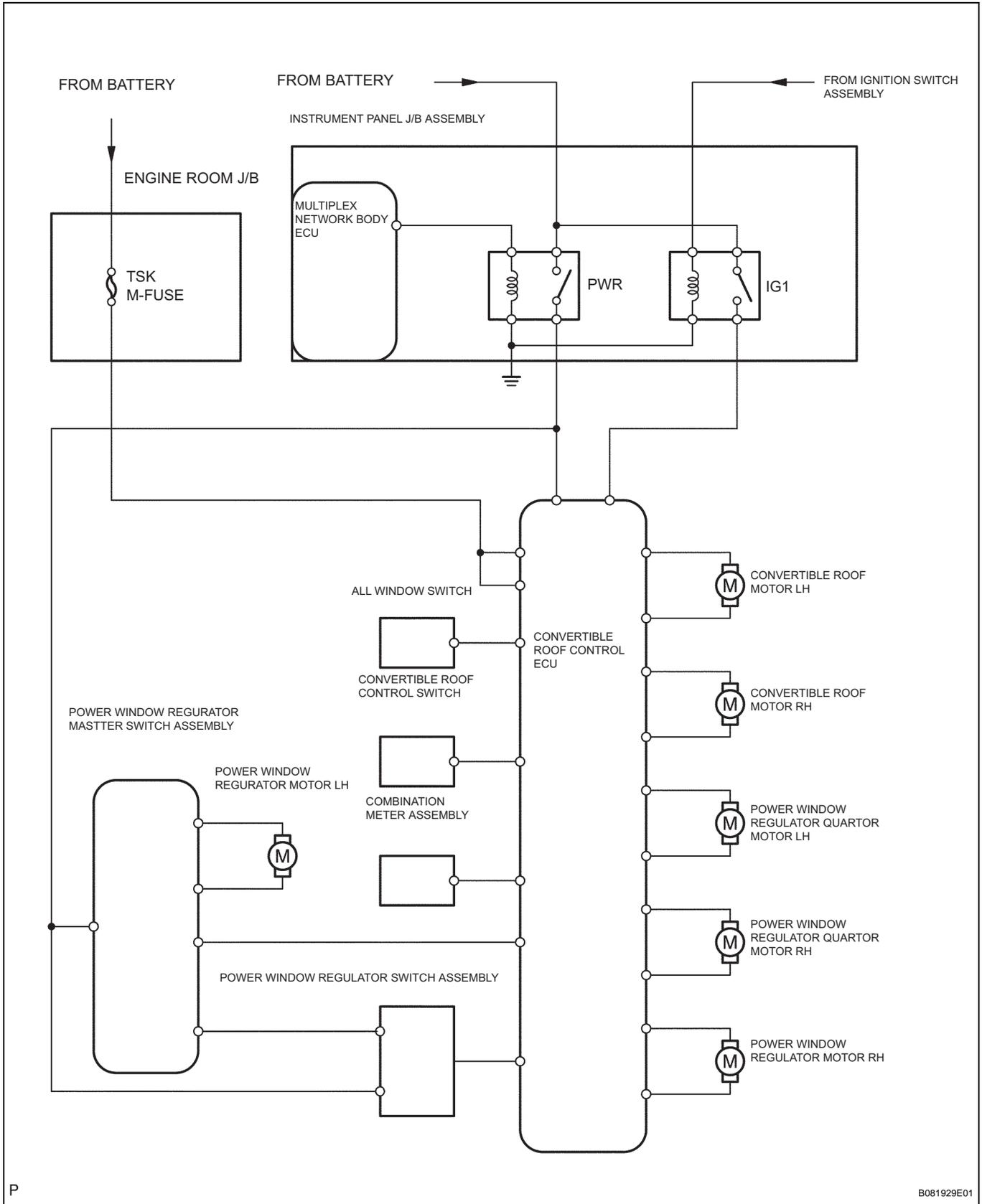


SYSTEM DIAGRAM



CT

SYSTEM DESCRIPTION

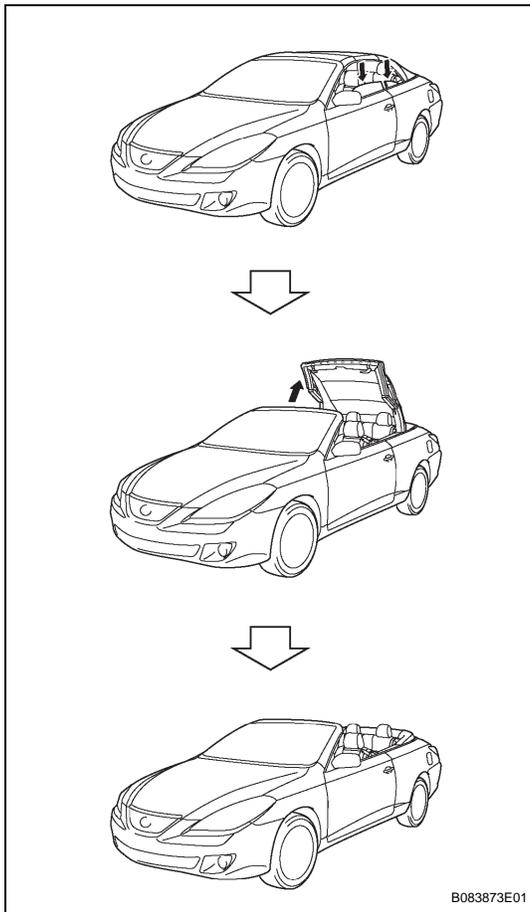
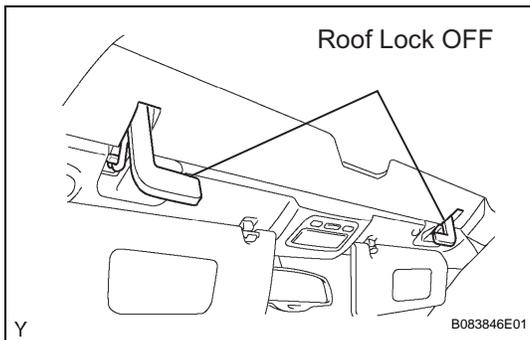
1. CONVERTIBLE ROOF CONTROL SYSTEM DESCRIPTION

(a) The SOLARA convertible has adopted a one-button operation (continuous operation), electric opening/closing type convertible roof system. This system has the following features.

- (1) This system uses an electric motor to open and close the soft top, which consists of 6 link hinges. (operation time: approximately 10 seconds)
- (2) This system is controlled by the convertible roof control ECU.

2. OPENING OPERATION OF CONVERTIBLE ROOF CONTROL SYSTEM

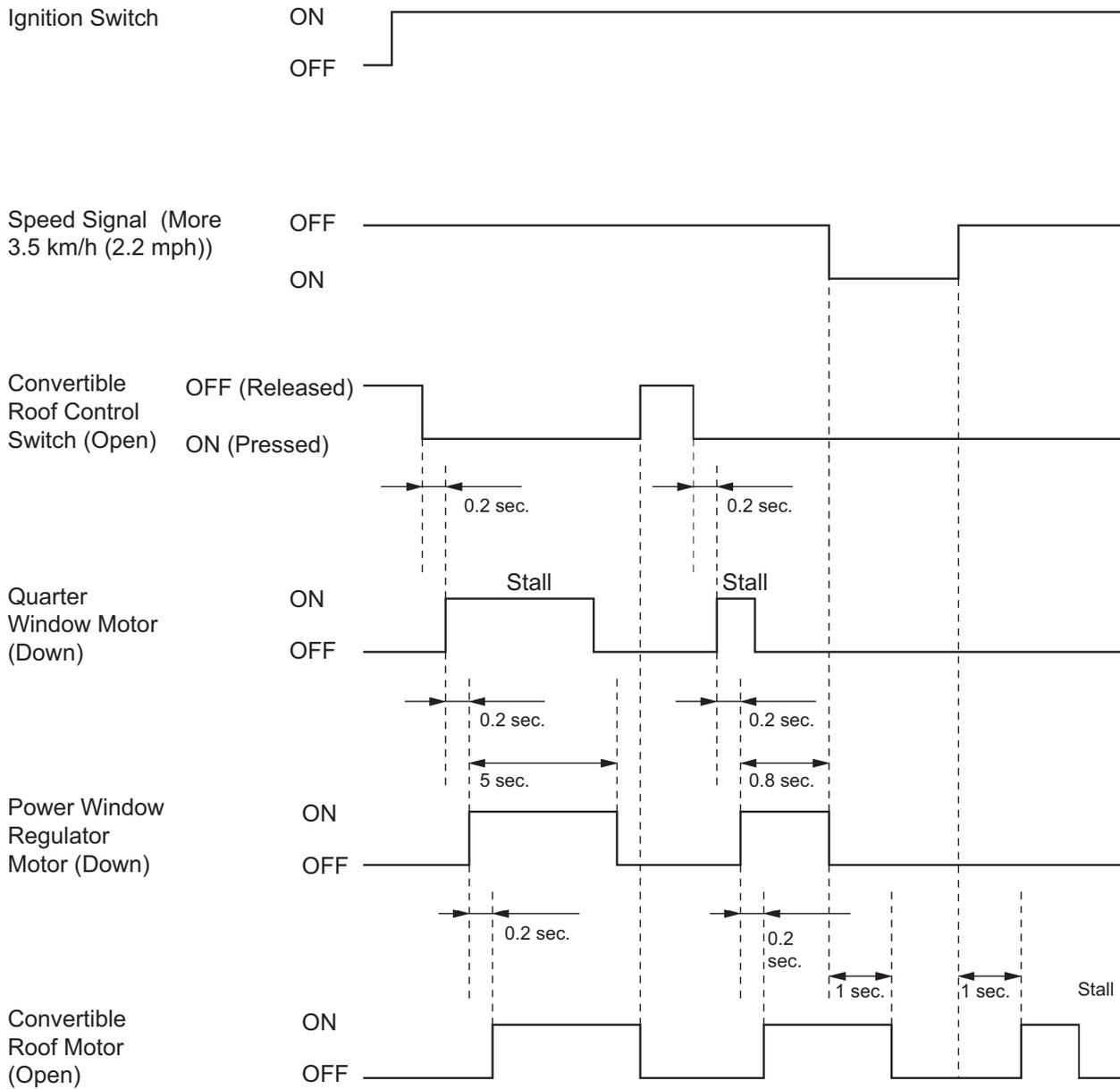
(a) Release the roof locks (roof lock OFF).

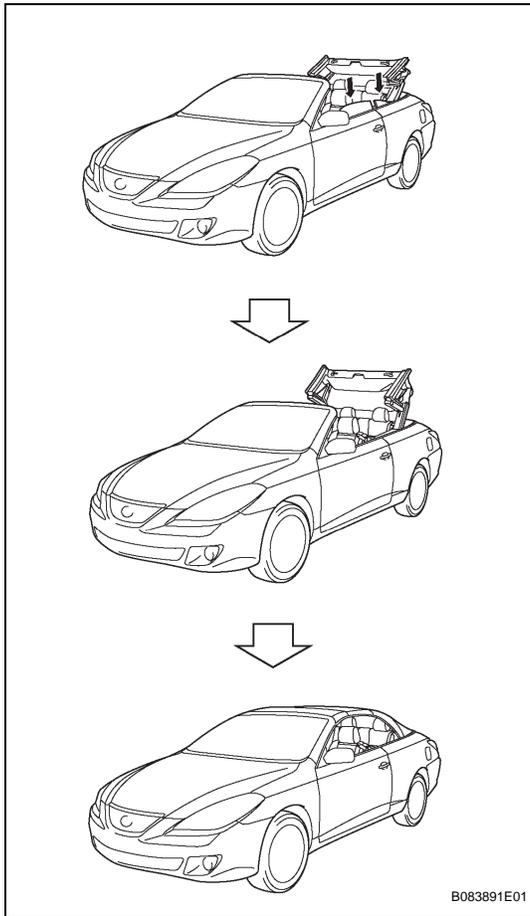


- (b) Turn the ignition switch ON and make sure the vehicle is stopped. Press and hold the convertible roof control OPEN switch. 0.2 seconds after the OPEN switch is pressed, a quarter window motor open signal is sent and the quarter windows open. 0.4 seconds after the OPEN switch is pressed, a power window regulator motor open signal is sent and the door windows open. 0.6 seconds after the OPEN switch is pressed, a roof motor open signal is sent and the soft top opens.
- (c) When the quarter window motors and roof motors have stalled for approximately 0.5 seconds, the open signals are cancelled.
- (d) After a power window regulator motor open signal is sent, the signal will continue for 5 seconds. Then the signal will be cancelled. If the OPEN switch is pressed again, a power window regulator motor open signal will continue for 0.8 seconds and then will be cancelled.
- (e) All outputs signals are turned OFF immediately when the convertible roof control switch is turned OFF.

- (f) Then convertible roof motor output signal is turned OFF when the vehicle is moving more than 3.5 km/h (2.2 mph).

Opening Operation of Convertible Roof Control System



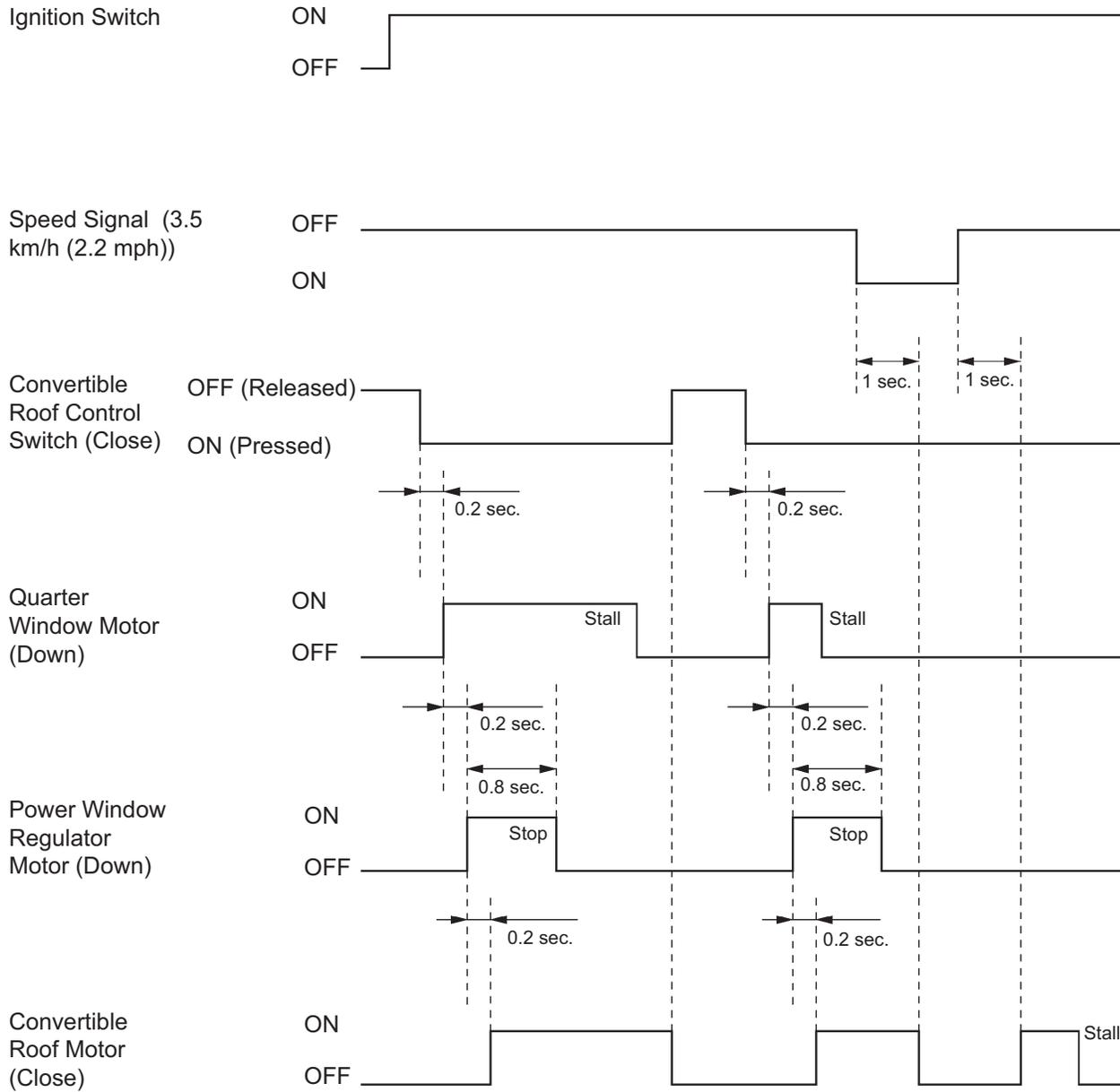


3. CLOSING OPERATION OF CONVERTIBLE ROOF CONTROL SYSTEM

- (a) Turn the ignition switch ON and make sure the vehicle is stopped. Press and hold the convertible roof control CLOSE switch. 0.2 seconds after the CLOSE switch is pressed, a quarter window motor open signal is sent and the quarter windows open. 0.4 seconds after the CLOSE switch is pressed, a power window regulator motor open signal is sent and the door windows open. 0.6 seconds after the CLOSE switch is pressed, a roof motor close signal is sent and the soft top roof closes.
- (b) When the quarter window motors and roof motors have stalled for approximately 0.5 seconds, the open signals are cancelled.
- (c) After a power window regulator motor open signal is sent, the signal will continue for 0.8 seconds. Then the signal will be cancelled.
- (d) All outputs signal are turned OFF immediately when the convertible roof control switch is turned OFF.

- (e) The convertible roof motor output signal is turned OFF when the vehicle is moving more the 3.5 km/h (2.2 mph).

Closing Operation of Convertible Roof Control System



CT

4. OPERATING CONDITIONS

(a) The convertible roof control system will operate when the following conditions are met.

- Ignition switch is ON
- Vehicle speed: less than 3.5 km/h (2.2 mph)
- Convertible roof control switch is ON (OPEN or CLOSE switch is being pressed)

If the above conditions are not met during the convertible roof open/close operation, the system will stop operating.

HINT:

Approximately 43 seconds after the ignition switch is turned OFF, the convertible roof ECU makes the roof motor drive circuit an open circuit. As a result, the soft top can be opened or closed manually.

5. MOTOR CONTROL

- The convertible roof control ECU has a function to detect the stalling of the convertible roof motor by increasing the amperage being sent to motors. When the soft top is in the fully opened/closed condition, the ECU detects the stalling of the roof motor and will stop the roof motor.
- The quarter window motors operate in the same way as the roof motors.
- The door window motors operate according to the convertible roof control ECU's output signals for 5 seconds when the soft top is opened (0.8 seconds when the roof control OPEN switch is pressed a second time) and 0.8 seconds when the soft top is closed.

6. WINDOW LINKED CONTROL

(a) If the roof control OPEN/CLOSE switch is pressed, the convertible roof control ECU will start opening both quarter windows (0.2 seconds after the switch is pressed) and start opening both door windows (0.4 seconds after the switch is pressed) before opening or closing the soft top (0.6 seconds after the switch is pressed).

NOTICE:

The door window motors may overheat as a result of repeated roof control switch operations. If the ECU detects repeated switch operations, the ECU may deactivate the door window motors. If deactivated, the convertible roof control system's open/close operation will not be linked with the door window's fully open operation.

HINT:

- If the battery voltage is low or the vehicle is in an area that is 0°C (32 °F) or less, the convertible roof control system's open/close operation may not be linked with the door window's fully open operation.

- If you wish to use the all window switch to close all of the windows simultaneously:
Press the all window switch. First, the door windows will lower approximately 100 mm (3.94 in.) and the quarter windows will fully close first. Continue holding down the all window switch and the door windows will then fully close.

7. OTHER PROTECTION CONTROL

(a) Motor current control

- (1) The convertible roof control ECU has a function to detect the stalling of the roof motors and quarter window motors by detecting of current (amperage) applied to the motors. When the ECU detects the stalling of any motor, it will stop actuating the motor.

Stall detection value

Motor Name	Stall Detection Current
Convertible roof motor	Approx. 10 A
Quarter window motor	Approx. 7 A (when convertible roof control switch is operated) Approx. 9.5 A (when all window switch is operated)

CT

(b) Timer control.

- (1) If the designated maximum operating time for a motor has expired, the convertible roof control ECU will stop motor actuation.

Timer value

Motor Name	Maximum Operating Time
Convertible Roof Motor	Approx. 20 seconds
Quarter Window Motor	Approx. 10 seconds
Door Window Motor	Approx. 5 seconds

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

Use these procedures to troubleshoot the convertible roof control system.

1 VEHICLE BROUGHT TO WORKSHOP

NEXT

2 CUSTOMER PROBLEM ANALYSIS CHECK AND SYMPTOM CHECK

NEXT

3 PROBLEM SYMPTOMS TABLE

- (a) If the fault is not listed on the problem symptoms table, proceed to A.
- (b) If the fault is listed on the problem symptoms table, proceed to B.

B

Go to step 5

A

4 OVERALL ANALYSIS AND TROUBLESHOOTING

NEXT

5 ADJUST, REPAIR OR REPLACE

NEXT

6 CONFIRMATION TEST

NEXT

END

CT

PROBLEM SYMPTOMS TABLE

CONVERTIBLE ROOF CONTROL SYSTEM

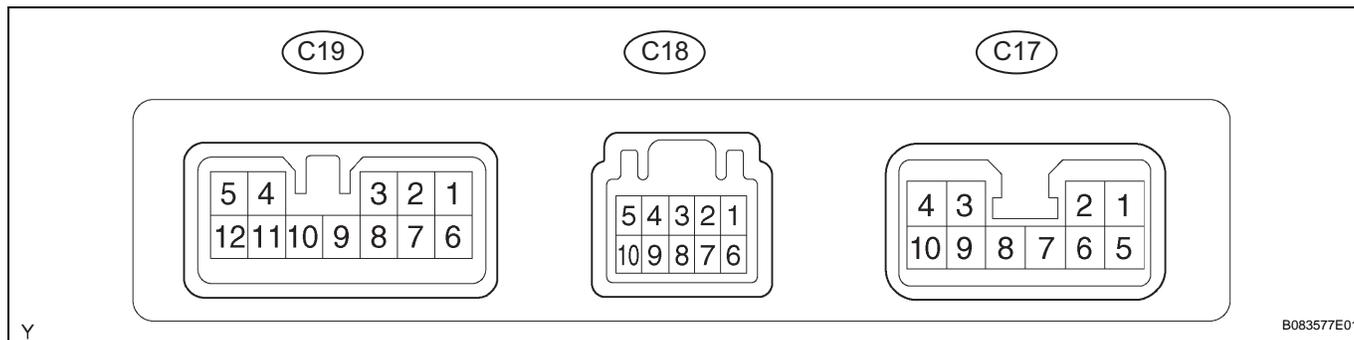
Symptom	Suspected area	See page
Soft top and all windows do not operate when convertible roof control switch is operated (all windows do not operate when all window switch is operated)	1.ECU power source circuit	CT-19
Soft top and all windows do not operate when convertible roof control switch is operated (all windows operate when all window switch is operated)	1.Convertible roof control switch circuit	CT-17
Only soft top does not operate when convertible roof control switch is operated	1.Convertible roof motor circuit	CT-15
Soft top operates when vehicle is being driven	1.Vehicle speed signal circuit	CT-19
All windows do not operate when all window switch is operated (all windows do not operate when convertible roof control switch is operated)	1.ECU power source circuit	CT-19
All windows do not operate when all window switch is operated (all windows operate when convertible roof control switch is operated)	1.All window switch circuit	WS-54
Only soft top operates when convertible roof control switch is operated (driver and passenger side power windows operate when master switch is operated)	1.ECU power source circuit	CT-19
Only quarter window does not operated when convertible roof control switch is operated	1.Quarter window motor circuit	WS-55
Only each of side windows does not operated when convertible roof control switch is operated	1.Power window motor circuit	WS-54

CT

TERMINALS OF ECU

1. CHECK CONVERTIBLE ROOF CONTROL ECU

(a) Disconnect the C17, C18 and C19 ECU connectors.



(b) Measure the voltage and resistance of the wire harness side connectors.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
BTP (C17-10) - Body ground	W - Body ground	Convertible roof motor power supply	Always	10 to 14 V
EIG (C18-5) - Body ground	B-R - Body ground	Ignition power supply	Ignition switch OFF → ON	Below 1 V → 10 to 14 V
GND1 (C17-2) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
GND2 (C19-10) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
GND3 (C18-9) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
SPD (C18-2) - Body ground	V-W - Body ground	Speed signal from combination meter	Ignition switch ON, rotate driving wheel slowly	Pulse generation (See page ME-13)
TPU (C18-1) - Body ground	B-R - Body ground	Convertible roof control switch CLOSE input	Convertible roof control switch OFF → CLOSE	10 kΩ or higher → Below 1 Ω
TPD (C18-6) - Body ground	B - Body ground	Convertible roof control switch OPEN input	Convertible roof control switch OFF → OPEN	10 kΩ or higher → Below 1 Ω
WLSW (C18-10) - Body ground	G - Body ground	Window lock switch input	Window lock switch LOCK → UNLOCK	10 kΩ or higher → Below 1 Ω

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

(c) Reconnect the C17, C18 and C19 ECU connectors.

(d) Measure the voltage the connectors.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
TL+ (C17-7) - GND1 (C17-2)	L-W - W-B	Convertible roof motor (LH) CLOSE output	Ignition switch ON, Convertible roof control switch OFF → CLOSE	Below 1 V → 10 to 14 V
TL- (C17-3) - GND1 (C17-2)	W-R - W-B	Convertible roof motor (LH) OPEN output	Ignition switch ON, Convertible roof control switch OFF → OPEN	Below 1 V → 10 to 14 V
TSR+ (C19-2) - GND1 (C17-2)	L-W - W-B	Convertible roof motor (RH) CLOSE output	Ignition switch ON, Convertible roof control switch OFF → CLOSE	Below 1 V → 10 to 14 V
TSR- (C19-3) - GND1 (C17-2)	W-R - W-B	Convertible roof motor (RH) OPEN output	Ignition switch ON, Convertible roof control switch OFF → OPEN	Below 1 V → 10 to 14 V

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

ON-VEHICLE INSPECTION

1. CHECK SOFT TOP OPERATION

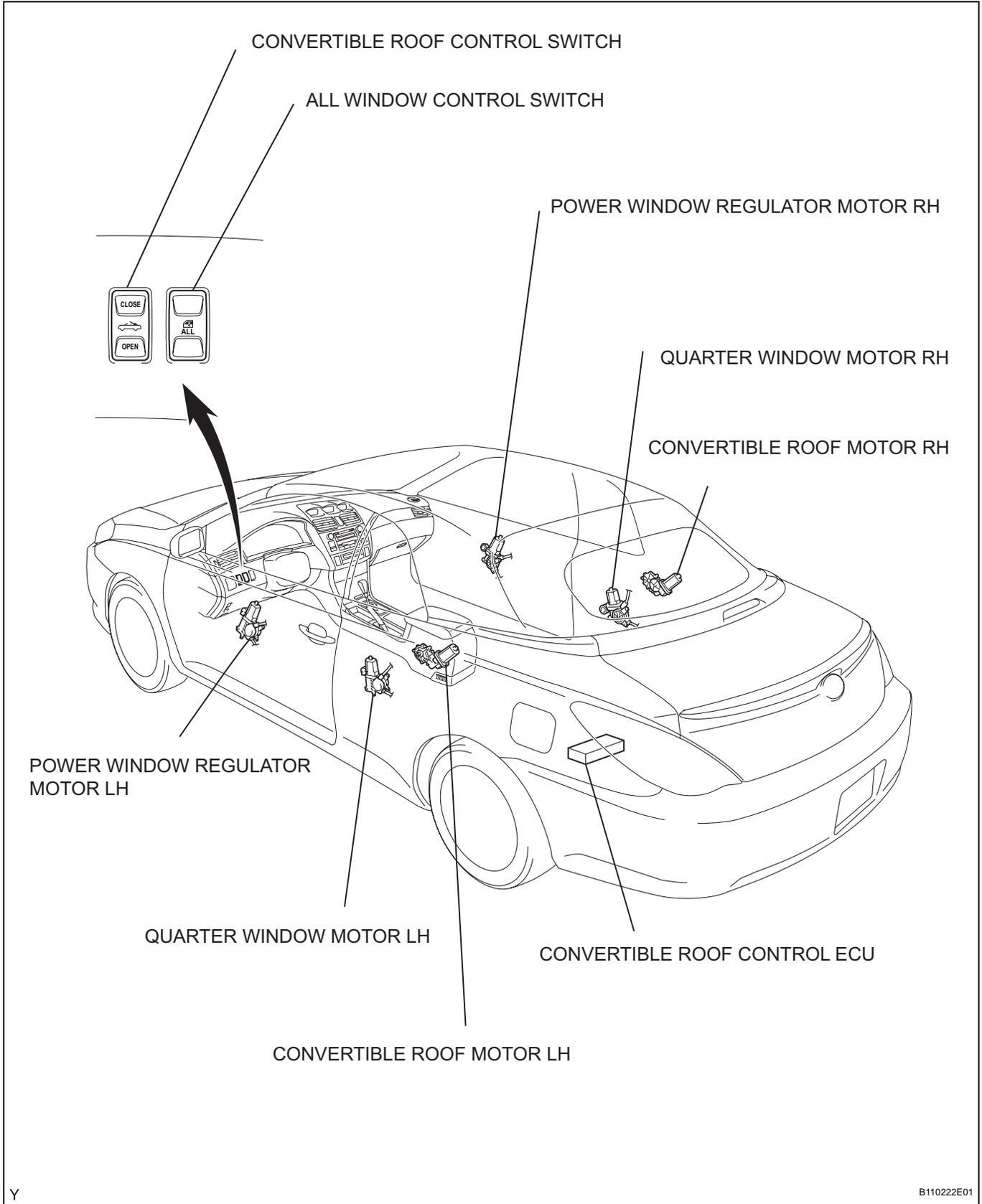
HINT:

The convertible roof control system will operate when the following conditions are met: the ignition switch is ON, the vehicle speed is less than 3.5 km/h (2.2 mph) and the convertible roof control switch is ON (OPEN or CLOSE)

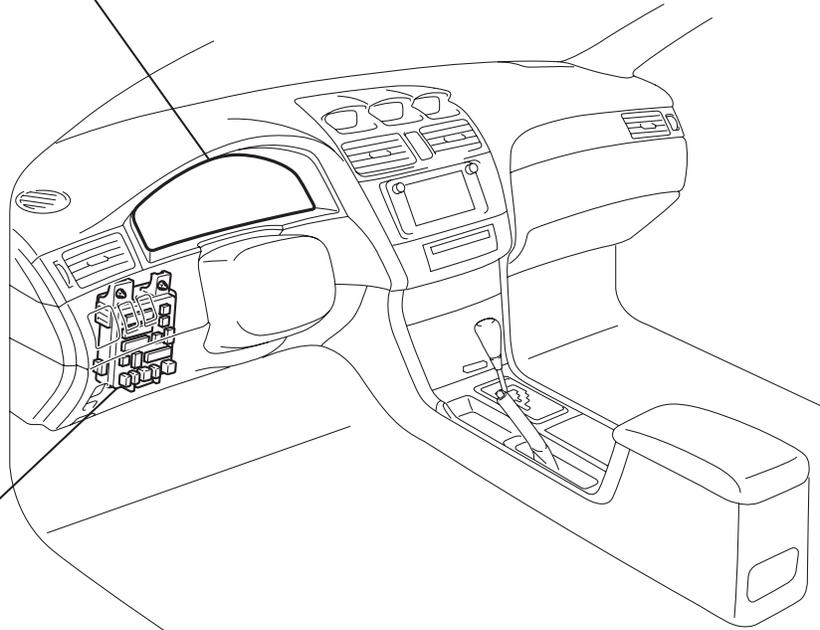
- (a) Check the soft top opening operation.
 - (1) Turn the ignition switch ON and stop the vehicle.
 - (2) Make sure the roof locks are OFF.
 - (3) Press and hold down the convertible roof control OPEN switch. Check that the quarter windows, door windows and soft top fully open.
- (b) Check the soft top closing operation.
 - (1) Turn the ignition switch ON and stop the vehicle.
 - (2) Press and hold down the convertible roof control CLOSE switch. Check that the quarter windows fully open, door windows open for a certain distance and then the soft top fully closes.
- (c) Check that the soft top opens/closes by hand.
 - (1) Turn the ignition switch OFF and wait for approximately 43 seconds.
 - (2) Use your hands to move the soft top and check that it can open and close smoothly.

