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# SERVICE BULLETIN

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Classification: BT14-018	Reference: NTB14-076	Date: August 11, 2014
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## 2011 – 2014 MURANO CROSS CABRIOLET FOLDING ROOF (SOFT TOP) UPPER AND LOWER LINKAGE ASSEMBLY REPLACEMENT

**APPLIED VEHICLES:** 2011 – 2014 Murano Cross Cabriolet (Z51)

### SERVICE INFORMATION

This bulletin contains the procedure to replace the folding roof lower linkage assemblies (lower links) and the folding roof upper linkage assemblies (upper links).

**NOTE:** For 2011 and 2012 Murano Cross Cabriolet, it is recommended that you check Service Comm for campaign P1261/NTB12-003. If the campaign has not been performed, it should be performed before returning the vehicle to the customer.

Nissan Bulletins are intended for use by qualified technicians, not 'do-it-yourselfers'. Qualified technicians are properly trained individuals who have the equipment, tools, safety instruction, and know-how to do a job properly and safely. NOTE: If you believe that a described condition may apply to a particular vehicle, DO NOT assume that it does. See your Nissan dealer to determine if this applies to your vehicle.

## SERVICE PROCEDURE

During this procedure, the soft top will need to be operated several times.

### NOTE:

- Do not operate the soft top in temperatures below 32°F (0°C).
- If the vehicle is in an area with temperatures below 32°F (0°C), move it to an area with temperature above 32°F (0°C) and wait for the vehicle to adapt to the warmer temperature.
- If the soft top is operated in temperatures below 32°F (0°C) the soft top material may not stow correctly.

### CAUTION: Before operating the soft top, make sure:

- The engine is running; keep the engine running while operating the soft top.
- There is **5 feet of horizontal clearance** behind the rear bumper.
- There is **10 feet of vertical clearance** from the ground above the vehicle.
- The **luggage cover is pulled out and hooked** so the roof storage area is separate from the trunk area.
- The **trunk is closed**.
- **Top is clean**; free from water, snow, sand, or other debris.
- Rear window **defroster is turned OFF**.
- Vehicle is in an area with **temperatures above 32°F (0°C)**.

### NOTE:

- **Photos and instructions in this procedure are for the left side (driver side) unless otherwise stated.**
- Links should be replaced as pairs; both upper links and/or both lower links.
- When replacing the right side lower link or upper link, follow the steps in this procedure, keeping in mind that the photos are of the left side. The right side is a mirror image.

## Replacement of Folding Roof Lower Linkage (Lower Link) Assembly

### NOTE:

- Use protective covers as needed for interior and exterior surfaces while performing this Service Procedure.
- Exploded views are provided on pages 33 through 37 as reference while performing this procedure.
- If an upper link is being replaced, the lower link must be removed first.
- Replace both links, one side at a time.

**Recommendation:** The following will be very helpful for reassembly:

- Pay close attention to the location and fit of all parts during removal.
- Keep all screws, clips, pins, and nuts separated so their reassembly location can be easily identified.

### 1. Remove the interior rear side finisher.

- Refer to the Electronic Service Manual (ESM), Section INT-Interior, for rear side finisher removal information.

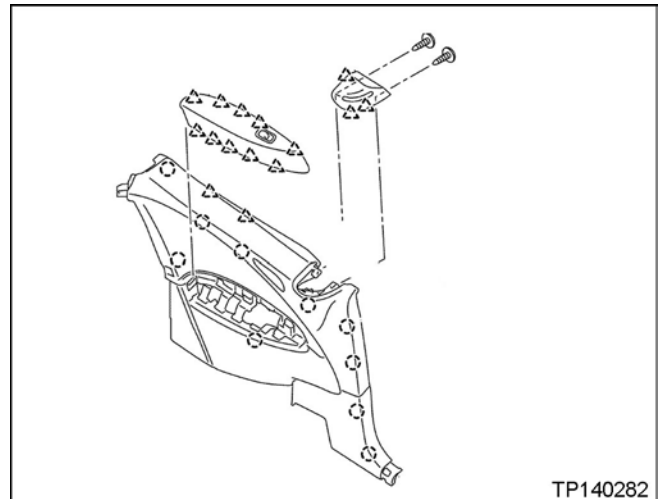


Figure 1

### 2. Partially open the soft top as follows:

- a. Set the parking brake.
- b. Start the engine.
- c. Keep the transmission in Park.
- d. Operate the soft top until it is at approximately the position shown in Figure 2.
- e. Turn the ignition OFF.



Figure 2

**WARNING:** During step 3, oil pressure in the soft top system may drop low enough to allow the top to move. Keep fingers and other body parts safely away from areas that could result in injury.

3. Remove the pin shown in Figure 3, and then reinstall it in the opposite direction as follows:

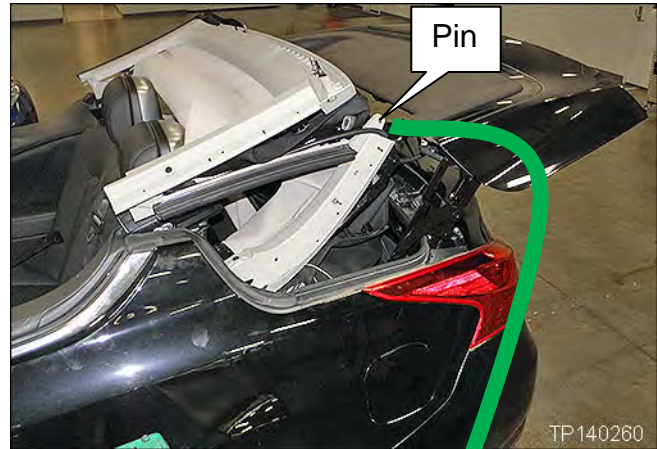


Figure 3

- a. Remove the push-on nut.
- b. Remove the pin.

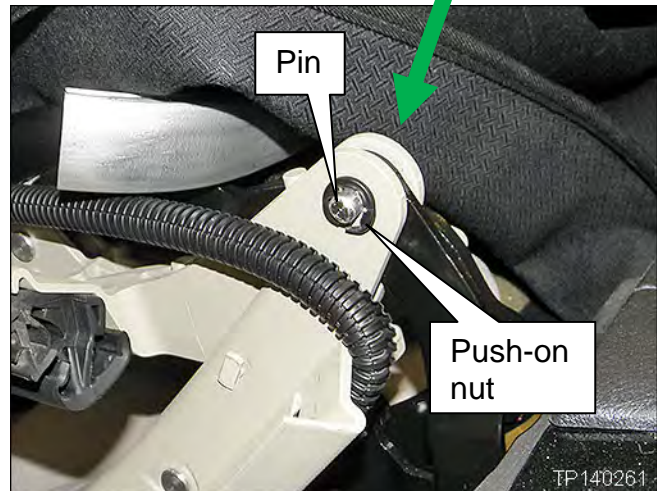


Figure 4

- c. Re-install the pin in the **opposite** direction as shown.
  - **Do not** install the push-on nut.

**NOTE:** This pin must be temporarily reinstalled in the opposite direction so that the soft top can be operated. This pin will be removed later in the procedure.

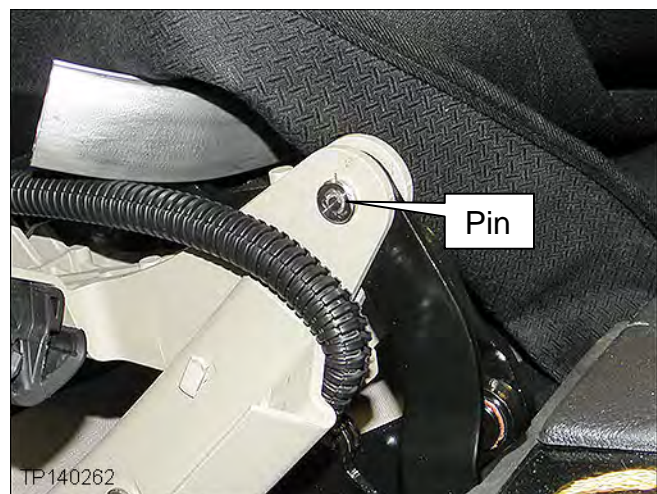


Figure 5

4. Partially open the soft top as follows:
  - a. Set the parking brake.
  - b. Start the engine.
  - c. Keep the transmission in Park.
  - d. Operate the soft top until it is in the position shown in Figure 6.
  - e. Turn the ignition OFF.



Figure 6

**WARNING:** During step 5, oil pressure in the soft top system may drop low enough to allow the top to move. Keep fingers and other body parts safely away from areas that could result in injury.

5. Remove the down stopper as follows:
  - a. Look down in the area just in front of the rear rail.



Figure 7

- b. Locate the down stopper with felt cloth tape on top of it.
  - c. Remove the felt cloth tape.

**NOTE:**

- For reassembly, use new felt cloth tape. Use two strips about 1 inch long side by side.
- Felt cloth tape is listed in the Parts Information.

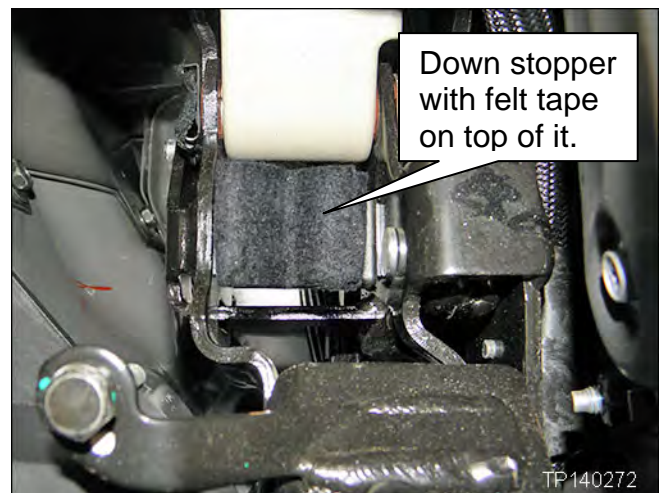


Figure 8



- d. Remove the screw.
- e. Remove the down stopper.

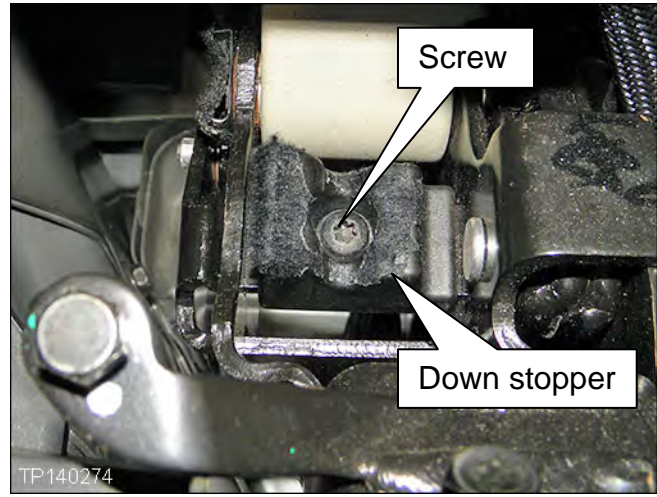


Figure 9

- 6. Partially open the soft top as follows:
  - a. Set the parking brake.
  - b. Start the engine.
  - c. Keep the transmission in Park.
  - d. Operate the soft top until it is at approximately the position shown in Figure 10.
  - e. Turn the ignition OFF.



Figure 10

7. Remove the front rail weather-strip as follows:



Figure 11

- a. Remove two screws at the top of **both** front rail weather-strips.
- Screws at the top of both front rail weather-strips must be removed in order to remove the cover outer front retainer in step 8.

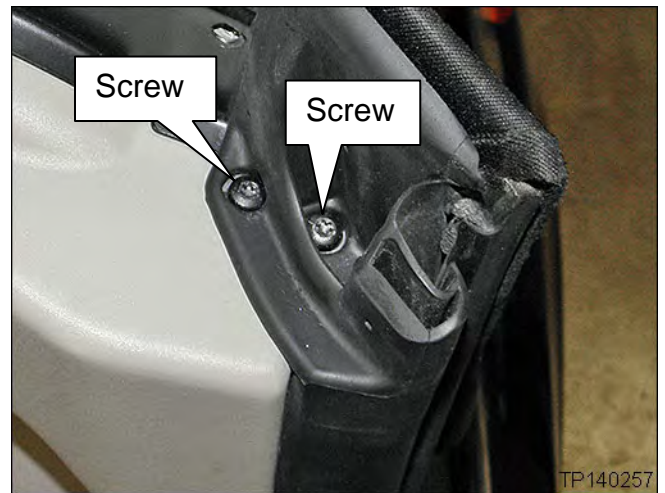


Figure 12

- b. Start from the top and pull the front rail weather-strip from the rail.



