operated [INFO](#) .

OK:

Auto up/down function is normal (applicable location).

NG  **GO TO STEP 3**

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.

CAUTION:

Perform initialization again.

HINT:

Ensure the following:

- The window glass fits with the glass run without improper contact or deformation.
- Foreign matter is not caught in the glass run.
- The glass run is not misaligned.
- The belt moulding or inner weatherstrip is not caught.
- The glass is not tilted and does not catch.

Result

RESULT	PROCEED TO
NG	A
OK (Driver side power window)	B
OK (Front passenger side power window)	C

B  **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH**

C  **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH**

A  **FIT WINDOW GLASS CORRECTLY (REMOVE FOREIGN OBJECTS CAUSING IMPROPER FIT OR REPLACE PARTS)**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002BQS0CKX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): B2311; Power Window Motor Malfunction; 2016 MY Tacoma [08/2015 -]		

DTC	B2311	Power Window Motor Malfunction
------------	--------------	---------------------------------------

DESCRIPTION

The power window regulator motor assemblies are operated by the power window regulator master switch assembly, front power window regulator switch assembly RH. The power window regulator motor assemblies have 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 (Front Power Window Regulator Motor Assembly LH)

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2311	Either condition is met: - Power window regulator motor assembly malfunctions - 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 ignition switch ON - Front power window regulator motor assembly LH - Incorrect installation of power window components - Overheated front power window regulator motor assembly LH - Harness or connector

P-Door Motor (Front Power Window Regulator Motor Assembly RH)

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2311	Either condition is met: - Power window regulator motor assembly malfunctions - 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 ignition switch ON - Front power window regulator motor assembly RH - Incorrect installation of power window

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
		components • Overheated front power window regulator motor assembly RH • Harness or connector

INSPECTION PROCEDURE

NOTICE:

- DTC B2311 is stored in each power window regulator motor assembly.
- If a power window regulator motor assembly has been replaced with a new one, initialize the power window control system **INFO** .
- If a power window regulator motor assembly and door window regulator sub-assembly have been removed and installed, or if a power window regulator motor assembly was reused when a door glass or door glass run was replaced, initialize the power window control system **INFO** .
- The power window control system uses the LIN communication system. Inspect the communication function by following How to Proceed with Troubleshooting. Troubleshoot the power window control system after confirming that the communication system is functioning properly **INFO** .

PROCEDURE

1.	CHECK FOR DTC
-----------	----------------------

(a) Clear the DTCs **INFO** .

(b) Check for DTCs **INFO** .

OK:

DTC B2311 is not output.

NG ► **GO TO STEP 2**

OK ► **USE SIMULATION METHOD TO CHECK**

2.	CHECK DTC OUTPUT
-----------	-------------------------

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

Result

RESULT	PROCEED TO
DTC output from power window regulator motor assembly (for driver door)	A
DTC output from power window regulator motor assembly (for front passenger door)	B

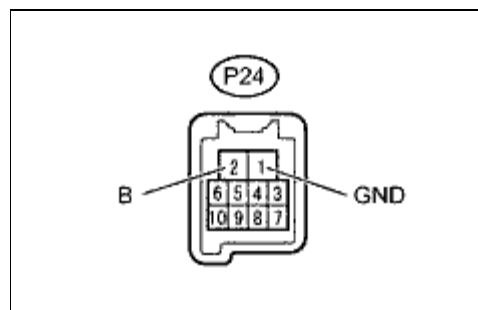
B ► **GO TO STEP 4**

A**3.****CHECK HARNESS AND CONNECTOR (FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH - BATTERY AND BODY GROUND)**

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P24-1 (GND) - Body ground	Always	Below 1 Ω



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

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P24-2 (B) - P24-1 (GND)	Always	11 to 14 V

Result

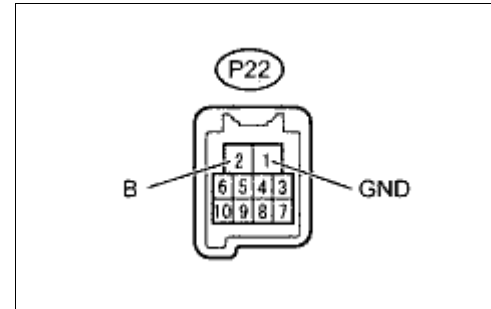
RESULT	PROCEED TO
NG	A
OK	B

B **GO TO STEP 5****A** **REPAIR OR REPLACE HARNESS OR CONNECTOR****4.****CHECK HARNESS AND CONNECTOR (FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH - BATTERY AND BODY GROUND)**

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P22-1 (GND) - Body ground	Always	Below 1 Ω



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

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P22-2 (B) - P22-1 (GND)	Always	11 to 14 V

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK



5.	PERFORM ACTIVE TEST USING TECHSTREAM (APPLICABLE LOCATION)
-----------	---

(a) Connect the Techstream to the DLC3.

(b) Turn the ignition switch to ON.

(c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / (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 (Front Power Window Regulator Motor Assembly LH)

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Power Window	Power window	OFF / UP / DOWN	-

P-Door Motor (Front Power Window Regulator Motor Assembly RH)

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 side power window)	B
NG (Front passenger side power window)	C

B ► **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH**

C ► **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH**

A



6.	PERFORM INITIALIZATION (APPLICABLE LOCATION)
-----------	---

(a) Initialize the power window regulator motor assembly  .

HINT:

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

NEXT



7.	CHECK POWER WINDOW CONTROL SYSTEM (APPLICABLE LOCATION)
-----------	--

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

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 side power window)	B
NG (Front passenger side power window)	C

B ► **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH**

C ► **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH**

A
▼

8.	CHECK WHETHER PARTS HAVE BEEN INSTALLED CORRECTLY
-----------	--

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

OK:

Power window components are installed correctly.

NG ► **INSTALL PARTS CORRECTLY**

OK
▼

9.	CHECK DTC OUTPUT
-----------	-------------------------

(a) Turn the ignition switch to ON.

(b) Wait for at least 10 seconds, and then turn the ignition switch to ON.

(c) Check for DTCs INFO.

Result

RESULT	PROCEED TO
OK	A
NG (Driver side power window)	B
NG (Front passenger side power window)	C

**B ▶ REPLACE FRONT POWER WINDOW REGULATOR
MOTOR ASSEMBLY LH**

**C ▶ REPLACE FRONT POWER WINDOW REGULATOR
MOTOR ASSEMBLY RH**

A ▶ END



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002BQR0B3X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): B2312; Power Window Switch Malfunction; 2016 MY Tacoma [08/2015 -]		

DTC	B2312	Power Window Switch Malfunction
------------	--------------	--

DESCRIPTION

The power window regulator motor assembly is operated by the power window regulator 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 determines that the power window regulator master switch assembly or power window regulator switch assembly is stuck.

HINT:

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

Master Switch

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2312	- Power window regulator master switch assembly stuck - Power window regulator master switch assembly held in same position for more than 20 seconds	Power window regulator master switch assembly

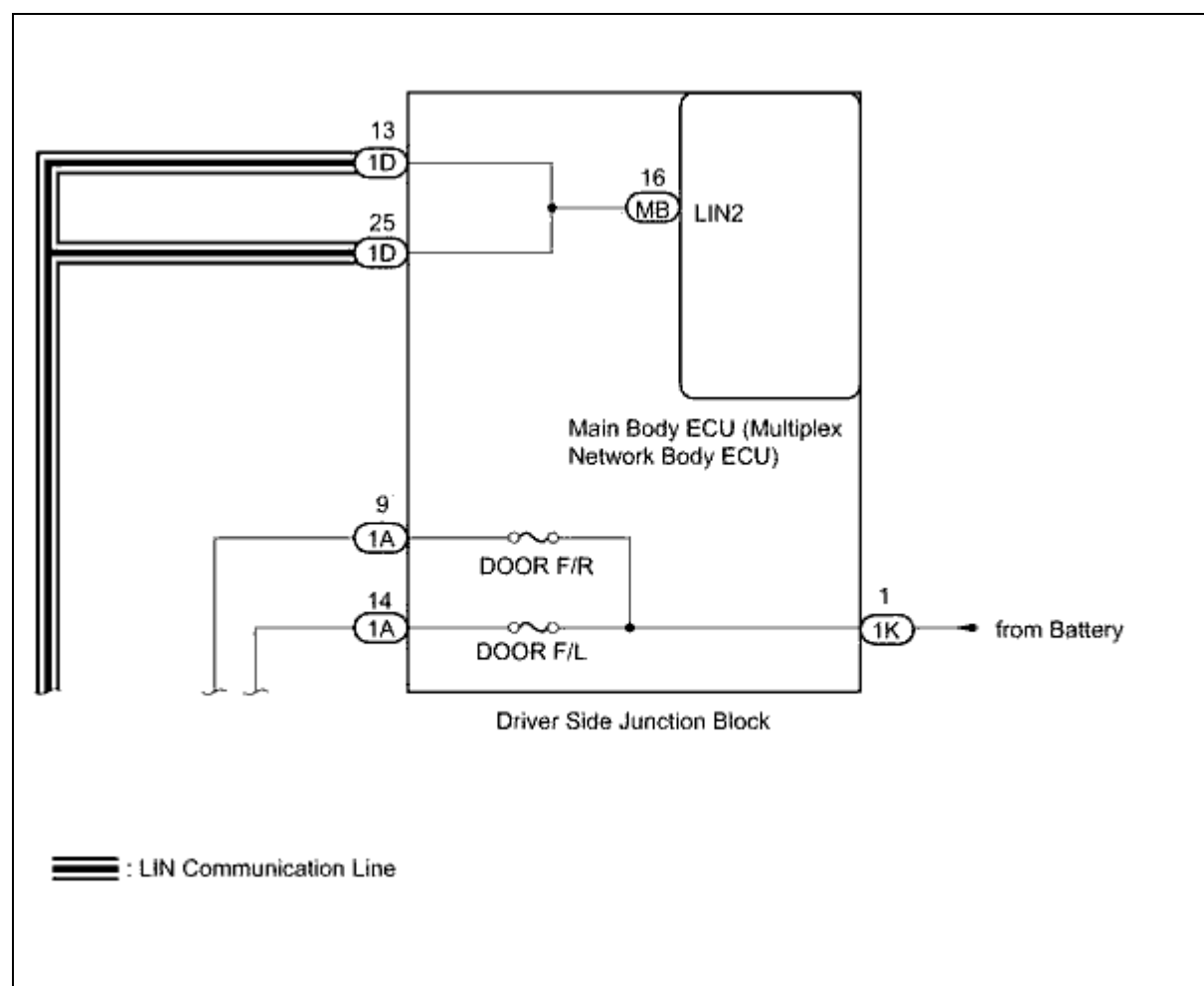
D-Door Motor (Front Power Window Regulator Motor Assembly LH)

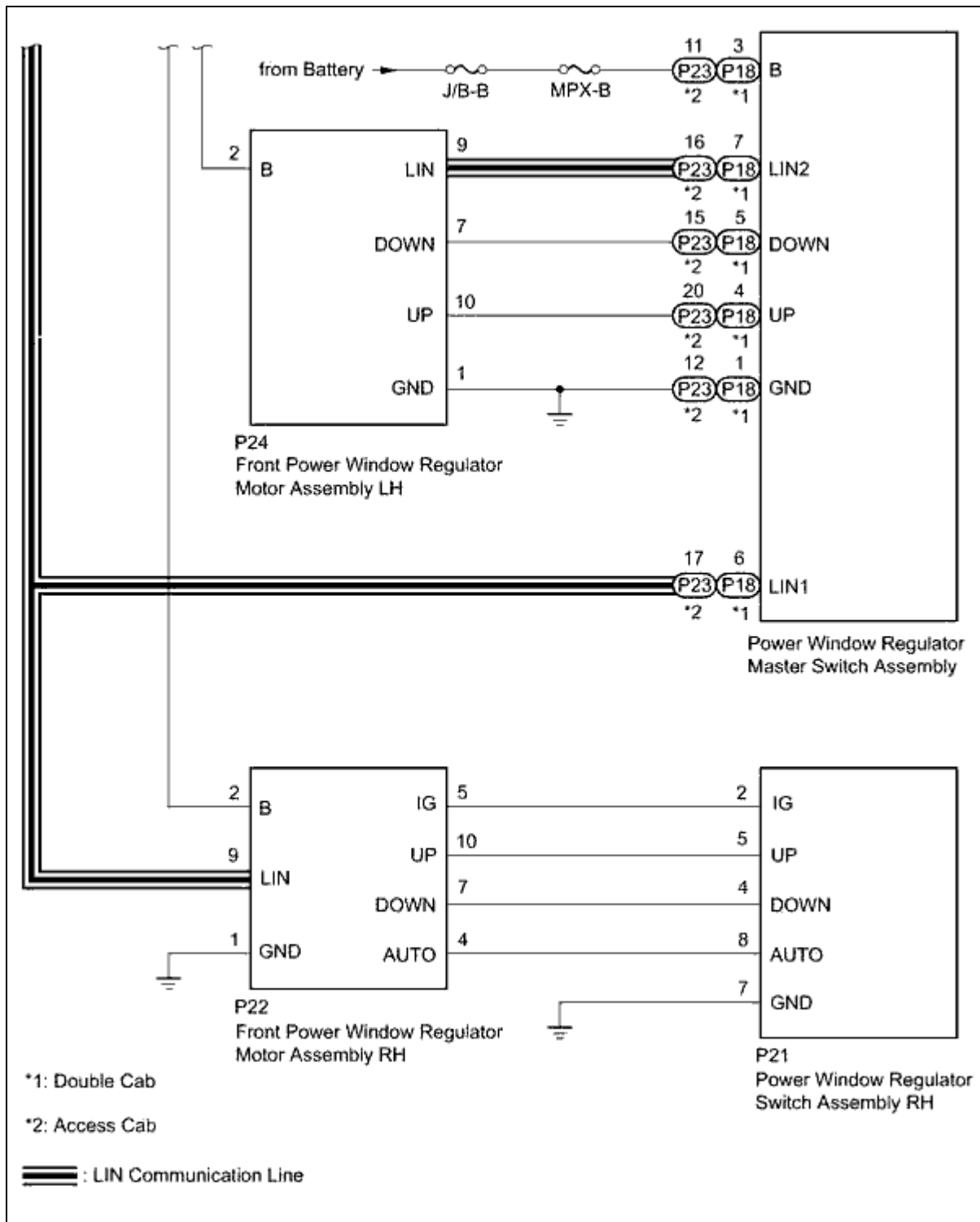
DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2312	- Power window regulator master switch assembly stuck - Power window regulator master switch assembly held in same position for more than 20 seconds	- Power window regulator master switch assembly - Front power window regulator motor assembly LH - Harness or connector

P-Door Motor (Front Power Window Regulator Motor Assembly RH)

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2312	- Power window regulator switch assembly stuck - Power window regulator switch assembly held in same position for more than 20 seconds	- Front power window regulator switch assembly RH - Front power window regulator motor assembly RH - Harness or connector

WIRING DIAGRAM





INSPECTION PROCEDURE

NOTICE:

- DTC B2312 is stored in the power window regulator master switch assembly and in each power window regulator motor assembly.
- If a power window regulator motor assembly has been replaced with a new one, initialize the power window control system [INFO](#).
- Inspect the fuses for circuits related to this system before performing the following procedure.
- The power window control system uses the LIN communication system. Inspect the communication function by following How to Proceed with Troubleshooting. Troubleshoot the power window control system

after confirming that the communication system is functioning properly  .

PROCEDURE

1. CHECK DTC OUTPUT

(a) Clear the DTC  .

(b) Check for DTCs  .

OK:

No DTCs output.

NG  **GO TO STEP 2**

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

2. CHECK DTC OUTPUT

(a) Check for DTC output conditions.

Result

RESULT	PROCEED TO
DTC output from power window regulator master switch assembly	A
DTC output from front power window regulator motor assembly LH	B
DTC output from front power window regulator motor assembly RH	C

B  **GO TO STEP 3**

C  **GO TO STEP 7**

A  **REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY**

3. READ VALUE USING TECHSTREAM (D-DOOR MOTOR)

(a) Connect the Techstream to the DLC3.

(b) Turn the ignition switch to ON.

(c) Turn the Techstream on.

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

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

D-Door Motor (Front Power Window Regulator Motor Assembly LH)

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
D Door P/W Up SW	Driver side power window manual up switch signal / ON or OFF	ON: Driver side power window manual up switch operated OFF: Driver side power window manual up switch not operated	-
D Door P/W Down SW	Driver side power window manual down switch signal / ON or OFF	ON: Driver side power window manual down switch operated OFF: Driver side power window manual down switch not operated	-

OK:

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

NG  **GO TO STEP 4**

OK  **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH**

4.	CHECK HARNESS AND CONNECTOR (POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY - FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH)
-----------	---

(a) for Double Cab:

- (1) Disconnect the P18 power window regulator master switch assembly connector.
- (2) Disconnect the P24 front power window regulator motor assembly LH connector.
- (3) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P18-4 (UP) - Body ground	Always	10 k Ω or higher
P18-5 (DOWN) - Body ground	Always	10 k Ω or higher
P24-10 (UP) - Body ground	Always	10 k Ω or higher
P24-7 (DOWN) - Body ground	Always	10 k Ω or higher

(b) for Access Cab:

- (1) Disconnect the P23 power window regulator master switch assembly connector.
- (2) Disconnect the P24 front power window regulator motor assembly LH connector.
- (3) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P23-20 (UP) - Body ground	Always	10 kΩ or higher
P23-15 (DOWN) - Body ground	Always	10 kΩ or higher
P24-10 (UP) - Body ground	Always	10 kΩ or higher
P24-7 (DOWN) - Body ground	Always	10 kΩ or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



5.	REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY
-----------	--

(a) Replace the power window regulator master switch assembly  .

NEXT



6.	CHECK DTC OUTPUT
-----------	-------------------------

(a) Clear the DTCs  .

(b) Check for DTCs  .

OK:

DTC B2312 is not output.

NG  **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH**

OK  **END (POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY WAS DEFECTIVE)**

7.	READ VALUE USING TECHSTREAM (P-DOOR MOTOR)
-----------	---

(a) Connect the Techstream to the DLC3.

(b) Turn the ignition switch to ON.

(c) Turn the Techstream on.

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

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

P-Door Motor (Front Power Window Regulator Motor Assembly RH)

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
P Door P/W Auto SW	Front passenger side power window auto up/down switch signal / ON or OFF	ON: Front passenger side power window auto switch operated OFF: Front passenger side 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 power window manual up switch operated OFF: Front passenger side 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 power window manual down switch operated OFF: Front passenger side power window manual down switch not operated	-

OK:

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

NG  **GO TO STEP 8**

OK  **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH**

8.	INSPECT FRONT POWER WINDOW REGULATOR SWITCH ASSEMBLY RH
-----------	--

(a) Remove the front power window regulator switch assembly RH  .

(b) Inspect the front power window regulator switch assembly RH.

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

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
5 - 7	Auto up or manual up position	Below 1 Ω
4 - 7	Auto down or manual down position	Below 1 Ω
7 - 8	Auto down or manual down position	Below 1 Ω
4 - 5	Off	10 k Ω or higher

NG  **REPLACE FRONT POWER WINDOW REGULATOR**

SWITCH ASSEMBLY RH

OK
▼

9.	CHECK HARNESS AND CONNECTOR (FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH - FRONT POWER WINDOW REGULATOR SWITCH ASSEMBLY RH)
----	---

- (a) Disconnect the P22 front power window regulator motor assembly RH connector.
- (b) Disconnect the P21 front power window regulator switch assembly RH connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P21-5 (UP) - Body ground	Always	10 k Ω or higher
P21-4 (DOWN) - Body ground	Always	10 k Ω or higher
P21-8 (AUTO) - Body ground	Always	10 k Ω or higher
P22-10 (UP) - Body ground	Always	10 k Ω or higher
P22-7 (DOWN) - Body ground	Always	10 k Ω or higher
P22-4 (AUTO) - Body ground	Always	10 k Ω or higher

NG ► **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ► **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM0000027JF0CJX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): B2313; Glass Position Initialization Incomplete; 2016 MY Tacoma [08/2015 -]		

DTC	B2313	Glass Position Initialization Incomplete
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DESCRIPTION

The power window regulator motor assembly is operated by the power window regulator master switch assembly 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 (Front Power Window Regulator Motor Assembly LH)

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2313	- Power window regulator motor assembly not initialized - Power window regulator motor assembly malfunctions	- Front power window regulator motor assembly LH not initialized - Front power window regulator motor assembly LH

P-Door Motor (Front Power Window Regulator Motor Assembly RH)

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2313	- Power window regulator motor assembly not initialized - Power window regulator motor assembly malfunctions	- Front power window regulator motor assembly RH not initialized - Front power window regulator motor assembly RH

INSPECTION PROCEDURE

NOTICE:

- DTC B2313 is stored in each power window regulator motor assembly.
- If the battery is disconnected while the ignition switch is on (IG), DTC B2313 is stored.
- If a power window regulator motor assembly has been replaced with a new one, initialize the power window control system INFO.
- The power window control system uses the LIN communication system. Inspect the communication function by following How to Proceed with Troubleshooting. Troubleshoot the power window control system after confirming that the communication system is functioning properly INFO.

PROCEDURE

1. PERFORM INITIALIZATION (APPLICABLE LOCATION)

- (a) Turn the ignition switch to ON.
- (b) Initialize the power window regulator motor assembly .

HINT:

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

NEXT



2. CHECK DTC OUTPUT

- (a) Turn the ignition switch off.
- (b) Wait for at least 10 seconds, and then turn the ignition switch to ON.
- (c) Check for DTCs .

HINT:

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

OK:

B2313 output does not recur.

Result

RESULT	PROCEED TO
OK	A
NG (Driver side power window)	B
NG (Front passenger side power window)	C

B  **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH**

C  **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH**

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



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000004DM300CX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): CUSTOMIZE PARAMETERS; 2016 MY Tacoma [08/2015 -]		

CUSTOMIZE PARAMETERS

1. CUSTOMIZE POWER WINDOW CONTROL SYSTEM

HINT:

The following items can be customized.

NOTICE:

- When the customer requests a change in a function, first make sure that the function can be customized.
- Record the current settings before customizing.

(a) Customizing with the Techstream

- (1) Connect the Techstream to the DLC3.
- (2) Turn the ignition switch to ON.
- (3) Turn the Techstream on.
- (4) Enter the following menus: Customize Setting / Power Window.
- (5) Select the setting by referring to the table below.

DISPLAY	DEFAULT	CONTENT	SETTING	RELEVANT ECU
D Window Auto Up	ON	This function is used to enable or disable the auto up function for the driver door window using the multiplex network master switch assembly.	OFF or ON	Front power window regulator motor assembly LH
P Window Auto Up	ON	This function is used to enable or disable the auto up function for the front passenger side window using the front power window regulator switch assembly RH.	OFF or ON	Front power window regulator motor assembly RH
P Window Auto Up From Driver	ON	This function is used to enable or disable the remote auto up function for the front passenger side window using the multiplex network master switch.	OFF or ON	Front power window regulator motor assembly RH
D Window Auto Down	ON	This function is used to enable or disable the auto down function for the driver door window using the multiplex network master switch assembly.	OFF or ON	Front power window regulator motor assembly LH
P Window Auto Down	ON	This function is used to enable or disable the auto down function for the front passenger side window using the front power window regulator switch assembly RH.	OFF or ON	Front power window regulator motor assembly RH
P Window Auto Down From Driver	ON	This function is used to enable or disable the remote auto down function for the front passenger side window using the multiplex network master switch.	OFF or ON	Front power window regulator motor assembly RH



Last Modified: 11-13-2015	6.6 U	Doc ID: RM0000011V10AKX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): DATA LIST / ACTIVE TEST; 2016 MY Tacoma [08/2015 -]		

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.

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / (desired system) / Data List / All Data.
- Read the Data List according to the display on the Techstream.