CONVERTIBLE ROOF CONTROL SYSTEM

PARTS LOCATION



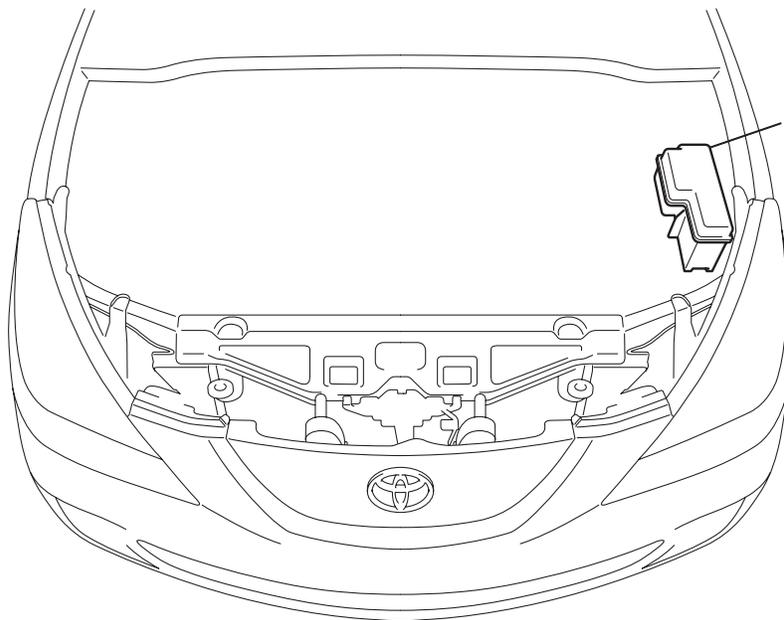
COMBINATION METER ASSEMBLY



CT

INSTRUMENT PANEL J/B ASSEMBLY

- MULTIPLEX NETWORK BODY ECU
- PWR RELAY
- IG1 RELAY
- PWR FUSE
- AM1 FUSE
- ECU-IG FUSE

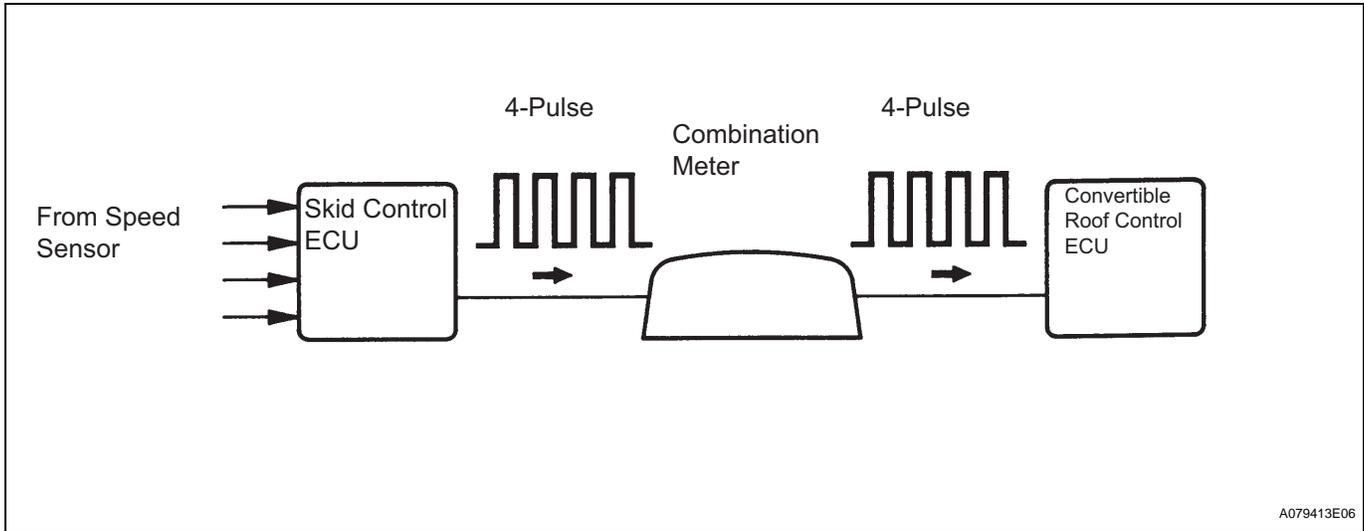


ENGINE ROOM J/B
● TSK M-FUSE

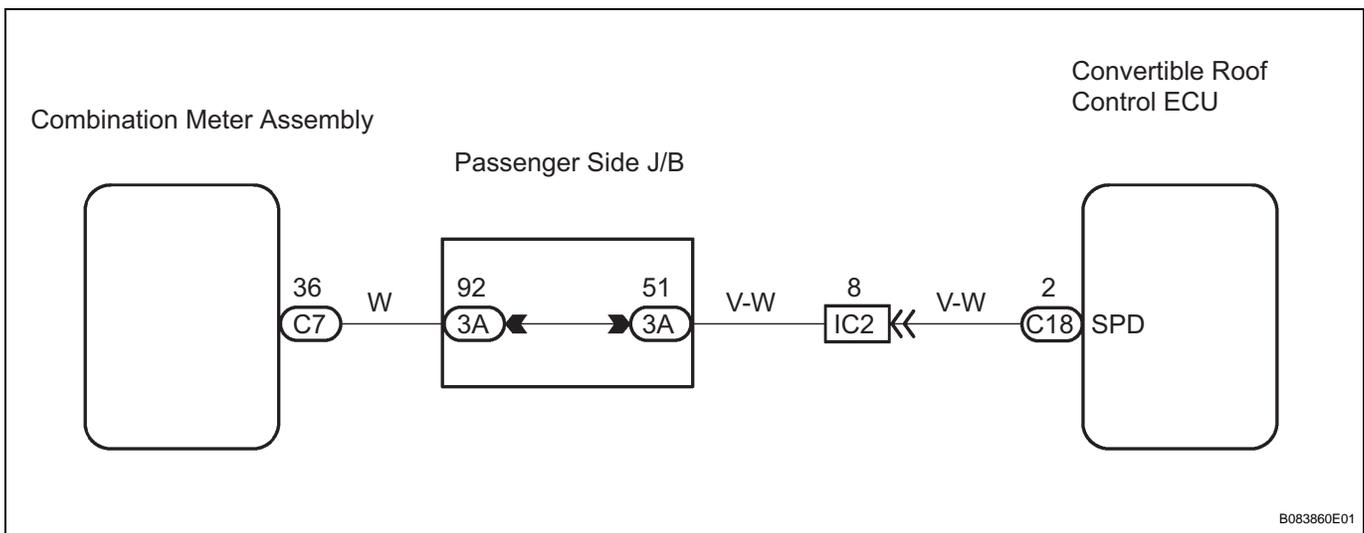
Vehicle Speed Signal Circuit

DESCRIPTION

Vehicle speed signals travel from the skid control ECU to the combination meter to the convertible roof control ECU. When the vehicle speed is over 3.5 km/h (2.2 mph), the roof control ECU stops the motors. The vehicle speed is detected by the skid control ECU, which receives vehicle speed signals from its sensor. The skid control ECU then converts these signals into 4-pulse signals and outputs the signals to the combination meter. The combination meter then converts the signals into more precise, rectangular waveforms using its built-in waveform sharpening circuit. Finally, the speed signals are output to the roof control ECU. The roof control ECU determines the vehicle speed based on the frequency of the pulse signals.



WIRING DIAGRAM



1 CHECK OPERATION OF SPEEDOMETER

- (a) Drive the vehicle and check if operation of the speedometer in the combination meter is normal.

OK:

Speedometer display is normal.

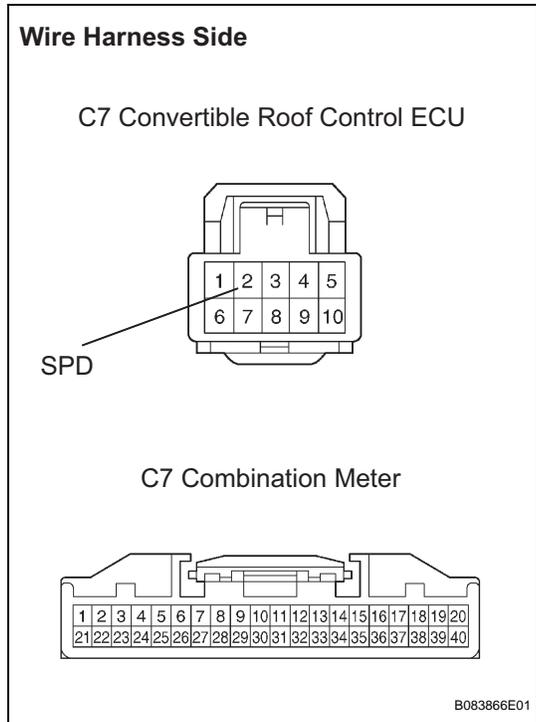
HINT:

The vehicle speed sensor is operating normally if the speedometer display is normal.

NG **GO TO COMBINATION METER**

OK

2 CHECK WIRE HARNESS (CONVERTIBLE ROOF CONTROL ECU - COMBINATION METER)



- (a) Disconnect the C18 ECU connector.
- (b) Disconnect the C7 meter connector.
- (c) Measure the resistance of the wire harness side connectors.

Resistance

Tester Connection	Specified Condition
C18-2 (SPD) - C7-36	Below 1 Ω
C18-2 (SPD) - Body ground	10 kΩ or higher

CT

NG **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPLACE CONVERTIBLE ROOF CONTROL ECU

Convertible Roof Motor Circuit

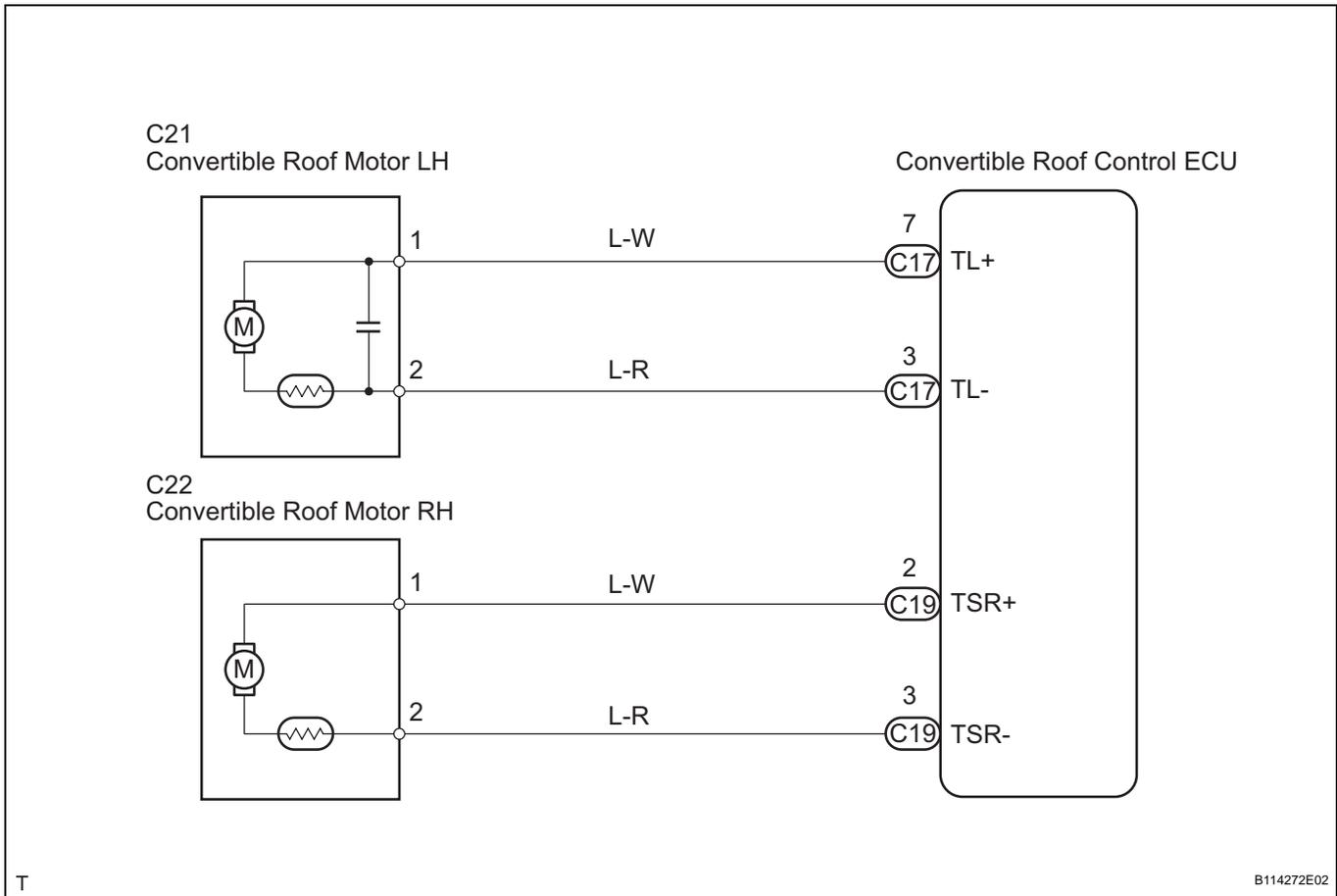
DESCRIPTION

The convertible roof motors are installed in the left and right roof links. The roof motors drive the roof links directly and open/close the soft top. Pressing the convertible roof control OPEN/CLOSE switch activates the motors through the convertible roof control ECU.

The convertible roof control ECU can determine if a roof motor has stalled by checking the motor's amperage level. If the soft top is fully open/closed but the motors have a current of 10 A, the ECU assumes that the motors are stalled and sends a stop signal to deactivate the motors.

To prevent motor overload, the ECU performs timer control. In timer control, the ECU will automatically stop the roof motors after 20 seconds of continuous operation (designated fail-safe time).

WIRING DIAGRAM



CT

1 INSPECT CONVERTIBLE ROOF MOTOR

NG

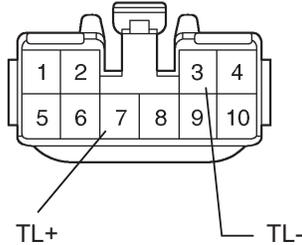
REPLACE CONVERTIBLE ROOF MOTOR

OK

2 CHECK HARNESS AND CONNECTOR (CONVERTIBLE ROOF CONTROL ECU - CONVERTIBLE ROOF MOTOR)

Wire Harness Side

C17
Convertible Roof Control ECU



C21
Convertible Roof Motor LH



B083863E01

- (a) Check the wire harness between the convertible roof control ECU and convertible roof motor LH.
- (1) Disconnect the C17 ECU connector.
 - (2) Disconnect the C21 motor connector.
 - (3) Measure the resistance of the wire harness side connectors.

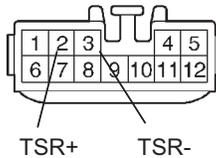
Resistance

Tester Connection	Specified Condition
C17-7 (TL+) - C21-1	Below 1 Ω
C17-3 (TL-) - C21-2	Below 1 Ω
C21-1 - Body ground	10 kΩ or higher
C21-2 - Body ground	10 kΩ or higher

CT

Wire Harness Side

C19
Convertible Roof Control ECU



C22
Convertible Roof Motor RH



B083864E01

- (b) Check the wire harness between the convertible roof control ECU and convertible roof motor RH.
- (1) Disconnect the C19 ECU connector.
 - (2) Disconnect the C22 motor connector.
 - (3) Measure the resistance of the wire harness side connectors.

Resistance

Tester Connection	Specified Condition
C19-2 (TSR+) - C22-1	Below 1 Ω
C19-3 (TSR-) - C22-2	Below 1 Ω
C22-1 - Body ground	10 kΩ or higher
C22-2 - Body ground	10 kΩ or higher

NG **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPLACE CONVERTIBLE ROOF CONTROL ECU

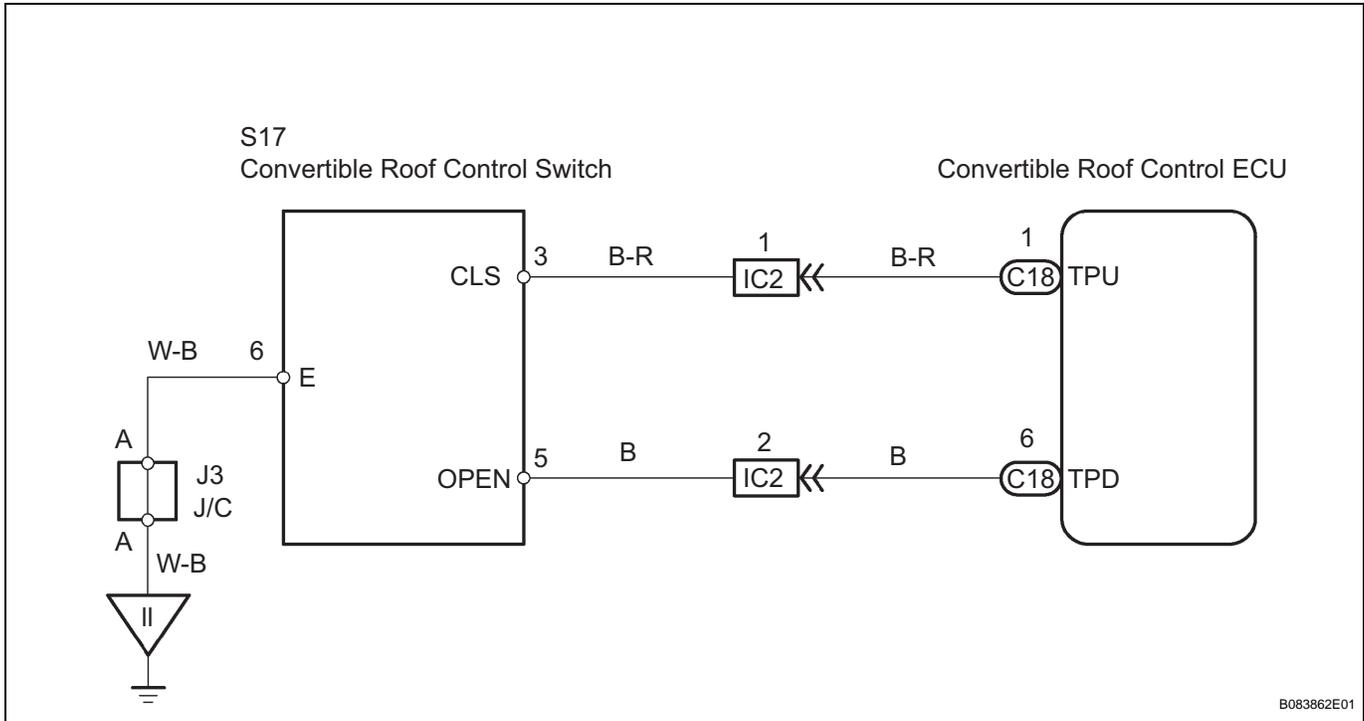
Convertible Roof Control Switch Circuit

DESCRIPTION

The convertible roof control switch is installed in the instrument panel. Pressing the convertible roof control OPEN/CLOSE switch opens/closes the soft top. While the switch is pressed, the soft top, front door windows and quarter windows will move according to a set pattern.

A wire harness connects the convertible roof control switch and the convertible roof control ECU. If the roof's operating conditions are met, the roof motors, door window motors and quarter window motors will operate according to switch input.

WIRING DIAGRAM



CT

1 INSPECT CONVERTIBLE ROOF CONTROL SWITCH

NG

REPLACE CONVERTIBLE ROOF CONTROL SWITCH

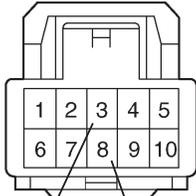
OK

2

CHECK WIRE HARNESS (CONVERTIBLE CONTROL ECU - CONVERTIBLE SWITCH AND BODY GROUND)

Wire Harness Side

C18
Convertible Roof Control ECU

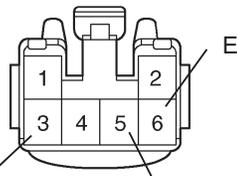


SU

SD

S17

Convertible Roof Control Switch



CLS

OPEN

B083865E01

- (a) Disconnect the C18 ECU connector.
- (b) Disconnect the S17 switch connector.
- (c) Measure the resistance of the wire harness side connectors.

Resistance

Tester Connection	Specified Condition
C18-1 (TPU) - S17-3 (CLS)	Below 1 Ω
C18-6 (TPD) - S17-5 (OPEN)	Below 1 Ω
S17-6 (E) - Body ground	Below 1 Ω
S17-3 (CLS) - Body ground	10 kΩ or higher
S17-5 (OPEN) - Body ground	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

CT

OK

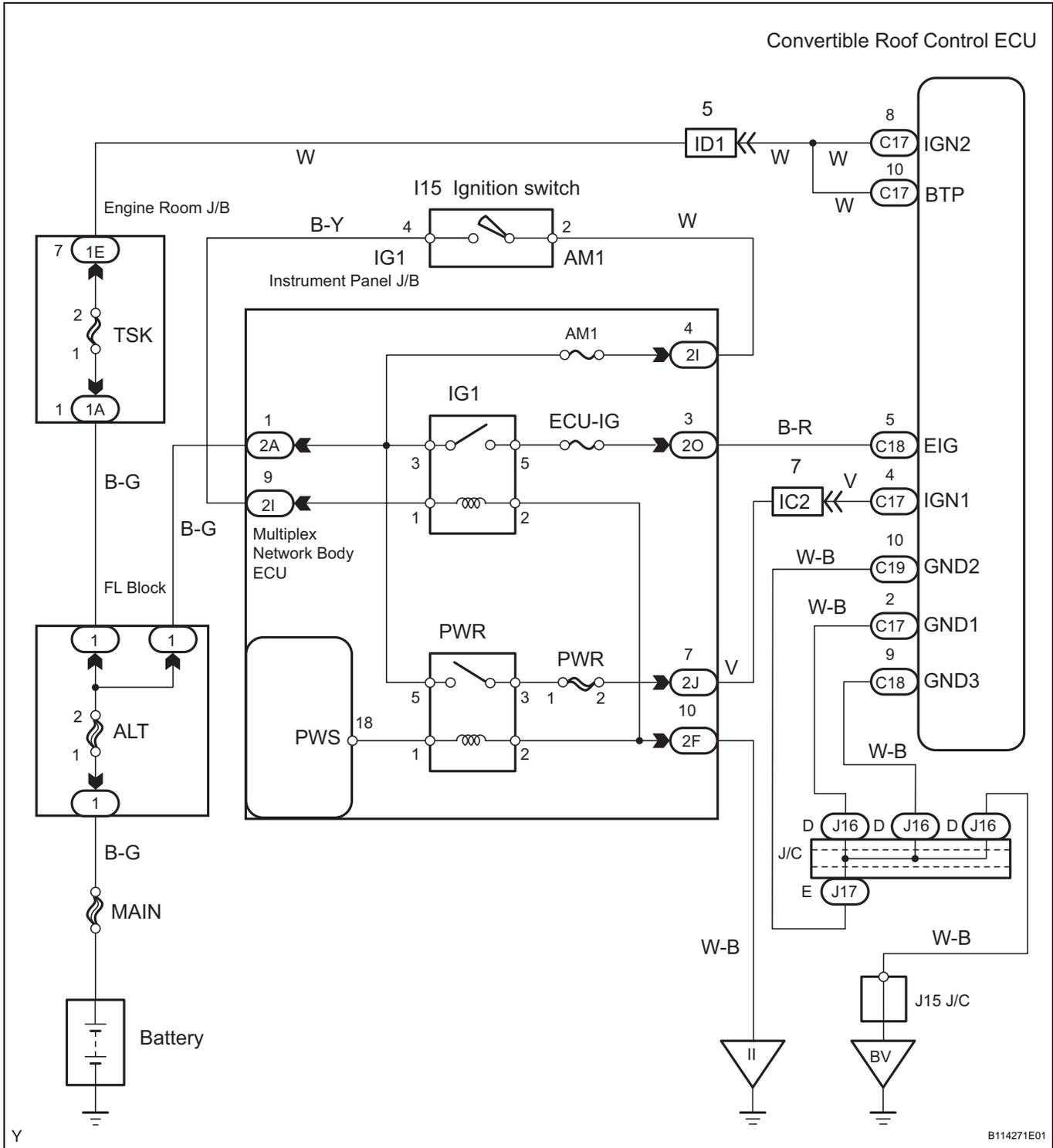
REPLACE CONVERTIBLE ROOF CONTROL ECU

ECU Power Source Circuit

DESCRIPTION

This circuit supplies power to the convertible roof control ECU.

WIRING DIAGRAM



CT

Y

1 INSPECT FUSE (ECU-IG, PWR, AM1, TSK)

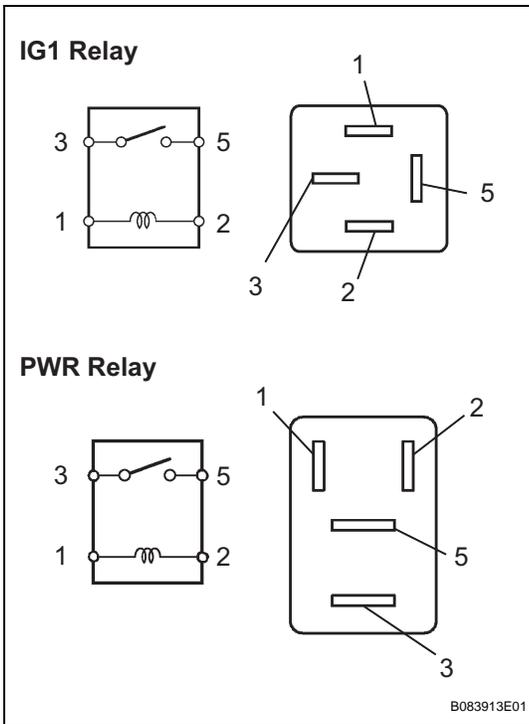
- (a) Remove the ECU-IG, PWR and AM1 fuses from the instrument panel J/B.
- (b) Remove the TSK fuses from the engine room J/B.
- (c) Measure the resistance of the fuses.

Resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

2 INSPECT RELAY (IG1, PWR)



- (a) Remove the IG1 and PWR relays from the instrument panel J/B.
- (b) Measure the resistance of the relays.

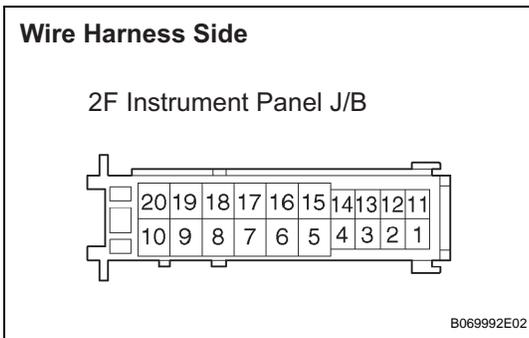
Resistance

Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
3 - 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)

NG → **REPLACE RELAY**

OK

3 CHECK WIRE HARNESS (INSTRUMENT PANEL J/B - BODY GROUND)



- (a) Disconnect the 2F J/B connector.
- (b) Measure the resistance of the wire harness side connector.

Resistance

Tester Connection	Specified Condition
2F-10 - Body ground	Below 1Ω

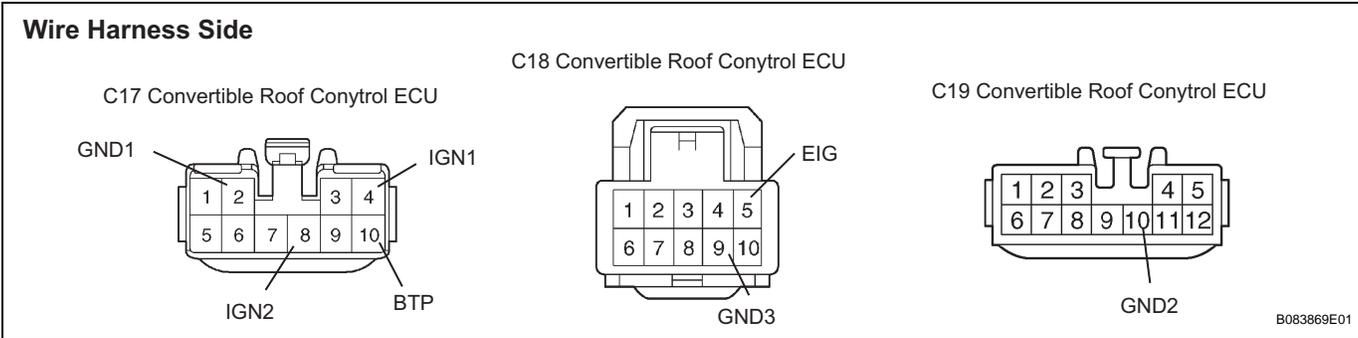
NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

CT

OK

4 CHECK WIRE HARNESS (COVERTIBLE ROOF CONTROL ECU - BATTERY AND BODY GROUND)

(a) Disconnect the C17, C18 and C19 ECU connectors.



(b) Measure the voltage and resistance of the wire harness side connectors.