Figure 13

8. Remove the soft top cover outer front retainer.



Figure 14

- Retainer is held on with 7 screws as shown.

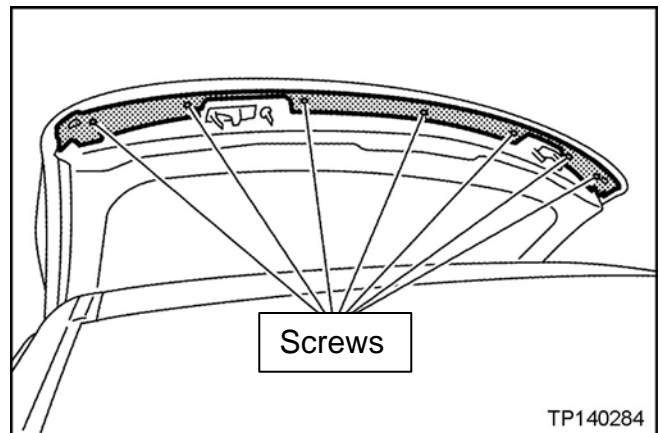


Figure 15

9. Remove the front rail weather-strip retainer:

- Retainer is held on with 3 screws.

**NOTE:** For reassembly, tighten the top screw first.

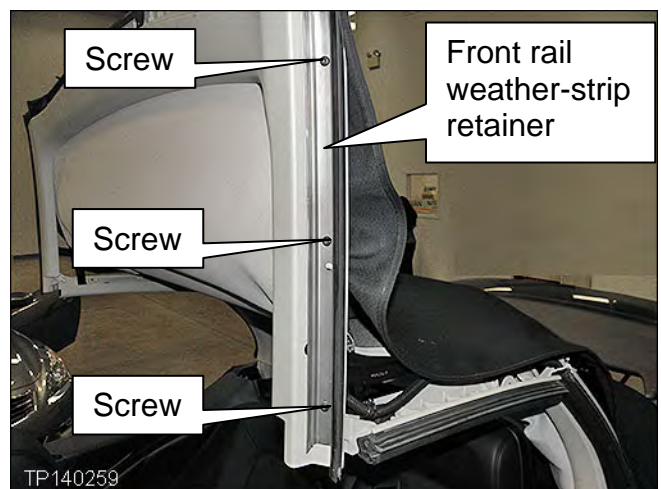


Figure 16



10. Take the soft top cover loose from the front corner.

- The cover has a cloth loop that is helpful in pulling the cover loose from the corner.



Figure 17

11. Remove felt cloth tape covering the end of the soft top cover outer wire.

**NOTE:** For reassembly:

- Use new felt cloth tape - about 1.5 inch long strip.
- Felt cloth tape is listed in the Parts Information.



Figure 18

12. Unhook the soft top cover outer wire from the 1<sup>st</sup> bow assembly (see Figures 19 and 20).

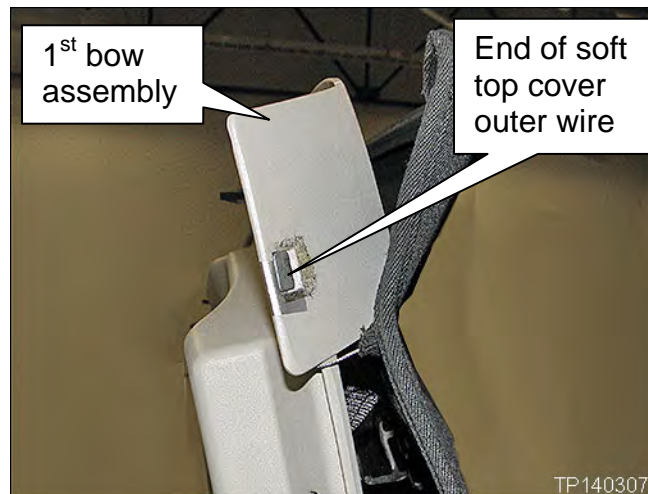


Figure 19

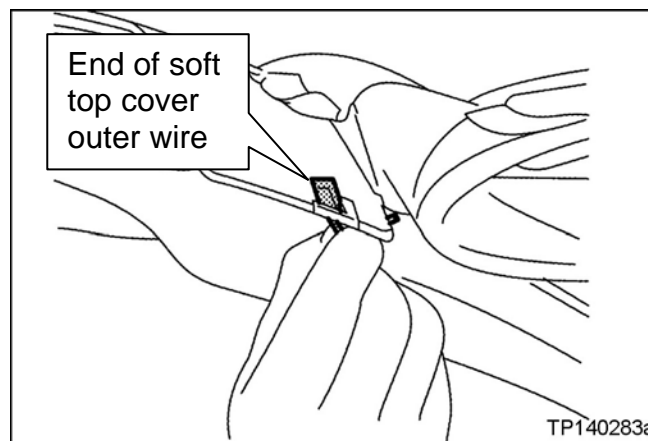


Figure 20

13. Remove screw to disconnect the soft top cover outer bungee cord at front rail.

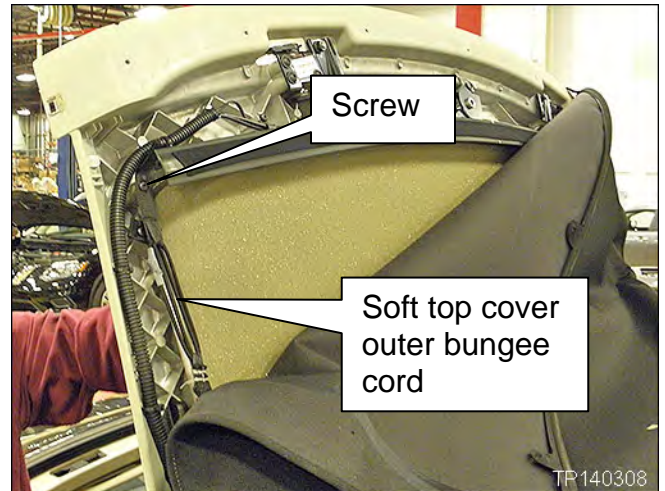


Figure 21

14. Remove the rear rail weather-strip as follows:

- a. Remove 2 screws on the lower part of the rear rail weather-strip.



Figure 22

- b. Start from the top and **carefully** pull the weather-strip from the retainer.

**NOTE:** The weather-strip is still attached at the lower end.

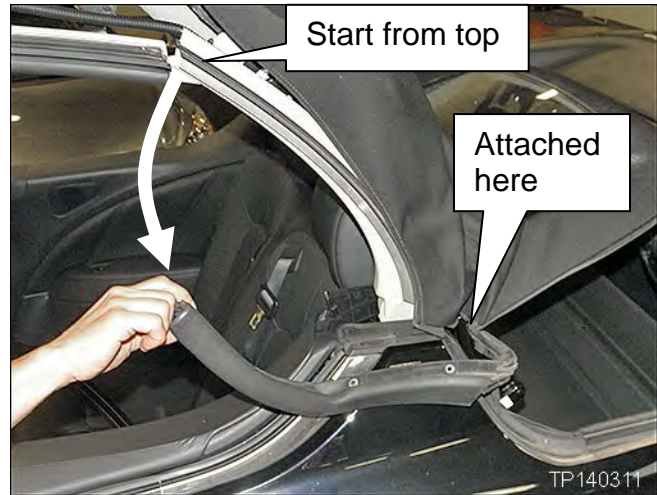


Figure 23

- c. Disconnect the clip shown in Figure 24.
- d. Place the weather-strip out of the way.

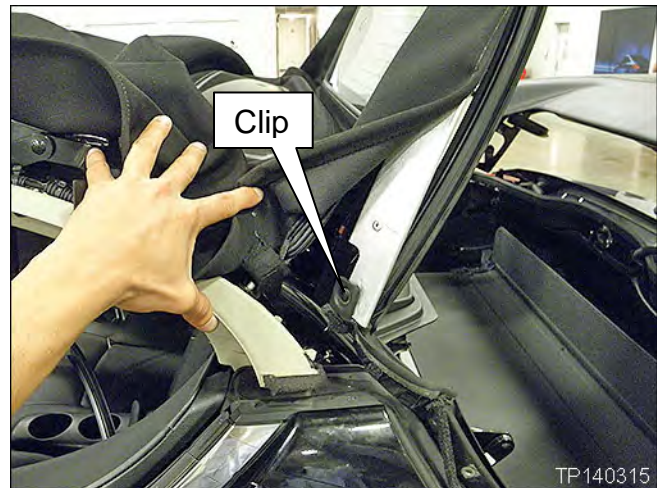


Figure 24

15. Remove the rear rail weather-strip retainer:

- Retainer is held on with 3 screws.

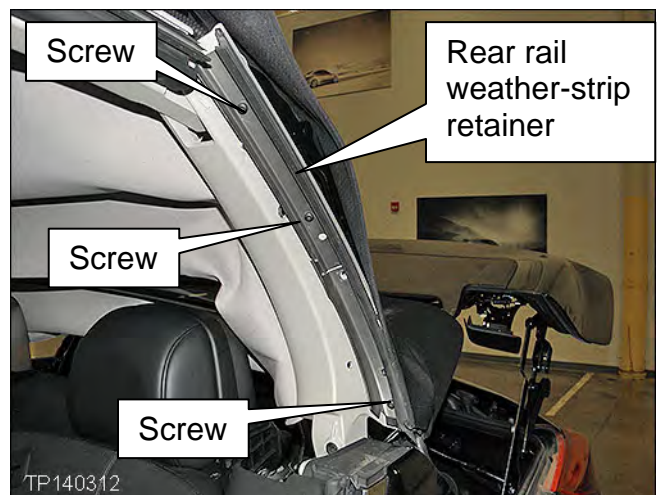


Figure 25



16. Take the soft top cover loose from the rear rail.



Figure 26

17. Pull the soft top cover outer wire from the cover and place it out on the way.

**NOTE:**

- Leave wire connected at the rear end.
- It is helpful to coil the outer wire and tape it out of the way until you are ready for reassembly.



Figure 27

- Figure 28 is provided for reference showing location of outer wire.

**NOTE:** For reassembly:

- Make sure the outer wire is routed through the hole in the plastic edge of the soft top cover as shown in Figure 26 above.
- Use a stiff wire to push/pull the outer wire back through the soft top cover.

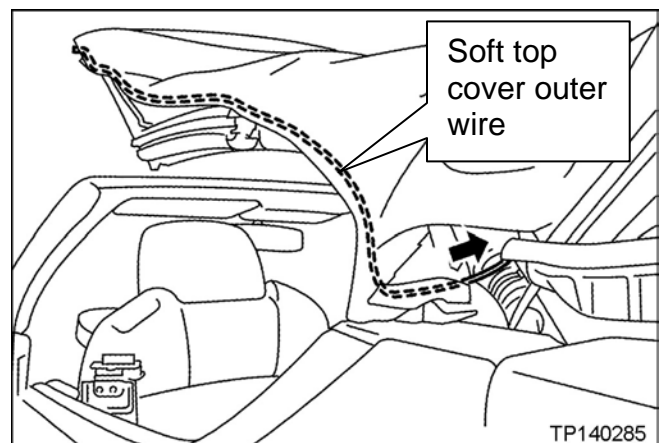


Figure 28

18. Take loose the cloth loop from around the lower link, shown in Figure 29, as follows:

- a. Unwrap felt cloth tape from around the cloth loop.
- b. Unhook the cloth loop.

**NOTE:** For reassembly:

- Make sure the loop is below the bungee cord as shown.
- Use new felt cloth tape. Use a strip about 4 inches long.
- Felt cloth tape is listed in the parts information.

