



Technical Service BULLETIN

November 10, 2003

Title:

MOON ROOF (SLIDING ROOF) RATTLE

Models:

'03 4Runner

NVH
REVISED
NV013-03

TSB REVISION NOTICE:

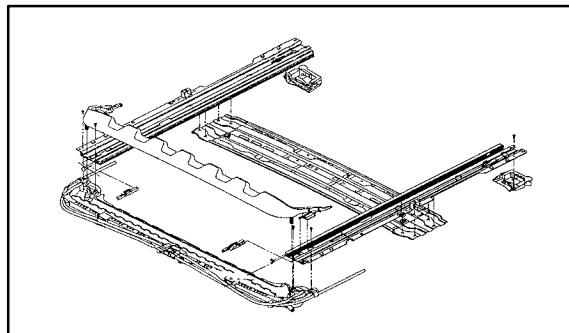
- January 22, 2004: "Notice" added on page 2.
- November 20 2003: The Parts Information Table has been updated since the Sliding Roof Housing Sub-Assembly is not required for the repair procedure. Previous versions of this TSB should be discarded.

TSB UPDATE NOTICE:

This TSB updates NV003-03 and NV009-02. TSBs NV003-03 and NV009-02 are now obsolete and should be discarded.

Introduction Customers may experience a persistent rattle noise from the moon roof (also known as a sliding roof). The following procedure has been developed to improve this condition.

Applicable Vehicles 2003 model year 4Runner vehicles produced **BEFORE** the Production Change Effective VINs shown below.



Production Change Information

PLANT	MODEL		PRODUCTION CHANGE EFFECTIVE VIN
Tahara	V8	4WD Limited	JTEBT17R240029172
		4WD Sport	JTEBT14R140028616
		2WD Limited	JTEZT17RX40014105
		2WD SR5	JTEZT14R240014285
	V6	4WD Limited	JTEBU17R240021750
		4WD Sport	JTEBU14R940022902
		2WD Limited	JTEZU17R740019507
		2WD SR5	JTEZU14R440019520
Hino	V8	4WD Limited	JTEBT17R748008951
		4WD Sport	JTEBT14R848008638
		2WD Limited	JTEZT17R448002944
		2WD SR5	JTEZT14R648003050
	V6	4WD Limited	JTEBU17R748012057
		4WD Sport	JTEBU14R748012174
		2WD Limited	JTEZU17R348010143
		2WD SR5	JTEZU14R748010229



**Warranty
Information**

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
NV3021	Install Tubing On Wind Deflector Rods (Section 1)	0.3	63200–35030	91	43
Combo A	Apply Grease and Felt (Section 2)	0.3			
Combo B	R & R Moon Roof Housing Sub–Assembly and Apply Felt to Moon Roof Housing Brace (Section 3)	2.8			

Applicable Warranty*:

This repair is covered under the Toyota Comprehensive Warranty. This warranty is in effect for 36 months or 36,000 miles, whichever occurs first, from the vehicle's in-service date.

* Warranty application is limited to correction of a problem based upon a customer's specific complaint.

**Parts
Information**

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
—	63207–35040	Base Sub–Assembly Roof W (Moon Roof Rattle Field Fix Kit)	1
—	08887–02007	Body Grease W	1
—	08231–00801	Noise Kit	1

**Repair
Procedure**

There are eight field fix methods covered on the following pages. One or all of these methods may be used depending on the source of the noise being addressed on a particular vehicle. The main source of rattle noise is the moon roof wind deflector rods (Section 1). It is highly recommended to re–test for the customer complaint after each section. Section 3 requires removal of the moon roof housing sub–assembly. Perform this section only after all other measures have failed.

