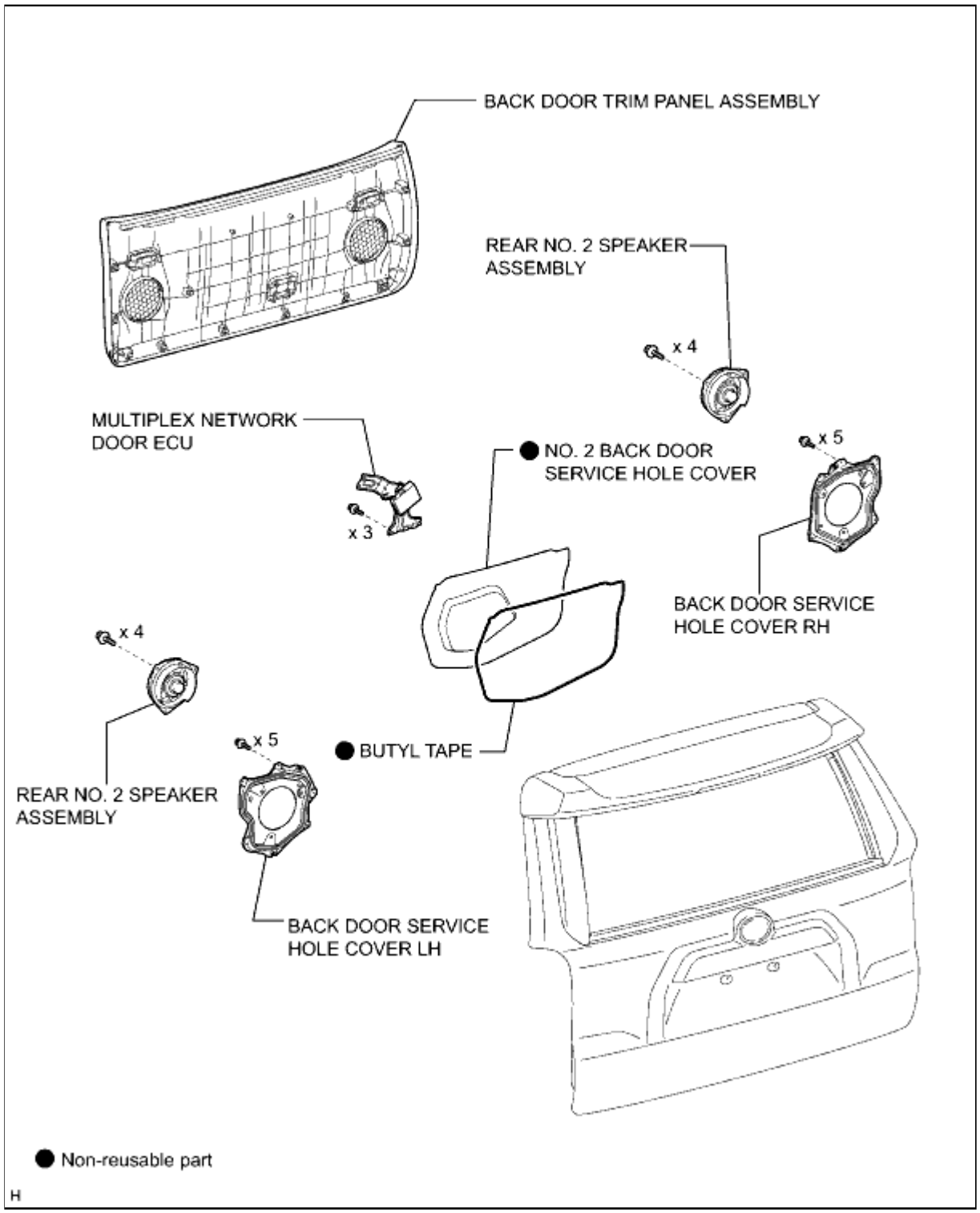
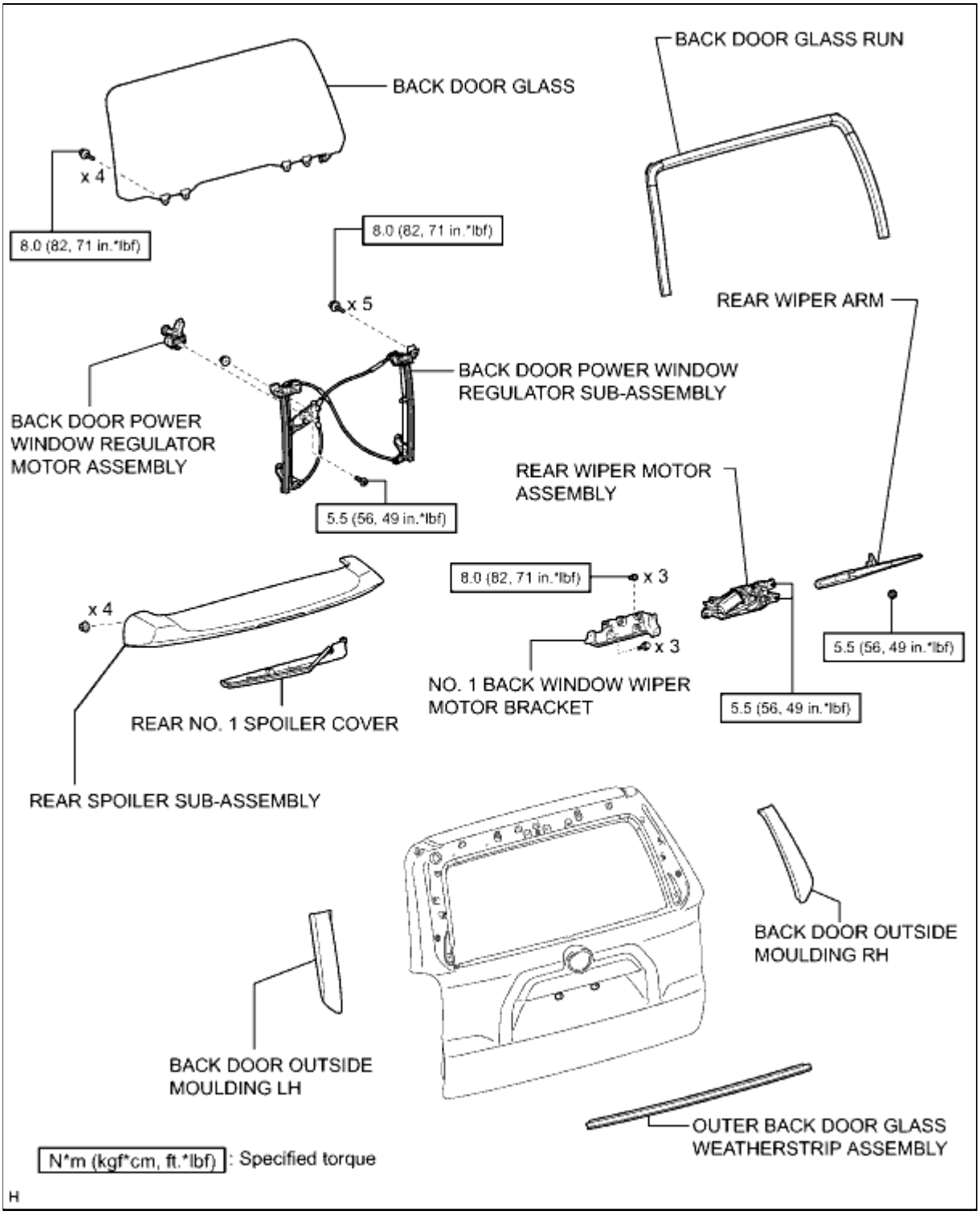
Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000046E2000X
Title: WINDOW / GLASS: BACK DOOR POWER WINDOW MOTOR: COMPONENTS (2010 4Runner)		

COMPONENTS

ILLUSTRATION



ILLUSTRATION



Last Modified: 5-10-2010	6.4 G	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000003EX4005X
Title: WINDOW / GLASS: BACK DOOR POWER WINDOW MOTOR: INSPECTION (2010 4Runner)		

INSPECTION

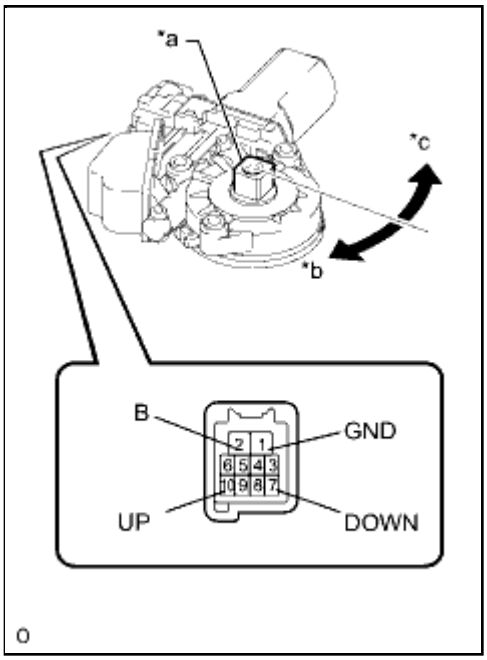
1. INSPECT BACK DOOR POWER WINDOW REGULATOR MOTOR ASSEMBLY

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

NOTICE:

Do not apply positive (+) battery voltage to any terminals except terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

OK:



MEASUREMENT CONDITION	SPECIFIED CONDITION
1. Connect the positive (+) battery terminal to terminal 2 (B), and connect the negative (-) battery terminal to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected to the battery, connect the negative (-) battery terminal to terminal 10 (UP). 3. Disconnect and reconnect the negative (-) battery terminal to terminal 10 (UP) within 1 second.	Motor gear rotates clockwise (Up)
1. Connect the positive (+) battery terminal to terminal 2 (B), and connect the negative (-) battery terminal to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected to the battery, connect the negative (-) battery terminal to terminal 7 (DOWN). 3. Disconnect and reconnect the	Motor gear rotates counterclockwise (Down)

	negative (-) battery terminal to terminal 7 (DOWN) within 1 second.	

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

CAUTION:

Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly to the door.

Text in Illustration

*a	Motor Gear
*b	Clockwise
*c	Counterclockwise

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002AJO00AX
Title: WINDOW / GLASS: BACK DOOR POWER WINDOW MOTOR: REMOVAL (2010 4Runner)		

REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

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

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO **.**

2. REMOVE BACK DOOR TRIM PANEL ASSEMBLY INFO

3. REMOVE REAR NO. 2 SPEAKER ASSEMBLY INFO

4. REMOVE MULTIPLEX NETWORK DOOR ECU INFO

5. REMOVE NO. 2 BACK DOOR SERVICE HOLE COVER INFO

6. REMOVE BACK DOOR SERVICE HOLE COVER LH INFO

7. REMOVE BACK DOOR SERVICE HOLE COVER RH INFO

8. REMOVE BACK DOOR OUTSIDE MOULDING LH INFO

9. REMOVE BACK DOOR OUTSIDE MOULDING RH

HINT:

Use the same procedure described for the LH side.

10. REMOVE REAR NO. 1 SPOILER COVER INFO

11. REMOVE REAR SPOILER SUB-ASSEMBLY INFO

12. REMOVE REAR WIPER ARM INFO

13. REMOVE REAR WIPER MOTOR ASSEMBLY INFO

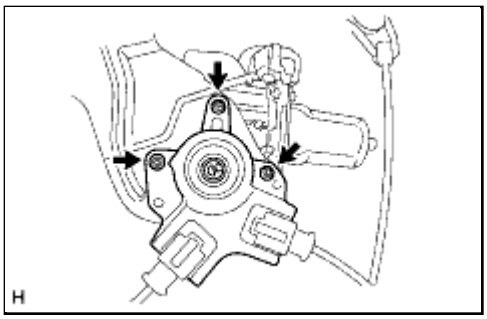
14. REMOVE NO. 1 BACK WINDOW WIPER MOTOR BRACKET INFO

15. REMOVE BACK DOOR GLASS RUN INFO

16. REMOVE BACK DOOR GLASS INFO

17. REMOVE OUTER BACK DOOR GLASS WEATHERSTRIP ASSEMBLY INFO

18. REMOVE BACK DOOR POWER WINDOW REGULATOR SUB-ASSEMBLY INFO



19. REMOVE BACK DOOR POWER WINDOW REGULATOR MOTOR ASSEMBLY

(a) Using a T25 "TORX" socket wrench, remove the 3 screws and power window regulator motor.

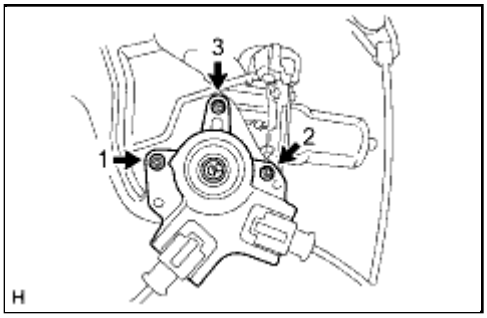
NOTICE:

Be careful when removing the screws as the motor may fall and become damaged.

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002AJP00AX
Title: WINDOW / GLASS: BACK DOOR POWER WINDOW MOTOR: INSTALLATION (2010 4Runner)		

INSTALLATION

1. INSTALL BACK DOOR POWER WINDOW REGULATOR MOTOR ASSEMBLY



(a) Using a T25 "TORX" socket wrench, install the power window regulator motor with the 3 screws.

HINT:

- Tighten the screws in the order shown in the illustration.
- A new back door power window regulator uses self-tapping screws to thread new installation holes when the self-tapping screws are installed.

Torque: 5.5 N·m (56 kgf·cm, 49in·lbf)

2. INSTALL BACK DOOR POWER WINDOW REGULATOR SUB-ASSEMBLY INFO

3. INSTALL OUTER BACK DOOR GLASS WEATHERSTRIP ASSEMBLY INFO

4. INSTALL BACK DOOR GLASS INFO

5. INSTALL BACK DOOR GLASS RUN INFO

6. REMOVE NO. 1 BACK WINDOW WIPER MOTOR BRACKET INFO

7. INSTALL REAR WIPER MOTOR ASSEMBLY INFO

8. INSTALL REAR WIPER ARM INFO

9. INSTALL REAR SPOILER SUB-ASSEMBLY INFO

10. INSTALL REAR NO. 1 SPOILER COVER INFO

11. INSTALL BACK DOOR OUTSIDE MOULDING LH INFO

12. INSTALL BACK DOOR OUTSIDE MOULDING RH

HINT:

Use the same procedure described for the LH side.

13. INSTALL BACK DOOR SERVICE HOLE COVER LH INFO

14. INSTALL BACK DOOR SERVICE HOLE COVER RH INFO

15. INSTALL NO. 2 BACK DOOR SERVICE HOLE COVER INFO

16. INSTALL MULTIPLEX NETWORK DOOR ECU INFO

17. INSTALL REAR NO. 2 SPEAKER ASSEMBLY INFO

18. INSTALL BACK DOOR TRIM PANEL ASSEMBLY INFO

19. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

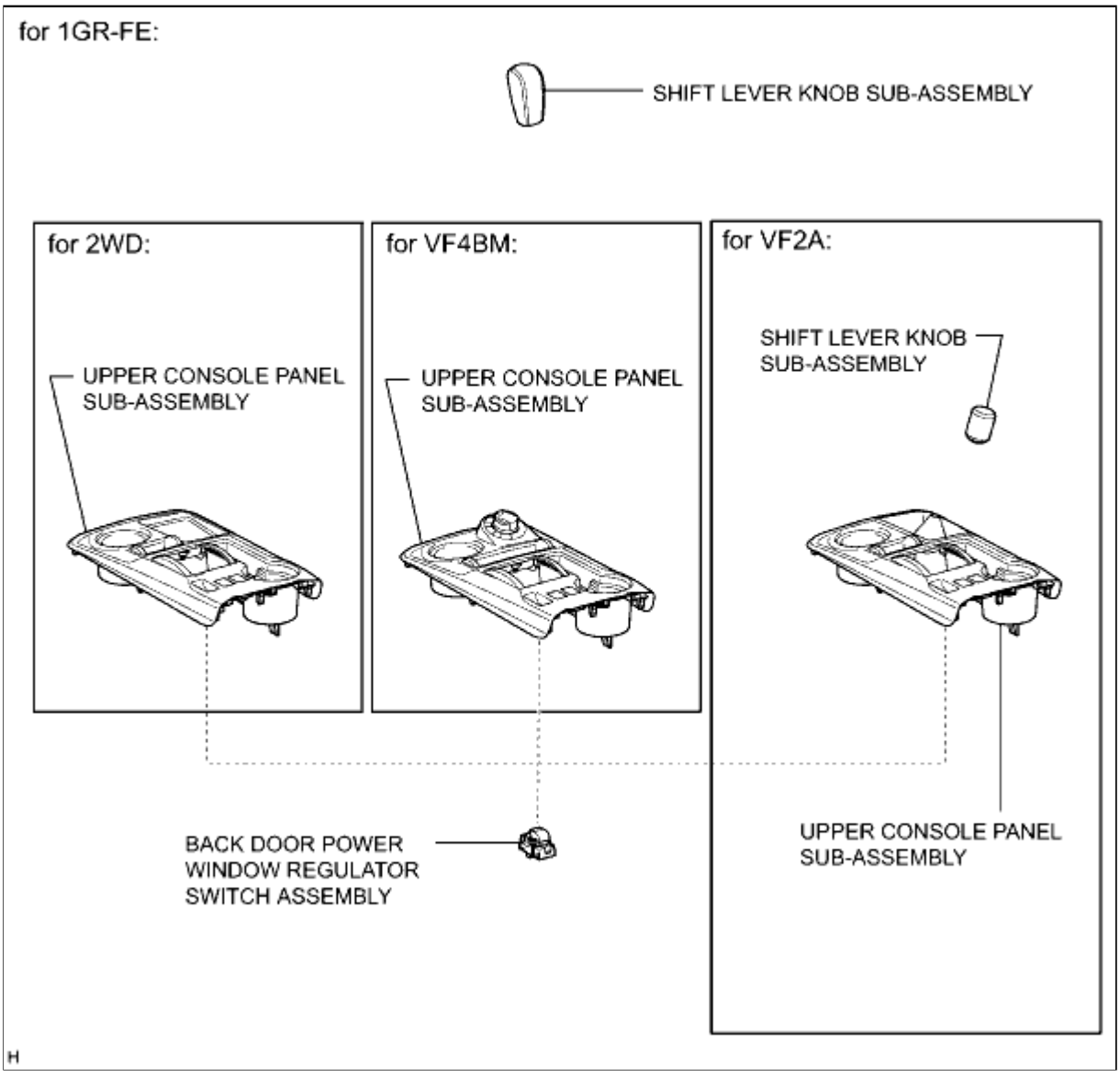
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO **.**

Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000461U000X
Title: WINDOW / GLASS: BACK POWER WINDOW SWITCH: COMPONENTS (2010 4Runner)		

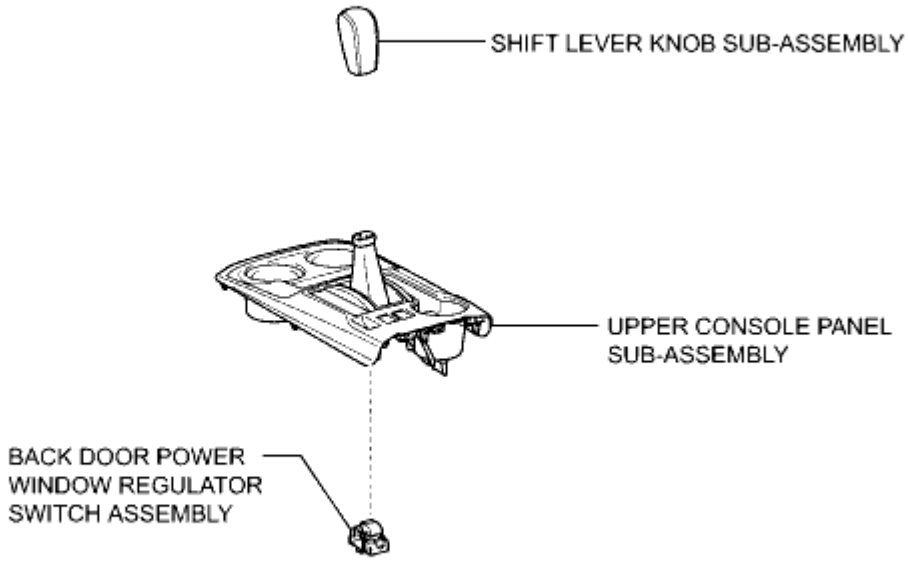
COMPONENTS

ILLUSTRATION



ILLUSTRATION

for 2TR-FE:



H

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000461V000X
Title: WINDOW / GLASS: BACK POWER WINDOW SWITCH: REMOVAL (2010 4Runner)		

REMOVAL

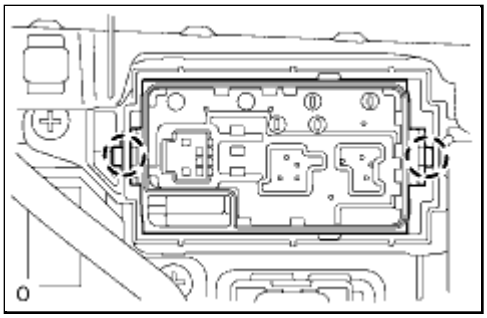
1. REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY (for 1GR-FE) INFO

2. REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY (for VF2A) INFO

3. REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY (for 2TR-FE) INFO

4. REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY (for 1GR-FE) INFO

5. REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY (for 2TR-FE) INFO



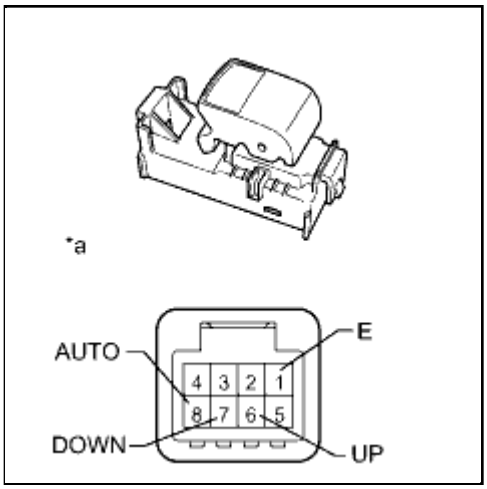
6. REMOVE BACK DOOR POWER WINDOW REGULATOR SWITCH ASSEMBLY

(a) Detach the 2 claws and remove the regulator switch.

Last Modified: 5-10-2010	6.4 G	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002R1J018X
Title: WINDOW / GLASS: BACK POWER WINDOW SWITCH: INSPECTION (2010 4Runner)		

INSPECTION

1. INSPECT BACK DOOR POWER WINDOW REGULATOR SWITCH ASSEMBLY



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

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
6 (UP) - 1 (E)	Manual up operation	Below 1 Ω
7 (DOWN) - 1 (E)	Manual down operation	Below 1 Ω
8 (AUTO) - 1 (GND)	Auto up/down operation	Below 1 Ω
6 (UP) - 1 (E)	Not operated	10 kΩ or higher
7 (DOWN) - 1 (E)	Not operated	10 kΩ or higher
8 (AUTO) - 1 (GND)	Not operated	10 kΩ or higher

If the result is not as specified, replace the back door power window regulator switch assembly.

Text in Illustration

*a	Component without harness connected (Back Door Power Window Regulator Switch Assembly)

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000461V002X
Title: WINDOW / GLASS: BACK POWER WINDOW SWITCH: INSTALLATION (2010 4Runner)		

INSTALLATION

1. INSTALL BACK DOOR POWER WINDOW REGULATOR SWITCH ASSEMBLY

(a) Attach the 2 claws to install the regulator switch.

2. INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY (for 2TR-FE) INFO

3. INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY (for 1GR-FE) INFO

4. INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY (for 2TR-FE) INFO

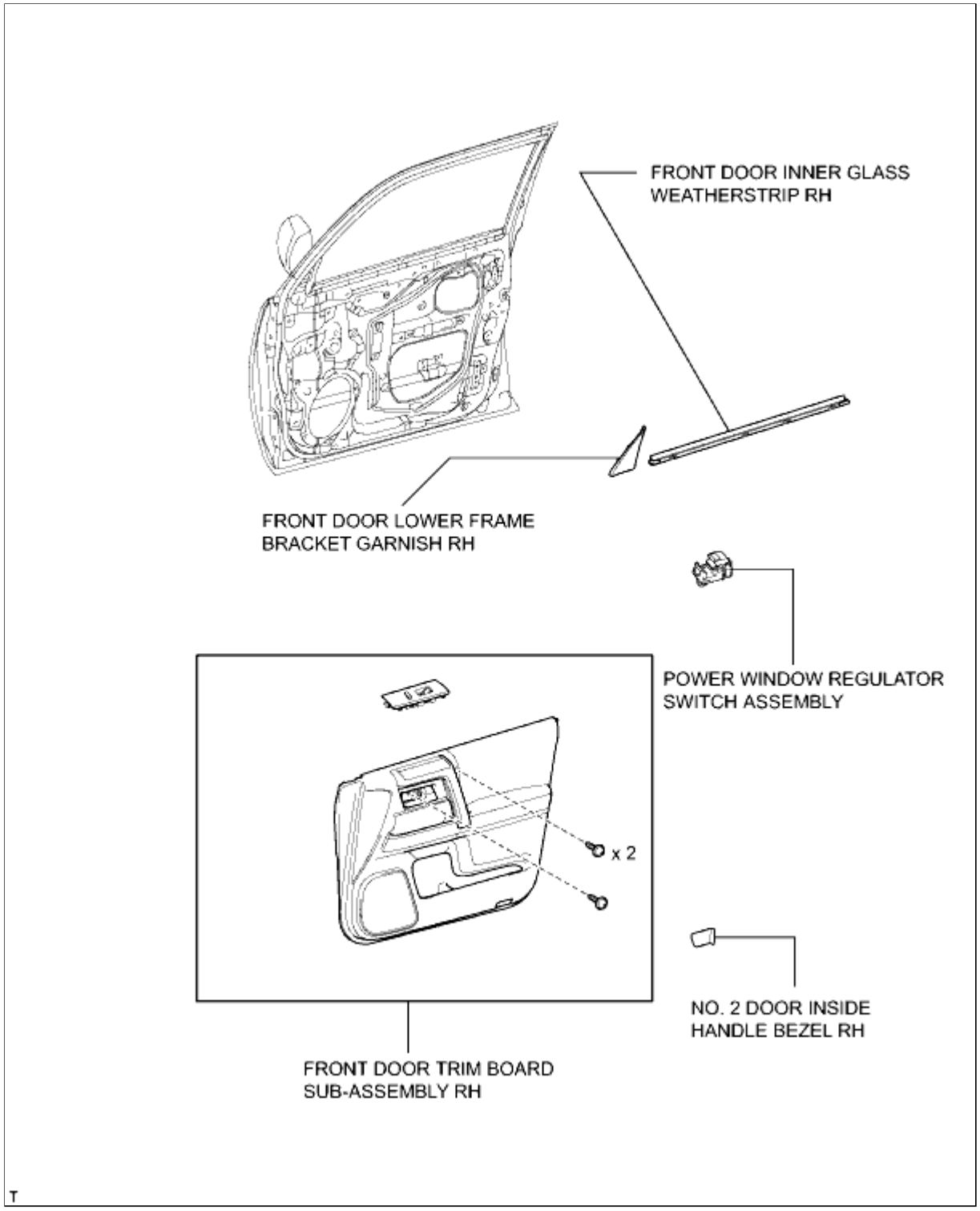
5. INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY (for VF2A) INFO

6. INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY (for 1GR-FE) INFO

Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002STT016X
Title: WINDOW / GLASS: FRONT PASSENGER SIDE POWER WINDOW SWITCH: COMPONENTS (2010 4Runner)		

COMPONENTS

ILLUSTRATION



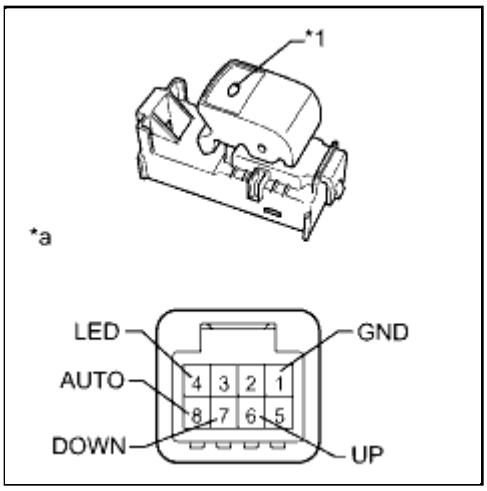
Last Modified: 5-10-2010	6.4 G	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002R1J013X
Title: WINDOW / GLASS: FRONT PASSENGER SIDE POWER WINDOW SWITCH: INSPECTION (2010 4Runner)		

INSPECTION

1. INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY

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

Standard Resistance:



TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
6 (UP) - 1 (GND)	Manual up operation	Below 1 Ω
7 (DOWN) - 1 (GND)	Manual down operation	Below 1 Ω
8 (AUTO) - 1 (GND)	Auto up/down operation	Below 1 Ω
6 (UP) - 1 (GND)	Not operated	10 kΩ or higher
7 (DOWN) - 1 (GND)	Not operated	10 kΩ or higher
8 (AUTO) - 1 (GND)	Not operated	10 kΩ or higher

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

(b) Check that the LED illuminates.