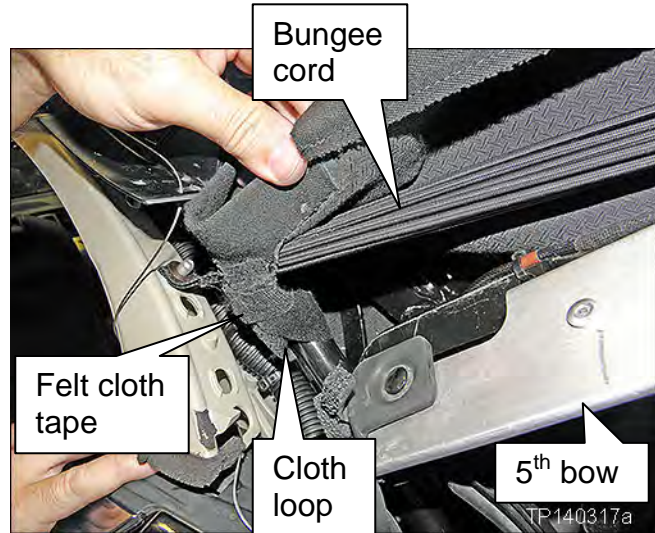


Figure 29

**NOTE:** In the next few steps you will remove lower link pins. The location of each pin is identified by the corresponding photo. **It may also be helpful to refer to Figure B2 on page 34.**

19. Remove the pin shown in Figure 30.

**NOTE:** This is the pin that was temporarily installed in the opposite direction in step 3.

**For reassembly,** remember to install temporarily in the direction shown – it will be installed permanently later.

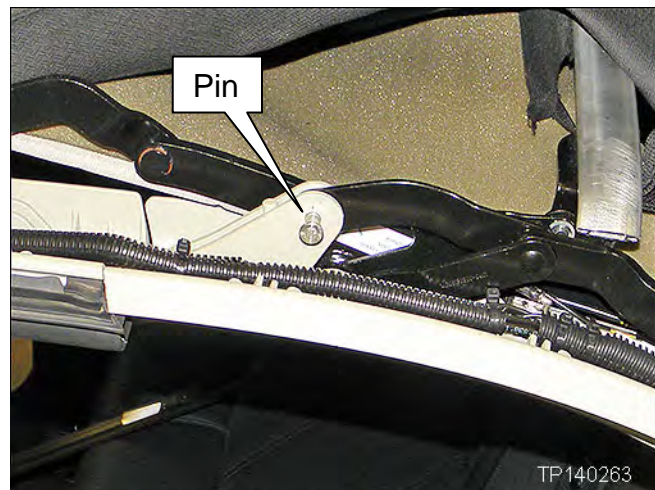


Figure 30

20. Remove the pin shown in Figure 31 as follows:

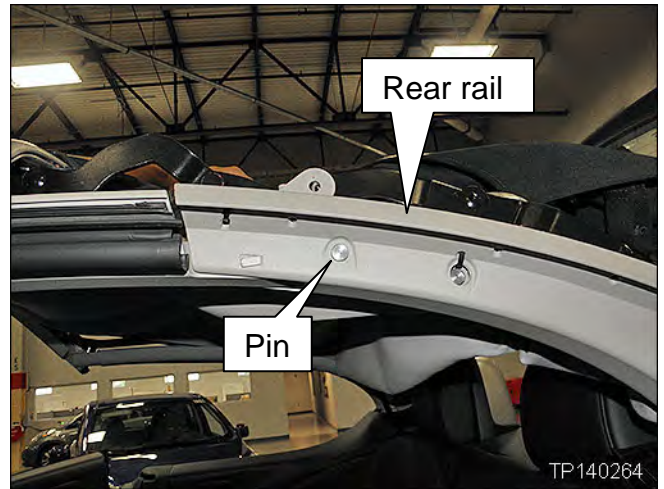


Figure 31

- a. Locate the inboard end of the pin.
- b. Remove the push-nut.
- c. Remove the pin.

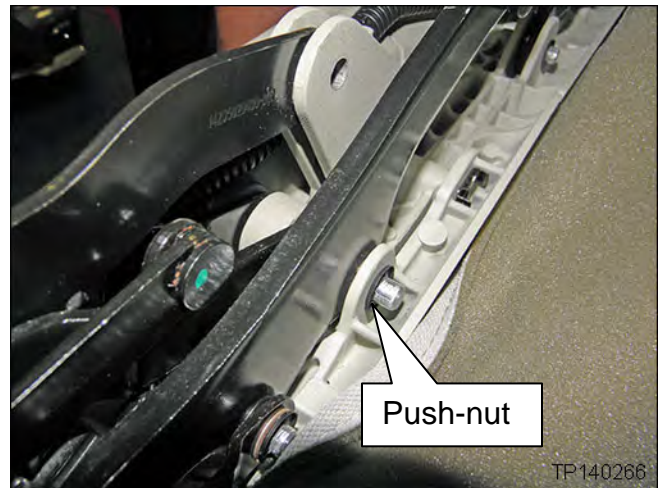


Figure 32

**NOTE:** During removal, you may find this pin has a push nut as shown in Figure 32, or an E-clip with gray colored washer as shown in Figure 33.

**For Reassembly,** make sure to install the new pin with gray colored washer and E-clip as shown in Figure 33.

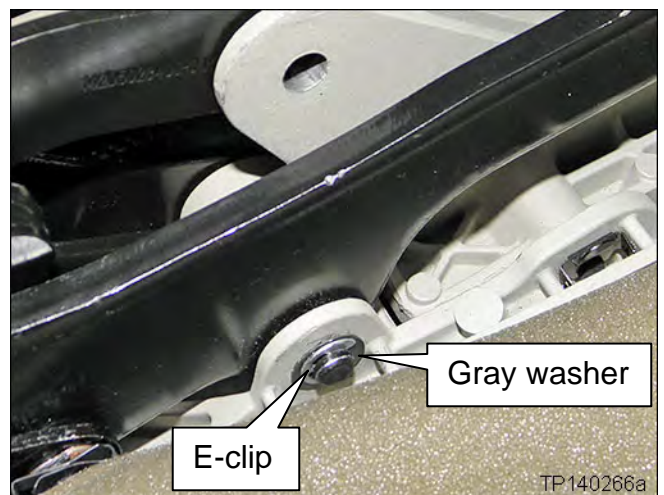


Figure 33



21. Remove the 3.5 bow pin shown in Figure 34 as follows:

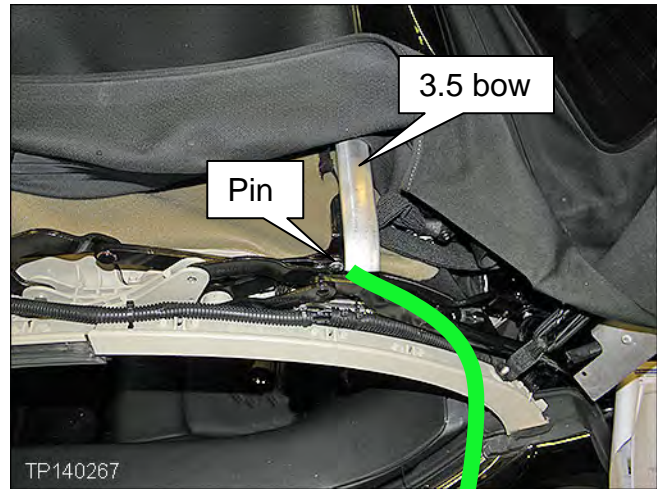


Figure 34

- a. Remove the E-clip.
- b. Remove the pin.

**IMPORTANT for reassembly:** Make sure to use the new pin and E-clip supplied with the new link.

- c. You will find one of the following (see Figure 36):
  - No washer
  - Washer in location A
  - Washer in location B

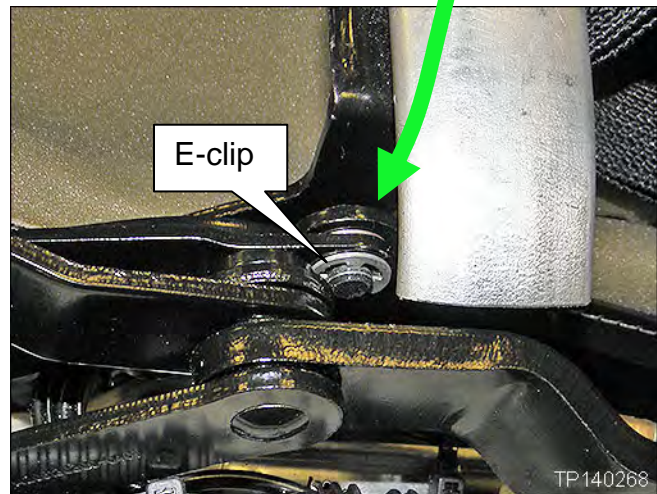


Figure 35

- d. Make a note of what you find so you can reassemble it the same as you found it.

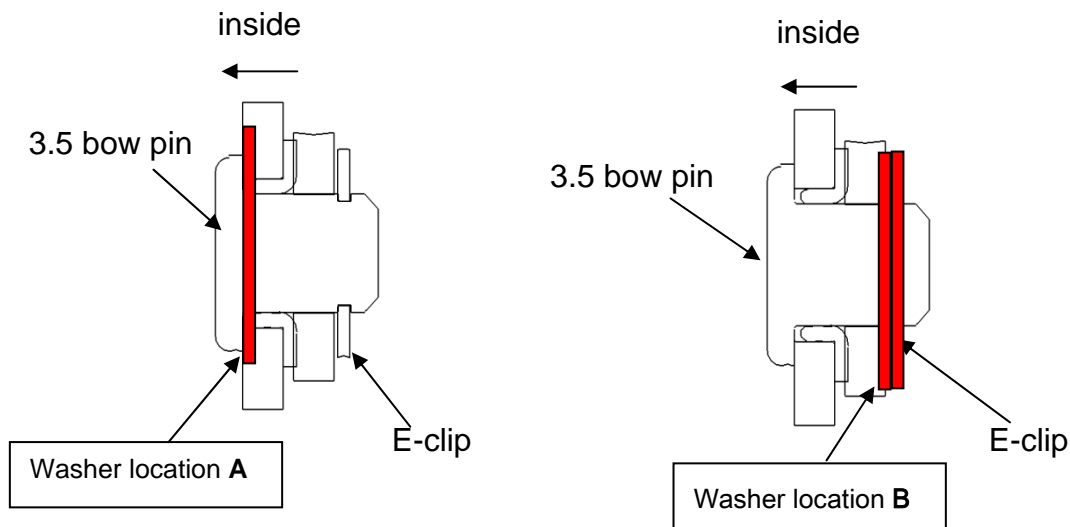


Figure 36



22. Loosen – do not remove – the bolts shown in Figure 37.

**NOTE:** Loosening these bolts will allow movement of the soft top hinge assembly. This movement will provide additional space for removing the next 3 pins.

**For reassembly,** torque to 40.0 N·m (4.1 kg·m, **30 ft-lb**).

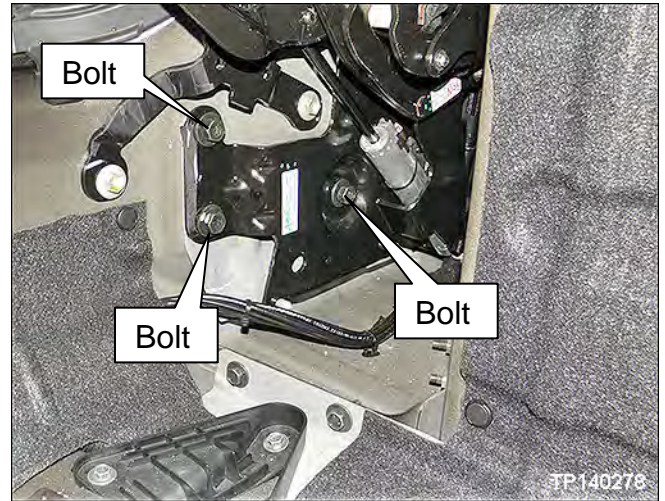


Figure 37

23. Remove main pivot pin as follows:

- a. Look in the area below the rear rail.



Figure 38

- b. Locate the main pivot pin.
- c. Remove the push-on nut.
- d. Remove the pin.