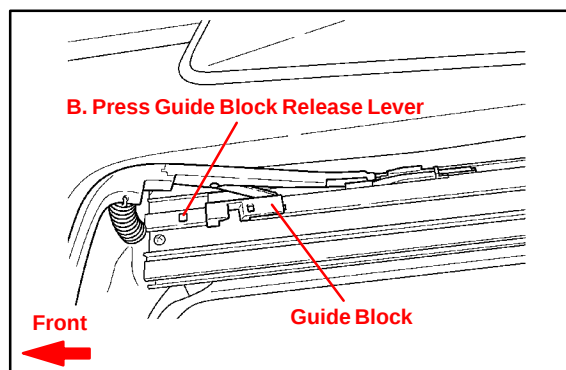
SECTION 1: Install Tubing On Wind Deflector Rods

1. Add a piece of hose included in the Moon Roof Rattle Field Fix Kit (P/N 63207–35040) to moon roof wind deflector rod (both sides).
 - A. Open the moon roof to the full open position by pressing the rocker switch.

NOTE:

The moon roof must be opened fully to ensure proper operation after the field fix is complete.

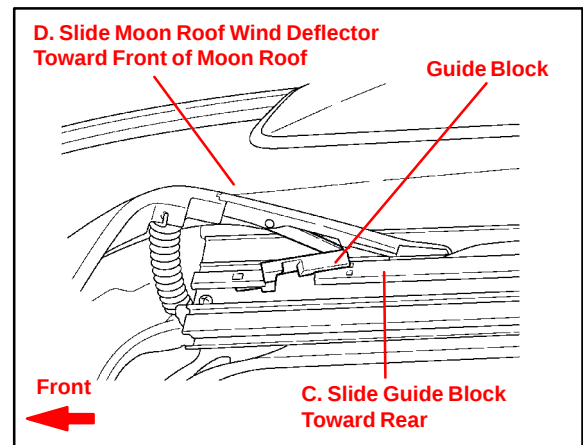
- B. Remove the wind deflector by pressing down on the guide block release lever using a small screwdriver.

**NOTICE:**

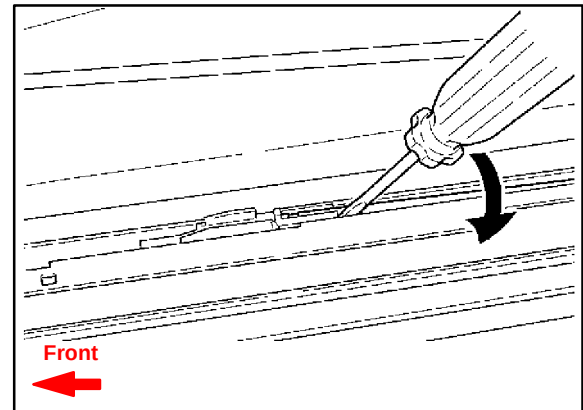
To prevent breakage of the guide block release lever when the outside temperature is below 40°F, use a heat gun to raise the temperature of the guide block and surrounding aluminum housing to a temperature of at least 65°F. Be careful not to damage components or paint with the heat gun.

**Repair
Procedure:
Section 1**
(Continued)

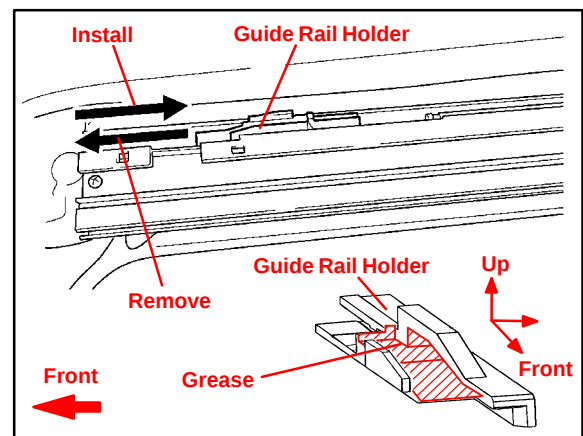
- C. Pull back on the moon roof wind deflector guide block.
- D. Slide the moon roof wind deflector toward the front of the moon roof.



- E. Insert a small screwdriver between the moon roof wind deflector rod and the aluminum moon roof track and twist. The rod will snap free of the moon roof guide rail holder.



- F. Replace the moon roof wind deflector guide rail holder with new service part included in the Moon Roof Rattle Field Fix Kit, (P/N 63207–35040), and apply grease included in the kit to the moon roof wind deflector guide rail holder.