Standard

Tester Connection	Condition	Specified Condition
C17-8 (IGN2) - Body ground	Always	10 to 14 V
C17-10 (BTP) - Body ground	Always	10 to 14 V
C18-5 (EIG) - Body ground	Ignition switch ON	10 to 14 V
C17-4 (IGN1) - Body ground	Ignition switch ON	10 to 14 V
C17-2 (GND1) - Body ground	Always	Below 1 Ω
C19-10 (GND2) - Body ground	Always	Below 1 Ω
C18-9 (GND3) - Body ground	Always	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE CONVERTIBLE ROOF CONTROL ECU

REMOVAL

HINT:

- Use the same procedures for the RH side and LH side.
- Turn the ignition switch OFF and wait for approximately 43 seconds. Use your hands to move the soft top and check that it can open and close smoothly.
- Apply protective tape to the outer surface of the vehicle body to prevent scratches.
- The installation procedures are the removal procedures in reverse order. However, only installation procedures requiring additional information are included.
- A bolt without a torque specification is shown in the standard bolt chart (see page [SS-1](#)).

CAUTION:

During installation/removal of the tarpaulin, do not lift the assembly with less than 3 people.

NOTICE:

When placing a removed tarpaulin on the ground, prevent damage to its rail by placing cushions beneath the tarpaulin.

1. **DISCONNECT BATTERY NEGATIVE TERMINAL**
2. **REMOVE REAR SEAT HEADREST PLATE COVER LH**
3. **REMOVE REAR SEAT HEADREST ASSEMBLY**
4. **REMOVE REAR SEAT CUSHION ASSEMBLY (See page [SE-46](#))**
5. **REMOVE REAR SEATBACK ASSEMBLY (See page [SE-47](#))**
6. **REMOVE QUARTER TRIM PANEL LOWER LH**
 - (a) Remove the rear seat outer belt.
 - (b) Remove the front door scuff plate.
 - (c) Remove the cup holder cover.
 - (d) Remove the cup holder No. 2.
 - (e) Remove the quarter trim panel upper.
 - (f) Remove the quarter trim panel lower.
7. **REMOVE QUARTER TRIM PANEL LOWER RH**

HINT:
Use the same procedures described for the LH side.
8. **REMOVE QUARTER WINDOW GLASS WEATHERSTRIP OUTER LH (See page [ET-13](#))**
9. **REMOVE QUARTER WINDOW GLASS WEATHERSTRIP OUTER RH**

HINT:
Use the same procedures described for the LH side.
10. **REMOVE BACK BELT MOULDING (See page [ET-12](#))**
11. **REMOVE QUARTER BELT MOULDING LH (See page [ET-13](#))**

12. REMOVE QUARTER BELT MOULDING RH

HINT:

Use the same procedures described for the LH side.

13. REMOVE TARPAULIN RAIL WEATHERSTRIP

HINT:

See the illustration below.

- (a) Remove the 2 clips and tarpaulin front rail weatherstrip.
- (b) Remove the 2 clips and tarpaulin center rail weatherstrip.
- (c) Remove the 3 clips and tarpaulin rear rail weatherstrip.

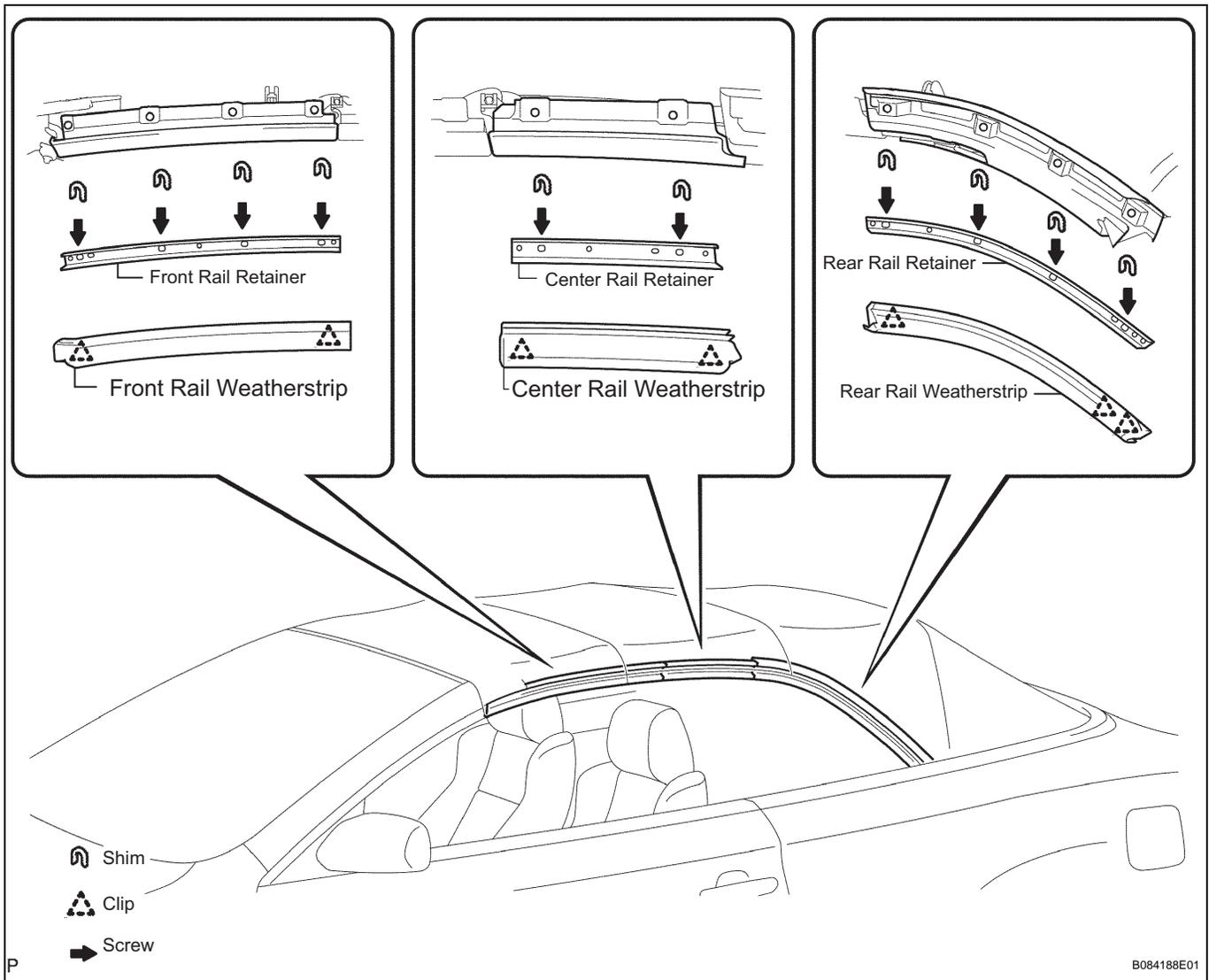
14. REMOVE ROOF SIDE RAIL RETAINER

HINT:

See the illustration below.

- (a) Remove the 4 screws, 4 shims and tarpaulin front rail retainer.
- (b) Remove the 2 screws, 2 shims and tarpaulin center retainer.

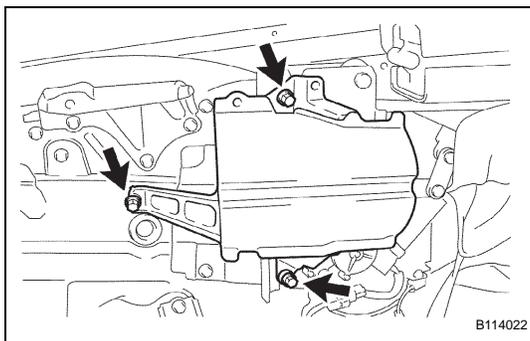
(c) Remove the 4 screws, 4 shims and tarpaulin rear rail retainer.



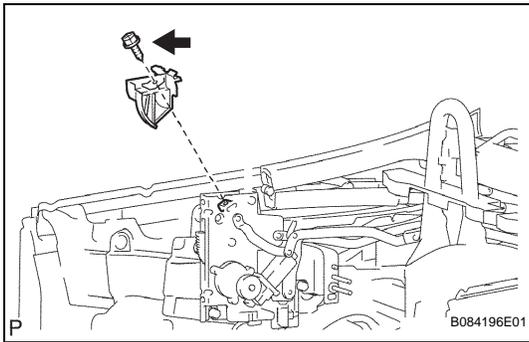
NOTICE:
 Removed shims must be installed to the location it was installed previously. Depending on the location, each shim's thickness is different.

15. REMOVE QUARTER PANEL EXTENSION REINFORCEMENT LH

(a) Remove the 3 bolts and reinforcement.

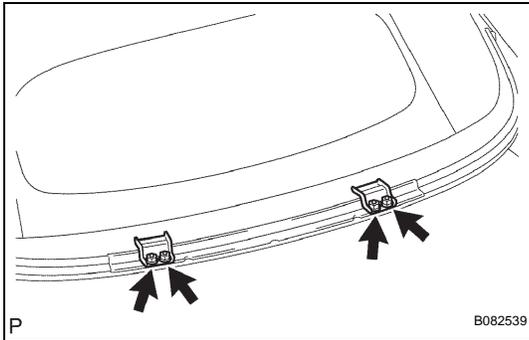


CT



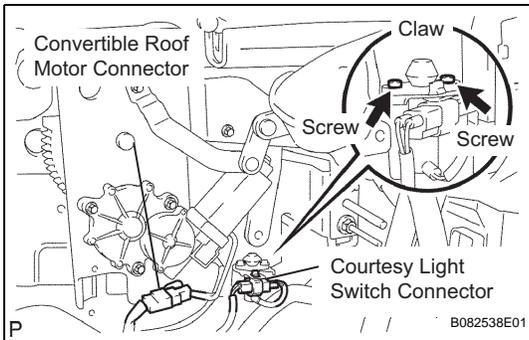
16. REMOVE TARPAULIN RAIL PIVOT BRACKET COVER

- (a) Remove the screw and pivot bracket cover.



17. REMOVE TARPAULIN ASSEMBLY

- (a) Remove the 4 nuts from the tarpaulin rear rail bow drain trough stay.



- (b) Fully open the tarpaulin.
- (c) Disconnect the convertible roof motor connector.
- (d) Remove the courtesy light switch from the base as shown in the illustration.
 - (1) Disconnect the courtesy lamp switch connector.
 - (2) Remove the claw from the courtesy light switch base.
 - (3) Remove the 2 screws and courtesy light switch.

NOTICE:

Before removing the tarpaulin, remove the courtesy light switch. Failing to do so may damage the courtesy light switch.

- (e) Disconnect the defogger connector.
- (f) On the rear rail bow bracket, uniformly loosen nuts A and B. Then remove nut A.
- (g) Retighten nut B a distance of 65 mm (2.56 in.) as shown in the illustration.

HINT:

Performing procedures (f) and (g) will make the No. 5 bow operational.

- (h) Close the tarpaulin.
- (i) Remove the 2 bolts, 4 nuts and tarpaulin.

CAUTION:

During installation/removal of the tarpaulin, do not lift the tarpaulin with less than 3 people.

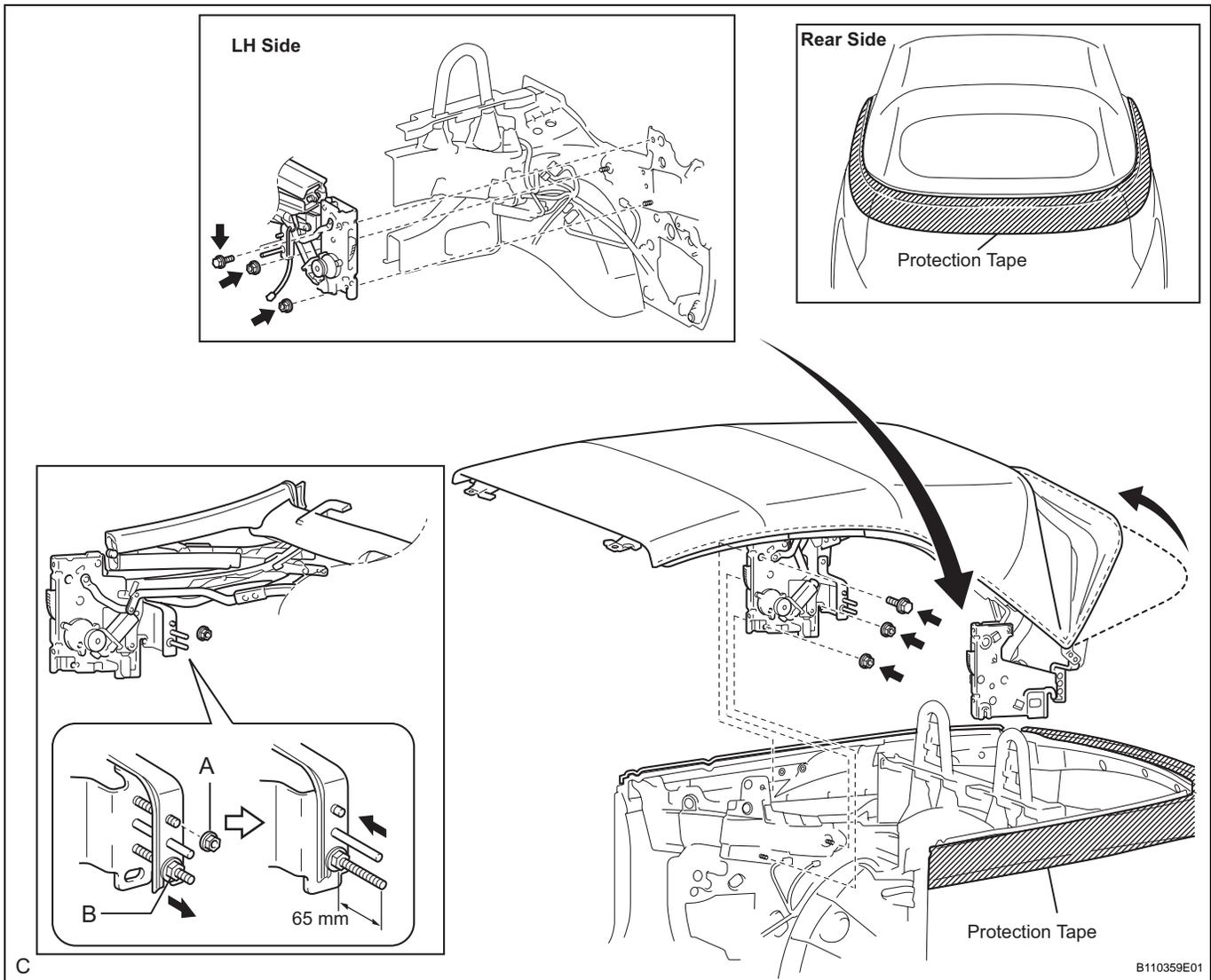
NOTICE:

Be careful not to deform the base of the courtesy light switch.

HINT:

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

- (j) Install the rear rail bow bracket by partially tightening the 2 nuts (A and B).



- (k) Place the tarpaulin so that its underside is facing up.

NOTICE:

When placing a removed tarpaulin on the ground, prevent damage to its rail by placing cushions beneath the tarpaulin.

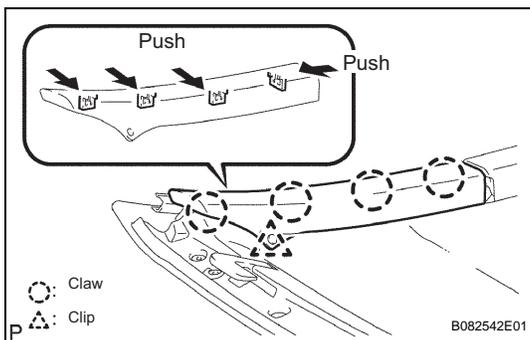
DISASSEMBLY

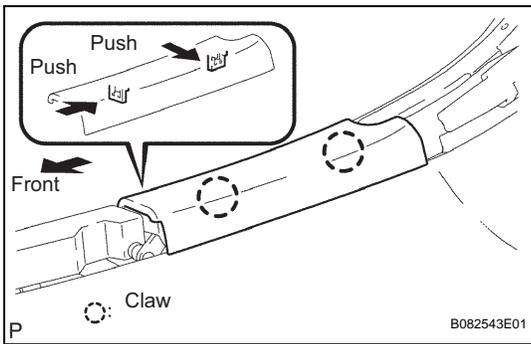
1. REMOVE FRONT ROOF SIDE RAIL GARNISH

- (a) Remove the clip from the front side rail garnish.
 (b) Using a screwdriver, pry out the 4 claws by pushing the claws in the directions shown in the illustration.

HINT:

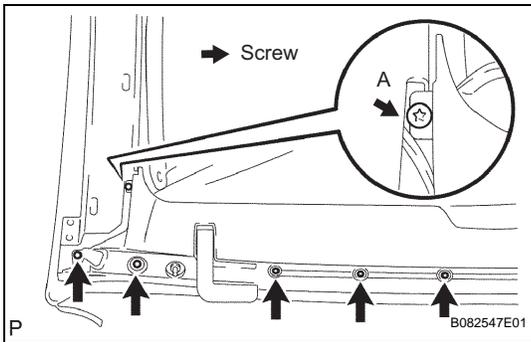
Tape the screwdriver tip before use.





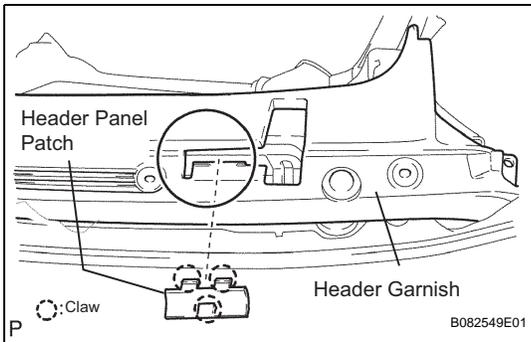
2. REMOVE ROOF SIDE RAIL GARNISH NO.2

- (a) Using a screwdriver, pry out the 2 claws by pushing the claws in the directions shown in the illustration.
HINT:
Tape the screwdriver tip before use.

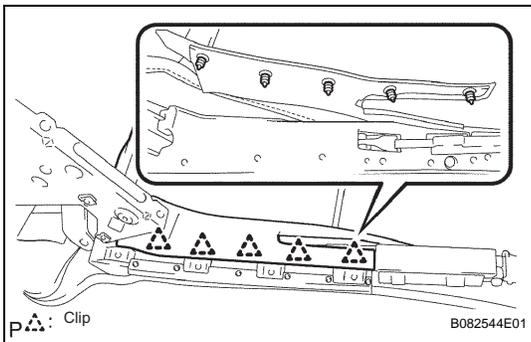


3. REMOVE ROOF HEADER GARNISH

- (a) Using a torx wrench (T25), remove the 6 screws from the LH side as shown in the illustration. Then remove the 6 screws from the other side.

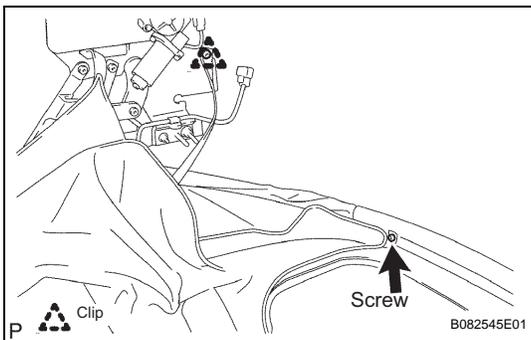


- (b) Remove the 3 claws and header panel patch from the header garnish.
- (c) Remove the roof header garnish.
HINT:
Pull the tarpaulin latch from the circled area in the illustration.

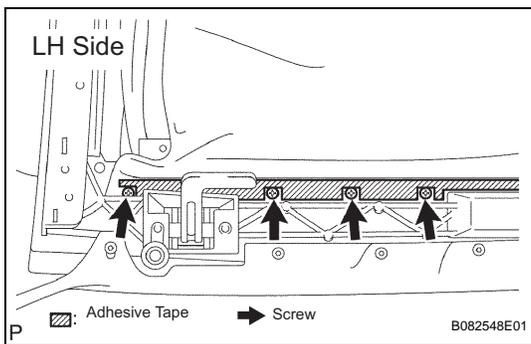


4. REMOVE TARPULIN HEADLINING

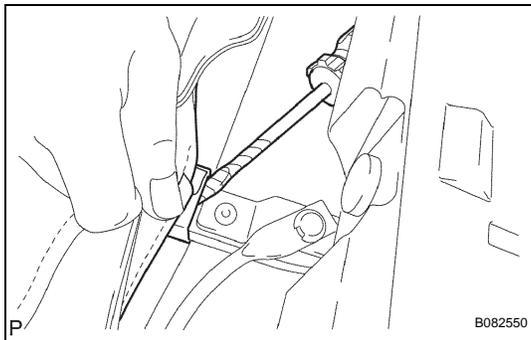
- (a) Using a clip remover, remove the 5 clips from the tarpaulin rail.



- (b) Using a torx wrench (T25), remove the screw.
- (c) Using a clip remover, remove the clip.



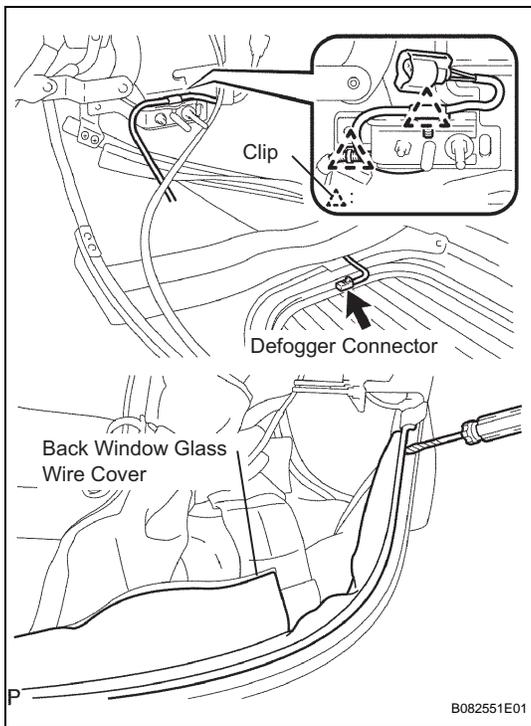
- (d) Using a torx wrench (T25), remove the 4 screws from the LH side. Then remove the 4 screws from the other side.
- (e) Peel the tarpaulin headlining from the adhesive tape of the No. 1 tarpaulin bow.



- (f) Using a screwdriver, pry out the tarpaulin bows (No. 2, No. 3 and No. 4).

HINT:

Tape the screwdriver tip before use.

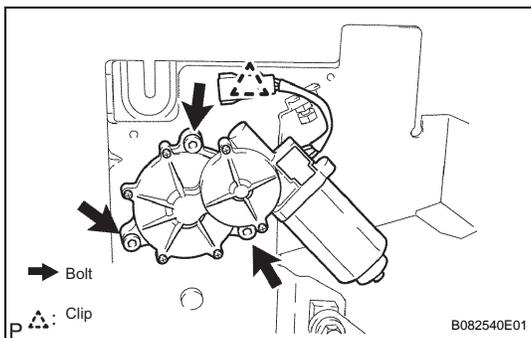


5. REMOVE BACK WINDOW GLASS WIRE COVER

- (a) Using a clip remover, remove the 2 clips. Then remove the defogger connector from the back window glass side.
- (b) Using a screwdriver, pry out the back window glass wire cover.

HINT:

Tape the screwdriver tip before use.

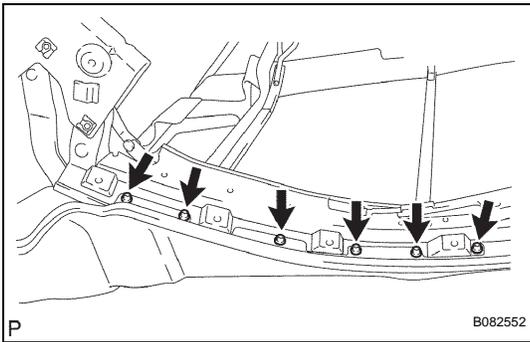


6. REMOVE CONVERTIBLE ROOF MOTOR ASSEMBLY LH

- (a) Using a clip remover, remove the convertible roof motor's connector clip.
- (b) Using a 6 mm hexagon wrench, remove the 3 bolts and convertible roof motor.

7. REMOVE TARPAULIN COVER

- (a) Using a torx wrench (T25), remove the 6 screws.



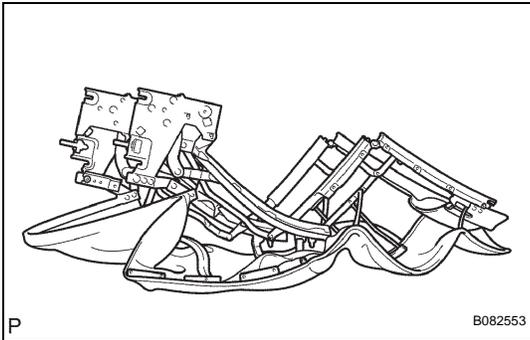
- (b) Fold the tarpaulin rail as shown in the illustration.

NOTICE:

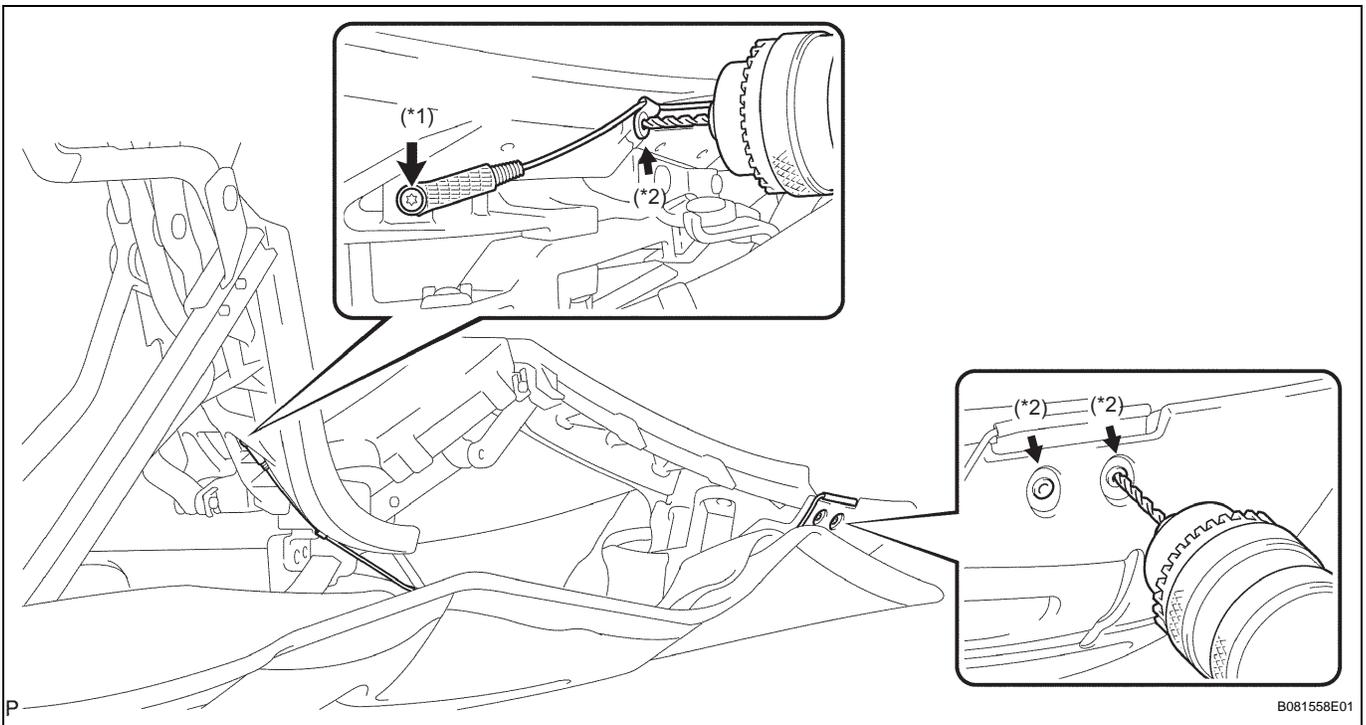
When placing a removed tarpaulin on the ground, prevent damage to its rail by placing cushions beneath the tarpaulin.

- (c) Using a torx wrench (T25), remove the screw under the tarpaulin rail (*1).

- (d) Using a drill of less than approximately $\phi 3.35\text{mm}$ (0.1319 in.), drill out the heads of the 3 rivets as shown in the illustration below (*2).



CT

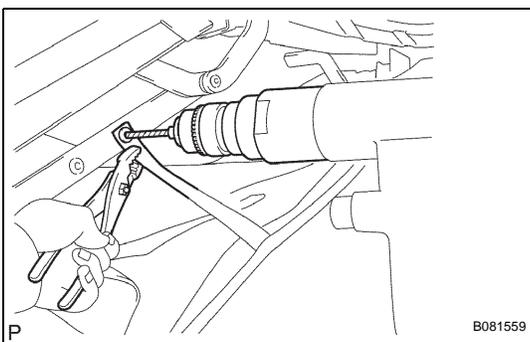


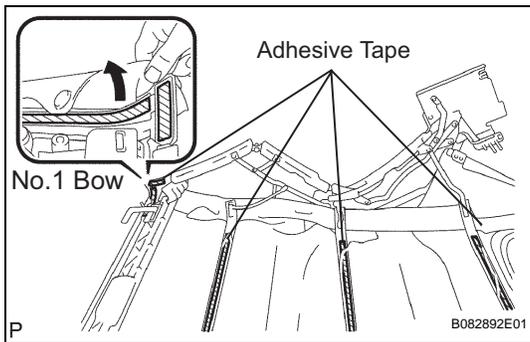
- (e) Hold the nylon strip in place with pliers or a similar tool.

CAUTION:

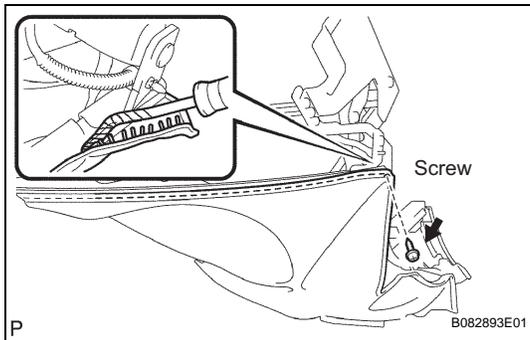
Do not use your hand to hold the nylon strip in place.

- (f) Using a drill of less than approximately $\phi 3.35\text{ mm}$ (0.1319 in.), drill out the head of the rivet as shown in the illustration.





- (g) Peel the tarpaulin cover from the adhesive tape of tarpaulin bows (No. 1, No. 2, No. 3 and No. 4) as shown in the illustration.



- (h) Using a torx wrench (T25), remove the screw.
 (i) Using a clip remover, remove the staples from the tarpaulin cover and No. 5 bow.
HINT:
 Tape the screwdriver tip before use.
 (j) Using a screwdriver, remove the staple and the sound pad from the tarpaulin bows (No. 2, No. 3 and No. 4).
HINT:
 Tape the screwdriver tip before use.

