

2007-08 ACCESSORIES & EQUIPMENT**Slide/Tilt Roof - Repair Instructions - X5****10 SUNROOF****54 0 ... REPAIR INSTRUCTIONS FOR BONDED SEALS****1. General information on handling rubber seal profiles:**

- If seals reveal partly detached protective film on delivery, they must not be bonded.
- Store seals at 15 °C to 25 °C.
- If, during the handling, the protective film has come off before bonding, it can still be bonded.
- Bonding at room and object temperature >20 °C. Temperatures between 40 and 50 °C significantly increase initial adhesion.
- Seals, which are subjected to temperatures above 80 °C after gluing, will be very difficult to remove.

2. Damage pattern and repair**1. Partially detached bond (rubber-adhesive tape or adhesive tape-paint)**

- Up to 120 mm for retouching without auxiliary resources
- Up to 200 mm repaired with pressing-on tools on straight surfaces

a. Cleaning damaged areas:

- Degrease bonded area with adhesive cleaner (refer to BMW Parts Service) and remove other residues.

NOTE: Use necessary cotton - or fluff-free paper towel once only.
When using solvent:
expose repair area to air for at least 2 minutes.

b. Applying adhesive:

- With a fine nozzle, apply a wafer-thin bead to adhesive tape.

NOTE: Use contact adhesive (e.g. Terokal 2444)

CAUTION: Avoid contact to skin!

Do not apply adhesive to visible painted surfaces.

c. Pressing on rubber seal:

- Press down seal using contact pressure (forced pressure not necessary) for at least 1 minute.

CAUTION: Load can only be applied to the bond after a period of 2731 of 3160

2 minutes. This waiting time is absolutely essential.

2. Larger defects (mechanical damage and larger separations of seal)

- A complete replacement of the rubber seal is necessary. See **54 13 050 Replacing Seal For Slide/Tilt Sunroof Lid At Rear**, **54 13 055 Replacing Seal For Slide/Tilt Sunroof Frame**

a. Peeling off damaged rubber seal:

- Pull off rubber seal slowly at an angle up to 20 ° under uniformly strong tension.

NOTE: **Make sure the connection between adhesive tape and seal is retained.**
If the connection between adhesive tape and seal is detached: Carefully and slowly detach adhesive tape at an angle of 20° from roof opening or lid.
If, in the case of older seals, you are peeling off using a hot air blower: Do not damage paintwork.
Do not detach rubber-adhesive tape connection if at all possible.

b. Cleaning bonded area:

- Degrease bonded area with adhesive cleaner (refer to BMW Parts Service) and remove other residues.

NOTE: **Use necessary cotton - or fluff-free paper towel once only.**
When using solvent:
expose repair area to air for at least 2 minutes.

c. Detaching protective film from bonded area:

- Detach protective film from rubber seal in sections.

CAUTION: **Once the protective film has been removed, do not under any circumstances touch the exposed bonded area.**

d. Applying rubber seal:

- Apply rubber seal on roof opening edge beginning at rear center. Use upper lip as application edge. Press on seal continuously by hand. Carefully unwrap seal at radii without tension and press down (critical area).

NOTE: **If positioned incorrectly, the seal can still be pulled off, repositioned and pressed on again.**

e. Establishing seal joint:

- Mark contact point at joint by pressing down loose end on seal of already bonded end.

Then cut and press down loose end at same height.

NOTE: **Small areas of seal can remain stuck to adhesive tape of loose end.**

f. Pressing on seal:

- Press on seal using a roller
- Adhesive tape width up to 5 mm Application pressure approx. 5 N
- Adhesive tape width up to 10 mm Application pressure approx. 10 N

Sliding sunroof seal only:

- Press against seal strongly with a roller. Application pressure approx. 70 N.

E36 sliding sunroof seal only:

- Application pressure approx. 30 N.
- Tear off tear-off lip at rear and side in area of narrower flange.

NOTE: **Firm thumb pressure has approx. 35 N/cm²**

3. Checking rubber seal

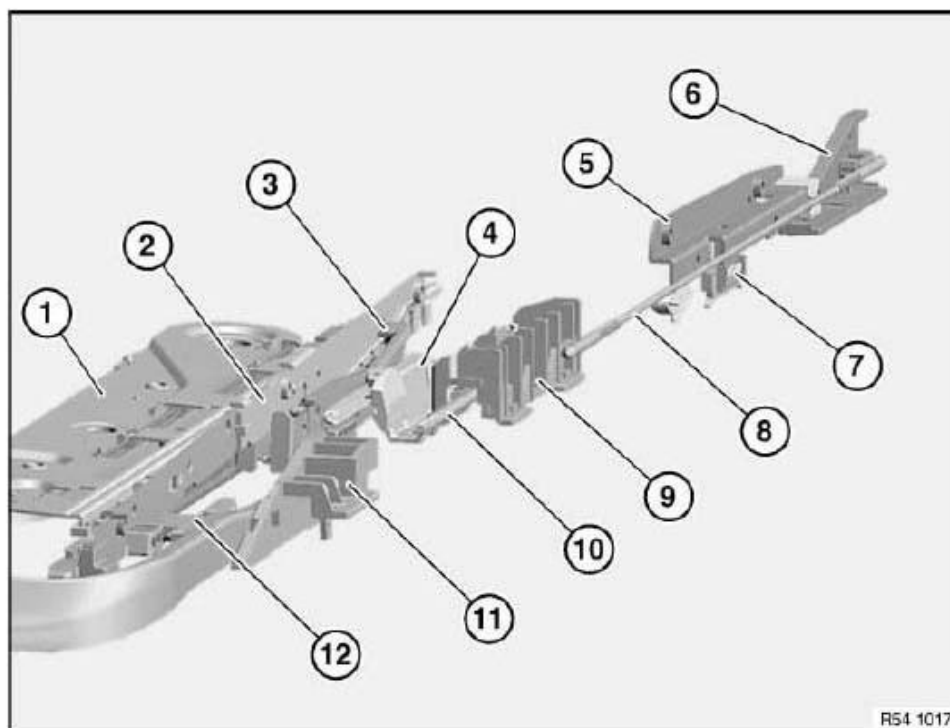
- Check the bonded seals for correct positioning and perfect adhesion. The bonding can be checked by pressing back the sealing lip.
- The force required to peel off the seal immediately after gluing must be greater than 10 N/cm.

54 10 ... REMOVING AND INSTALLING/REPLACING DRIVE CABLE PLATE

Necessary preliminary tasks:

- Remove mechanism for glass cover at front. See **54 10 020 Removing and Installing Mechanism For Front Glass Lid**

Overview of glass lid mechanism:



- | | |
|------------------------------------|---|
| 1 Floating roofliner mechanism | 7 Spring retainer |
| 2 Mechanism, front glass lid | 8 Drive cable, rear glass lid (connecting link) |
| 3 Drive wedge | 9 Drive cable plate |
| 4 Drive plate | 10 Drive cable, front glass lid (connecting link) |
| 5 Mechanism, rear glass lid | 11 Control carriage, wind deflector |
| 6 Control carriage, rear glass lid | 12 Slide element |

Fig. 1: Identifying Glass Lid Mechanism Components

Courtesy of BMW OF NORTH AMERICA, INC.

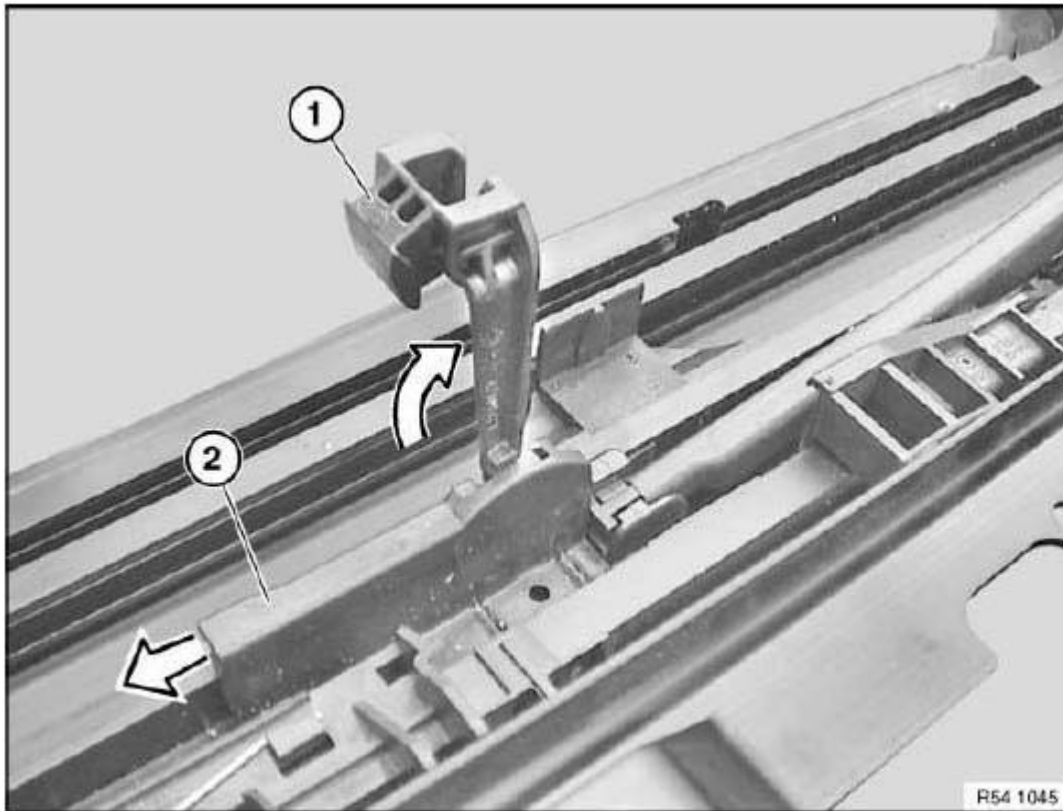


Fig. 2: Removing Drive Wedge

Courtesy of BMW OF NORTH AMERICA, INC.