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

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → 4 (LED) Battery negative (-) → 1 (GND)	LED illuminates

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

Text in Illustration

*1	LED
*a	Front view of wire harness connector (Power Window Regulator Switch Assembly)

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000011QF03ZX
Title: WINDOW / GLASS: FRONT PASSENGER SIDE POWER WINDOW SWITCH: REMOVAL (2010 4Runner)		

REMOVAL

1. REMOVE FRONT DOOR LOWER FRAME BRACKET GARNISH RH INFO

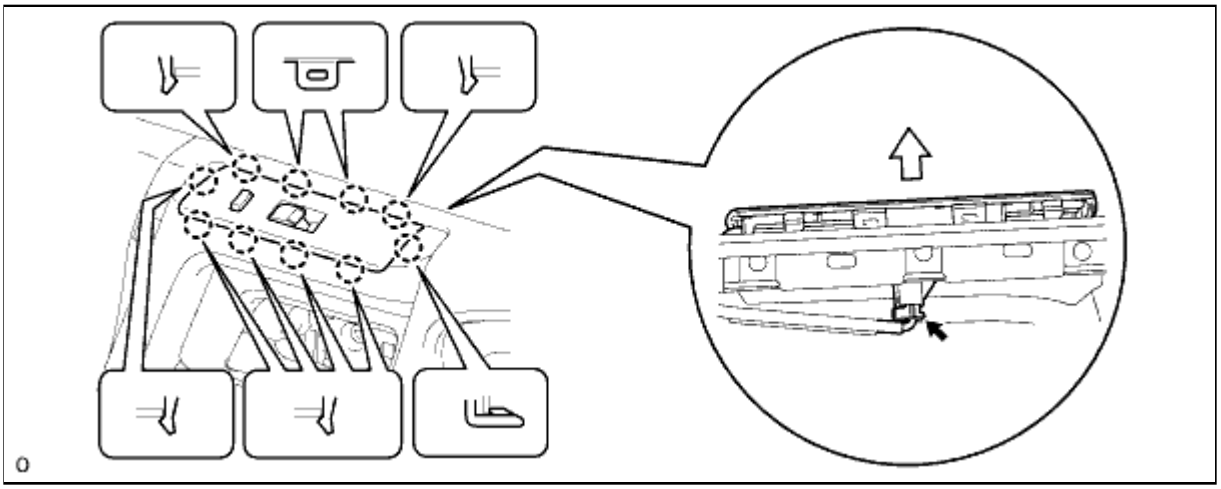
2. REMOVE NO. 2 DOOR INSIDE HANDLE BEZEL RH INFO

3. REMOVE FRONT DOOR TRIM BOARD SUB-ASSEMBLY RH INFO

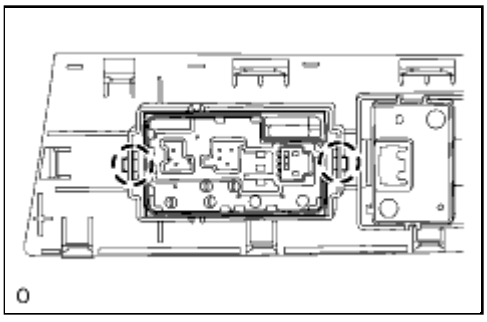
4. REMOVE FRONT DOOR INNER GLASS WEATHERSTRIP RH INFO

5. REMOVE POWER WINDOW REGULATOR SWITCH ASSEMBLY

(a) Detach the 10 claws from the backside and remove the power window regulator switch with base panel.



(b) Disconnect the connectors.



(c) Detach the 2 claws and remove the power window regulator switch.

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000011QG03ZX
Title: WINDOW / GLASS: FRONT PASSENGER SIDE POWER WINDOW SWITCH: INSTALLATION (2010 4Runner)		

INSTALLATION

1. INSTALL POWER WINDOW REGULATOR SWITCH ASSEMBLY

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

(b) Connect the connectors.

(c) Attach the 10 claws to install the power window regulator switch with base panel.

2. INSTALL FRONT DOOR INNER GLASS WEATHERSTRIP RH INFO

3. INSTALL FRONT DOOR TRIM BOARD SUB-ASSEMBLY RH INFO

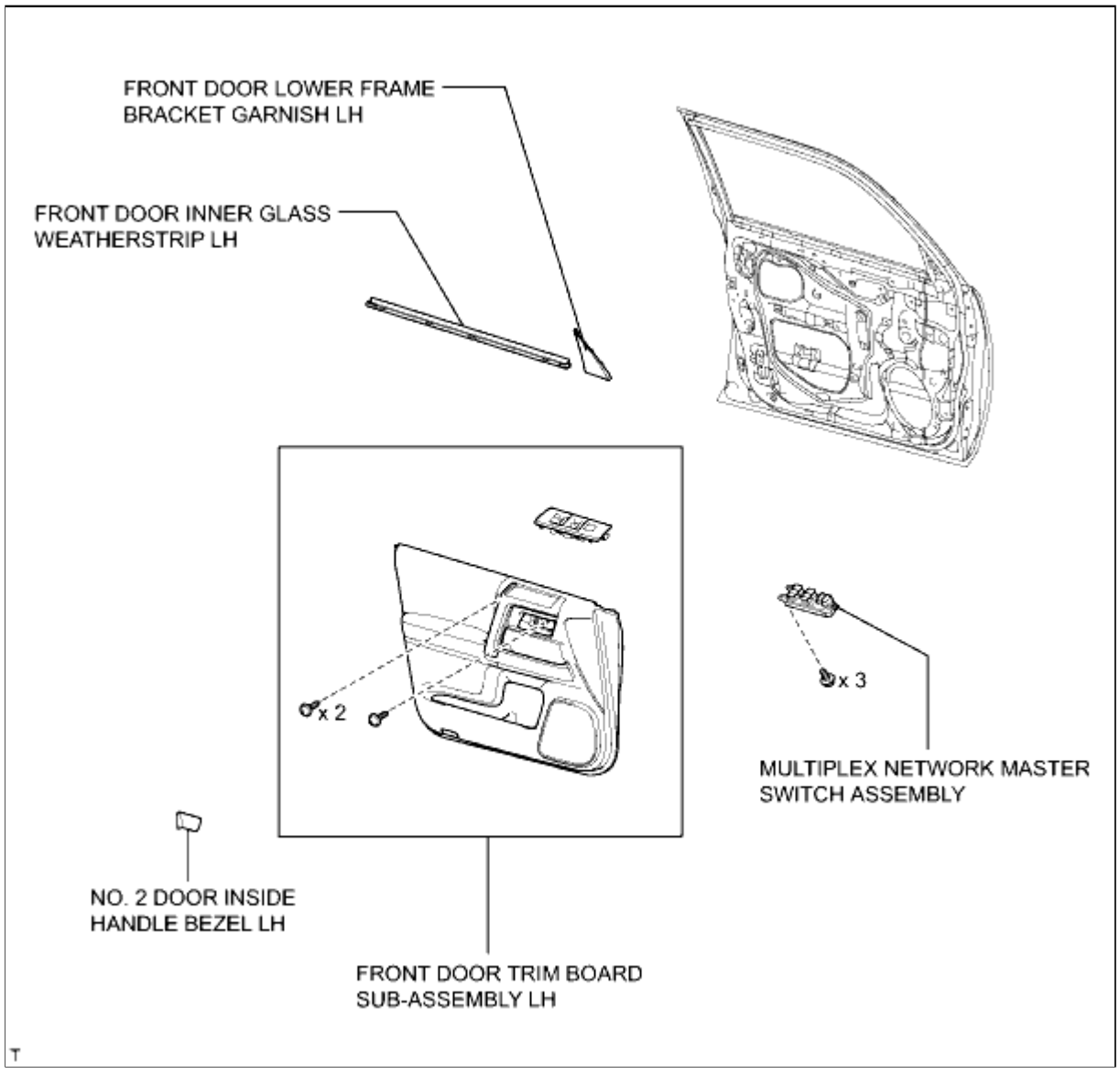
4. INSTALL NO. 2 DOOR INSIDE HANDLE BEZEL RH INFO

5. INSTALL FRONT DOOR LOWER FRAME BRACKET GARNISH RH INFO

Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002STW010X
Title: WINDOW / GLASS: POWER WINDOW MASTER SWITCH: COMPONENTS (2010 4Runner)		

COMPONENTS

ILLUSTRATION



Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000011QF040X
Title: WINDOW / GLASS: POWER WINDOW MASTER SWITCH: REMOVAL (2010 4Runner)		

REMOVAL

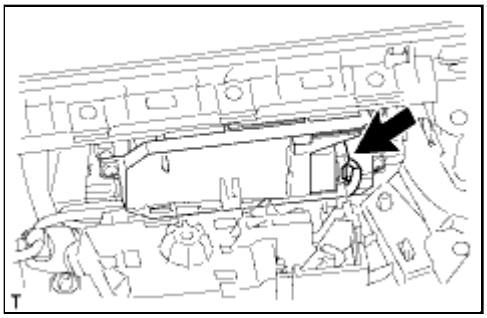
1. REMOVE FRONT DOOR LOWER FRAME BRACKET GARNISH LH INFO

2. REMOVE NO. 2 DOOR INSIDE HANDLE BEZEL LH INFO

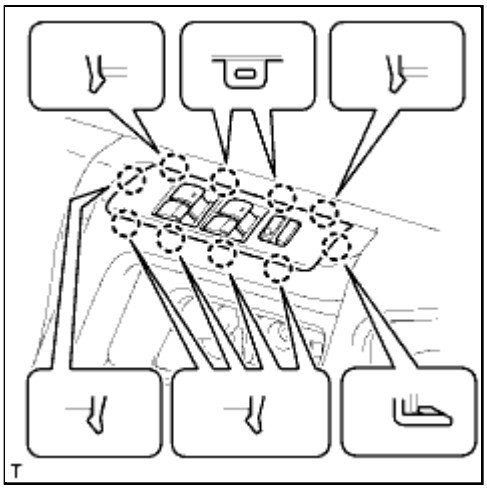
3. REMOVE FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH INFO

4. REMOVE FRONT DOOR INNER GLASS WEATHERSTRIP LH INFO

5. REMOVE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

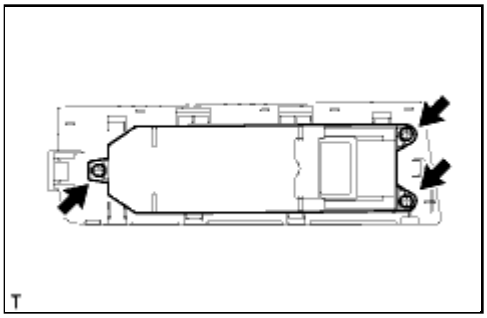


(a) Disconnect the connector.



(b) Detach the 10 claws from the backside and remove the multiplex network master switch with base panel.

(c) Remove the 3 screws and multiplex network master switch assembly.



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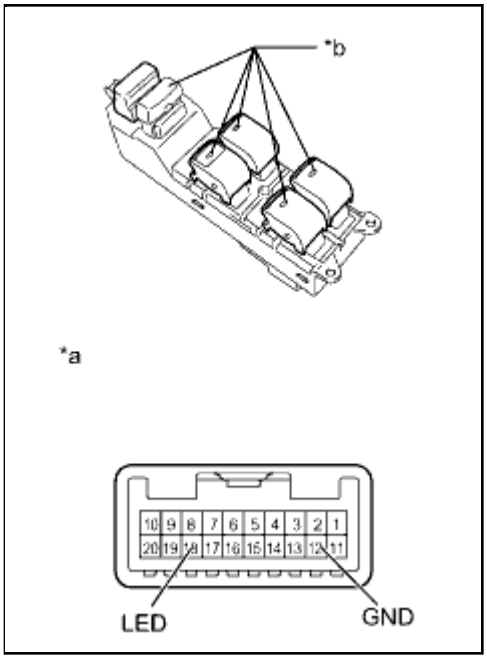
Last Modified: 5-10-2010	6.4 G	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002R1I013X
Title: WINDOW / GLASS: POWER WINDOW MASTER SWITCH: INSPECTION (2010 4Runner)		

INSPECTION



1. INSPECT MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

(a) Check that the LED illuminates.

(1) Apply battery voltage to the master switch and check that the LEDs illuminate.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → 18 (LED) Battery negative (-) → 12 (GND)	LEDs illuminate

If the result is not as specified, replace the multiplex network master switch assembly.

Text in Illustration

*a	Component without harness connected (Multiplex Network Master Switch Assembly)
*b	LED

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000011QG040X
Title: WINDOW / GLASS: POWER WINDOW MASTER SWITCH: INSTALLATION (2010 4Runner)		

INSTALLATION

1. INSTALL MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

(a) Install the the multiplex network master switch assembly with the 3 screws.

(b) Attach the 10 claws to install the multiplex network master switch with base panel.

(c) Connect the connector.

2. INSTALL FRONT DOOR INNER GLASS WEATHERSTRIP LH INFO

3. INSTALL FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH INFO

4. INSTALL NO. 2 DOOR INSIDE HANDLE BEZEL LH INFO

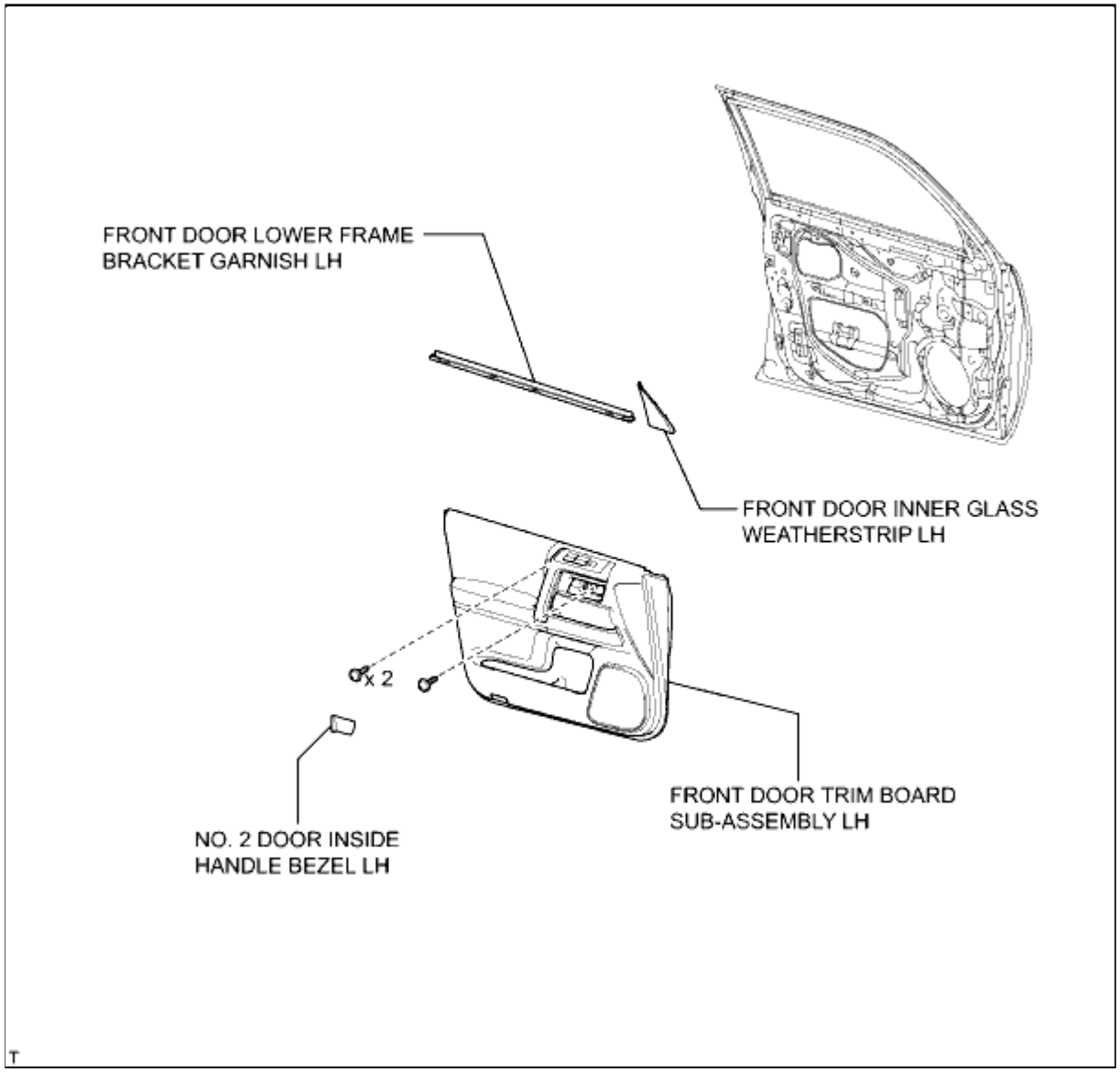
5. INSTALL FRONT DOOR LOWER FRAME BRACKET GARNISH LH INFO

6. INSTALL NO. 2 DOOR INSIDE HANDLE BEZEL LH INFO

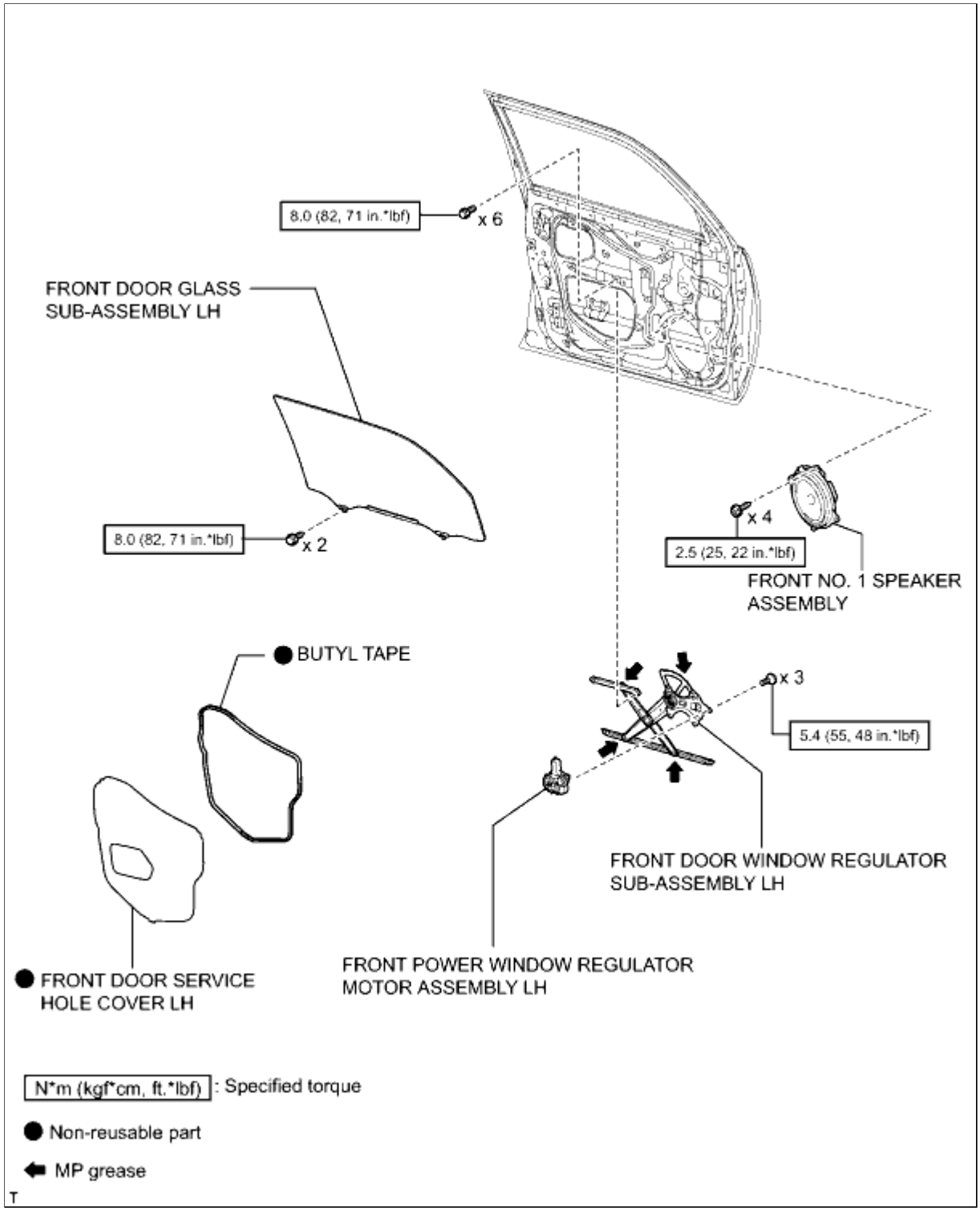
Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000039BD008X
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Front Door): COMPONENTS (2010 4Runner)		

COMPONENTS

ILLUSTRATION



ILLUSTRATION



Last Modified: 5-10-2010	6.4 G	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002R1L01MX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Front Door): INSPECTION (2010 4Runner)		

INSPECTION

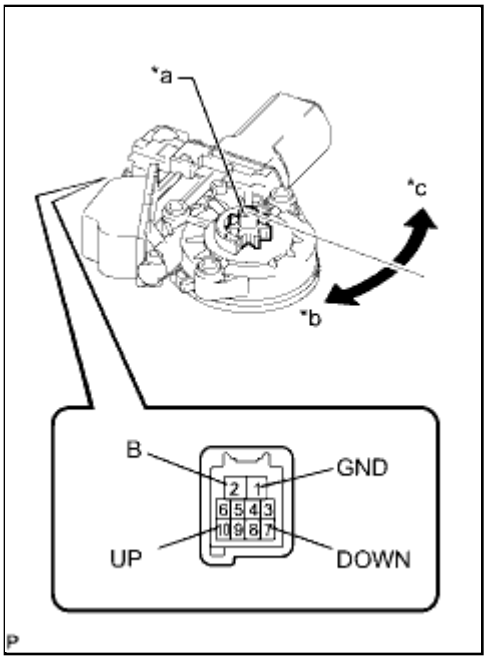
1. INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

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

NOTICE:

Do not apply positive (+) battery voltage to any terminals except terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

OK:



MEASUREMENT CONDITION	SPECIFIED CONDITION
1. Connect the positive (+) battery terminal to terminal 2 (B), and connect the negative (-) battery terminal to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected to the battery, connect the negative (-) battery terminal to terminal 10 (UP). 3. Disconnect and reconnect the negative (-) battery terminal to terminal 10 (UP) within 1 second.	Motor gear rotates clockwise (Up)
1. Connect the positive (+) battery terminal to terminal 2 (B), and connect the negative (-) battery terminal to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected to the battery, connect the negative (-) battery terminal to terminal 7 (DOWN).	Motor gear rotates counterclockwise (Down)

3. Disconnect and reconnect the negative (-) battery terminal to terminal 7 (DOWN) within 1 second.	

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

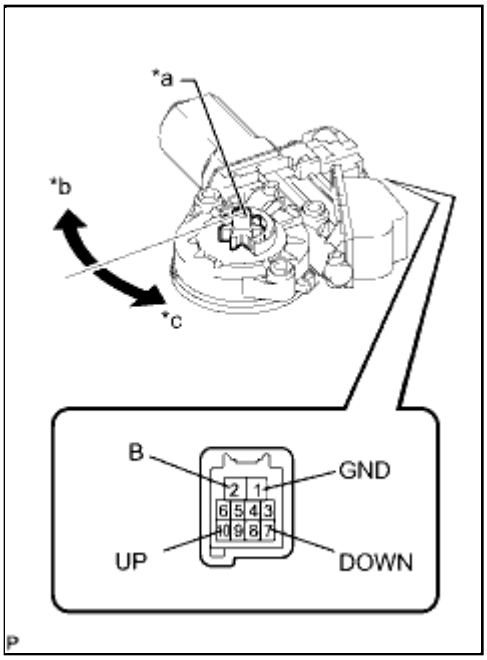
CAUTION:

Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly to the door.

Text in Illustration

*a	Motor Gear
*b	Clockwise
*c	Counterclockwise

2. INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH



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

NOTICE:

Do not apply positive (+) battery voltage to any terminals except terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
1. Connect the positive (+) battery terminal to terminal 2 (B), and connect the negative (-) battery terminal to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected to the battery, connect the negative (-) battery terminal to terminal 10 (UP). 3. Disconnect and reconnect the	Motor gear rotates counterclockwise (Up)

negative (-) battery terminal to terminal 10 (UP) within 1 second.	
1. Connect the positive (+) battery terminal to terminal 2 (B), and connect the negative (-) battery terminal to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected to the battery, connect the negative (-) battery terminal to terminal 7 (DOWN). 3. Disconnect and reconnect the negative (-) battery terminal to terminal 7 (DOWN) within 1 second.	Motor gear rotates clockwise (Down)

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

CAUTION:

Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly to the door.