Master Switch

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
D Door P/W Auto SW	Driver side power window auto switch signal / ON or OFF	ON: Driver side power window auto switch operated OFF: Driver side power window auto switch not operated	-
P Door P/W Auto SW	Front passenger side power window auto up/down switch signal / ON or OFF	ON: Front passenger side power window auto switch operated OFF: Front passenger side 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 power window manual up switch operated OFF: Front passenger side 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 power window manual down switch operated OFF: Front passenger side power window manual down switch not operated	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Door Lock Switch Status	Driver side door control switch lock signal / ON or OFF	ON: Door control switch pushed to lock position OFF: Door control switch not pushed to lock position	-
Door Unlock Switch Status	Driver side door control switch unlock signal / ON or OFF	ON: Door control switch pushed to unlock position OFF: Door control switch not pushed to unlock position	-
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 (Front Power Window Regulator Motor Assembly LH)

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
D Door P/W Auto SW	Driver side power window auto switch signal / ON or OFF	ON: Driver side power window auto switch operated OFF: Driver side power window auto switch not operated	-
D Door P/W Up SW	Driver side power window manual up switch signal / ON or OFF	ON: Driver side power window manual up switch operated OFF: Driver side power window manual up switch not operated	-
D Door P/W Down SW	Driver side power window manual down switch signal / ON or OFF	ON: Driver side power window manual down switch operated OFF: Driver side 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.

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
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.
D Window Auto Up	Auto up operation using the multiplex network master switch assembly / ON or OFF	Customization status displayed	-
D Window Auto Down	Auto down operation using the multiplex network master switch assembly / ON or OFF	Customization status displayed	-
Number of Trouble Codes	Number of trouble codes / Min.: 0 or Max.: 255	Number of DTCs will be displayed	-

P-Door Motor (Front Power Window Regulator Motor Assembly RH)

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 side power window auto switch operated OFF: Front passenger side 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 power window manual up switch operated OFF: Front passenger side 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 power window manual down switch operated OFF: Front passenger side power window manual down switch not operated	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
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.
P Window Auto Up	Auto up operation using the front power window regulator switch assembly RH / ON or OFF	Customization status displayed	-
P Window Auto Up From Driver	Remote auto up operation using the multiplex network master switch assembly / ON or OFF	Customization status displayed	-
P Window Auto Down	Auto down operation using the front power window regulator switch assembly RH / ON or OFF	Customization status displayed	-
P Window Auto Down From Driver	Remote auto down operation using the multiplex network master switch assembly / ON or OFF	Customization status displayed	-
Number of Trouble Codes	Number of trouble codes / Min.: 0 or Max.: 255	Number of DTCs will be displayed	-

Main Body (Main Body ECU)

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
FR Door Courtesy	Front door courtesy light switch RH signal / ON or OFF	ON: Front passenger side door closed OFF: Front passenger side door open	-
FL Door Courtesy	Front door courtesy light switch LH signal / ON or OFF	ON: Driver side door closed OFF: Driver side door open	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Communication P-Door Motor	Connection status between front power window regulator motor assembly RH and main body ECU / OK or STOP	OK: Normal communication STOP: Communication stopped	-
Communication Master SW	Connection status between multiplex network master switch and main 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.

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / (desired system) / Active Test.
- 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 (Front Power Window Regulator Motor Assembly LH)

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Power Window	Power window	OFF / UP /DOWN	-

P-Door Motor (Front Power Window Regulator Motor Assembly RH)

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Power Window	Power window	OFF / UP /DOWN	-

Main Body (Main Body ECU)

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
IG OFF P/W Control Permission Output	Power window	OFF / ON	Perform this Active Test with the ignition switch off



Last Modified: 11-13-2015	6.6 D	Doc ID: RM0000012GX0H0X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): DIAGNOSIS SYSTEM; 2016 MY Tacoma [08/2015 -]		

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  .

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.



Last Modified: 11-13-2015	6.6 S	Doc ID: RM00000363N089X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): DIAGNOSTIC TROUBLE CODE CHART; 2016 MY Tacoma [08/2015 -]		

DIAGNOSTIC TROUBLE CODE CHART

Power Window Control System

DTC CODE	DETECTION ITEM	SEE PAGE
B2311	Power Window Motor Malfunction	INFO
B2312	Power Window Switch Malfunction	INFO
B2313	Glass Position Initialization Incomplete	INFO



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000000YCC0CZX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): DTC CHECK / CLEAR; 2016 MY Tacoma [08/2015 -]		

DTC CHECK / CLEAR

1. CHECK DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / (desired system) / Trouble Codes.
- (e) Check the details of the DTC(s)  .

2. CLEAR DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / (desired system) / Trouble Codes.
- (e) Clear the DTCs.



Last Modified: 11-13-2015	6.6 J	Doc ID: RM0000027QT07UX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): Driver Side Power Window Auto Up / Down Function does not Operate with Power Window Master Switch; 2016 MY Tacoma [08/2015 -]		

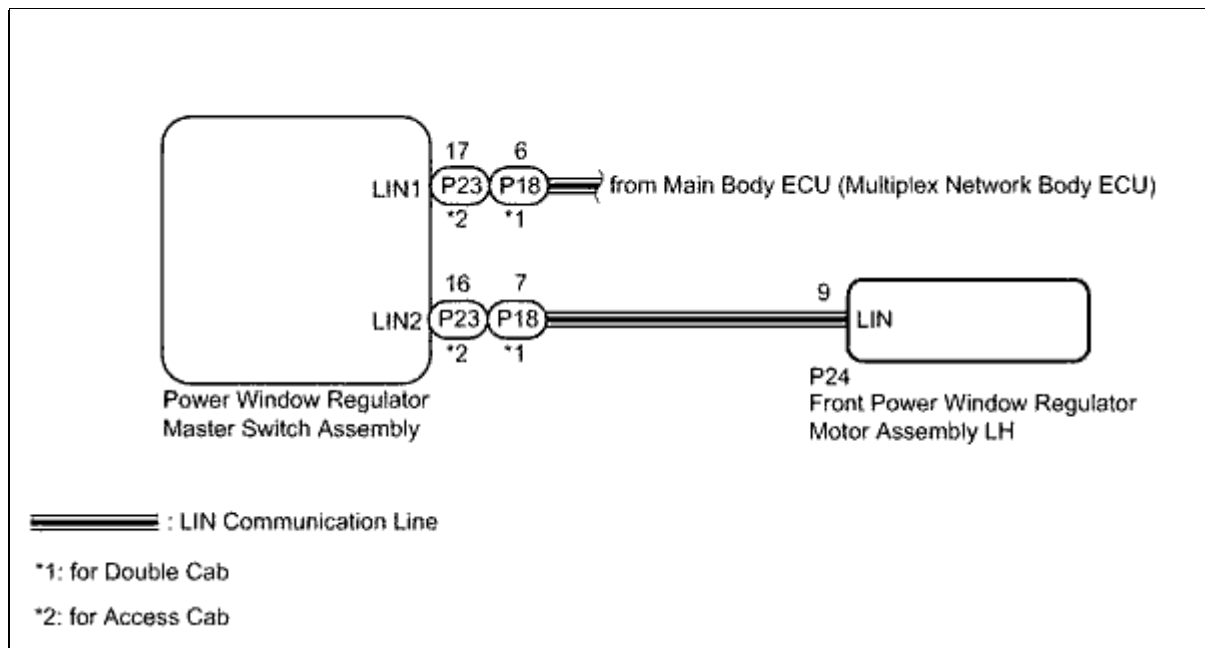
Driver Side Power Window Auto Up / Down Function does not Operate with Power Window Master Switch

DESCRIPTION

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

If the power window initialization [INFO](#) has not been performed, the auto up/down function will not operate.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- The power window control system uses the LIN communication system. Inspect the communication function by following How to Proceed with Troubleshooting. Troubleshoot the power window control system after confirming that the communication system is functioning properly [INFO](#).
- If the front power window regulator motor assembly LH has been replaced with a new one, initialize the power window control system [INFO](#).
- Check that the "D Window Auto Up" and "D Window Auto Down" power window control system customize settings are "ON" before proceeding with work [INFO](#).
- After the catch protection function operates, the auto operation is not performed the first time auto up is performed. All auto up operations performed after the first operate normally.

HINT:

If the pulse sensor built into the front power window regulator motor assembly LH is malfunctioning, 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 master switch assembly at the auto up position, and opened manually by pushing down the power window regulator master switch assembly  .

PROCEDURE

1. READ VALUE USING TECHSTREAM (MASTER SWITCH)

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Master switch / Data List.
- (e) Read the Data List according to the display on the Techstream.

Master Switch

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
D Door P/W Auto SW	Driver side power window auto up/down switch signal / ON or OFF	ON: Driver side power window auto switch operated OFF: Driver side power window auto switch not operated	-

OK:

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

NG  **REPLACE POWER WINDOW REGULATOR 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 (Front Power Window Regulator Motor Assembly LH)

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
D Door P/W	Driver side power window auto up/down	ON: Driver side power window	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Auto SW	switch signal / ON or OFF	auto switch operated OFF: Driver side power window auto switch not operated	

OK:

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

NG ► **GO TO STEP 5**

OK



3.	PERFORM INITIALIZATION (for Driver Side)
-----------	---

(a) Initialize the front power window regulator motor assembly LH  .

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/down function of the power window regulator master switch assembly is operated  .

OK:

Driver side auto up/down function is normal.

NG ► **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH**

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

5.	REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY
-----------	--

(a) Replace the power window regulator master switch assembly  .

NEXT



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

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

OK:

Driver side auto up/down function is normal.

NG  **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH**

OK  **END (POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY WAS DEFECTIVE)**



Last Modified: 11-13-2015	6.6 J	Doc ID: RM000000XHI0F3X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): Driver Side Power Window does not Operate with Power Window Master Switch; 2016 MY Tacoma [08/2015 -]		

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

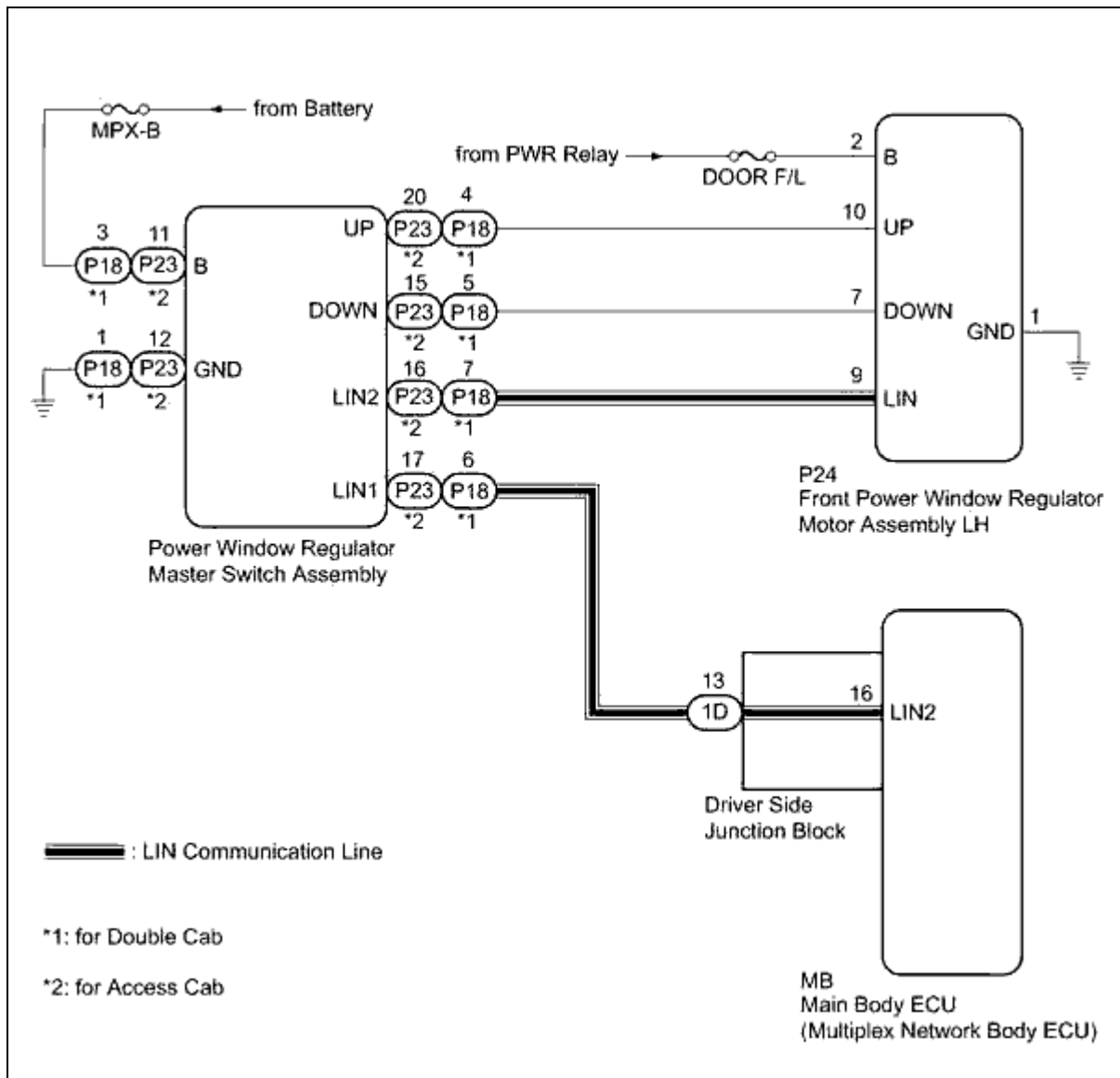
DESCRIPTION

When the engine is running or the ignition switch is ON, the front power window regulator motor assembly LH is operated by the power window regulator master switch assembly. The front power window regulator motor assembly LH has motor, regulator, and ECU functions.

HINT:

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

WIRING DIAGRAM



(a) Connect the Techstream to the DLC3.

- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Main Body / Data List.
- (e) Read the Data List according to the display on the Techstream.

Main Body (Main Body ECU)

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Communication D-Door Motor	Connection status between front power window regulator motor assembly LH and main body ECU / OK or STOP	OK: Normal communication STOP: Communication stopped	-
Communication Master SW	Connection status between multiplex network master switch and main 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 (Front Power Window Regulator Motor Assembly LH)

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
D Door P/W Up SW	Driver side power window manual up switch signal / ON or OFF	ON: Driver side power window manual up switch operated OFF: Driver side power window manual up switch not operated	-
D Door P/W Down SW	Driver side power window manual down switch signal / ON or OFF	ON: Driver side power window manual down switch operated	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
		OFF: Driver side power window manual down switch not operated	

OK:

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

NG ► **GO TO STEP 4**

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.

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 (Front Power Window Regulator Motor Assembly LH)

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Power Window	Power window	OFF / UP / DOWN	-

HINT:

Up and down movement does not occur if the arrow is not pressed and held.

OK:

Driver side power window operates normally.

NG ► **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH**

OK ► **REPLACE MAIN BODY ECU**

4.	CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY - FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH)
-----------	--

(a) for Double Cab:

- (1) Disconnect the P18 power window regulator master switch assembly connector.
- (2) Disconnect the P24 front power window regulator motor assembly LH connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P18-4 (UP) - P24-10 (UP)	Always	Below 1 Ω
P18-5 (DOWN) - P24-7 (DOWN)	Always	Below 1 Ω
P18-4 (UP) - Body ground	Always	10 k Ω or higher
P18-5 (DOWN) - Body ground	Always	10 k Ω or higher
P24-10 (UP) - Body ground	Always	10 k Ω or higher
P24-7 (DOWN) - Body ground	Always	10 k Ω or higher

(b) for Access Cab:

(1) Disconnect the P23 power window regulator master switch assembly connector.

(2) Disconnect the P24 front power window regulator motor assembly LH connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P23-20 (UP) - P24-10 (UP)	Always	Below 1 Ω
P23-15 (DOWN) - P24-7 (DOWN)	Always	Below 1 Ω
P23-20 (UP) - Body ground	Always	10 k Ω or higher
P23-15 (DOWN) - Body ground	Always	10 k Ω or higher
P24-10 (UP) - Body ground	Always	10 k Ω or higher
P24-7 (DOWN) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



5.	REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY
-----------	--

(a) Replace the power window regulator master switch assembly  .

NEXT



6. CHECK MANUAL UP / DOWN FUNCTION (FOR DRIVER SIDE)

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

OK:

Driver side manual up/down function is normal.

NG  **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH**

OK  **END (POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY WAS DEFECTIVE)**



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000000X8Z0E5X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): FAIL-SAFE CHART; 2016 MY Tacoma [08/2015 -]		

FAIL-SAFE CHART

1. PULSE FAILURE OR DISPLACEMENT OF NON-DETECTION RANGE TO THE OPENING DIRECTION

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

Power Window Regulator Master Switch Assembly, Front Power Window Regulator Switch Assembly RH

POWER WINDOW OPERATION	CONDITION		
	IGNITION SWITCH ON	IGNITION SWITCH OFF (KEY-OFF OPERATION PERMITTED)	IGNITION SWITCH OFF (KEY-OFF OPERATION PROHIBITED)
Manual up (Switch on the door)	▲	X	-
Manual down (Switch on the door)	▲	X	-
Auto up (Switch on the door)	X	X	-
Auto down (Switch on the door)	X	X	-
Manual up (Remote switch operation)	X	X	-
Manual down (Remote switch operation)	X	X	-
Auto up (Remote switch operation)	X	X	-
Auto down (Remote switch operation)	X	X	-

HINT:

- : Operates permitted w/ jam protection/catch protection
- ▲: Operates permitted w/o jam protection/catch protection
- X: Operation prohibited

Fail-safe deactivation condition

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/down function will return.

2. INITIAL FAILURE

- (a) During initialization, when the window position or initialization complete status cannot be properly read from the non-volatile memory, the following power window operations are prohibited.

Power Window Regulator Master Switch Assembly, Front Power Window Regulator Switch Assembly

POWER WINDOW OPERATION	CONDITION		
	IGNITION SWITCH ON	IGNITION SWITCH OFF (KEY-OFF OPERATION PERMITTED)	IGNITION SWITCH OFF (KEY-OFF OPERATION PROHIBITED)
Manual up (Switch on the door)	▲	X	-
Manual down (Switch on the door)	▲	X	-
Auto up (Switch on the door)	X	X	-
Auto down (Switch on the door)	X	X	-
Manual up (Remote switch operation)	X	X	-
Manual down (Remote switch operation)	X	X	-
Auto up (Remote switch operation)	X	X	-
Auto down (Remote switch operation)	X	X	-

- •: Operates permitted w/ jam protection/catch protection
- ▲: Operates permitted w/o jam protection/catch protection
- X: Operation prohibited

Fail-safe deactivation condition

Perform initialization  .

3. LIN COMMUNICATION FAILURE

(a) If the LIN communication line is malfunctioning (communication stop), the power window control system prohibits operation as follows. (Operation is only possible using the power window switch of each seat.)

Power Window Regulator Master Switch Assembly

POWER WINDOW OPERATION	CONDITION
	ALWAYS
Manual up	•
Manual down	▲
Auto up	-
Auto down	-

Front Power Window Regulator Switch Assembly RH

POWER WINDOW OPERATION	CONDITION
	ALWAYS
Manual up	•

POWER WINDOW OPERATION	CONDITION
	ALWAYS
Manual down	▲
Auto up	•
Auto down	▲

- •: Operates permitted w/ jam protection/catch protection
- ▲: Operates permitted w/o jam protection/catch protection
- X: Operation prohibited

Fail-safe deactivation condition

Check LIN communication system INFO .

4. PULSE FAILURE AND LIN COMMUNICATION FAILURE

(a) If the LIN communication line is malfunctioning (communication stop) and the pulse sensor is malfunctioning, the following power window operations are prohibited.

Power Window Regulator Master Switch Assembly

POWER WINDOW OPERATION	CONDITION
	ALWAYS
Manual up	X
Manual down	X
Auto up	X
Auto down	X

Front Power Window Regulator Switch Assembly RH

POWER WINDOW OPERATION	CONDITION
	ALWAYS
Manual up	X
Manual down	X
Auto up	X
Auto down	X

- •: Operates permitted w/ jam protection/catch protection
- ▲: Operates permitted w/o jam protection/catch protection
- X: Operation prohibited

5. DISPLACEMENT OF NON-DETECTION RANGE TO THE OPENING DIRECTION AND LIN COMMUNICATION FAILURE / INITIAL FAILURE AND LIN COMMUNICATION FAILURE

(a) If the LIN communication line is malfunctioning and the window position and learned value are abnormal, or the LIN communication line is malfunctioning and the window position or initialization complete status cannot be properly read from the non-volatile memory during initialization, the following power window operations are prohibited.

Multiplex Network Master Switch Assembly

POWER WINDOW OPERATION	CONDITION
	ALWAYS
Manual up	•
Manual down	▲
Auto up	-
Auto down	-

Front Power Window Regulator Switch Assembly RH, Rear Power Window Regulator Switch Assembly LH/RH

POWER WINDOW OPERATION	CONDITION
	ALWAYS
Manual up	•
Manual down	▲
Auto up	X
Auto down	X

- •: Operates permitted w/ jam protection/catch protection
- ▲: Operates permitted w/o jam protection/catch protection
- X: Operation prohibited



Last Modified: 11-13-2015	6.6 J	Doc ID: RM0000036GT0HHX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): Front Passenger Side Power Window Auto Up / Down Function does not Operate with Front Passenger Side Power Window Switch; 2016 MY Tacoma [08/2015 -]		

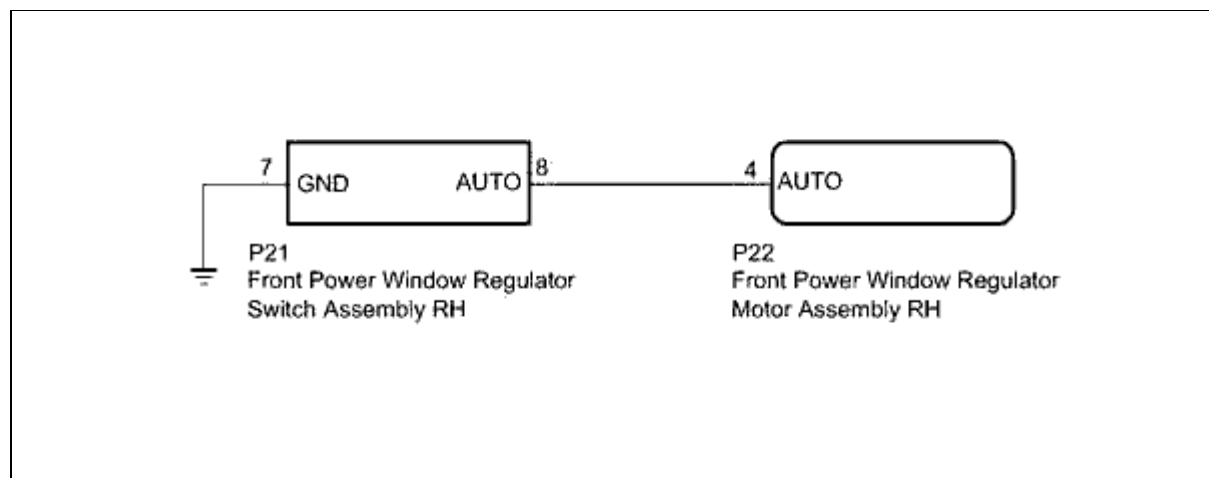
Front Passenger Side Power Window Auto Up / Down Function does not Operate with Front Passenger Side Power Window Switch

DESCRIPTION

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

If the power window initialization [INFO](#) has not been performed, the auto up/down function will not operate.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- If the front power window regulator motor assembly RH has been replaced with a new one, initialize the power window control system [INFO](#).
- Check that the "P Window Auto Up" and "P Window Auto Down" power window control system customize settings are "ON" before proceeding with work [INFO](#).
- After the catch protection function operates, the auto operation is not performed the first time auto up is performed. All auto up operations performed after the first operate normally.

HINT:

If the pulse sensor built into the front power window regulator motor assembly RH is malfunctioning, 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 at the auto up position, and opened manually by pushing down the power window regulator switch assembly [INFO](#).

PROCEDURE

1. READ VALUE USING TECHSTREAM (P-DOOR MOTOR)

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / P-Door Motor / Data List.
- (e) Read the Data List according to the display on the Techstream.