If necessary, remove drive wedge (1).

If necessary, slide drive cable plate (2) towards rear and remove from guide rail.

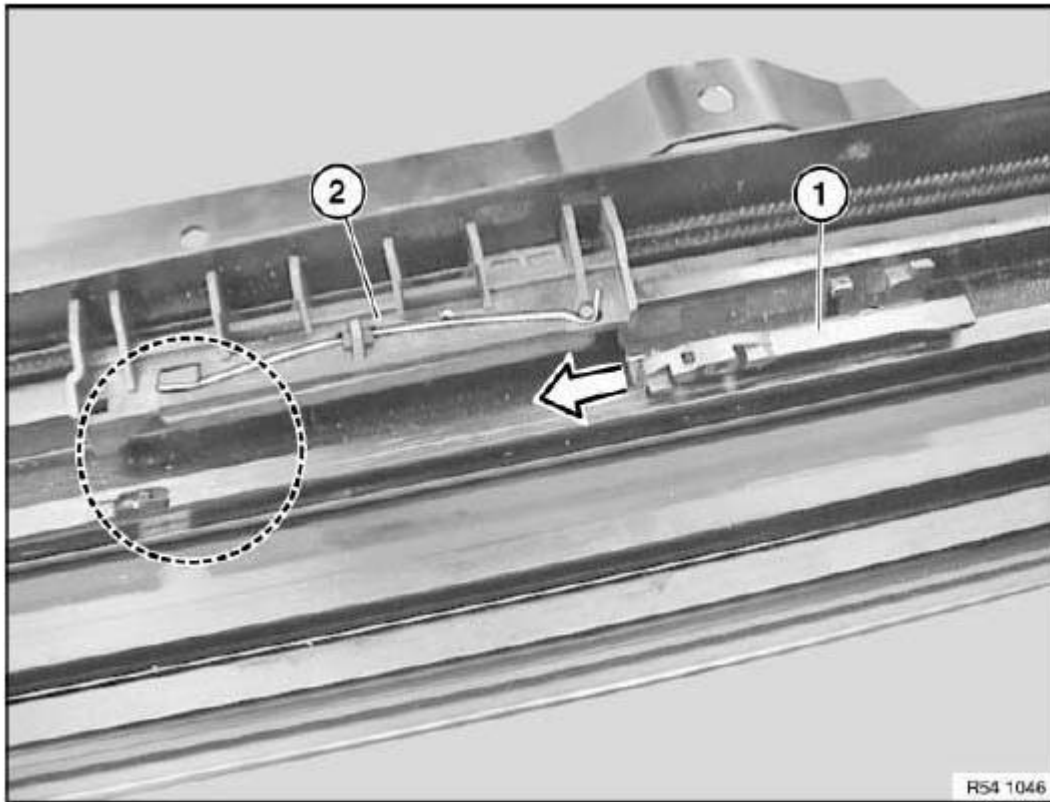


Fig. 3: Sliding Drive Cable Plate

Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Risk of damage when installing drive cable plate

The rear drive cable plate (2) must be engaged before the front drive cable plate (1) is installed.

Incorrect setting can be identified from spring position and lever position (marked area).

Check engagement of rear drive cable plate (2) in guide rail.

Slide in drive cable plate (1).

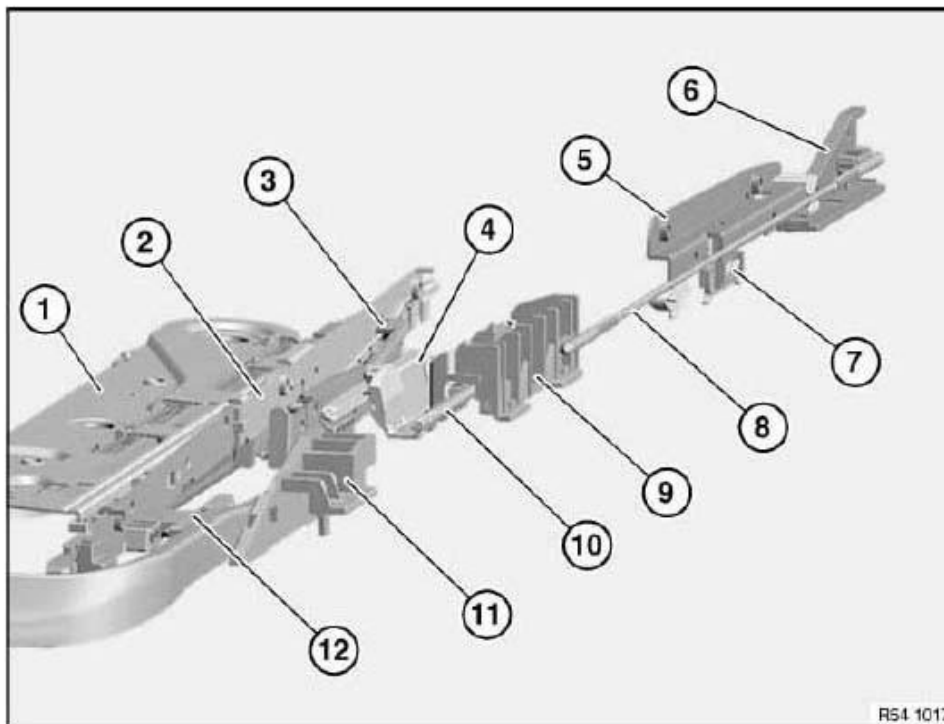
54 10 020 REMOVING AND INSTALLING MECHANISM FOR FRONT GLASS LID

Necessary preliminary tasks:

- Remove glass slide/tilt sunroof. See **54 13 080 Removing and Installing Complete Glass Slide/Tilt Sunroof.**
- Remove glass slide/tilt sunroof lid at front. See **54 10 170 Removing and Installing Front Glass Slide/Tilt Sunroof Cover.**
- Remove glass slide/tilt sunroof lid at rear. See **54 10 175 Removing and Installing Rear Glass Slide/Tilt Sunroof Cover.**

- Remove front drip molding. See **54 13 100 Removing and Installing/Replacing Drip Molding**.
- Remove drive for slide/tilt sunroof actuation. See **67 61 005 REPLACING DRIVE WITH GEAR (FRONT) FOR ACTUATING SLIDE/TILT SUNROOF** , **67 61 007 REMOVING AND INSTALLING/REPLACING DRIVE WITH GEAR (REAR) FOR ACTUATING SLIDE/TILT SUNROOF (REAR)**

Overview of glass lid mechanism:



- | | |
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| 1 Floating roofliner mechanism | 7 Spring retainer |
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| 4 Drive plate | 10 Drive cable, front glass lid (connecting link) |
| 5 Mechanism, rear glass lid | 11 Control carriage, wind deflector |
| 6 Control carriage, rear glass lid | 12 Slide element |

Fig. 4: Identifying Glass Lid Mechanism Components

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Always replace mechanism for glass slide/tilt sunroof in pairs.
If necessary, lightly grease guide channel.