Text in Illustration

*a	Motor Gear
*b	Clockwise
*c	Counterclockwise

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000011QF03YX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Front Door): REMOVAL (2010 4Runner)		

REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

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

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO **.**

2. REMOVE FRONT DOOR LOWER FRAME BRACKET GARNISH LH INFO

3. REMOVE NO. 2 DOOR INSIDE HANDLE BEZEL LH INFO

4. REMOVE FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH INFO

5. REMOVE FRONT DOOR INNER GLASS WEATHERSTRIP LH INFO

6. REMOVE FRONT NO. 1 SPEAKER ASSEMBLY INFO

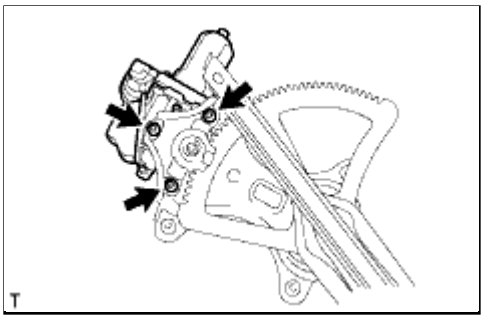
7. REMOVE FRONT DOOR SERVICE HOLE COVER LH INFO

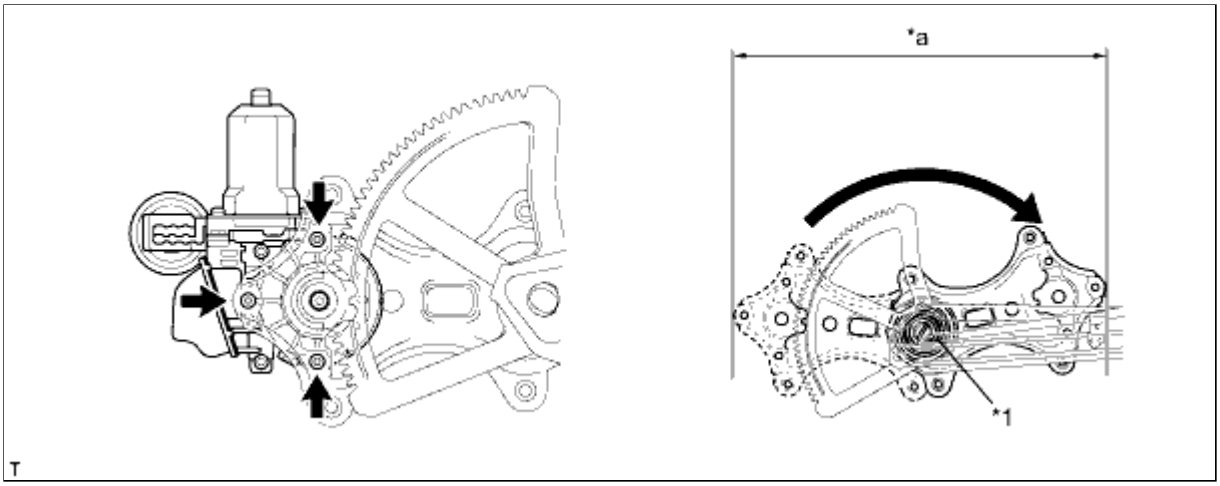
8. REMOVE FRONT DOOR GLASS SUB-ASSEMBLY LH INFO

9. REMOVE FRONT DOOR WINDOW REGULATOR SUB-ASSEMBLY LH INFO

10. REMOVE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

(a) Using a T25 "TORX" socket wrench, remove the 3 screws and power window regulator motor.





Text in Illustration

*1	Spring	-	-
*a	Range of Movement	-	-

CAUTION:

Do not place your finger, etc. within the range of movement of the window regulator. When removing the power window regulator motor, the force of the spring causes the window regulator to move in the direction of the arrow shown in the illustration (the direction in which the window rises), which may cause injury.

NOTICE:

Be careful when removing the screws as the motor may fall and become damaged.

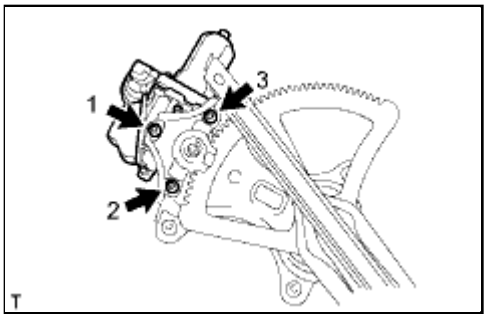
Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000011QG03YX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Front Door): INSTALLATION (2010 4Runner)		

INSTALLATION

1. INSTALL FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

NOTICE:

The regulator arm must be below the intermediate position when installing the power window regulator motor.



(a) Using a T25 "TORX" socket wrench, install the power window regulator motor with the 3 screws.

HINT:

- Tighten the screws in the order shown in the illustration.
- A new front window regulator uses self-tapping screws to thread new installation holes when the self-tapping screws are installed.

Torque: 5.4 N·m (55 kgf·cm, 48in·lbf)

2. INSTALL FRONT DOOR WINDOW REGULATOR SUB-ASSEMBLY LH INFO

3. INSTALL FRONT DOOR GLASS SUB-ASSEMBLY LH INFO

4. INSTALL FRONT DOOR SERVICE HOLE COVER LH INFO

5. INSTALL FRONT NO. 1 SPEAKER ASSEMBLY INFO

6. INSTALL FRONT DOOR INNER GLASS WEATHERSTRIP LH INFO

7. INSTALL FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH INFO

8. INSTALL NO. 2 DOOR INSIDE HANDLE BEZEL LH INFO

9. INSTALL FRONT DOOR LOWER FRAME BRACKET GARNISH LH INFO

10. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO .

11. INITIALIZE POWER WINDOW CONTROL SYSTEM

(a) Initialize the power window control system INFO .

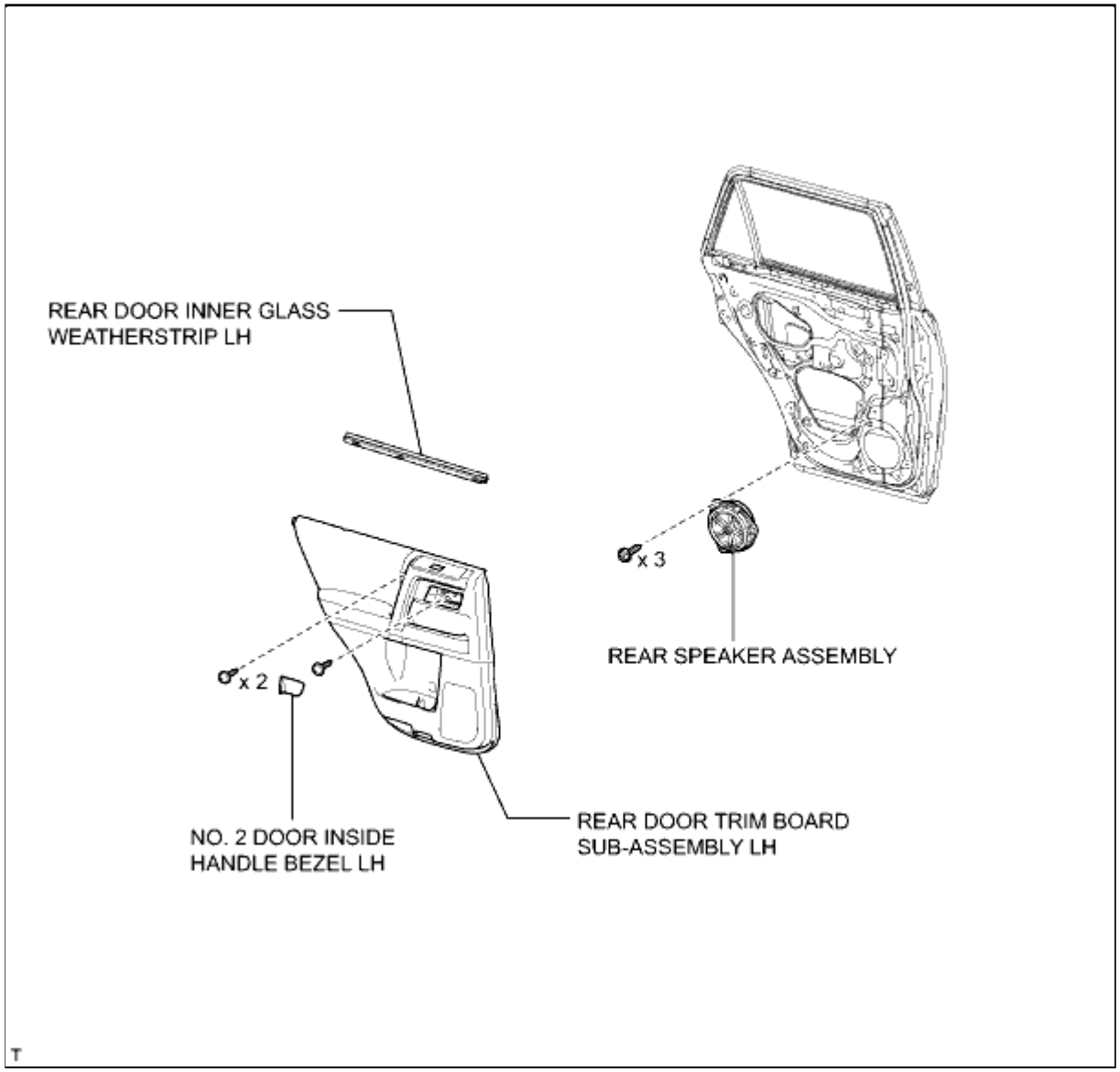
12. CHECK SRS WARNING LIGHT

(a) Check the SRS warning light INFO .

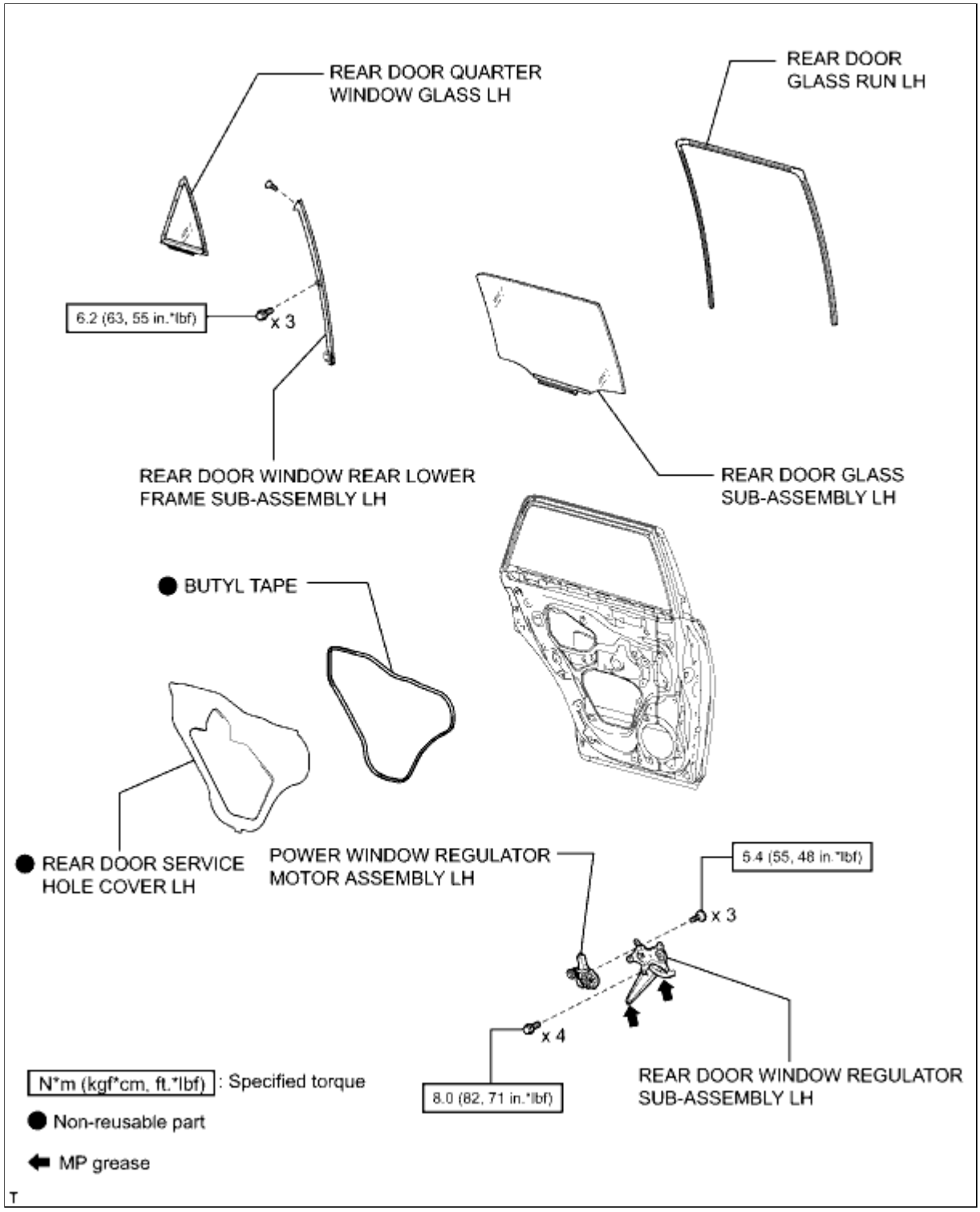
Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000039BF008X
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Rear Door): COMPONENTS (2010 4Runner)		

COMPONENTS

ILLUSTRATION



ILLUSTRATION



T

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000011RX02LX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Rear Door): REMOVAL (2010 4Runner)		

REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO .

2. REMOVE NO. 2 DOOR INSIDE HANDLE BEZEL LH INFO

3. REMOVE REAR DOOR TRIM BOARD SUB-ASSEMBLY LH INFO

4. REMOVE REAR DOOR INNER GLASS WEATHERSTRIP LH INFO

5. REMOVE REAR SPEAKER ASSEMBLY INFO

6. REMOVE REAR DOOR SERVICE HOLE COVER LH INFO

7. REMOVE REAR DOOR GLASS RUN LH INFO

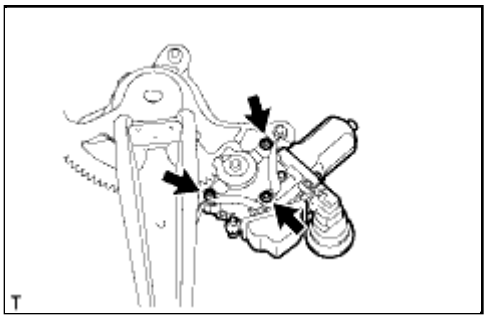
8. REMOVE REAR DOOR WINDOW REAR LOWER FRAME SUB-ASSEMBLY LH INFO

9. REMOVE REAR DOOR QUARTER WINDOW GLASS LH INFO

10. REMOVE REAR DOOR GLASS SUB-ASSEMBLY LH INFO

11. REMOVE REAR DOOR WINDOW REGULATOR SUB-ASSEMBLY LH INFO

12. REMOVE POWER WINDOW REGULATOR MOTOR ASSEMBLY LH



(a) Using a T25 "TORX" socket wrench, remove the 3 screws and power window regulator motor.

Last Modified: 5-10-2010	6.4 G	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002R1L01NX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Rear Door): INSPECTION (2010 4Runner)		

INSPECTION

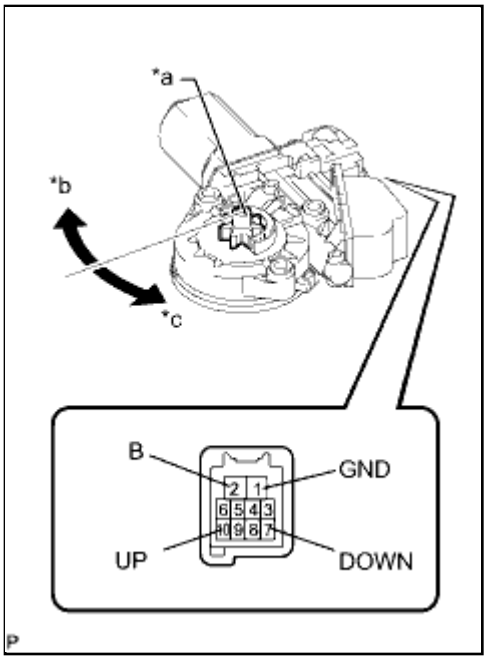
1. INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

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

NOTICE:

Do not apply positive (+) battery voltage to any terminals except terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

OK:



MEASUREMENT CONDITION	SPECIFIED CONDITION
1. Connect the positive (+) battery terminal to terminal 2 (B), and connect the negative (-) battery cable to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected to the battery, connect the negative (-) battery terminal to terminal 10 (UP). 3. Disconnect and reconnect the negative (-) battery terminal to terminal 10 (UP) within 1 second.	Motor gear rotates clockwise (Up)
1. Connect the positive (+) battery terminal to terminal 2 (B), and connect the negative (-) battery terminal to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected to the battery, connect the negative (-) battery terminal to terminal 7 (DOWN).	Motor gear rotates counterclockwise (Down)

3. Disconnect and reconnect the negative (-) battery terminal to terminal 7 (DOWN) within 1 second.	

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

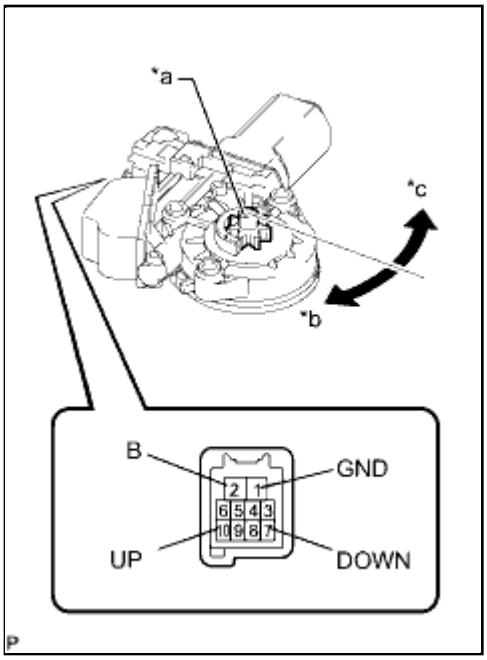
CAUTION:

Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly to the door.

Text in Illustration

*a	Motor Gear
*b	Clockwise
*c	Counterclockwise

2. INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH



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

NOTICE:

Do not apply positive (+) battery voltage to any terminals except terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
1. Connect the positive (+) battery terminal to terminal 2 (B), and connect the negative (-) battery terminal to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected to the battery, connect the negative (-) battery terminal to terminal 10 (UP). 3. Disconnect and reconnect the	Motor gear rotates counterclockwise (Up)

negative (-) battery terminal to terminal 10 (UP) within 1 second.	
1. Connect the positive (+) battery terminal to terminal 2 (B), and connect the negative (-) battery terminal to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected to the battery, connect the negative (-) battery terminal to terminal 7 (DOWN). 3. Disconnect and reconnect the negative (-) battery terminal to terminal 7 (DOWN) within 1 second.	Motor gear rotates clockwise (Down)

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

CAUTION:

Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly to the door.

Text in Illustration

*a	Motor Gear
*b	Clockwise
*c	Counterclockwise

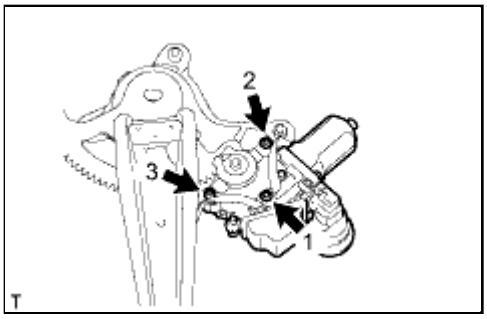
Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000011RY02LX
Title: WINDOW / GLASS: POWER WINDOW REGULATOR MOTOR (for Rear Door): INSTALLATION (2010 4Runner)		

INSTALLATION

1. INSTALL POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

NOTICE:

The regulator arm must be below the intermediate position when installing the rear power window regulator motor assembly.



(a) Using a T25 "TORX" socket wrench, install the power window regulator motor with the 3 screws.

HINT:

- Tighten the screws in the order shown in the illustration.
- A new power window regulator uses self-tapping screws to thread new installation holes when the self-tapping screws are installed.

Torque: 5.4 N·m (55 kgf·cm, 48in·lbf)

2. INSTALL REAR DOOR WINDOW REGULATOR SUB-ASSEMBLY LH INFO

3. INSTALL REAR DOOR GLASS SUB-ASSEMBLY LH INFO

4. INSTALL REAR DOOR QUARTER WINDOW GLASS LH INFO

5. INSTALL REAR DOOR WINDOW REAR LOWER FRAME SUB-ASSEMBLY LH INFO

6. INSTALL REAR DOOR GLASS RUN LH INFO

7. INSTALL REAR DOOR SERVICE HOLE COVER LH INFO

8. INSTALL REAR SPEAKER ASSEMBLY INFO

9. INSTALL REAR DOOR INNER GLASS WEATHERSTRIP LH INFO

10. INSTALL REAR DOOR TRIM BOARD SUB-ASSEMBLY LH INFO

11. INSTALL NO. 2 DOOR INSIDE HANDLE BEZEL LH INFO

12. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO **.**

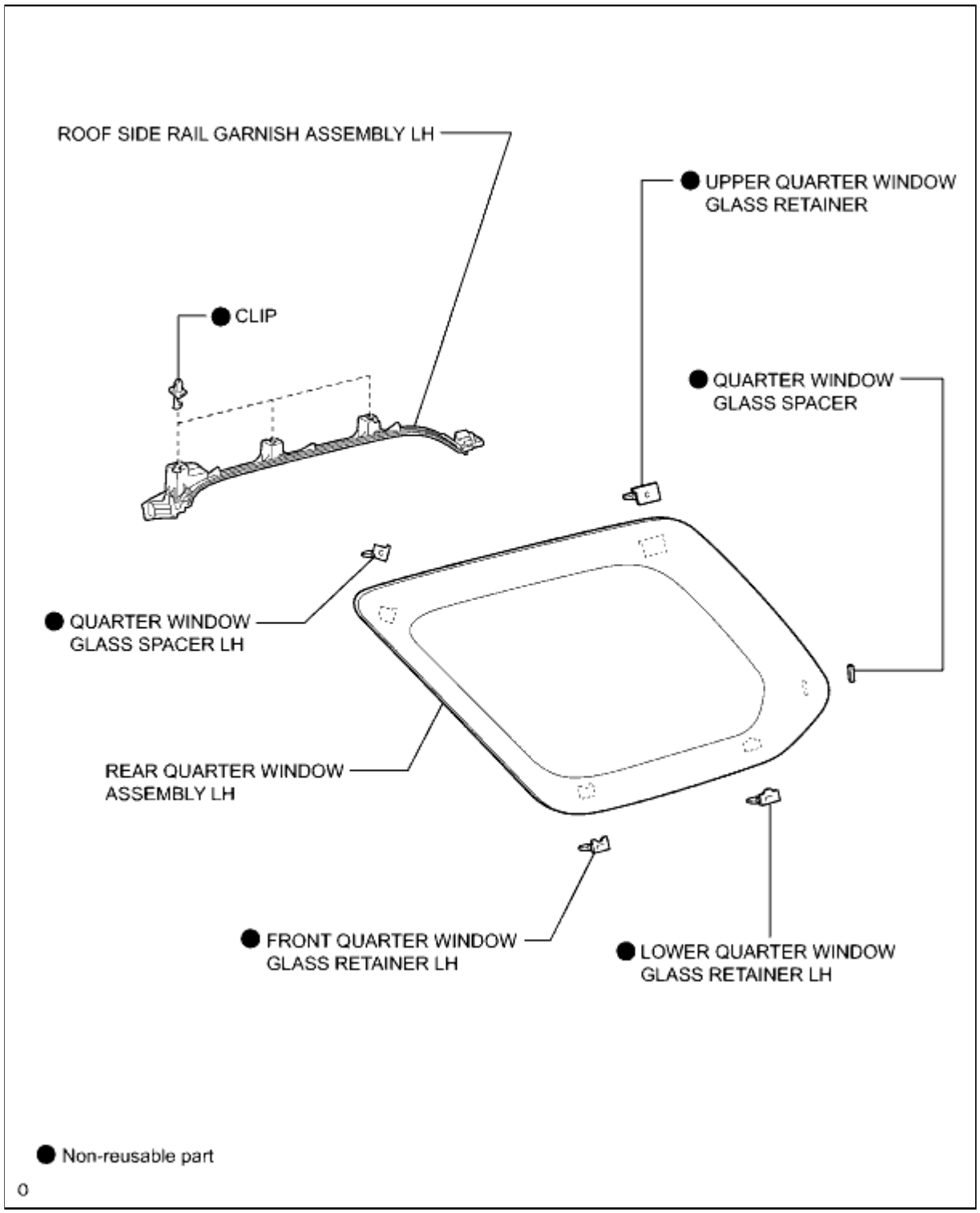
13. INITIALIZE POWER WINDOW CONTROL SYSTEM

(a) Initialize the power window control system INFO .

Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000039DP008X
Title: WINDOW / GLASS: QUARTER WINDOW GLASS: COMPONENTS (2010 4Runner)		

COMPONENTS

ILLUSTRATION



Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000192A01QX
Title: WINDOW / GLASS: QUARTER WINDOW GLASS: REMOVAL (2010 4Runner)		

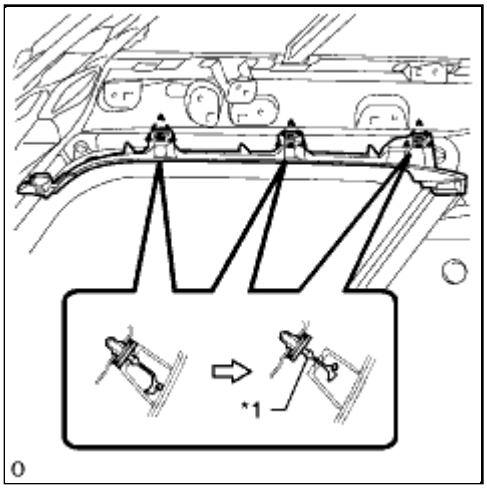
REMOVAL

HINT:

- Use the same procedure for the RH and LH sides.
- The procedure listed below is for the LH side.

1. REMOVE ROOF HEADLINING ASSEMBLY

(a) Remove the roof headlining assembly INFO .



2. REMOVE ROOF SIDE RAIL GARNISH ASSEMBLY LH

(a) Detach the 3 clips.

(b) Cut off clip A.

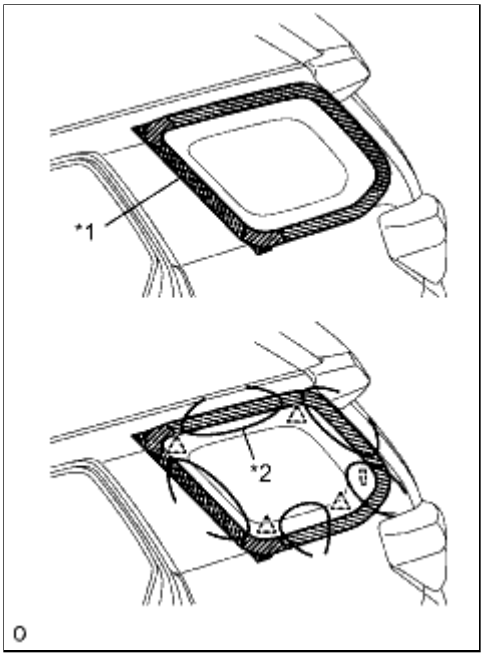
(c) Detach the 3 guides and remove the roof side rail garnish.

(d) Remove clip A from the vehicle body.

Text in Illustration

*1	Clip A

3. REMOVE REAR QUARTER WINDOW ASSEMBLY LH



HINT:

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

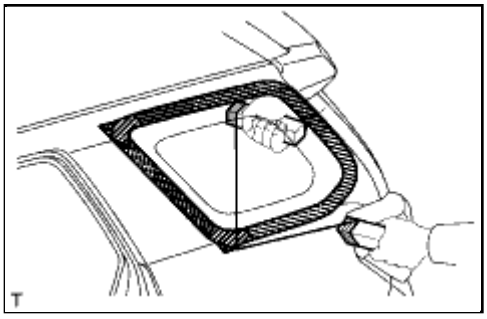
NOTICE:

When separating the quarter window glass from the vehicle, be careful not to damage the vehicle paint or interior/exterior ornaments.

(a) From the interior, insert a piano wire between the vehicle body and quarter window glass as shown in the illustration.

Text in Illustration

*1	Protective Tape
*2	Wire



(b) Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

(c) Cut through the adhesive by pulling the piano wire around the quarter window glass.

NOTICE:

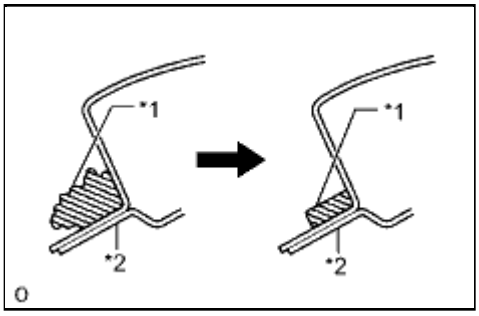
Leave as much adhesive on the vehicle body as possible when removing the quarter window glass.