P-Door Motor (Front Power Window Regulator Motor Assembly RH)

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 side power window auto switch operated OFF: Front passenger side power window auto switch not operated	-

OK:

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

NG  **GO TO STEP 4**

OK



2. PERFORM INITIALIZATION (FOR FRONT PASSENGER SIDE)

- (a) Initialize the front power window regulator motor assembly RH  .

NEXT



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

- (a) Check that the front passenger side power window moves when the auto up/down function of the front power window regulator switch assembly RH is operated  .

OK:

Front passenger side auto up/down function is normal.

NG  **REPLACE FRONT POWER WINDOW REGULATOR**

MOTOR ASSEMBLY RH

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

4. INSPECT FRONT POWER WINDOW REGULATOR SWITCH ASSEMBLY RH

(a) Remove the front power window regulator switch assembly RH  .

(b) Inspect the front power window regulator switch assembly RH.

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

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
5 - 7	Auto up or manual up position	Below 1 Ω
4 - 7	Auto down or manual down position	Below 1 Ω
7 - 8	Auto down or manual down position	Below 1 Ω
4 - 5	Off	10 k Ω or higher

NG  **REPLACE FRONT POWER WINDOW REGULATOR SWITCH ASSEMBLY RH**

OK


5. CHECK HARNESS AND CONNECTOR (FRONT POWER WINDOW REGULATOR SWITCH ASSEMBLY RH - FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH)

(a) Disconnect the P21 front power window regulator switch assembly RH connector.

(b) Disconnect the P22 front power window regulator motor assembly RH connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P21-8 (AUTO) - P22-4 (AUTO)	Always	Below 1 Ω
P21-8 (AUTO) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



REPLACE FRONT POWER WINDOW REGULATOR
MOTOR ASSEMBLY RH



Last Modified: 11-13-2015	6.6 J	Doc ID: RM0000010ZL0CJX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): Front Passenger Side Power Window does not Operate with Front Passenger Side Power Window Switch; 2016 MY Tacoma [08/2015 -]		

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

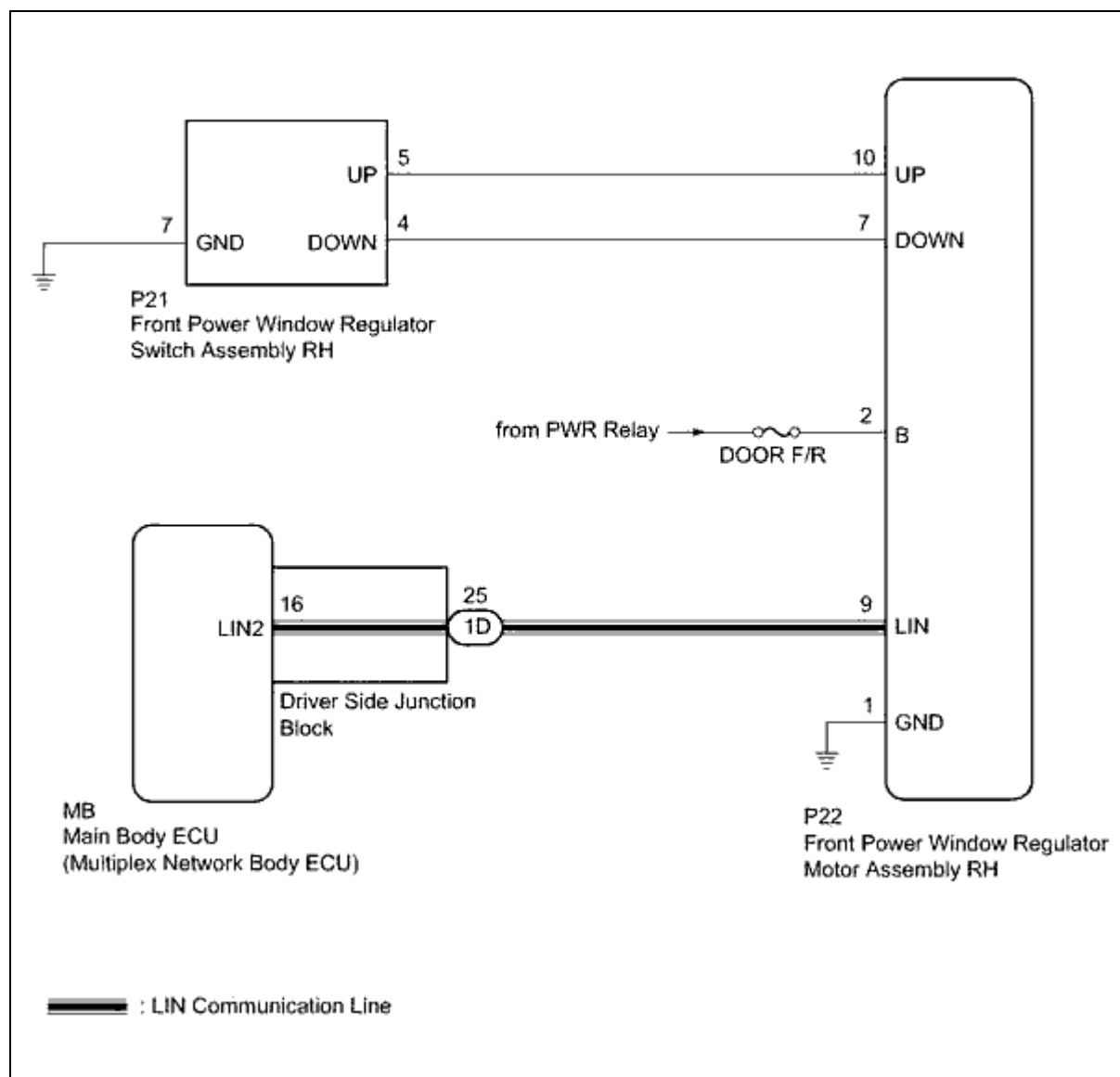
DESCRIPTION

When the engine is running or the ignition switch is ON, the front power window regulator motor assembly RH is operated by the front power window regulator switch assembly RH. The front power window regulator motor assembly RH has motor, regulator, and ECU functions.

HINT:

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

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- The power window control system uses the LIN communication system. Inspect the communication function by following How to Proceed with Troubleshooting. Troubleshoot the power window control system after confirming that the communication system is functioning properly [INFO](#).
- If the front power window regulator motor assembly RH has been replaced with a new one, initialize the power window control system [INFO](#).
- Check that the window lock switch is off before performing the following procedure.
- Inspect the fuses for circuits related to this system before performing the following procedure.

PROCEDURE

1.	READ VALUE USING TECHSTREAM (MAIN BODY)
----	--

(a) Connect the Techstream to the DLC3.

(b) Turn the ignition switch to ON.

(c) Turn the Techstream on.

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

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

Main Body (Main Body ECU)

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Communication P-Door Motor	Connection status between front power window regulator motor assembly RH and main 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 (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 (Front Power Window Regulator Motor Assembly RH)

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 side 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 side 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  **GO TO STEP 4**

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.

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.

P-Door Motor (Front Power Window Regulator Motor Assembly RH)

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Power Window	Power window	OFF / UP / DOWN	-

HINT:

Up and down movement does not occur if the arrow is not pressed and held.

OK:

Front passenger side power window operates normally.

NG ► REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

OK ► REPLACE MAIN BODY ECU

4. INSPECT FRONT POWER WINDOW REGULATOR SWITCH ASSEMBLY RH

(a) Remove the front power window regulator switch assembly RH  .

(b) Inspect the front power window regulator switch assembly RH.

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

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
5 - 7	Auto up or manual up position	Below 1 Ω
4 - 7	Auto down or manual down position	Below 1 Ω
7 - 8	Auto down or manual down position	Below 1 Ω
4 - 5	Off	10 k Ω or higher

NG ► REPLACE FRONT POWER WINDOW REGULATOR

SWITCH ASSEMBLY RH

OK



5.	CHECK HARNESS AND CONNECTOR (FRONT POWER WINDOW REGULATOR SWITCH ASSEMBLY RH - FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH)
-----------	---

- (a) Disconnect the P21 power window regulator switch assembly connector.
- (b) Disconnect the P22 front power window regulator motor assembly RH connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P21-5 (UP) - P22-10 (UP)	Always	Below 1 Ω
P21-4 (DOWN) - P22-7 (DOWN)	Always	Below 1 Ω
P21-7 (GND) - Body ground	Always	Below 1 Ω
P21-5 (UP) - Body ground	Always	10 k Ω or higher
P21-4 (DOWN) - Body ground	Always	10 k Ω or higher
P22-10 (UP) - Body ground	Always	10 k Ω or higher
P22-7 (DOWN) - Body ground	Always	10 k Ω or higher

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH**



Last Modified: 11-13-2015	6.6 D	Doc ID: RM0000011UW0EPX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): HOW TO PROCEED WITH TROUBLESHOOTING; 2016 MY Tacoma [08/2015 -]		

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.

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 LIN COMMUNICATION SYSTEM*
----	--

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

Result

RESULT	PROCEED TO
No DTCs output	A
DTCs output	B

B  **GO TO LIN COMMUNICATION SYSTEM**

A



5.	CHECK LIN COMMUNICATION SYSTEM POWER WINDOW REGULATOR MASTER SWITCH
----	--

(a) Manually operate power window regulator master switch assembly to confirm front passenger side power window functions  .

OK:

Front passenger side power window regulator motors operate by power window regulator master switch assembly

NG  **GO TO REMOTE UP / DOWN FUNCTION DOES NOT OPERATE**

OK



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 ► [GO TO DIAGNOSTIC TROUBLE CODE CHART](#)

A



7.	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 9](#)

A



8.	OVERALL ANALYSIS AND TROUBLESHOOTING*
-----------	--

(a) Operation Check [INFO](#)

(b) Data List / Active Test [INFO](#)

(c) Terminals of ECU [INFO](#)

NEXT



9.	REPAIR OR REPLACE
-----------	--------------------------

NEXT



10.	RESET POWER WINDOW MOTOR
------------	---------------------------------

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

NEXT



11.	CONFIRMATION TEST
------------	--------------------------

NEXT  **END**



Last Modified: 11-13-2015	6.6 D	Doc ID: RM0000011V20C6X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): INITIALIZATION; 2016 MY Tacoma [08/2015 -]		

INITIALIZATION

1. INITIALIZE POWER WINDOW CONTROL SYSTEM

NOTICE:

- When a door window regulator assembly, power window regulator motor assembly, door glass or door glass run is reinstalled or replaced, the power window control system must be initialized. Functions such as the auto up and down function, jam protection function, catch protection function, remote control function, key-linked function, wireless transmitter-linked function, key-off operation function and window open warning function will not operate if initialization is not performed.
- 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.
- Make sure to park the vehicle and turn off all electrical systems before performing initialization. Initialization will be canceled if the vehicle is driven during initialization.
- Make sure not to hit, strike or vibrate the door window glass during initialization because the vehicle is learning the sliding resistance of the door window glass.
- Make sure not to turn the ignition switch on or off during initialization.

HINT:

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

NOTICE:

- If the battery has been replaced, it is not necessary to initialize the power window regulator motor assembly.
- If initialization does not complete properly, the LIN communication system may be malfunctioning .

(a) Perform initialization according to the table below.

CONDITION OF POWER WINDOW	PROCEED TO
Initialization procedure for when a power window regulator motor assembly has been replaced with a new one	Procedure A
- Initialization procedure for when a power window regulator motor assembly has been removed/installed or a door glass and/or door glass run etc. have been removed/installed or replaced with new ones - Initialization procedure for when the window cannot fully open via a down operation (door glass remains visible) - Initialization procedure for when the door glass cannot fully close (erroneously operates in reverse) after initialization - Initialization procedure for when the door glass cannot fully open (erroneously stops) after initialization - Initialization procedure for when instructions to perform initialization appear in other troubleshooting flowcharts HINT: Use this procedure if a power window regulator motor assembly is being reused.	Procedure B
Initialize procedure for when the door glass unexpectedly operates in reverse or stops due to a change in the sliding after a fitting adjustment is made	Procedure C

(b) Procedure A

Perform registration of the door glass position (fully closed, fully open) and sliding resistance learning.

Operation Procedures	Door Glass Position	Purpose
1. Connect battery. 2. Turn the ignition switch ON. (window lock switch unlocked)	Any	 Initialization preparation
3. Perform down operation.*1 + Hold at fully open position for 1 second or more. (Switch may be operated in either manual or auto operation positions.)	Any ↓ Fully open	
4. Perform auto up operation.*2 + Hold at fully closed position for 1 second or more. 5. Initialization complete.	Fully open ↓ Fully closed	Window position initialization and sliding resistance learning (performed simultaneously)

HINT:

- *1: Even if the door glass is in the fully open condition before performing step 3, perform the down operation for 1 second or more.
- *2: Do not stop the procedure during step 4.

(c) Procedure B

Reset the door glass position, and perform registration of the door glass position (fully closed, fully open) and sliding resistance learning.

Operation Procedures	Door Glass Position		Purpose
1. Connect battery. 2. Turn ignition switch ON. (Window lock switch unlocked)	Any		Reset preparation
3. Perform auto up operation. 4. Confirm operation result of step 3. - If door glass reverses, proceed to step 5. - If door glass stops before reaching fully closed position, proceed to step 6.	Any ↓ Fully closed		
5. If door glass reverses from fully closed position: (a) Within 4 seconds after door glass reverses, perform auto up operation and fully close door glass. + Hold at fully closed position for 6 seconds or more. (Switch may be operated in either manual or auto operation positions.)	If door glass reverses from fully closed position: Any ↓ Reverses at fully closed position	If door glass stops before reaching fully closed position: Any ↓ Stops before reaching fully closed position	
6. If door glass stops before reaching fully closed position: (a) Perform auto up operation until door glass moves upward. (b) Perform auto up operation again and move door glass to fully closed position. (Switch may be operated in either manual or auto operation positions.)			

7. Perform down operation.*1 + Hold at door glass stopped position*2 for 1 second or more. (Switch may be operated in either manual or auto operation positions.)	Fully closed ↓ Door glass stopped position	Reset window position
8. Perform auto down operation.*3 + Hold at door glass stopped position for 4 seconds or more.	Door glass stopped position ↓ Fully closed	
9. Perform auto up operation. + Hold at fully closed position for 1 second or more. 10. Initialization complete.*4	Fully open ↓ Fully closed ↓ Fully closed	Sliding resistance learning

HINT:

- *1: If catch protection function operates during step 7, then hold the switch in the auto down position within 4 seconds.
- *2: The door glass stopped position is the fully open position stored in the ECU.
- *3: After performing step 7, return the switch to the neutral position once, and then perform an auto down operation.
- *4: After completion, check that the door glass can fully close via an auto up operation.
- If the initialization is not completed properly, the LIN communication system may have a malfunction

INFO

(d) Procedure C

Perform sliding resistance learning.

Operation Procedures	Door Glass Position	Purpose
1. Connect battery. 2. Turn ignition switch ON. (Window lock switch unlocked)	Any	Reset preparation
3. Perform auto up operation.*1 (Release switch after door glass is fully closed to return switch to neutral condition.) (Switch may be operated in either manual or auto operation positions.)	Any ↓ Fully closed	
4. Perform auto up operation.*2 + Hold at fully closed position for 4 seconds or more. (Switch may be operated in either manual or auto operation positions.)	Fully closed	
5. Perform down operation.*2 + Hold at fully open position for 1 second or more. (Switch may be operated in either manual or auto operation positions.)	Fully closed ↓ Fully open	Sliding resistance learning
6. Perform auto up operation.*2 + Hold at fully closed position for 1 second or more. 7. Initialization complete.	Fully open ↓ Fully closed	

HINT:

- *1: If jam protection function operates during step 3, then hold the switch in the auto up position within 4 seconds.
- *2: Do not stop the procedure during step 4, 5 or 6.
- If erroneous reverse operation of the door glass continues even after performing steps 4, 5 and 6, perform the procedure again from step 3.



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): Jam Protection Function does not Operate; 2016 MY Tacoma [08/2015 -]		

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:

- If a power window regulator motor assembly has been replaced with a new one, initialize the power window control system [INFO](#) .
- If the pulse sensor built into the power window regulator motor assemblies is malfunctioning, the power window control system enters fail-safe mode. The jam protection function cannot be operated during fail-safe mode [INFO](#) .
- After the jam protection function operates when an auto up or manual up operation is performed, the jam protection function will not operate when the manual up operation is performed again within approximately 4 seconds.
- After the catch protection function operates when an auto down or manual down operation is performed, the jam protection function will not operate when the manual down operation is performed again within approximately 4 seconds.

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/down function operates normally [INFO](#) .

OK:

Auto up/down function is normal.

NG  **GO TO OTHER PROBLEM (Proceed to Problem Symptoms Table)**

OK



3.	CHECK JAM PROTECTION FUNCTION OPERATING RANGE
----	---

(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 side power window)	B
NG (Front passenger side power window)	C

B ► REPLACE FRONT POWER WINDOW REGULATOR
MOTOR ASSEMBLY LH

C ► REPLACE FRONT POWER WINDOW REGULATOR
MOTOR ASSEMBLY RH

A ► END (PROBLEM DUE TO INITIALIZATION FAILURE)



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): Key-off Operation Function Operates even if Operating Conditions are not Satisfied; 2016 MY Tacoma [08/2015 -]		

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 43 seconds after the ignition switch is turned from ON to off by receiving operation permission signals from the main body ECU.
- However, when approximately 43 seconds have elapsed, or the driver side door or front passenger side door is opened within approximately 43 seconds of the ignition switch being turned off, the power window regulator motor assembly stops operating.
- During an auto operation, when 43 seconds have passed and key-off operation is prohibited, the window operation stops immediately.

INSPECTION PROCEDURE

NOTICE:

- The power window control system uses the LIN communication system. Inspect the communication function by following How to Proceed with Troubleshooting. Troubleshoot the power window control system after confirming that the communication system is functioning properly [INFO](#).
- If a power window regulator motor assembly has been replaced with a new one, initialize the power window control system [INFO](#).

PROCEDURE

1.	READ VALUE USING TECHSTREAM (MAIN BODY)
-----------	--

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Main Body / Data List.
- Read the Data List according to the display on the Techstream.

Main Body (Main Body ECU)

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Communication D-Door Motor	Connection status between front power window regulator motor assembly LH and main body ECU / OK or STOP	OK: Normal communication STOP: Communication	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
		stopped	

OK:

On the Techstream screen, OK is displayed.

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

OK



2.	CHECK OPERATION FUNCTION AFTER IGNITION SWITCH IS TURNED OFF
-----------	---

(a) Check the power window operation function after the ignition 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 43 seconds of ignition switch being turned off	A
When power window can still be operated even after approximately 43 seconds have elapsed after ignition switch is turned off (for Front Passenger Side, Rear LH Side or Rear RH Side)	B
When power window can still be operated even after approximately 43 seconds have elapsed after ignition switch is turned off (for All Doors)	C

B ► **GO TO STEP 4**

C ► **REPLACE MAIN BODY ECU**

A



3.	READ VALUE USING TECHSTREAM (MAIN BODY)
-----------	--

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

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

Main Body (Main Body ECU)

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
FL Door Courtesy	Front door courtesy light switch LH signal / ON or OFF	ON: Driver side door closed OFF: Driver side door open	-
FR Door Courtesy	Front door courtesy light switch RH signal / ON or OFF	ON: Front passenger side door closed OFF: Front passenger side door open	-

OK:

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

NG ► **GO TO LIGHTING SYSTEM (Proceed to Door Courtesy Switch Circuit)**

OK ► **REPLACE MAIN BODY ECU**

4.	REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (KEY-OFF OPERATION FUNCTIONING WINDOW)
-----------	---

- (a) Replace the power window regulator motor assembly  for Front Door) for the window that still operates when more than 43 seconds have elapsed after the ignition switch was turned off.

NEXT



5.	PERFORM INITIALIZATION (APPLICABLE LOCATION)
-----------	---

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

NEXT



6.	CHECK OPERATION FUNCTION AFTER IGNITION SWITCH IS TURNED OFF
-----------	---

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

OK:

The power window does not operate when more than 43 seconds have elapsed after the ignition switch was turned off.

NG ► **REPLACE MAIN BODY ECU**

OK



**END (POWER WINDOW REGULATOR MOTOR
ASSEMBLY WAS DEFECTIVE)**



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): OPERATION CHECK; 2016 MY Tacoma [08/2015 -]		

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*1 or rear RH side*1) when the window lock switch of the power window regulator master switch assembly is pushed in.

OK:

Front passenger and rear windows*1 are disabled.

HINT:

Even when the window lock switch of the power window regulator 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*1 or rear RH side*1) when the window lock switch of the power window regulator master switch assembly is pushed in again.

OK:

Front passenger and rear windows*1 operate normally.

*1: for Double Cab

2. CHECK MANUAL UP / DOWN FUNCTION

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

OK

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

- (b) Check that the front passenger side window and rear power windows*1 operate as follows:

OK

CONDITION	REGULATOR SWITCH	SWITCH OPERATION	POWER WINDOW
- Ignition switch ON - Window lock switch off	Front passenger side	Pulled halfway up	UP (Closes)
		Pushed halfway down	DOWN (Opens)
	Rear LH side*1	Pulled halfway up	UP (Closes)
		Pushed halfway down	DOWN (Opens)
	Rear RH side*1	Pulled halfway up	UP (Closes)
		Pushed halfway down	DOWN (Opens)

CONDITION	REGULATOR SWITCH	SWITCH OPERATION	POWER WINDOW
		Pushed halfway down	DOWN (Opens)

*1: for Double Cab

3. CHECK AUTO UP / DOWN FUNCTION

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

OK

CONDITION	MASTER SWITCH	SWITCH OPERATION	POWER WINDOW
Ignition switch ON	Driver side	Pulled up (One touch operation)	AUTO UP (Closes)
		Pushed down (One touch operation)	AUTO DOWN (Opens)

(b) Check that the front passenger side window operate as follows:

OK

CONDITION	REGULATOR SWITCH	SWITCH OPERATION	POWER WINDOW
- Ignition switch ON - Window lock switch off	Front passenger 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*1 operate as follows:

OK

CONDITION	MASTER SWITCH	SWITCH OPERATION	POWER WINDOW
Ignition switch ON	Front passenger side	Pulled halfway up	UP (Closes)
		Pushed halfway down	DOWN (Opens)
	Rear LH side*1	Pulled halfway up	UP (Closes)
		Pushed halfway down	DOWN (Opens)
	Rear RH side*1	Pulled halfway up	UP (Closes)
		Pushed halfway down	DOWN (Opens)

*1: for Double Cab

5. CHECK REMOTE AUTO UP / DOWN FUNCTION

(a) Check that the front passenger side window and rear power windows*1 operate as follows:

OK

CONDITION	MASTER SWITCH	SWITCH OPERATION	POWER WINDOW
Ignition switch ON	Front passenger side	Pulled up (One touch operation)	AUTO UP (Closes)
		Pushed down (One touch operation)	AUTO DOWN (Opens)

CONDITION	MASTER SWITCH	SWITCH OPERATION	POWER WINDOW
	Rear LH side*1	Pulled up (One touch operation)	AUTO UP (Closes)
		Pushed down (One touch operation)	AUTO DOWN (Opens)
	Rear RH side*1	Pulled up (One touch operation)	AUTO UP (Closes)
		Pushed down (One touch operation)	AUTO DOWN (Opens)

*1: for Double Cab

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

- (a) Check that each power window can be operated with the power window regulator master switch assembly, power window regulator switch assembly or rear power window regulator switch assembly after the ignition switch is turned off.

HINT:

If the window lock switch is on, the power windows cannot be operated by using the power window regulator switch assembly and rear power window regulator switch assembly. 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 side door is opened.
- (c) Check that all the power windows cannot be operated after more than approximately 45 seconds have elapsed since the ignition 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.