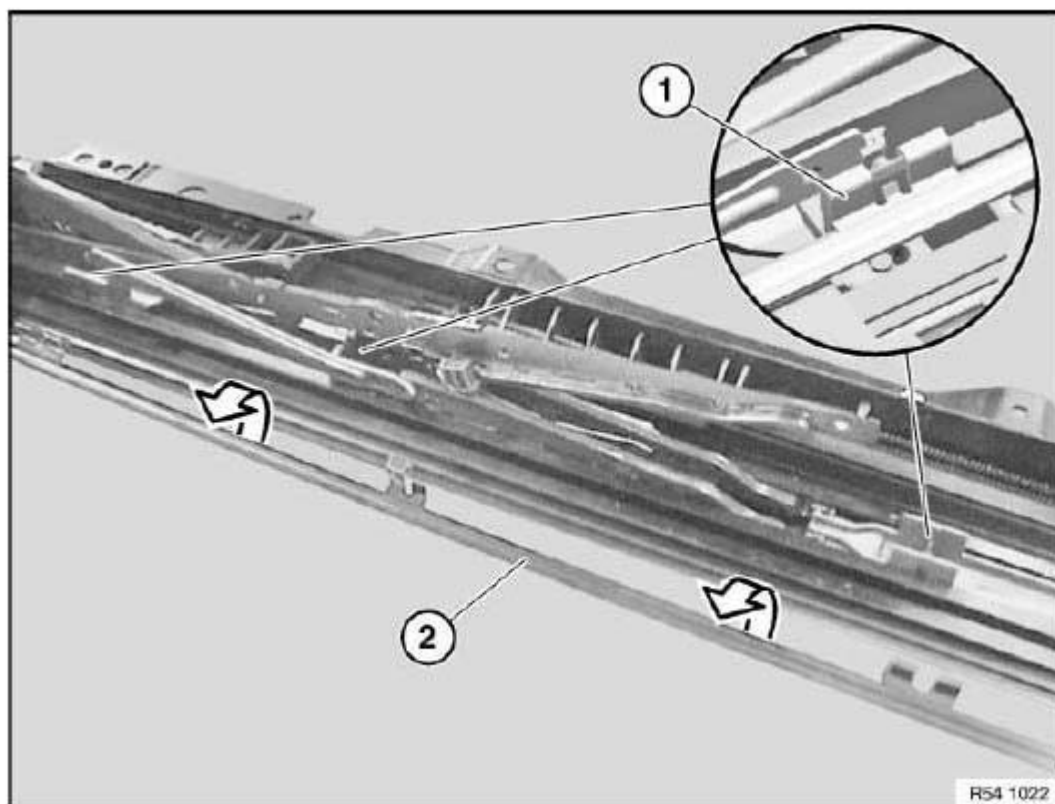


Fig. 5: Bending Open Tabs Of Cover Strip
Courtesy of BMW OF NORTH AMERICA, INC.

Removing upper connecting link (return linkage):

Bend open tabs (1) of cover strip (2).

Remove cover strip (2).

Installation:

Cover strip determines alignment of mechanism.

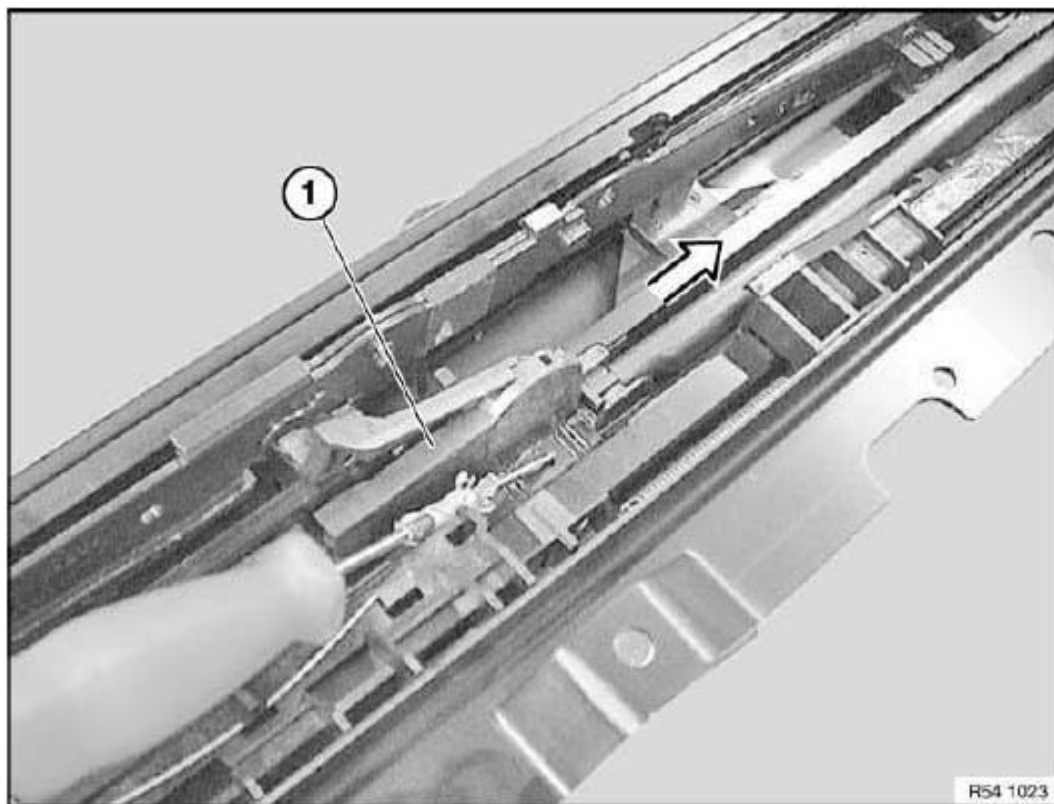


Fig. 6: Identifying Drive Cable Plate
Courtesy of BMW OF NORTH AMERICA, INC.

If necessary, slide drive cable plate (1) fully forwards with a screwdriver (stop).

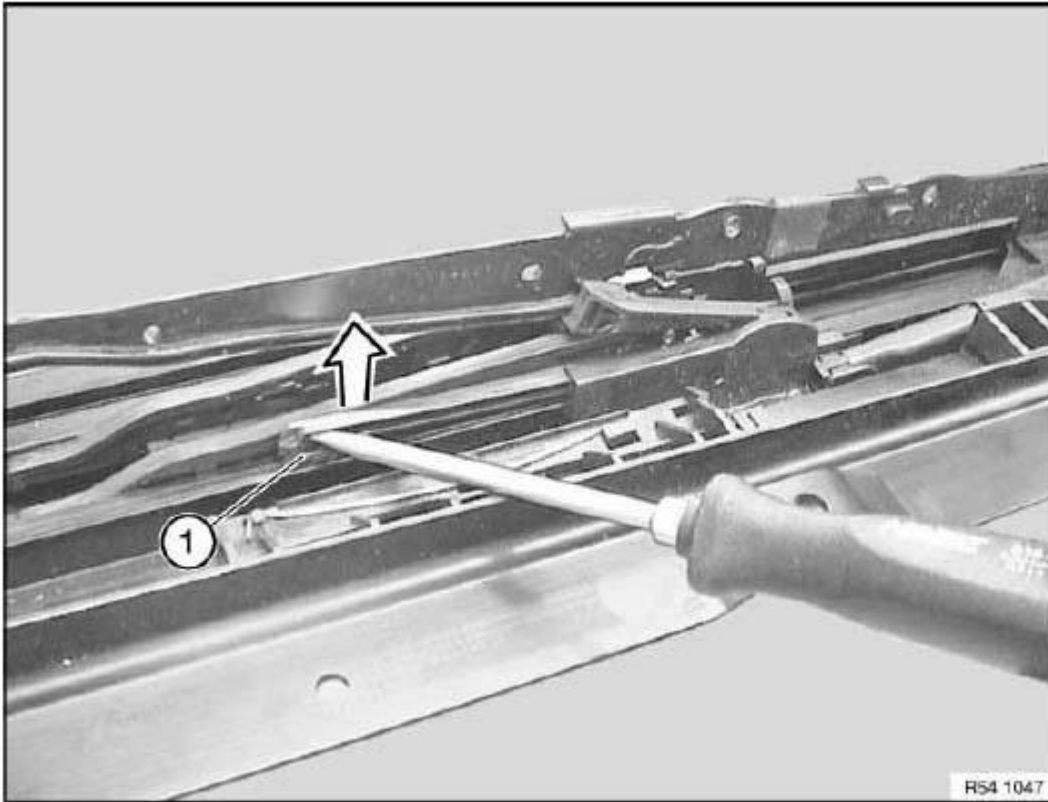


Fig. 7: Prying Out Locking Lever

Courtesy of BMW OF NORTH AMERICA, INC.

Pry out locking lever (1) of detent element at front from guide rail (unlock).