(d) Using suction cups, remove the quarter window glass.

4. CLEAN VEHICLE BODY

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

Text in Illustration



*1	Adhesive
*2	Vehicle Body

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

HINT:

Leave as much adhesive on the vehicle body as possible.

NOTICE:

Be careful not to damage the vehicle body.

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

HINT:

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

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000192801SX
Title: WINDOW / GLASS: QUARTER WINDOW GLASS: INSTALLATION (2010 4Runner)		

INSTALLATION

HINT:

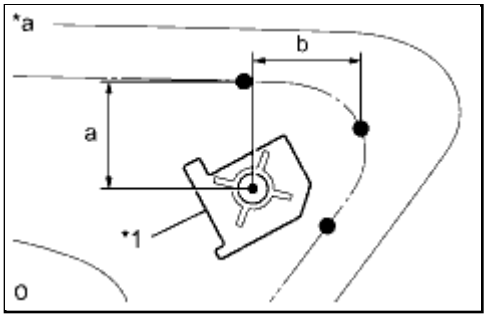
- Use the same procedure for the RH and LH sides.
- The procedure listed below is for the LH side.
- A bolt without a torque specification is shown in the standard bolt chart INFO.

1. INSTALL QUARTER WINDOW GLASS SPACER LH

(a) Apply Primer G to the window where the spacer will be installed.

Standard:

AREA	SPECIFIED CONDITION
a	32.1 mm (1.26 in.)
b	24.8 mm (0.976 in.)



Text in Illustration

*1	Spacer
*a	Backside

NOTICE:

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

HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

(b) Remove the peeling paper from a new spacer. Install the spacer to the quarter window at the location shown in the illustration.

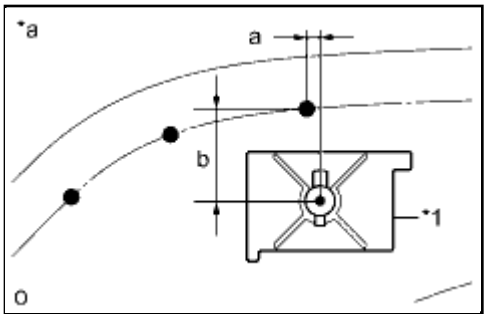
2. INSTALL UPPER QUARTER WINDOW GLASS

RETAINER

(a) Apply Primer G to the window where the retainer will be installed.

Standard:

AREA	SPECIFIED CONDITION
a	3.8 mm (0.150 in.)
b	27.9 mm (1.10 in.)



Text in Illustration

*1	Retainer
*a	Backside

NOTICE:

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

HINT:

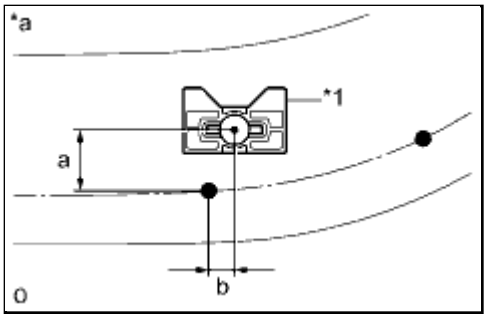
If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

(b) Remove the peeling paper from a new retainer. Install the retainer to the quarter window at the location shown in the illustration.

3. INSTALL FRONT QUARTER WINDOW GLASS RETAINER LH

(a) Apply Primer G to the window where the retainer will be installed.

Standard:



AREA	SPECIFIED CONDITION
a	18.9 mm (0.744 in.)
b	7.0 mm (0.276 in.)

Text in Illustration

*1	Retainer
*a	Backside

NOTICE:

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

HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

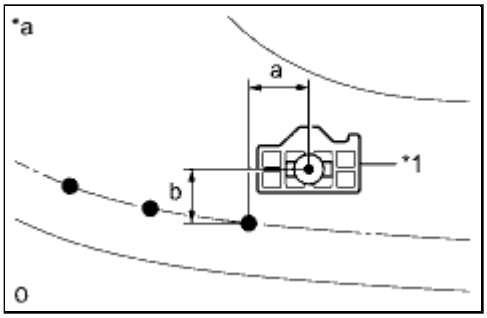
(b) Remove the peeling paper from a new retainer. Install the retainer to the quarter window at the location shown in the illustration.

4. INSTALL LOWER QUARTER WINDOW GLASS RETAINER LH

(a) Apply Primer G to the window where the retainer will be installed.

Standard:

AREA	SPECIFIED CONDITION
a	15.1 mm (0.594 in.)
b	17.1 mm (0.673 in.)



Text in Illustration

*1	Retainer
*a	Backside

NOTICE:

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

HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer

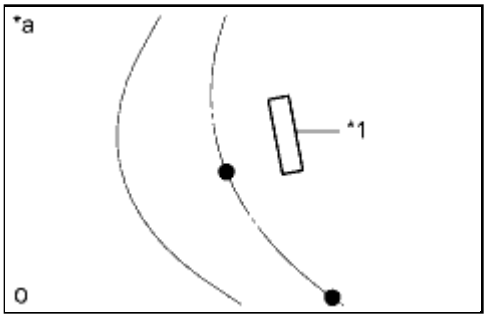
before it dries.

(b) Remove the peeling paper from a new retainer. Install the retainer to the quarter window at the location shown in the illustration.

5. INSTALL QUARTER WINDOW GLASS SPACER

(a) Apply Primer G to the window where the spacer will be installed.

Text in Illustration



*1	Spacer
*a	Backside

NOTICE:

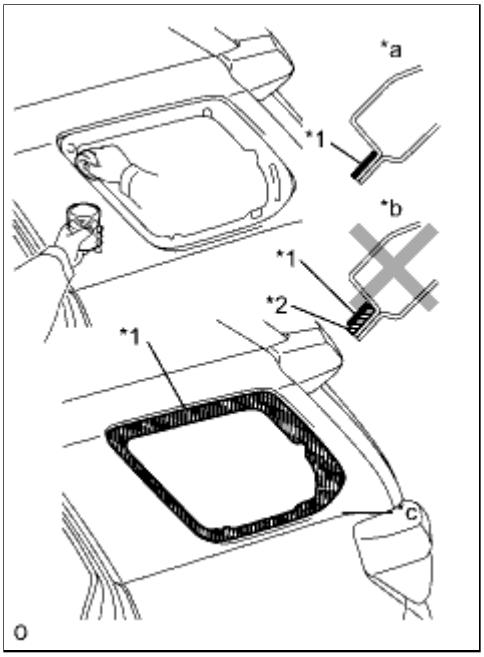
- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.

HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

(b) Remove the peeling paper from a new spacer. Install the spacer to the quarter window at the location shown in the illustration.

6. INSTALL REAR QUARTER WINDOW ASSEMBLY LH



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

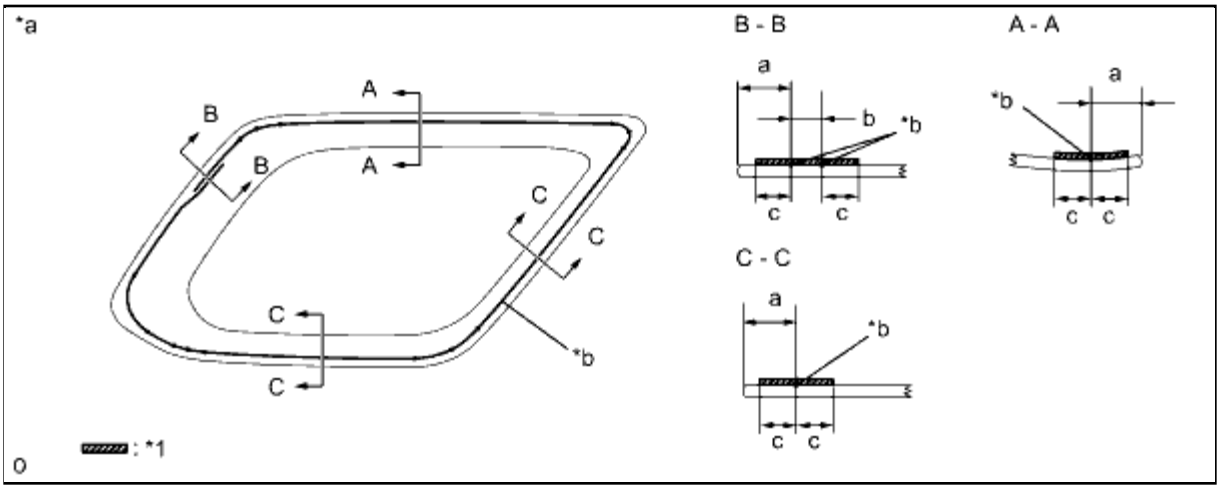
NOTICE:

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

Text in Illustration

*1	Primer M
*2	Adhesive
*a	CORRECT
*b	INCORRECT

(b) Using a brush or sponge, apply Primer G to the contact surface of the glass.



Text in Illustration

*1	Primer G	-	-
*a	Backside	*b	Adhesive Center Line

Standard:

AREA	SPECIFIED CONDITION
a	13.5 mm (0.531 in.)
b	4.0 mm (0.157 in.)
c	10.0 mm (0.394 in.)

HINT:

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

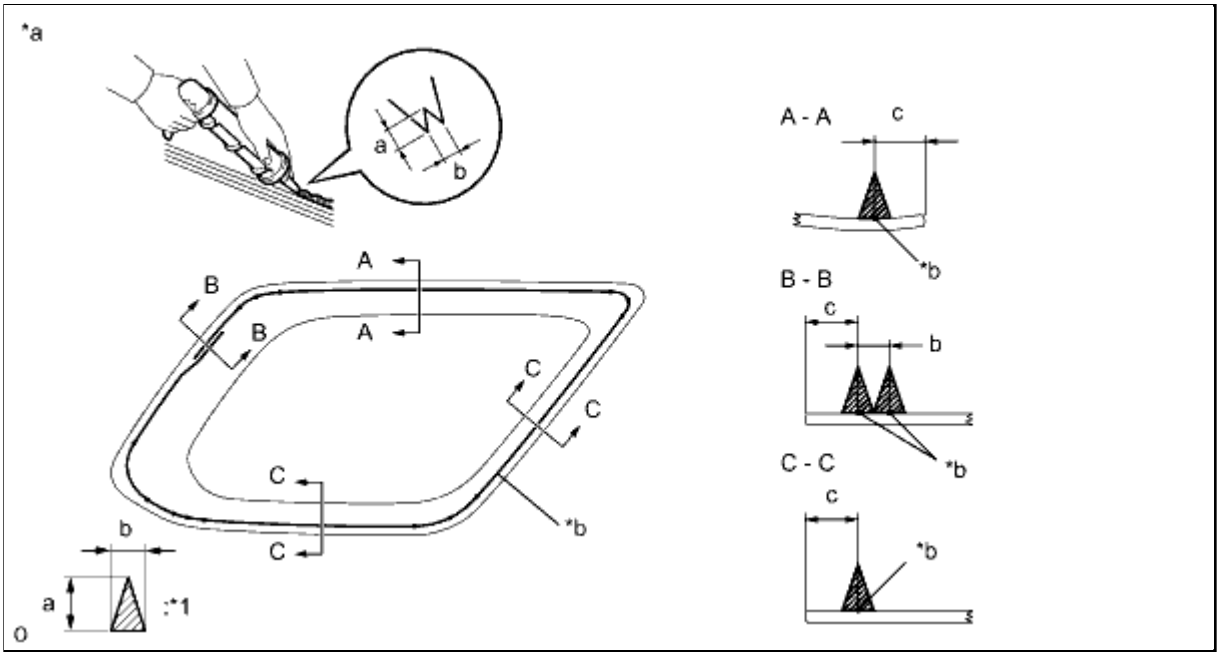
NOTICE:

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

(c) Apply adhesive to the quarter window glass.

Adhesive:
Toyota Genuine Windshield Glass Adhesive or equivalent

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



Text in Illustration

*1	Adhesive	-	-

*a	Backside	*b	Adhesive Center Line

Standard:

AREA	SPECIFIED CONDITION
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)
c	13.5 mm (0.531 in.)

HINT:

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

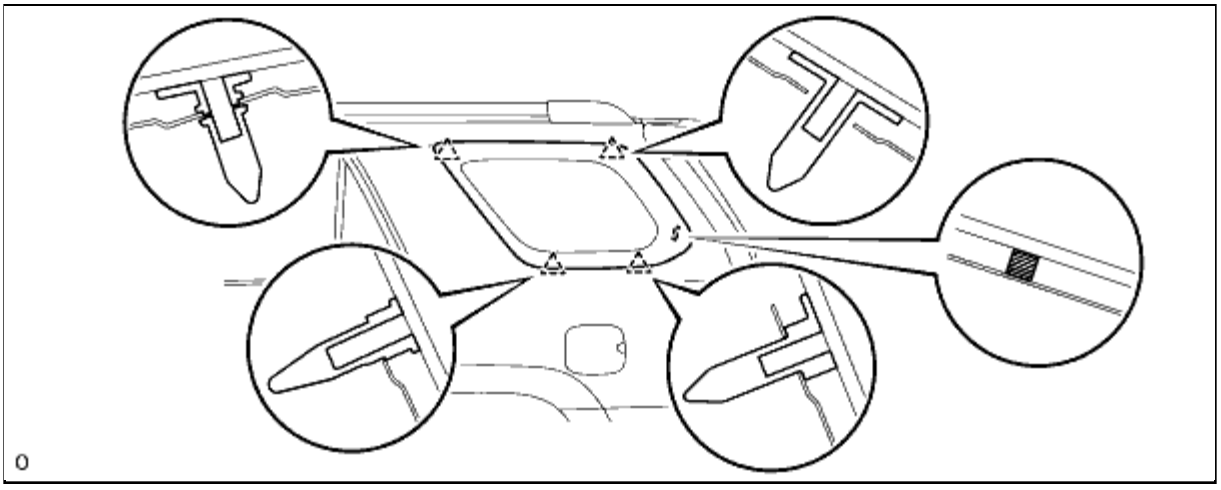
Usage Time Frame:

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 a sealer gun with the cartridge.

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

(d) Install the quarter window glass to the vehicle body.



(1) Attach the 3 retainers and 2 spacers to install the quarter window assembly LH.

NOTICE:

Allow the primer to dry for 3 minutes or more.

(2) Hold the quarter window glass in place securely with protective tape or equivalent until the adhesive hardens.

NOTICE:

- Allow the primer coating to dry for 3 minutes or more.
- Check the clearance between the body and glass.

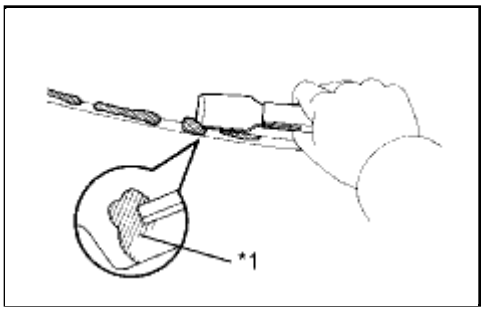
(3) Lightly press the front surface of the glass to ensure a close fit.

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

NOTICE:

Do not drive the vehicle within the time written 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

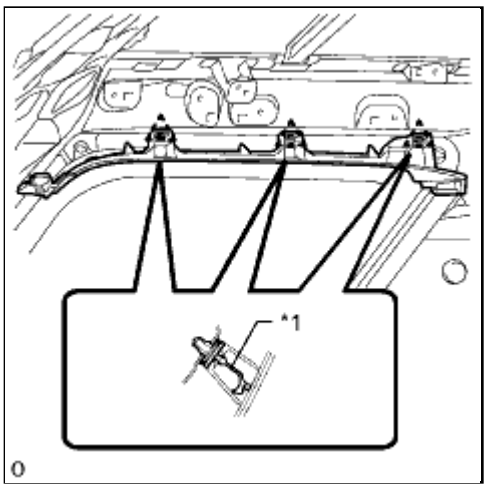
Text in Illustration

*1	Adhesive

7. CHECK FOR LEAK AND REPAIR

(a) Conduct a leak test after the adhesive has completely hardened.

(b) Seal any leaks with auto glass sealer.



8. INSTALL ROOF SIDE RAIL GARNISH ASSEMBLY LH

(a) Install a new clip A to the roof side rail garnish.

Text in Illustration

*1	New Clip

(b) Attach the 3 clips to install the roof side rail garnish.

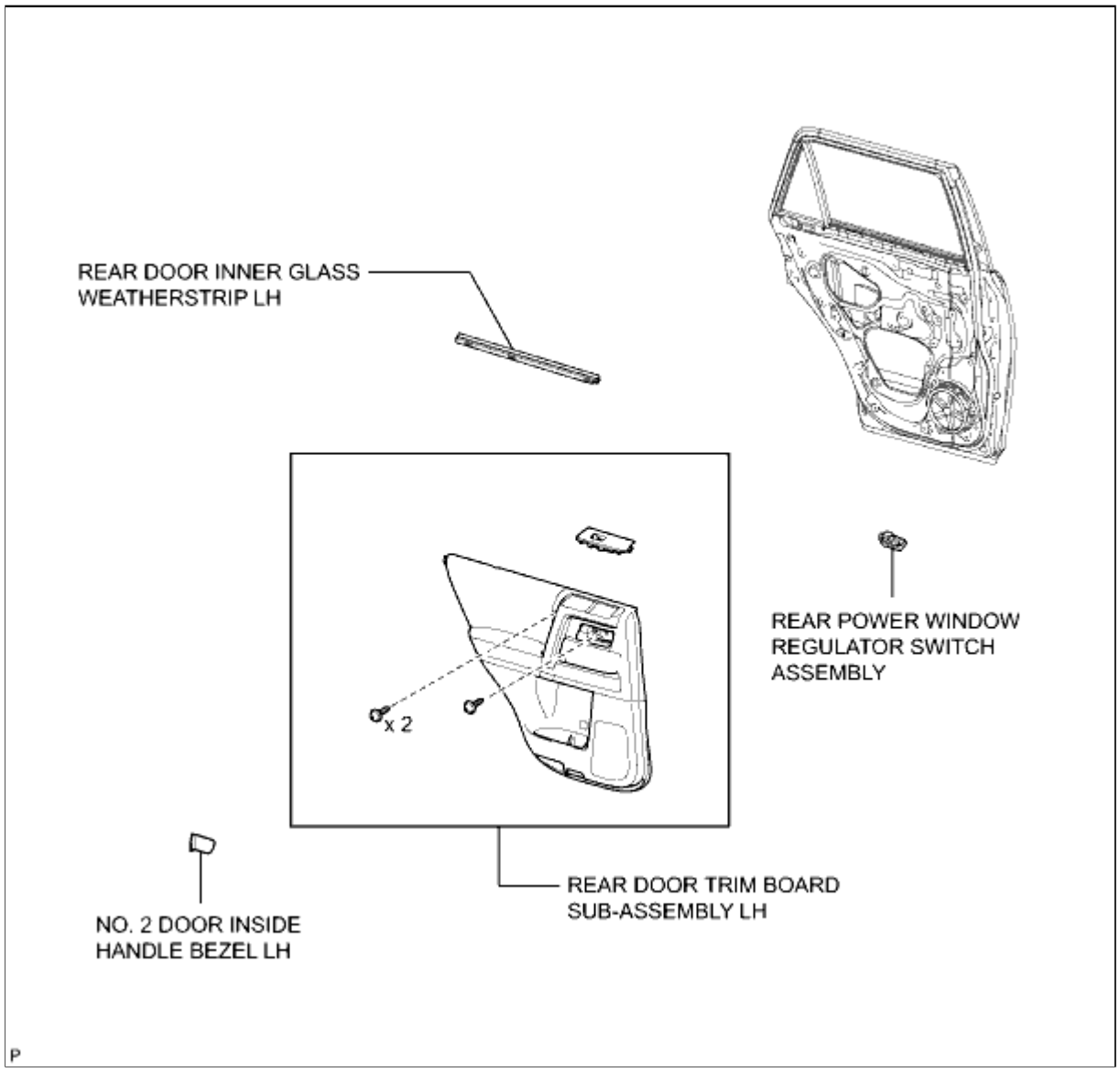
9. INSTALL ROOF HEADLINING ASSEMBLY

(a) Install the roof headlining assembly INFO .

Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002STT017X
Title: WINDOW / GLASS: REAR POWER WINDOW SWITCH: COMPONENTS (2010 4Runner)		

COMPONENTS

ILLUSTRATION



Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000011RX02MX
Title: WINDOW / GLASS: REAR POWER WINDOW SWITCH: REMOVAL (2010 4Runner)		

REMOVAL

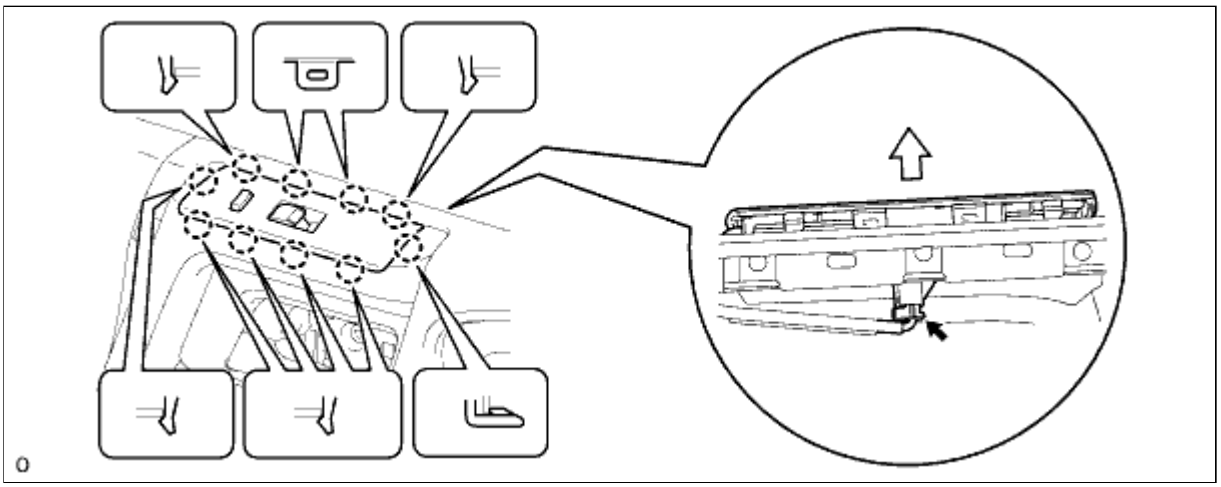
1. REMOVE NO. 2 DOOR INSIDE HANDLE BEZEL LH INFO

2. REMOVE REAR DOOR TRIM BOARD SUB-ASSEMBLY LH INFO

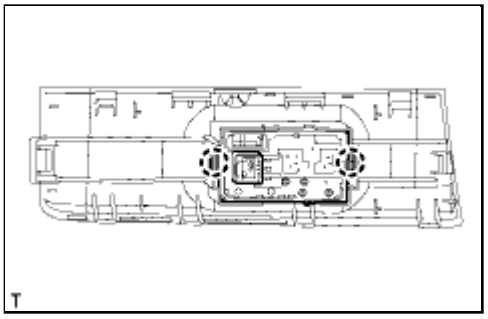
3. REMOVE REAR DOOR INNER GLASS WEATHERSTRIP LH INFO

4. REMOVE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY

(a) Detach the 10 claws from the backside and remove the power window regulator switch with base panel.



(b) Disconnect the connector.



(c) Detach the 2 claws and remove the power window regulator switch.

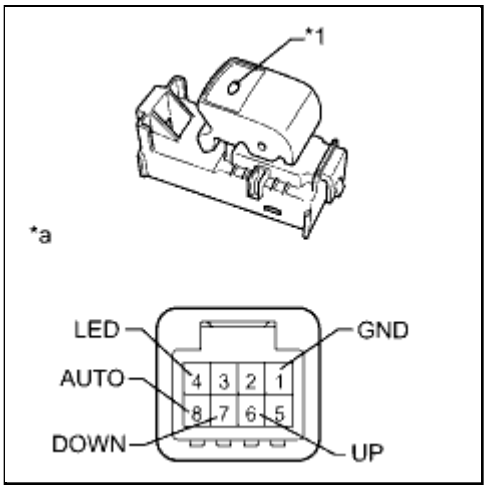
Last Modified: 5-10-2010	6.4 G	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002R1J017X
Title: WINDOW / GLASS: REAR POWER WINDOW SWITCH: INSPECTION (2010 4Runner)		

INSPECTION

1. INSPECT REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY

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

Standard Resistance:



TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
6 (UP) - 1(GND)	Manual up operation	Below 1 Ω
7 (DOWN) - 1 (GND)	Manual down operation	Below 1 Ω
8 (AUTO) - 1 (GND)	Auto up/down operation	Below 1 Ω
6 (UP) - 1 (GND)	Not operated	10 kΩ or higher
7 (DOWN) - 1 (GND)	Not operated	10 kΩ or higher
8 (AUTO) - 1 (GND)	Not operated	10 kΩ or higher

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

(b) Check that the LED illuminates.

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

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → 4 (LED) Battery negative (-) → 1 (GND)	LED illuminates

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

Text in Illustration

*1	LED
*a	Front view of wire harness connector (Power Window Regulator Switch Assembly)

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000011RY02MX
Title: WINDOW / GLASS: REAR POWER WINDOW SWITCH: INSTALLATION (2010 4Runner)		

INSTALLATION

1. INSTALL REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY

(a) Attach the 2 claws to install the power window regulator switch assembly to the base panel.

(b) Connect the connector.

(c) Attach the 10 claws to the install the power window regulator switch with base panel.

2. INSTALL REAR DOOR INNER GLASS WEATHERSTRIP LH INFO

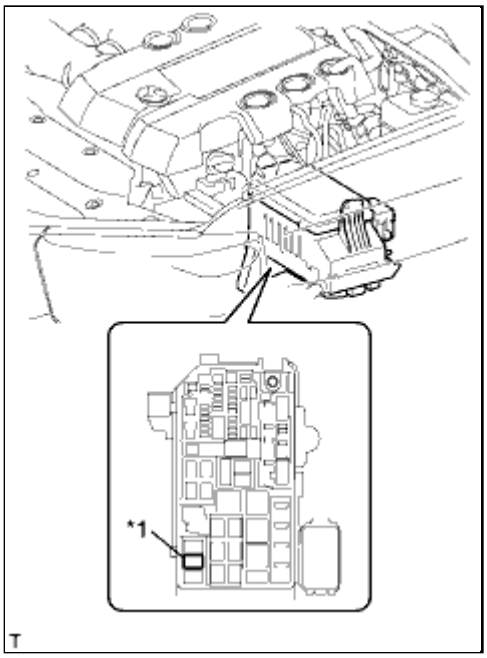
3. INSTALL REAR DOOR TRIM BOARD SUB-ASSEMBLY LH INFO

4. INSTALL NO. 2 DOOR INSIDE HANDLE BEZEL LH INFO

Last Modified: 5-10-2010	6.4 G	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000003A7J00EX
Title: WINDOW / GLASS: RELAY (for Window Defogger): ON-VEHICLE INSPECTION (2010 4Runner)		

ON-VEHICLE INSPECTION

1. REMOVE DEFOGGER RELAY (DEF)



(a) Remove the defogger relay from the engine room relay block.

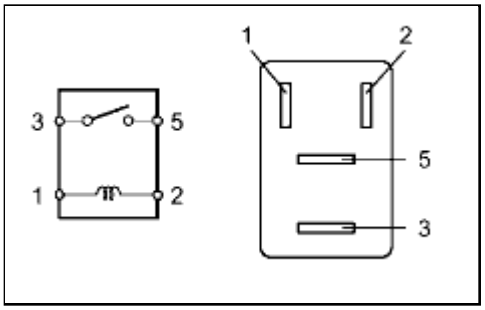
Text in Illustration

*1	Defogger relay

2. INSPECT DEFOGGER RELAY

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

Standard Resistance:



TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 - 5	Battery voltage is not applied to terminals 1 and 2	10 kΩ or higher
	Battery voltage is applied to terminals 1 and 2	Below 1 Ω

If the result is not as specified, replace the defogger relay.