8. REVERSE TARPAULIN RAIL ASSEMBLY

- (a) Reverse the tarpaulin rail on the top of the tarpaulin cover.

NOTICE:

When placing a removed tarpaulin on the ground, prevent damage to its rail by placing cushions beneath the tarpaulin.

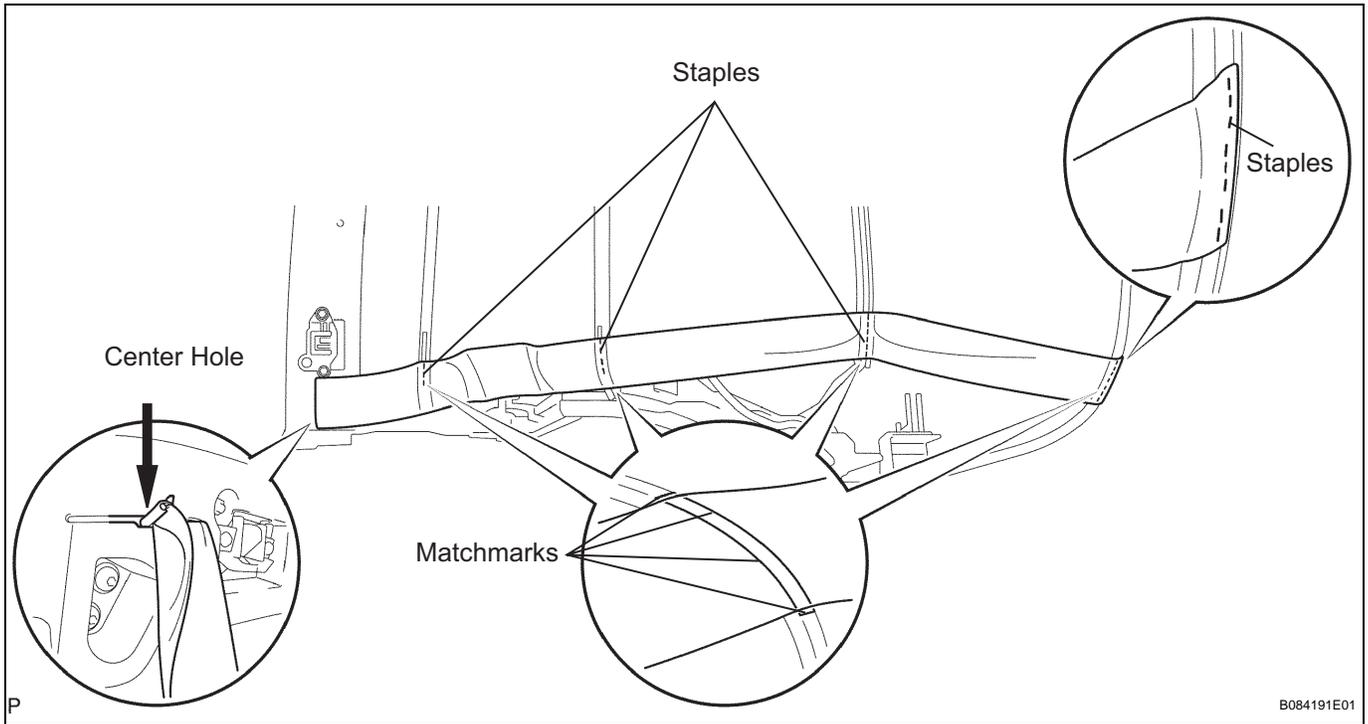
CAUTION:

Do not reverse the tarpaulin with less than 3 people.

9. REMOVE SIDE STAY PAD

- (a) From the center hole, remove the side stay pad.
 (b) Align the matchmarks on the tarpaulin bows (No. 2, No. 3 and No. 4) and No. 5 bow.

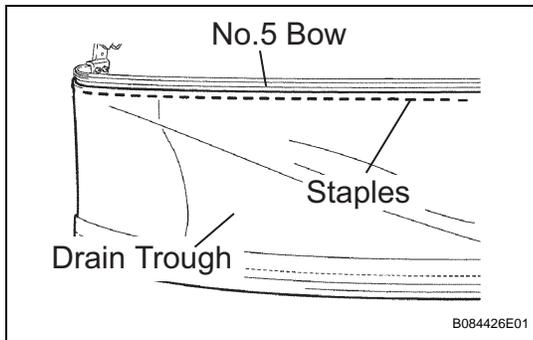
- (c) Using a screwdriver, remove the staples from the side stay pad, tarpaulin bows (No. 2, No. 3 and No. 4) and No. 5 bow.



CT

HINT:

Tape the screwdriver tip before use.



10. REMOVE TARPULIN REAR RAIL BOW DRAIN TROUGH

- (a) Using a screwdriver, remove the staples and drain trough from the No. 5 bow.

HINT:

Tape the screwdriver tip before use.

11. REMOVE TARPULIN BOW

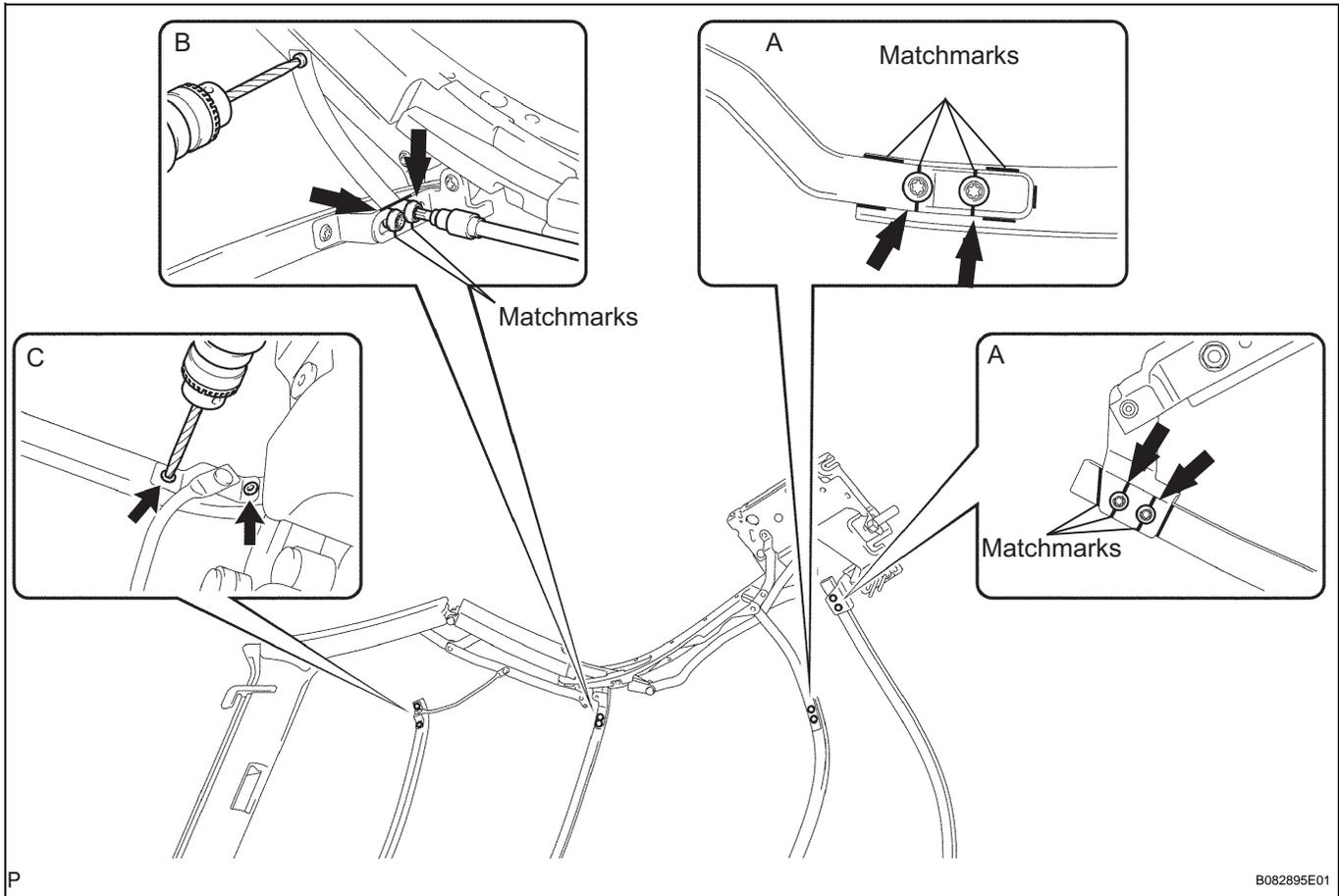
- (a) Align the matchmarks on the bolts and tarpaulin bows.
 (b) Using a torx wrench (T40), remove the 12 bolts (LH and RH) from the tarpaulin bows (No. 3 and No. 4) and No. 5 bow as shown in A and B in the illustration below (RH bolts are not shown in the illustration).

HINT:

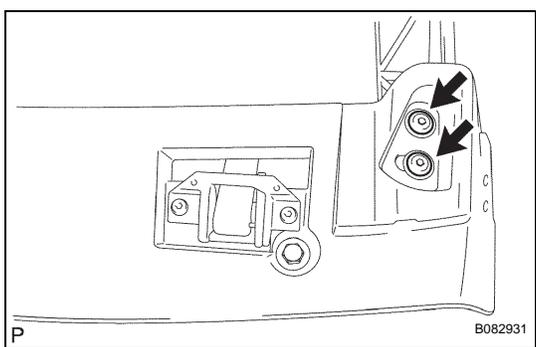
The torx wrench will not be able to reach the bolts unless the tarpaulin bow is tilted as shown in B below.

- (c) Using a drill, drill out the heads of the rivet from the hinge link as shown in B below.

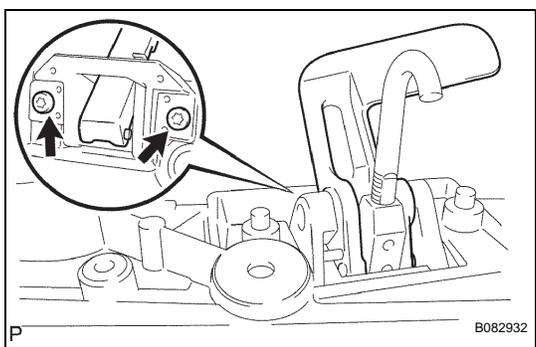
- (d) Using a drill of less than $\phi 5.1$ mm (0.200 in.), drill out the heads of the 2 rivets from the No. 2 bow as shown in C below.



CT

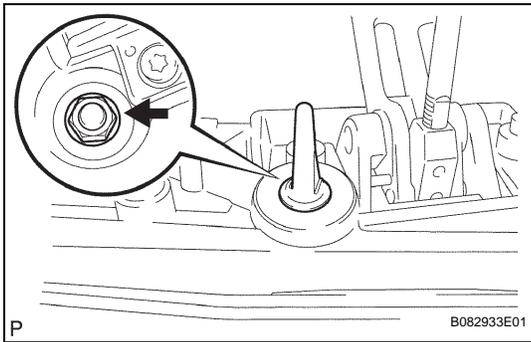


- (e) Using a torx wrench (T40), remove the 2 bolts and 2 bushings from the No. 1 bow and remove the 2 bushings and 2 spacers between the No. 1 bow and tarpaulin rail.



12. REMOVE TARPULIN LATCH

- (a) Using a torx wrench (T40), remove the 2 bolts from the No. 1 bow.

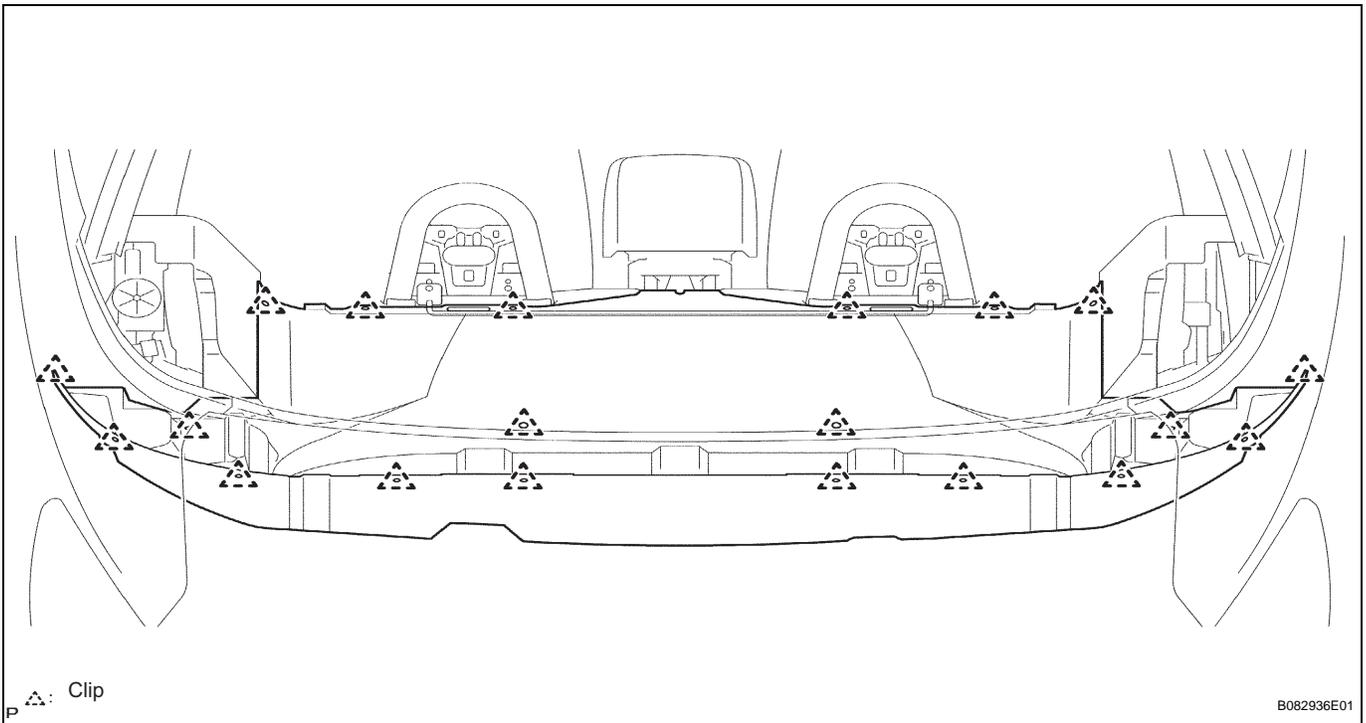


13. REMOVE NO.1 BOW LOCATING PIN

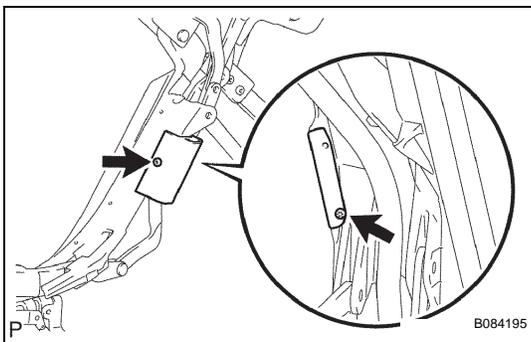
- (a) Using a 13 mm socket wrench and 8 mm open end wrench, remove the nut and bow locating pin from the No. 1 bow.

14. REMOVE TARPULIN STORAGE COVER ASSEMBLY

- (a) Using a clip remover, remove the 20 clips and storage cover.

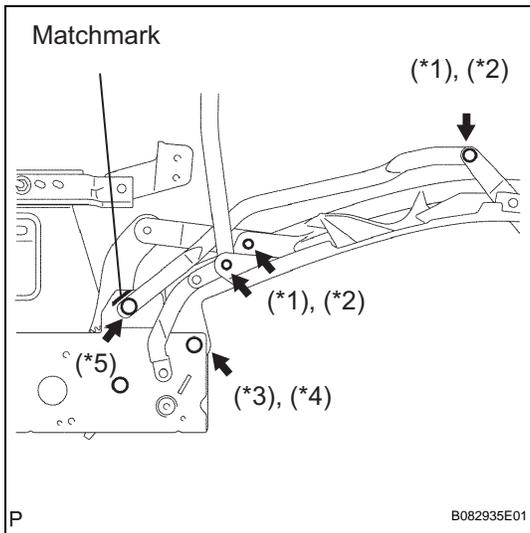


CT



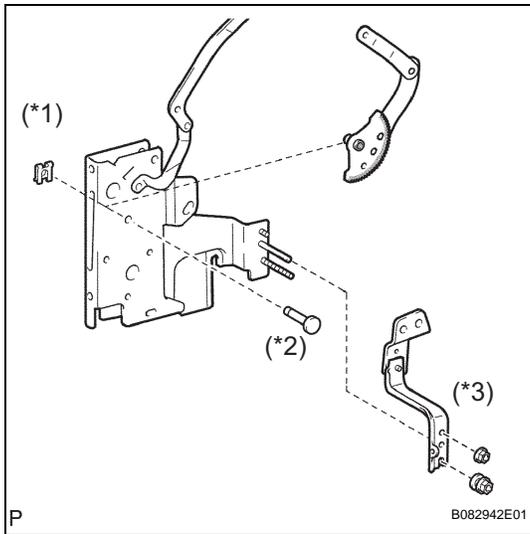
15. REMOVE TARPULIN RAIL PIVOT BRACKET

- (a) Using a torx wrench (T25), remove the 2 screws and tarpaulin rail damper from the tarpaulin rear rail.



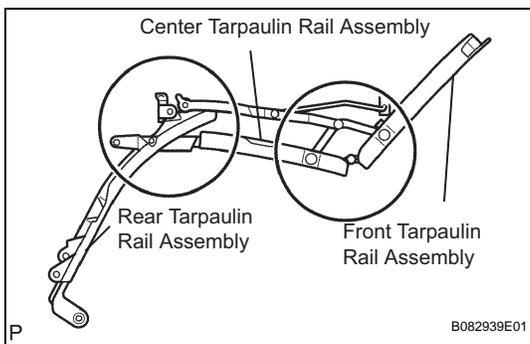
- (b) Align the matchmark of the lock plate.
 - (c) Pull up and pry off the 3 clips (*1).
 - (d) Strike the area of the 3 shafts where the 3 clips were installed (*2).
 - (e) Pull up and pry off the clip (*3).
 - (f) Strike the area of the shaft where the clip were installed (*4).
- HINT:
Using a hammer and thin pole that is less than the diameter of the shaft (Approximately $\phi 10$ mm (0.39 in.)), strike the shaft and remove it from the other side.
- (g) Using a torx wrench (T40), remove the bolt, spacer, lock plate and nut (*5).

CT



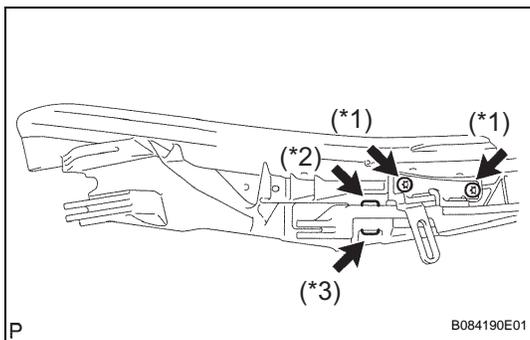
16. REMOVE RECLINING CONTROL LINK AND TARPULIN REAR RAIL BOW BRACKET

- (a) Pull up and pry off the clip (*1).
- (b) Strike the area of the shaft where the clip were installed (*2).
- (c) Remove the 2 nuts and rear rail bow bracket (*3).

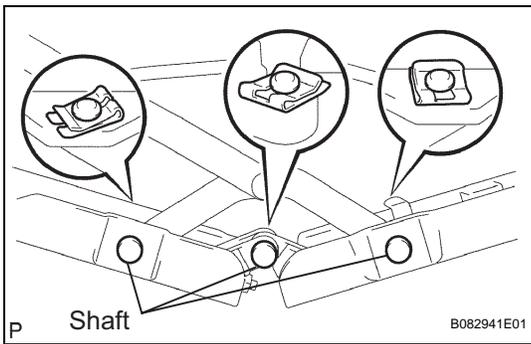


17. SEPARATE TARPULIN RAIL ASSEMBLY

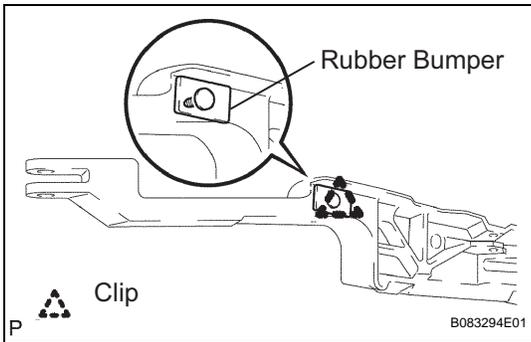
HINT:
The disassembly of the 2 circled areas are shown below.



- (a) Separate the rear tarpaulin rail and the center tarpaulin rail.
 - (1) Using a torx wrench (T40), remove the 2 bolts from the rear tarpaulin rail (*1).
 - (2) Pull up and pry off the clip (*2).
 - (3) Remove the shaft between the rear tarpaulin rail assembly and center tarpaulin rail (*3).

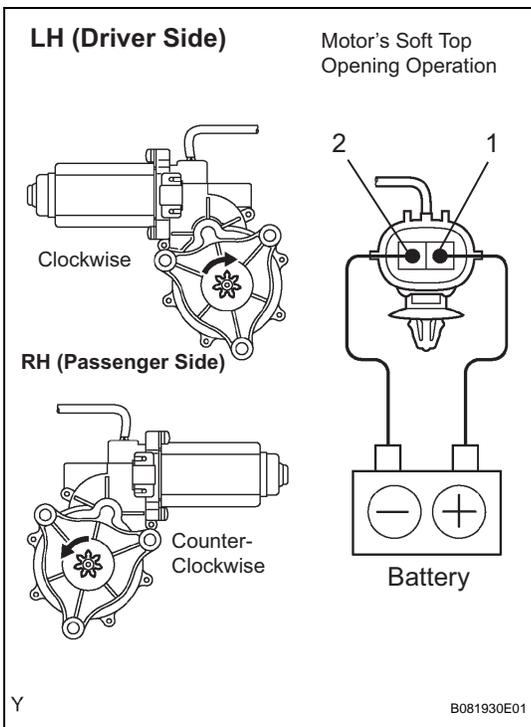


- (b) Separate the center rail and front tarpaulin rail.
 - (1) Pull up and pry off the 3 clips.
 - (2) Remove the 3 shafts between the center tarpaulin rail and front tarpaulin rail.



18. REMOVE RUBBER BUMPER

- (a) Using a clip remover, remove the rubber and clip.



INSPECTION

1. INSPECT CONVERTIBLE ROOF MOTOR ASSEMBLY

- (a) Motor's soft top opening operation:
 - Inspect operation of the roof motor.
 - (1) Connect the battery's positive (+) lead to terminal 1 and the negative (-) lead to terminal 2.
 - (2) Check that the motor operates smoothly.

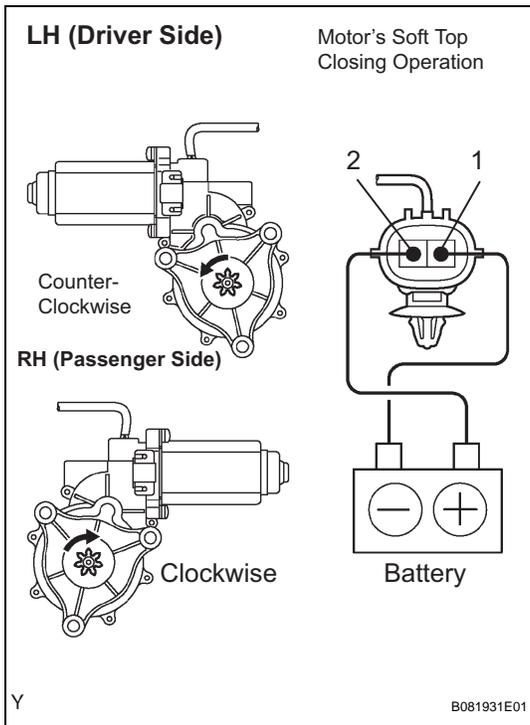
OK:
LH (Driver side)

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery positive (-) → Terminal 2	Motor gear rotates clockwise

RH (Passenger side)

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery positive (-) → Terminal 2	Motor gear rotates counterclockwise

If the result is not as specified, replace the motor.



(b) Motor's soft top closing operation:
Inspect operation of the roof motor.

- (1) Connect the battery's positive (+) lead to terminal 2 and the negative (-) lead to terminal 1.
- (2) Check that the motor operates smoothly.

OK:

LH (Driver side)

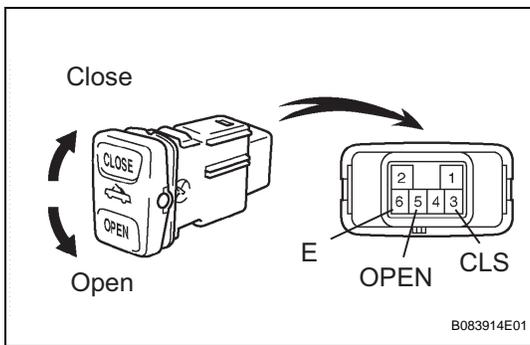
Measurement Condition	Specified Condition
Battery positive (+) → Terminal 2 Battery positive (-) → Terminal 1	Motor gear rotates counterclockwise

RH (Passenger side)

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 2 Battery positive (-) → Terminal 1	Motor gear rotates clockwise

If the result is not as specified, replace the motor.

CT



2. INSPECT CONVERTIBLE ROOF CONTROL SWITCH

(a) Measure the resistance of the convertible roof control switch.

Resistance

Tester Connection	Switch Condition	Specified Condition
2 - 5 (OPEN) 3 (CLS) - 6 (E)	Close	Below 1 Ω
2 - 5 (OPEN) 3 (CLS) - 6 (E) 2 - 3 (CLS) 5 (OPEN) - 6 (E)	OFF	10 kΩ or higher
2 - 3 (CLS) 5 (OPEN) - 6 (E)	Open	Below 1 Ω

If the result is not as specified, replace the switch.

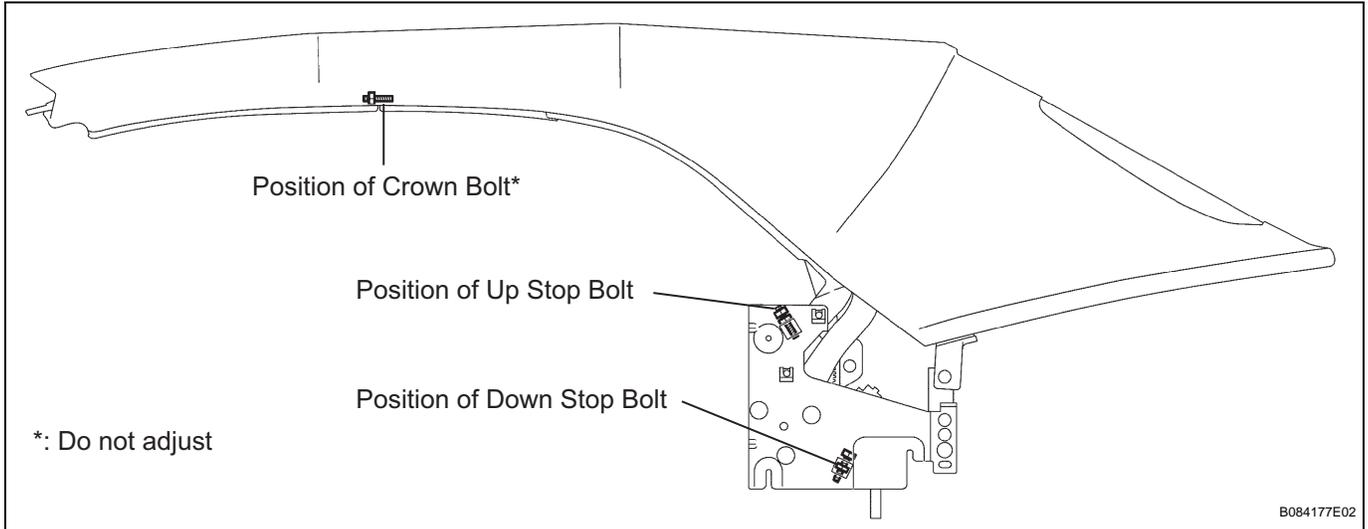
ADJUSTMENT

NOTICE:

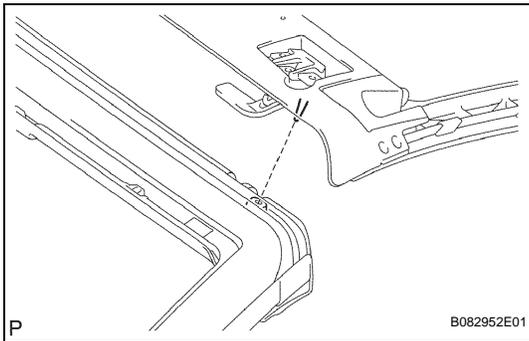
Adjusting the crown bolt will loosen the seal between the weatherstrip and glass and potentially lead to water leakage or other problems. If the crown bolt needs to be adjusted, replace the rail assembly.

HINT:

The illustration below shown the adjustment and bolt position.

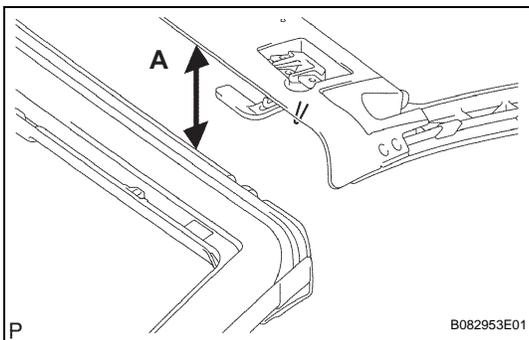


CT



1. CHECK POSITION OF NO.1 BOW LOCATING PIN AND BOW CONTROL LINK UP STOP

- (a) Check that when the bow control link is closed, the No. 1 bow locating pin and pin hole are aligned.



- (b) Release the tarpaulin latch and then measure the distance (A) between the bottom surface of the No. 1 tarpaulin bow and top surface of the header weather seal, as shown in the illustration.

Standard (A):

w/ Tarpaulin cover:

55 to 70 mm (2.17 to 2.76 in.)