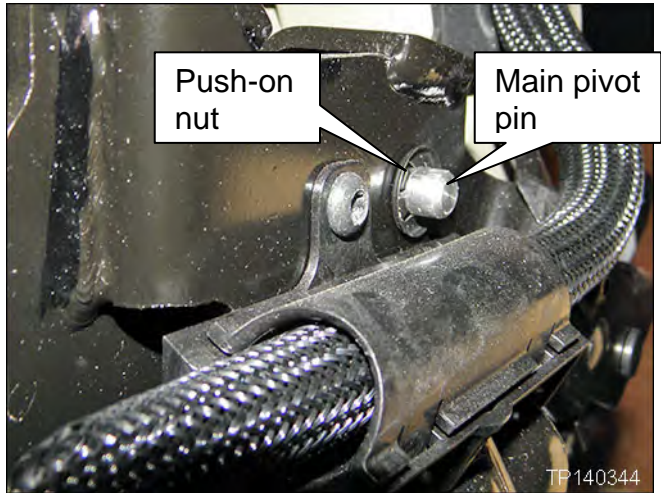


Figure 39

**NOTE:** During removal, you may find that this pin has a push-on nut as shown in Figure 39, or an E-clip as shown in Figure 40.

**For Reassembly:**

- Make sure to install the new pin with white washer and E-clip as shown in Figure 40.
- Install a gray colored washer (not shown) on the inboard side of the pin.

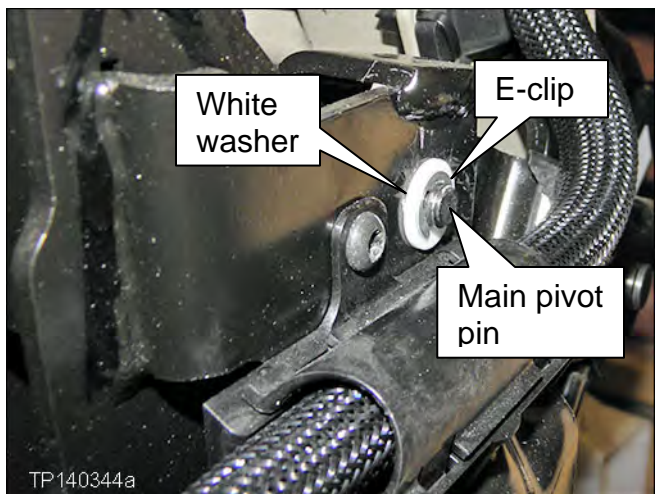


Figure 40

24. Remove the pin connecting the lower link to the hydraulic cylinder.

- a. Remove the E-clip.
- b. Remove the pin.

**NOTE:** For reassembly, the pin has a gray colored washer on the outboard side, not shown here.

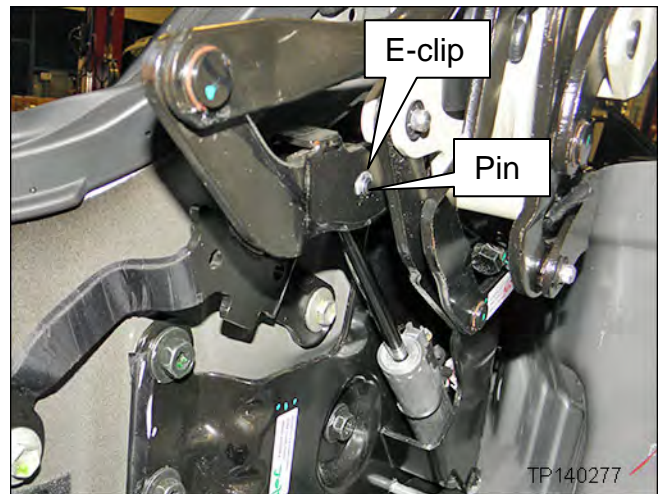


Figure 41

25. Remove the pin shown in Figure 42.

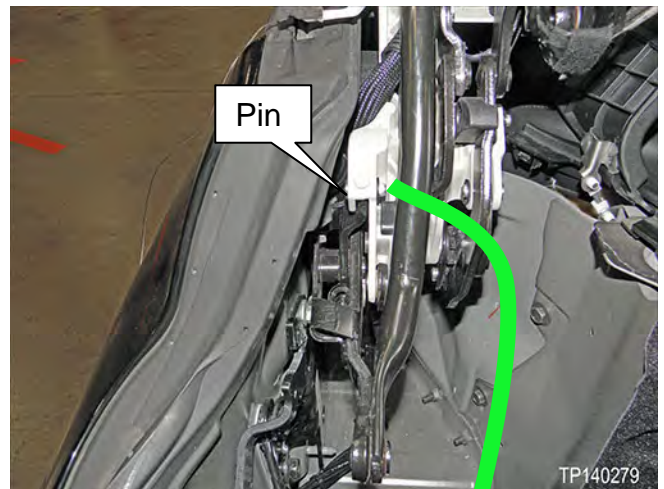


Figure 42

- a. Remove the push-on nut.
- b. Remove the pin.

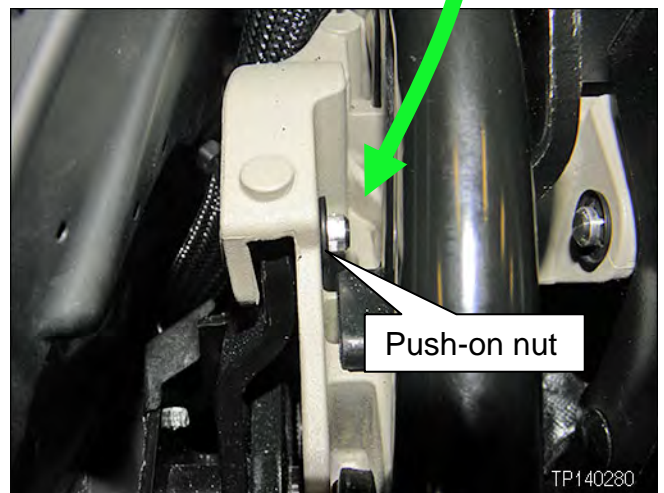


Figure 43



26. Remove the lower link from the vehicle.

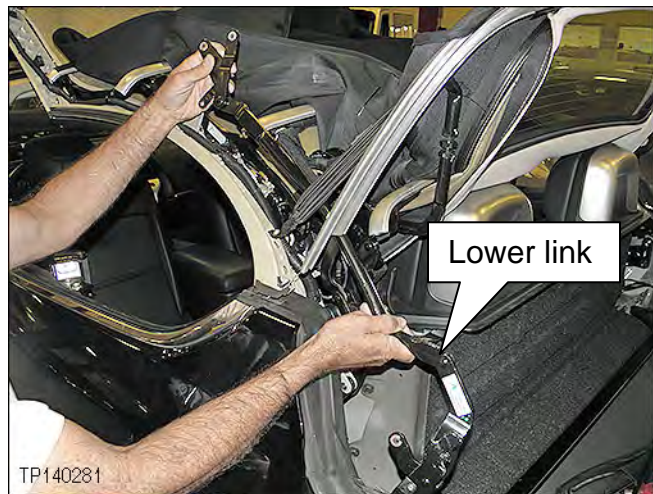


Figure 44

27. Swap the plastic protector from the old link to the new link.

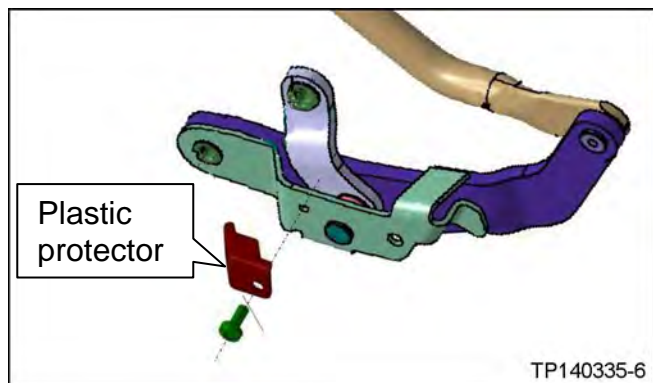


Figure 45

- **If only the lower linkage assembly is being replaced, install the new one in reverse order of removal.**
- If the folding roof upper linkage assembly (upper link) is being replaced, continue with this procedure.



## Replacement of Folding Roof Upper Linkage (Upper Link) Assembly

### **NOTE:**

- Use protective covers as needed for interior and exterior surfaces while performing this Service Procedure.
- Exploded views are provided on pages 33 through 37 as reference while performing this procedure.
- The lower link must be removed before removing the upper link.
- Replace both links, one side at a time.

**Recommendation:** The following will be very helpful for reassembly:

- Pay close attention to the location and fit of all parts during removal.
- Keep all screws, clips, pins, and nuts separated so their reassembly location can be easily identified.

1. Remove the weather-strip from the center rail.



Figure A1

2. Remove the center rail weather-strip retainer.

- Retainer is held on with 3 screws.

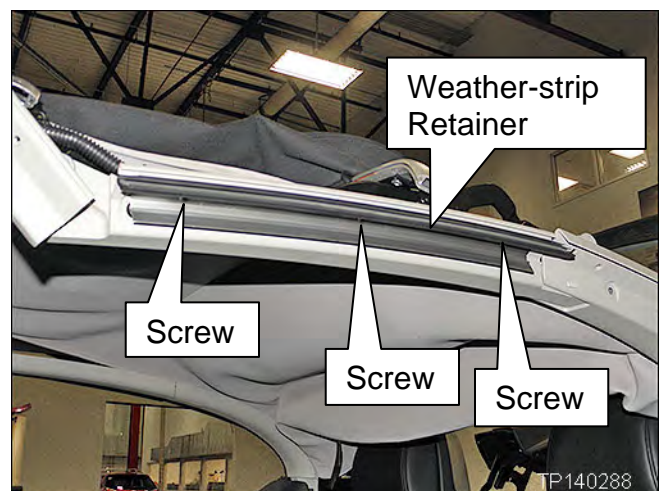


Figure A2

3. Disconnect the 2<sup>nd</sup> bow from the upper link as follows.

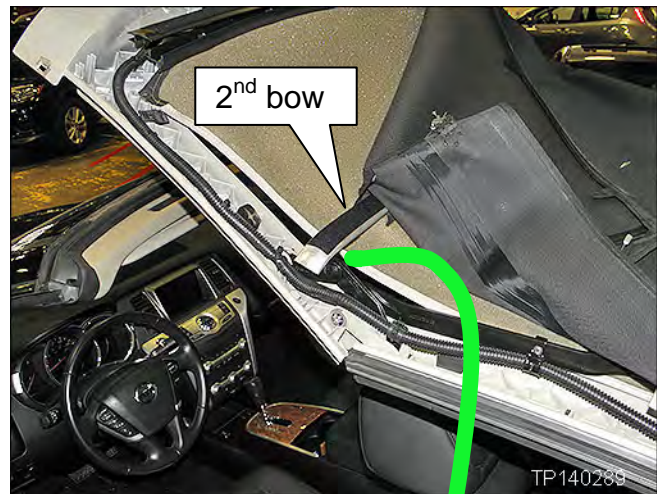


Figure A3

- a. Locate the inboard side of the support pin.
- b. Remove the push-on nut.

**NOTE:** Make sure to use the chrome capped push-on nut for reassembly.

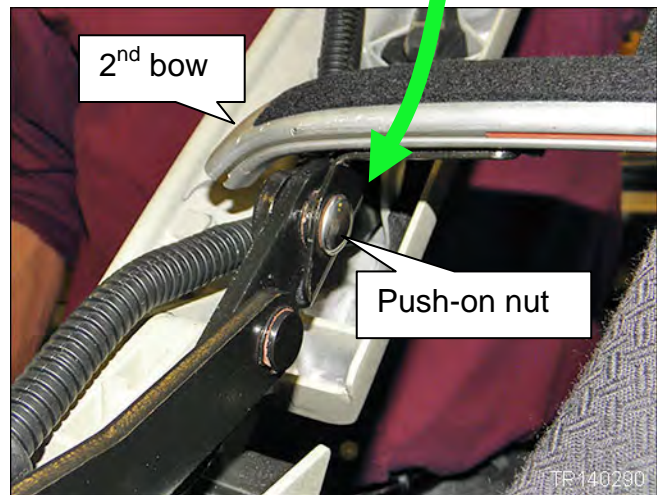


Figure A4

- c. Take the bow loose from the pin.
  - Use a medium size flat blade screwdriver as leverage to remove the bow from the pin.