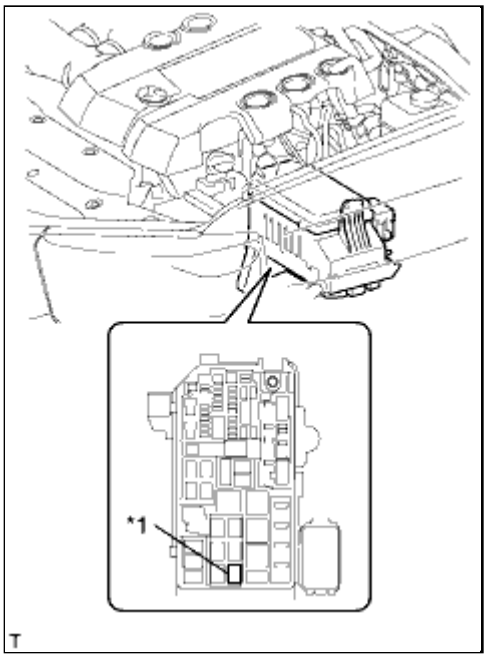
3. INSTALL DEFOGGER RELAY

(a) Install the defogger relay to the engine room relay block.

Last Modified: 5-10-2010	6.4 G	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000003A7K00DX
Title: WINDOW / GLASS: RELAY (for Windshield Deicer): ON-VEHICLE INSPECTION (2010 4Runner)		

ON-VEHICLE INSPECTION

1. REMOVE DEICER RELAY (DEICER)



(a) Remove the deicer relay from the engine room relay block.

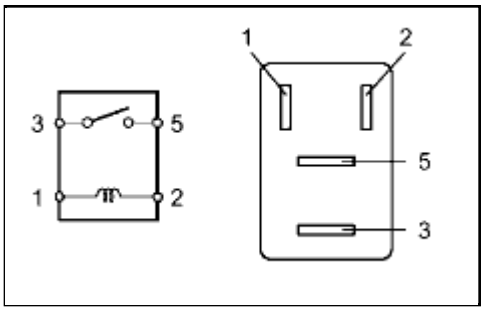
Text in Illustration

*1	Deicer Relay

2. INSPECT DEICER RELAY

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

Standard Resistance:



TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 - 5	Battery voltage is not applied to terminals 1 and 2	10 kΩ or higher
3 - 5	Battery voltage is applied to terminals 1 and 2	Below 1 Ω

If the result is not as specified, replace the deicer relay.

3. INSTALL DEICER RELAY

(a) Install the deicer relay to the engine room relay block.

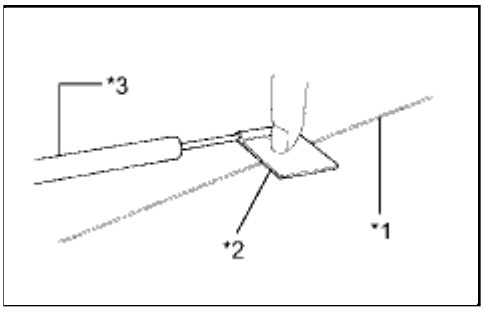
Last Modified: 5-10-2010	6.4 G	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000001L64023X
Title: WINDOW / GLASS: WINDOW DEFOGGER WIRE: ON-VEHICLE INSPECTION (2010 4Runner)		

ON-VEHICLE INSPECTION

1. INSPECT BACK WINDOW GLASS (DEFOGGER WIRE)

NOTICE:

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

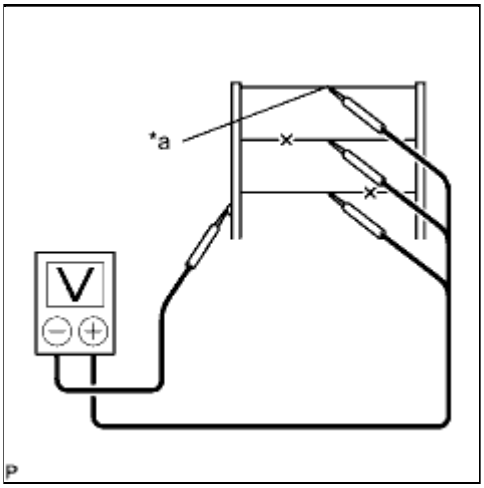


Text in Illustration

*1	Defogger Wire
*2	Tin Foil
*3	Tester Probe

(a) Turn the ignition switch to ON.

(b) Turn the defogger switch on.



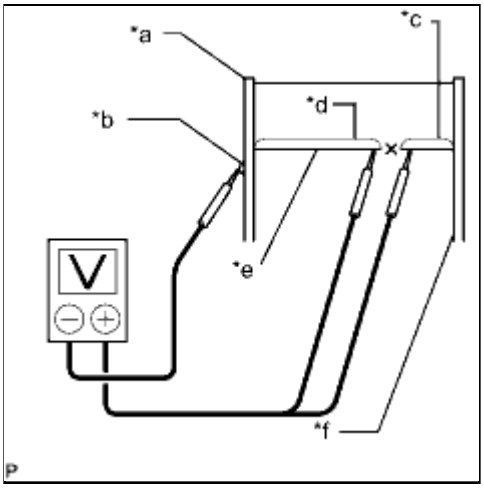
(c) Measure the voltage at the center of each defogger wire as shown in the illustration.

Standard Voltage:

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

Text in Illustration

*a	Center



HINT:

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

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

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

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

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

HINT:

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

Text in Illustration

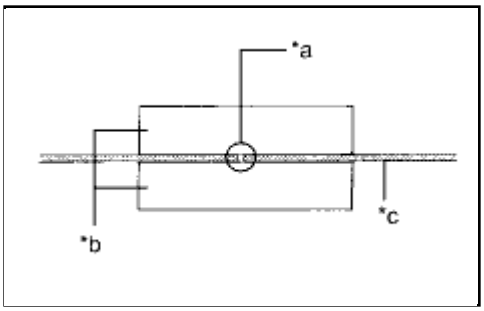
*a	Ground Side
*b	Foil Strip
*c	Approximately 10 V
*d	0 V

*e	Broken Wire
*f	Battery Side

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000001L65023X
Title: WINDOW / GLASS: WINDOW DEFOGGER WIRE: REPAIR (2010 4Runner)		

REPAIR

1. REPAIR DEFOGGER WIRE



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

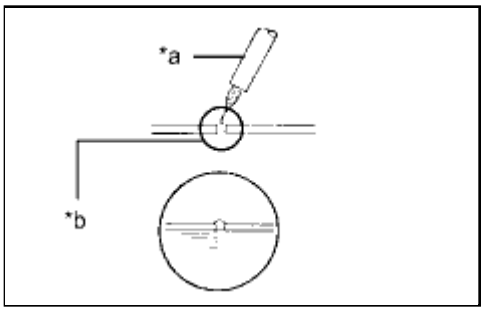
(b) Place masking tape along both sides of the wire.

(c) Thoroughly mix the repair agent.

DuPont paste:
No. 4817 or equivalent

Text in Illustration

*a	Repair Point
*b	Masking Tape
*c	Broken Wire



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

Text in Illustration

*a	Fine Tip Brush
*b	Repair Point

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

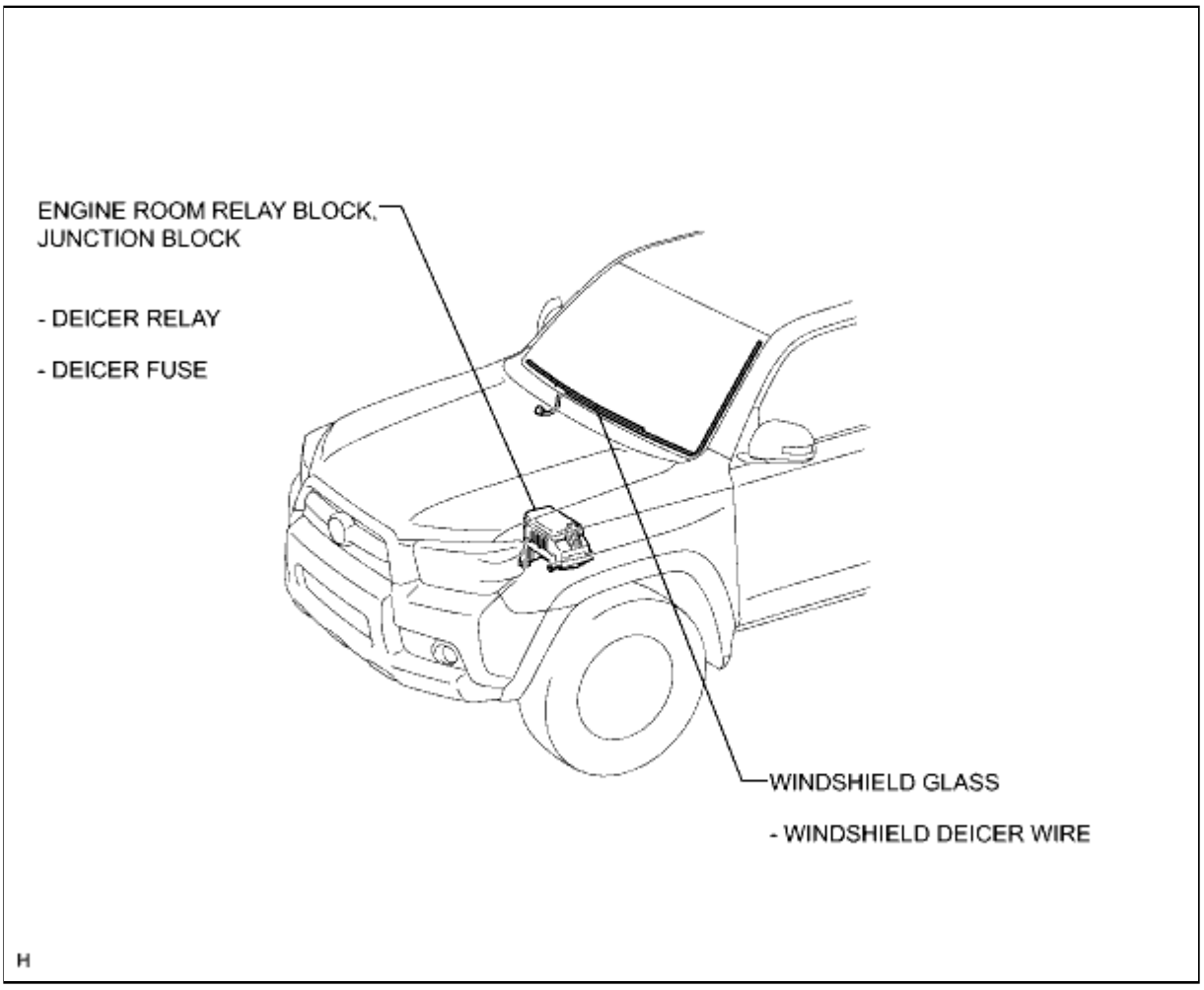
NOTICE:

Do not allow electricity to flow in the defogger wire for at least 24 hours.

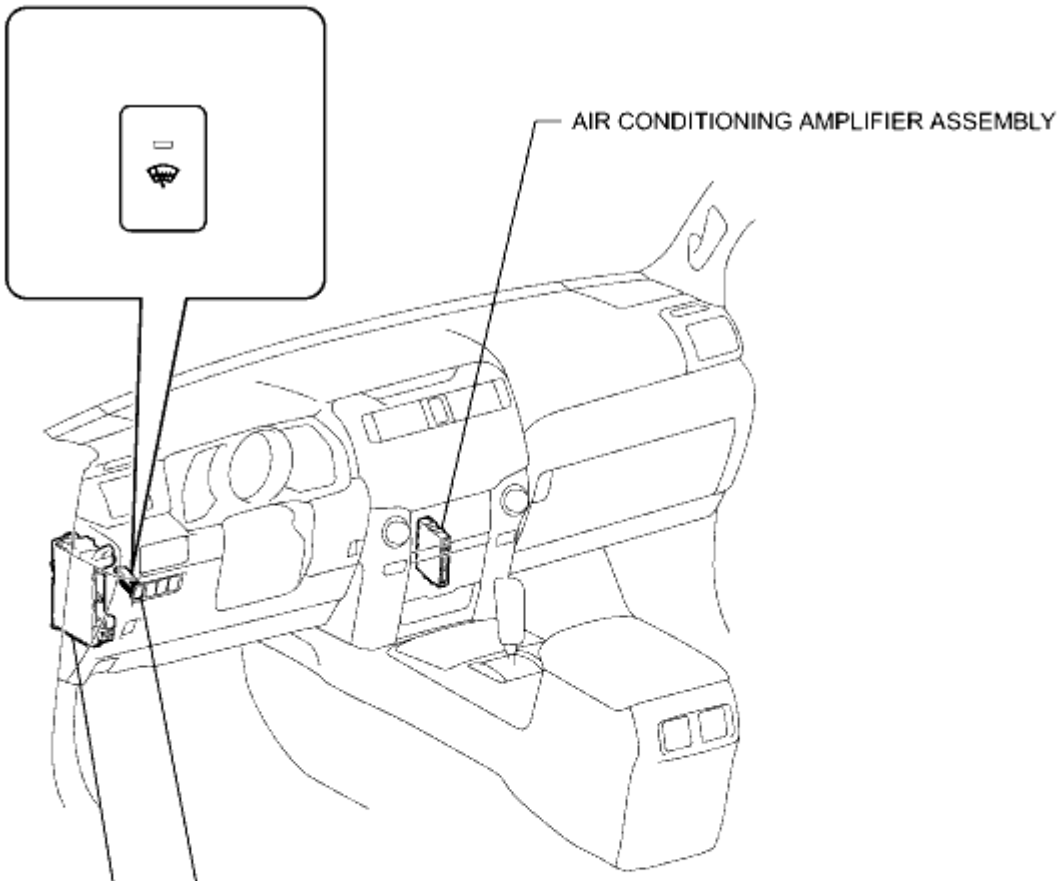
Last Modified: 5-10-2010	6.4 R	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000004796000X
Title: WINDOW / GLASS: WINDSHIELD DEICER SYSTEM: PARTS LOCATION (2010 4Runner)		

PARTS LOCATION

ILLUSTRATION



ILLUSTRATION



H

Last Modified: 5-10-2010	6.4 L	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000003VK800CX
Title: WINDOW / GLASS: WINDSHIELD DEICER SYSTEM: PRECAUTION (2010 4Runner)		

PRECAUTION

1. IGNITION SWITCH EXPRESSION

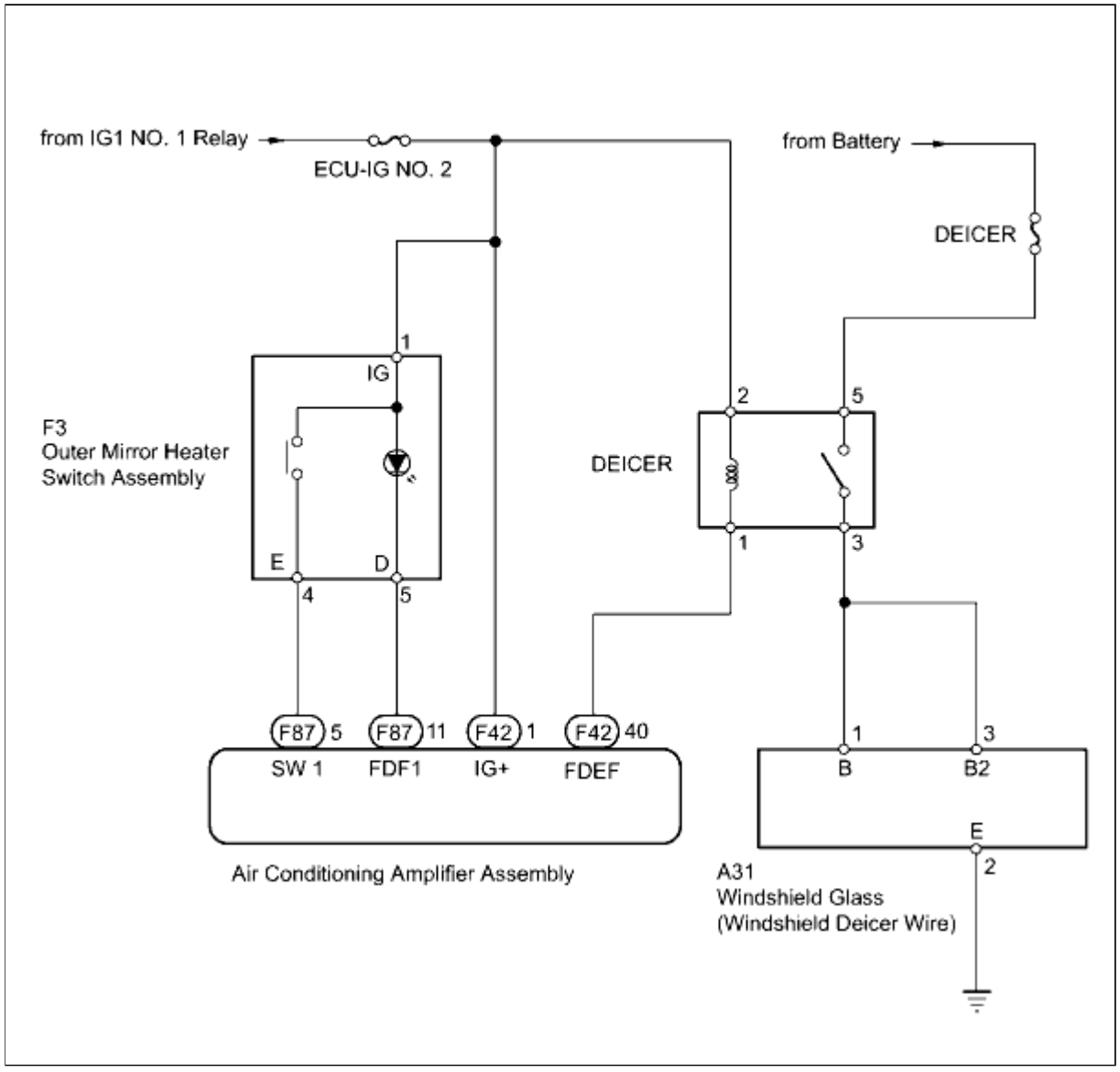
HINT:

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	Off	Off
Ignition Switch ON	ON	On (IG)
Ignition Switch ACC	ACC	On (ACC)
Engine Start	START	Start

Last Modified: 5-10-2010	6.4 U	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000001ZZ000LX
Title: WINDOW / GLASS: WINDSHIELD DEICER SYSTEM: SYSTEM DIAGRAM (2010 4Runner)		

SYSTEM DIAGRAM



Last Modified: 5-10-2010	6.4 D	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000000WPT04LX
Title: WINDOW / GLASS: WINDSHIELD DEICER SYSTEM: SYSTEM DESCRIPTION (2010 4Runner)		

SYSTEM DESCRIPTION

1. WINDSHIELD DEICER SYSTEM DESCRIPTION

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

2. FUNCTION OF MAIN COMPONENT

COMPONENT	OUTLINE
Engine room relay block, junction block (DEICER relay)	Receives front deicer activation request signals from the air conditioning amplifier assembly and supplies power to the front window deicer.
Outer mirror heater switch assembly (windshield deicer switch)	Sends signals to the air conditioning amplifier assembly to operate the deicer.
Windshield glass (windshield deicer wire)	Receives power from the DEICER relay and heats the windshield glass (windshield deicer wire).

Last Modified: 5-10-2010	6.4 D	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000003W32003X
Title: WINDOW / GLASS: WINDSHIELD DEICER SYSTEM: OPERATION CHECK (2010 4Runner)		

OPERATION CHECK

1. CHECK WINDSHIELD DEICER SYSTEM OPERATION

(a) When the ignition switch is turned to ON and the outer mirror heater switch (windshield deicer switch) is pressed, check that the windshield deicer operates.

HINT:

After waiting approximately 15 minutes, check that the deicer automatically turns off.

Last Modified: 5-10-2010	6.4 T	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000001ZYZ00LX
Title: WINDOW / GLASS: WINDSHIELD DEICER SYSTEM: PROBLEM SYMPTOMS TABLE (2010 4Runner)		

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.

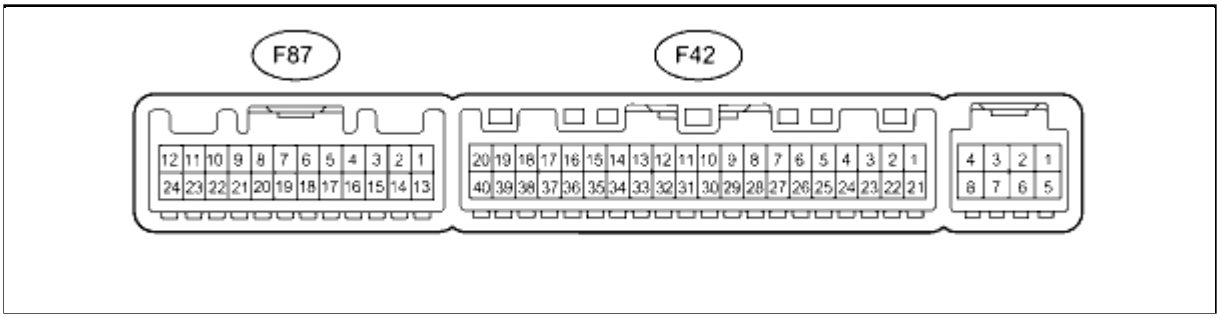
Windshield Deicer System

SYMPTOM	SUSPECTED AREA	SEE PAGE
Window deicer switch is turned on but does not operate (Indicator on)	Air conditioning amplifier assembly	INFO
	Windshield glass (Windshield deicer wire)	-
	Harness or connector	-
Window deicer switch is turned on but does not operate (Indicator off)	Outer mirror heater switch assembly	
	Air conditioning amplifier assembly	INFO
	Windshield glass (Windshield deicer wire)	-
	Harness or connector	-

Last Modified: 5-10-2010	6.4 U	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000000WPS04IX
Title: WINDOW / GLASS: WINDSHIELD DEICER SYSTEM: TERMINALS OF ECU (2010 4Runner)		

TERMINALS OF ECU

1. CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY



(a) Disconnect the F42 air conditioning amplifier connector.

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

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
F42-21 (B) - F42-14 (GND)	V - W-B	Battery power source	Always	11 to 14 V
F42-1 (IG+) - F42-14 (GND)	L - W-B	Ignition power supply	Ignition switch ON	11 to 14 V
F42-1 (IG+) - F42-14 (GND)	L - W-B	Ignition power supply	Ignition switch off	Below 1 V
F42-14 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

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

(c) Reconnect the F42 air conditioning amplifier connectors.

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

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
F42-40 (FDEF) - Body ground	LG - Body ground	Windshield deicer relay operation signal	Ignition switch ON, outer mirror heater switch off	11 to 14 V
F42-40 (FDEF) - Body ground	LG - Body ground	Windshield deicer relay operation signal	Ignition switch ON, outer mirror heater switch on	Below 1 V

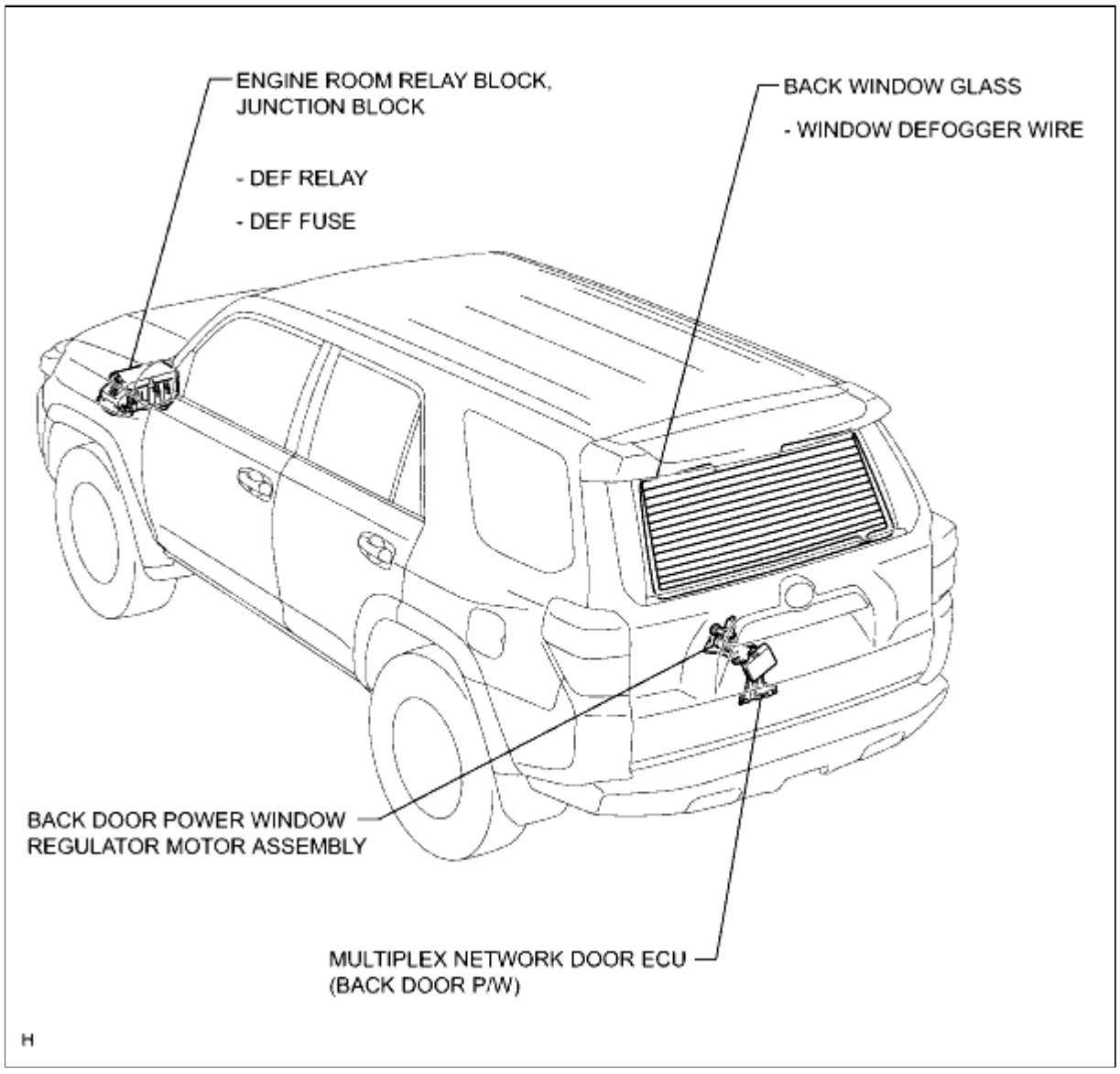
TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
F87-11 (FDF1) - Body ground	P - Body ground	Outer mirror heater switch indicator signal output	Ignition switch ON, outer mirror heater switch off	11 to 14 V
F87-11 (FDF1) - Body ground	P - Body ground	Outer mirror heater switch indicator signal output	Ignition switch ON, outer mirror heater switch on	Below 1 V
F87-5 (SW 1) - Body ground	R - Body ground	Outer mirror heater switch signal input	Ignition switch ON, outer mirror heater switch off	Below 1 V
F87-5 (SW 1) - Body ground	R - Body ground	Outer mirror heater switch signal input	Ignition switch ON, outer mirror heater switch on	11 to 14 V

- If the result is not as specified, the air conditioning amplifier assembly may have a malfunction.