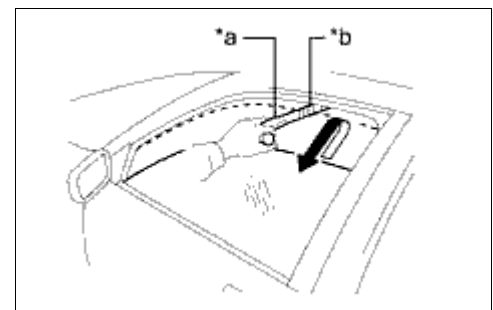
HINT:

The jam protection function is operative during both the auto up and manual up operations while the engine is running or the ignition switch is ON, and also approximately 43 seconds have elapsed after the ignition switch is turned off.

- (1) Fully open the window.
- (2) Set a check jig wrapped with a piece of cloth near the window fully closed position.

Text in Illustration

*a	Check Jig
*b	Cloth



- (3) When an auto up or manual up operation is performed to fully close the door glass, check that the glass stops momentarily when it contacts the end of the hammer, lowers via a down operation and then stops.

HINT:

- If a manual up operation is performed from the seat, the door glass will lower approximately 30 mm (1.181 in.) from the point it contacts the end of the hammer or continue lowering for approximately 5 seconds and then stop.
- If a manual up operation is not performed from the seat, the door glass will lower approximately 125 mm (4.921 in.) from the point it contacts the end of the hammer or continue lowering for approximately 5 seconds and then stop.
- After the jam protection function operates when an auto up or manual up operation is performed, the jam protection function will not operate when the manual up operation is performed again within approximately 4 seconds.
- After the catch protection function operates when an auto down or manual down operation is performed, the jam protection function will not operate when the manual up operation is performed again within approximately 4 seconds.

(4) While the door glass is lowering, check that the switch of that door or the remote operation using the power window regulator master switch assembly cannot be used to raise the door glass.

8. CHECK CATCH PROTECTION FUNCTION

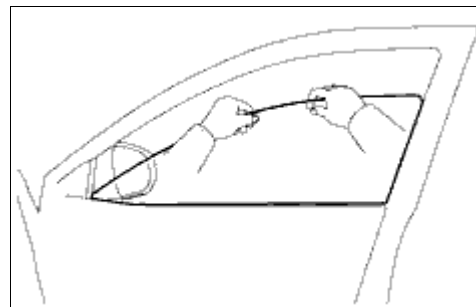
(a) Check the basic operation.

HINT:

The catch protection function operates when the ignition switch is on, and when auto down and manual down are operated after the ignition switch is turned off.

(1) Fully close all door windows.

(2) While using auto down or manual down to open the window, grasp the upper edge of the door glass with one or two hands and check that the door glass operation stops.



HINT:

After the catch protection function operates when an auto down or manual down operation is performed, the catch protection function will not operate when the manual down operation is performed again within approximately 4 seconds.

9. CHECK POWER QUARTER WINDOW SWITCH

(a) Check that the rear quarter windows operate as follows:

OK

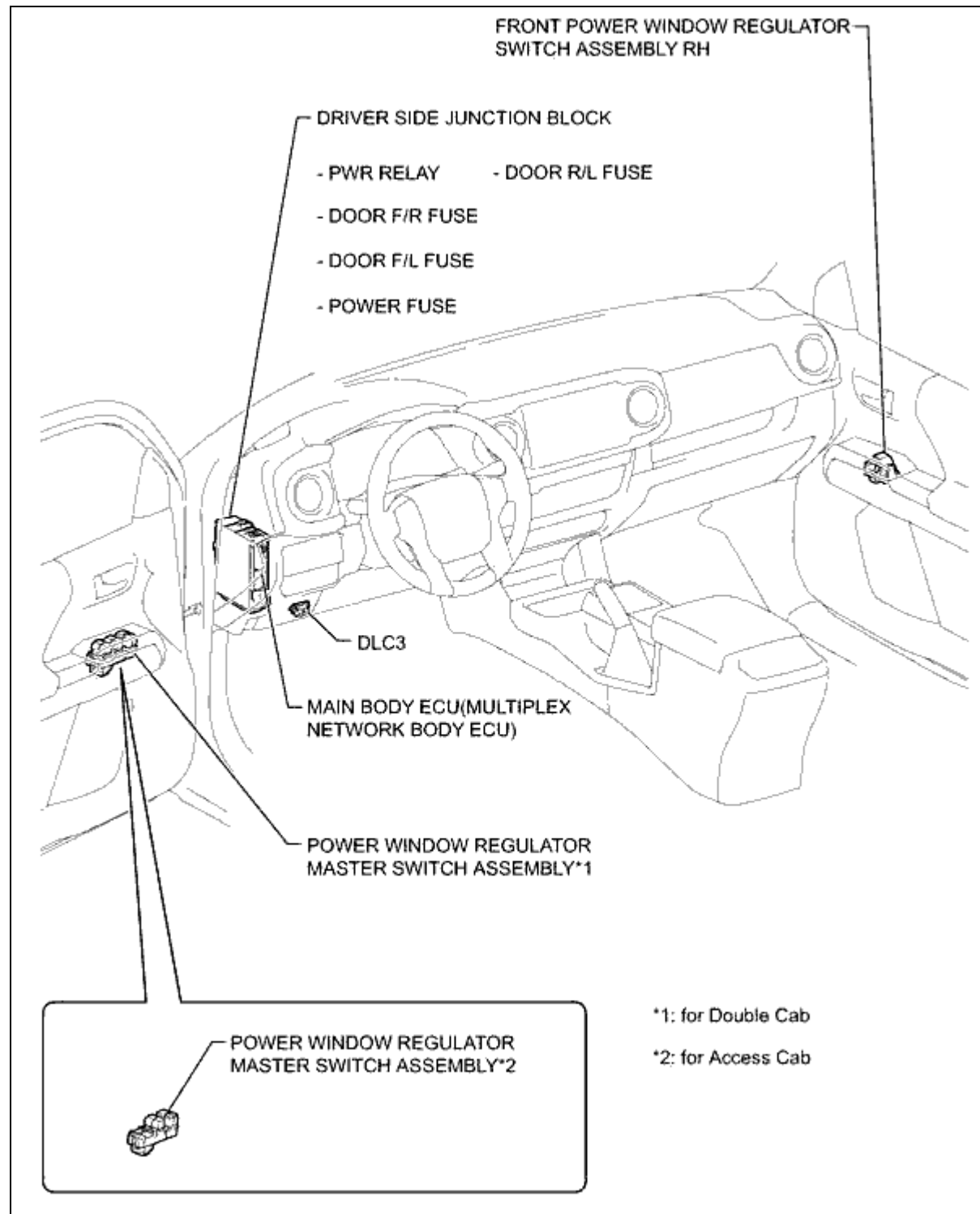
CONDITION	POWER QUARTER WINDOW SWITCH	SWITCH OPERATION	POWER WINDOWS
Ignition switch ON	-	Pulled up	Close
		Pushed down	Open



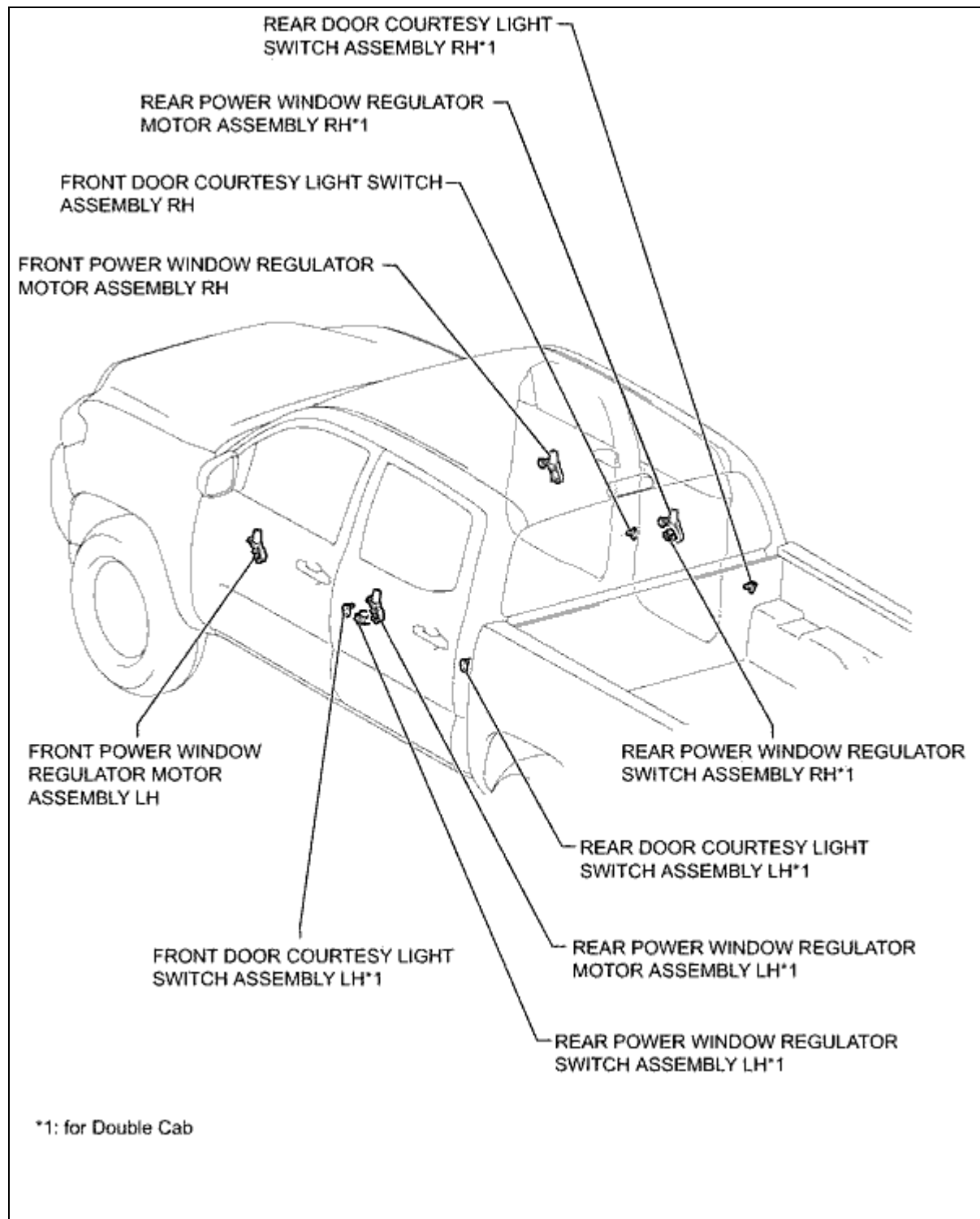
Last Modified: 11-13-2015	6.6 R	Doc ID: RM00000363I06CX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): PARTS LOCATION; 2016 MY Tacoma [08/2015 -]		

PARTS LOCATION

ILLUSTRATION



ILLUSTRATION



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): PRECAUTION; 2016 MY Tacoma [08/2015 -]		

PRECAUTION

1. EXPRESSIONS OF IGNITION SWITCH

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

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

2. POWER WINDOW CONTROL SYSTEM PRECAUTIONS

CAUTION:

- The power window control system uses the LIN communication system. Inspect the communication function by following How to Proceed with Troubleshooting. Troubleshoot the power window control system after confirming that the communication system is functioning properly **INFO**.
- The power window control system prohibits the auto up and down function when the jam protection function malfunctions.
- The power window control system prohibits the auto up and down function when the catch protection function malfunctions.
- If the power window regulator motor assembly has been replaced with a new one, initialize the power window control system **INFO**.
- If the power window regulator motor assembly and door window regulator sub-assembly have been removed and installed, or if the power window regulator motor assembly was reused when a door glass or door glass run was replaced, initialize the power window control system **INFO**.
- The jam protection function and the catch protection function may operate unexpectedly, even when the power window control system is normal, due to detection of a value different than 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.
- Do not disconnect the battery while the ignition switch is ON. Otherwise, DTC B2313 will be stored **INFO**.



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Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): PROBLEM SYMPTOMS TABLE; 2016 MY Tacoma [08/2015 -]		

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	Proceed to "Remote Up / Down Function does not Operate"	INFO
Driver Side Power Window does not Operate with Power Window Regulator Master Switch Assembly	Proceed to "Driver Side Power Window does not Operate with Power Window Master Switch"	INFO
Front Passenger Side Power Window does not Operate with Front Passenger Side Power Window Switch	Proceed to "Front Passenger Side Power Window does not Operate with Front Passenger Side Power Window Switch"	INFO
Rear Power Window LH does not Operate with Rear Power Window Switch LH*1	Rear power window regulator switch assembly LH	INFO
	Rear power window regulator motor assembly LH	INFO
	Power window regulator master switch assembly	INFO
	Harness or connector	-
Rear Power Window RH does not Operate with Rear Power Window Switch RH*1	Rear power window regulator switch assembly RH	INFO
	Rear power window regulator motor assembly RH	INFO
	Power window regulator master switch assembly	INFO
	Harness or connector	-
Driver Side Power Window Auto Up / Down Function does not Operate with Power Window Regulator Master Switch Assembly	Proceed to "Driver Side Power Window Auto Up / Down Function does not Operate with Power Window Master Switch"	INFO
Front Passenger Side Power Window Auto Up / Down Function does not Operate with Front Passenger Side Power Window Switch	Proceed to "Front Passenger Side Power Window Auto Up / Down Function does not Operate with Front Passenger Side Power Window Switch"	INFO
Key-off Operation Function Operates even if Operating Conditions are not Satisfied	Proceed to "Key-off Operation Function Operates even if Operating Conditions are not Satisfied"	INFO
Auto Up Operation does not Fully Close Power Window (Jam Protection Function is Activated)	Proceed to "Auto Up Operation does not Fully Close Power Window (Jam Protection Function is Activated)"	INFO

SYMPTOM	SUSPECTED AREA	SEE PAGE
Auto down operation does not fully open power window (catch protection function is activated)	Proceed to "Auto Down Operation does not Fully Open Power Window (Catch Protection Function is Activated)"	INFO
Jam Protection Function does not Operate	Proceed to "Jam Protection Function does not Operate"	INFO

*1: for Double Cab



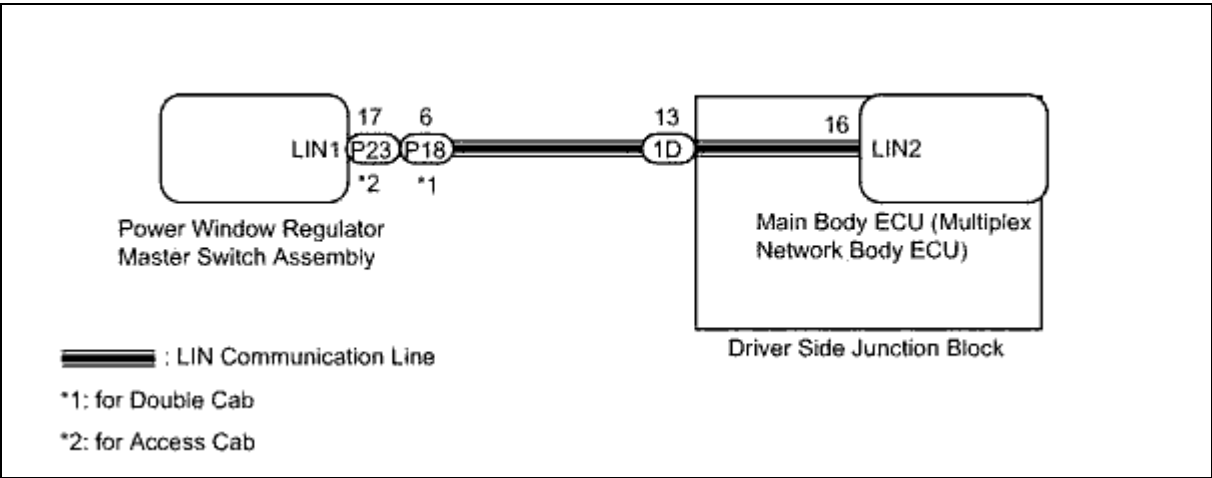
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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): Remote Up / Down Function does not Operate; 2016 MY Tacoma [08/2015 -]		

Remote Up / Down Function does not Operate

DESCRIPTION

When the ignition switch is ON, the power window regulator master switch assembly sends remote up/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 the LIN communication system. Inspect the communication function by following How to Proceed with Troubleshooting. Troubleshoot the power window control system after confirming that the communication system is functioning properly [INFO](#) .
- If a power window regulator motor assembly has been replaced with a new one, initialize the power window control system [INFO](#) .

PROCEDURE

1.	READ VALUE USING TECHSTREAM (MAIN BODY)
----	--

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Main Body / Data List.

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

Main Body (Main Body ECU)

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Communication P-Door Motor	Connection status between front power window regulator motor assembly RH and main body ECU / OK or STOP	OK: Normal communication STOP: Communication stopped	-
Communication Master SW	Connection status between multiplex network master switch and main 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.

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/down switch signal / ON or OFF	ON: Front passenger side power window auto switch operated OFF: Front passenger side 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 power window manual up switch operated OFF: Front passenger side 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 power window manual down switch	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
		operated OFF: Front passenger side 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/down function does not operate)	B

B ► **REPLACE FRONT POWER WINDOW REGULATOR
MOTOR ASSEMBLY RH**

A ► **REPLACE POWER WINDOW REGULATOR MASTER
SWITCH ASSEMBLY**



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): SYSTEM DESCRIPTION; 2016 MY Tacoma [08/2015 -]		

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 power window regulator master switch assembly (mounted on the driver door), power window regulator switch assembly (mounted on the front passenger door) and rear power window regulator switch assemblies (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
Power Window Regulator Master Switch Assembly	• Controls power window operation for all seats. • When lock switch is set to lock position, window operation will be possible for all windows.
Power Window Regulator Switch Assembly	• Located on front passenger side door. • Controls front passenger window operation.
Rear Power Window Regulator Switch Assembly*1 • LH Side • RH Side	• Located on the rear doors. • Each switch controls window operation for its respective window.
Rear power window regulator switch assembly	• Located on the rear doors. • Each switch controls window operation for its respective window.
Front Power Window Regulator Motor Assembly	• Receives switch signals and changes signals into motor activation. As a result, window position changes. • Uses Hall-IC in regulator motor with ECU to detect window position and jamming.
Rear Power Window Regulator Motor Assembly	Receives switch signals and changes signals into motor activation. As a result, window position changes.

*1: for Double Cab

3. SYSTEM FUNCTION

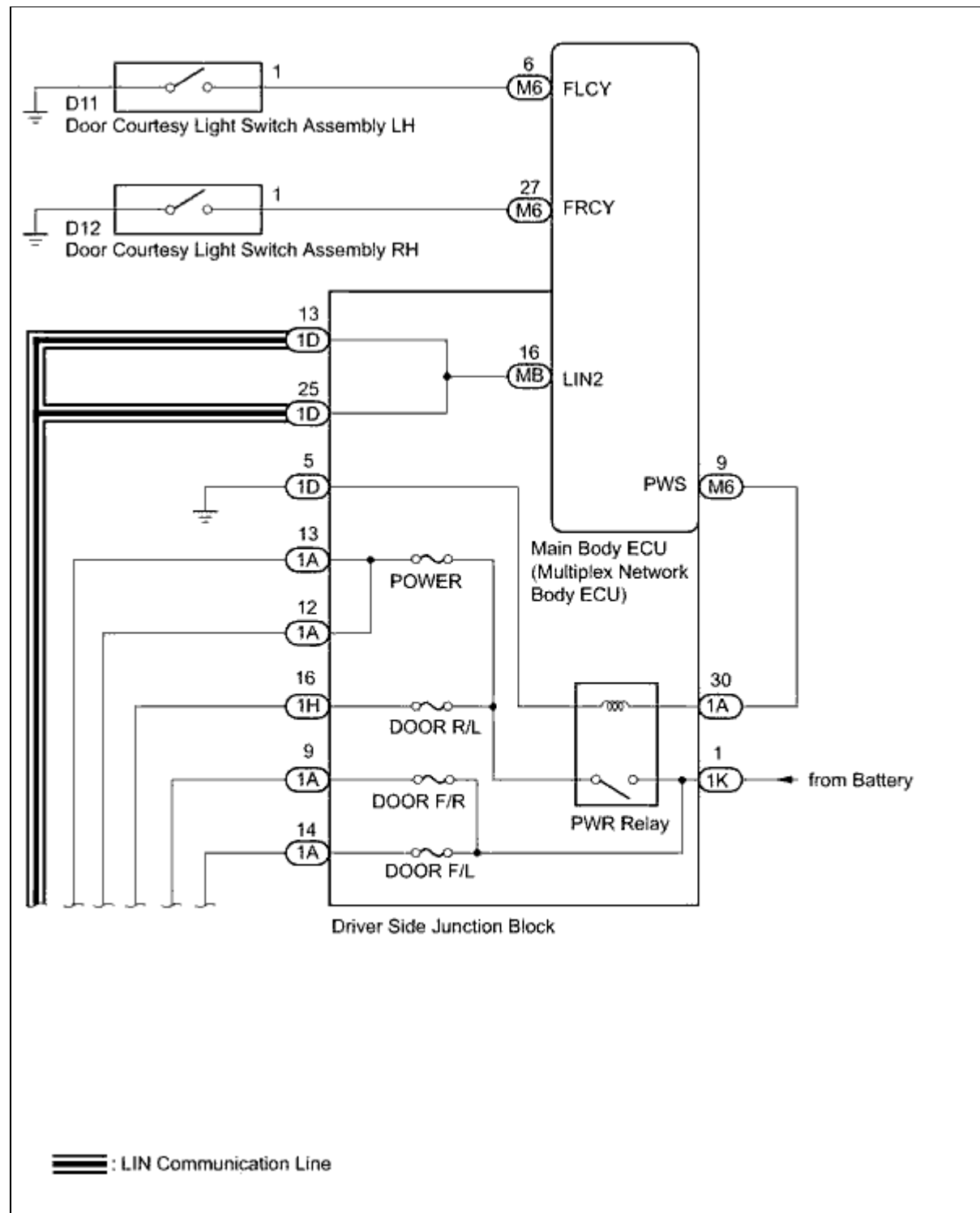
The power window control system has the following functions:

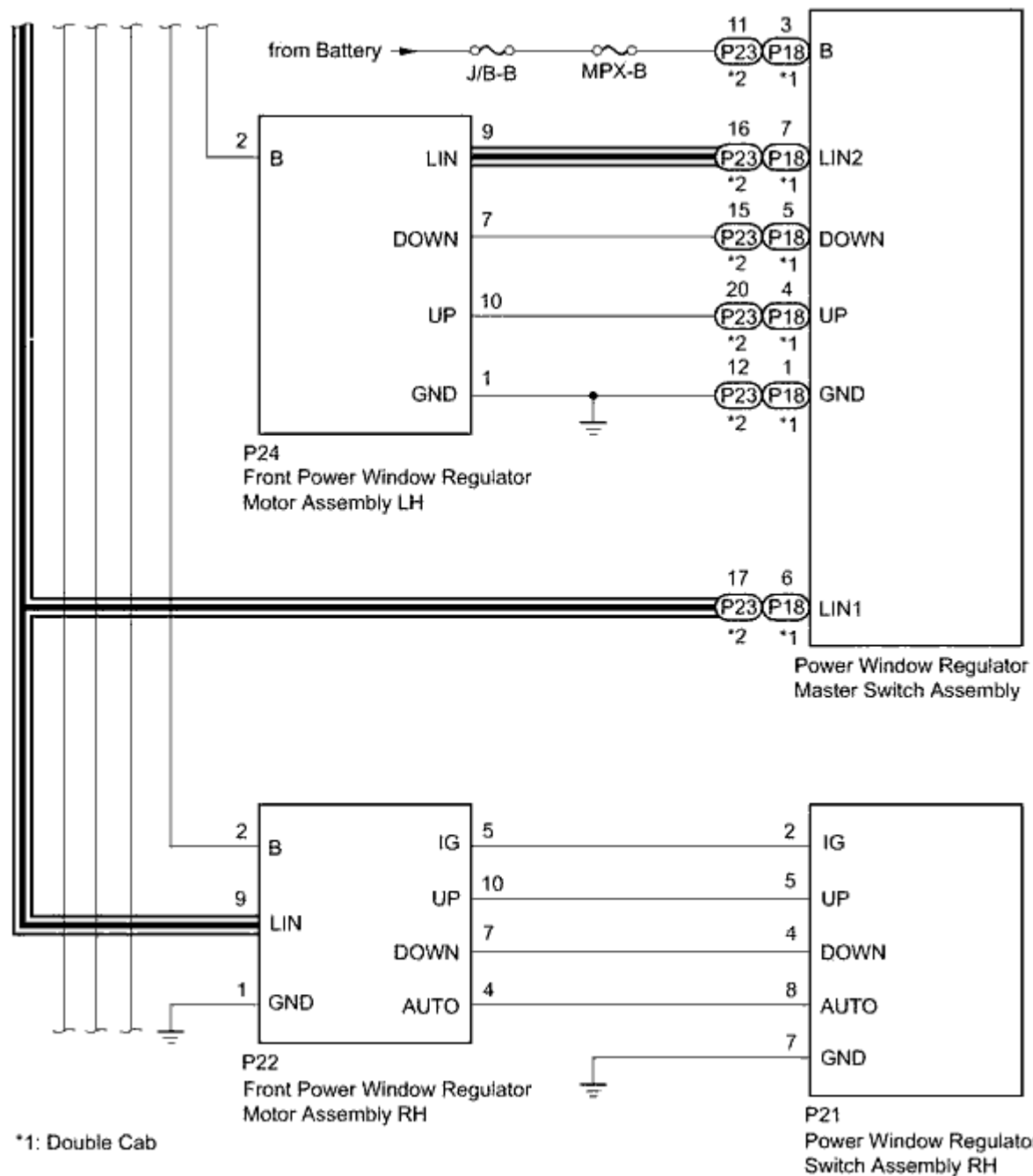
FUNCTION	OUTLINE
Manual up-and-down function	Function that causes the window to go up while the power window switch is being pulled halfway up and to go down while pushed halfway down. The window stops as soon as the switch is released.
Auto up and down function (for Front Door Only)	Function that enables the driver door or front passenger door window to be fully opened or closed by one full pull or push of the power window regulator master switch assembly or front power window regulator switch assembly.
Window lock function	• Function that disables power window regulator switch assembly operations when the window lock switch is pressed. • The power window regulator switch assemblies can be operated when the window lock switch is pressed again. • Power window regulator master switch can operate all windows even when locked.
Jam protection function	Function that automatically stops power window and moves it downward if a foreign object gets jammed in door window during auto up and manual up operation.
Catch protection function	Function that automatically stops the power window if a foreign object gets caught in the door window during auto down or manual down operation.
Remote control function	Function that allows the power window regulator 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 43 seconds after the ignition switch is turned off when the driver side door or front passenger side door has not been opened. • When approximately 43 seconds have elapsed, or the driver door or front passenger door is opened after the ignition switch is turned off, the key-off operation function will be disabled. HINT: Even if the driver door or passenger door is opened during automatic window operation while the key-off operation function is on, the window will continue 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.
Fail-safe	Function to disable part of the power window control system functions if the pulse sensor in the power window regulator motor has a malfunction. Auto up and down function and remote control function are disabled.