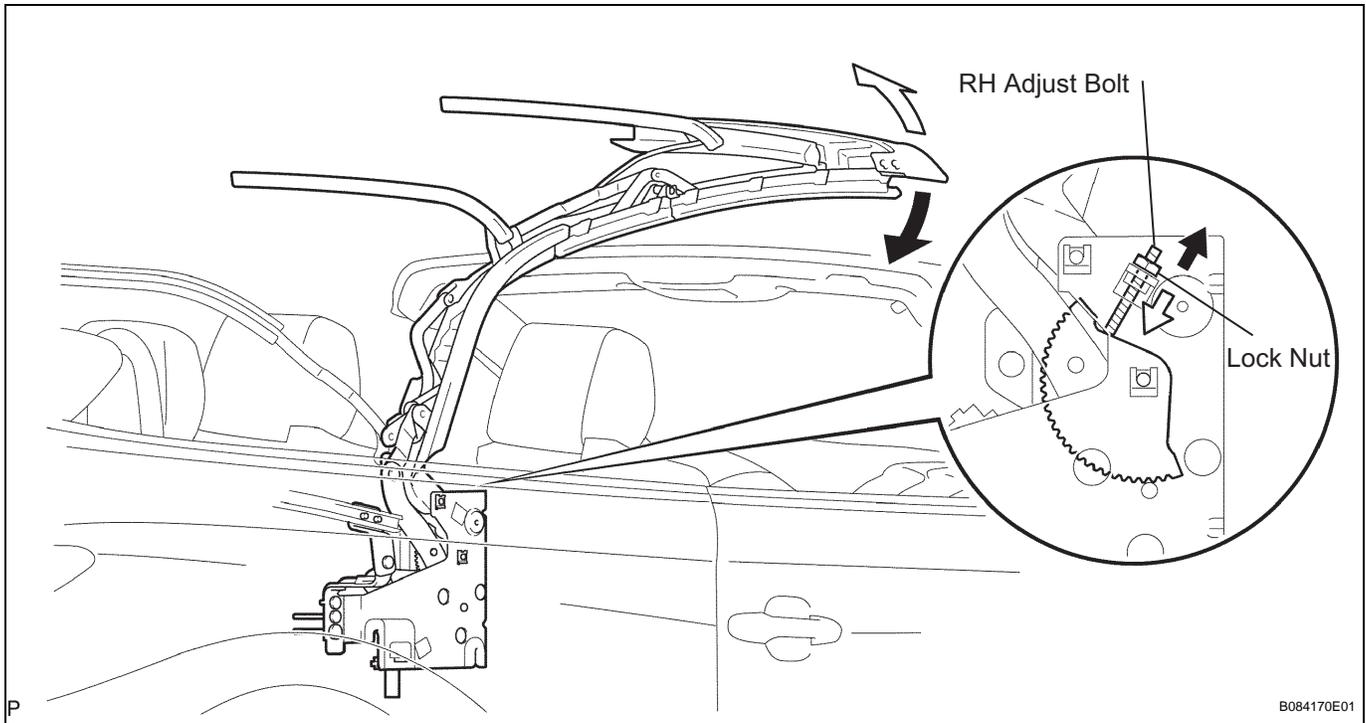
w/o Tarpaulin cover:

5.0 to 25 mm (0.20 to 0.98 in.)

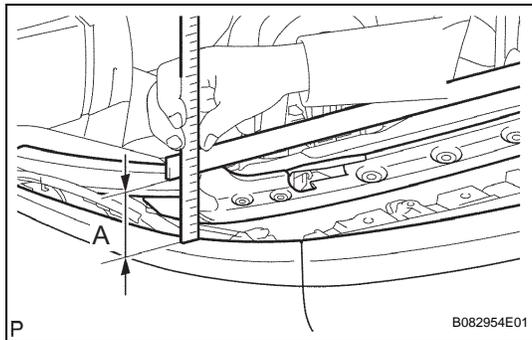
2. ADJUST POSITION OF BOW CONTROL LINK UP STOP

- (a) Loosen the lock nuts and adjust the LH and RH adjust bolts (LH adjust bolt is not shown in illustration).

(b) Tighten the lock nuts.



CT



3. CHECK POSITION OF BOW CONTROL LINK DOWN STOP

- (a) Fully open the convertible roof.
- (b) Place a straight edge across the top of the No. 1 tarpaulin bow. Using a scale, measure the distance (A) between the bottom of the straight edge and top of the quarter belt moulding as shown in the illustration.

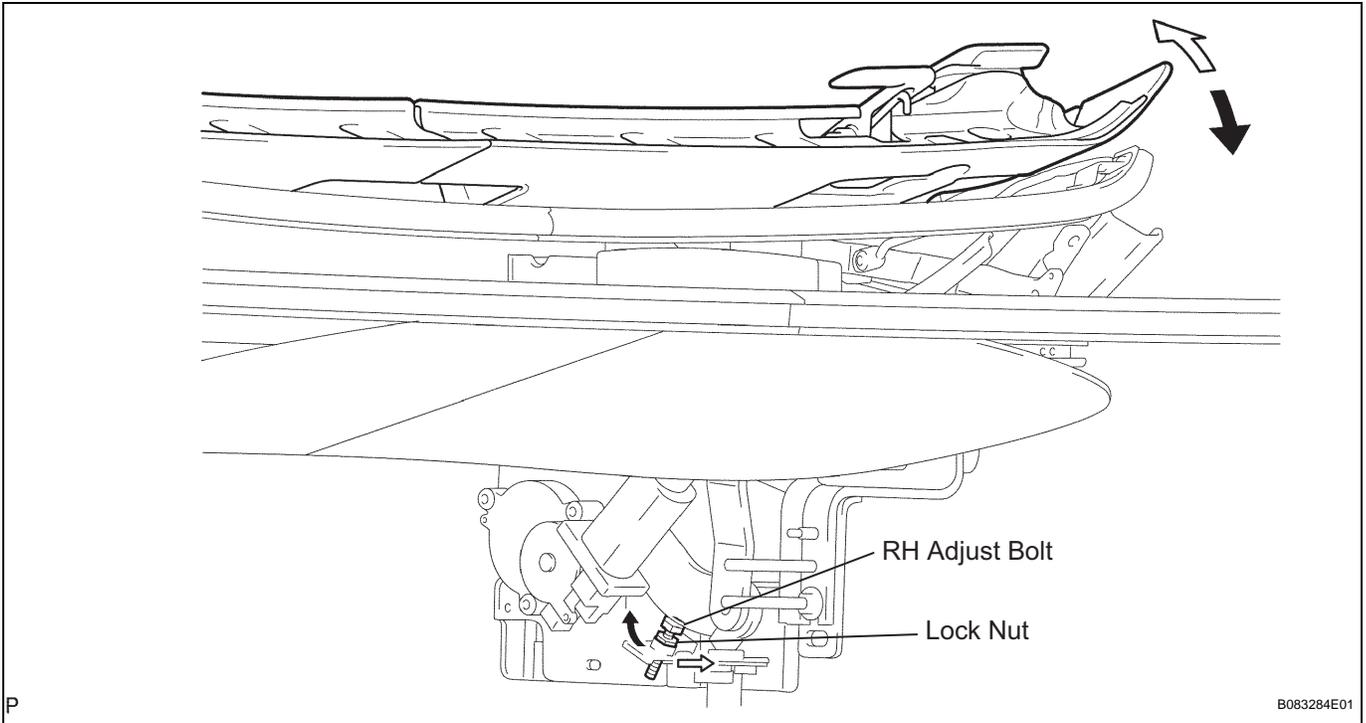
Standard (A):

39.5 to 45.5 mm (1.56 to 1.79 in.)

4. ADJUST POSITION OF BOW CONTROL LINK DOWN STOP

- (a) Loosen the lock nuts and adjust the LH and RH adjust bolts (LH adjust bolt is not shown in illustration).

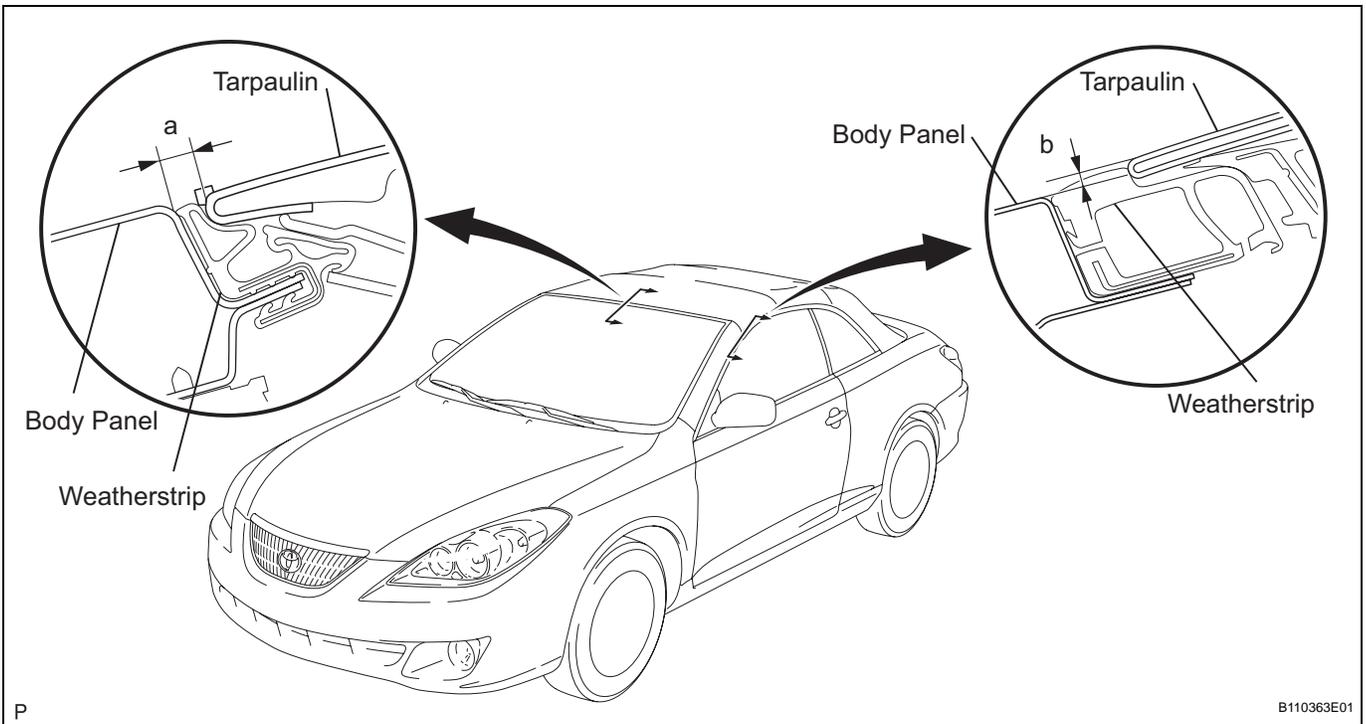
(b) Tighten the lock nuts.



CT

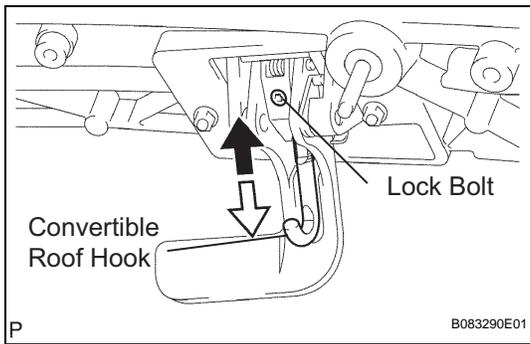
5. CHECK POSITION OF TARPAULIN ASSEMBLY

(a) Check that the clearance measurements of A and B are within the standard range.



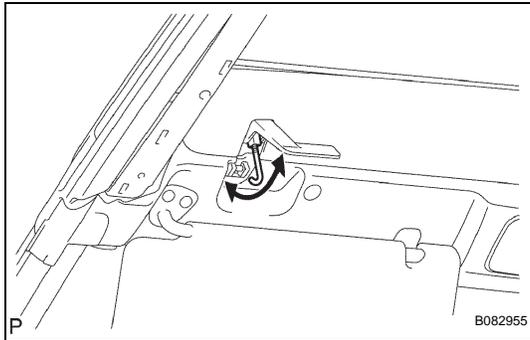
Standard

Area	Measurement
a	4.8 to 8.8 mm (0.189 to 0.346 in.)
b	2.3 to 5.8 mm (0.091 to 0.228 in.)



6. ADJUST TARPAULIN LATCH

- (a) Using a hexagon wrench, loosen the lock bolt.
- (b) Adjust the length of convertible roof hook.
- (c) Using a hexagon wench, tightening the lock bolt.



- (d) Move the tarpaulin latch by hand and check that it moves in the direction of the arrow marks in the illustration.
While the tarpaulin cover is fully closed, check for clearance or unevenness between the windshield and tarpaulin cover.
If so, turn the convertible roof hook to make adjustments.

7. CHECK POSITION OF TARPAULIN ASSEMBLY AND WINDOW GLASS

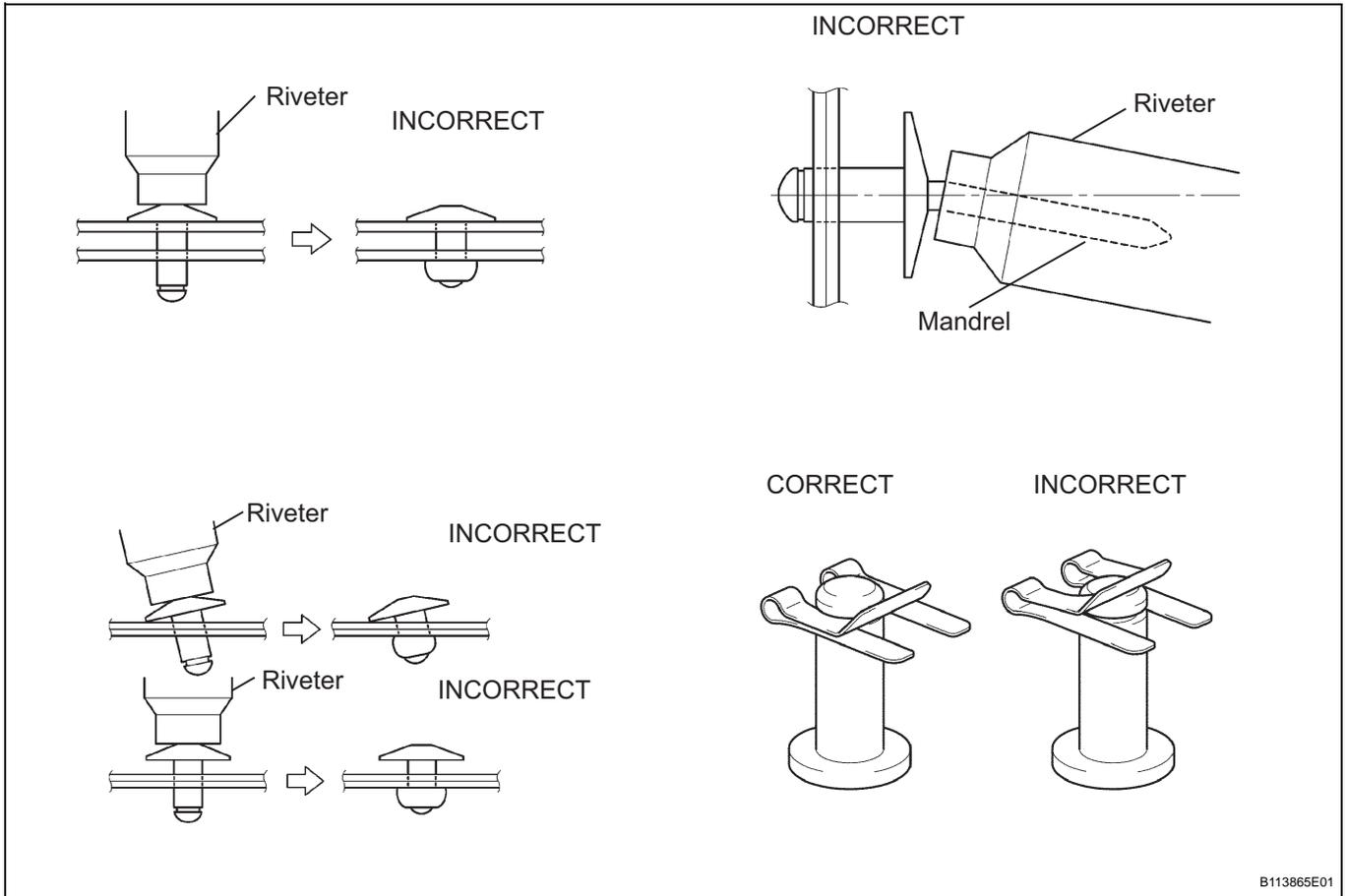
- (a) Check that the clearance is within the standard range.

Area	See procedure
Front door glass	ED-19
Quarter window glass	WS-124 and ED-16

CT

REASSEMBLY

1. **INSTALL RUBBER BUMPER**
 - (a) Install the rubber bumper with the clip.
2. **INSTALL TARPAULIN STORAGE COVER ASSEMBLY**
 - (a) Install the tarpaulin storage cover with the 20 clips.
3. **INSTALL TARPAULIN RAIL ASSEMBLY**
 - (a) Install the tarpaulin rail assembly.



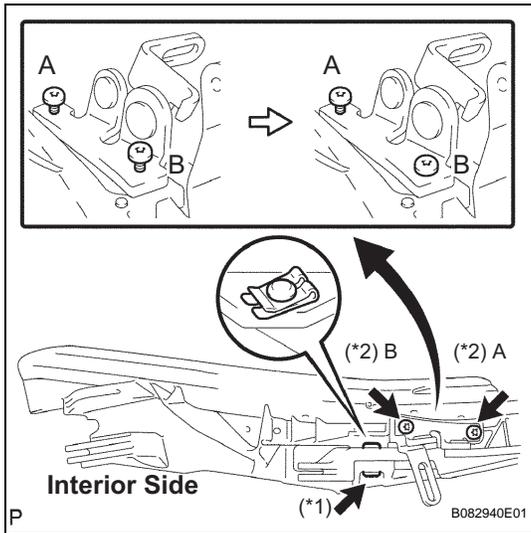
CT

CAUTION:

The tarpaulin may separate if the tops of the clips are not securely hooked into the grooves of their respective shafts.

NOTICE:

- If clips are damaged during removal, replace them.
- Do not prize the riveter. The riveter will be damaged and the mandrel will bend.
- Do not tilt the riveter when fastening the rivet to the tarpaulin hinge link as this will cause the rivet to be loose.
- Do not have any space between the rivet head and the tarpaulin hinge link. The rivet head must be completely flat against the tarpaulin hinge link.



- Do not have any space between the No. 2 bow and tarpaulin hinge link. Firmly hold together the 2 items while installing the rivet.
- (b) Connect the rear tarpaulin rail and center tarpaulin rail.

- (1) Install the shaft (length: 45 mm (1.77 in.)) to the tarpaulin rails. Then connect the clip into the groove of the shaft (*1).

HINT:

Install the shaft to the interior side of the tarpaulin rail.

NOTICE:

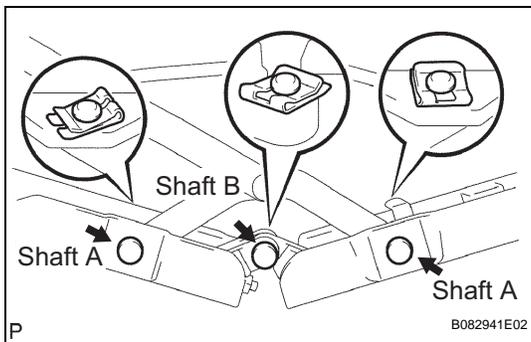
The tarpaulin may separate if the top of the clip is not securely hooked into the groove of its respective shaft.

- (2) Using a torx wrench (T40), install the 2 bolts to the rear tarpaulin rail with the link (*2).

Torque: 30 N*m (306 kgf*cm, 22 in.*lbf)

HINT:

Partially tighten bolts A and B. Then fully tighten bolt B first and fully tighten bolt A.



- (c) Connect the center tarpaulin rail and front tarpaulin rail.

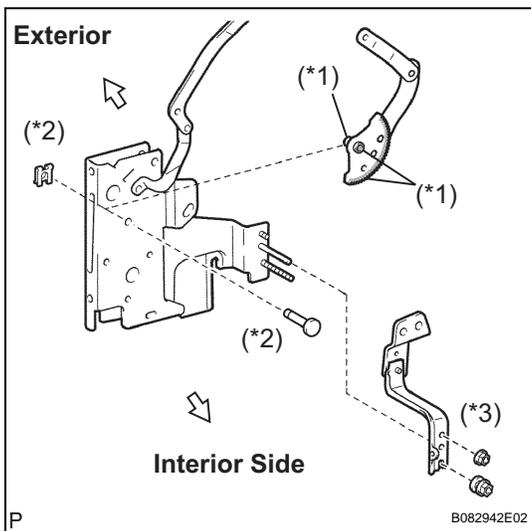
- (1) Install the 3 shafts (length A: 24 mm (0.94 in.); length B: 45 mm (1.77 in.)) to the tarpaulin rails. Then connect the 3 clips into the grooves of the 3 shafts.

HINT:

Install the shaft to the interior side of the tarpaulin rail.

NOTICE:

The tarpaulin may separate if the tops of the clips are not securely hooked into the grooves of their respective shaft.



4. INSTALL RECLINING CONTROL LINK AND TARPULIN REAR RAIL BOW BRACKET

- (a) Apply MP grease to the neck and gear of the reclining control link as shown in the illustration (*1).

HINT:

Apply a thin coat of grease to the neck and gear of the link.

NOTICE:

Do not allow grease to come in contact with the cover. Doing so will damage or cause color damage to the cover.

- (b) Install the shaft (length: 45 mm (1.77 in.)) to the tarpaulin rail pivot bracket with the reclining control link (*2).

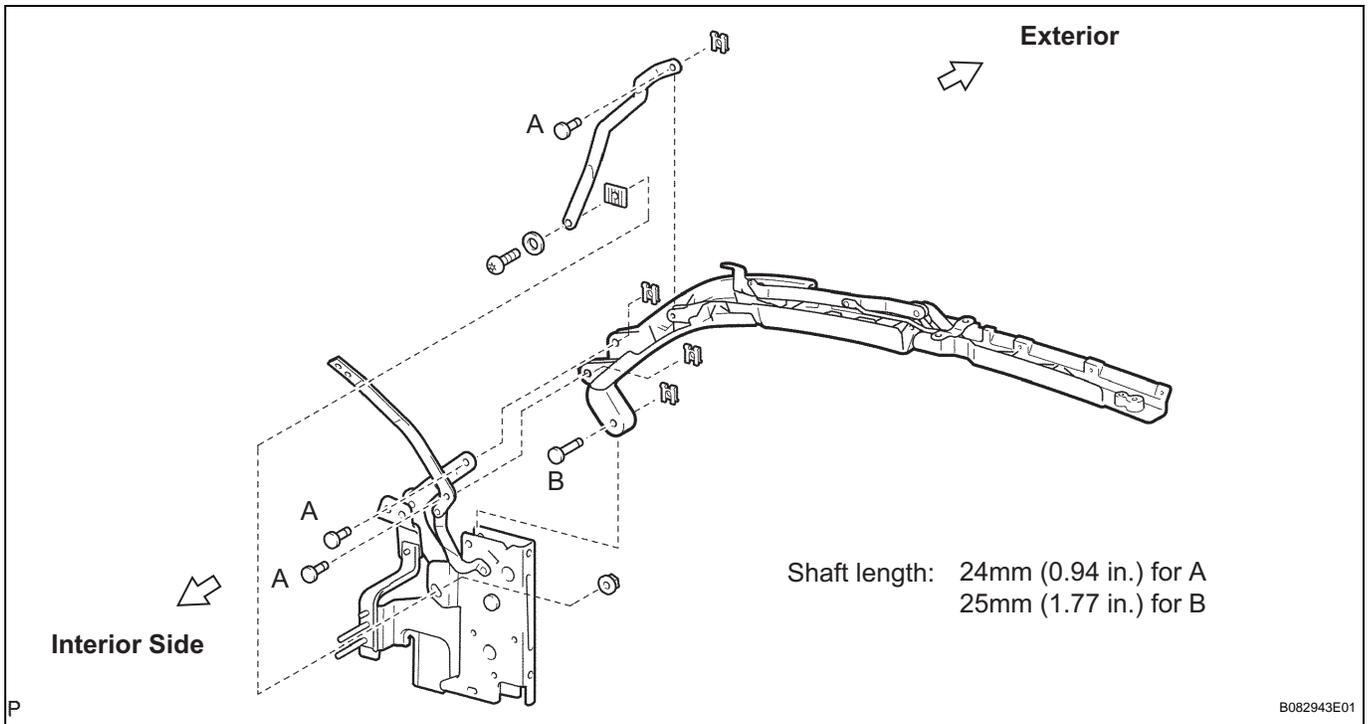
HINT:

Install the shaft to the interior side of the tarpaulin rail.

- (c) Insert a clip into the groove of the shaft (*3).
CAUTION:
The tarpaulin may separate if the top of the clip is not securely hooked into the groove of the shaft.
- (d) Install the tarpaulin rear bow bracket with the 2 nuts.
Torque: 26 N*m (265 kgf*cm, 19 ft.*lbf)

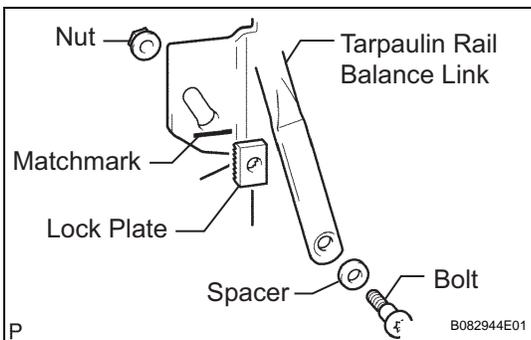
5. INSTALL TARPAULIN RAIL PIVOT BRACKET AND TARPAULIN RAIL ASSEMBLY

- (a) Install the 4 shafts (A and B) to the tarpaulin rail pivot bracket and tarpaulin rail, as shown in the illustration below.
HINT:
Install the shaft to the interior side of the tarpaulin rail.
- (b) Insert the 4 clips into the grooves of the 4 shafts.

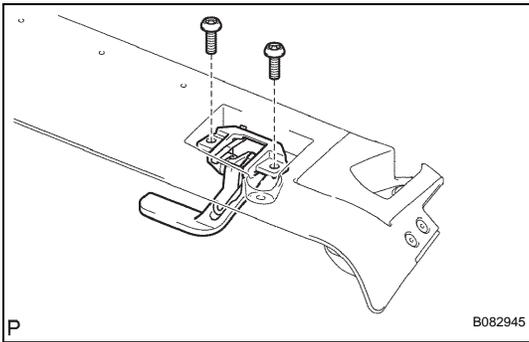


CT

CAUTION:
The tarpaulin may separate if the tops of the clips are not securely hooked into the grooves of their respective shafts.



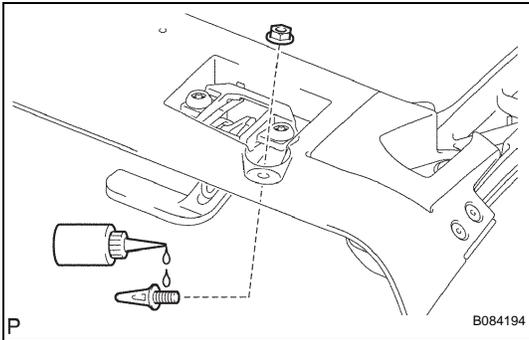
- (c) Install the tarpaulin rail balance link to the tarpaulin pivot bracket.
 - (1) Apply adhesive on the thread of the bolt.
Adhesive:
Part No. 08833-00100, THREE BOND 1360 K or equivalent
 - (2) Align the lock plate with the matchmark.
 - (3) Using a torx wrench (T40), install the bolt, spacer, lock plate and nut to the tarpaulin pivot bracket.
Torque: 30 N*m (306 kgf*cm, 22 ft.*lbf)



6. INSTALL TARPAULIN LATCH

- (a) Using a torx wrench (T40), install the tarpaulin latch with the 2 bolts.

Torque: 30 N*m (306 kgf*cm, 22 ft.*lbf)



7. INSTALL NO.1 BOW LOCATING PIN

- (a) Apply adhesive on the thread of the pin.

Adhesive:

Part No. 08833-00100, THREE BOND 1360 K or equivalent

- (b) Using a 13 mm socket wrench and 8 mm open end wrench, install the bow locating pin with the nut.

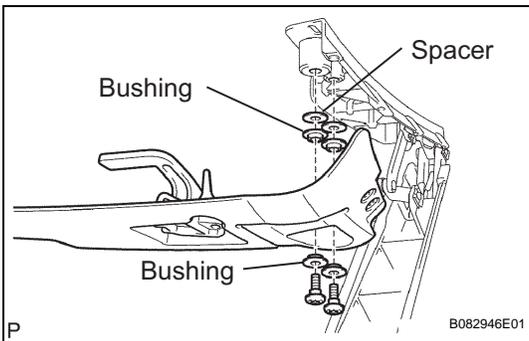
Torque: 30 N*m (306 kgf*cm, 22 ft.*lbf)

8. PARTIALLY TIGHTEN NO.1 TARPAULIN BOW AND TARPAULIN RAIL ASSEMBLY

NOTICE:

When placing a removed tarpaulin on the ground, prevent damage to its rail by placing cushions beneath the tarpaulin.

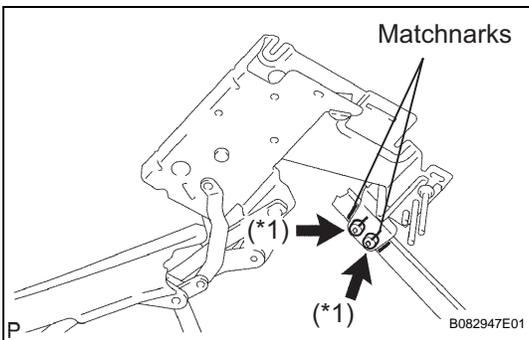
- (a) Using a torx wrench (T40), install the 2 spacers and 4 bushings, and partially tightening the 2 bolts to the No. 1 bow as shown in the illustration.



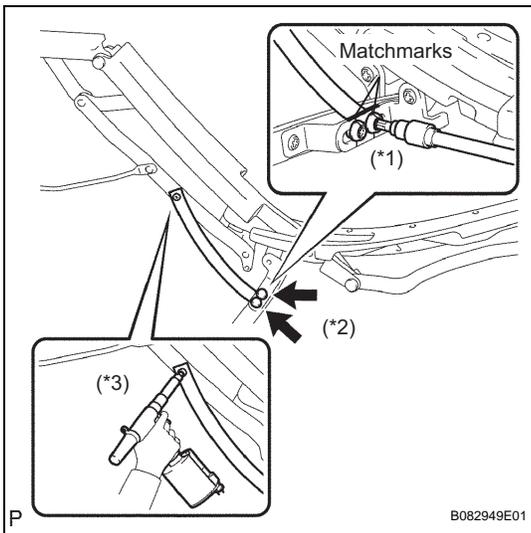
9. PARTIALLY TIGHTEN NO.5 TARPAULIN BOW AND TARPAULIN RAIL ASSEMBLY

- (a) Align the bow with the matchmarks.