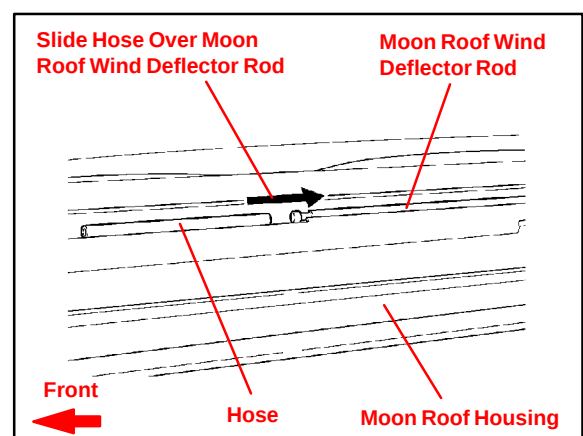


- G. Add piece of hose included in kit (P/N 63207–35040) to the moon roof wind deflector rod (both sides).

Sliding roof wind deflector rod hose:
L: 150 mm
Internal diameter: 5 mm
External diameter: 8 mm

NOTE:

Using a larger diameter hose may result in moon roof operation malfunction.

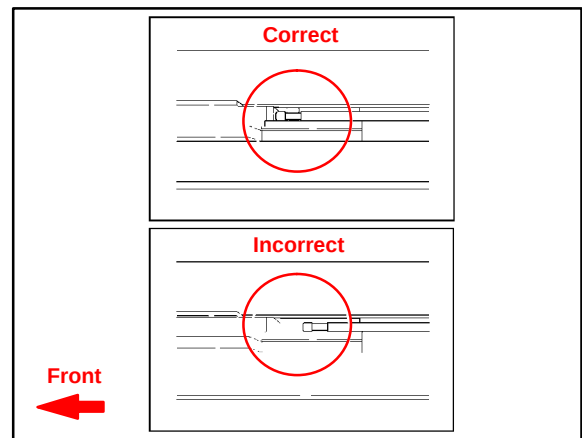


**Repair
Procedure:
Section 1**
(Continued)

- H. Reinstall the moon roof wind deflector rod and wind deflector.

NOTE:

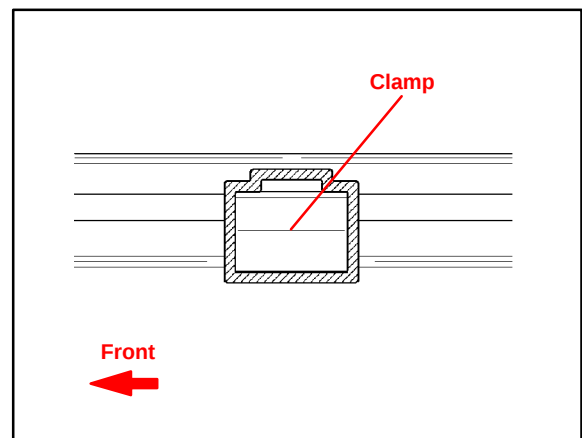
Ensure that the moon roof wind deflector rod is installed securely in the guide block's forward most position.



2. Apply grease included in the kit (P/N 63207–35040) to moon roof wind deflector rod clamp.

NOTE:

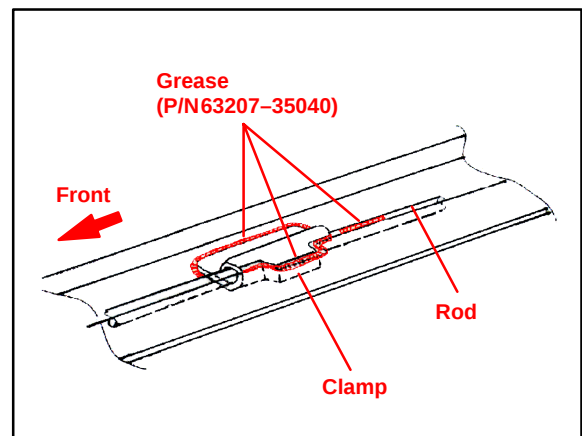
The moon roof wind deflector rod clamp is located at the rear of the moon roof opening (both sides).