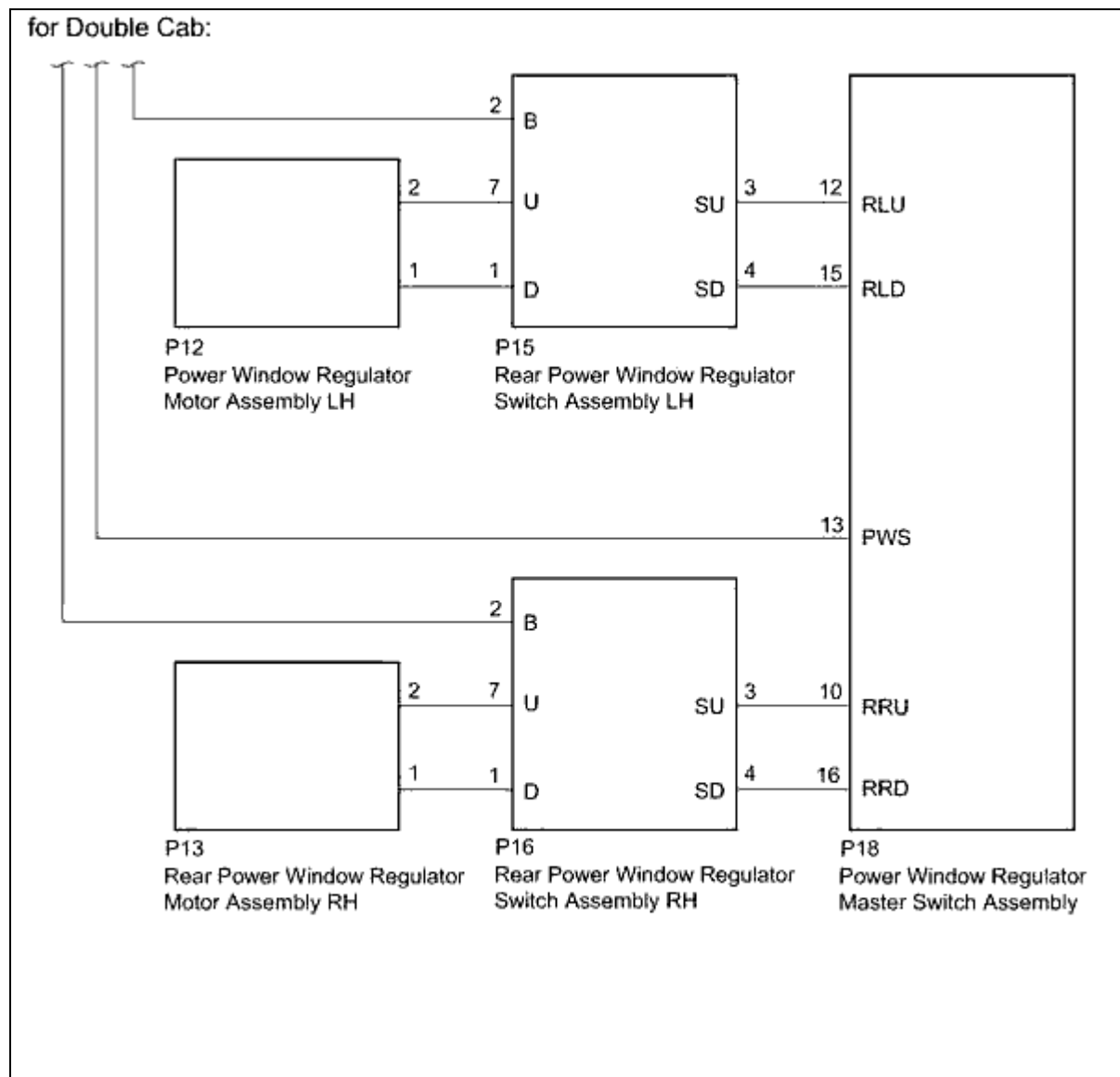


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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): SYSTEM DIAGRAM; 2016 MY Tacoma [08/2015 -]		

SYSTEM DIAGRAM







Communication Table

TRANSMITTING ECU	RECEIVING ECU	SIGNAL	COMMUNICATION METHOD
Power Window Regulator Master Switch Assembly	Power Window Regulator Motor Assembly (for Driver Door)	Power Window Regulator Motor Assembly (for Front Passenger Door)	LIN
	Power Window Regulator Motor Assembly (for Front Passenger Door)	Power window remote up and down signal	LIN
Main body ECU (multiplex network body ECU)	- Front power window regulator motor assembly LH - Front power window regulator motor assembly RH	Power window operation permission signal	LIN



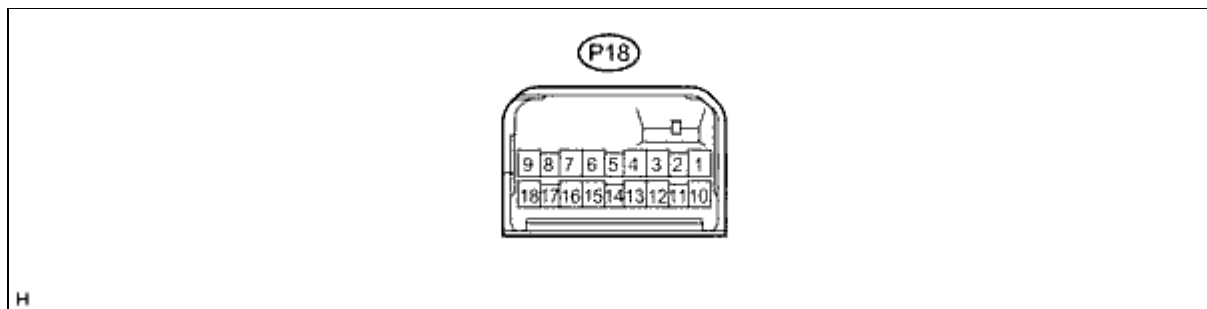
Last Modified: 11-13-2015	6.6 U	Doc ID: RM0000013390CIX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/ Jam Protection Function): TERMINALS OF ECU; 2016 MY Tacoma [08/2015 -]		

TERMINALS OF ECU

1. CHECK POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

(a) for Double Cab

(1) Disconnect the P18 power window regulator master switch assembly connector.



(2) 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.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P18-3 (B) - P18-1 (GND)	R - W-B	Power supply	Always	11 to 14 V
P18-1 (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.

(3) Reconnect the P18 power window regulator master switch assembly connector.

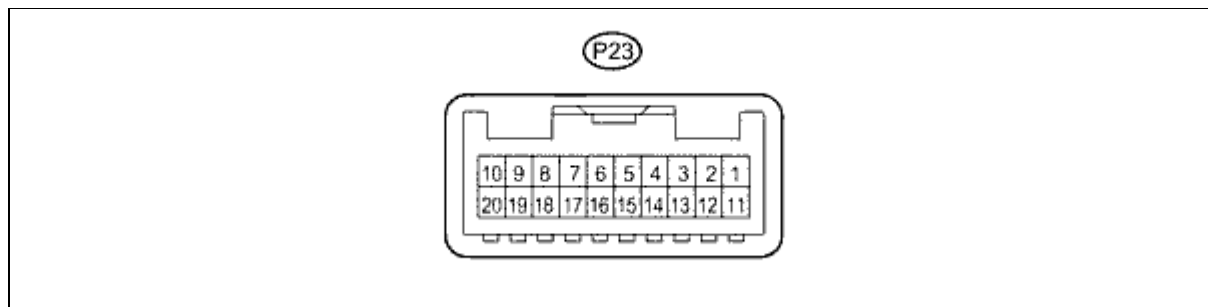
(4) Measure the voltage according to the value(s) in the table below.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P18-5 (DOWN) - P18-1 (GND)	SB - W-B	Power window motor DOWN output	Ignition switch ON, power window regulator master switch assembly off	11 to 14 V
			Ignition switch ON, power window regulator master switch assembly DOWN (Manual operation)	Below 1 V
P18-4 (UP) - P18-1 (GND)	L - W-B	Power window motor UP output	Ignition switch ON, power window regulator master switch assembly off	11 to 14 V
			Ignition switch ON, power window regulator master switch assembly UP (Manual operation)	Below 1 V

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P18-13 (PWS) - P18-1 (GND)	W - W-B	P/W MAIN relay operation signal	Ignition switch ON	11 to 14 V

(b) for Access Cab

(1) Disconnect the P23 power window regulator master switch assembly connector.



(2) 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.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P23-11 (B) - P23-12 (GND)	R - W-B	Power supply	Always	11 to 14 V
P23-12 (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.

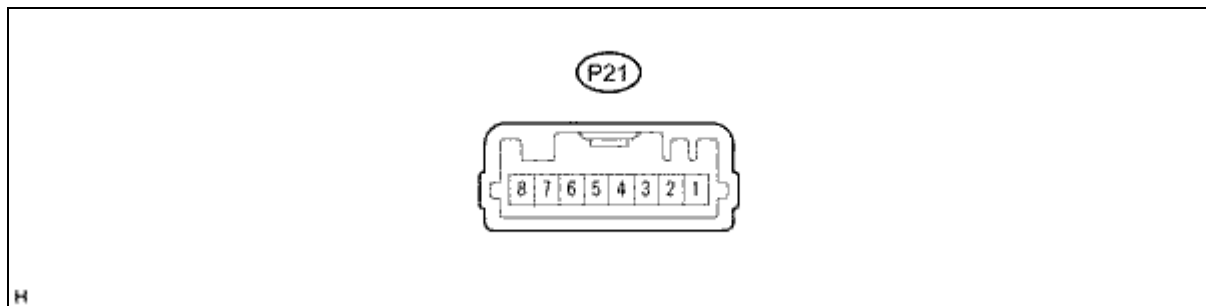
(3) Reconnect the P18 power window regulator master switch assembly connector.

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

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P23-15 (DOWN) - P23-12 (GND)	SB - W-B	Power window motor DOWN output	Ignition switch ON, power window regulator master switch assembly off	11 to 14 V
			Ignition switch ON, power window regulator master switch assembly DOWN (Manual operation)	Below 1 V
P23-20 (UP) - P23-12 (GND)	L - W-B	Power window motor UP output	Ignition switch ON, power window regulator master switch assembly off	11 to 14 V
			Ignition switch ON, power window regulator master switch assembly UP (Manual operation)	Below 1 V

2. CHECK FRONT POWER WINDOW REGULATOR SWITCH ASSEMBLY RH

(a) Disconnect the P21 front power window regulator switch assembly RH 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.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P21-7 (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 P21 front power window regulator switch assembly RH connector.

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

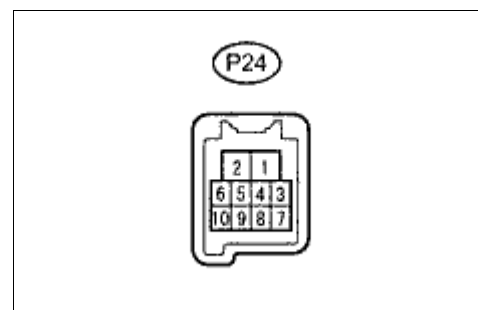
TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P21-2 (IG) - P21-7 (GND)	P - W-B	IG power supply	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
P21-5 (UP) - P21-7 (GND)	L - W-B	Power window motor up output	Ignition switch ON, front power window regulator switch assembly RH not pushed or pulled	11 to 14 V
			Ignition switch ON, front passenger door power window moving, front power window regulator switch assembly RH pulled halfway up (Manual operation)	Below 1 V
			Ignition switch ON, front passenger door power window fully open	11 to 14 V
			Ignition switch ON, front passenger door power window moving, front power window regulator switch assembly RH fully pulled up (Auto operation)	Below 1 V
			Ignition switch ON, front passenger door power window fully closed	11 to 14 V
P21-4 (DOWN) - P21-7 (GND)	Y - W-B	Power window motor down output	Ignition switch ON, front power window regulator switch assembly RH not pushed or pulled	11 to 14 V

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P21-8 (AUTO) - P21-7 (GND)	R - W-B		Ignition switch ON, front passenger door power window moving, front power window regulator switch assembly RH pushed halfway down (Manual operation)	Below 1 V
			Ignition switch ON, front passenger door power window fully closed	11 to 14 V
			Ignition switch ON, front passenger door power window moving, front power window regulator switch assembly RH fully pushed down (Auto operation)	Below 1 V
			Ignition switch ON, front passenger door power window fully open	11 to 14 V
		Power window motor up output	Ignition switch ON, front passenger door power window fully open	11 to 14 V
			Ignition switch ON, front passenger door power window moving, front power window regulator switch assembly RH fully pulled up (Auto operation)	Below 1 V
			Ignition switch ON, front passenger door power window fully closed	11 to 14 V
			Ignition switch ON, front passenger door power window fully closed	11 to 14 V
			Ignition switch ON, front passenger door power window moving, front power window regulator switch assembly RH fully pushed down (Auto operation)	Below 1 V
			Ignition switch ON, front passenger door power window fully open	11 to 14 V

If the result is not as specified, the front power window regulator switch assembly RH may have a malfunction.

3. CHECK FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

- (a) Disconnect the P24 front power window regulator motor assembly LH 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.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P24-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
P24-2 (B) - Body ground	R - Body ground	Power supply	Ignition switch ON	11 to 14 V

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

(c) Reconnect the P24 front power window regulator motor assembly LH connector.

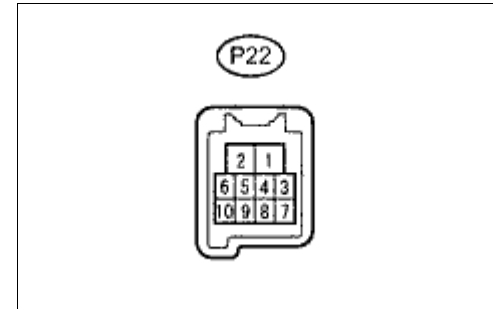
(d) Measure the voltage according to the value(s) in the table below.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P24-7 (DOWN) - P24-1 (GND)	SB - W-B	Power window motor DOWN input	Ignition switch ON, power window regulator master switch assembly off	11 to 14 V
			Ignition switch ON, power window regulator master switch assembly DOWN (Manual operation)	Below 1 V
			Ignition switch ON, driver side power window fully closed	11 to 14 V
			Ignition switch ON, driver side power window fully DOWN (AUTO DOWN position)	Below 1 V
			Ignition switch ON, driver side power window fully stopped (DOWN)	11 to 14 V
P24-10 (UP) - P24-1 (GND)	L - W-B	Power window motor UP input	Ignition switch ON, power window regulator master switch assembly off	11 to 14 V
			Ignition switch ON, power window regulator master switch assembly UP (Manual operation)	Below 1 V
			Ignition switch ON, driver side power window fully open	11 to 14 V
			Ignition switch ON, driver side power window fully UP (AUTO UP position)	Below 1 V
			Ignition switch ON, driver side power window fully stopped (UP)	11 to 14 V

If the result is not as specified, the front power window regulator motor assembly LH may have a malfunction.

4. CHECK FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

- (a) Disconnect the P22 front power window regulator motor assembly RH 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.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P22-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
P22-2 (B) - Body ground	W - Body ground	Power supply	Ignition switch ON	11 to 14 V

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

- (c) Reconnect the P22 front power window regulator motor assembly RH connector.

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

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P22-4 (AUTO) - P22-1 (GND)	R - W-B	Power window motor AUTO UP input	Ignition switch ON, front passenger side power window fully open	11 to 14 V
			Ignition switch ON, front passenger side power window fully UP (AUTO UP position)	Below 1 V
			Ignition switch ON, front passenger side power window fully stopped (UP)	11 to 14 V
		Power window motor AUTO DOWN input	Ignition switch ON, front passenger side power window fully closed	11 to 14 V
			Ignition switch ON, front passenger side power window fully DOWN (AUTO DOWN position)	Below 1 V
			Ignition switch ON, front passenger side power window fully stopped (DOWN)	11 to 14 V
P22-7 (DOWN) - P22-1 (GND)	Y - W-B	Power window motor DOWN input	Ignition switch ON, front power window regulator switch assembly RH off	11 to 14 V
			Ignition switch ON, front power window regulator switch assembly RH DOWN (Manual operation)	Below 1 V

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P22-10 (UP) - P22-1 (GND)	L - W-B	Power window motor UP input	Ignition switch ON, front passenger side power window fully closed	11 to 14 V
			Ignition switch ON, front passenger side power window fully DOWN (AUTO DOWN position)	Below 1 V
			Ignition switch ON, front passenger side power window fully stopped (DOWN)	11 to 14 V
			Ignition switch ON, front power window regulator switch assembly RH off	11 to 14 V
			Ignition switch ON, front power window regulator switch assembly RH UP (Manual operation)	Below 1 V
			Ignition switch ON, front passenger side power window fully open	11 to 14 V
			Ignition switch ON, front passenger side power window fully UP (AUTO UP position)	Below 1 V
			Ignition switch ON, front passenger side power window fully stopped (UP)	11 to 14 V

If the result is not as specified, the front power window regulator motor assembly RH may have a malfunction.

5. CHECK MAIN BODY ECU AND DRIVER SIDE JUNCTION BLOCK



TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
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TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
M6-6 (FLCY) - Body ground	Y	Front door courtesy light switch LH input	Driver side door Closed (off)	10 k Ω or higher
			Driver side door Open (on)	Below 1 Ω
M6-27 (FRCY) - Body ground	LG	Front door courtesy light switch RH input	Front passenger side door Closed (off)	10 k Ω or higher
			Front passenger side door Open (on)	Below 1 Ω
MB-11 (GND1) - Body ground	-	Ground	Always	Below 1 Ω
MB-30 (ACC) - Body ground	-	Ignition power supply (ACC signal)	Ignition switch ACC	11 to 14 V
			Ignition switch off	Below 1 V
MB-31 (BECU) - Body ground	-	Battery power supply	Always	11 to 14 V
MB-32 (IG) - Body ground	-	Battery power supply	Always	11 to 14 V
1D-5 (GND1) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

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

(d) Reinstall the main body ECU.

(e) Reconnect the M6 main body ECU connector.

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

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
M6-6 (FLCY) - Body ground	Y - Body ground	Front door courtesy light switch LH input	Driver side door open	Below 1 V
		Front door courtesy light switch LH input	Driver side door closed	11 to 14 V
M6-27 (FRCY) - Body ground	LG - Body ground	Front door courtesy light switch RH input	Front passenger side door open	Below 1 V
		Front door courtesy light switch RH input	Front passenger side door closed	11 to 14 V

If the result is not as specified, the ECU may have a malfunction.



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Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function): HOW TO PROCEED WITH TROUBLESHOOTING; 2016 MY Tacoma [08/2015 -]		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use these procedures to troubleshoot the power window control system.

1.	VEHICLE BROUGHT TO WORK SHOP
-----------	-------------------------------------

NEXT



2.	CUSTOMER PROBLEM ANALYSIS CHECK AND SYMPTOM CHECK
-----------	--

NEXT



3.	PROBLEM SYMPTOM TABLE
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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 5

A



4.	OVERALL ANALYSIS AND TROUBLESHOOTING*
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(a) Operation check

(b) Inspection

NEXT



5.	ADJUST, REPAIR OR REPLACEMENT
-----------	--------------------------------------

NEXT



6.	CONFIRMATION TEST
-----------	--------------------------

NEXT  **END**



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function): OPERATION CHECK; 2016 MY Tacoma [08/2015 -]		

OPERATION CHECK

1. CHECK WINDOW LOCK FUNCTION

(a) Turn the ignition switch ON.

(b) Press the window lock switch of the power window regulator master switch assembly.

HINT:

The illumination (LED) built into the switch knob of each seat does not turn off.



(c) Check that the power window for each seat except the driver seat can no longer be operated.

(d) When the window lock switch is pressed again, check that the power window for each seat except the driver seat can be operated.