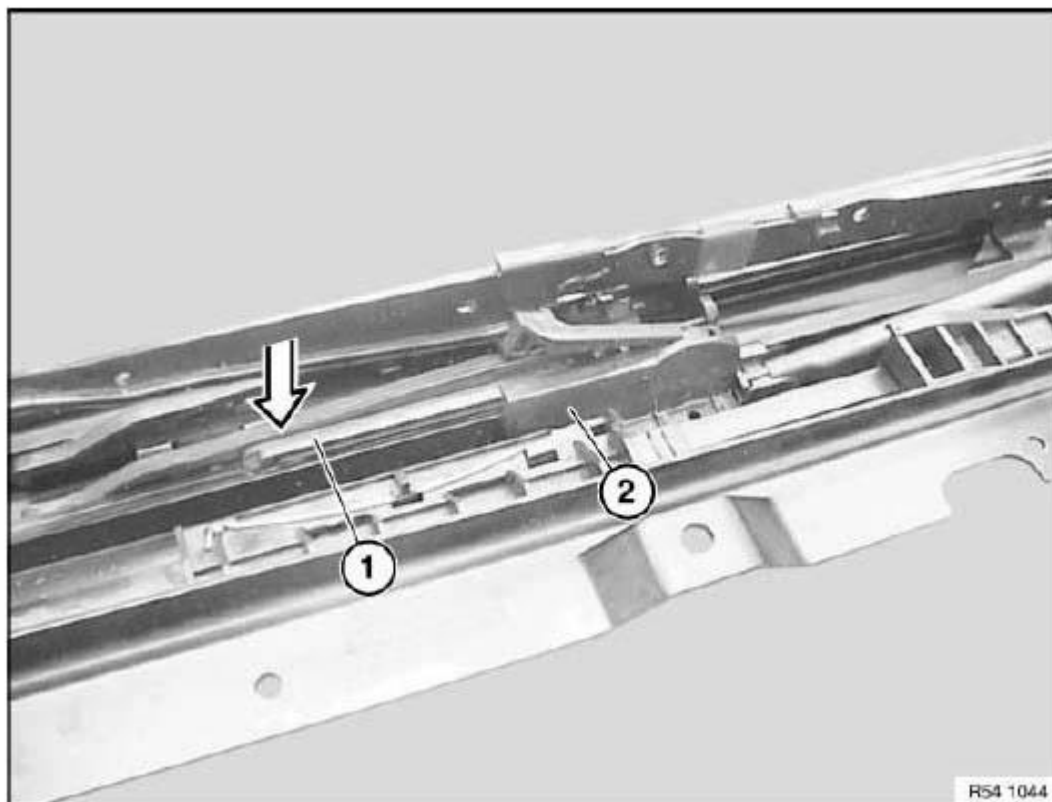


Fig. 8: Identifying Locking Lever And Drive Cable Plate
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Do not move drive cable plate (2) before locking lever (1) is engaged (risk of damage).

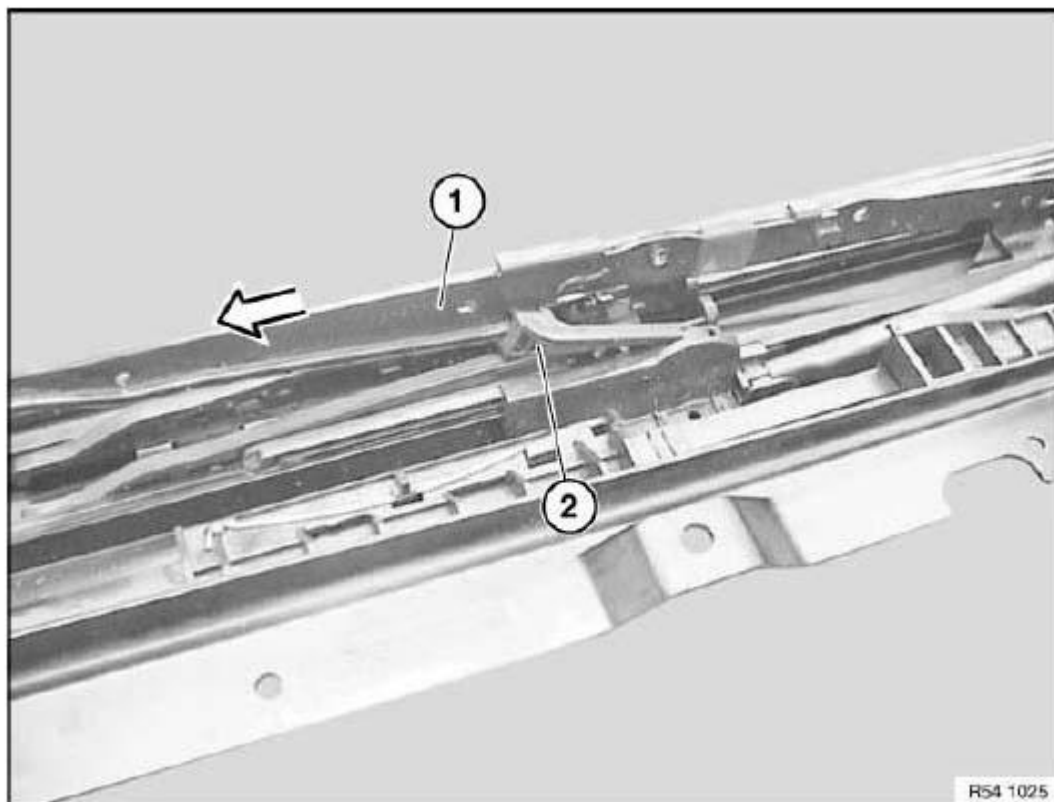


Fig. 9: Pulling Upper Connecting Link
Courtesy of BMW OF NORTH AMERICA, INC.

Pull upper connecting link (1) towards rear out of drive wedge (2).

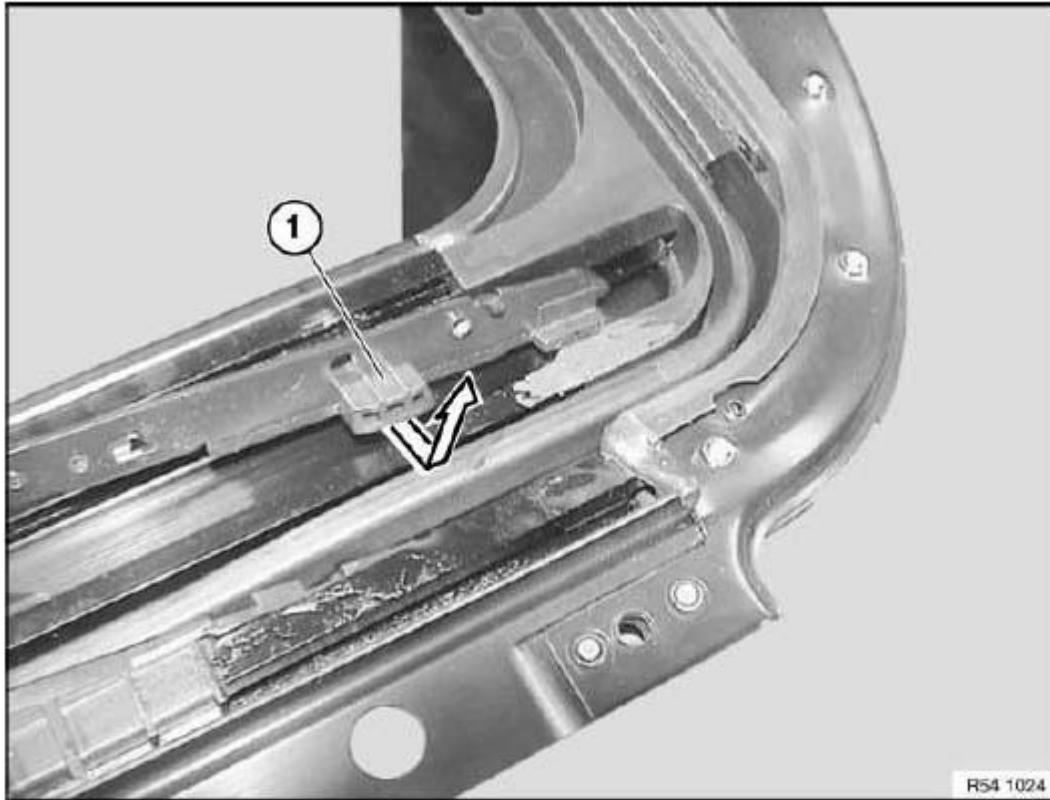


Fig. 10: Identifying Upper Connecting Link
Courtesy of BMW OF NORTH AMERICA, INC.

Feed upper connecting link (1) out of guide rail.

NOTE: If necessary, move mechanism (drive cable plate) approx. 2 cm towards rear.
Upper detent element can be fed out and in more easily.