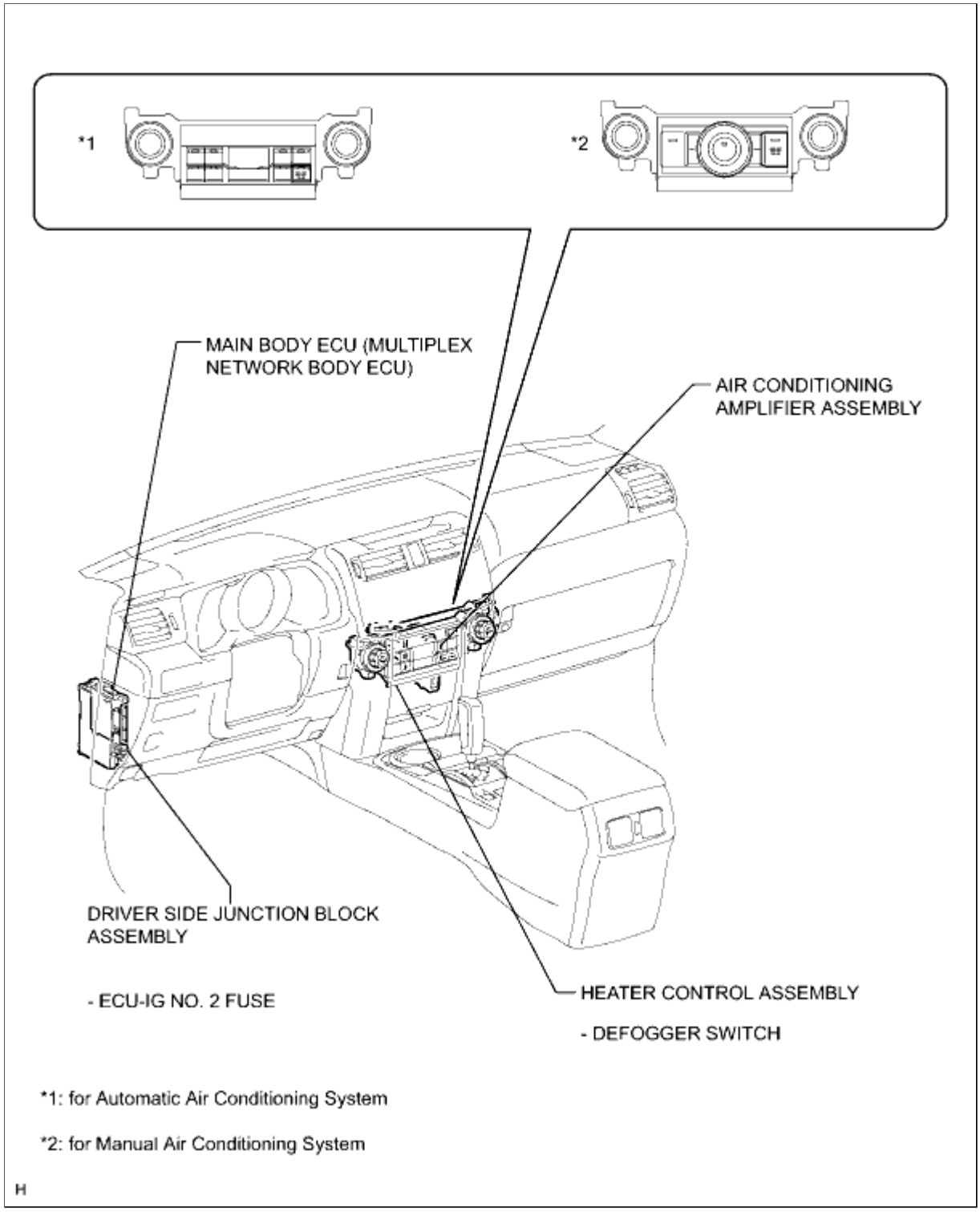
Last Modified: 5-10-2010	6.4 R	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000047BR000X
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM: PARTS LOCATION (2010 4Runner)		

PARTS LOCATION

ILLUSTRATION



ILLUSTRATION



*1: for Automatic Air Conditioning System

*2: for Manual Air Conditioning System

H

Last Modified: 5-10-2010	6.4 L	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000003VK800DX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM: PRECAUTION (2010 4Runner)		

PRECAUTION

1. IGNITION SWITCH EXPRESSION

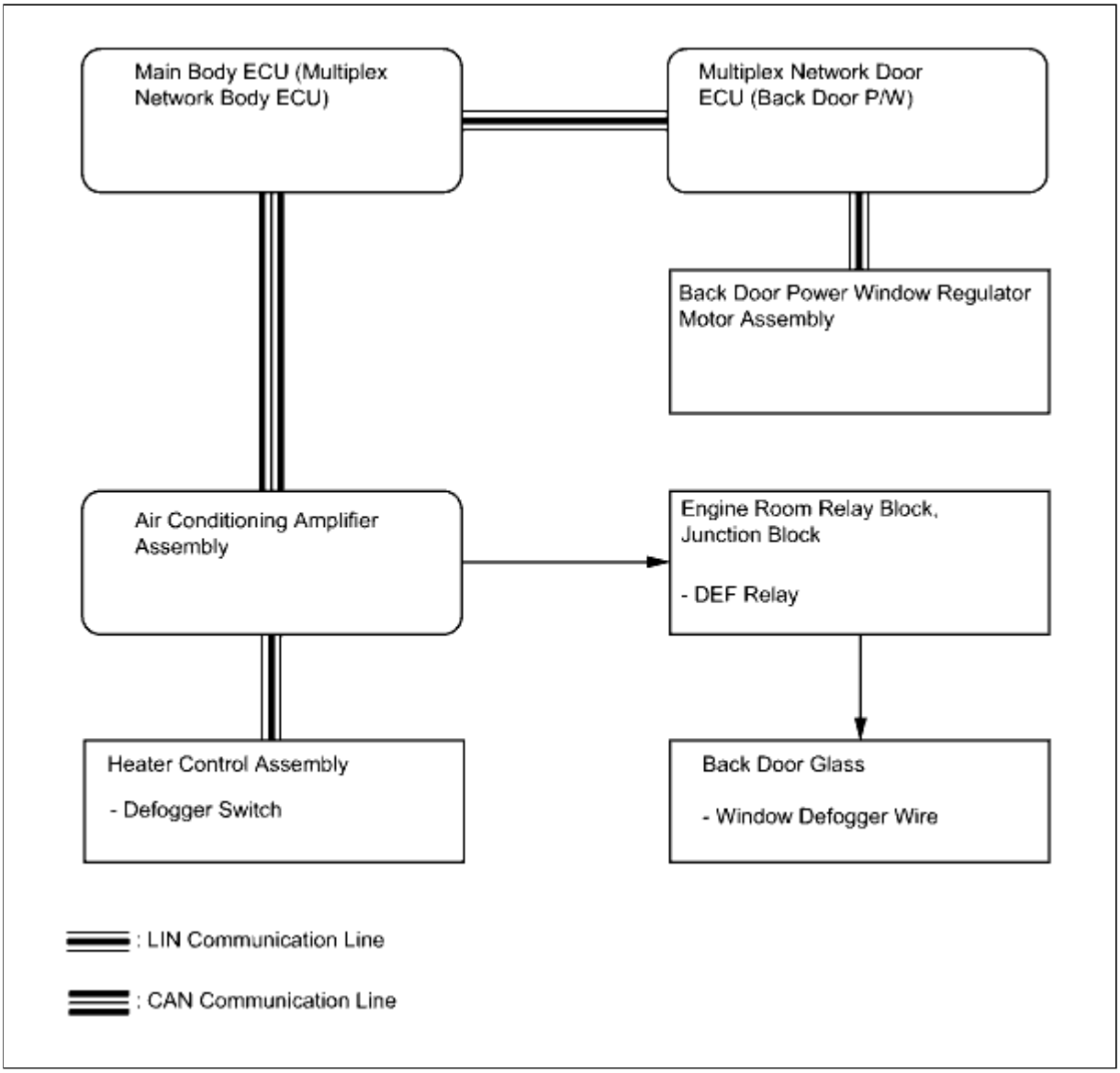
HINT:

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	Off	Off
Ignition Switch ON	ON	On (IG)
Ignition Switch ACC	ACC	On (ACC)
Engine Start	START	Start

Last Modified: 5-10-2010	6.4 U	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002ZCC019X
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM: SYSTEM DIAGRAM (2010 4Runner)		

SYSTEM DIAGRAM



Communication Table

TRANSMITTER	RECEIVER	SIGNAL	LINE
Heater control assembly	Air conditioning amplifier assembly	Defogger switch signal	LIN
Multiplex network door ECU (Back door P/W)	Main body ECU (Multiplex network body ECU)	Back door window position signal	LIN

TRANSMITTER	RECEIVER	SIGNAL	LINE
Back door power window regulator motor	Multiplex network door ECU (Back door P/W)	Back door window position signal	LIN
Main body ECU (Multiplex network body ECU)	Air conditioning amplifier assembly	Back door window position signal	CAN

Last Modified: 5-10-2010	6.4 D	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002ZC701DX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING (2010 4Runner)		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Inspect the window defogger system after confirming that the back door power window system of the power window control system is operating normally.
- Use these procedures to troubleshoot the window defogger system.
- *: Use the Techstream.

1.	**VEHICLE BROUGHT TO WORKSHOP**

NEXT

2.	**INSPECT BATTERY VOLTAGE**

Standard voltage:
11 to 14 V

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

NEXT

3.	**CHECK COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM***

(a) Check if the CAN communication system is functioning normally INFO.

Result

RESULT	PROCEED TO
CAN DTC is not output	A

RESULT	PROCEED TO
CAN DTC is output	B

B ▶ INFO **Go to CAN COMMUNICATION SYSTEM**

A ▼

4.	CHECK COMMUNICATION FUNCTION OF LIN COMMUNICATION SYSTEM*

(a) Check if the LIN communication system is functioning normally.

Result

RESULT	PROCEED TO
LIN DTC is not output	A
LIN DTC is output	B

B ▶ INFO **Go to LIN COMMUNICATION SYSTEM**

A ▼

5.	PROBLEM SYMPTOMS TABLE

(a) Refer to the Problem Symptoms Table INFO .

Result

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

B ▶ **Go to step 7**

A

6.	OVERALL ANALYSIS AND TROUBLESHOOTING*

(a) Terminals of ECU INFO .

(b) Data List / Active Test INFO .

NEXT

7.	REPAIR OR REPLACE

NEXT

8.	CONFIRMATION TEST

NEXT END

Last Modified: 5-10-2010	6.4 D	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002ZCB01CX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM: SYSTEM DESCRIPTION (2010 4Runner)		

SYSTEM DESCRIPTION

1. WINDOW DEFOGGER SYSTEM DESCRIPTION

The thin heater wires of the defogger system are attached to the rear window and defog the rear window surface quickly. The system only operates when the back door power window is closed. The indicator light illuminates while the system is operating. The system automatically turns off when the back door power window is opened, or approximately 15 minutes after operation starts. For vehicles with an air conditioning system, there is a timer extension function which can operate the window defogger system for up to an additional 255 minutes.

HINT:

The timer extension function operates when the following conditions are met:

- Ambient Temperature: 0°C (32°F) or less
- Vehicle Speed: 31.1 mph (50 km/h) or more

2. FUNCTION OF MAIN COMPONENT

COMPONENT	OUTLINE
Heater control assembly	Detects defogger switch operation and transmits signals to the air conditioning amplifier through the LIN communication line.
Engine room relay block, junction block (DEF relay)	Receives rear window defogger activation request signals from the air conditioning amplifier and supplies power to the rear window defogger.
Back door glass (Window defogger wire)	Receives power from the defogger relay and heats the defogger wire.
Multiplex network door ECU (Back door P/W)	Sends the back power window position signal to the main body ECU (multiplex network body ECU).
Main body ECU (Multiplex network body ECU)	Sends the back power window position signal to the air conditioning amplifier.
Back door power window regulator motor assembly	Sends the back power window position signal to the multiplex network door ECU (back door P/W).

3. SYSTEM FUNCTION

FUNCTION	OUTLINE
Defog rear window surface	• The defogger relay receives rear window defogger activation request signals from the air conditioning amplifier and defogs the rear window surface. • Power received from the defogger relay heats the defogger wire.

Last Modified: 5-10-2010	6.4 D	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000047CQ000X
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM: OPERATION CHECK (2010 4Runner)		

OPERATION CHECK

1. CHECK WINDOW DEFOGGER SYSTEM OPERATION

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

Last Modified: 5-10-2010	6.4 T	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002ZCA019X
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM: PROBLEM SYMPTOMS TABLE (2010 4Runner)		

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.

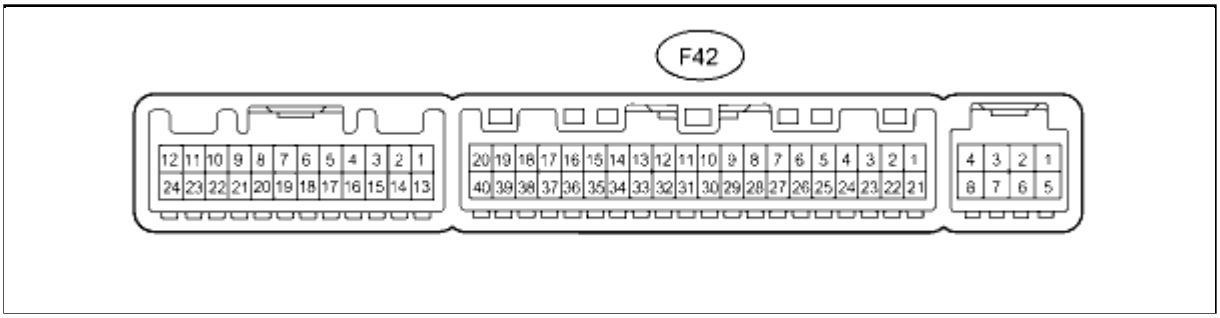
Window Defogger System

SYMPTOM	SUSPECTED AREA	SEE PAGE
Rear window defogger system does not operate	Proceed to "Rear Window Defogger System does not Operate"	INFO

Last Modified: 5-10-2010	6.4 U	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000000WPS04JX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM: TERMINALS OF ECU (2010 4Runner)		

TERMINALS OF ECU

1. CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY



(a) Disconnect the F42 air conditioning amplifier connector.

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

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
F42-21 (B) - F42-14 (GND)	V - W-B	Battery power source	Always	11 to 14 V
F42-1 (IG+) - F42-14 (GND)	L - W-B	Ignition switch power supply	Ignition switch ON	11 to 14 V
F42-1 (IG+) - F42-14 (GND)	L - W-B	Ignition switch power supply	Ignition switch off	Below 1 V
F42-14 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

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

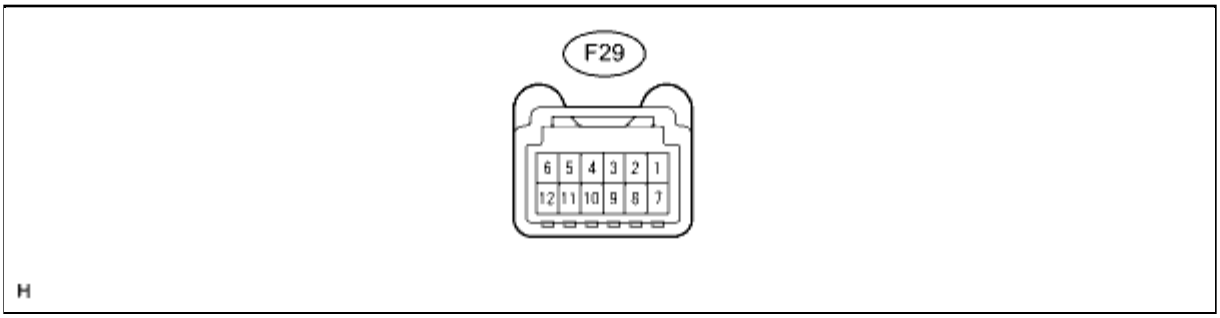
(c) Reconnect the F42 air conditioning amplifier connector.

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

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
F42-38 (RDEF) - F42-14 (GND)	P - W-B	Rear defogger signal	Ignition switch ON, rear window defogger switch off	11 to 14 V
F42-38 (RDEF) - F42-14 (GND)	P - W-B	Rear defogger signal	Ignition switch ON, rear window defogger switch on	Below 1 V

- If the result is not as specified, there may be a malfunction in the air conditioning amplifier.

2. CHECK HEATER CONTROL ASSEMBLY



(a) Disconnect the F29 heater control connector.

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

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
F29-4 (IG+) - F29-11 (GND)	L - W-B	Ignition switch power supply	Ignition switch ON	11 to 14 V
F29-4 (IG+) - F29-11 (GND)	L - W-B	Ignition switch power supply	Ignition switch off	Below 1 V
F29-11 (GND) - 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.

Last Modified: 5-10-2010	6.4 U	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000002ZCD01BX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM: DATA LIST / ACTIVE TEST (2010 4Runner)		

DATA LIST / ACTIVE TEST

1. ACTIVE TEST

HINT:

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

(a) Connect the Techstream to the DLC3.

(b) Turn the ignition switch to ON.

(c) Turn the Techstream on.

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

(e) According to the display on the Techstream, perform the Active Test.

Air Conditioner

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Defogger Relay (Rear)	DEF relay operation	OFF/ON	-

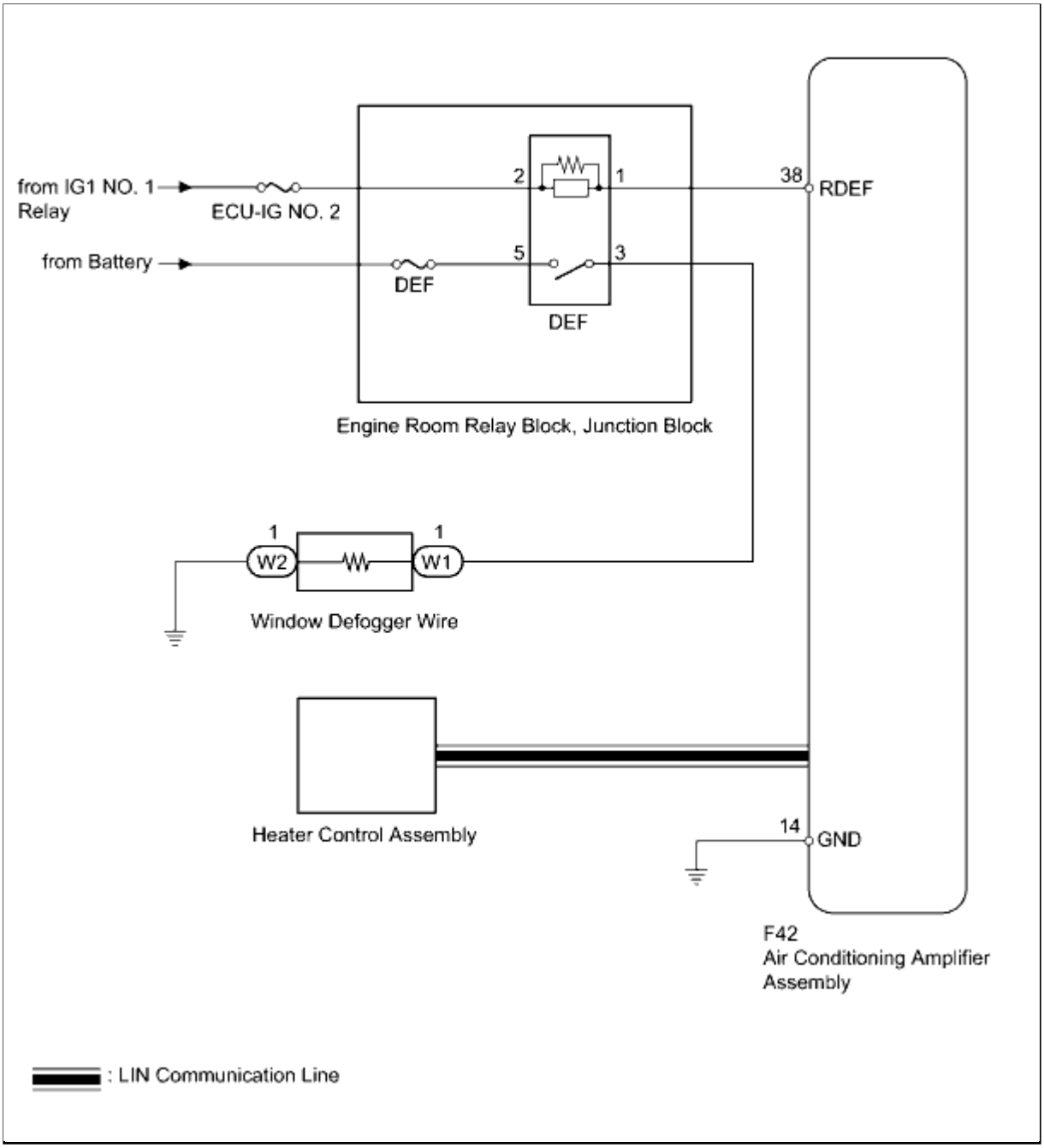
Last Modified: 5-10-2010	6.4 J	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000020LP03SX
Title: WINDOW / GLASS: WINDOW DEFOGGER SYSTEM: Rear Window Defogger System does not Operate (2010 4Runner)		

Rear Window Defogger System does not Operate

DESCRIPTION

When the back door power window is fully closed and the rear window defogger switch is turned on, a rear window defogger activation request signal is sent via the LIN communication line to the air conditioning amplifier.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- Inspect the fuses for circuits related to this system before performing the following inspection procedure.
- Since the window defogger system has functions that use LIN communication, first confirm that there is no malfunction in the communication system by inspecting the LIN communication functions in accordance with the "How to Proceed with Troubleshooting" procedures. Then, conduct the following inspection procedure.
- Since the window defogger system does not operate if the back power window is not operating normally, confirm that the back power window of the power window system is operating normally before performing troubleshooting.

PROCEDURE

1.	**PERFORM ACTIVE TEST USING TECHSTREAM (DEFOGGER RELAY [REAR])**

(a) Using the Techstream, perform the Active Test INFO.

Air Conditioner

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Defogger Relay (Rear)	DEF relay operation	OFF/ON	-

OK:
The DEF relay operates normally.

NG ▶ **INSPECT DEF RELAY**

OK ▼

2.	**REPLACE HEATER CONTROL ASSEMBLY**

(a) Temporarily replace the heater control with a new or normally functioning one INFO.

(b) Check the rear defogger function.

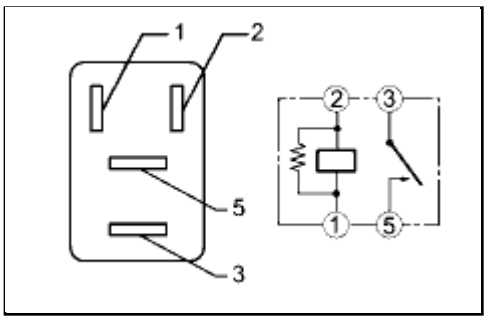
OK:
The window defogger function operates normally.

NG ▶ **REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY**

OK ▶ **END (HEATER CONTROL ASSEMBLY IS DEFECTIVE)**

3.	**INSPECT DEF RELAY**

(a) Remove the DEF relay from the engine room relay block, junction block.



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

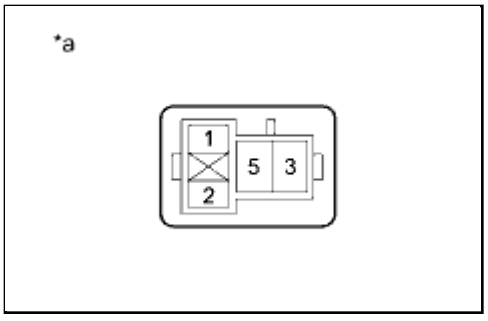
Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 - 5	Battery voltage applied between terminals 1 and 2	Below 1 Ω
3 - 5	Battery voltage not applied between terminals 1 and 2	10 kΩ or higher

NG ▶ **REPLACE DEF RELAY**

OK ▼

4.	CHECK HARNESS AND CONNECTOR (BATTERY - DEF RELAY)



(a) Remove the DEF relay from the engine room relay block, junction block.

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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
DEF relay terminal 2 - Body ground	Ignition switch off	Below 1 V

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
DEF relay terminal 2 - Body ground	Ignition switch ON	11 to 14 V
DEF relay terminal 5 - Body ground	Always	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to DEF Relay)

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

OK
▼

5.	**CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER ASSEMBLY - DEF RELAY AND BODY GROUND)**

(a) Disconnect the F42 air conditioning amplifier connector.

(b) Remove the DEF relay from the engine room relay block, junction block.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
DEF relay terminal 1 - F42-38 (RDEF)	Always	Below 1 Ω
F42-14 (GND) - Body ground	Always	Below 1 Ω
F42-38 (RDEF) - Body ground	Always	10 kΩ or higher

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

OK
▼

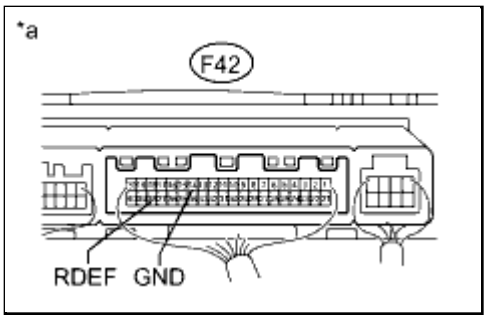
6.	**INSPECT AIR CONDITIONING AMPLIFIER ASSEMBLY**

(a) Reconnect the F42 air conditioning amplifier connector.

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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
F42-38 (RDEF) - F42-14 (GND)	Ignition switch ON, defogger switch on	11 to 14 V
F42-38 (RDEF) - F42-14 (GND)	Ignition switch ON, defogger switch off	Below 1 V



Text in Illustration

*a	Component with harness connected (Air Conditioning Amplifier Assembly)

NG ▶ **REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY**

OK ▼

7.	**CHECK HARNESS AND CONNECTOR (BACK DOOR GLASS - DEF RELAY AND BODY GROUND)**

(a) Disconnect the W1 and W2 back door glass (window defogger wire) connectors.