2. CHECK MANUAL UP / DOWN FUNCTION

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

CONDITION	MASTER SWITCH	SWITCH OPERATION	POWER WINDOW
Ignition switch ON	Driver door	Pulled up	UP (Closes)
		Pushed halfway down	DOWN (Opens)

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

CONDITION	REGULATOR SWITCH	SWITCH OPERATION	POWER WINDOW
- Ignition switch ON - Window lock switch off	Front passenger door	Pulled up	UP (Closes)
		Pushed down	DOWN (Opens)
	Rear LH door*1	Pulled up	UP (Closes)
		Pushed down	DOWN (Opens)
	Rear RH door*1	Pulled up	UP (Closes)
		Pushed down	DOWN (Opens)

*1: for Double Cab

3. CHECK AUTO DOWN FUNCTION

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

CONDITION	MASTER SWITCH	SWITCH OPERATION	POWER WINDOW
- Ignition switch ON - Window lock switch off	Driver door	Pushed down (One touch operation)	AUTO DOWN (Opens)

4. CHECK REMOTE MANUAL UP / DOWN FUNCTION

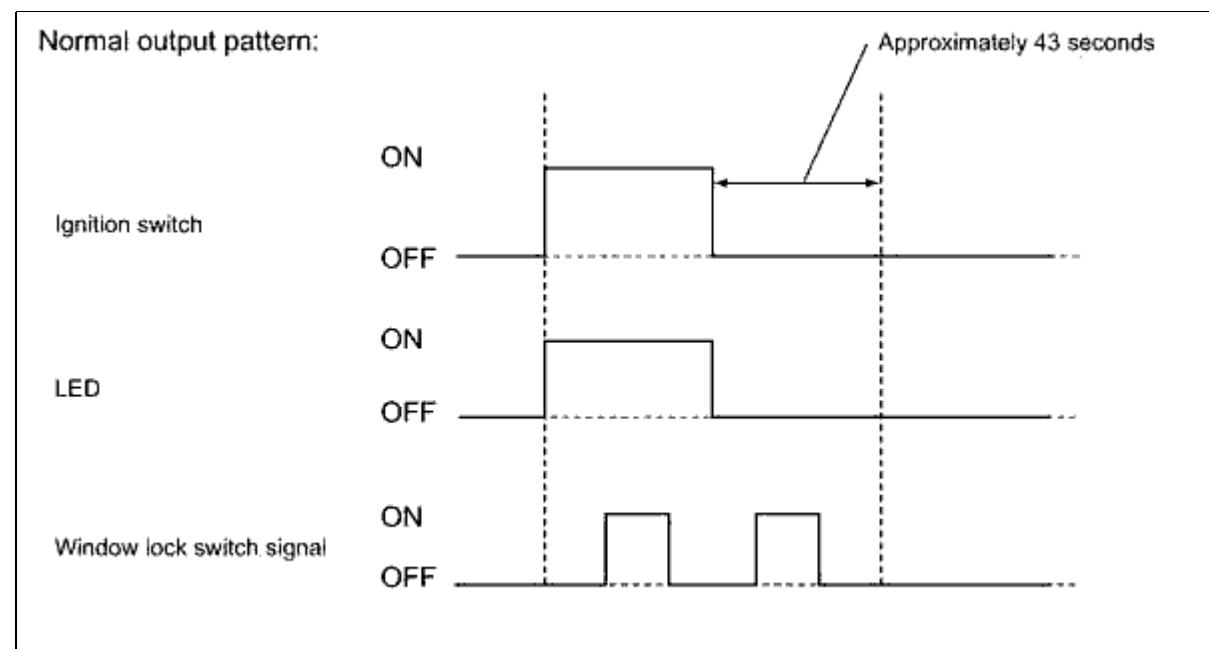
(a) Check that the front passenger door window and rear power windows operate as follows:

CONDITION	MASTER SWITCH	SWITCH OPERATION	POWER WINDOW
Ignition switch ON	Front passenger door	Pulled up	UP (Closes)
		Pushed down	DOWN (Opens)
	Rear LH door*1	Pulled up	UP (Closes)
		Pushed down	DOWN (Opens)
	Rear RH door*1	Pulled up	UP (Closes)
		Pushed down	DOWN (Opens)

*1: for Double Cab

5. CHECK POWER WINDOW SWITCH LED ILLUMINATION

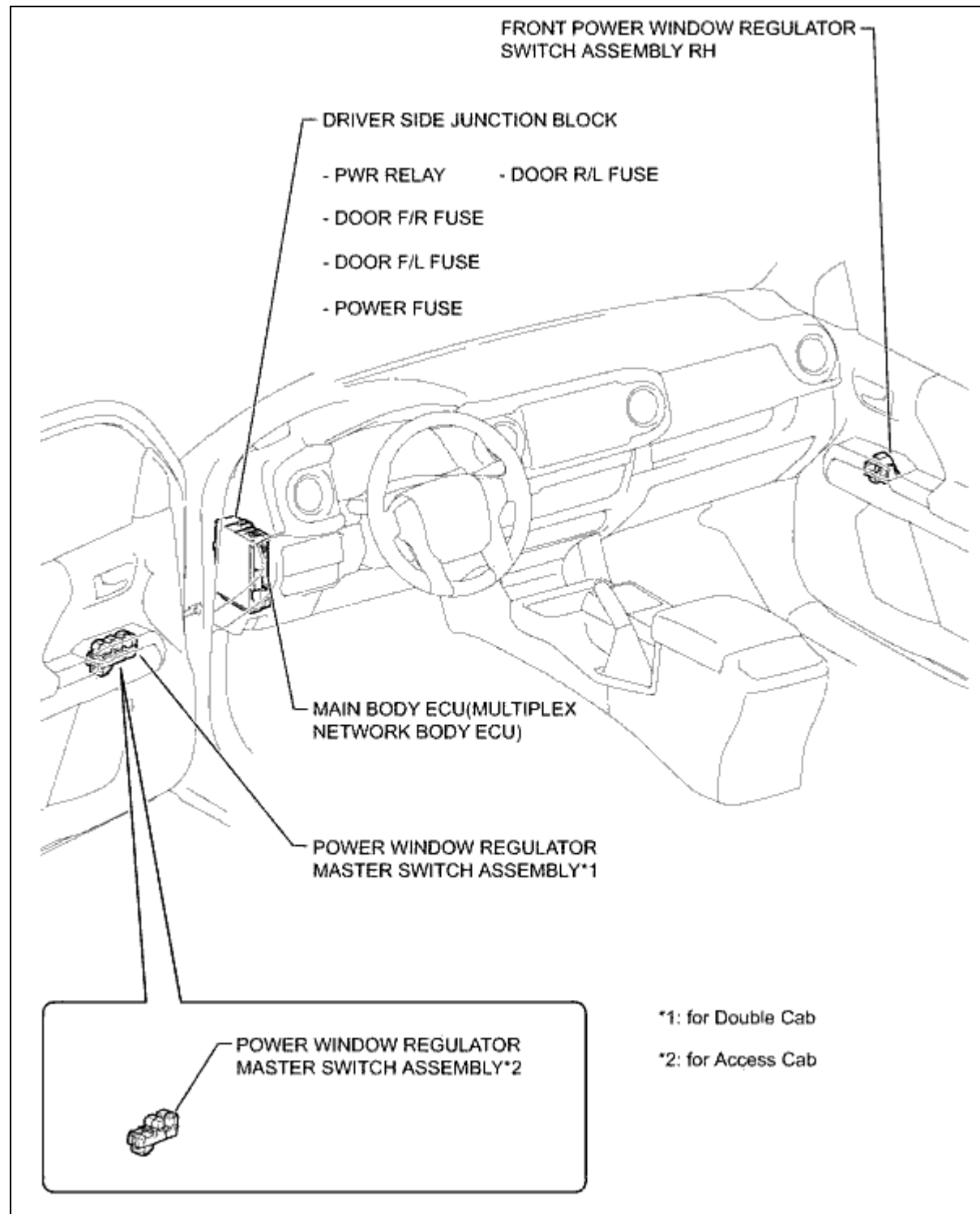
(a) When the ignition switch is turned from off to ON with the connectors connected, check that the illumination (LED) on the switch portion of the power window regulator switch assembly turns on.



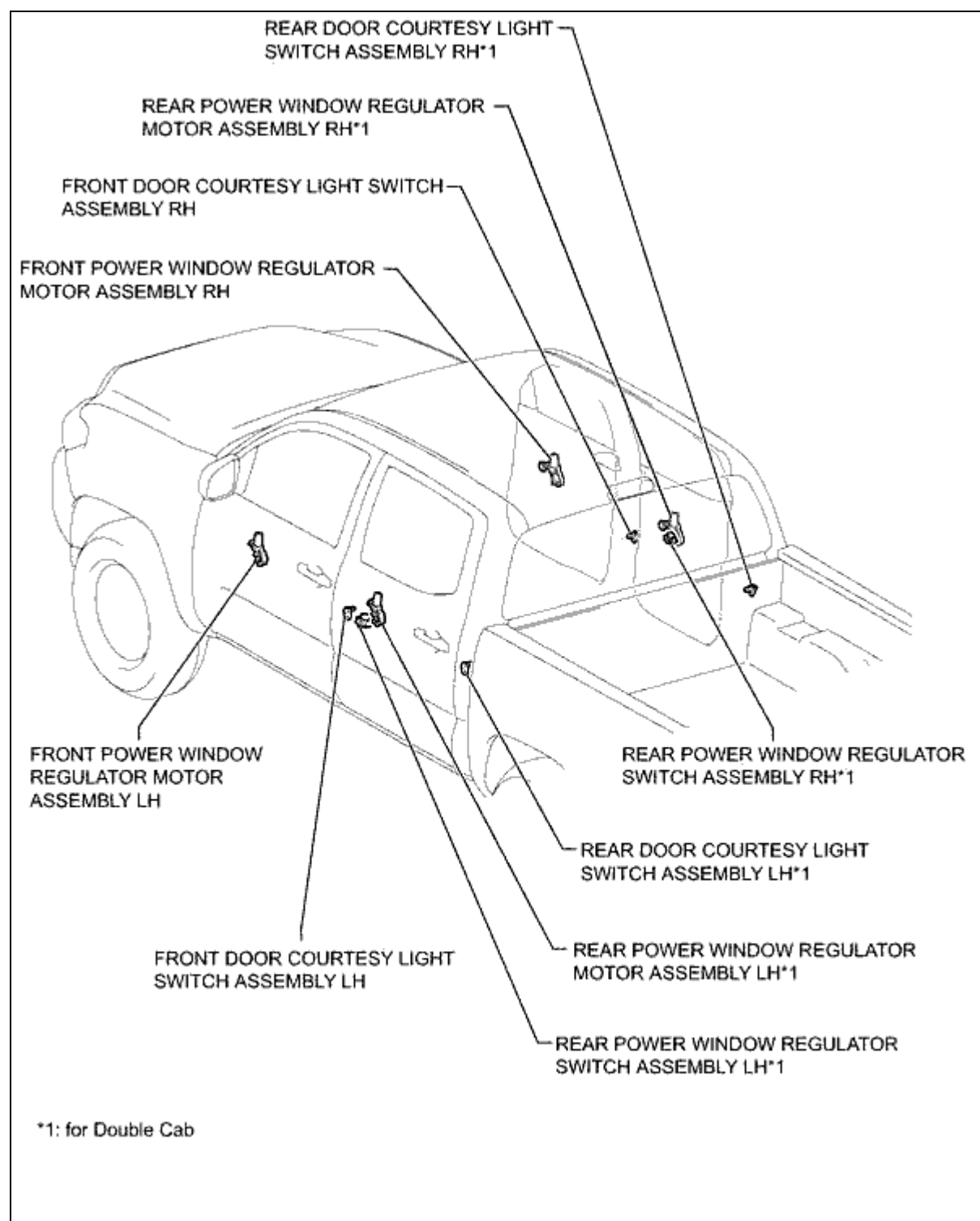
Last Modified: 11-13-2015	6.6 R	Doc ID: RM000000PY101EX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function): PARTS LOCATION; 2016 MY Tacoma [08/2015 -]		

PARTS LOCATION

ILLUSTRATION



ILLUSTRATION



Last Modified: 11-13-2015	6.6 T	Doc ID: RM000000PY801IX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function): PROBLEM SYMPTOMS TABLE; 2016 MY Tacoma [08/2015 -]		

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
Driver side power window does not operate with power window master switch	Front power window regulator motor assembly LH	INFO
	Power window regulator master switch assembly	INFO
	Harness or connector	-
Front passenger side power window does not operate with front passenger side power window switch	Power window regulator master switch assembly	INFO
	Front power window regulator motor assembly LH	INFO
	Harness or connector	-
Rear power window LH does not operate with rear power window switch LH*1	Rear power window regulator switch assembly LH	INFO
	Rear power window regulator motor assembly LH	INFO
	Harness or connector	-
Rear power window RH does not operate with rear power window switch RH*1	Rear power window regulator switch assembly RH	INFO
	Rear power window regulator motor assembly RH	INFO
	Harness or connector	-
Driver side power window auto down function does not operate with power window master switch (manual up / down function is normal)	Power window regulator master switch assembly	INFO
	Front power window regulator motor assembly LH	INFO
	Harness or connector	-
Remote up / down function does not operate	Power window regulator master switch assembly	INFO

SYMPTOM	SUSPECTED AREA	SEE PAGE
	Driver side junction block	INFO
	Harness or connector	-

*1: for Double Cab



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function): SYSTEM DESCRIPTION; 2016 MY Tacoma [08/2015 -]		

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 power window regulator master switch assembly (mounted on the driver door), power window regulator switch assembly (mounted on the front passenger door) and rear power window regulator switch assemblies (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
Power window regulator master switch assembly	- Controls power window operation for all windows. - When the window lock switch is set to the lock position, window operation will be possible for all windows.
Power window regulator switch assembly	- Located on the front passenger door. - Controls front passenger window operation.
- Rear power window regulator switch assembly LH*1 - Rear power window regulator switch assembly RH*1	- Located on the rear doors - Each switch controls window operation for its respective window.
- Front power window regulator motor assembly RH - Front power window regulator motor assembly LH - Rear power window regulator motor assembly LH*1 - Rear power window regulator motor assembly RH*1	Receives switch signals and changes signals into motor activation. As a result, the window position changes.

*1: for Double Cab

3. SYSTEM FUNCTION

The power window control system has the following functions:

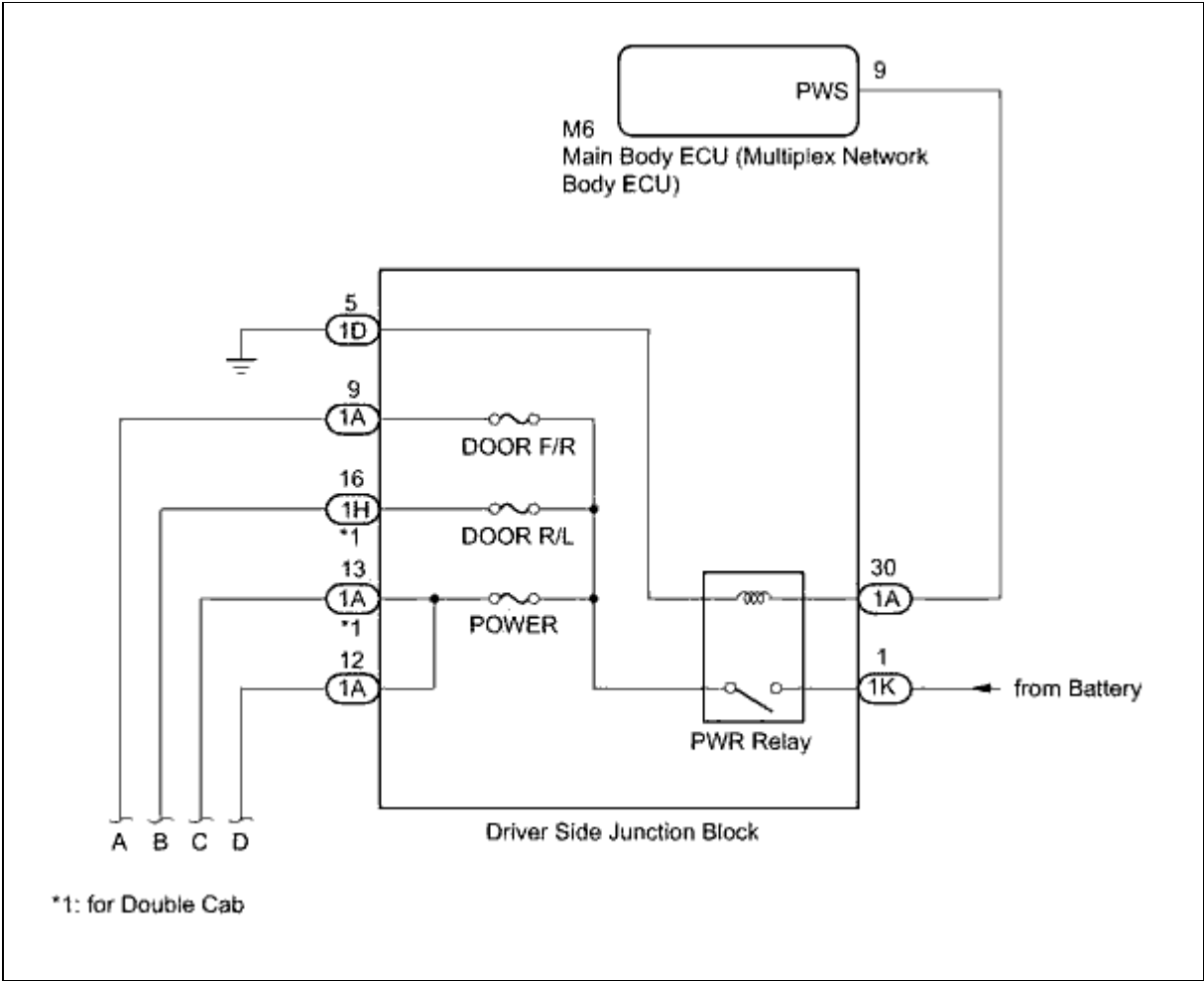
FUNCTION	OUTLINE
Manual up and	Function that causes the window to go up while the power window switch is being pulled

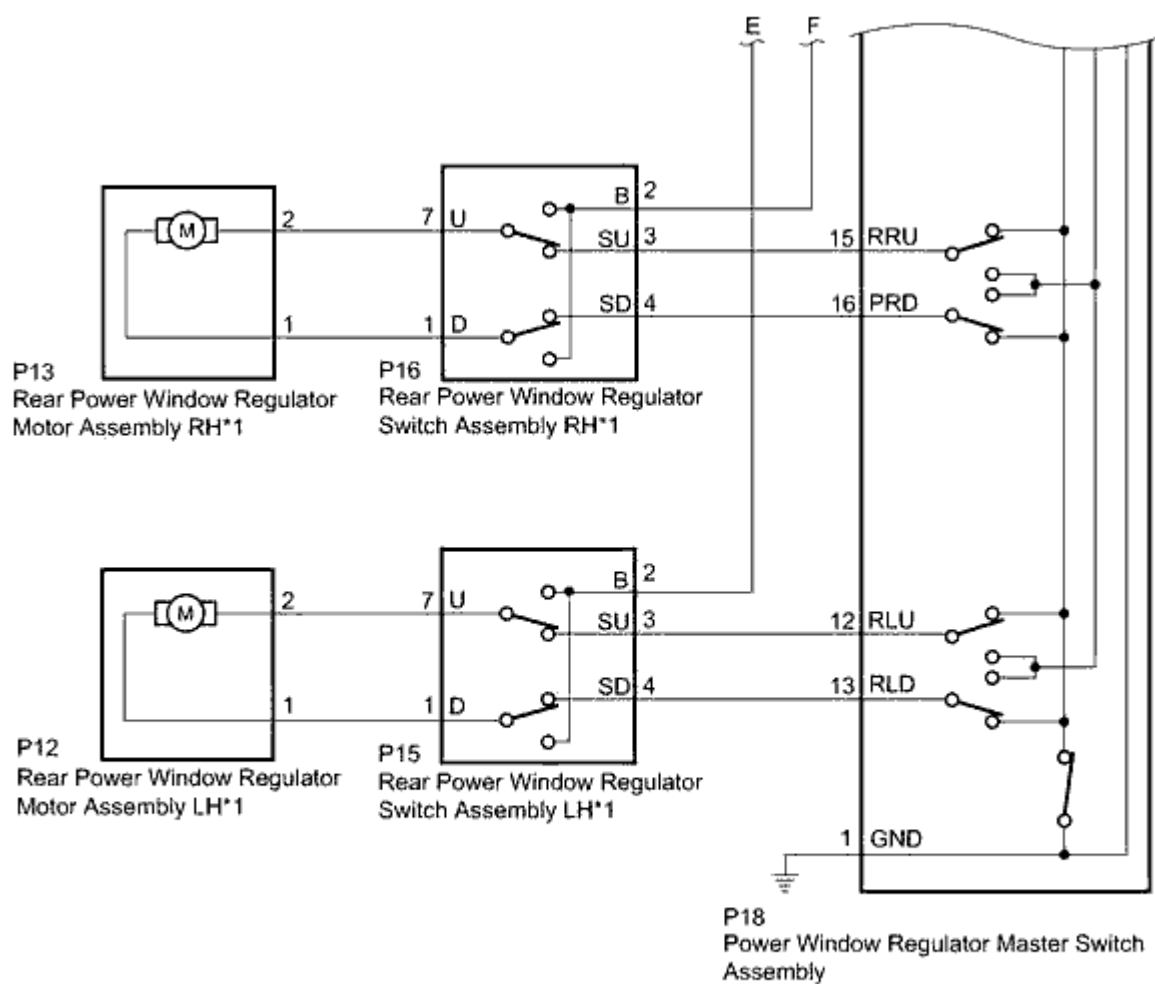
FUNCTION	OUTLINE
down function	halfway up and to go down while it is being pushed halfway down. The window stops as soon as the switch is released.
Auto down function	Function that enables the window of the driver side door to be fully opened by one full push downward on the power window regulator master switch assembly.
Window lock function	• Function that disables the power window regulator switch assembly and rear power window regulator switch assembly operations when the window lock switch is pressed. • Function that disables the power window regulator switch assembly and rear power window regulator switch assembly operations when the window lock switch is pressed.
Remote control function	Function that allows the power window regulator master switch assembly to control manual up and down operations of the front passenger door window and rear door windows.



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000000PY5011X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: POWER WINDOW CONTROL SYSTEM (w/o Jam Protection Function): SYSTEM DIAGRAM; 2016 MY Tacoma [08/2015 -]		

SYSTEM DIAGRAM

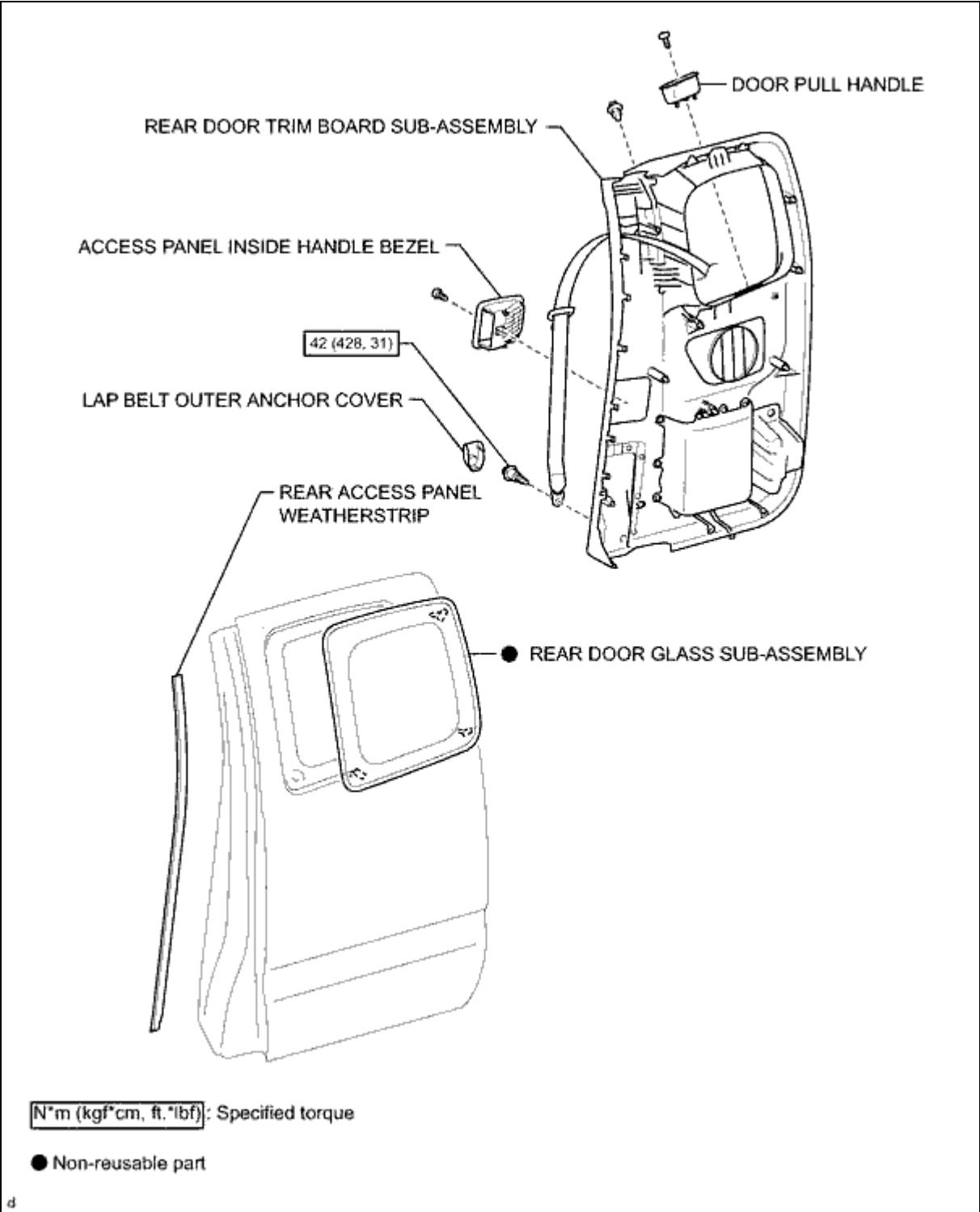




Last Modified: 11-13-2015	6.6 K	Doc ID: RM0000016Z100CX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: QUARTER WINDOW GLASS (for Access Cab): COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

ILLUSTRATION





Last Modified: 11-13-2015	6.6 A	Doc ID: RM0000016Z000CX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: QUARTER WINDOW GLASS (for Access Cab): INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

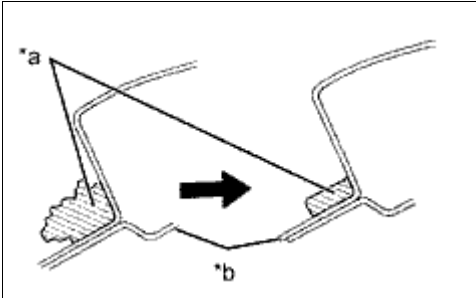
1. INSTALL REAR DOOR GLASS SUB-ASSEMBLY

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

Text in Illustration

*a	Adhesive
*b	Vehicle Body

- (1) Using a knife, cut away excess adhesive on the contact surface of the vehicle body as shown in the illustration.