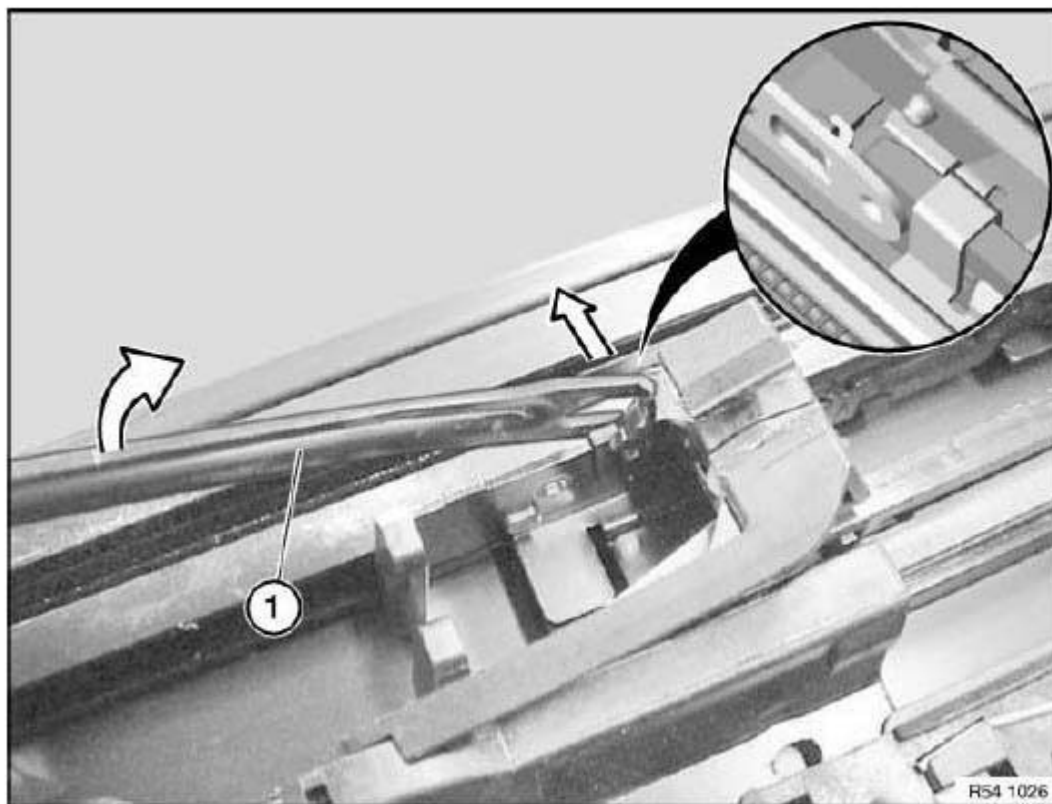


Fig. 11: Removing Upper Connecting Link
Courtesy of BMW OF NORTH AMERICA, INC.

Remove upper connecting link (1) in direction of arrow from lower connecting link.

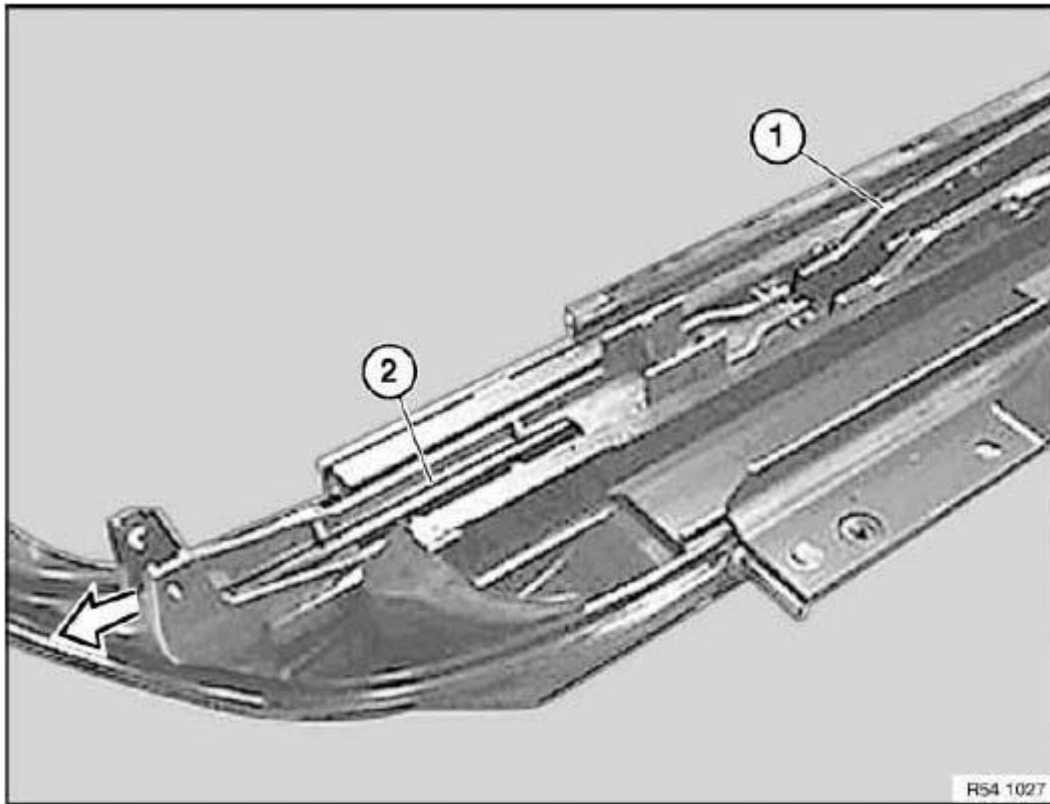


Fig. 12: Identifying Drip Molding Carrier And Lower Connecting Link
Courtesy of BMW OF NORTH AMERICA, INC.

Removing drip molding carrier and lower connecting link:

Slide drip molding carrier (2) with lower connecting link (1) towards rear and remove from guide rail.

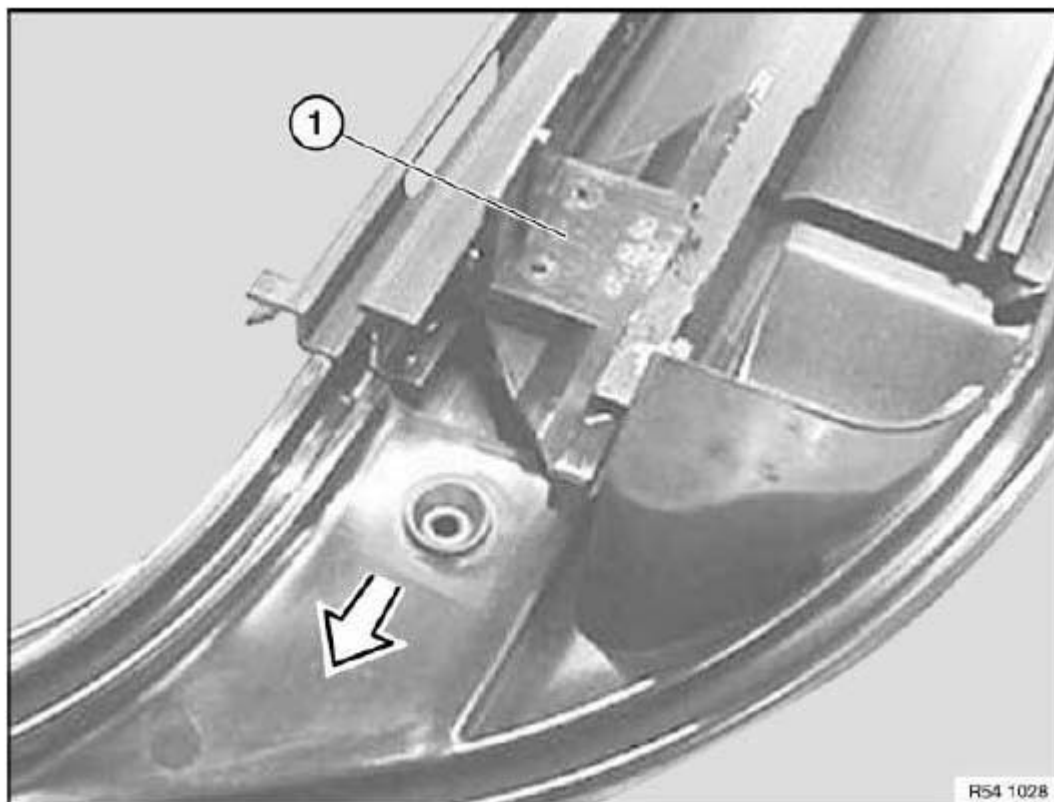


Fig. 13: Pushing Slide Element

Courtesy of BMW OF NORTH AMERICA, INC.

If necessary, push slide element (1) towards rear and remove from guide rail.

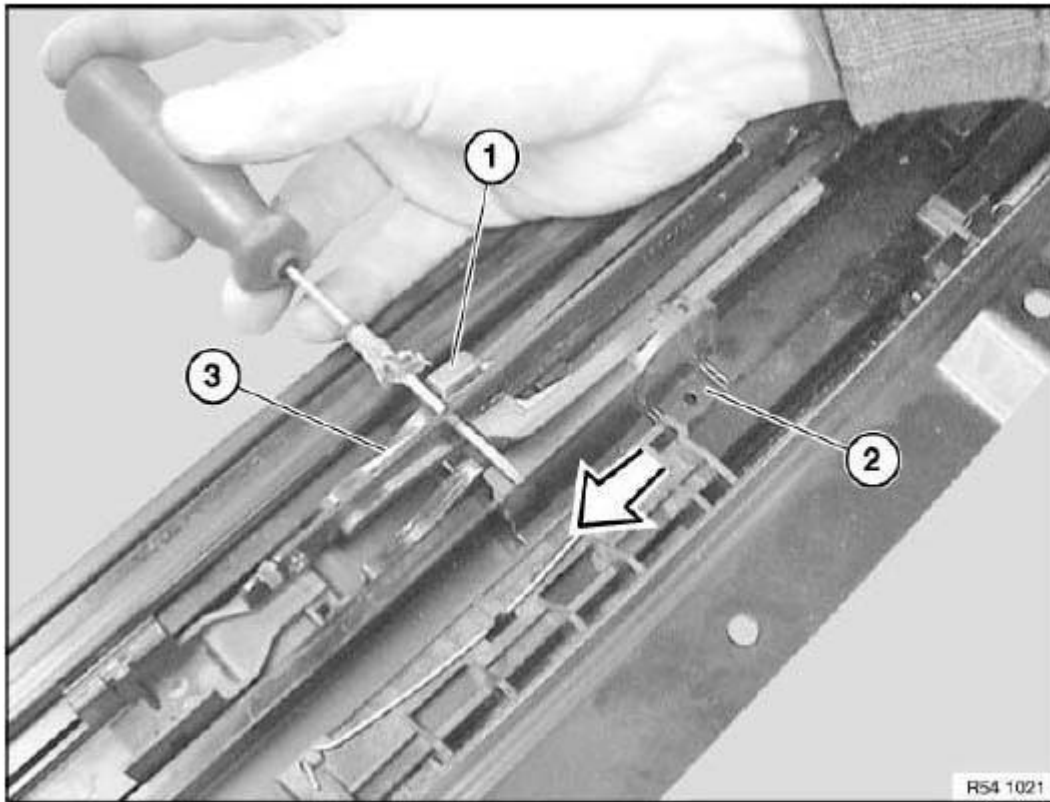


Fig. 14: Sliding Drive Plate

Courtesy of BMW OF NORTH AMERICA, INC.