- A. Ensure the moon roof is in the full open position.
- B. Apply grease to the rod behind the clamp.
- C. Partially close the moon roof then reopen. The moon roof wind deflector rod will have moved forward carrying grease inside the clamp.

HINT:

Ensure grease gets between the rod and clamp surfaces.



- D. Re-test vehicle for customer complaint. Stop here if customer complaint is resolved. If rattle noise is still present, continue on to Section 2.

**Repair
Procedure:
Section 2**

**SECTION 2: Apply Grease and Felt to
Moon Roof Area**

1. Apply felt squares to the guide rail garnish and the moon roof side garnish.
 - A. Remove the moon roof side garnish and moon roof guide rail garnish.
 - B. Apply three pieces of felt to the moon roof side garnish.

“a” Felt Dimensions:

Length: 10 mm

Width: 10 mm

Thickness: 1.0 mm

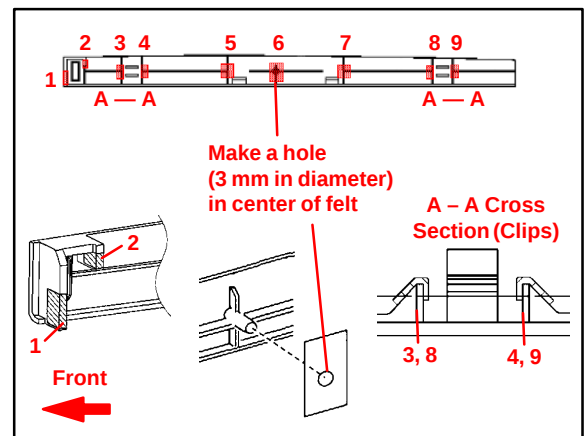
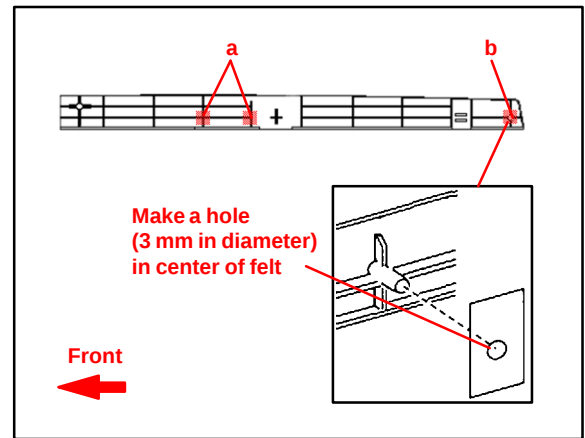
“b” Felt Dimensions:

Length: 15 mm

Width: 12 mm

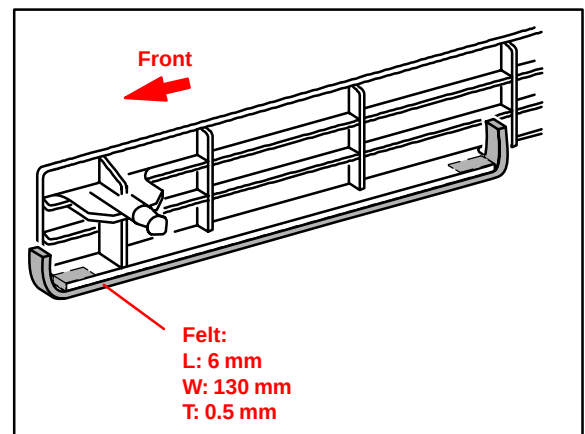
Thickness: 1.0 mm

- C. Apply nine felt pieces to the moon roof side rail garnish. Please see the table below for felt sizes and locations.
- D. Reinstall the moon roof guide rail garnish and moon roof side garnish.



FELT LOCATION	LENGTH	WIDTH	THICKNESS
1, 3, 4, 5, 7, 8, 9	10 mm	10 mm	1.0 mm
2	5 mm	15 mm	1.0 mm
6	16 mm	10 mm	1.0 mm

2. Fit a piece of felt to the front side bottom of the moon roof garnish as shown in the illustration.
3. Reinstall the moon roof garnish.