- (b) Using a torx wrench (T40), install the tarpaulin bow by partially tightening the 2 bolts (*1).



CT



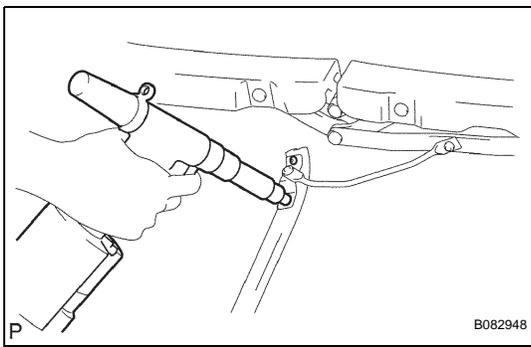
10. PARTIALLY TIGHTEN NO.3 TARPAULIN BOW AND TARPAULIN RAIL ASSEMBLY

- (a) Align the bow with the matchmarks (*1).
- (b) Using a torx wrench (T40), install the No. 3 bow by partially tightening the 2 bolts (*2).

HINT:

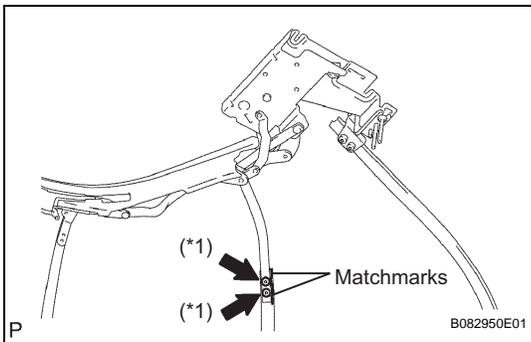
The torx wrench will not be able to reach the bolts unless the tarpaulin bow is tilted as shown in the illustration.

- (c) Using an air riveter equipped with a nose piece, install the strap into the hinge link with the rivet (*3).



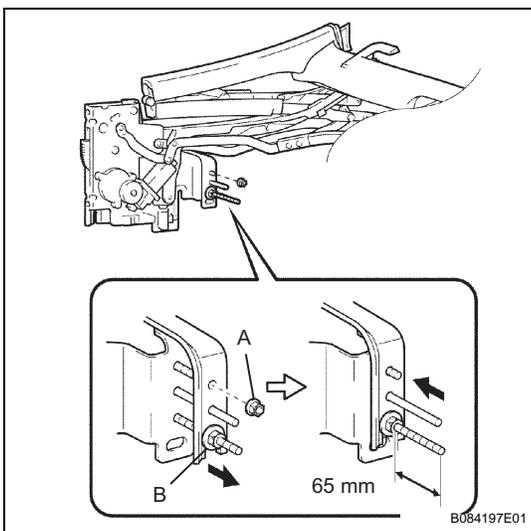
11. INSTALL NO.2 TARPAULIN BOW AND TARPAULIN RAIL ASSEMBLY

- (a) Using an air riveter equipped with a nose piece, strike 2 rivets into the base of the tarpaulin hinge link.



12. PARTIALLY TIGHTEN NO.4 TARPAULIN BOW AND TARPAULIN RAIL ASSEMBLY

- (a) Align the bow with the matchmarks.
- (b) Using a torx wrench (T40), install the No. 4 bow by partially tightening the 2 bolts (*1).



13. MEASURE FITTING OF TARPAULIN ASSEMBLY

- (a) Fully open the tarpaulin.
- (b) Using a 6 mm hexagon wrench, install the roof motor with the 3 bolts.
Torque: 30 N*m (306 kgf*cm, 22 ft.*lbf)
- (c) On the rear rail bow bracket, uniformly loosen nuts A and B. Then remove nut A(*1).
- (d) Retighten nut B a distance of 65 mm (2.56 in.) as shown in the illustration(*2)

HINT:

Performing procedures (*1) and (*2) will make the No. 5 bow operational.

- (e) Close the tarpaulin.

- (f) Install the tarpaulin to the vehicle with the 2 bolts and 4 nuts.

Torque: Bolt

30 N*m (306 kgf*cm, 22 ft.*lbf)

Nut

26 N*m (265 kgf*cm, 19 ft.*lbf)

CAUTION:

During installation/removal of the tarpaulin, do not lift the assembly with less than 3 people.

NOTICE:

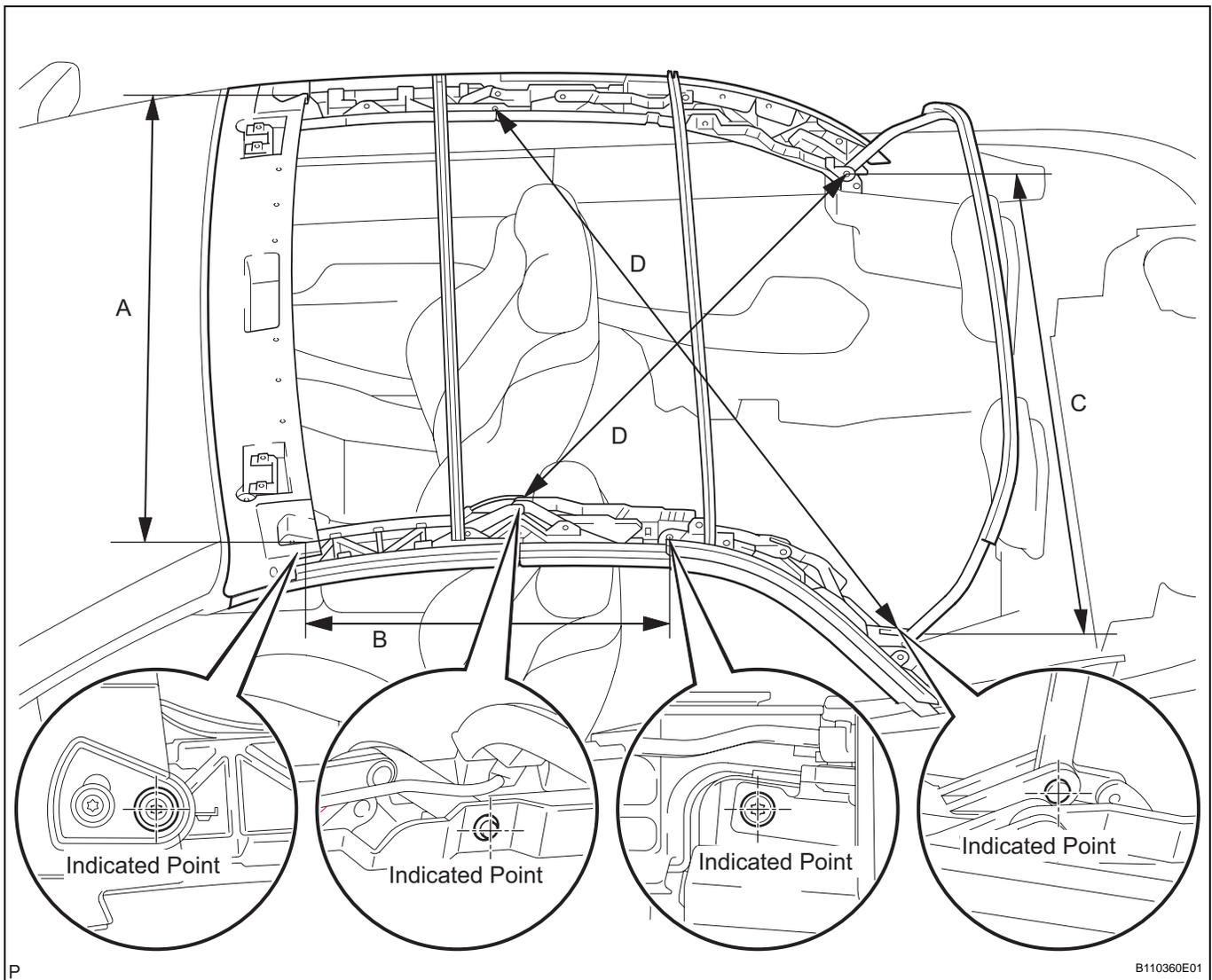
Be careful not to deform the courtesy lamp switch base.

- (g) Install the rear rail bow bracket with the 2 nuts (A and B).

Torque: 26 N*m (265 kgf*cm, 19 ft.*lbf)

- (h) Close the tarpaulin and lock to the tarpaulin latch.

- (i) Check the alignment of the tarpaulin rail's parts by taking the measurements indicated in A, B, C and D in the illustration. Check that the measurements are within the standard values.



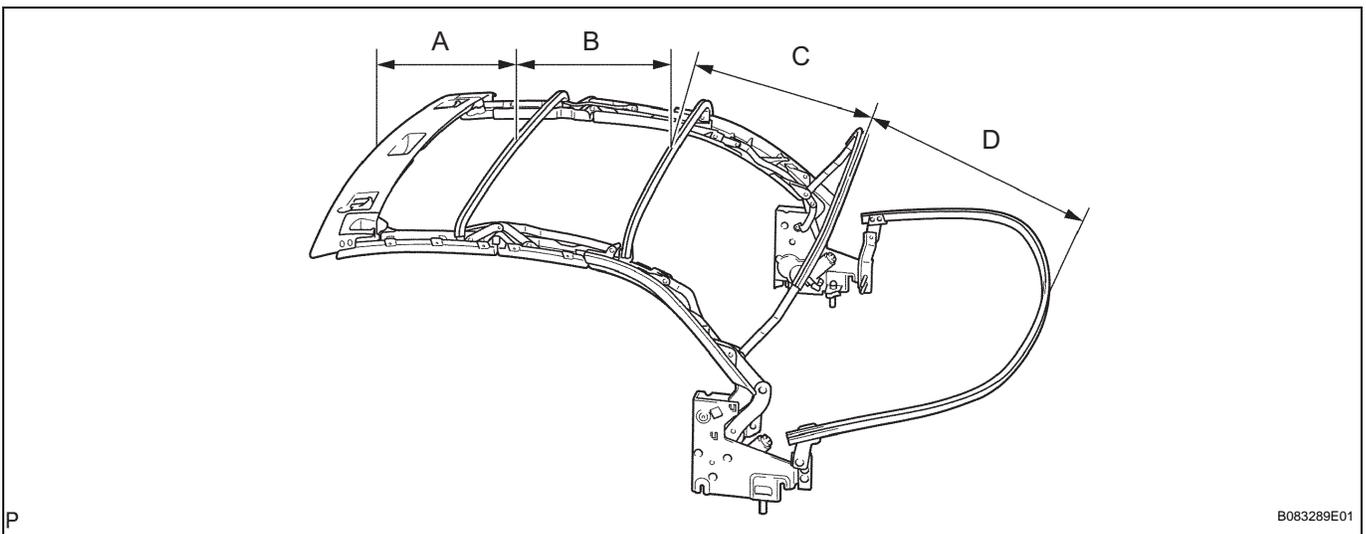
HINT:

- The standard values are for reference only. Measurements do not have to be exactly as shown in the illustration.
- Using the values listed under "Measurement" as a reference, adjust the marked areas as necessary.

Standard

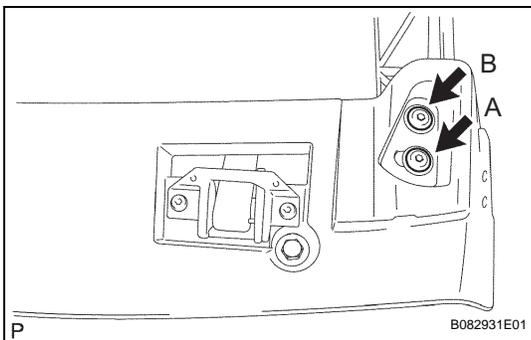
Area	Measurement
A	Approximately 1,148 mm (45.20 in.)
B	Approximately 636 mm (25.04 in.)
C	Approximately 1,208 mm (47.56 in.)
D	Approximately 1,391 mm (54.76 in.)

- (j) Check the alignment of the tarpaulin rail's parts by taking the measurements indicated in A, B, C, and D in the illustration. Check that the measurements are within the standard values.



Standard

Area	Measurement
A	Approximately 436mm (17.16 in.)
B	Approximately 466 mm (18.35 in.)
C	Approximately 523 mm (20.59 in.)
D	Approximately 674 mm (26.54 in.)



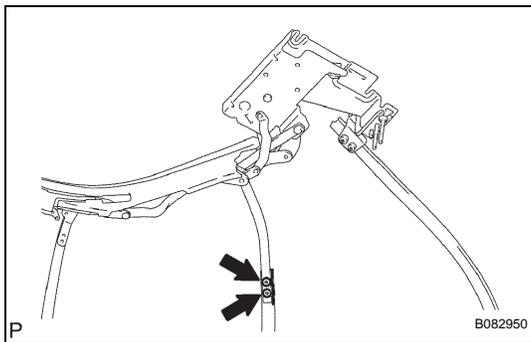
14. FULLY TIGHTEN NO.1 TARPAULIN BOW

- (a) Using a torx wrench (T40), tighten tarpaulin bow with the 2 bolts.

Torque: 30 N*m (306 kgf*cm, 22 ft.*lbf)

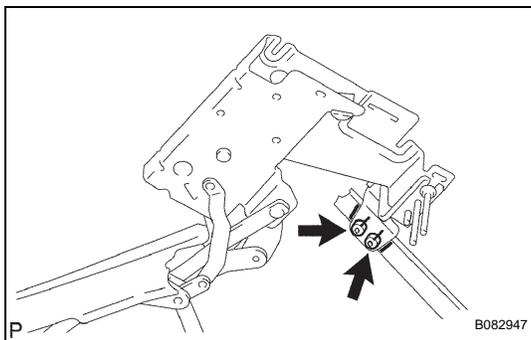
HINT:

Tighten bolt B first, then tighten bolt A.

**15. FULLY TIGHTEN NO.4 TARPAULIN BOW**

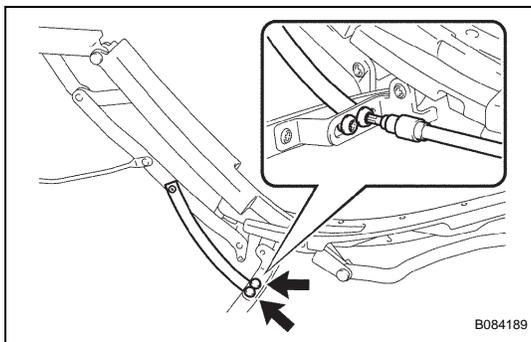
- (a) Using a torx wrench (T40), tighten the tarpaulin bow with the 2 bolts.

Torque: 30 N*m (306 kgf*cm, 22 ft.*lbf)

**16. FULLY TIGHTEN NO.5 TARPAULIN BOW**

- (a) Using a torx wrench (T40), tighten the No. 5 bow with the 2 bolts.

Torque: 30 N*m (306 kgf*cm, 22 ft.*lbf)

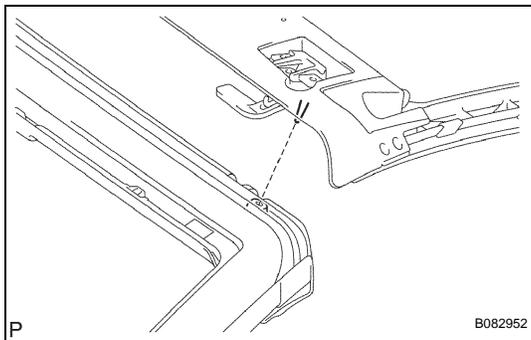
**17. FULLY TIGHTEN NO.3 TARPAULIN BOW**

- (a) Replace the tarpaulin latch and bend the tarpaulin rail.
 (b) Using a torx wrench (T40), tighten the tarpaulin bow with the 2 bolts.

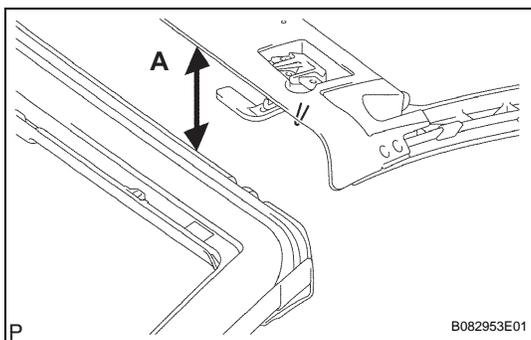
Torque: 30 N*m (306 kgf*cm, 22 ft.*lbf)

HINT:

The torx wrench will not be able to reach the bolts unless the tarpaulin bow is tilted as shown in the illustration.

**18. CHECK NO.1 BOW LOCATING PIN POSITION****HINT:**

Check that when the bow control link is closed, the No. 1 bow locating pin and pin hole are aligned.

**19. CHECK POSITION OF BOW CONTROL LINK UP STOP**

- (a) Replace the tarpaulin latch.
 (b) Measure the distance (A) between the bottom surface of the No. 1 tarpaulin bow and the top surface of the header weather seal, as shown in the illustration.

Standard (A):

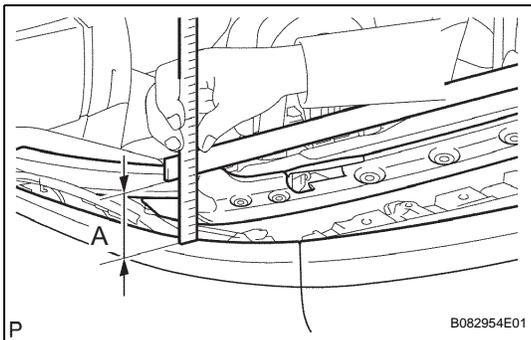
w/ Tarpaulin cover:

55 to 70 mm (2.17 to 2.76 in.)

w/o Tarpaulin cover:

5.0 to 25 mm (0.20 to 0.98 in.)

- (c) When performing adjustments, refer to the "Adjustment" section's up stop procedures (see page [CT-43](#)).



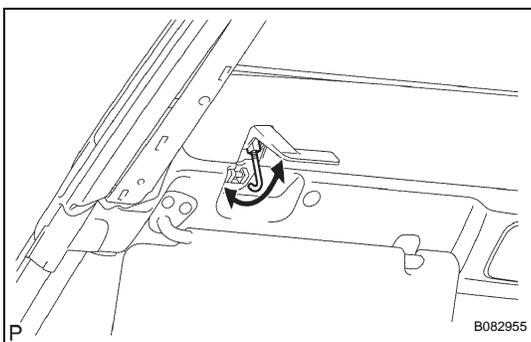
20. CHECK POSITION OF BOW CONTROL LINK DOWN STOP

- (a) Fully open the soft top.
- (b) Place a straight edge across the top of the No. 1 tarpaulin bow. Using a scale, measure the distance (A) between the bottom of the straight edge and top of the quarter belt moulding as shown in the illustration.

Standard (A):

39.5 to 45.5 mm (1.56 to 1.79 in.)

- (c) When performing adjustments, refer to the "Adjustment" section's down stop procedures (see page [CT-43](#)).



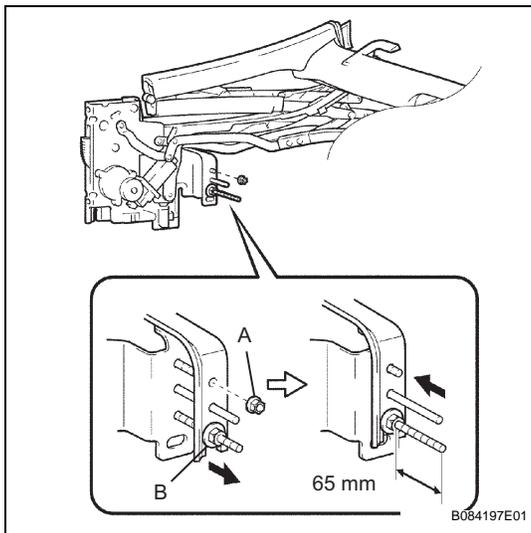
21. CHECK TARPAULIN LATCH

- (a) Move the tarpaulin latch by hand and check that it moves in the direction of the arrow marks in the illustration.
If there is clearance or level difference between the windshield and the front edge of the tarpaulin cover when the tarpaulin cover is fully closed, turn the convertible roof hook to adjust it.
- (b) When performing adjustments, refer to the "Adjustment" section's tarpaulin latch procedures (See page [CT-46](#)).

CT

22. CHECK TARPAULIN ASSEMBLY OPERATES

- (a) Connect the battery negative terminal.
- (b) Connect the convertible roof motor's connector.
- (c) Check that the tarpaulin opens/closes through operation of the convertible roof switch.
If a malfunction occurs, confirm that relevant procedure ("Reassembly" of Soft Top) have been completed properly.
- (d) Turn the ignition switch OFF and wait for approximately 43 seconds. Use your hands to move the soft top and check that it can open and close smoothly.
- (e) Disconnect the battery negative terminal.



23. REMOVE TARPAULIN ASSEMBLY

- (a) Fully open the tarpaulin.
- (b) Disconnect the convertible roof motor's connector.
- (c) On the rear rail bow bracket, uniformly loosen nuts A and B. Then remove nut A.
- (d) Retighten nut B a distance of 65 mm (2.56 in.) as shown in the illustration.

HINT:

Performing procedures (c) and (d) will make the No. 5 bow operational.

- (e) Close the tarpaulin.
- (f) Remove the 2 bolts, 4 nuts and tarpaulin.

CAUTION:

During installation/removal of the tarpaulin, do not lift the tarpaulin with less than 3 people.

NOTICE:

- When placing a removed tarpaulin on the ground, prevent damage to its rail by placing cushions beneath the tarpaulin.
 - Be careful not to deform the base of the courtesy lamp switch.
 - The motor should not be removed when installing the stay pad.
- (g) Install the rear rail bow bracket with the 2 nuts (A and B).
- Torque: 26 N*m (265 kgf*cm, 19 ft.*lbf)**

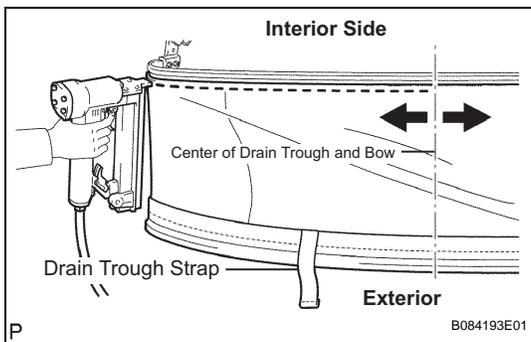
24. INSTALL TARPAULIN REAR RAIL BOW DRAIN TROUGH

HINT:

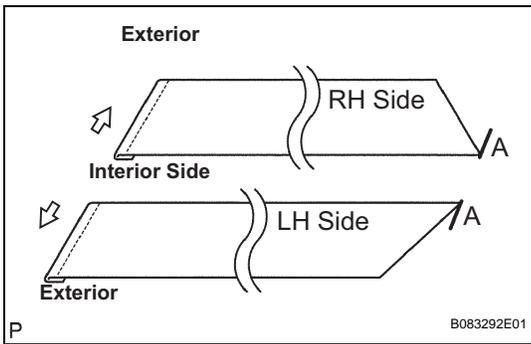
- The drain trough should be installed so that its strap is on the outer side.
- Before performing work on the tarpaulin, it should be turned upside down.

NOTICE:

When placing a removed tarpaulin on the ground, prevent damage to its rail by placing cushions beneath the tarpaulin.



- (a) Using a staple gun, install the drain trough to the No. 5 bow.
 - (1) With the frame extended, align the center of the cover to the frame. Use the staple gun to affix the rear top cover tarpaulin bow to the frame.
 - (2) Pull one side of the cover's rear away from the center of the cover. Use the staple gun to affix the side of the cover's rear to the frame, as shown in the illustration below. Repeat for the other side.



25. INSTALL SIDE STAY PAD

NOTICE:

When placing a removed tarpaulin on the ground, prevent damage to its rail by placing cushions beneath the tarpaulin.

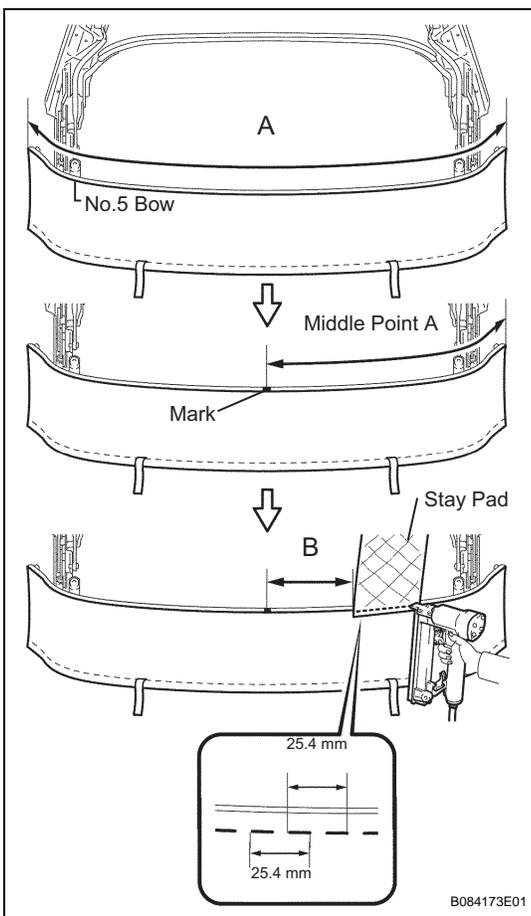
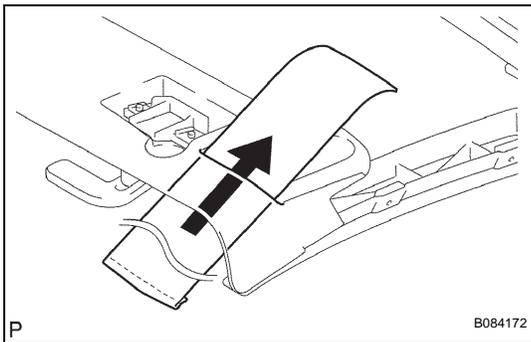
HINT:

- Turn the tarpaulin over so that it's right side up.
- Install the longer side of the interior side (A) to the interior of the No. 5 bow.
- Straighten the tarpaulin so that the tarpaulin is fully extended.

NOTICE:

Keep the side stay pad straight from the No. 1 bow to the No. 5 bow.

- (a) Install the pad to the No. 1 bow.



- (b) Using a staple gun, staple the pad to the No. 5 bow.
- (1) Fully open the tarpaulin.
 - (2) Measure the outer surface length of are A (indicated in the illustration) of the No. 5 bow.
 - (3) Place a reference mark on the middle point of are A.
 - (4) Place the stay pad onto the No. 5 bow, leaving a distance of dimension B between the reference mark (placed in step 3) and the stay pad.

Dimension B:

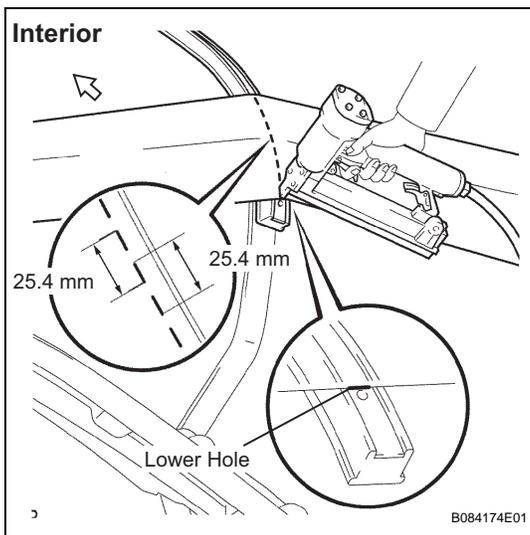
555 to 565 mm (21.85 to 22.24 in.)

HINT:

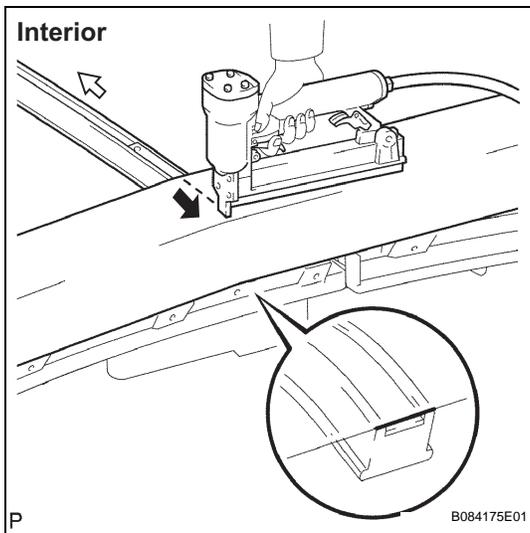
- The stay pad must not be loose between the No. 4 and No. 5 bows.
 - The stay pad must be lined up to the outboard end of the bow detail.
- (5) Staple the stay pad across the No. 5 bow in 8 places.

HINT:

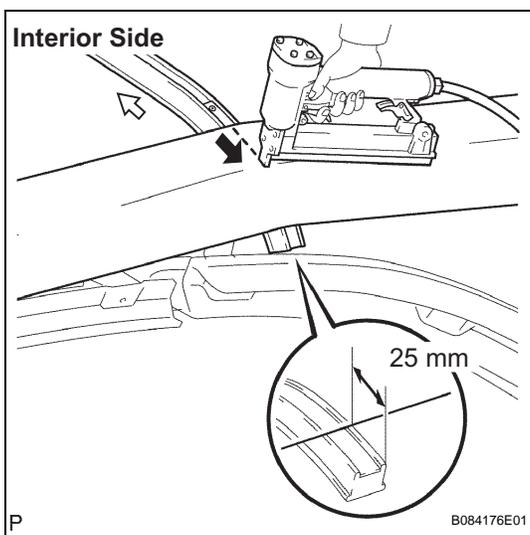
- Attach 2 staples for every 25.4 mm (1 in.).
- Staples must be fully seated.



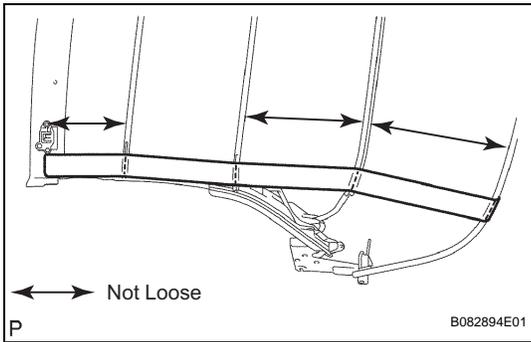
- (c) Using a staple gun, staple the pad to the No. 4 bow.
- (1) Align the stay pad to the No. 4 bow.
HINT:
 - The stay pad must not be loose between the No. 3 and No. 4 bows.
 - The stay pad must be aligned to the lower edge of the lower hole on the No. 4 bow.
 - (2) Staple the pad across the No. 4 bow in 8 places.
HINT:
 - Staples must be fully seated.
 - Attach 2 staples for every 25.4 mm (1 in.).