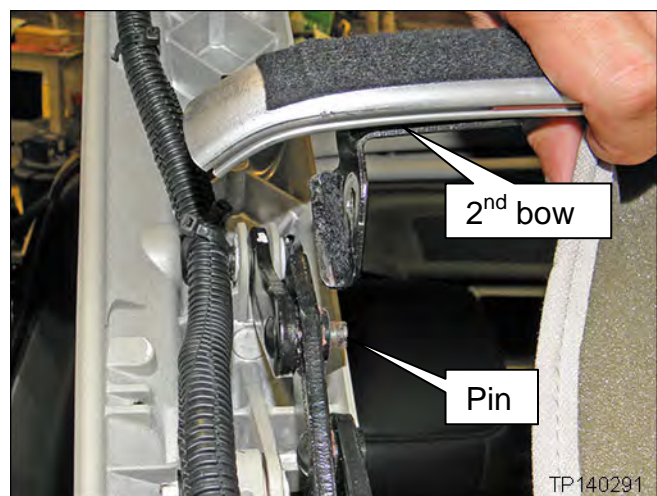


Figure A5



4. Disconnect the 3<sup>rd</sup> bow from the upper link as follows:

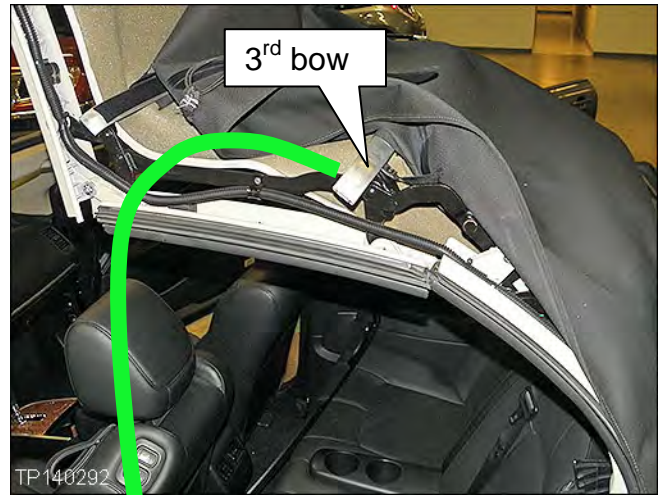


Figure A6

- a. Locate the inboard side of the support pin.
- b. Remove the push-on nut.
- c. Take the bow loose from the pin.
  - Use a medium size flat blade screwdriver as leverage to remove the bow from the pin.

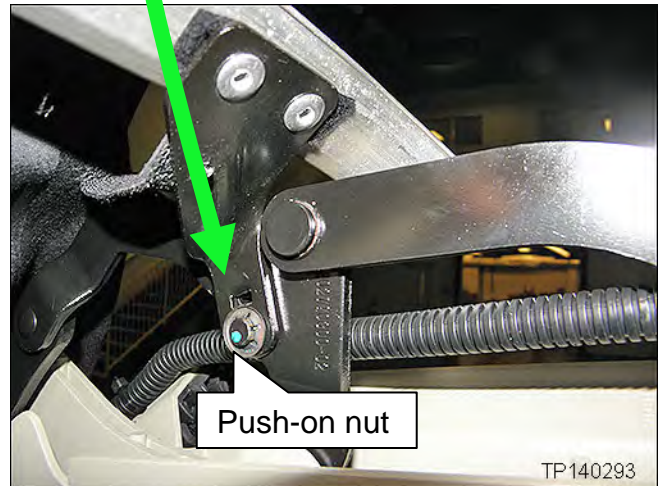


Figure A7

**NOTE:** During removal, you may find that this pin has no washer as shown in Figure A7, or a white washer as shown in Figure A8.

**For Reassembly,** make sure to install the white washer as shown in in Figure A8.

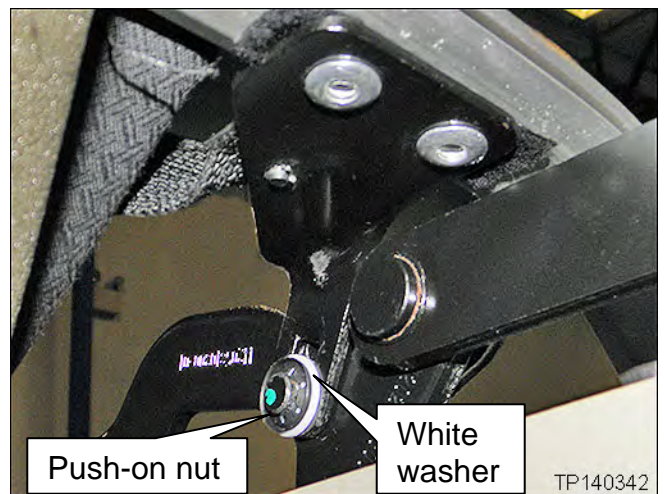


Figure A8



5. Disconnect the 3.5 bow from the upper link as follows:

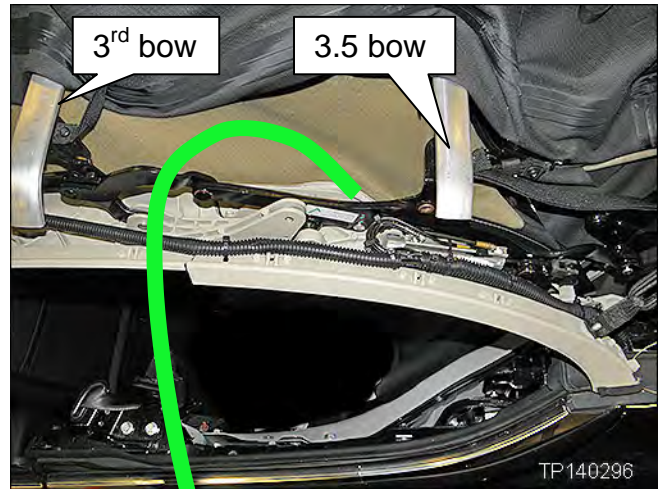


Figure A9

- a. Locate the inboard side of the support pin.
- b. Remove the push-on nut.
- c. Remove the pin.

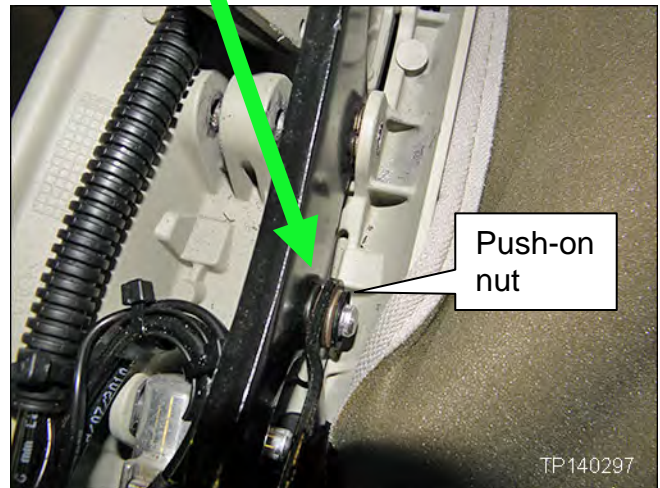


Figure A10

**NOTE:** During removal, you may find that this pin has a push-on nut as shown in Figure A10, or a clip as shown in Figure A11.

**For Reassembly,** make sure to install the new pin with clip as shown in Figure A11.



Figure A11

6. Disconnect the 4<sup>th</sup> bow from the upper link as follows:

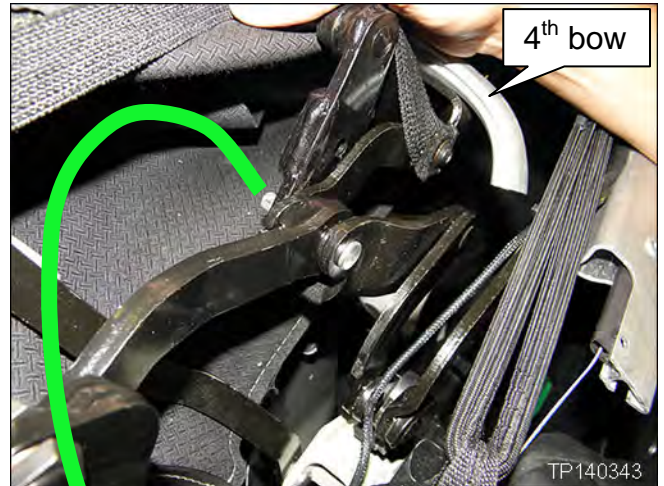


Figure A12

- a. Locate the inboard side of the support pin.
- b. Remove the push-on nut.
- c. Remove the pin.

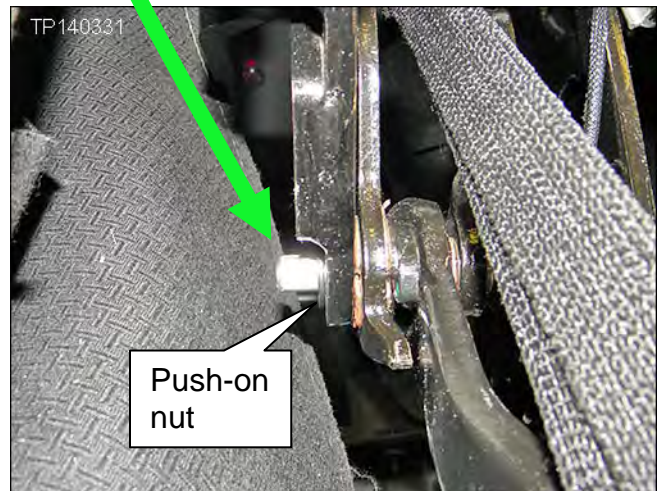


Figure A13



7. Make a support for the soft top as shown in Figure A14, or equivalent.
- A support for the center rail is required before disconnecting the upper link.
  - The support shown uses an 8 foot 2x4 supported by two pole stands (one on each side of the vehicle).
  - Place clean soft cloths between the soft top and the 2x4.



Figure A14

8. By hand, carefully move the rear window (5<sup>th</sup> bow) to the position shown in Figure A15.
- Allow the front of the soft top to rest on the top edge of the windshield.



Figure A15



**NOTE:** In the next few steps you will remove upper link pins. The location of each pin is identified by the corresponding photo. **It may also be helpful to refer to Figure B1 on page 33.**

9. Remove the pin shown in Figure A16 as follows:

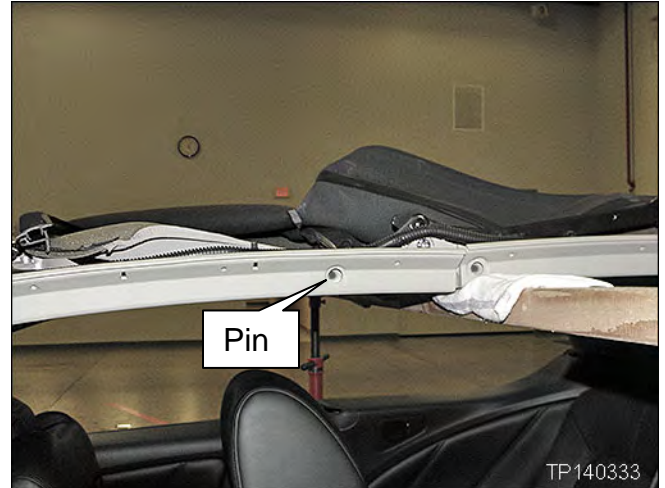


Figure A16

- a. Locate the inboard side of the pin.
- b. Remove the locking clip.
- c. Cut off the two tie wraps.

**NOTE:** Only the left side link has tie-straps.

- d. Remove the pin.

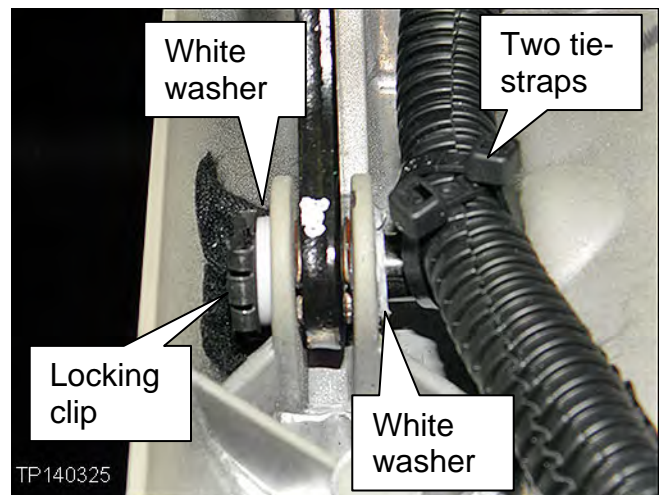


Figure A17

**NOTE:** During removal, you may find that this pin has washers as shown in Figure A17, or washers as shown in Figure A18 on the next page.