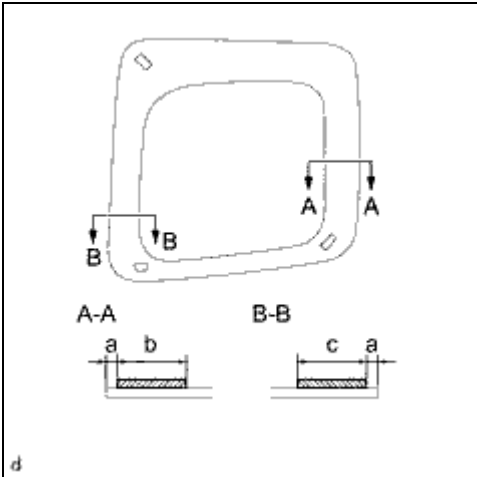


NOTICE:
Leave as much adhesive on the vehicle body as possible.

- (b) Clean the contact surface of the vehicle body with a piece of cloth saturated with non-residue solvent.
(c) Apply Primer M to the exposed part of the vehicle body.

- NOTICE:**
- Do not apply too much Primer M.
 - Do not coat the adhesive with primer M.
 - Be careful when applying primer to the panel joints and spot welds.

- (d) Using a brush or sponge, coat the application area of adhesive with primer G as shown in the illustration.



Text in Illustration

	Primer G
---	----------

Specification:

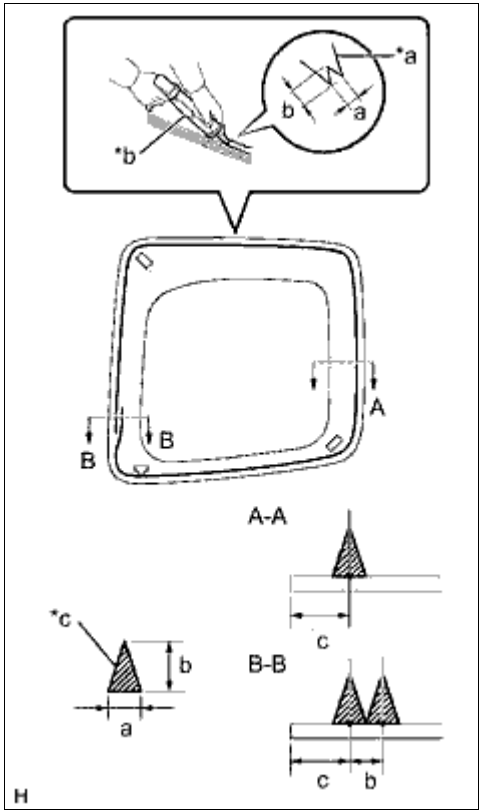
AREA	MEASUREMENT
a	5 mm (0.197 in.)
b	20 mm (0.787 in.)
c	26 mm (1.023 in.)

NOTICE:

Do not apply too much Primer G.

Text in Illustration

*a	Cartridge Nozzle
*b	Sealer Gun
*c	Adhesive



- (f) Load the sealer gun with the cartridge.
- (g) Apply a bead of adhesive to the location shown in the illustration.

Specification:

AREA	MEASUREMENT
a	8 mm (0.315 in.)
b	12 mm (0.472 in.)
c	13 mm (0.512 in.)

HINT:

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

Usage time frame:

TEMPERATURE	USAGE TIME FRAME
35°C (95°F)	15 minutes

TEMPERATURE	USAGE TIME FRAME
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

(h) Install the quarter window assembly:

- (1) Install the suction cups to the rear door glass assembly.
- (2) Using suction cups, engage the 2 side window clips and rear door glass clip to install the rear door glass assembly.

NOTICE:

Install the rear door glass assembly after primer M on the vehicle body has been allowed to dry (approximately 3 minutes).

- (3) Lightly press the front surface of the rear door glass assembly to ensure that the rear door glass assembly is securely fit to the vehicle body.
- (4) Using a scraper, remove any excess or protruding adhesive.
- (5) Hold the rear door glass assembly in place securely with protective tape or equivalent until the adhesive hardens.

NOTICE:

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

Minimum Time:

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

2. CHECK REAR DOOR GLASS SUB-ASSEMBLY

- (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.

3. INSTALL REAR DOOR TRIM BOARD SUB-ASSEMBLY

INFO

4. INSTALL DOOR PULL HANDLE

INFO

5. INSTALL ACCESS PANEL INSIDE HANDLE BEZEL

INFO

6. INSTALL LAP BELT OUTER ANCHOR COVER

INFO

7. INSTALL REAR ACCESS PANEL WEATHERSTRIP

INFO



Last Modified: 11-13-2015	6.6 A	Doc ID: RM0000016Z200CX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: QUARTER WINDOW GLASS (for Access Cab): REMOVAL; 2016 MY Tacoma [08/2015 -]		

REMOVAL

HINT:

- Use the same procedure for both the RH and LH side.
- The procedure described below is for the LH side.

1. REMOVE REAR ACCESS PANEL WEATHERSTRIP INFO

2. REMOVE LAP BELT OUTER ANCHOR COVER INFO

3. REMOVE ACCESS PANEL INSIDE HANDLE BEZEL INFO

4. REMOVE DOOR PULL HANDLE INFO

5. REMOVE REAR DOOR TRIM BOARD SUB-ASSEMBLY INFO

6. REMOVE REAR DOOR GLASS SUB-ASSEMBLY

NOTICE:

The rear door glass sub-assembly may fall while performing this procedure. Therefore, use suction cups to hold the rear door glass sub-assembly from the outside of the vehicle.

- (a) Apply protective tape to the area around the installation position of the rear door glass sub-assembly on the vehicle body to prevent it from being scratched.

Text in Illustration

*a	Protective Tape
*b	Piano Wire



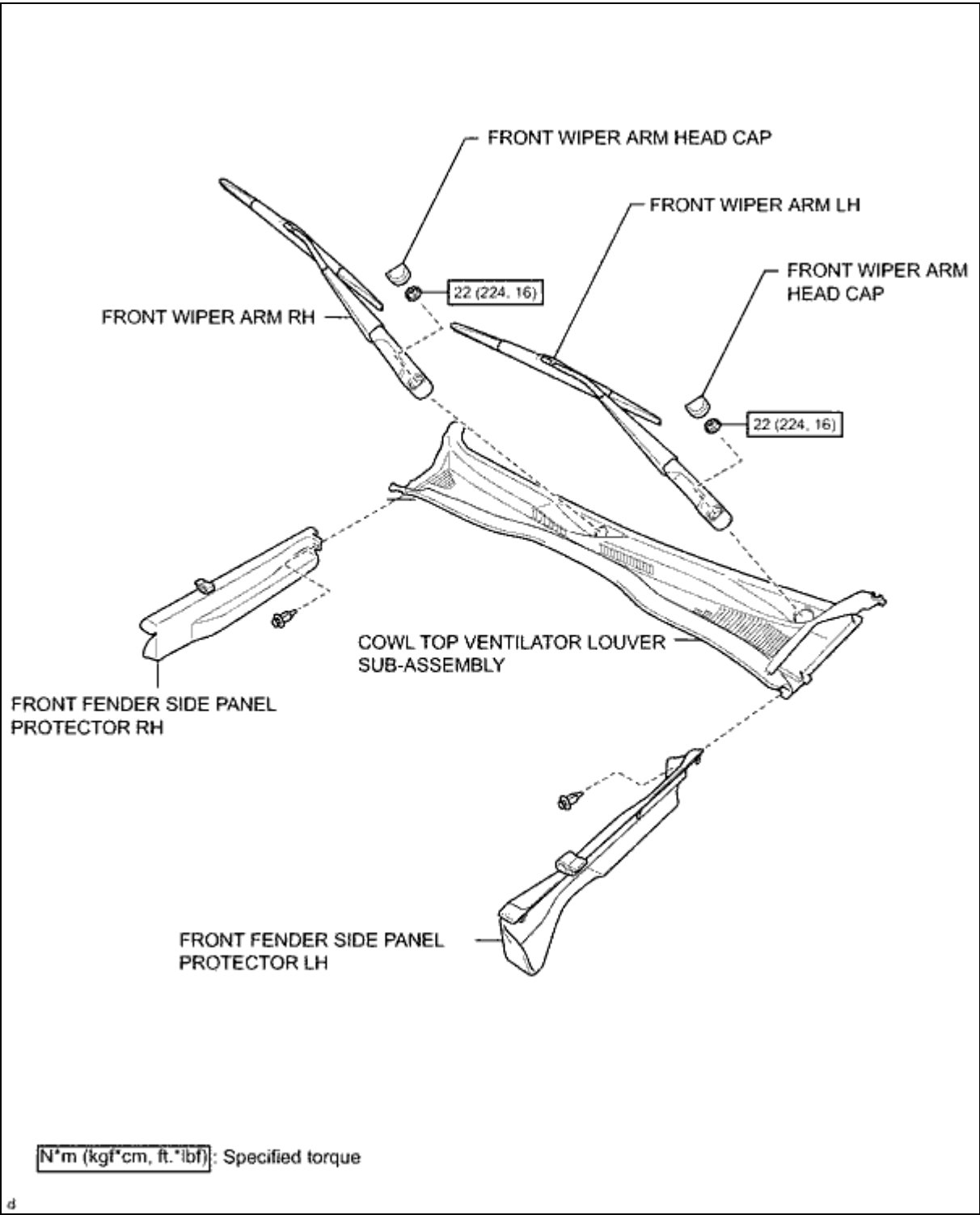
- (b) Install the suction cups to the quarter window assembly.
- (c) Pass a piano wire between the vehicle body and rear door glass sub-assembly from the interior.
- (d) Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.
- (e) Cut off the adhesive by pulling the piano wire around the rear door glass sub-assembly.
- (f) Using suction cups, disengage the 3 clips to remove the rear door glass sub-assembly.



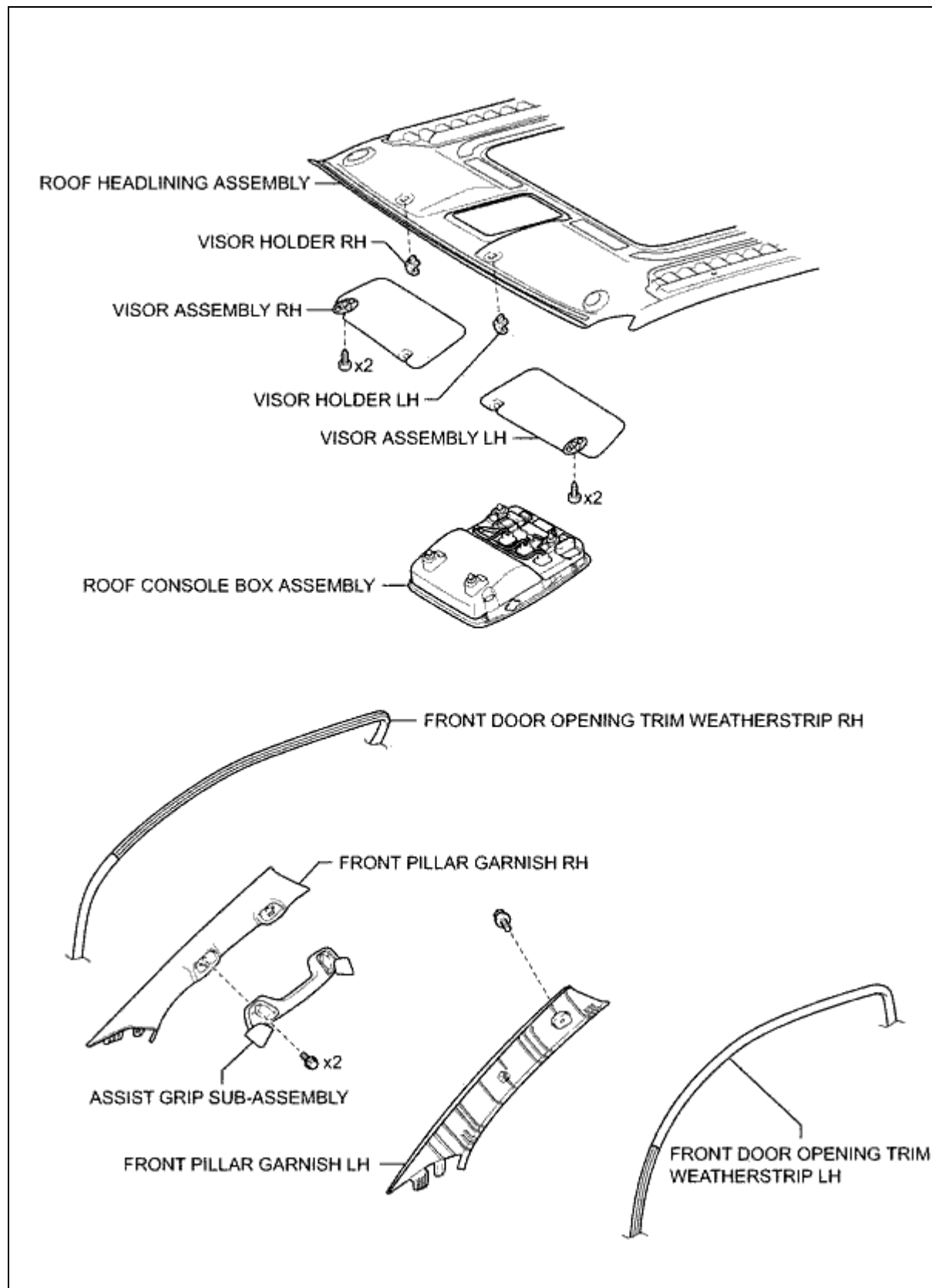
Last Modified: 11-13-2015	6.6 K	Doc ID: RM0000016Z700AX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: WINDSHIELD GLASS: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

ILLUSTRATION

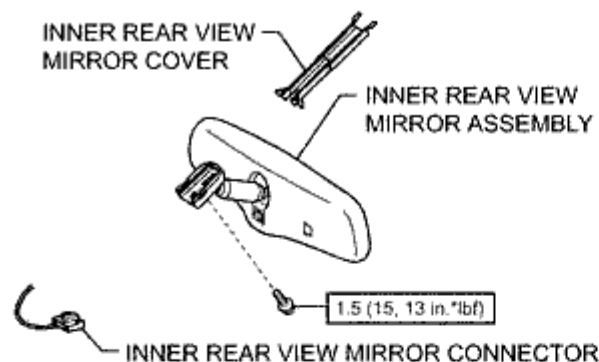


ILLUSTRATION

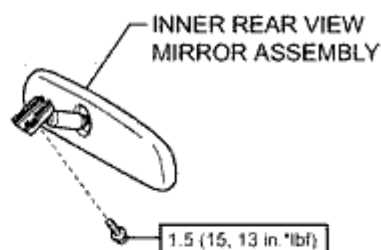


ILLUSTRATION

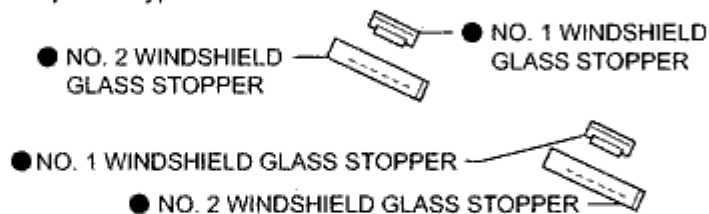
w/ EC Mirror:



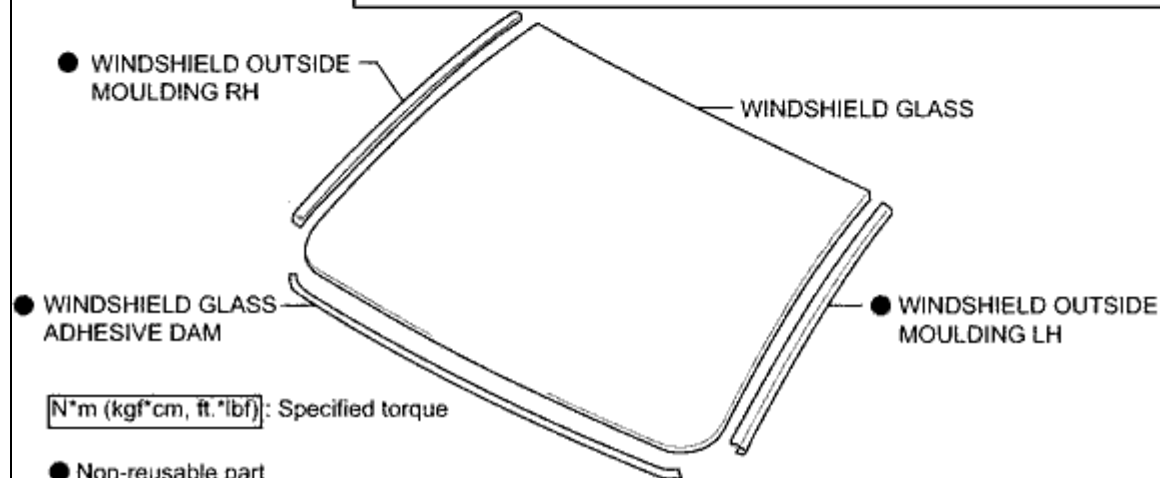
w/o EC Mirror:



for 2-piece Type:



for 1-piece Type:



Last Modified: 11-13-2015	6.6 A	Doc ID: RM0000016Z600AX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: WINDSHIELD GLASS: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

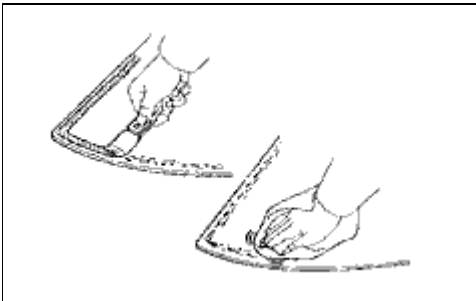
1. CLEAN WINDSHIELD GLASS

(a) When reusing the windshield glass:

- (1) Using a scraper, remove any remaining adhesive and windshield glass adhesive dam residue from the windshield glass.

NOTICE:

Be careful not to damage the windshield glass.



- (2) Clean the outer circumference of the windshield glass with a non-residue solvent.

NOTICE:

Even if using a new windshield glass, clean the windshield glass with a non-residue solvent.

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

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

NOTICE:

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

(b) Remove the peeling paper from the face of 2 new No. 2 windshield glass stoppers.

NOTICE:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

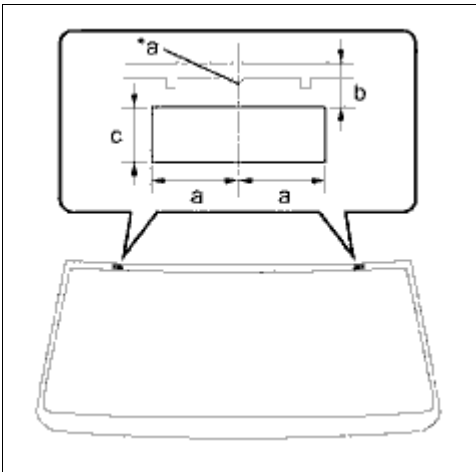
- (c) Install 2 new No. 2 windshield glass stoppers to the windshield glass as shown in the illustration.

Text in Illustration

*a	Ceramic Notch
----	---------------

Specification:

AREA	MEASUREMENT
a	40 mm (1.575 in.)
b	11.2 mm (0.441 in.)
c	12.5 mm (0.482 in.)



NOTICE:

- Install the No. 2 windshield glass stopper after primer G has been allowed to dry (approximately 3 minutes).
- Make sure to install the No. 2 windshield glass stopper in the correct orientation.

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

(a) Using a brush or sponge, coat the application area of the No. 1 windshield glass stopper with primer G.

NOTICE:

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

(b) Remove the peeling paper from the face of 2 new No. 1 windshield glass stoppers.

NOTICE:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

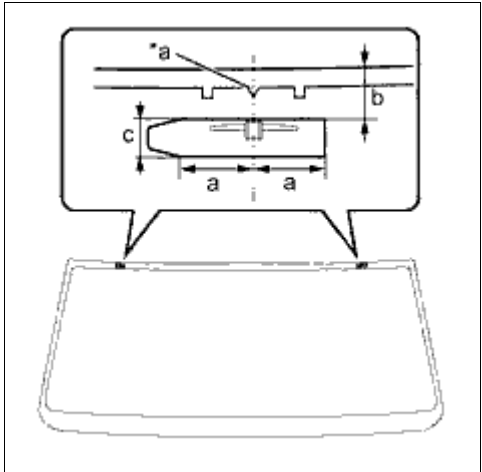
(c) Install 2 new No. 1 windshield glass stoppers to the windshield glass as shown in the illustration.

Text in Illustration

*a	Ceramic Notch
----	---------------

Specification:

AREA	MEASUREMENT
a	20 mm (0.787 in.)
b	13.3 mm (0.524 in.)
c	11 mm (0.433 in.)

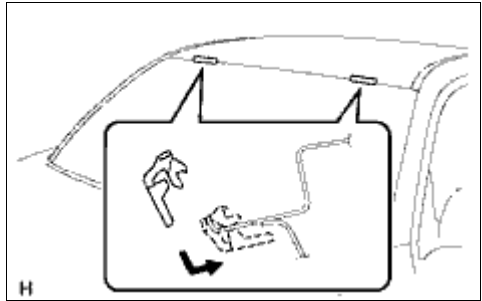


NOTICE:

- Install the No. 1 windshield glass stopper after primer G has been allowed to dry (approximately 3 minutes).
- Make sure to install the No. 1 windshield glass stopper in the correct orientation.