- (d) Using a staple gun, staple the pad to the No. 2 bow.
- (1) Align the stay pad assembly to the lower edge on the No. 2 bow.
HINT:
 - Align the pad so that it is flush to the No. 2 bow edge.
 - The stay pad must not be loose between the No. 1 and No. 2 bows.
 - (2) Staple the pad to across the No. 2 bow in 4 places.
HINT:
 - Staple the inner side of the No. 2 bow.
 - Staples must be fully seated.



- (e) Using a staple gun, staple the pad to the No. 3 bow.
- (1) Align the stay pad assembly to the No. 3 bow.
HINT:
The stay pad must be set 25 mm (0.98 in.) from the edge of the No. 3 bow.
 - (2) Staple stay pad to the No. 3 bow in 4 places.
HINT:
 - Staple the inner side of the No. 3 bow.
 - Staples must be fully seated.



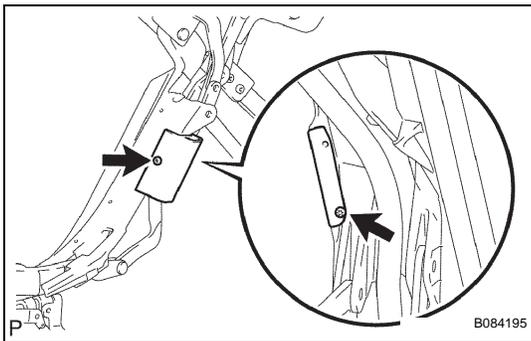
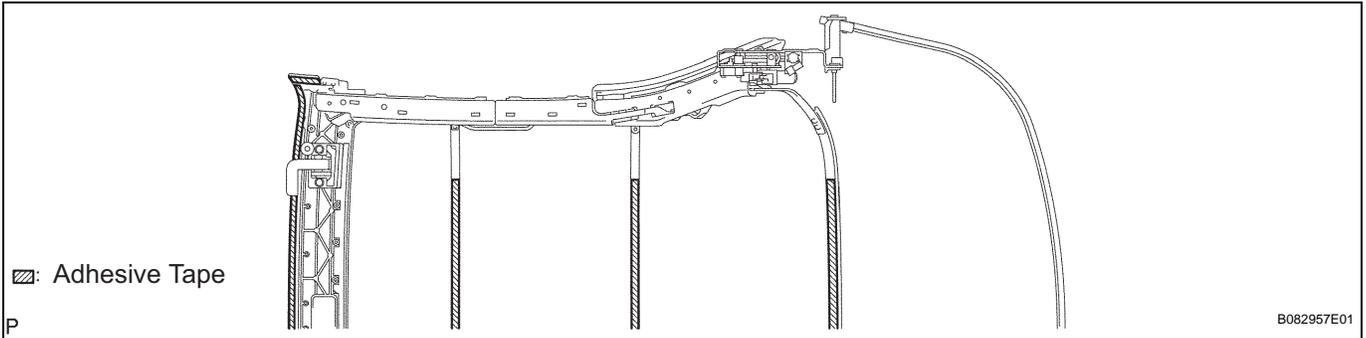
- (f) Check that the stay pad is not loose.
HINT:
 The stay pad must be pulled taut between the No. 1 and No. 2 bows, the No. 3 and No. 4 bows and the No. 4 and No. 5 bows.
 If the stay pad is slack in any location, the stay pad should be re-stapled to the bow.

26. INSTALL TARPAULIN COVER

NOTICE:

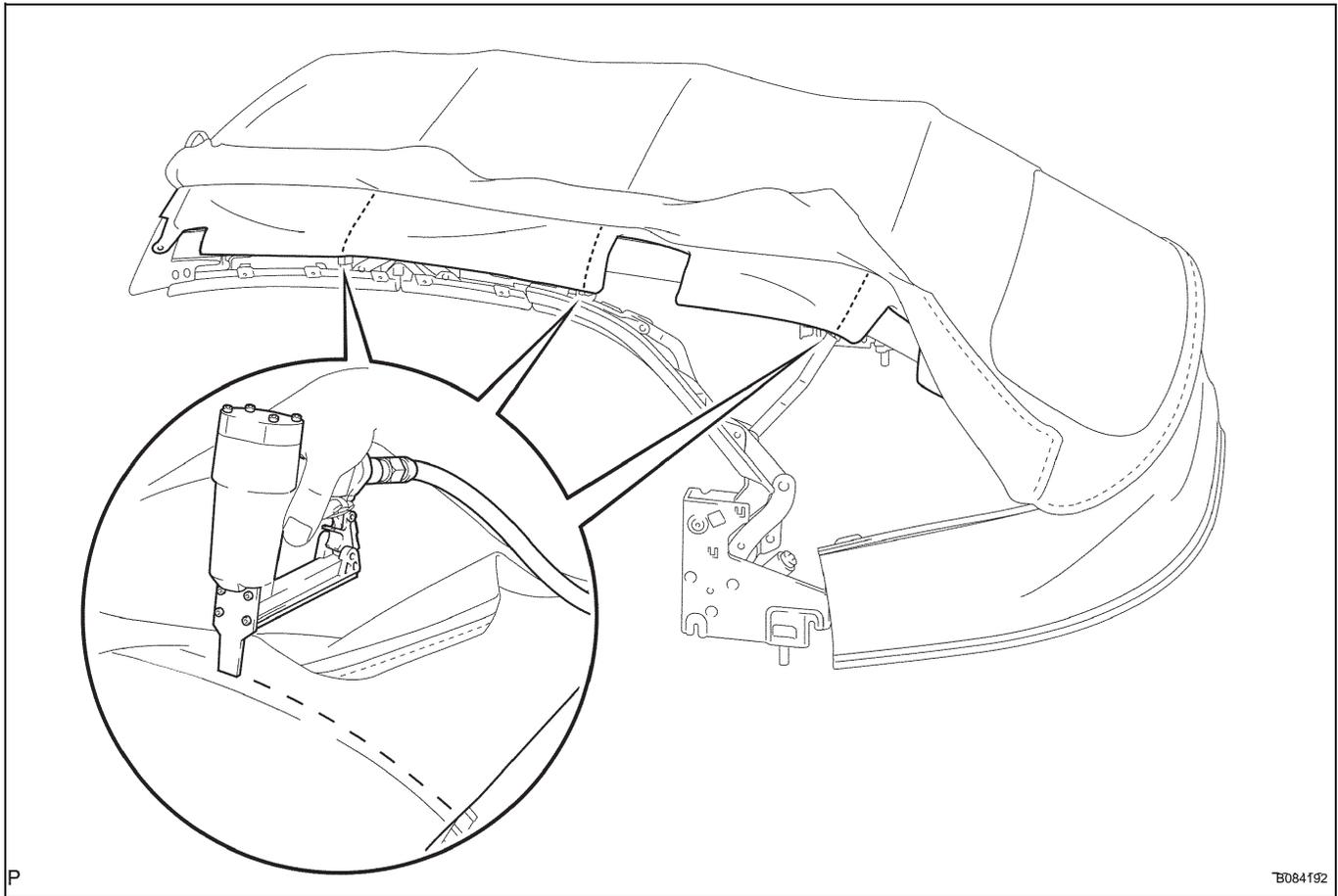
When placing a removed tarpaulin on the ground, prevent damage to its rail by placing cushions beneath the tarpaulin.

- (a) Remove the adhesive tape from the tarpaulin bows (No. 1, No. 2, No. 3 and No. 4). Clean off any residual adhesive.
 (b) Apply new adhesive tape to the tarpaulin bows (No. 1, No. 2, No. 3 and No. 4) as shown in the illustration below.



- (c) Using a torx wrench (T25), install the tarpaulin rail damper and rear rail with the 2 screws.
Torque: 8.0 N*m (82 kgf*cm, 71 in.*lbf)

- (d) Using a staple gun, staple the stay pad to the No. 2, No. 3 and No. 4 bows, as shown in the illustration below.



- (e) Using a 6 mm hexagon wrench, remove the 3 bolts and convertible roof motor (*1).
- (f) Fold the tarpaulin rail as shown in the illustration (*2).

NOTICE:

When placing a removed tarpaulin on the ground, prevent damage to its rail by placing cushions beneath the tarpaulin.

- (g) Using an air riveter equipped with a nose piece, install the 2 rivets to the No. 1 bow (*3).

HINT:

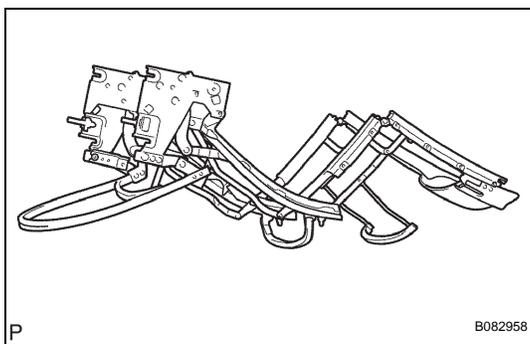
Fasten the 2 rivets in the order shown in the illustration A.

- (h) Using a torx wrench (T25), install the cable end and rear rail with the screw.

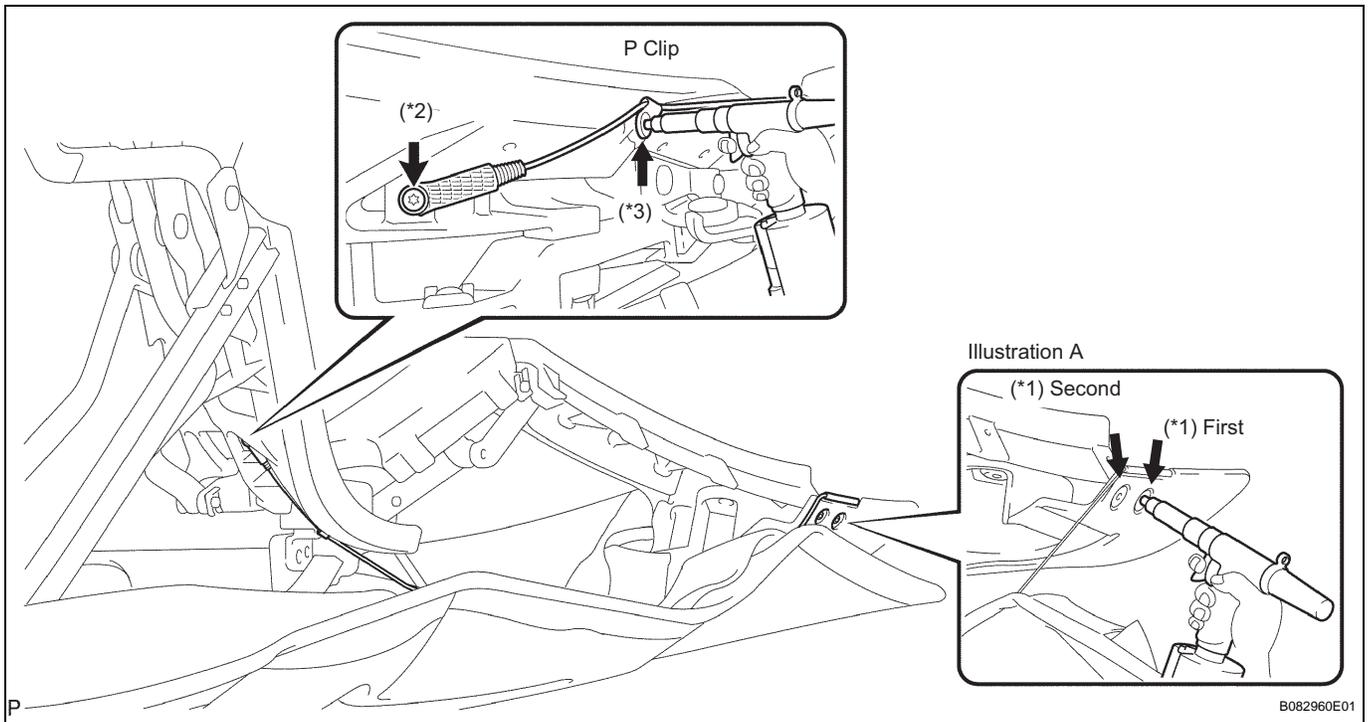
Torque: 8.0 N*m (82 kgf*cm, 71 ft.*lbf)

HINT:

Install the screw to the tarpaulin rail but do not fully tighten it. Attach the tarpaulin cover's wire hook to the screw and then fully tighten the screw.

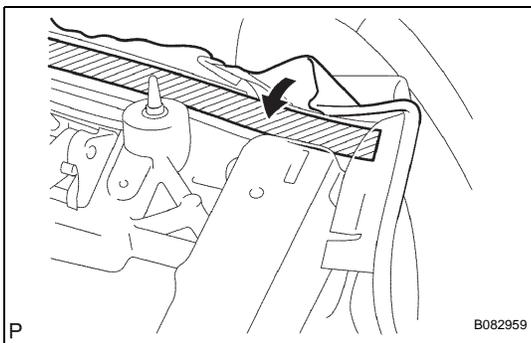


- (i) Using an air riveter equipped with a nose piece, install the P clip and the rear rail with the rivet.

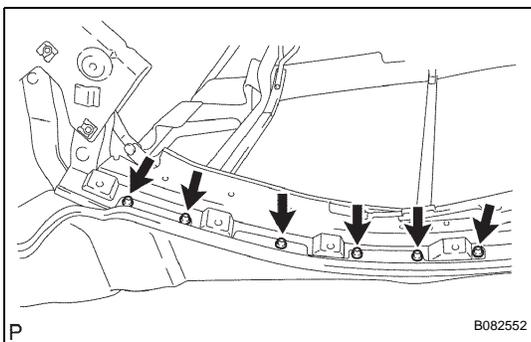


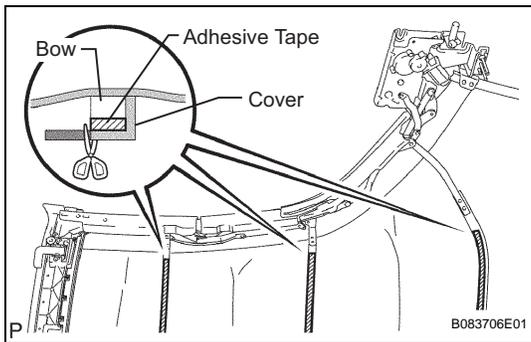
NOTICE:
The P clip's round edge must be outboard.

- (j) Align the front end of the tarpaulin cover with the No. 1 bow.
HINT:
Align the slit of the tarpaulin cover with center of the No. 1 bow.

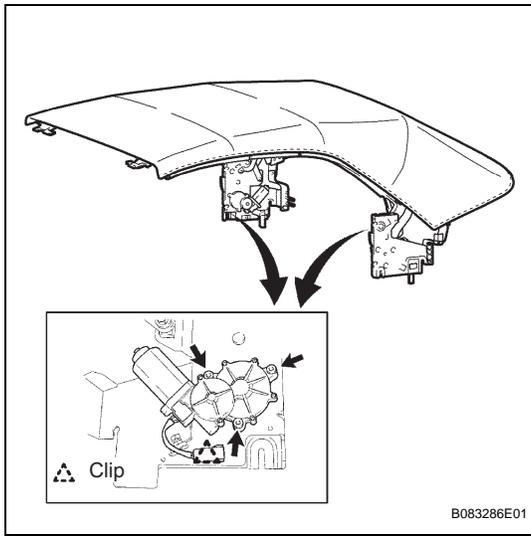


- (k) Using a torx wrench (T25), install the cover and rear rail with the 6 screws.
Torque: 6.0 N*m (61 kgf*cm, 53 in.*lbf)
HINT:
Tighten the center screws first. Then tighten screws toward the right and left side in sequence.





- (l) Apply the tarpaulin cover to the tarpaulin bows (No. 2, No. 3 and No. 4) as shown in the illustration.
HINT:
Cut excess cover at the edge of the bow.



- (m) Straighten the tarpaulin so that the tarpaulin is fully extended.
NOTICE:
Do not allow grease to come in contact with the cover. Doing so will damage or cause color damage to the cover.
- (n) Apply MP grease to the pinion gear of the motor.
(o) Using a 6 mm hexagon wrench, install the convertible roof motor with the 3 bolts.
Torque: 30 N*m (306 kgf*cm, 22 ft.*lbf)
- (p) Install the convertible roof motor's connector clip to the pivot bracket.
(q) Using a staple gun, install the tarpaulin cover and down stop strap to the No. 5 bow.

- (1) With the frame extended, align the center of the cover to the frame. Use the staple gun to affix the cover to the No. 5 bow.
- (2) Using a staple gun, staple the down stop strap to the No. 5 bow, as shown in the illustration below.

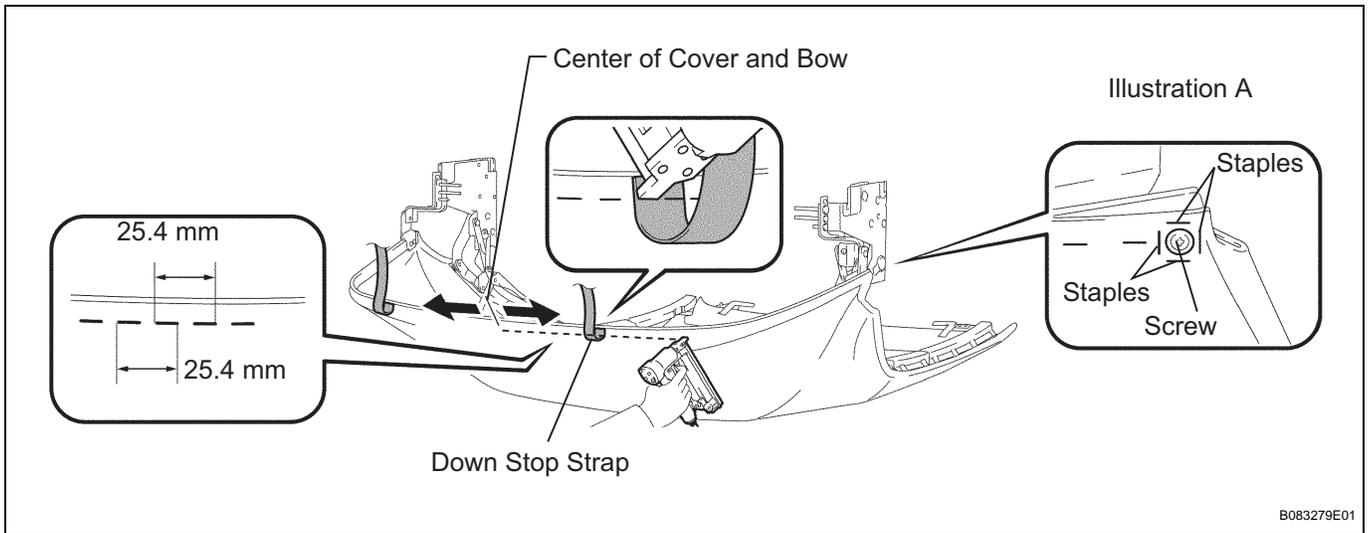
HINT:

- The drain trough should be installed so that its strap is on the outer side.
- (3) Affix the tips of the No. 5 bow to the frame as shown in the illustration A.
 - (4) Pull one side of the cover's rear away from the center of the cover. Use the staple gun to affix the side of the cover's rear to the frame, as shown in the illustration below. Repeat for the other side.

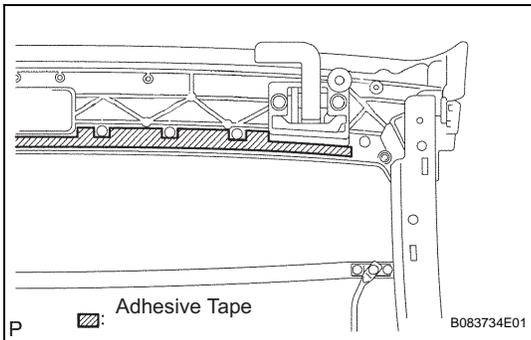
HINT:

- Staples must be fully seated.
- Attach 2 staples for every 25.4 mm (1 in.).

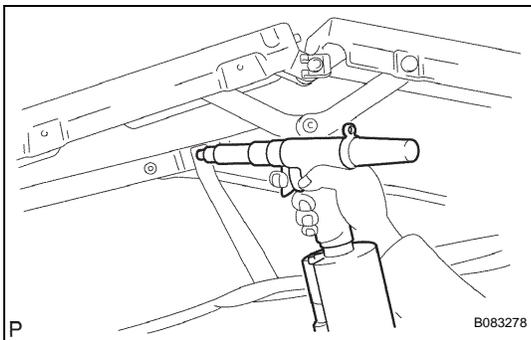
- (5) Using a torx wrench(T25), install a screw to the tarpaulin cover.



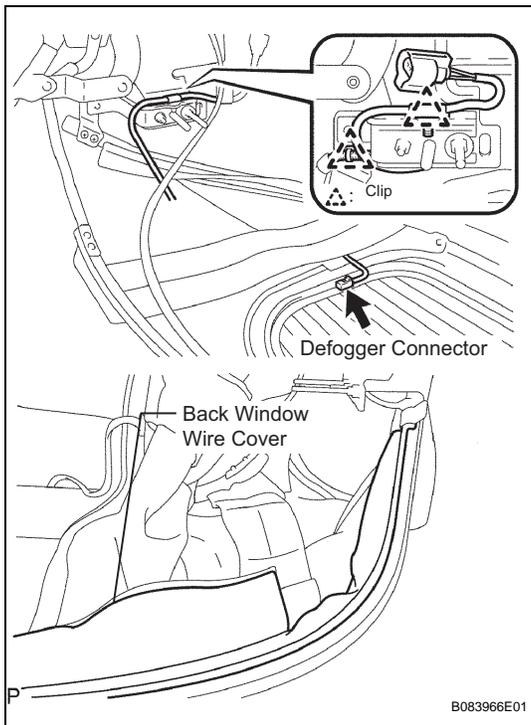
HINT:
The screw must be fully seated.



- (r) Remove the adhesive tape from the No. 1 tarpaulin bow.
- (s) Apply new adhesive tape to the No. 1 tarpaulin bow as shown in the illustration.



- (t) Using an air riveter equipped with a nose piece, strike rivets into the nylon strip.

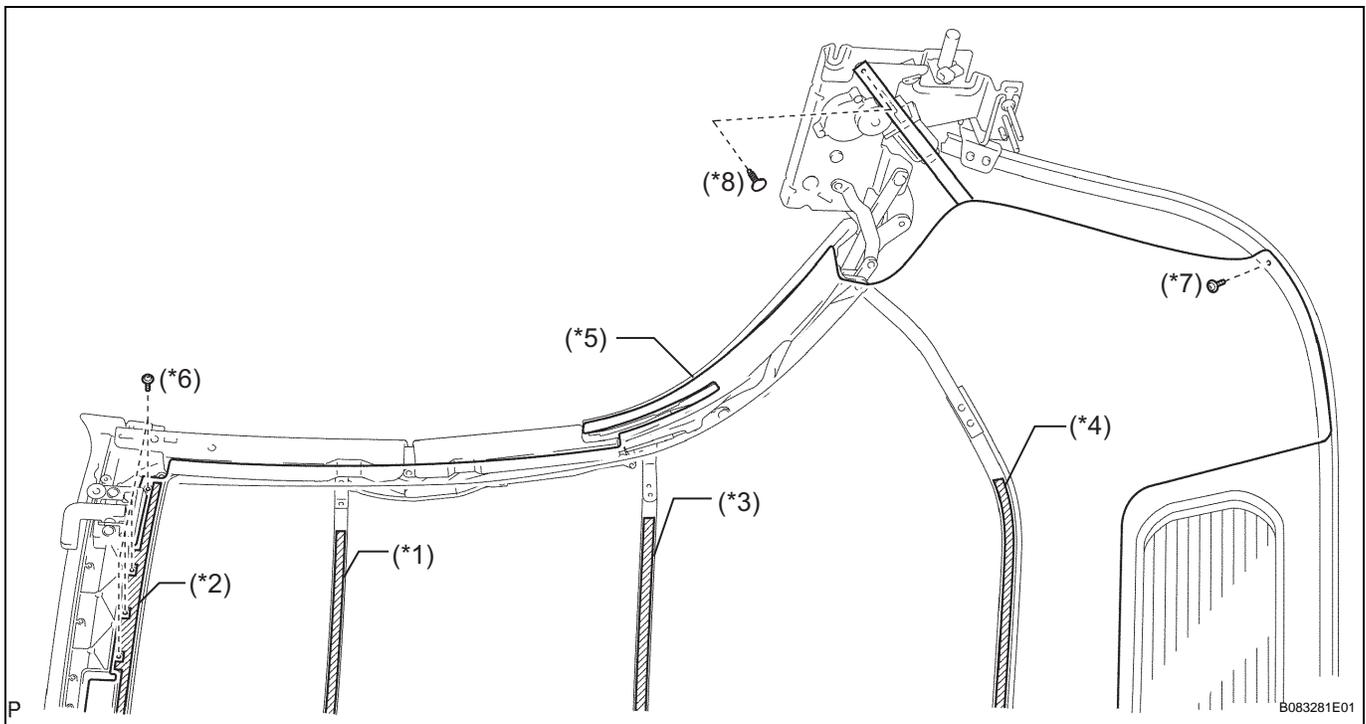


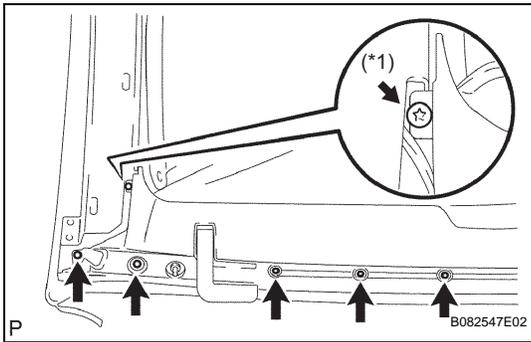
27. INSTALL BACK WINDOW GLASS WIRE COVER

- Install the back window wire cover.
- Connect the defogger wire's 2 clips to the tarpaulin rail pivot bracket. Also connect the 2 connectors to the rear window.

28. INSTALL TARPAULIN HEADLINING

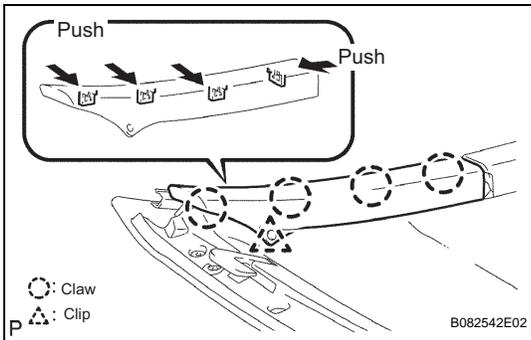
- Push the tarpaulin headlining into the No. 2 bow (*1).
 - Attach the tarpaulin headlining into the No. 1 bow (*2).
 - Push the tarpaulin headlining into the No. 3 bow (*3).
 - Push the tarpaulin headlining into the No. 4 bow (*4).
 - Install the tarpaulin headlining to the rear tarpaulin rail with the 5 clips (*5).
 - Using a torx wrench (T25), install the 8 screws (4 screws to LH side and 4 screws to RH side) to the No. 1 bow (*6).
- Torque: 6.0 N*m (61 kgf*cm, 53 in.*lbf)**
- Using a torx wrench (T25), install the screw, clip and tarpaulin headlining into the No. 5 bow (*7).
- HINT:
The screw must be fully seated.
- Install the tarpaulin headlining to the pivot bracket with the clip (*8).





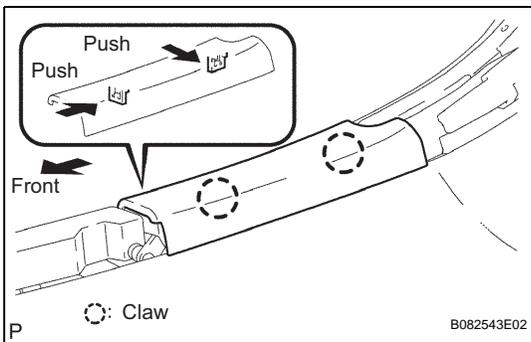
29. INSTALL ROOF HEADER GARNISH

- (a) Partially tighten the LH and RH screws (RH screw is not shown in illustration) (*1).
- (b) Install the roof header garnish.
- (c) Using a torx wrench (T25), install the 10 screws to the roof header garnish (5 screws to LH side and 5 screws to RH side). Then tighten the 12 screws.
Torque: 6.0 N*m (61 kgf*cm, 53 in.*lbf)
- (d) Install the header panel patch to the garnish.



30. INSTALL FRONT ROOF SIDE RAIL GARNISH

- (a) Install the front garnish to the front rail with the 4 claws.
- (b) Install the headlining to the front rail with the headlining clip.