**NOTE: For Reassembly:**

- Make sure to install the metal dished washers as shown in Figure A18.
- Install the dished washers with the “back side” of the dish (convex side) facing away from the link.
- For the left side link only; reinstall two new ¼ inch wide tie-straps (shop supply). Cut off excess tie wrap.

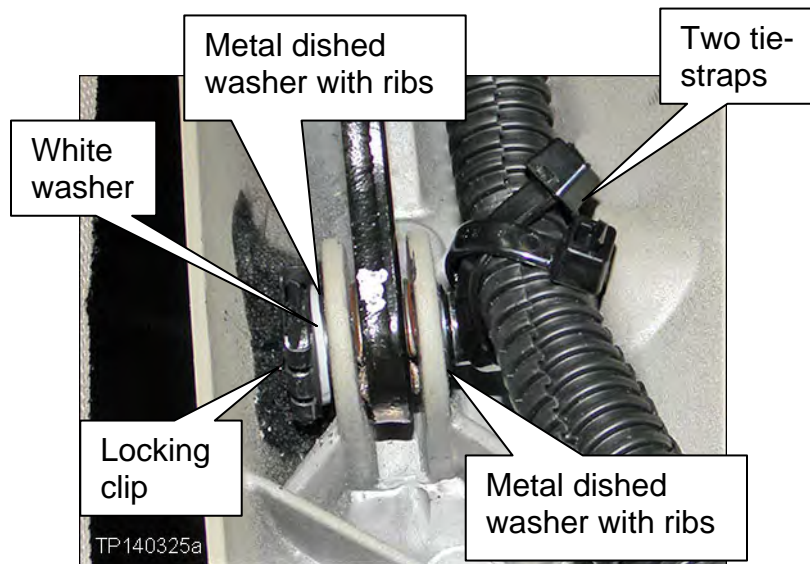


Figure A18

Metal dished washers with ribs supplied with new upper link

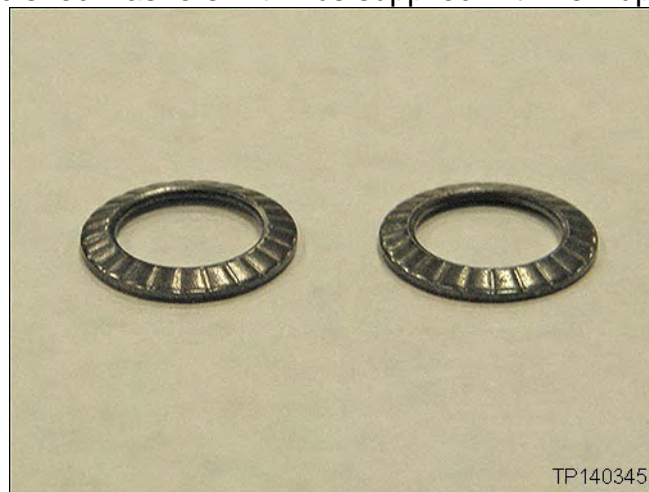


Figure A19

10. Remove the pin shown in Figure A20 as follows:



Figure A20

- a. Locate the inboard side of the pin.
- b. Remove the E-clip.
- c. Remove the pin.

**For reassembly:** For the left side link only, this pin passes through a harness support. Make sure the pin passes through the support when reinstalled.

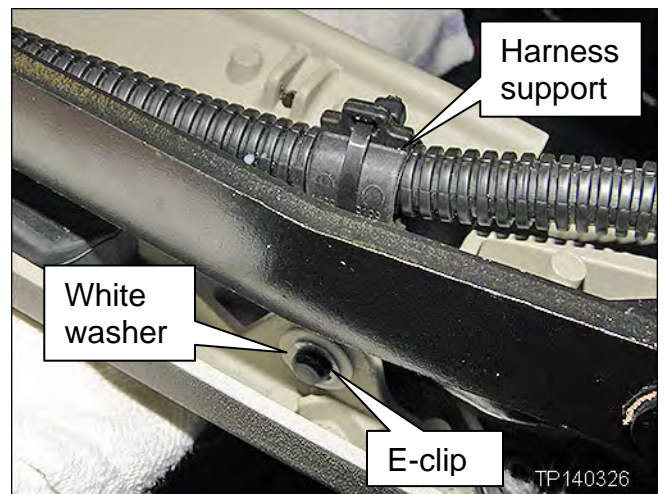


Figure A21



11. Remove the screw shown in Figure A22.

- This screw is installed on the left side link only.
- This screw supports the harness guide.

**NOTE:** For reassembly, a new screw is included in the kit for the left side link.

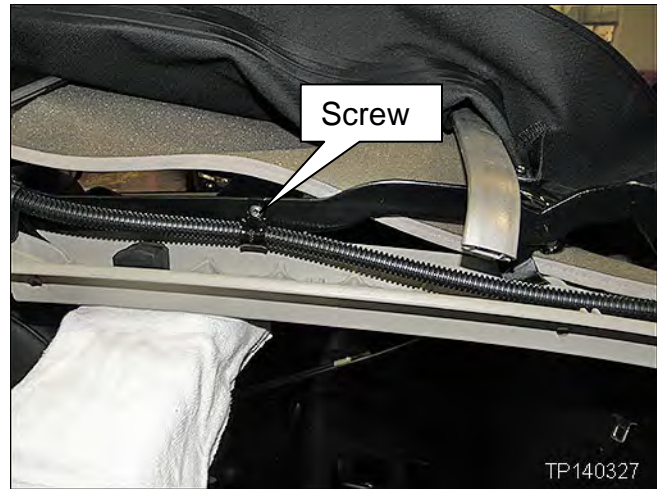


Figure A22

12. Remove the pin shown in Figure A23 as follows:

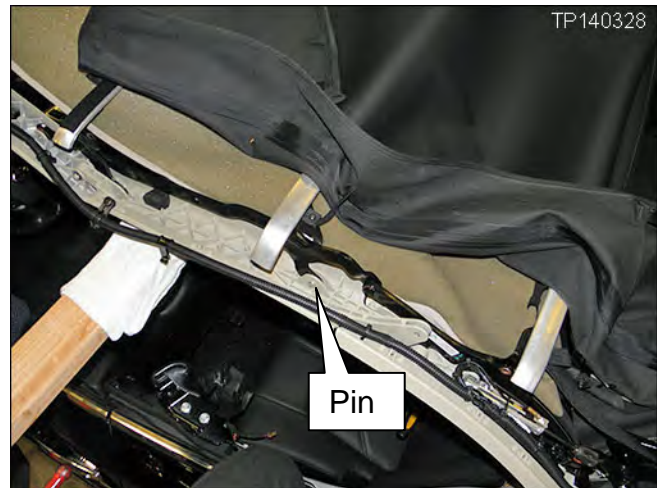


Figure A23

- a. Locate the inboard side of the pin.
- b. Remove the push-on nut.
- c. Remove the pin.

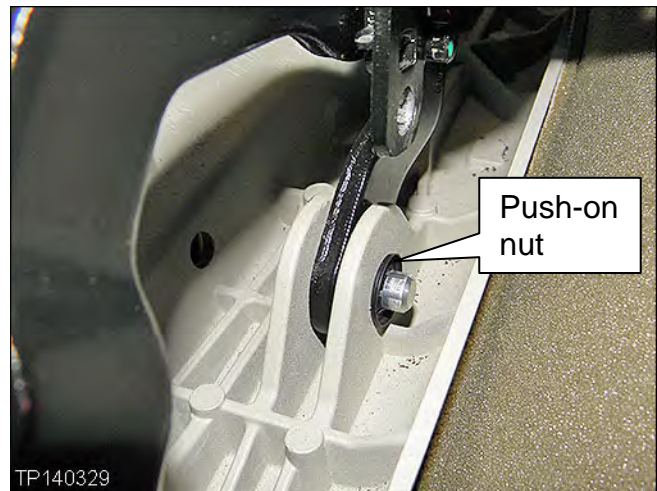


Figure A24

13. Remove the pin shown in Figure A25 as follows:

- This pin connects the hydraulic piston to the upper link.



Figure A25

- a. Locate the inboard side of the pin.
- b. Remove the E-clip.
- c. Remove the pin.

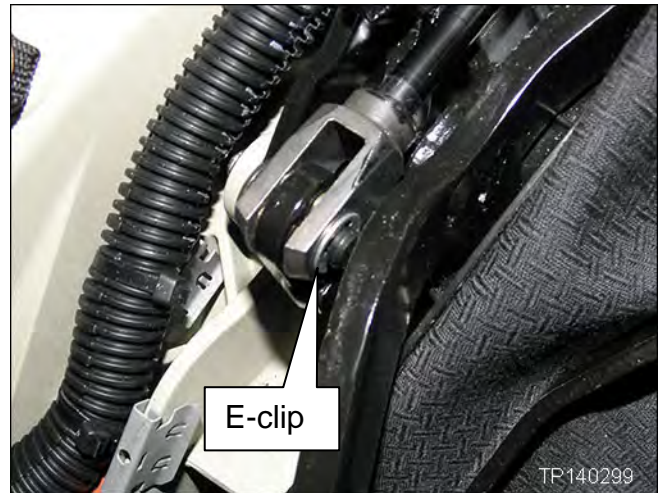


Figure A26

14. Take loose the two harness clips shown in Figure A27.

- Taking these clips loose will allow you to move the harness, giving access to the push-on nut in the next pin removal.

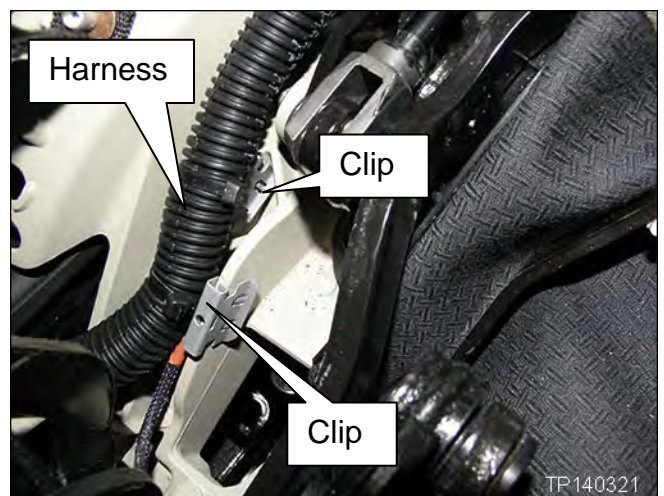


Figure A27



15. Remove the pin shown in Figure A28 as follows:

- a. Locate the outboard side of the pin.
- b. Remove the push-on nut.

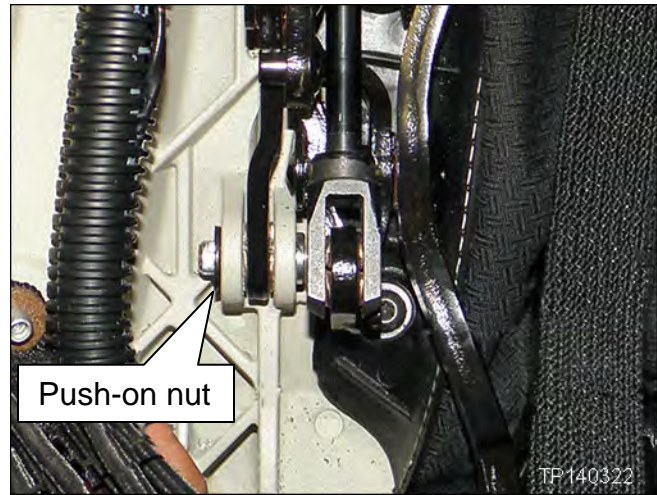


Figure A28

- c. Push the pin out as far as possible.

**NOTE:** This may not push out far enough to be completely removed because it hits a black plastic rib. With the pin pushed out as far as possible as shown, the link can be removed from the slot.