Adjusting mechanism before installing glass lid:

Insert screwdriver into upper connecting link (3).

Slide drive plate (2) towards rear until drive wedge (1) runs against screwdriver.

NOTE: Check that mechanical components on left and right sides have same status.

NOTE: Check smooth and noise-free running of kinematics.
Check function.

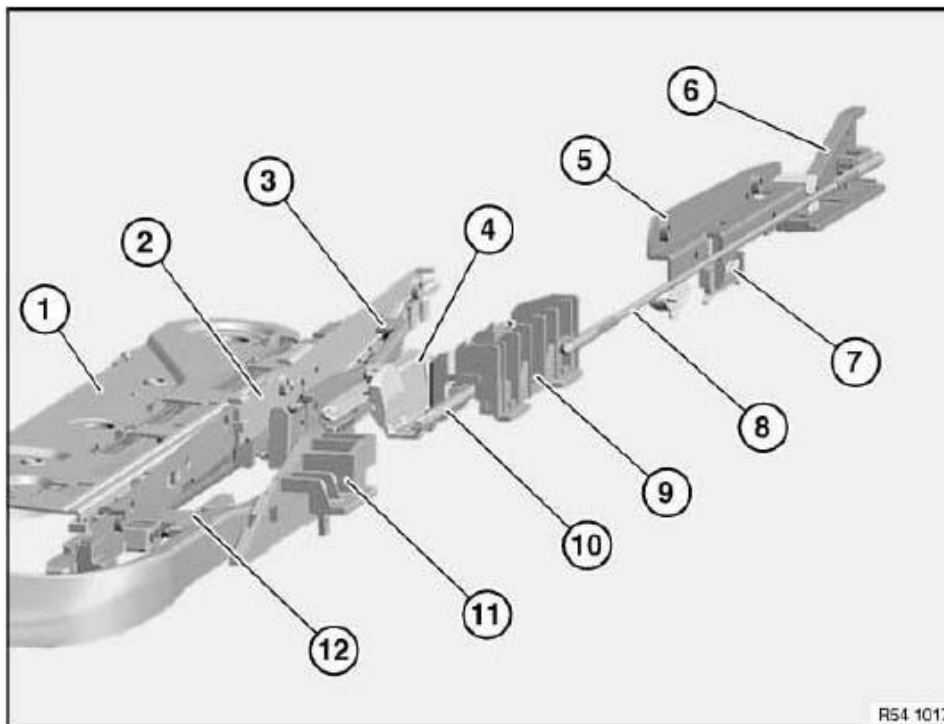
54 10 030 REMOVING AND INSTALLING MECHANISM FOR REAR GLASS LID

Necessary preliminary tasks:

- Remove complete glass slide/tilt sunroof. See **54 13 080 Removing and Installing Complete Glass Slide/Tilt Sunroof**.
- Remove glass slide/tilt sunroof lid at rear. See **54 10 175 Removing and Installing Rear Glass Slide/Tilt Sunroof Cover**.

- Remove rear drip molding. See **54 13 105 Removing and Installing/Replacing Rear Drip Molding**.
- Remove drive units with gearing. See **67 61 005 REPLACING DRIVE WITH GEAR (FRONT) FOR ACTUATING SLIDE/TILT SUNROOF** and **67 61 007 REMOVING AND INSTALLING/REPLACING DRIVE WITH GEAR (REAR) FOR ACTUATING SLIDE/TILT SUNROOF (REAR)**.

Overview of glass lid mechanism:



- | | |
|------------------------------------|---|
| 1 Floating roofliner mechanism | 7 Spring retainer |
| 2 Mechanism, front glass lid | 8 Drive cable, rear glass lid (connecting link) |
| 3 Drive wedge | 9 Drive cable plate |
| 4 Drive plate | 10 Drive cable, front glass lid (connecting link) |
| 5 Mechanism, rear glass lid | 11 Control carriage, wind deflector |
| 6 Control carriage, rear glass lid | 12 Slide element |

Fig. 15: Identifying Glass Lid Mechanism Components

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Always replace mechanism for glass slide/tilt sunroof in pairs.
If necessary, lightly grease guide channel.

NOTE: Drip molding carrier cannot be removed without incurring damage.

Installation:

Replace drip molding carrier and hook into place.

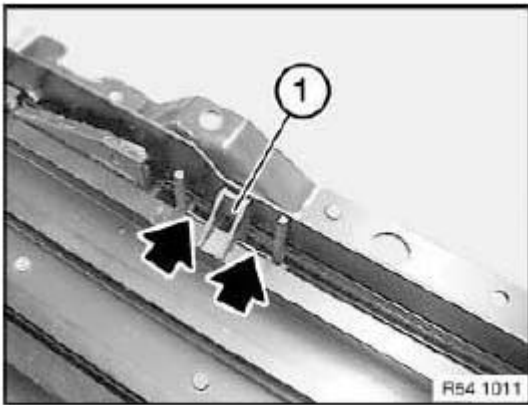


Fig. 16: [Identifying Tabs]

Courtesy of BMW OF NORTH AMERICA, INC.

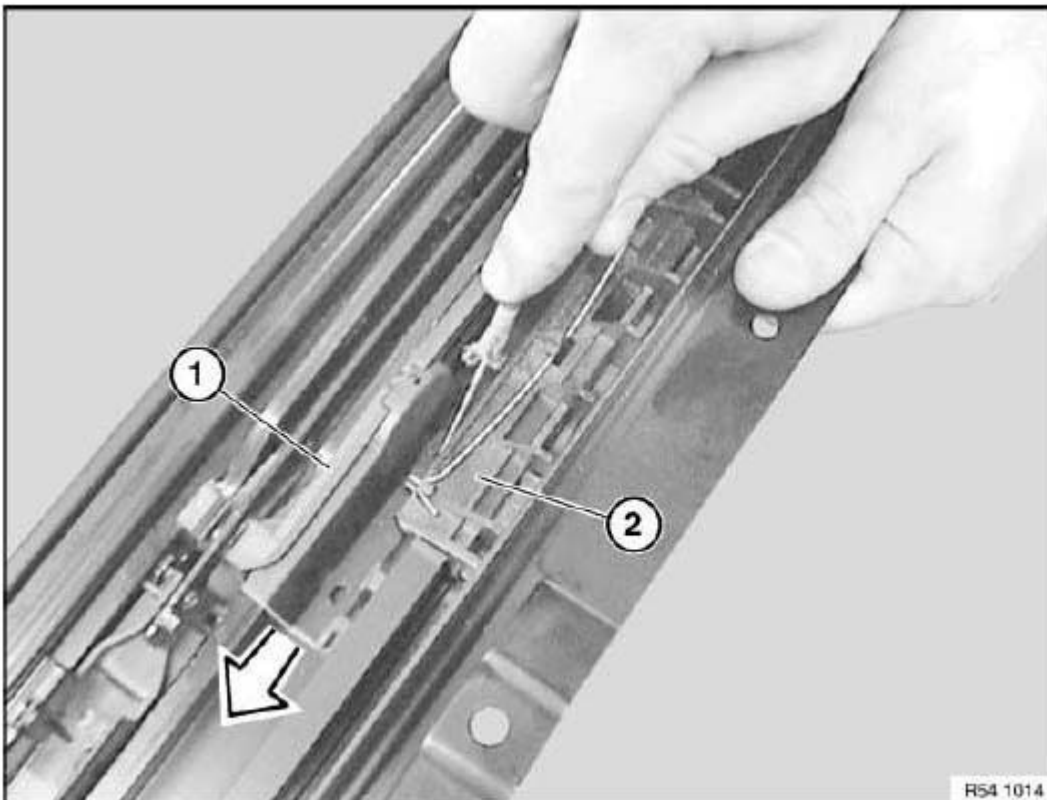


Fig. 17: Sliding Front Connecting Link

Courtesy of BMW OF NORTH AMERICA, INC.