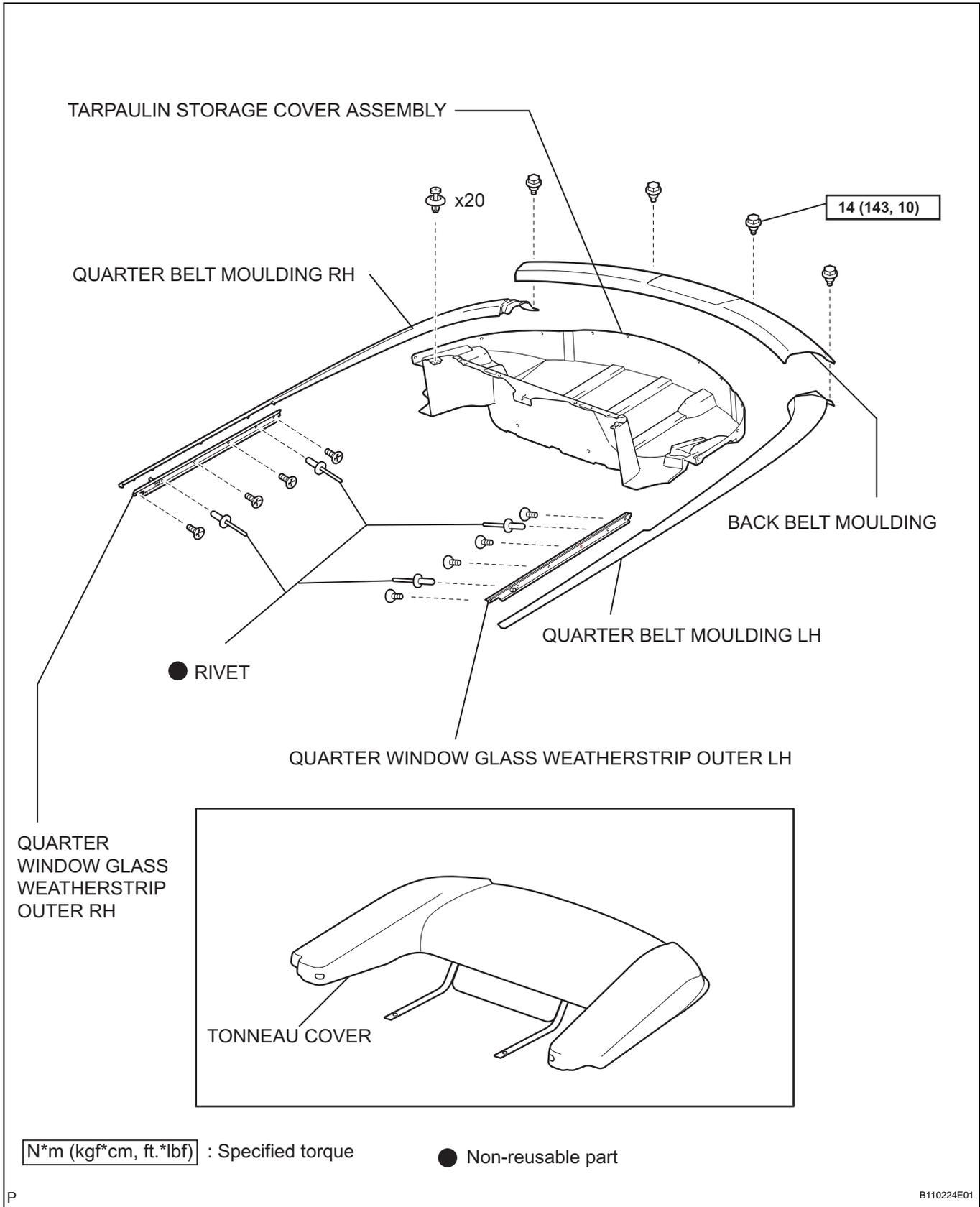


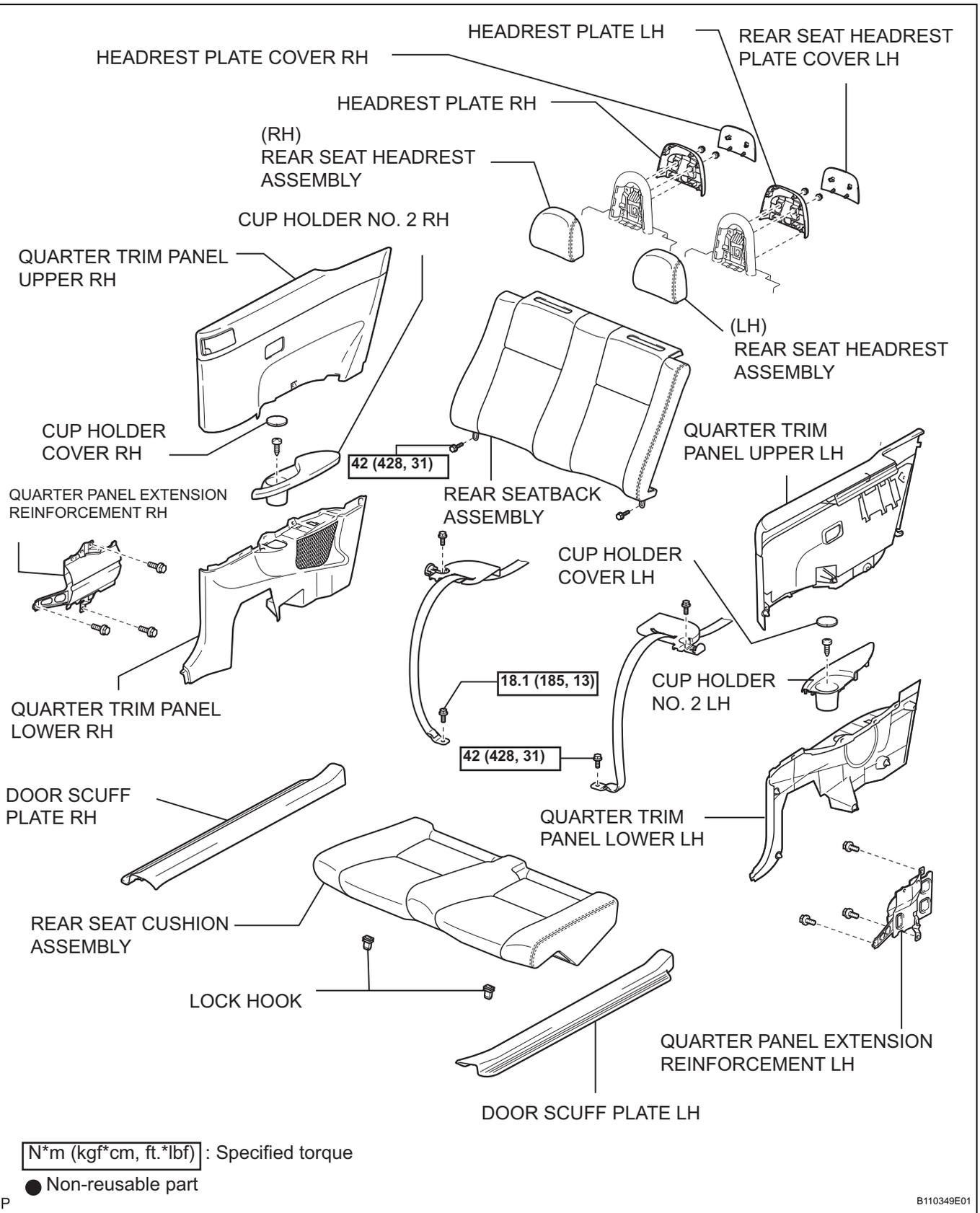
31. INSTALL ROOF SIDE RAIL GARNISH NO.2

- (a) Install the garnish to the center rail with the 2 claws.

SOFT TOP COMPONENTS

CT



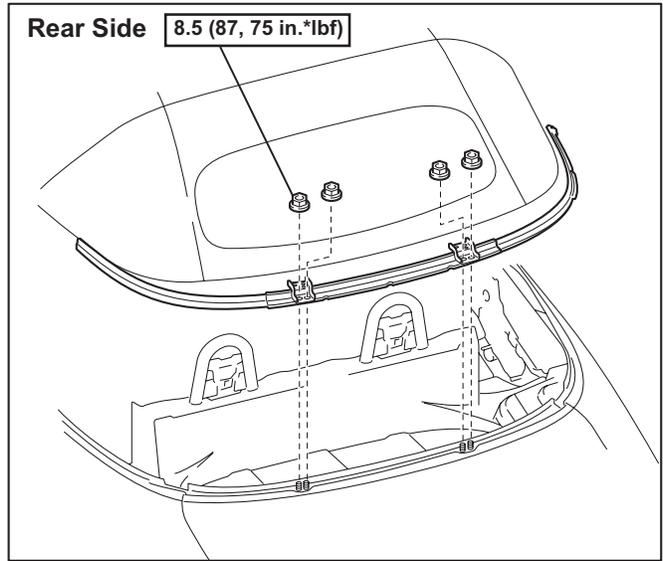


CT

TARPAULIN RAIL PIVOT
BRACKET COVER

5.5 (56, 49 in.*lbf)

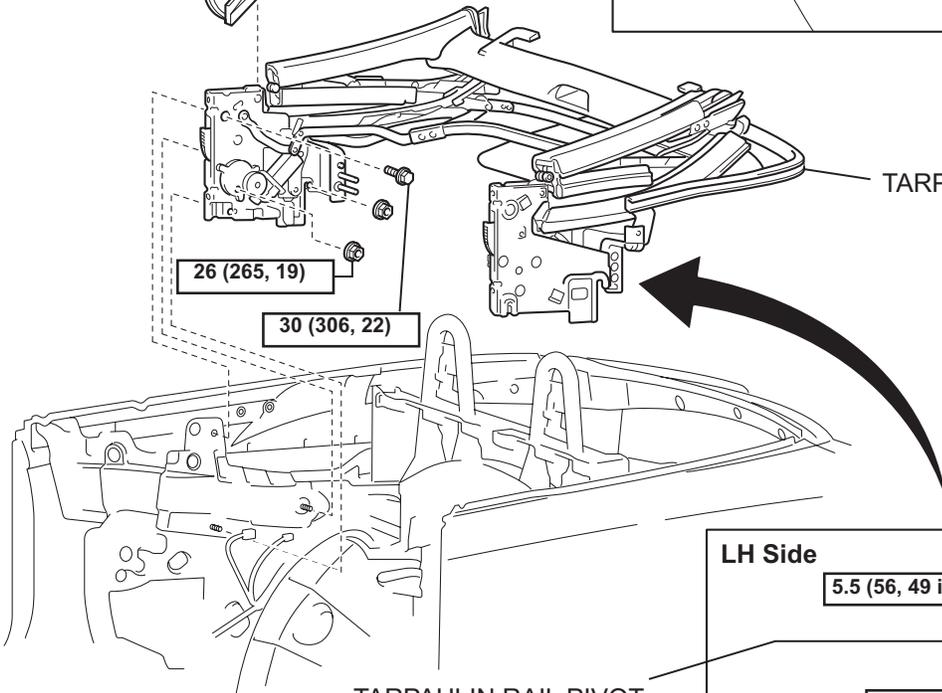
Rear Side 8.5 (87, 75 in.*lbf)



TARPAULIN ASSEMBLY

26 (265, 19)

30 (306, 22)



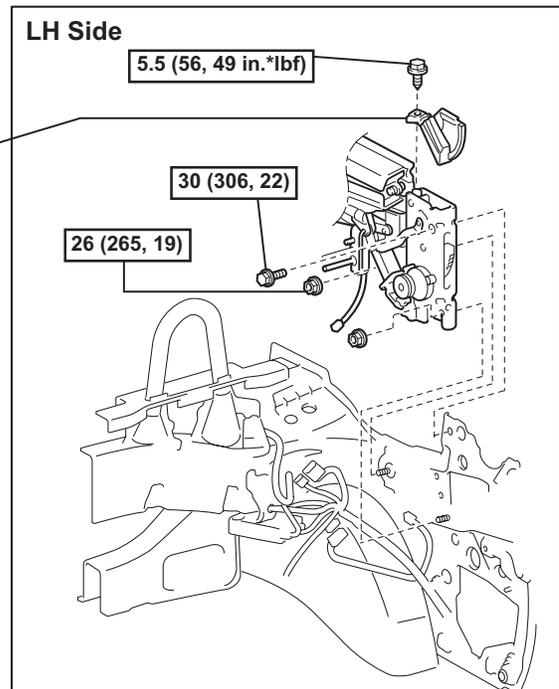
TARPAULIN RAIL PIVOT
BRACKET COVER LH

LH Side

5.5 (56, 49 in.*lbf)

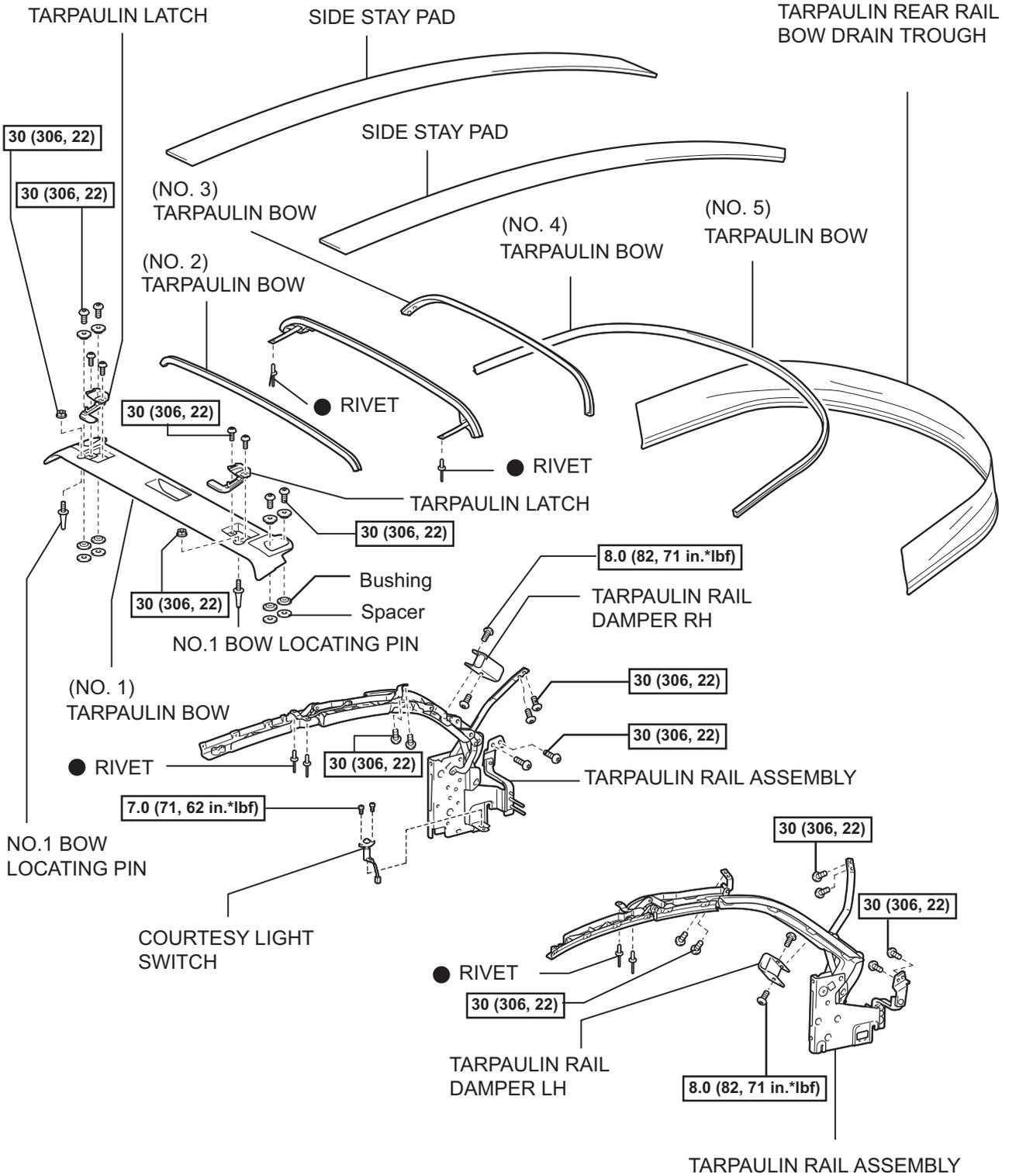
30 (306, 22)

26 (265, 19)



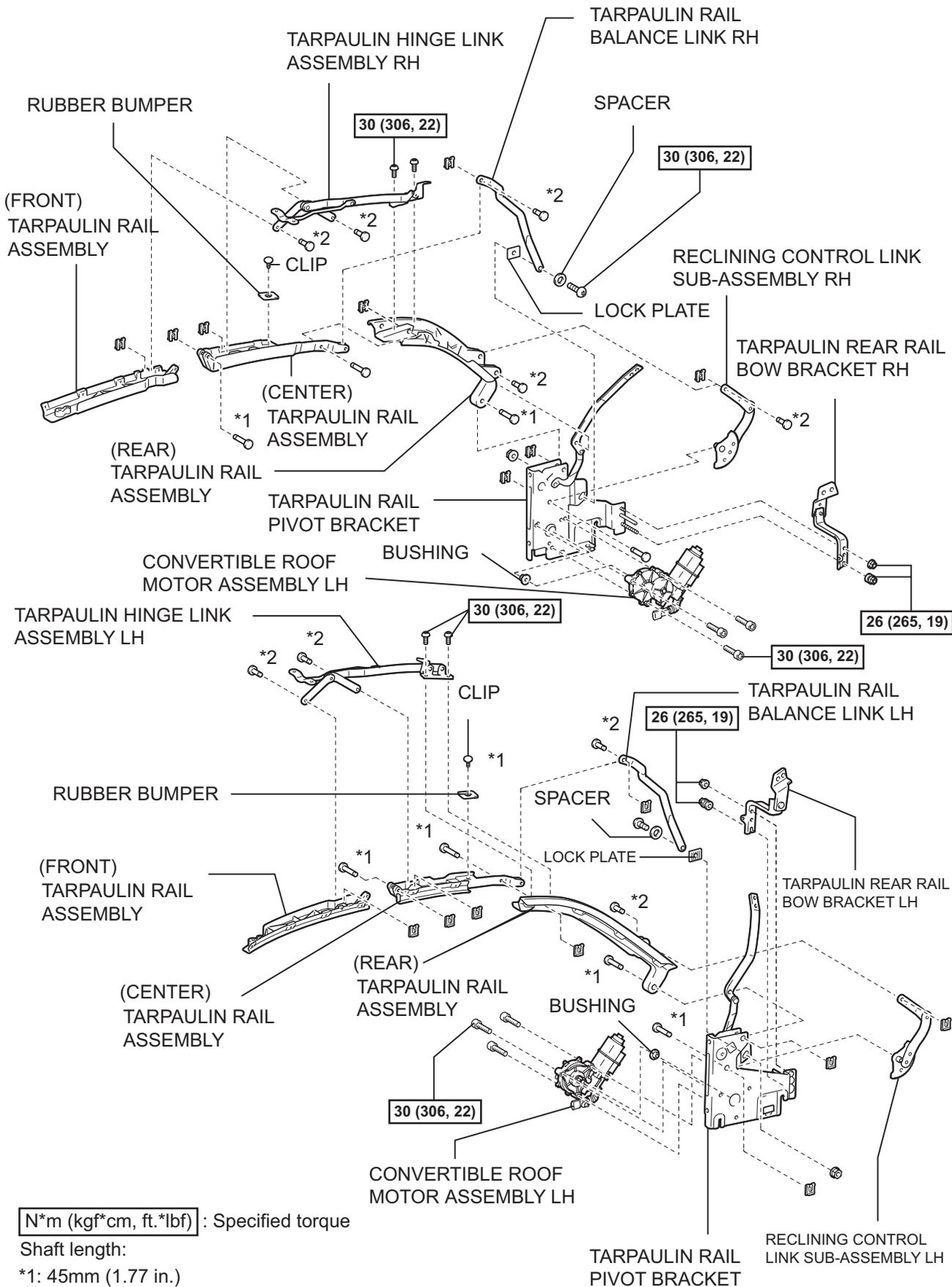
N*m (kgf*cm, ft.*lbf) : Specified torque

CT



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

● Non-reusable part



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

Shaft length:

*1: 45mm (1.77 in.)

*2: 24mm (0.94 in.)

INSTALLATION

1. INSTALL TARPAULIN ASSEMBLY

- (a) Fully open the tarpaulin.
- (b) On the rear rail bow bracket, uniformly loosen nuts A and B. Then remove nut A.
- (c) Retighten nut B a distance of 65 mm (2.56 in.) as shown in the illustration.

HINT:

Performing procedures (b) and (c) will make the No. 5 bow operational.

- (d) Close the tarpaulin.
- (e) Install the tarpaulin with the 2 bolts and 4 nuts.

Torque: Bolt

30 N*m (306 kgf*cm, 22 ft.*lbf)

Nut

26 N*m (265 kgf*cm, 19 ft.*lbf)

CAUTION:

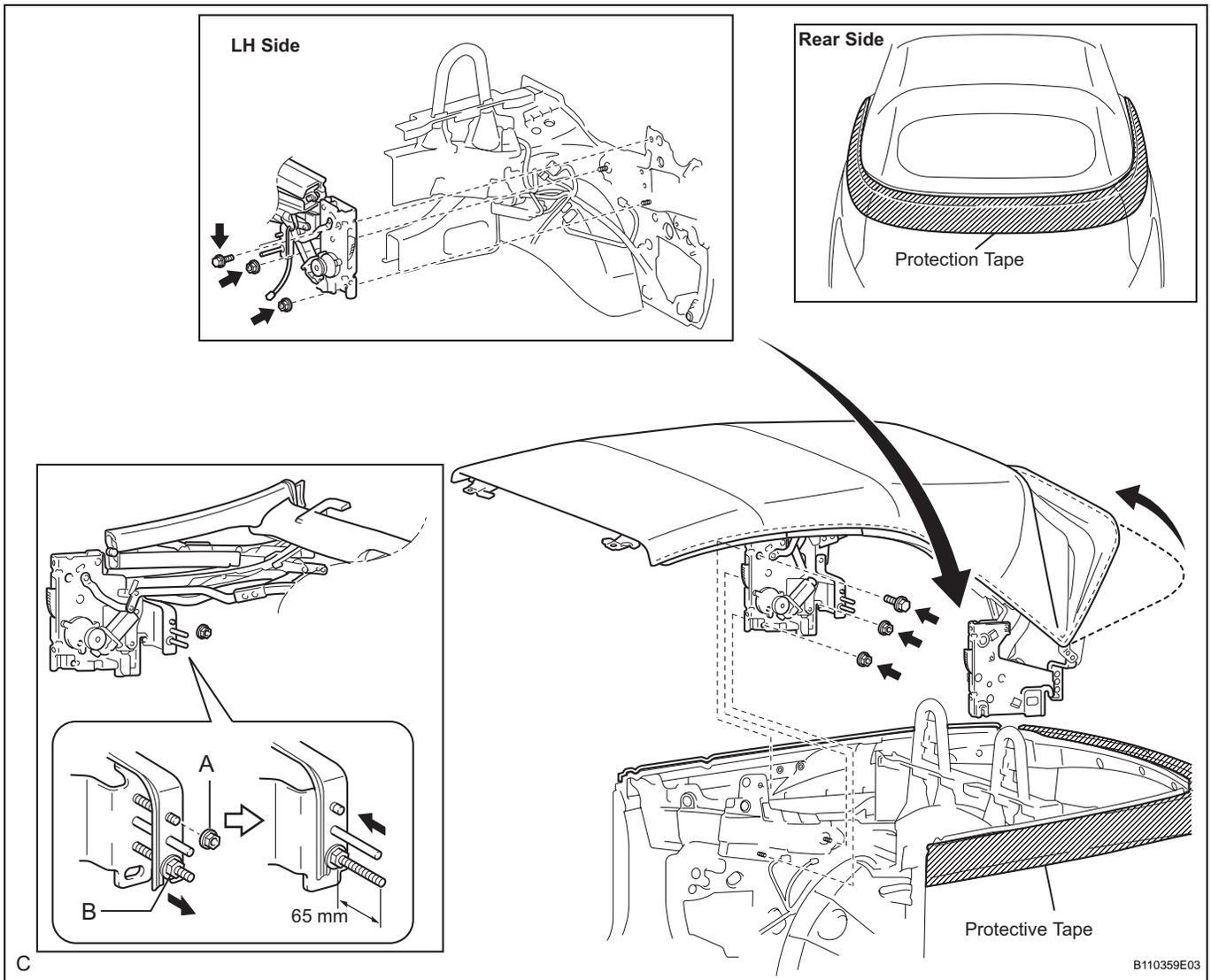
During installation/removal of the tarpaulin, do not lift the with less than 3 people.

NOTICE:

Be careful not to deform the base of the courtesy light switch.

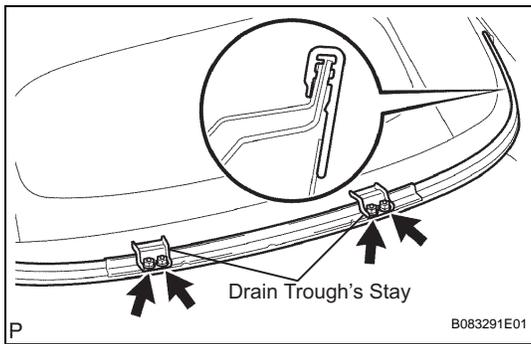
- (f) Install the rear rail bracket with the 2 nuts (A and B).
Torque: 26 N*m (265 kgf*cm, 19 ft.*lbf)
- (g) Connect the connector of the convertible roof motor.

- (h) Connect the connector of the courtesy light switch and defogger connector.



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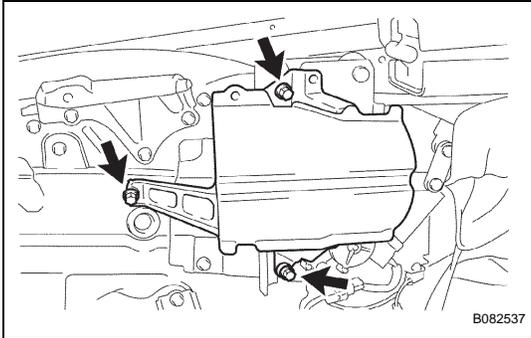
- (i) Connect the convertible roof motor connector.
- (j) Install the courtesy light switch with the 2 screws.
Torque: 7.0 N*m (71 kgf*cm, 62 in.*lbf)
- (k) Connect the courtesy light switch connector.
- (l) Connect the defogger connector.



- (m) Install the tarpaulin rear rail bow drain trough's stay.
- (1) Install the drain trough to the body panel as shown in the illustration.
 - (2) Install the drain trough's stay with the 4 nuts.
Torque: 8.5 N*m (87 kgf*cm, 75 in.*lbf)

2. INSTALL QUARTER PANEL EXTENSION REINFORCEMENT LH

- (a) Install the reinforcement with the 3 bolts.



3. INSTALL TARPAULIN RAIL PIVOT BRACKET COVER

- (a) Install the pivot bracket cover with the screw.
Torque: 5.5 N*m (56 kgf*cm, 49 in.*lbf)

4. INSTALL ROOF SIDE RAIL RETAINER

HINT:

See the illustration below.

- (a) Install the tarpaulin front rail retainer and 4 shims with the 4 screws.
- (b) Install the tarpaulin center rail retainer and 2 shims with the 2 screws.
- (c) Install the tarpaulin rear rail retainer and 4 shims with with 4 screws.

Torque: 10 N*m (102 kgf*cm, 7 in.*lbf)

NOTICE:

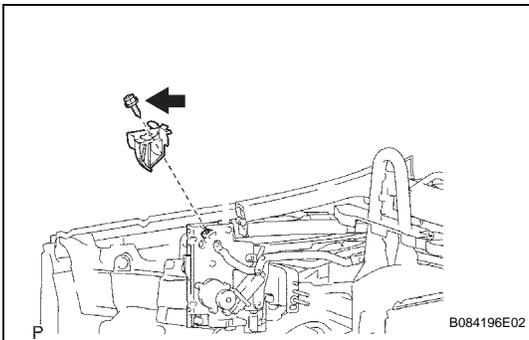
- Be careful not to drop shims between the tarpaulin rail retainer and the tarpaulin rail.
- Removed shims must be installed to the location it was installed previously.
Depending on the location, each shim's thickness is different.

5. INSTALL TARPAULIN RAIL WEATHERSTRIP

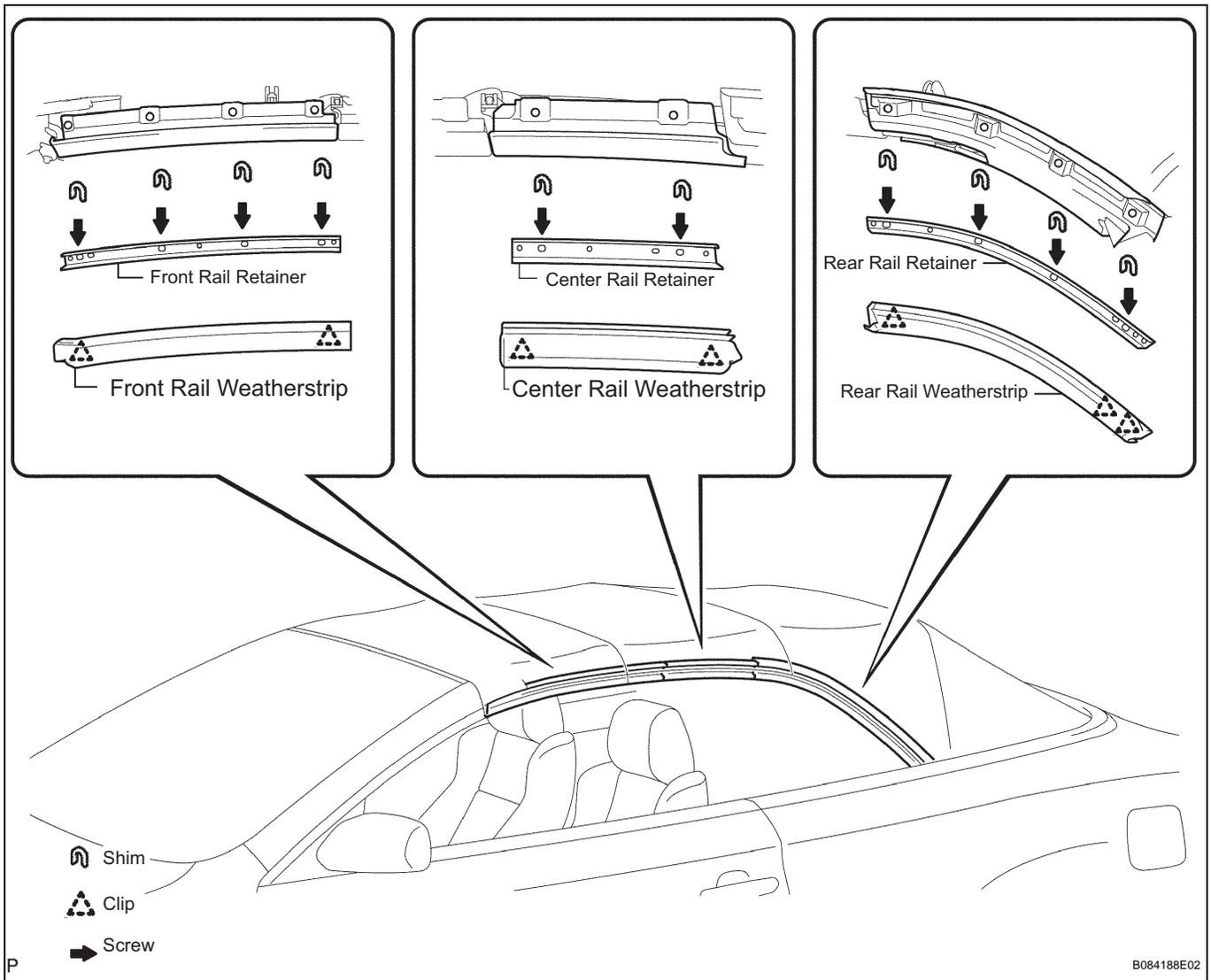
HINT:

See the illustration below.

- (a) Install the tarpaulin front rail weatherstrip with the 2 clips.
- (b) Install the tarpaulin center rail weatherstrip with the 2 clips.



(c) Install the tarpaulin rear rail weatherstrip with the 3 clips.



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6. CONNECT BATTERY NEGATIVE TERMINAL

(a) Connect the battery negative terminal.

NOTICE:

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

(b) Check the SRS warning light (see page [RS-30](#)).

7. CHECK FOR TARPULIN OPERATE

Area	See procedure
Front door glass	ED-19
Quarter window glass	WS-124 and WS-123

8. CHECK FOR WATER LEAKS

(a) Check that the tarpaulin has no water leaks. If a leak is found, determine where the leak is occurring. Then, confirm that the relevant procedures ("Reassembly" and "Installation" of Soft Top) have been completed properly.

If there is leak between the tarpaulin and the front/quarter window glass, refer to the adjustment procedures for the front/quarter window glass to correct the water leak.