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

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



5. INSTALL WINDSHIELD GLASS ADHESIVE DAM

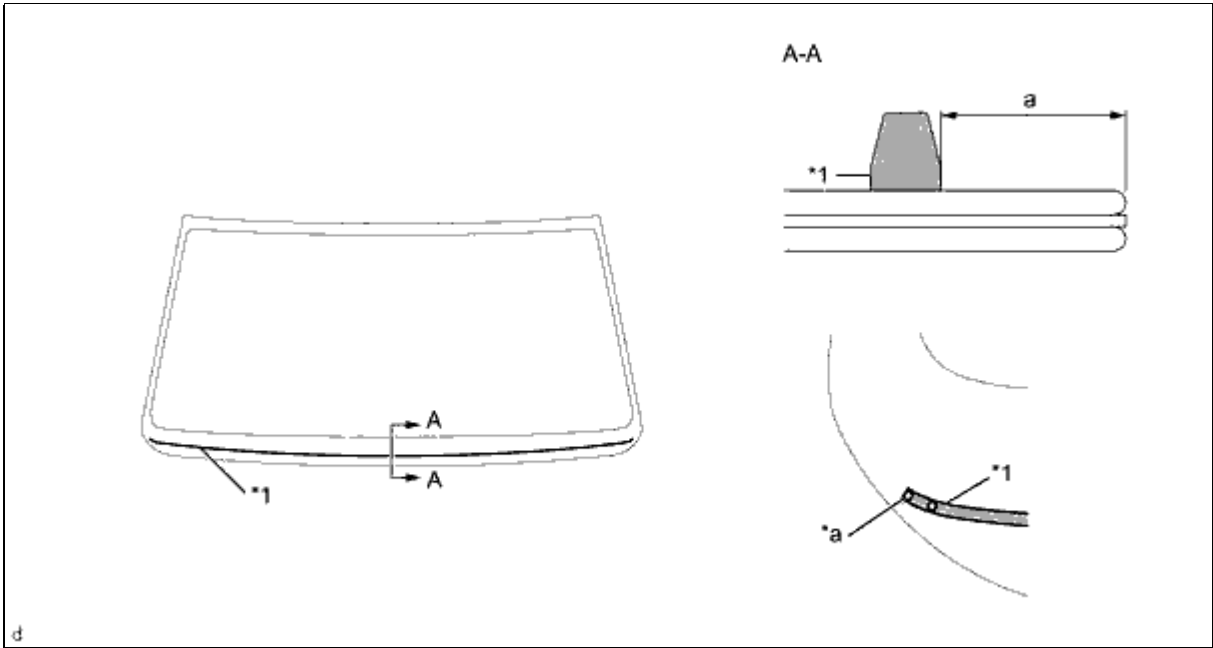
(a) Using a brush or sponge, coat the application area of the windshield glass adhesive dam with primer G.

NOTICE:

- Allow the primer to dry for 3 minutes or more.
 - Throw away any leftover Primer G.
 - Do not apply too much Primer G.
- (b) Remove the peeling paper from the face of the windshield glass adhesive dam.

NOTICE:

- After removing the peeling paper, keep the exposed adhesive free from foreign matter.
- (c) Install the windshield glass adhesive dam to the windshield glass as shown in the illustration.



Text in Illustration

*1	Window Glass Adhesive Dam	-	-
*a	Ceramic Notch	-	-

Specification:

AREA	MEASUREMENT
a	31.1 mm (1.22 in.)

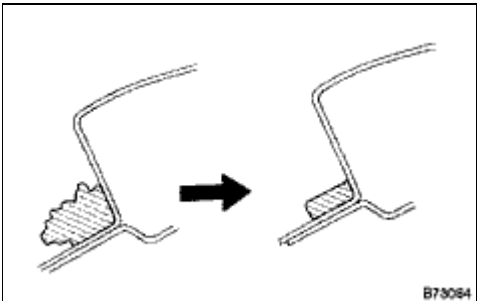
6. INSTALL WINDSHIELD GLASS

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

- (1) Using a knife, cut away excess adhesive on the contact surface of the vehicle body as shown in the illustration.

NOTICE:

Leave as much adhesive on the vehicle body as possible.



(b) Clean the contact surface of the vehicle body with a piece of cloth saturated with non-residue solvent.

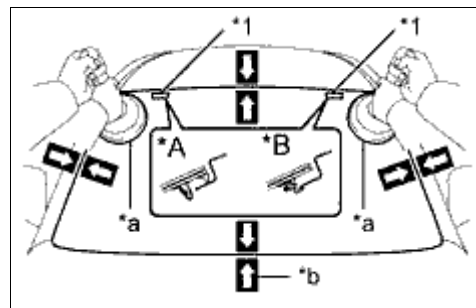
(c) Windshield glass preliminary installation procedures.

(1) Install the suction cups to the windshield glass.

(2) Engage the windshield glass stopper to temporarily place the windshield glass onto the vehicle body and set it so that the gap between the body and the upper portion and sides of the windshield glass is even.

Text in Illustration

*A	for 1-Piece Type
*B	for 2-Piece Type
*1	Windshield Glass Stopper
*a	Suction Cups
*b	Matchmarks



NOTICE:

Securely engage the No. 1 windshield glass stopper and No. 2 windshield glass stopper.

(3) When using a new windshield glass:

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

HINT:

When reusing the windshield glass, check and correct the matchmark positions.

(4) When reusing the windshield glass:

Check the position of the matchmarks and make adjustments.

(5) Remove the windshield glass.

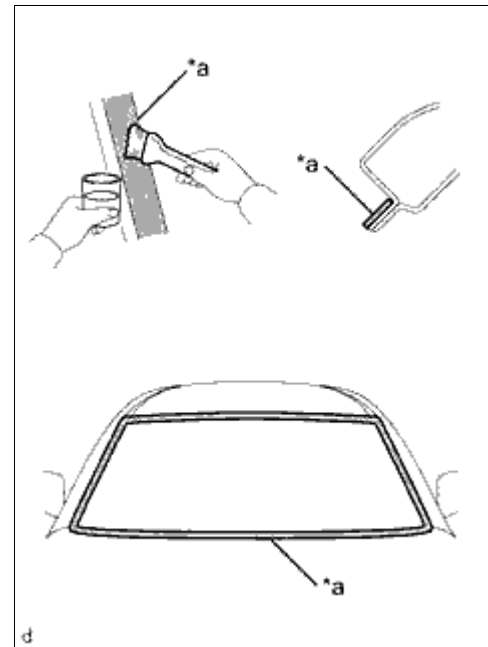
(d) Apply Primer M to the exposed part of the vehicle body.

Text in Illustration

*a	Primer M
----	----------

NOTICE:

- Do not apply too much Primer M.
- Do not coat the adhesive with primer M.
- Be careful when applying primer to the panel joints and spot welds.



(e) Using a brush or sponge, coat the application area of adhesive with primer G as shown in the illustration.

Text in Illustration

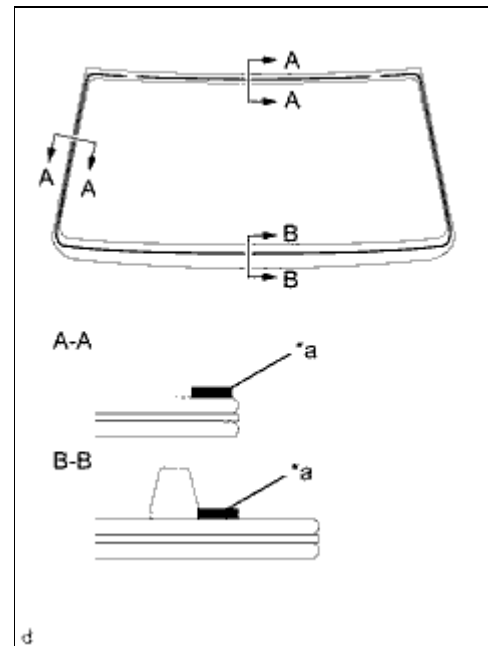
*a	Primer G
----	----------

NOTICE:

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

HINT:

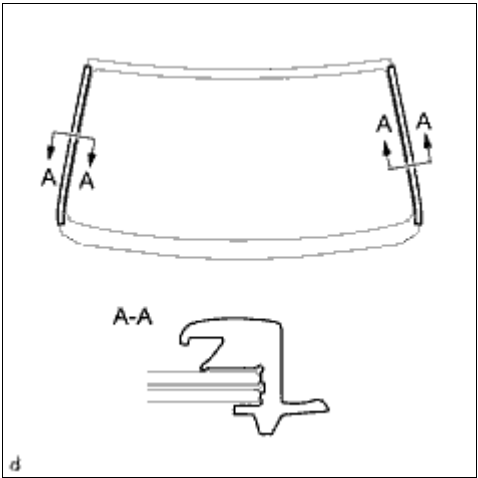
If Primer G is applied to any areas other than that which is specified, wipe off the primer with a clean shop towel before it dries.



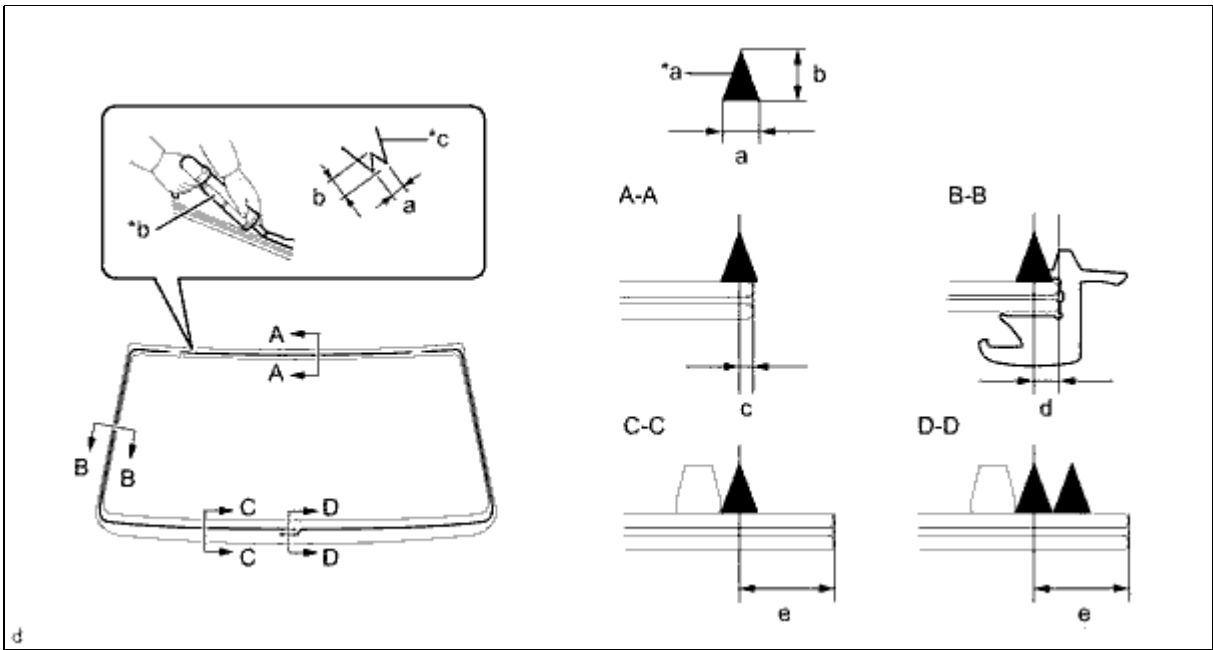
(f) Install the windshield outside moulding LH and windshield outside moulding RH to the windshield glass.

NOTICE:

- Install the windshield outside moulding LH after Primer G has been allowed to dry (approx. 3 min).
- After removing the peeling paper, keep the exposed adhesive free from foreign matter.



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



Text in Illustration

*a	Adhesive	*b	Sealer Gun
*c	Cartridge Nozzle	-	-

- (h) Load the sealer gun with the cartridge.
- (i) Apply adhesive to the windshield glass as shown in the illustration.
- Specification:

AREA	MEASUREMENT
a	8 mm (0.315 in.)
b	12 mm (0.472 in.)
c	7.2 mm (0.283 in.)
d	4.5 mm (0.117 in.)

AREA	MEASUREMENT
e	26.9 mm (1.05 in.)

HINT:

After cutting off the tip, use all adhesive within the times indicated in the table below.

Usage time frame:

TEMPERATURE	USAGE TIME FRAME
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

- (j) Using suction cups, engage the No. 1 windshield glass stopper and No. 2 windshield glass stopper, position the windshield glass so that the matchmarks are aligned and install the windshield glass.

NOTICE:

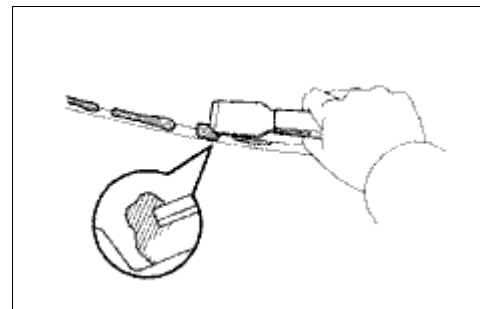
- Install the windshield glass after Primer M on the vehicle body has been allowed to dry (approx. 3 min).
- Check that the No. 1 windshield glass stopper and No. 2 windshield glass stopper are engaged to the vehicle body correctly.

- (1) Lightly press the front surface of the windshield glass to ensure that the windshield glass is securely fit to the vehicle body.

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

HINT:

Apply adhesive to the windshield glass rim.



- (3) Hold the windshield glass in place securely with protective tape or equivalent until the adhesive hardens.

HINT:

Follow the instructions for each adhesive manufacturer or the corresponding owner's manual for the minimum amount of time necessary prior to driving the vehicle.

Usage time frame:

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

7. CHECK WINDSHIELD GLASS

- (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.

8. INSTALL VISOR HOLDER LH INFO

9. INSTALL VISOR HOLDER RH

HINT:

Use the same procedure as for the LH side.

10. INSTALL VISOR ASSEMBLY LH (w/ Vanity Light) INFO

11. INSTALL VISOR ASSEMBLY LH (w/o Vanity Light) INFO

12. INSTALL VISOR ASSEMBLY RH (w/ Vanity Light)

HINT:

Use the same procedure as for the LH side.

13. INSTALL VISOR ASSEMBLY RH (w/o Vanity Light)

HINT:

Use the same procedure as for the LH side.

14. INSTALL ROOF CONSOLE BOX ASSEMBLY INFO

15. INSTALL FRONT PILLAR GARNISH LH INFO

16. INSTALL FRONT PILLAR GARNISH RH INFO

17. INSTALL ASSIST GRIP SUB-ASSEMBLY INFO

18. CONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH

(a) Connect the front door opening trim weatherstrip LH.

19. CONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH

HINT:

Use the same procedure as for the LH side.

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

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

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

23. INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY INFO

24. INSTALL FRONT FENDER SIDE PANEL PROTECTOR LH INFO

25. INSTALL FRONT FENDER SIDE PANEL PROTECTOR RH

HINT:

Use the same procedure as for the LH side.

26. INSTALL FRONT WIPER ARM LH INFO

27. INSTALL FRONT WIPER ARM RH INFO

28. INSTALL FRONT WIPER ARM HEAD CAP INFO



Last Modified: 11-13-2015	6.6 A	Doc ID: RM0000016Z800AX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: WINDSHIELD / WINDOWGLASS: WINDSHIELD GLASS: REMOVAL; 2016 MY Tacoma [08/2015 -]		

REMOVAL

1. REMOVE FRONT WIPER ARM HEAD CAP [INFO](#)

2. REMOVE FRONT WIPER ARM LH [INFO](#)

3. REMOVE FRONT WIPER ARM RH

HINT:

Use the same procedure as for the LH side.

4. REMOVE FRONT FENDER SIDE PANEL PROTECTOR LH [INFO](#)

5. REMOVE FRONT FENDER SIDE PANEL PROTECTOR RH

HINT:

Use the same procedure as for the LH side.

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/ EC Mirror) [INFO](#)

9. REMOVE INNER REAR VIEW MIRROR ASSEMBLY (w/o EC Mirror) [INFO](#)

10. DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH

- (a) Disconnect the front door opening trim weatherstrip LH to the extent which allows the removal of the front pillar garnish.

11. DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH

HINT:

Use the same procedure as for the LH side.

12. REMOVE ASSIST GRIP SUB-ASSEMBLY [INFO](#)

13. REMOVE FRONT PILLAR GARNISH LH [INFO](#)

14. REMOVE FRONT PILLAR GARNISH RH [INFO](#)

15. REMOVE ROOF CONSOLE BOX ASSEMBLY [INFO](#)

16. REMOVE VISOR ASSEMBLY LH (w/ Vanity Light) [INFO](#)

17. REMOVE VISOR ASSEMBLY LH (w/o Vanity Light) [INFO](#)

18. REMOVE VISOR ASSEMBLY RH (w/ Vanity Light)

HINT:

Use the same procedure as for the LH side.

19. REMOVE VISOR ASSEMBLY RH (w/o Vanity Light)

HINT:

Use the same procedure as for the LH side.

20. REMOVE VISOR HOLDER LH INFO

21. REMOVE VISOR HOLDER RH

HINT:

Use the same procedure as for the LH side.

22. REMOVE WINDSHIELD GLASS

NOTICE:

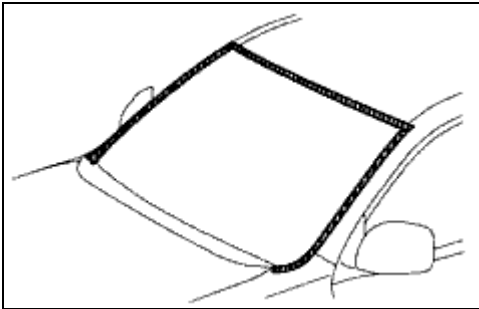
The windshield glass may fall while performing this procedure. Therefore, use suction cups to hold the windshield glass from the outside of the vehicle.

(a) Partially separate the roof headlining assembly enough to enable the windshield glass to be removed.

NOTICE:

Make sure not to cause any wrinkles or creases in the roof headlining assembly when separating it.

(b) Apply protective tape to the area around the installation position of the windshield glass on the vehicle body to prevent it from being scratched.



Text in Illustration

	Protective Tape
---	-----------------

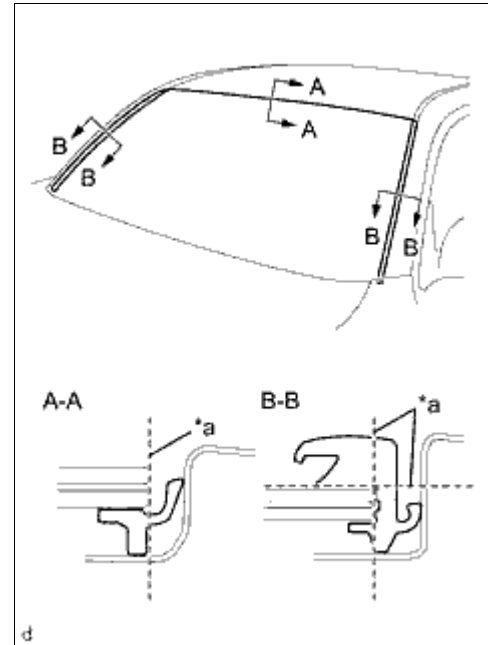
(c) Using a knife, cut off the windshield outside moulding as shown in the illustration.

Text in Illustration

*a	Cut off
----	---------

NOTICE:

- Be careful not to damage the vehicle body with the knife.
- If there are any scratches on the body panels, perform rustproofing treatment after removing the windshield glass.

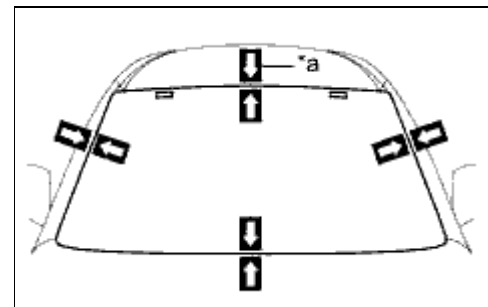


(d) When reusing the windshield glass:

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

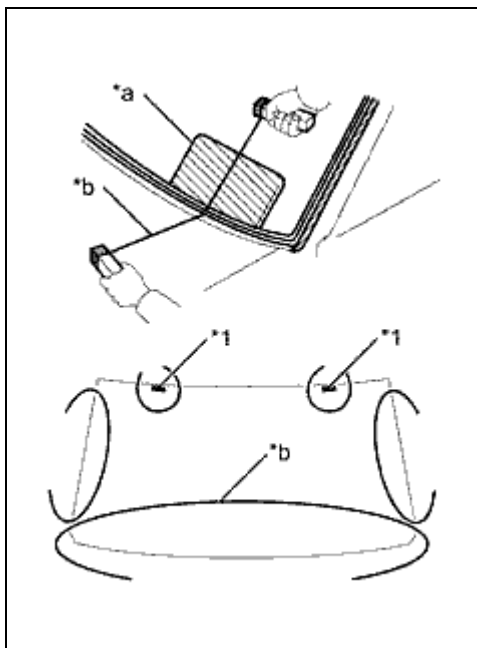
Text in Illustration

*a	Matchmarks
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(e) Install the suction cups to the windshield glass.

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



Text in Illustration

*1	Windshield Glass Stopper
*a	Plastic Sheet
*b	Piano Wire
	Protective Tape

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

NOTICE:

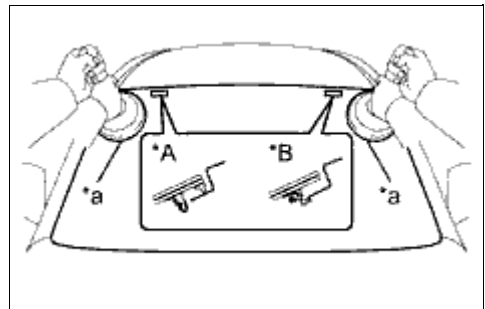
- Do not forcefully brush the piano wire against the windshield glass.
- To prevent the safety pad from being scratched when removing the windshield glass, place a plastic sheet between the piano wire and safety pad.

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

NOTICE:

Be careful as the piano wire will break if it crosses itself.

(i) Using suction cups, disengage the 2 windshield glass stoppers to remove the windshield glass.



Text in Illustration

*A	for 1-Piece Type
*B	for 2-Piece Type
*a	Suction Cups

23. REMOVE WINDSHIELD GLASS ADHESIVE DAM

(a) When reusing the windshield glass:

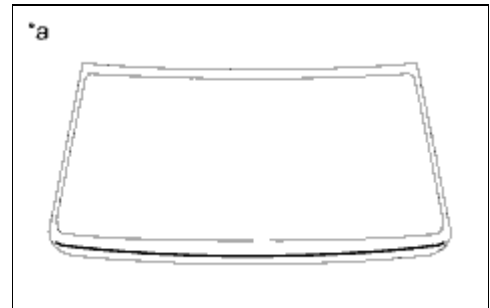
(1) Using a scraper, remove the windshield glass adhesive dam.

Text in Illustration

*a	Back Side of Windshield Glass
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NOTICE:

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



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

(a) When reusing the windshield glass:

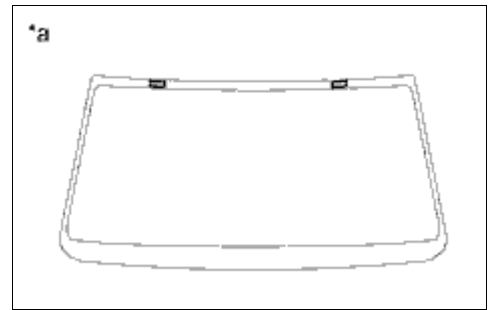
- (1) Using a scraper, remove the 2 No. 1 windshield glass stoppers from the back side of the windshield glass.

Text in Illustration

*a	Back Side of Windshield Glass
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NOTICE:

- Be careful not to damage the windshield glass.
- Be sure to replace the 1-piece type No. 1 windshield glass stoppers with new 2-piece type No. 1 and No. 2 windshield glass stoppers.



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

- (a) When reusing the windshield glass:

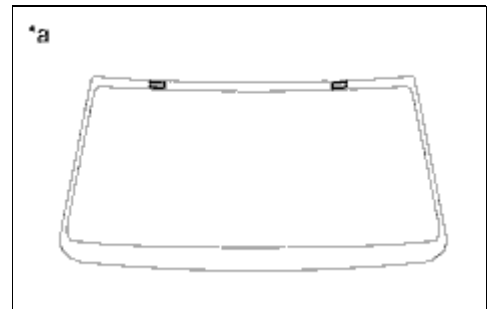
- (1) Using a scraper, remove the 2 No. 2 windshield glass stoppers from the back side of the windshield glass.

Text in Illustration

*a	Back Side of Windshield Glass
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NOTICE:

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



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

- (a) Remove the 2 No. 1 windshield glass stoppers from the vehicle body.

NOTICE:

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