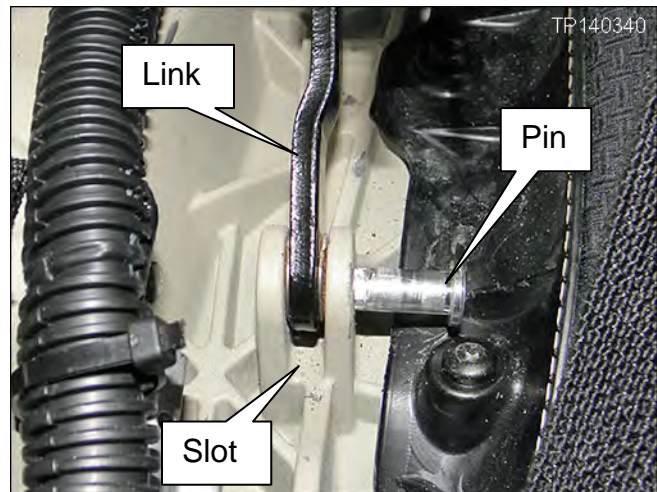


Figure A29

16. Carefully remove the upper link from the soft top.



Figure A30

17. Reinstall the new upper link in reverse order.



The exploded views on the next 4 pages are provided for reference, if needed, while performing this repair.

Upper Linkage Assembly (Upper Link – left side shown)

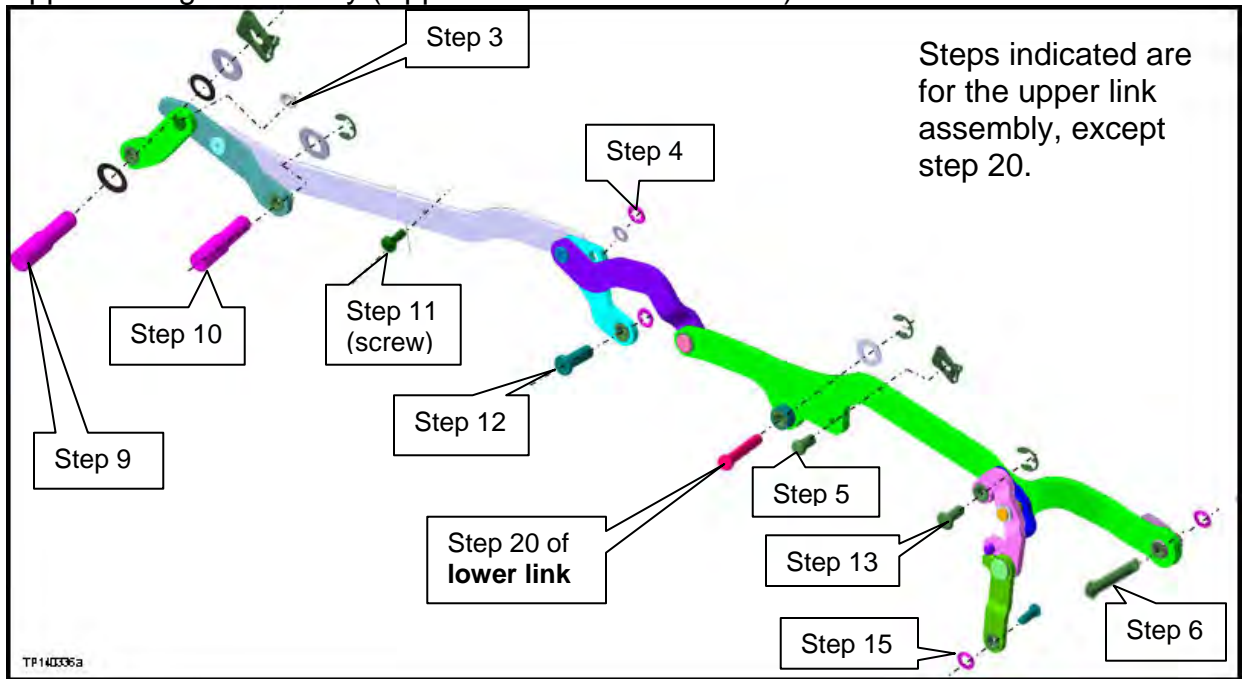
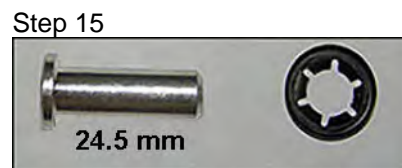
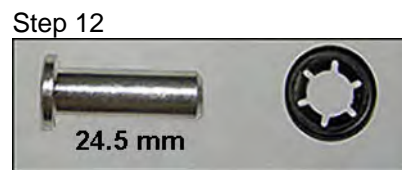
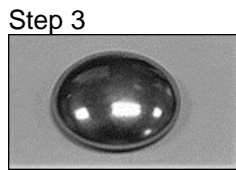


Figure B1



**NOTE:** Above pin lengths include the pin head.

Lower Linkage Assembly (Lower Link – left side shown)

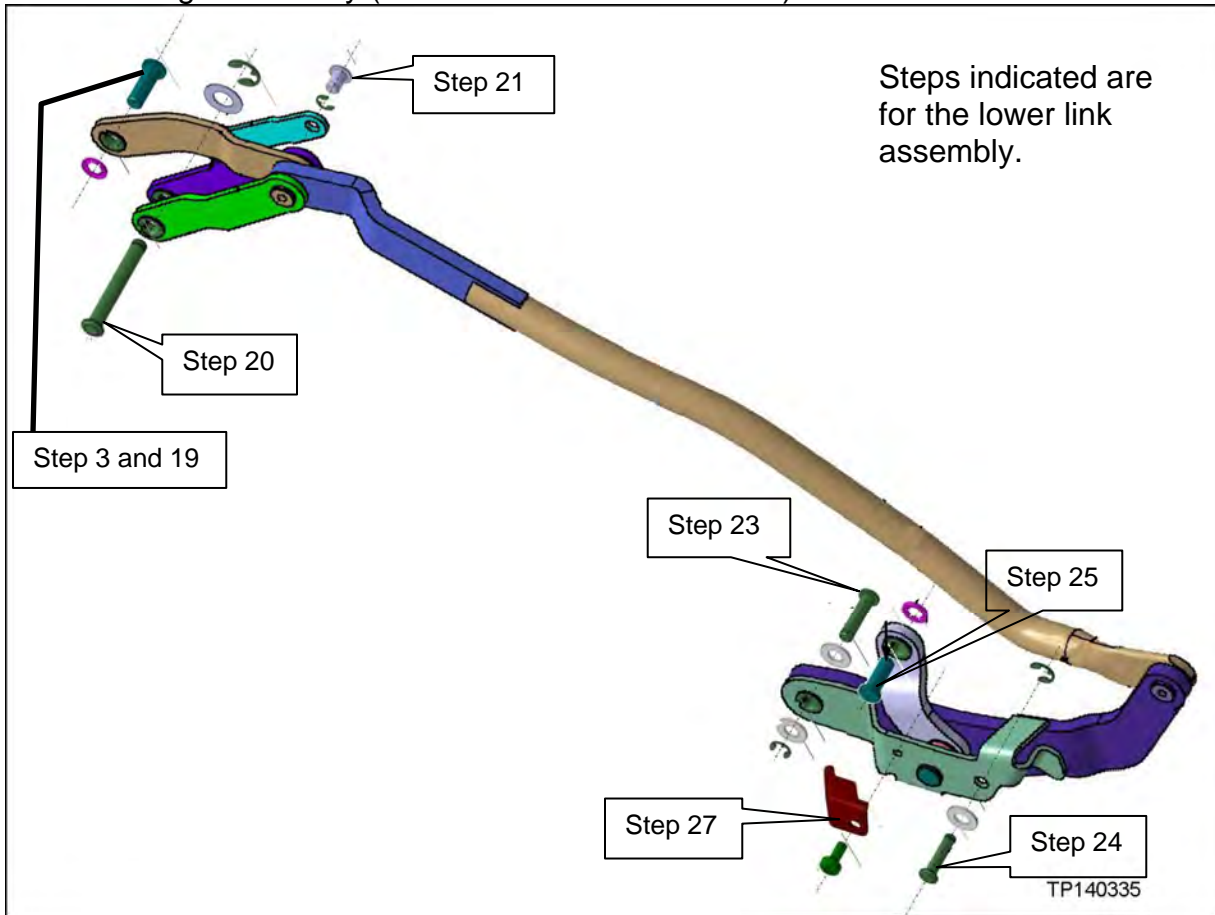


Figure B2

Step 3 and 19



Step 20



Step 21 (may require reinstallation of washer not included with new link)