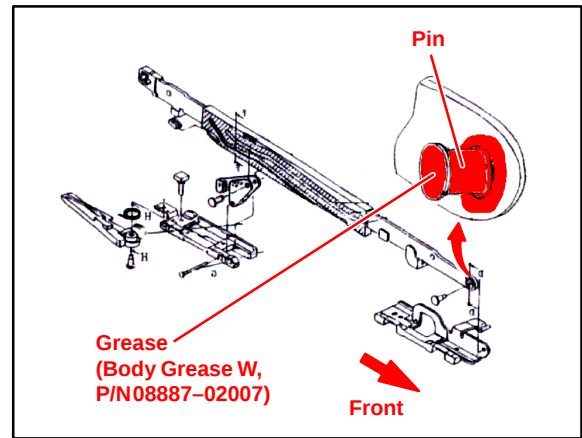
**Repair
Procedure:
Section 2
(Continued)**

4. Apply grease to drive cable pin.
Using a brush, apply Body Grease W (P/N 08887-02007) to the housing drive cable pin as shown in the shaded area.

 - A. Tilt moon roof up.
 - B. Remove moon roof side garnish.
 - C. Apply grease to the pin as shown in the shaded area in the illustration.
 - D. Reinstall moon roof side garnish.

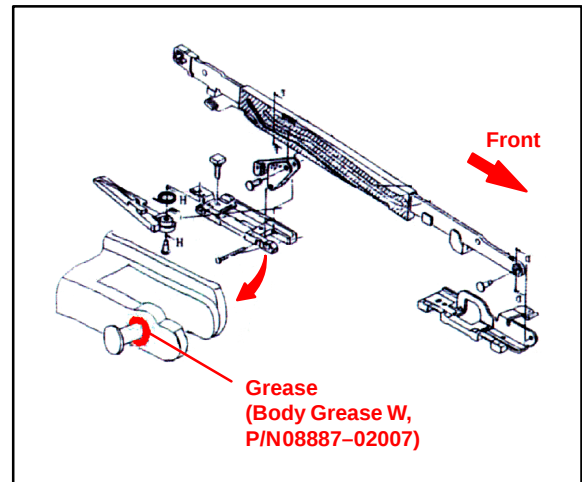
NOTE:

Before reinstallation, see page 6 for modification to side garnish.



5. Apply grease to drive cable lifter pin.
Using a brush, apply Body Grease W (P/N 08887-02007) to the housing drive cable lifter pin surface as shown in the shaded area.

 - A. Tilt moon roof up.
 - B. Remove moon roof side garnish.
 - C. Apply grease to pin as shown in the shaded area in the illustration.
 - D. Reinstall moon roof side garnish.
 - E. Apply grease to drive cable pin.
 - F. Apply grease to drive cable lifter pin.

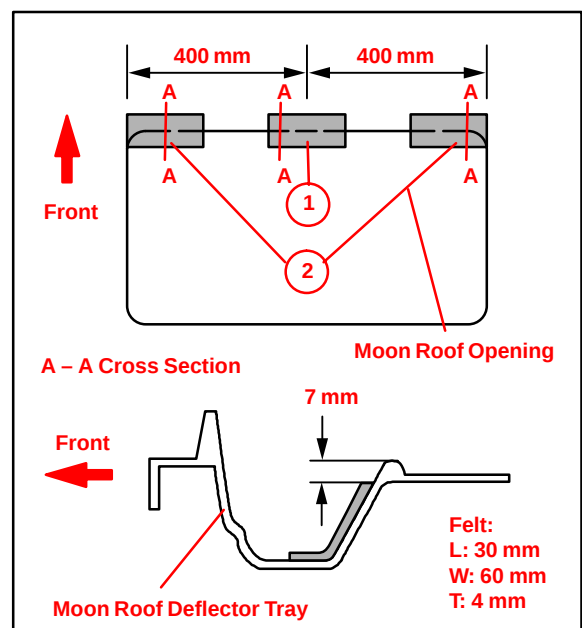


6. Fit three pieces of felt to the moon roof housing wind deflector tray.

 - A. Remove the original pieces of felt.
 - B. Apply one piece of felt to the center of the moon roof housing wind deflector tray.
 - C. Apply one piece each at the right and left corners of the moon roof housing wind deflector tray.