(b) Remove the DEF relay from the engine room relay block, junction block.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
DEF relay terminal 3 - W1-1	Always	Below 1 Ω
W2-1 - Body ground	Always	Below 1 Ω
W1-1 - Body ground	Always	10 kΩ or higher

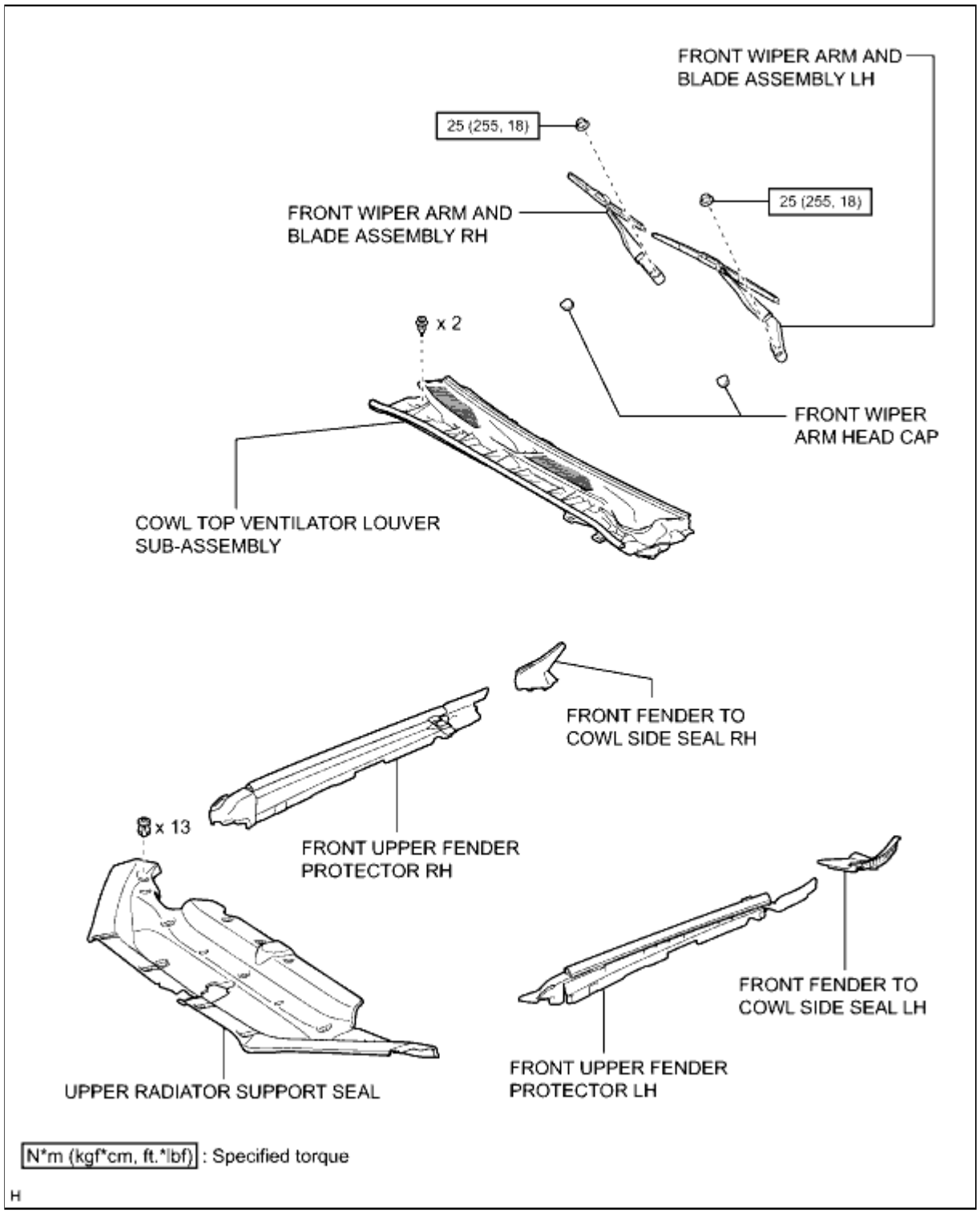
NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ REPLACE BACK DOOR GLASS (WINDOW DEFOGGER WIRE)

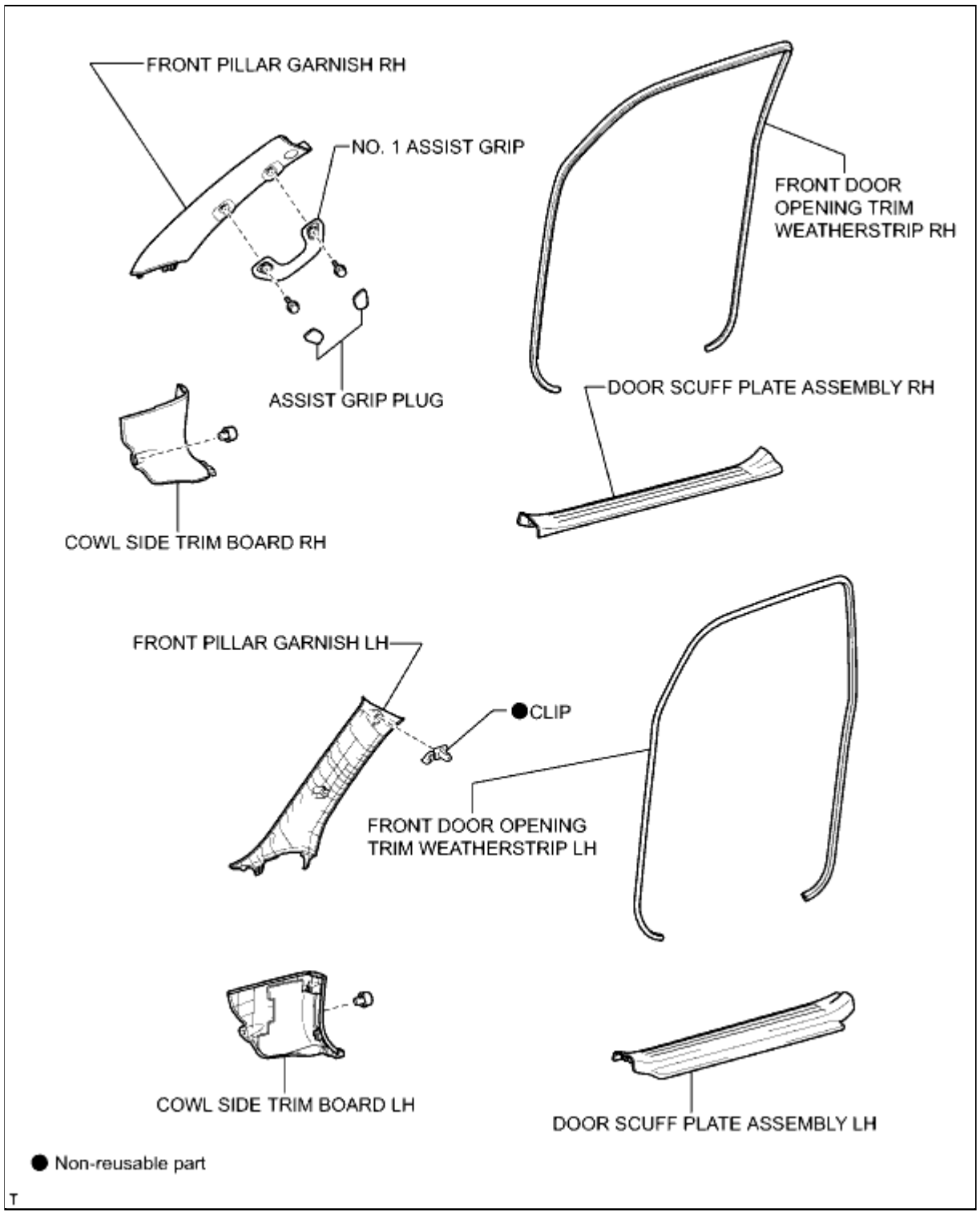
Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000039DJ007X
Title: WINDOW / GLASS: WINDSHIELD GLASS: COMPONENTS (2010 4Runner)		

COMPONENTS

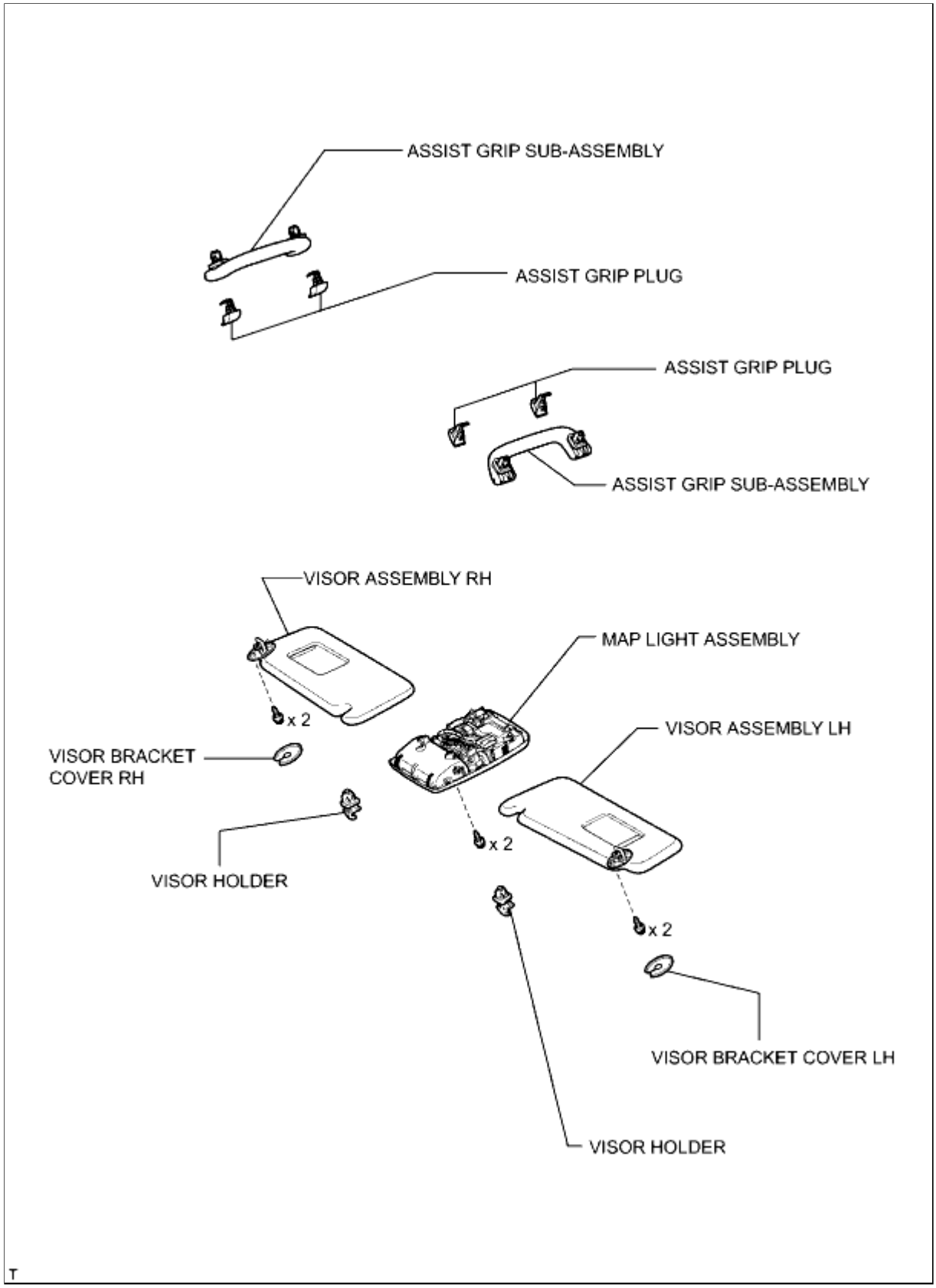
ILLUSTRATION



ILLUSTRATION

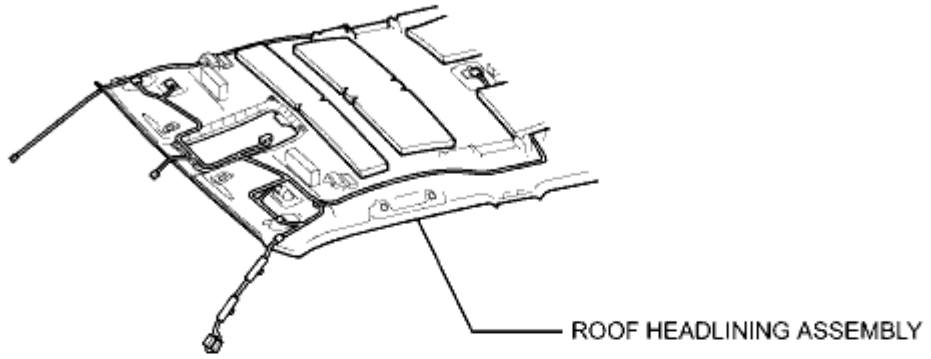


ILLUSTRATION



ILLUSTRATION

w/o Sliding Roof:



w/ Sliding Roof:

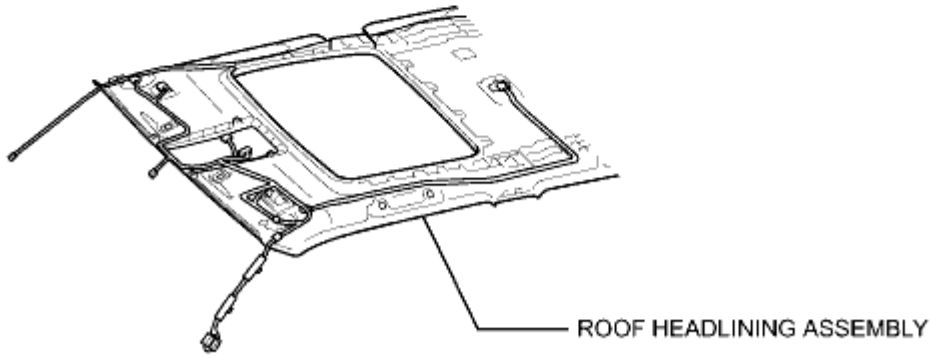


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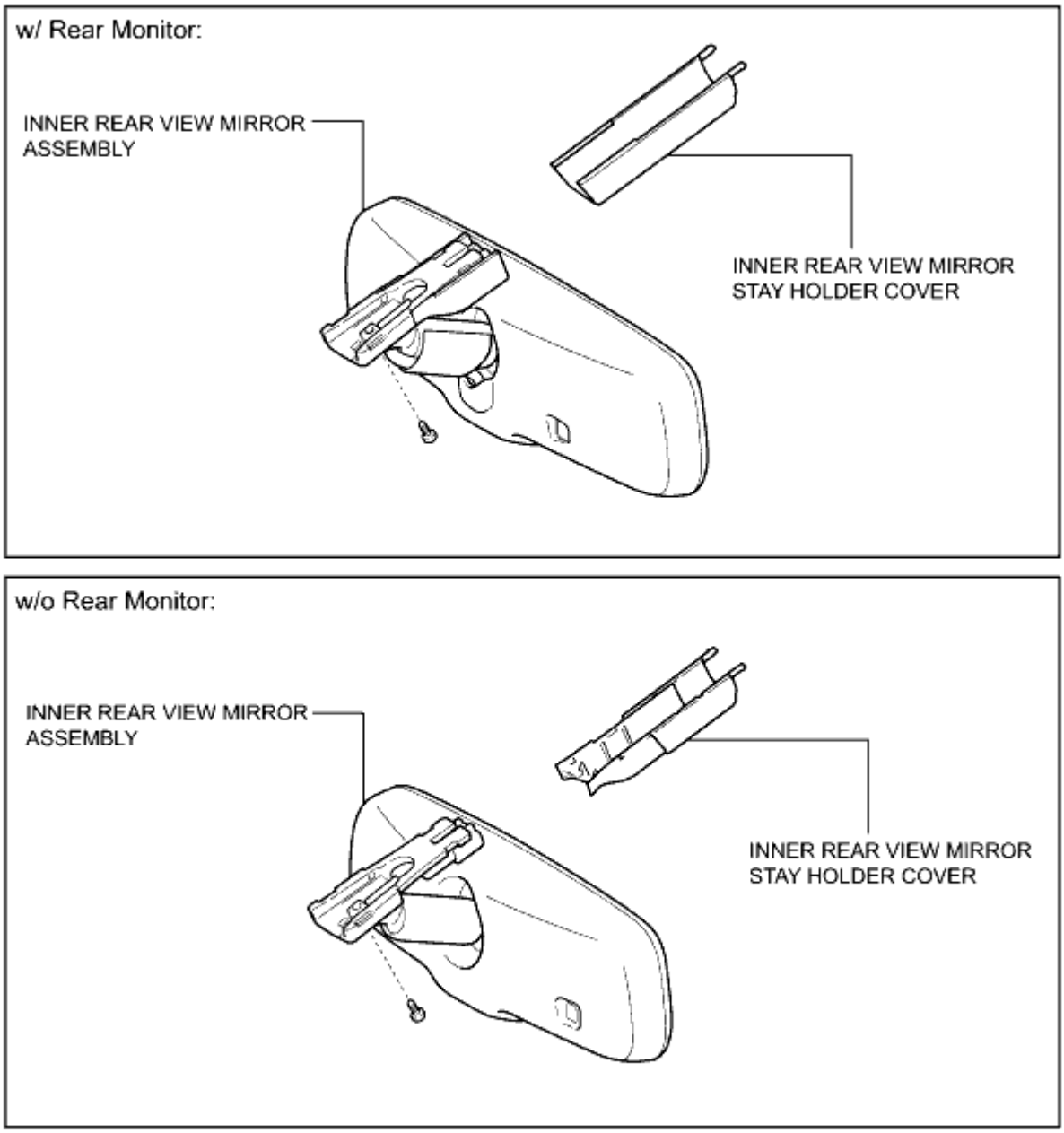
ILLUSTRATION

w/ EC Mirror:



H

ILLUSTRATION

w/o EC Mirror:

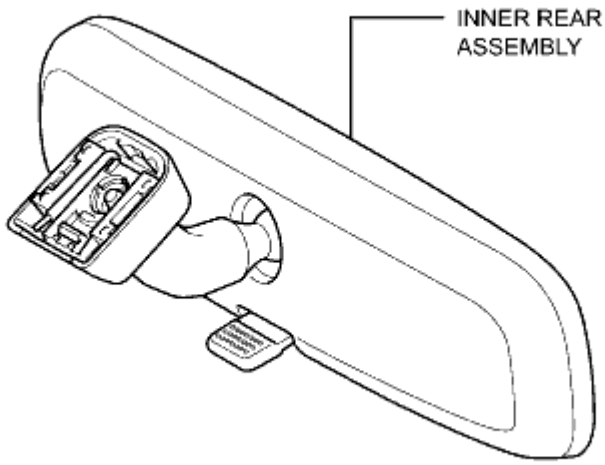


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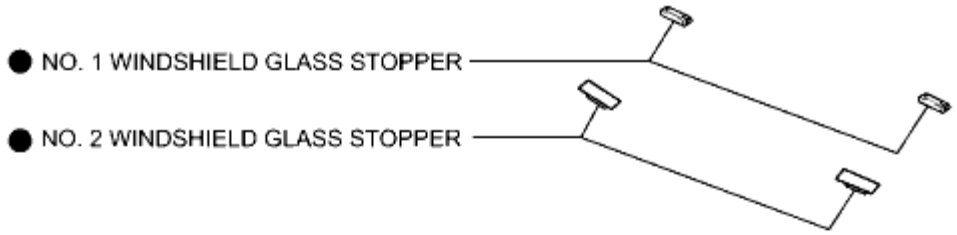
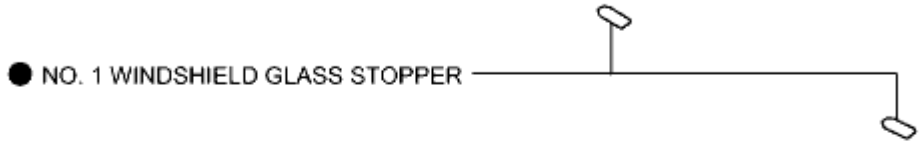
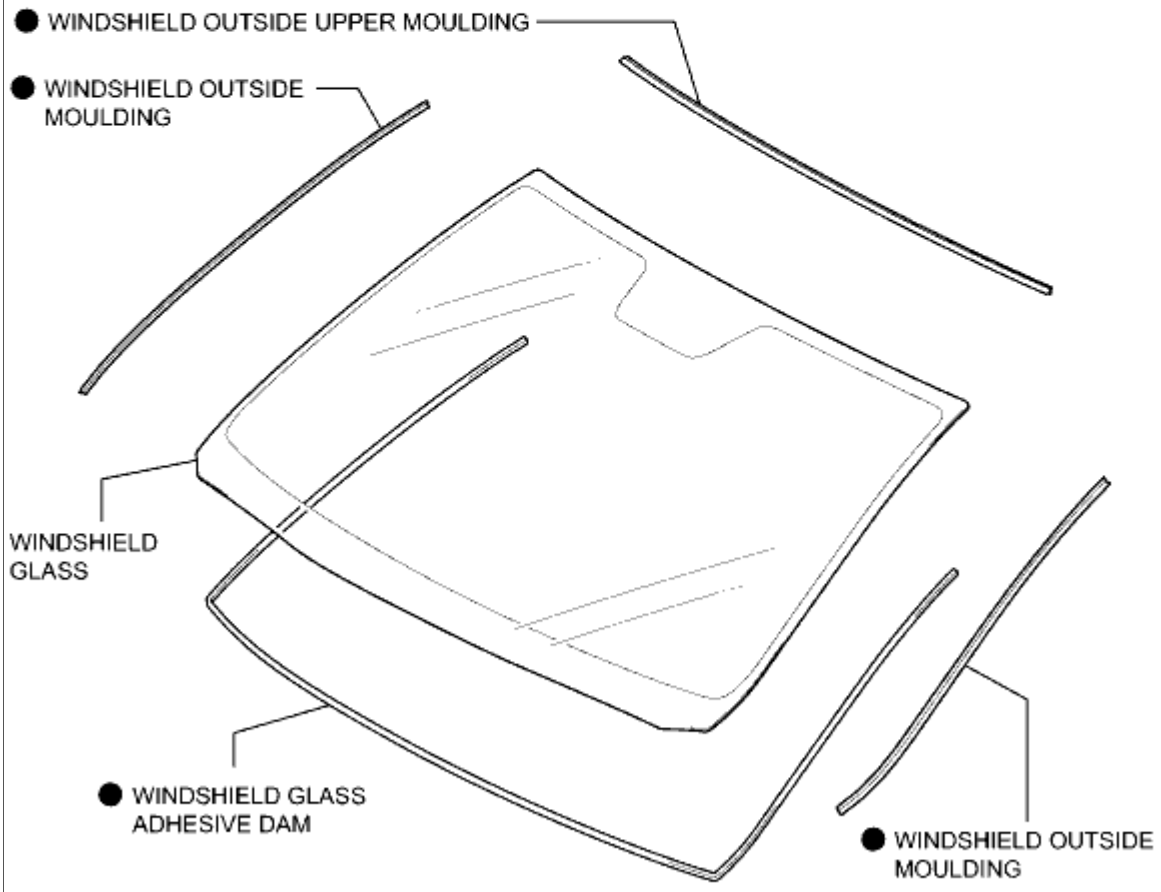
ILLUSTRATION

for 2-piece Type:



for 1-piece Type:





Non-reusable part

P

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000039DK00CX
Title: WINDOW / GLASS: WINDSHIELD GLASS: REMOVAL (2010 4Runner)		

REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

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

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO **.**

2. REMOVE UPPER RADIATOR SUPPORT SEAL INFO

3. REMOVE FRONT UPPER FENDER PROTECTOR LH INFO

4. REMOVE FRONT UPPER FENDER PROTECTOR RH INFO

5. REMOVE FRONT FENDER TO COWL SIDE SEAL LH INFO

6. REMOVE FRONT FENDER TO COWL SIDE SEAL RH INFO

7. REMOVE FRONT WIPER ARM HEAD CAP INFO

8. REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY LH INFO

9. REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY RH INFO

10. REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY INFO

11. REMOVE DOOR SCUFF PLATE ASSEMBLY LH INFO

12. REMOVE DOOR SCUFF PLATE ASSEMBLY RH INFO

13. REMOVE COWL SIDE TRIM BOARD LH INFO

14. REMOVE COWL SIDE TRIM BOARD RH INFO

15. REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP LH INFO

16. REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP RH INFO

17. REMOVE ASSIST GRIP PLUG INFO

18. REMOVE NO. 1 ASSIST GRIP INFO

19. REMOVE FRONT PILLAR GARNISH LH INFO

20. REMOVE FRONT PILLAR GARNISH RH INFO

21. REMOVE ASSIST GRIP SUB-ASSEMBLY INFO

22. REMOVE VISOR BRACKET COVER LH INFO

23. REMOVE VISOR BRACKET COVER RH INFO

24. REMOVE VISOR ASSEMBLY LH INFO

25. REMOVE VISOR ASSEMBLY RH INFO

26. REMOVE VISOR HOLDER INFO

27. REMOVE MAP LIGHT ASSEMBLY INFO

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

29. REMOVE INNER REAR VIEW MIRROR STAY HOLDER COVER (w/ EC Mirror) INFO

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

31. REMOVE ROOF HEADLINING ASSEMBLY

(a) Partially remove the roof headlining.

HINT:

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

Refer to the following procedures INFO **.**

32. REMOVE WINDSHIELD OUTSIDE MOULDING

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

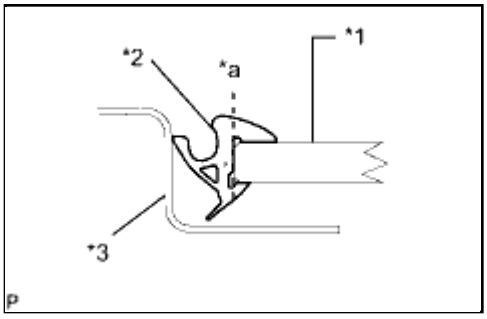
NOTICE:

Be careful not to damage the vehicle body.

(b) Remove the remaining moulding.

HINT:

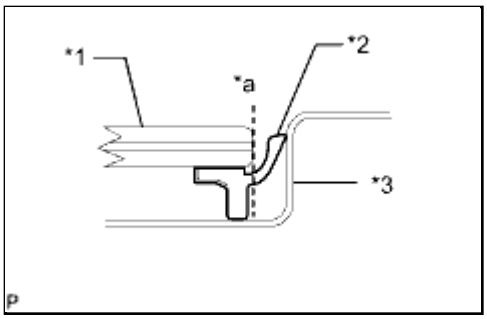
Make a partial cut in the moulding. Then pull and remove it by hand.



Text in Illustration

*1	Windshield Glass
*2	Moulding
*3	Vehicle Body
*a	Cut

33. REMOVE WINDSHIELD OUTSIDE UPPER MOULDING



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

NOTICE:

Be careful not to damage the vehicle body.

(b) Pull the shaded area shown in the illustration by hand to remove the windshield outside moulding.

HINT:

Make a partial cut in the moulding. Then pull and remove it by hand.

Text in Illustration

*1	Windshield Glass
*2	Moulding
*3	Vehicle Body
*a	Cut

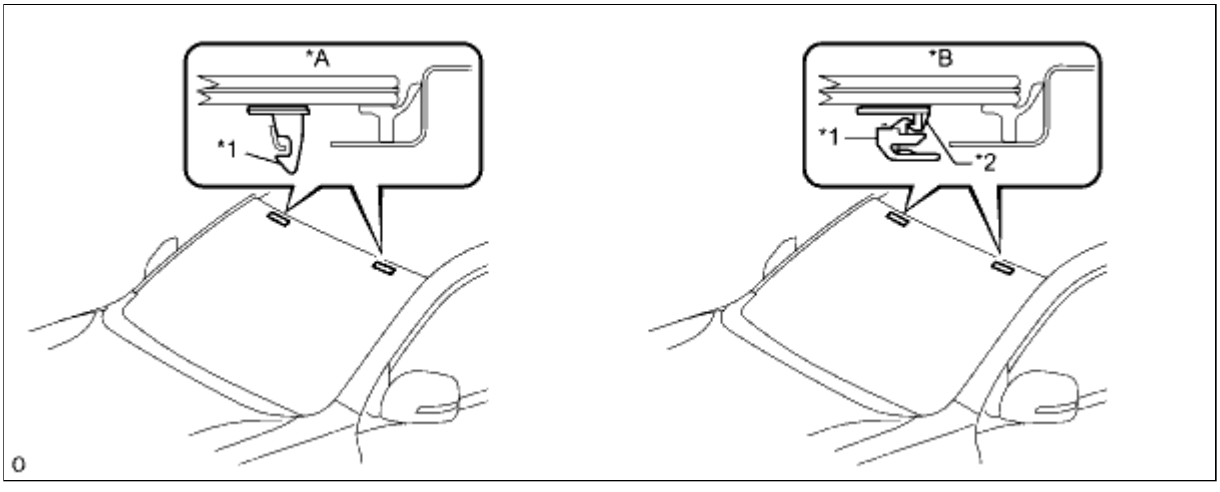
34. REMOVE WINDSHIELD GLASS

NOTICE:

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

HINT:

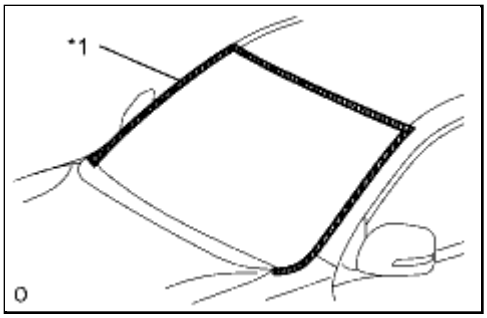
Depending on the vehicle specifications, a 1-piece or 2-piece type stopper is used.