Step 23



Step 24

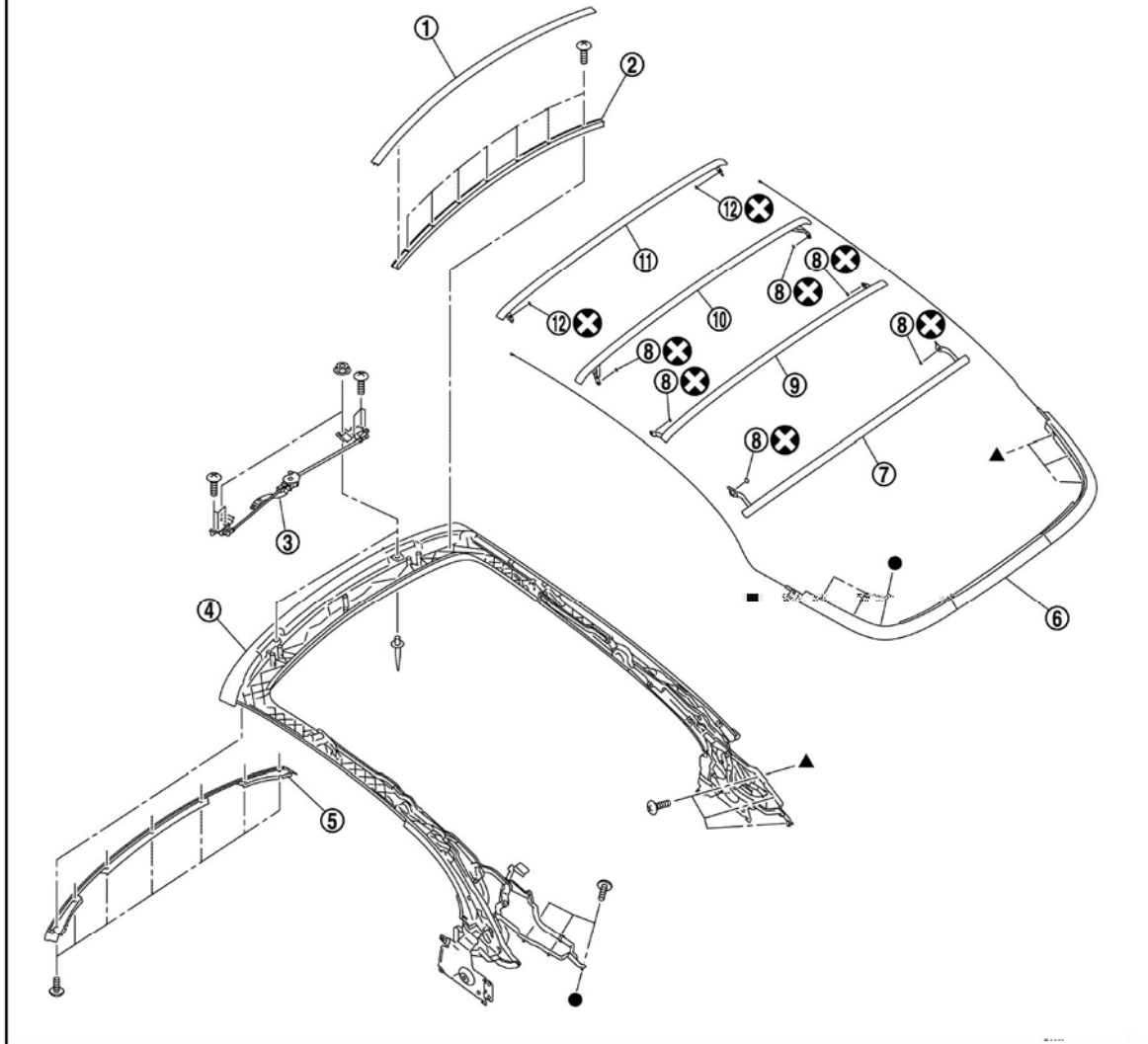


Step 25



**NOTE:** Above pin lengths include the pin head.

TP140337



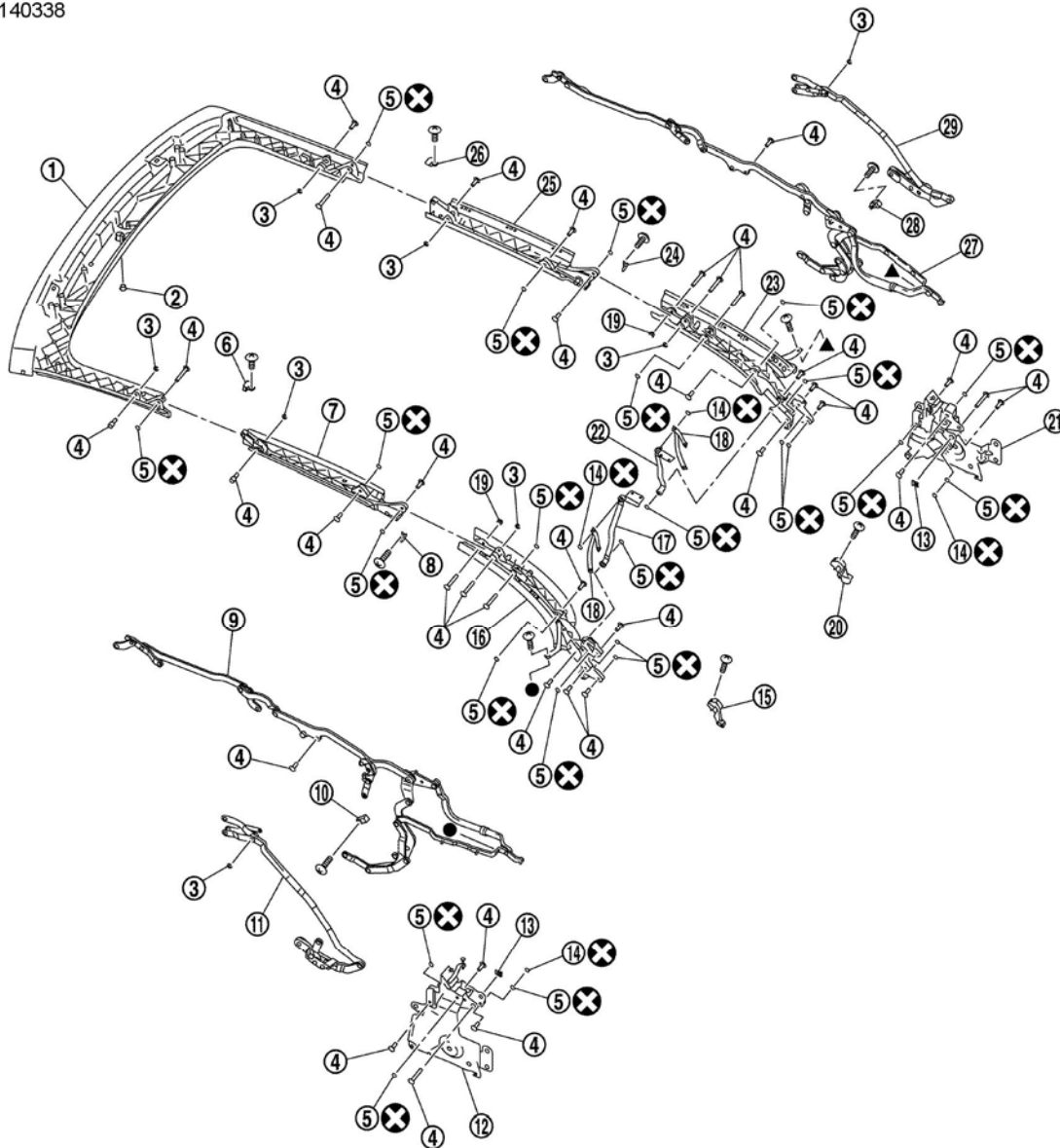
- |   |   |                  |
|---|---|------------------|
| 1. Folding roof headlining retainer upper | 2. Folding roof headlining retainer lower | 3. 1st bow latch |
| 4. Soft top frame and linkage assembly    | 5. Soft top cover outer front retainer    | 6. 5th bow       |
| 7. 4th bow                                | 8. Push on nut                            | 9. 3.5th bow     |
| 10. 3rd bow                               | 11. 2nd bow                               | 12. Push on nut  |

⊗ : Always replace after every disassembly.

Figure B3



TP140338

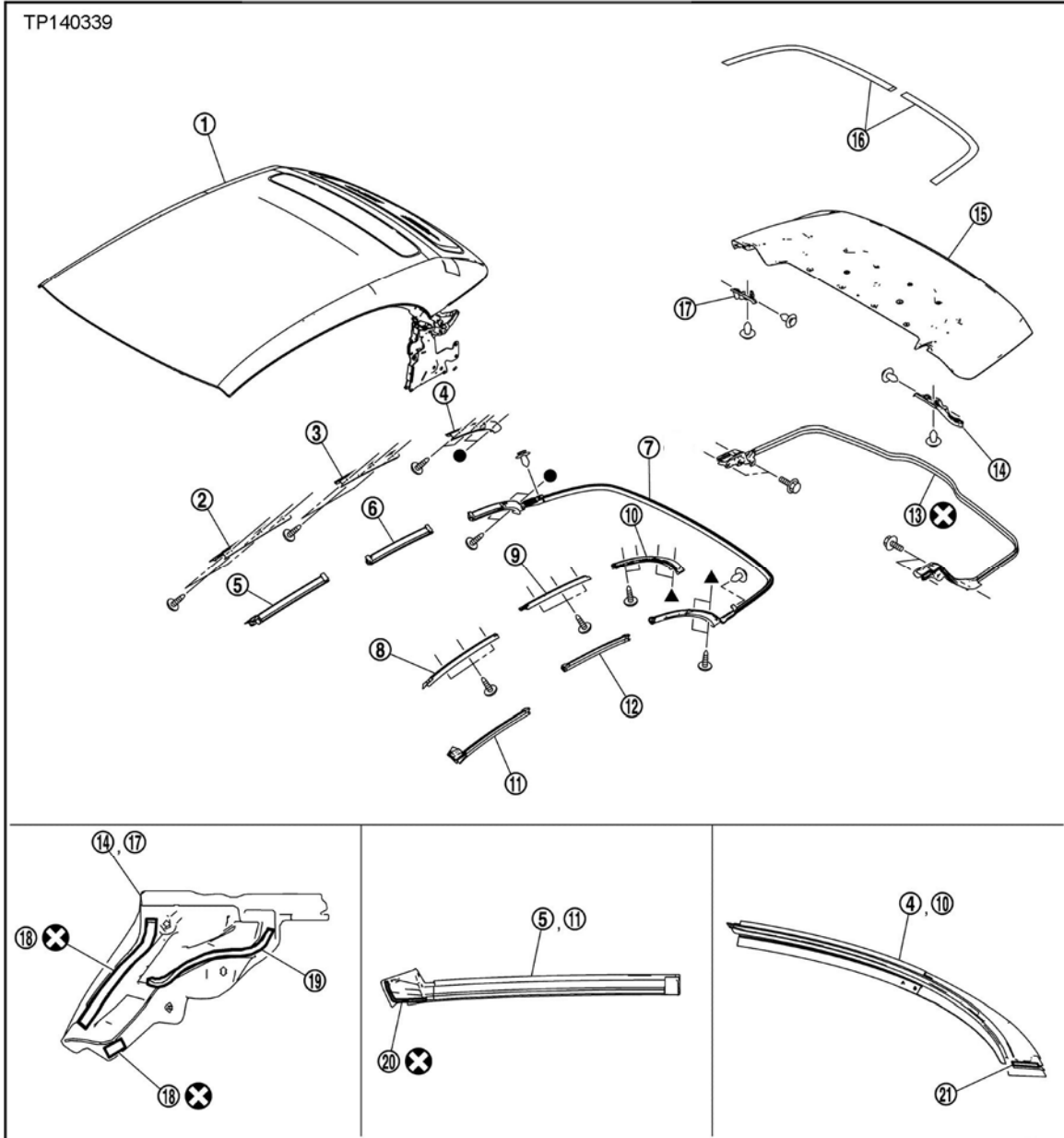


- |                                |  |  |
|--------------------------------|--|--|
| 1. 1st bow                     | 2. Cap                                     | 3. e-clip                                  |
| 4. Pin                         | 5. Push on nut                             | 6. Bumper stop center rail front LH        |
| 7. Center rail LH              | 8. Bumper stopper center rail rear LH      | 9. Folding roof upper linkage assembly LH  |
| 10. 5th bow stopper LH         | 11. Folding roof lower linkage assembly LH | 12. Folding roof mounting assembly LH      |
| 13. Retaining plate            | 14. Push nut cover                         | 15. Rear bumper stopper LH                 |
| 16. Rear rail LH               | 17. Sky light glass linkage LH             | 18. Bungee cord                            |
| 19. Retention clip             | 20. Rear bumper stopper RH                 | 21. Folding roof mounting assembly RH      |
| 22. Sky light glass linkage RH | 23. Rear rail RH                           | 24. Bumper stopper center rail rear RH     |
| 25. Center rail RH             | 26. Bumper stopper center rail front RH    | 27. Folding roof upper linkage assembly RH |
| 28. 5th bow stopper RH         | 29. Folding roof lower linkage assembly RH |  |

⊗ : Always replace after every disassembly.

Figure B4

TP140339



- |   |   |  |
|---|---|--|
| 1. Soft top assembly                    | 2. Front rail weather-strip retainer RH | 3. Center rail weather-strip retainer RH     |
| 4. Rear rail weather-strip retainer RH  | 5. Front rail weather-strip RH          | 6. Center rail weather-strip RH              |
| 7. Rear rail weather-strip              | 8. Front rail weather-strip retainer LH | 9. Center rail weather-strip retainer LH     |
| 10. Rear rail weather-strip retainer LH | 11. Front rail weather-strip LH         | 12. Center rail weather-strip LH             |
| 13. Storage lid weather-strip           | 14. Seal rubber LH                      | 15. Storage lid                              |
| 16. Storage lid protector               | 17. Seal rubber RH                      | 18. Double-sided tape [t: 0.8 mm (0.031 in)] |
| 19. EPT seal [t: 5.0 mm (0.197 in)]     | 20. Butyl tape [t: 2.0 mm (0.079 in)]   | 21. EPT seal [t: 7.0 mm (0.276 in)]          |

⊗ : Always replace after every disassembly.

Figure B5

## PARTS INFORMATION

DESCRIPTION	PART NUMBER	QTY
Linkage Kit - BAL ( <b>Right side</b> / Passenger side lower link. Comes with pins clips and washers.)	971H0 – 1GR0B	1
Linkage Kit - BAL ( <b>Left side</b> / Driver side lower link. Comes with pins clips and washers.)	971H6 – 1GR0B	1
Linkage Kit – FOL ( <b>Right side</b> / Passenger side upper link. Comes with pins clips and washers.)	970N1 – 1GR0B	1
Linkage Kit – FOL ( <b>Left side</b> / Driver side upper link. Comes with pins clips and washers.)	970N4 – 1GR0B	1
Woven Felt Tape – part of squeak and rattle kit J-50397 (Felt Cloth Tape)	J-50397-5 A new package has 8 feet, 96 inches. Available from Tech-Mate, 1-800-662-2001 (shop supply)	2 inches for lower link  6 inches for upper link
Tie - strap ¼ inch wide	Use generic tie-straps (shop supply)	2 for upper link



**CLAIMS INFORMATION**

Submit a Primary Part (PP) type line claim using the following claims coding:

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Replace Lower Links (Both Sides)	(1)	BX4HAA	ZE	32	4.9

(1) Refer to the Parts Information and use the appropriate Linkage Kit–BAL part number as the PFP.

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Replace Upper and Lower links Both Sides	(1)	BX4JAA	ZE	32	7.5

(2) Refer to the Parts Information and use the appropriate Linkage Kit–FOL part number as the PFP.

**EXPENSE CODE:**

EXPENSE CODE	DESCRIPTION	MAXIMUM AMOUNT
041	Supplies (Tape and Tie Wraps)	\$6.32