If front glass lid is installed, move mechanism with lid.

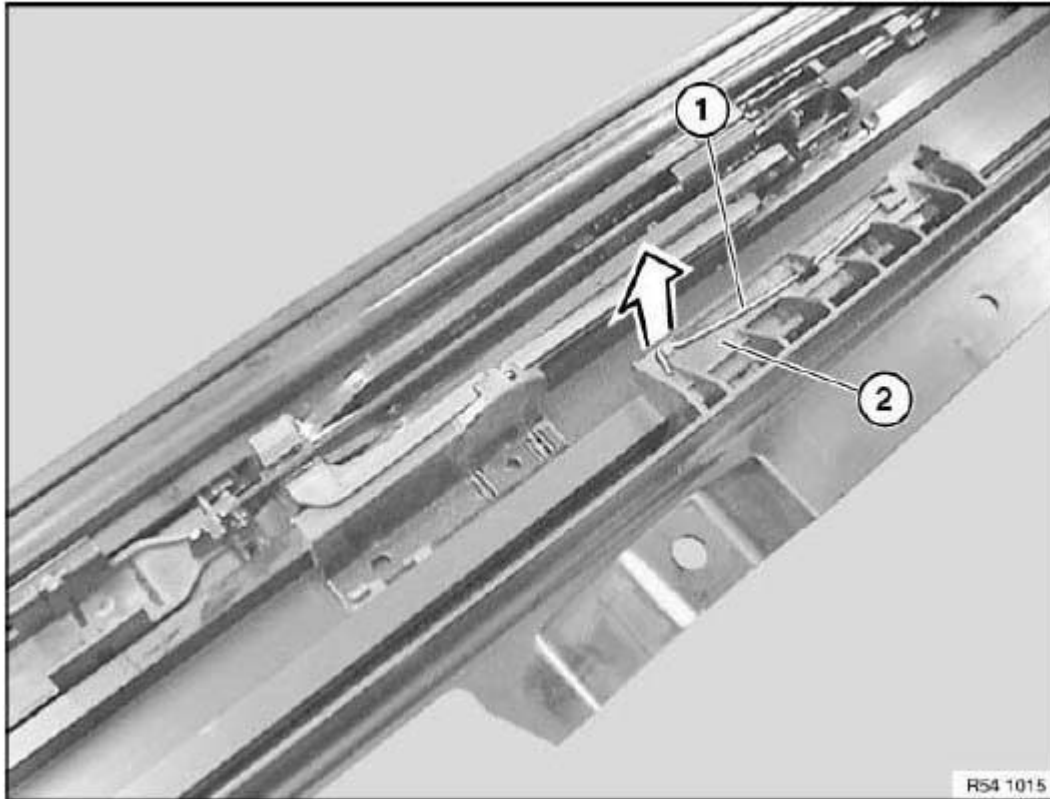


Fig. 18: Removing Retaining Bracket
Courtesy of BMW OF NORTH AMERICA, INC.

Lever out retaining bracket (1) from drive cable plate (2).

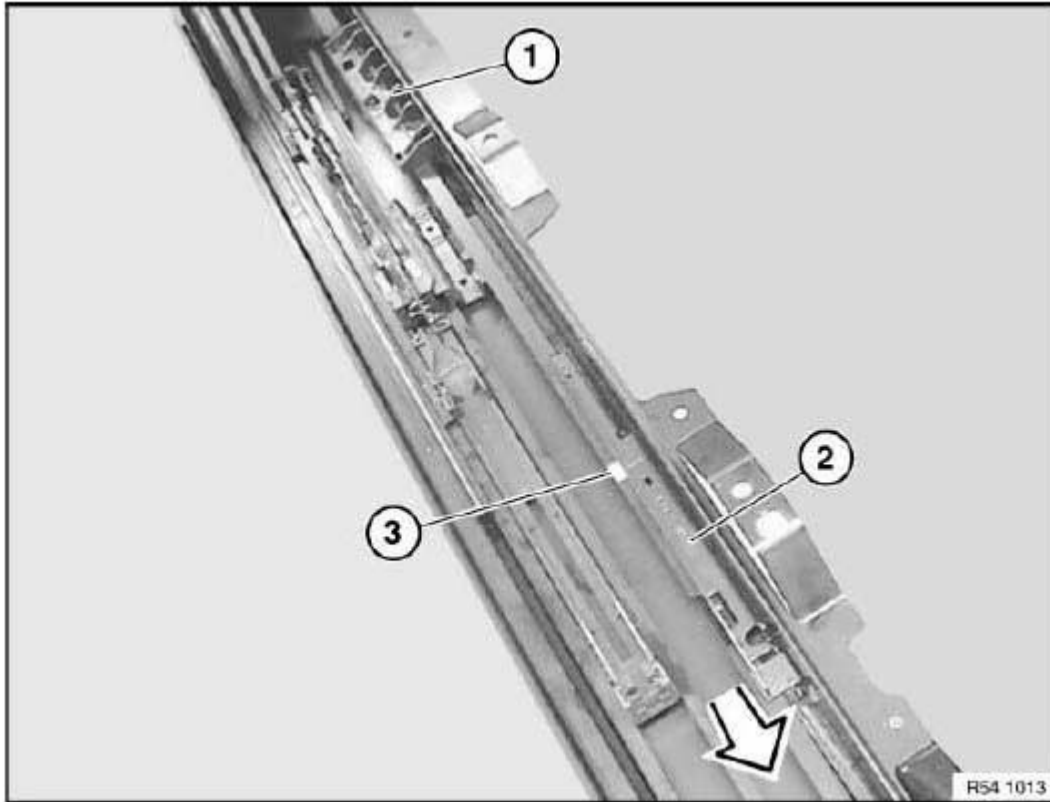


Fig. 19: Identifying Rear Connecting Line
Courtesy of BMW OF NORTH AMERICA, INC.

Slide rear connecting line (2) with drive cable plate (1) towards rear until spring retainer (3) is exposed.

NOTE: Spring retainer (3) cannot be removed without incurring damage.

Lever out spring retainer (3) with screwdriver.

Installation:

Replace faulty spring retainer.

Continue sliding rear connecting link (2) with drive cable plate (1) towards rear out of guide channel and remove in succession.

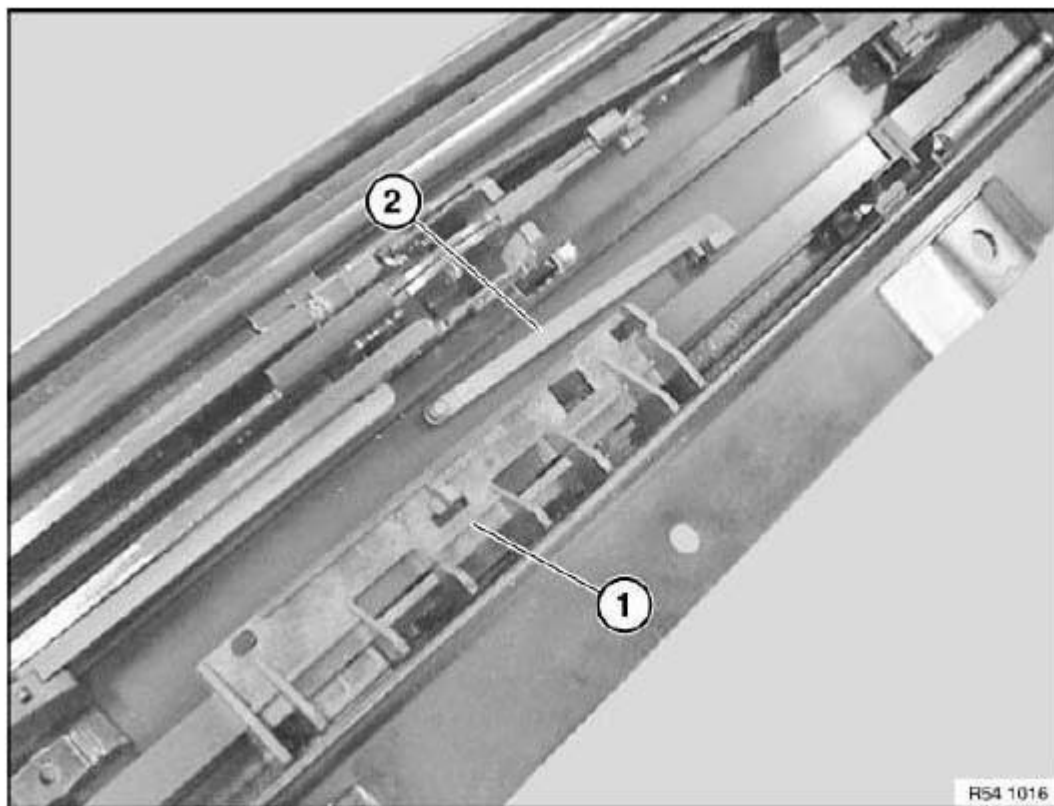


Fig. 20: Identifying Drive Cable Plate
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Slide drive cable plate (1) up against drive cable.