NOTE:

If 4 mm thick felt is not available, multiple pieces may be layered in order to obtain the desired thickness.



**Repair
Procedure:
Section 2
(Continued)**

7. Fit felt and clear tape to moon roof center reinforcement. Fit a piece of clear tape (P/N 3M SJ6595) and felt (2 mm thick from Noise Kit, P/N 08231-00801) to the center moon roof reinforcement.
8. Remove the interior light.
 - A. For the interior light with rear seat audio system, refer to the Technical Information System (TIS), 2003 4Runner Repair Manual: *Exterior/Interior Trim: Roof Headlining: Replacement*.
 - B. For the interior light without rear seat audio system, disengage the 4 clips shown in the illustration.
9. Disconnect the four hook and loop fasteners located behind the sunshade that secure the roof headlining to the roof.

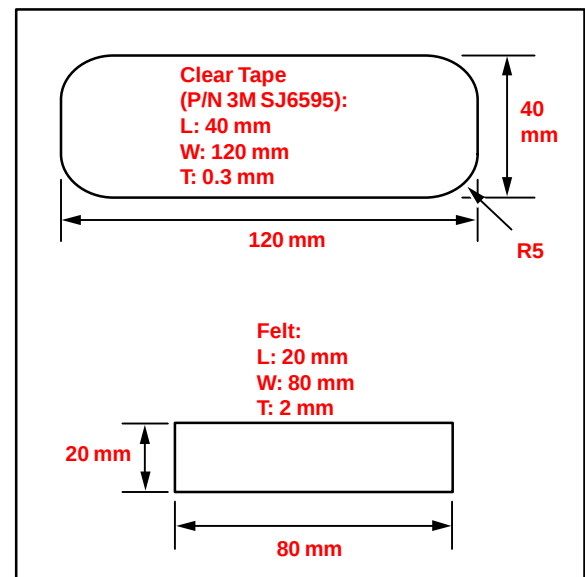
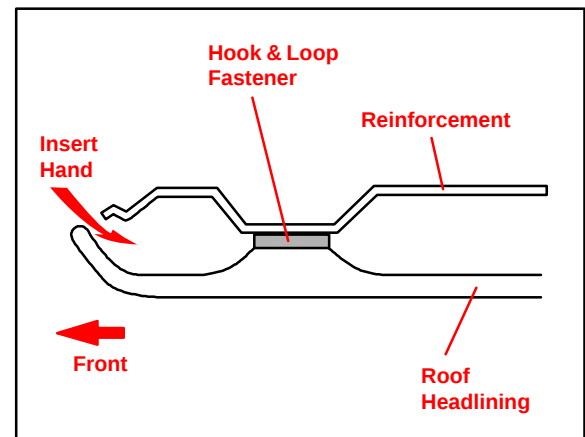
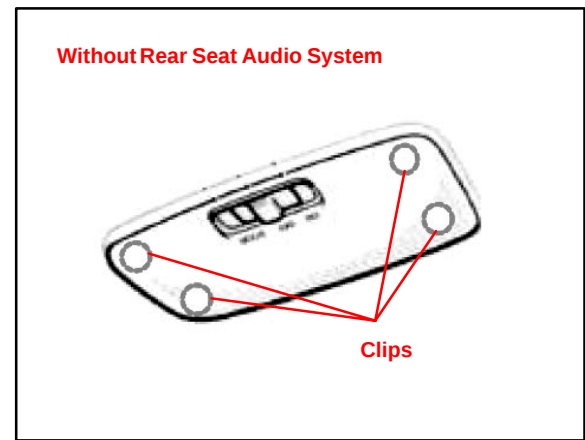
NOTE:

It is not necessary to remove the headliner to complete this operation.