Text in Illustration

*A	for 1-piece Type	*B	for 2-piece Type
*1	No. 1 Windshield Glass Stopper	*2	No. 2 Windshield Glass Stopper

(a) Apply protective tape around the windshield glass assembly on the vehicle body.

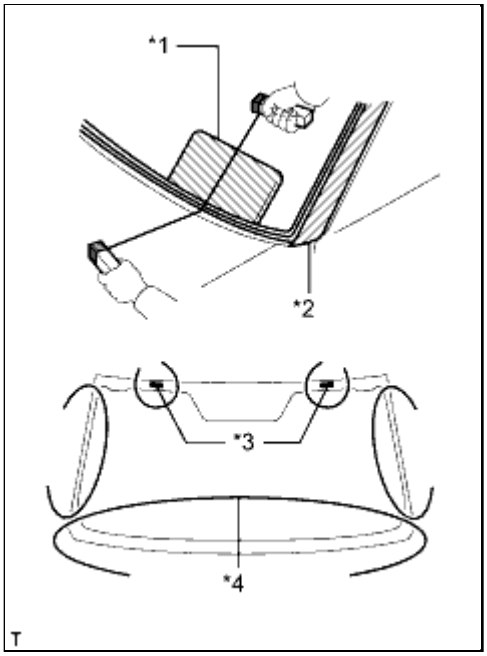


HINT:

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

Text in Illustration

*1	Protective Tape



(b) From the interior, insert a piano wire between the vehicle body and glass as shown in the illustration.

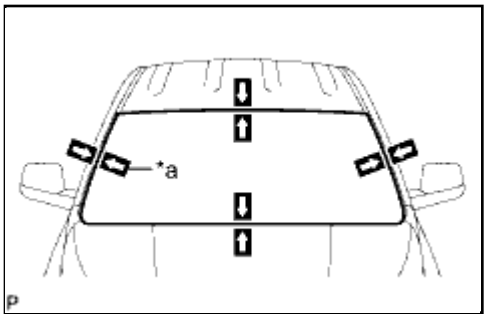
(c) Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

NOTICE:

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

Text in Illustration

*1	Plastic Sheet
*2	Protective Tape
*3	Stopper
*4	Piano Wire



(d) Place matchmarks on the glass and vehicle body at the locations indicated in the illustration.

NOTICE:

Matchmarks do not need to be placed if not reusing the glass.

Text in Illustration

*a	Matchmark

(e) w/ Windshield Deicer System:

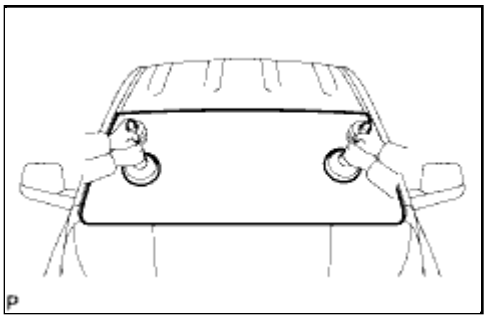
Disconnect the windshield deicer connector.

(f) Cut through the adhesive by pulling the piano wire around the glass.

NOTICE:

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

(g) Disconnect the stoppers.



(h) Using suction cups, remove the glass.

35. REMOVE WINDSHIELD GLASS ADHESIVE DAM

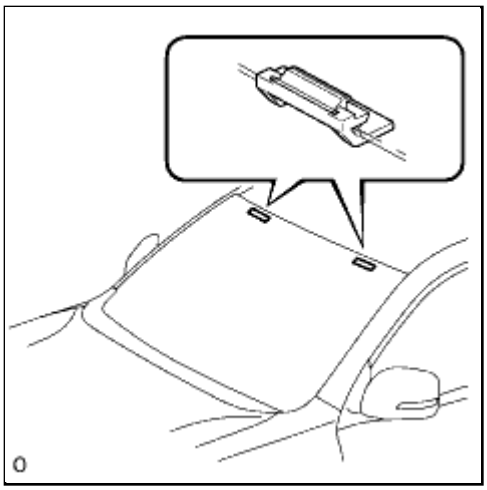
(a) Using a scraper, remove the dam.

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

(a) Using a scraper, remove the 2 stoppers.

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

(a) Using a scraper, remove the 2 stoppers.

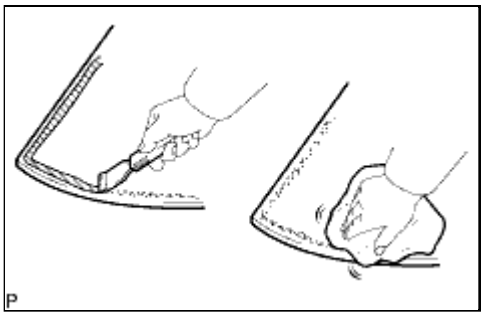


38. REMOVE NO. 1 WINDSHIELD GLASS STOPPER (for 2-piece Type)

(a) Remove the 2 stoppers.

NOTICE:

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



39. CLEAN WINDSHIELD GLASS

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

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

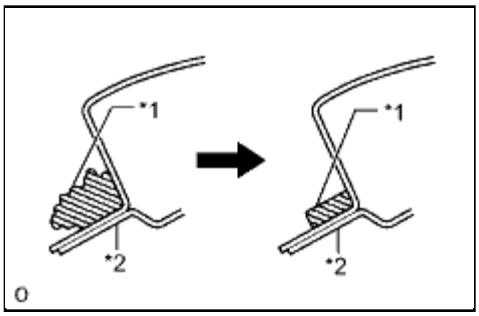
NOTICE:

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

40. CLEAN VEHICLE BODY

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

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



NOTICE:

Be careful not to damage the vehicle body.

HINT:

Leave as much adhesive on the vehicle body as possible.

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

HINT:

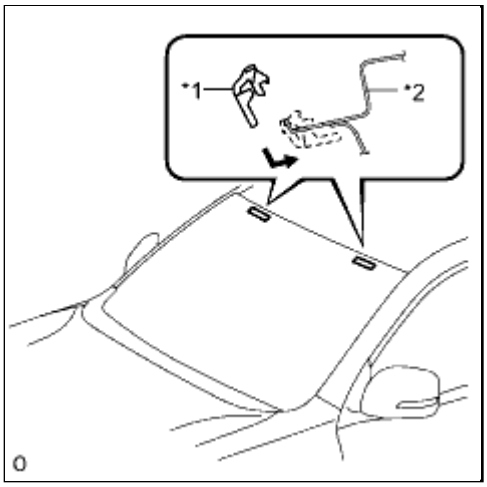
Even if all the adhesive has been removed, clean the vehicle body.

Text in Illustration

*1	Adhesive
*2	Vehicle Body

Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM0000039DI00CX
Title: WINDOW / GLASS: WINDSHIELD GLASS: INSTALLATION (2010 4Runner)		

INSTALLATION



1. INSTALL NO. 1 WINDSHIELD GLASS STOPPER

(a) Install 2 new stoppers to the vehicle body as shown in the illustration.

Text in Illustration

*1	Stopper
*2	Vehicle Body

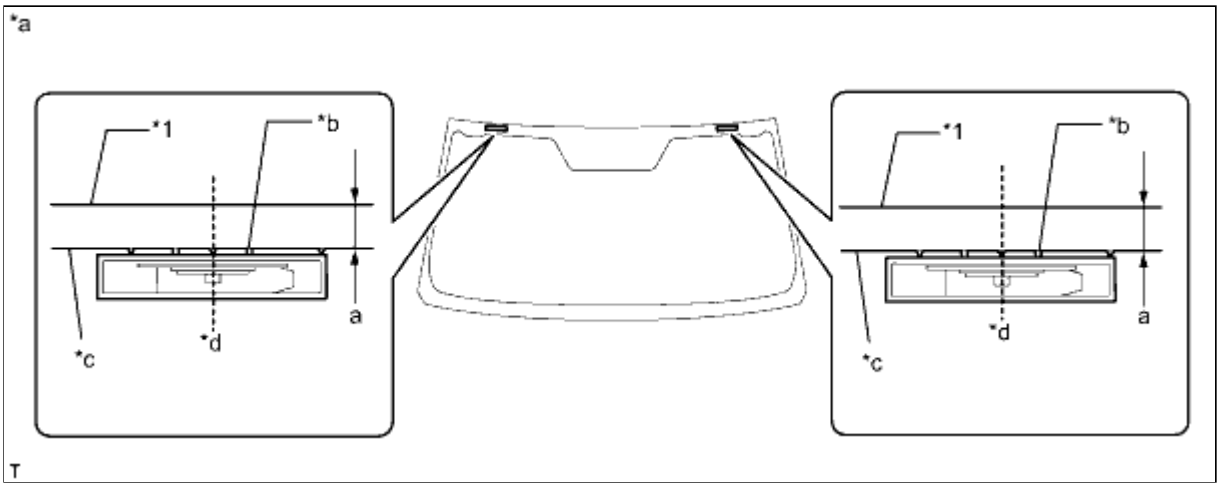
2. INSTALL NO. 2 WINDSHIELD GLASS STOPPER

(a) Apply Primer G to the glass where the stoppers will be installed.

NOTICE:

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

(b) Install 2 new stoppers to the glass at the locations shown in the illustration.



Text in Illustration

*1	Windshield Glass	-	-
*a	Backside	*b	Ceramic Notch
*c	Ceramic Line	d	Center

Standard:

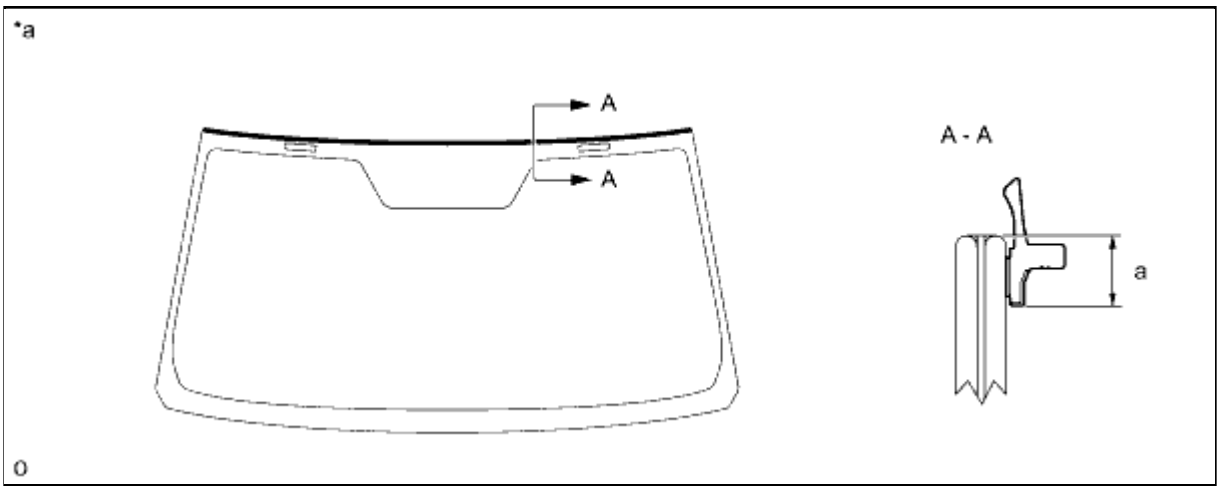
AREA	SPECIFIED CONDITION
a	14.2 mm (0.559 in.)

3. INSTALL WINDSHIELD OUTSIDE UPPER MOULDING

(a) Using a brush or sponge, coat the contact surface of the glass and moulding with Primer G as shown in the illustration.

NOTICE:

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



Text in Illustration

*a	Backside	-	-

Standard:

AREA	SPECIFIED CONDITION
a	6.9 mm (0.272 in.)

(b) Remove the peeling paper from a new windshield outside moulding. Install the moulding as shown in the illustration.

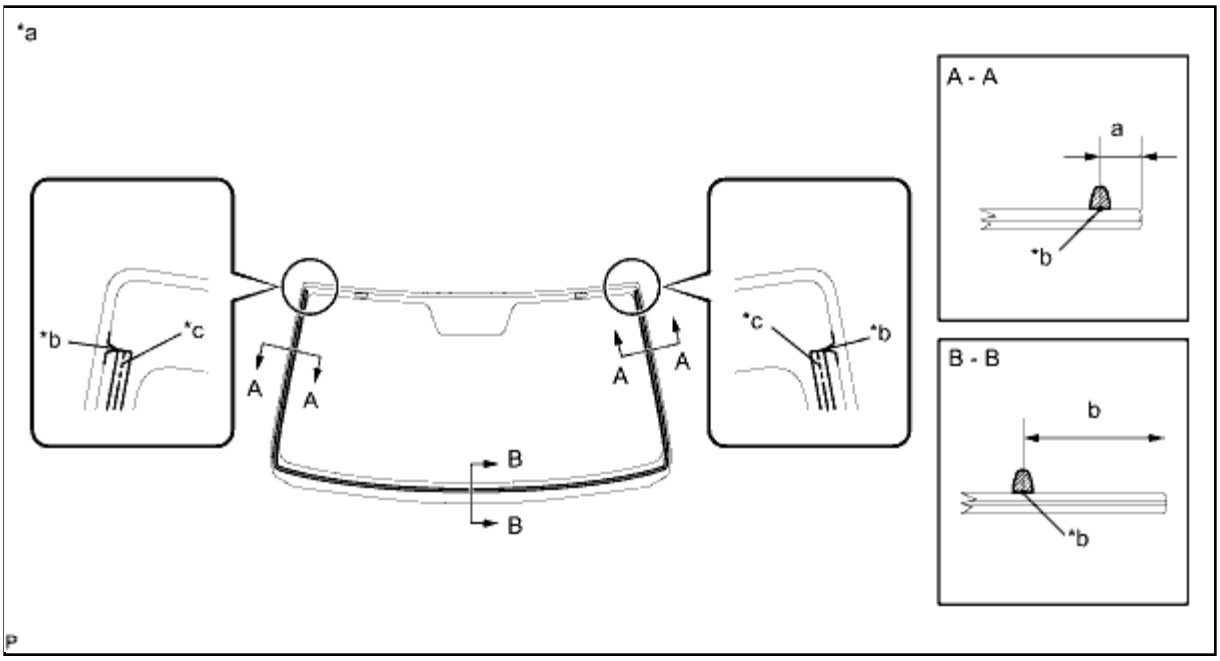
4. INSTALL WINDSHIELD GLASS ADHESIVE DAM

(a) Apply Primer G to the glass where the glass adhesive dam will be installed.

NOTICE:

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

(b) Remove the peeling paper from the adhesive part of a new dam. Install the dam (adhesive side) to the glass (Primer G area), but exclude the area above the notches on the upper part of the glass.



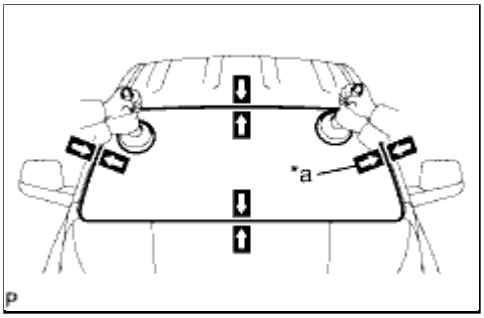
Text in Illustration

*a	Backside	*b	Ceramic Notch
*c	Dam Center Line	-	-

Standard:

AREA	SPECIFIED CONDITION
a	9.5 mm (0.374 in.)
b	37.7 mm (1.48 in.)

5. INSTALL WINDSHIELD GLASS



(a) Position the glass.

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

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

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

HINT:

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

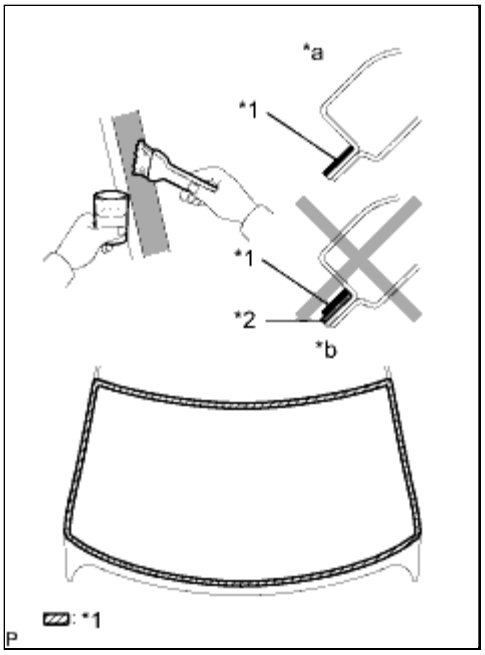
NOTICE:

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

(4) Using suction cups, remove the glass.

Text in Illustration

*a	Matchmark



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

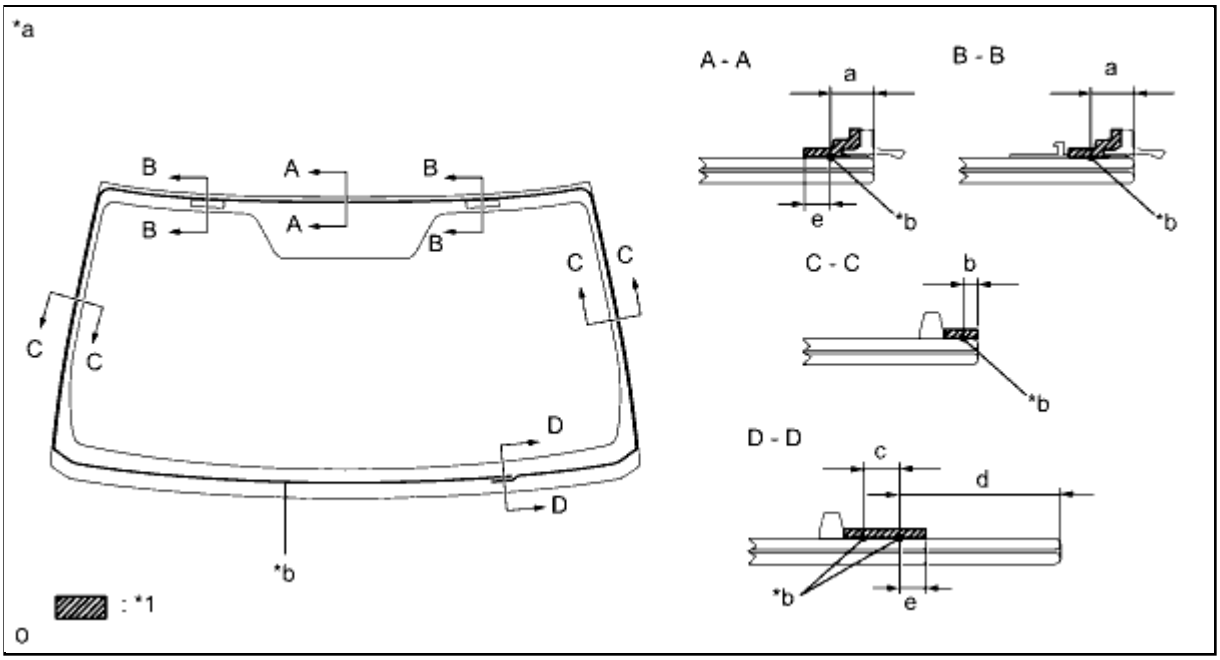
NOTICE:

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

Text in Illustration

*1	Primer M
*2	Adhesive
*a	CORRECT
*b	INCORRECT

(c) Using a brush or sponge, apply Primer G to the contact surface of the glass.



Text in Illustration

*1	Primer M	-	-
*a	Backside	*b	Adhesive Center Line

Standard:

AREA	SPECIFIED CONDITION
a	9.5 mm (0.374 in.)
b	3.0 mm (0.118 in.)
c	8.0 mm (0.315 in.)
d	28.1 mm (1.11 in.)
e	7.0 mm (0.276 in.)

HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

NOTICE:

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

(d) Apply adhesive to the glass.

Adhesive:
Toyota Genuine Windshield Glass Adhesive or equivalent

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

HINT:

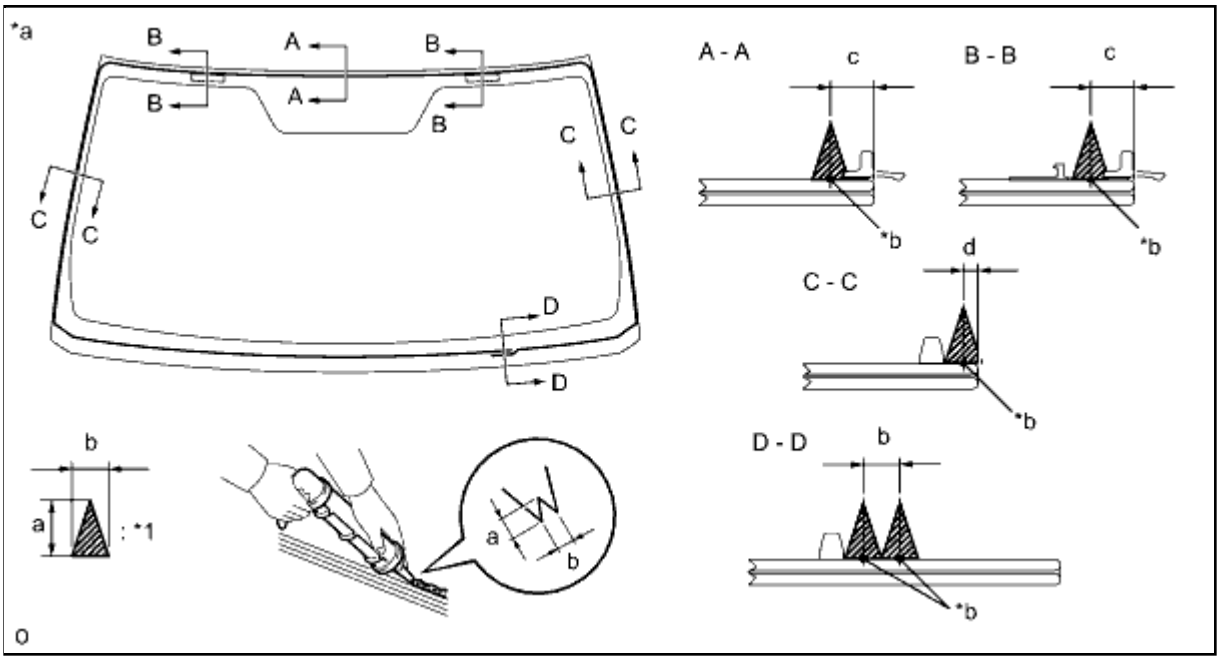
After cutting off the tip, use all adhesive within the time written in the table below.

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 a sealer gun with the cartridge.

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

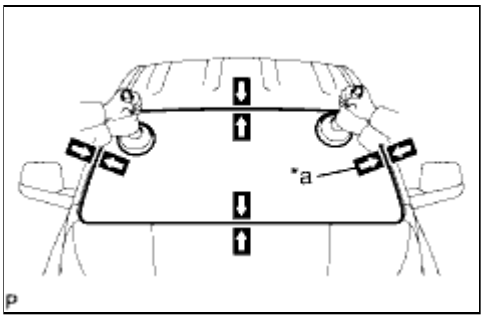


Text in Illustration

*1	Adhesive	-	-
*a	Backside	*b	Adhesive Center Line

Standard:

AREA	SPECIFIED CONDITION
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)
c	9.5 mm (0.374 in.)
d	3.0 mm (0.118 in.)



(e) Install the glass to the vehicle body.

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

Text in Illustration

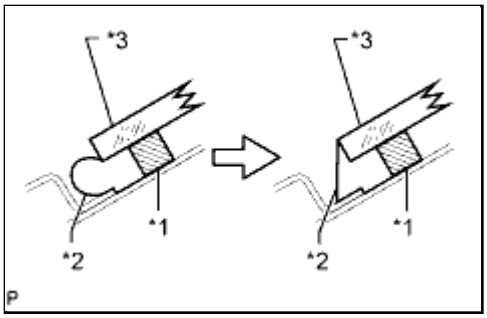
*a	Matchmark

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

NOTICE:

- Check that the stoppers are attached to the vehicle body correctly.
- Check that the vehicle body and glass have a small gap between them.

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



HINT:

Apply adhesive to any areas where the amount of adhesive is inadequate.

Text in Illustration

*1	Dam
*2	Adhesive
*3	Windshield Glass

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

NOTICE:

Do not drive the vehicle within the amount of time written in the table below.

Minimum Time:

TEMPERATURE	MINIMUM TIME PRIOR TO DRIVING VEHICLE
35°C (95°F)	1 hour 30 minutes

TEMPERATURE	MINIMUM TIME PRIOR TO DRIVING VEHICLE
20°C (68°F)	5 hours
5°C (41°F)	24 hours

(f) w/ Windshield Deicer System:

Connect the windshield deicer connector.

6. INSTALL WINDSHIELD OUTSIDE MOULDING

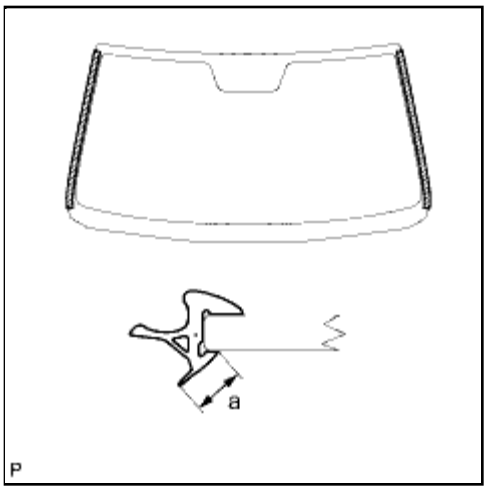
(a) Using a brush or sponge, apply Primer G to the glass where the moulding will be installed.

NOTICE:

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

HINT:

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



(b) Apply Primer G to the windshield outside moulding area "a" shown in the illustration.

(c) Install a new moulding to the windshield glass as shown in the illustration.

7. CHECK FOR LEAK AND REPAIR

(a) Conduct a leak test after the adhesive has completely hardened.

(b) Seal any leaks with auto glass sealer.

8. INSTALL ROOF HEADLINING ASSEMBLY

(a) Return the roof headlining to its original position. Refer to the following procedures INFO .

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

10. INSTALL INNER REAR VIEW MIRROR STAY HOLDER COVER (w/ EC Mirror) INFO

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

12. INSTALL MAP LIGHT ASSEMBLY INFO

13. INSTALL VISOR HOLDER INFO

14. INSTALL VISOR ASSEMBLY LH INFO

15. INSTALL VISOR ASSEMBLY RH INFO

16. INSTALL VISOR BRACKET COVER LH INFO

17. INSTALL VISOR BRACKET COVER RH INFO

18. INSTALL ASSIST GRIP SUB-ASSEMBLY INFO

19. INSTALL FRONT PILLAR GARNISH LH INFO

20. INSTALL FRONT PILLAR GARNISH RH INFO

21. INSTALL NO. 1 ASSIST GRIP INFO

22. INSTALL ASSIST GRIP PLUG INFO

23. INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP LH INFO

24. INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP RH INFO

25. INSTALL COWL SIDE TRIM BOARD LH INFO

26. INSTALL COWL SIDE TRIM BOARD RH INFO

27. INSTALL DOOR SCUFF PLATE ASSEMBLY LH INFO

28. INSTALL DOOR SCUFF PLATE ASSEMBLY RH INFO

29. INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY INFO

30. INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY RH INFO

31. INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY LH INFO

32. INSTALL FRONT WIPER ARM HEAD CAP INFO

33. INSTALL FRONT FENDER TO COWL SIDE SEAL LH INFO

34. INSTALL FRONT FENDER TO COWL SIDE SEAL RH INFO

35. INSTALL FRONT UPPER FENDER PROTECTOR LH INFO

36. INSTALL FRONT UPPER FENDER PROTECTOR RH INFO

37. INSTALL UPPER RADIATOR SUPPORT SEAL INFO

38. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO **.**