10. Measure and cut the tape and felt.
 - A. Cut clear tape (P/N 3M SJ6595) and felt (2 mm thick from Noise Kit, P/N 08231-00801) to the sizes shown in the illustration.
 - B. Remove release paper from tape.

NOTE:

Do not remove the release paper from the felt.

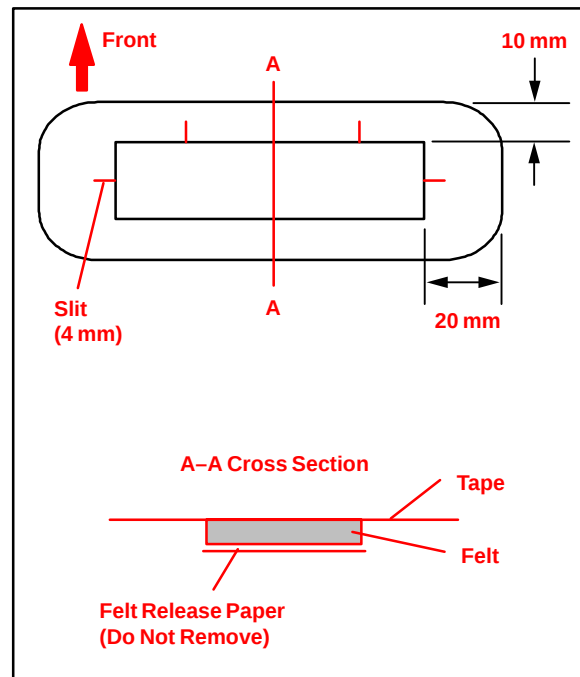


**Repair
Procedure:
Section 2
(Continued)**

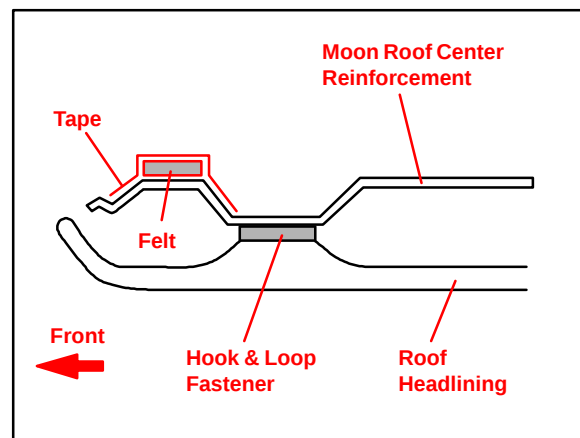
- C. Superimpose the felt onto the tape, and make four slits as shown in the illustration.

NOTE:

Slits allow for air evacuation.



11. Lift up sunshade trim, position the tape and felt to the center upper surface of the center moon roof reinforcement (black metal painted parts) which is located rearward of the sunshade trim handle. Attach the tape securely to the reinforcement as shown in the illustration.
12. Reconnect the four hook and loop fasteners located behind the sunshade that secure the roof headliner to the roof.
13. Reinstall the interior light.
14. Re-test for customer complaint. Stop here if customer complaint resolved. If customer complaint still present, continue on to Section 3.



Repair
Procedure:
Section 3

**SECTION 3: Remove Moon Roof
Housing Sub-Assembly and Apply Felt
to Moon Roof Housing Brace**

1. Apply two pieces of felt to the center moon roof housing reinforcement and two pieces of urethane sponge to the right and left drive cable housing.
 - A. Remove the moon roof housing from the vehicle (refer to the Technical Information System [TIS], 2003 4Runner Repair Manual: *Sliding Roof/Convertible: Sliding Roof: Replacement*).
 - B. Cut felt to size indicated below and slide under the edge of the center moon roof housing reinforcement.
 - C. After removing the release paper, fold the felt over the top of the center moon roof housing reinforcement.
 - D. Complete steps "B" and "C" for both driver's and passenger's sides.
 - E. Wrap drive cables with urethane sponge at each corner.

NOTE:

Do not remove the release paper until the felt is properly positioned under the center moon roof housing reinforcement.

NOTE:

The location of the sponge should be where the cable housings cross at both right and left corners.