Install locking lever (2) and lock retaining bracket.

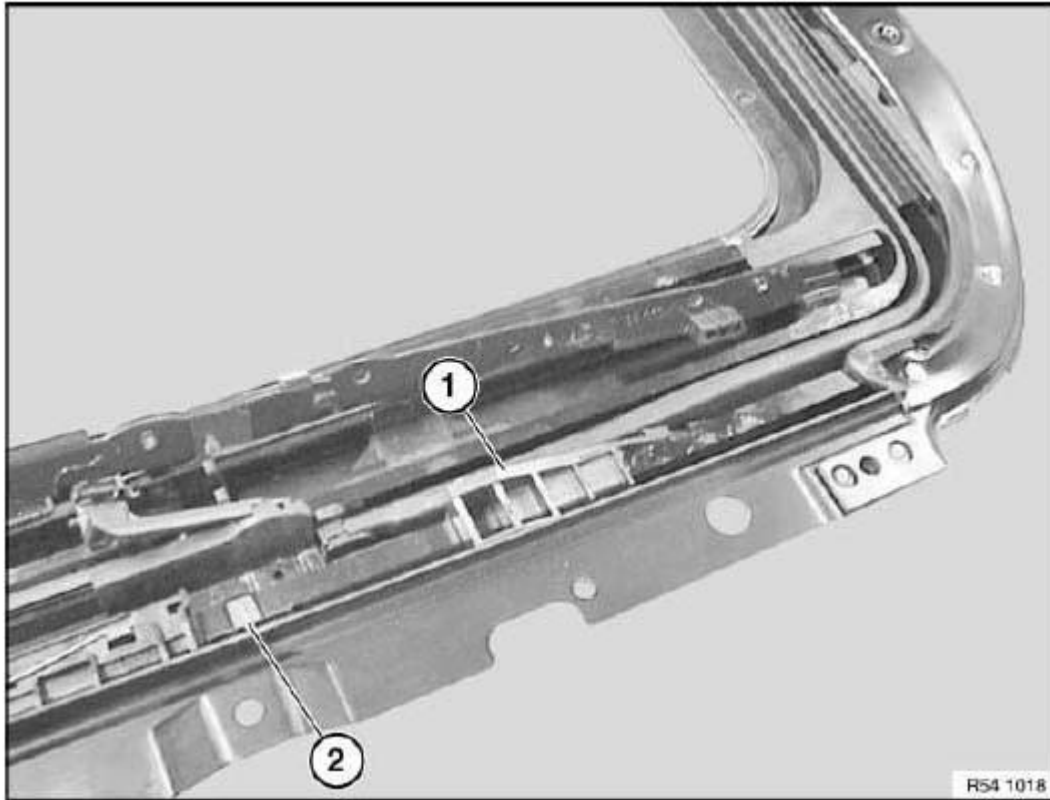


Fig. 21: Identifying Spring Retainer

Courtesy of BMW OF NORTH AMERICA, INC.

Removing control carriage for wind deflector:

NOTE: Spring retainer (2) cannot be removed without incurring damage.

Lever out spring retainer (2) with screwdriver.

Installation:

Replace faulty spring retainer.

Pull control carriage (1) for wind deflector towards rear out of rail and remove.

NOTE: Check smooth and noise-free running of kinematics.
Check function.

54 10 050 REMOVING AND INSTALLING/REPLACING MECHANISM FOR FLOATING ROOFLINER

Necessary preliminary tasks:

- Remove glass slide/tilt sunroof. See **54 13 080 Removing and Installing Complete Glass Slide/Tilt Sunroof.**
- Remove slider set for floating roofliner. See **54 10 070 Removing and Installing/Replacing Slider Set For Floating Roofliner.**
- Remove rear crossmember. See **54 13 150 Removing and Installing Rear Crossmember.**

Unclip end stops (1) on left and right from guide channel.

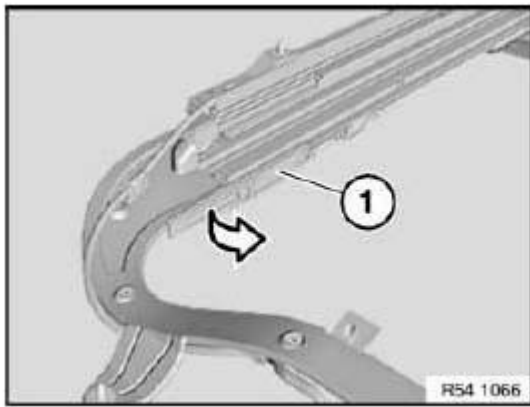


Fig. 22: Uncoupling End Stops

Courtesy of BMW OF NORTH AMERICA, INC.

Unclip floating roofliner cover plate (1) from slider for front sun shield.

Remove floating roofliner cover plate (1) upwards from locking lever (2).

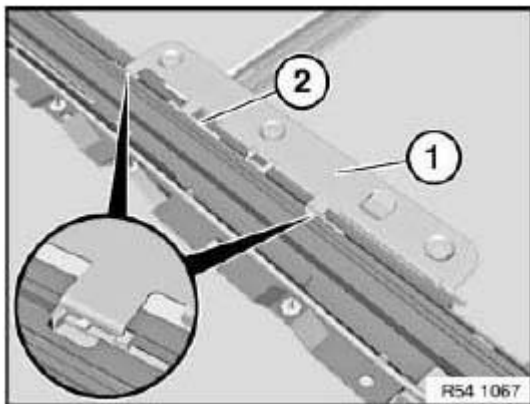


Fig. 23: Identifying Floating Roofliner Cover Plate

Courtesy of BMW OF NORTH AMERICA, INC.

Pull mechanism for floating roofliner towards rear out of guide channel:

1. Sliders for floating roofliner

2. Locking lever for floating roofliner
3. Rear drive cable plate with drive cable

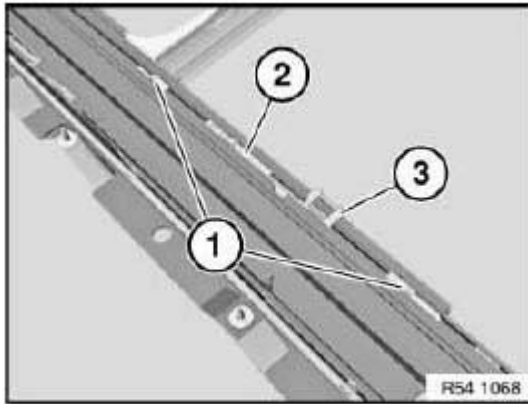


Fig. 24: Identifying Sliders For Floating Roofliner
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Ensure correct installation sequence:

1. Sliders for floating roofliner
2. Locking lever for floating roofliner
3. Rear drive cable plate with drive cable

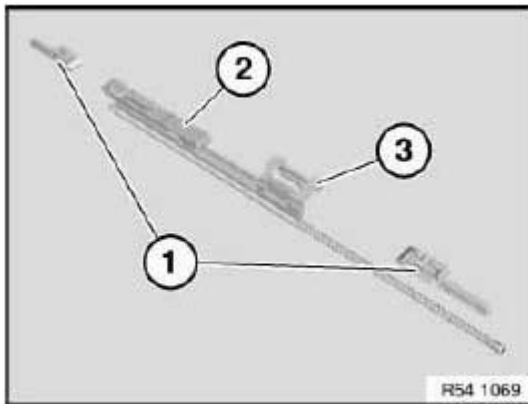


Fig. 25: Identifying Locking Lever For Floating Roofliner
Courtesy of BMW OF NORTH AMERICA, INC.

Slide in locking lever for floating roofliner (3) and slide up to recess in guide frame.

Open locking lever (1) with screwdriver.

Slide rear drive cable plate (2) into locking lever.

NOTE: Correct insertion can be checked by pulling back the drive cable plate (2): Drive cable plate (2) and locking lever for floating roofliner (3) must execute a joint movement. In addition, the correct spacing of locking lever (3) and drive cable plate (2) is determined by the floating roofliner cover plate.

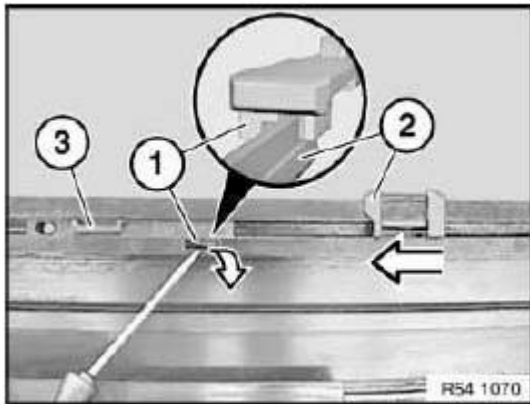


Fig. 26: Sliding Rear Drive Cable Plate
Courtesy of BMW OF NORTH AMERICA, INC.

54 10 052 REPLACING FASTENER FOR WIND DEFLECTOR ON LEFT OR RIGHT

Special tools required:

- 51 3 057

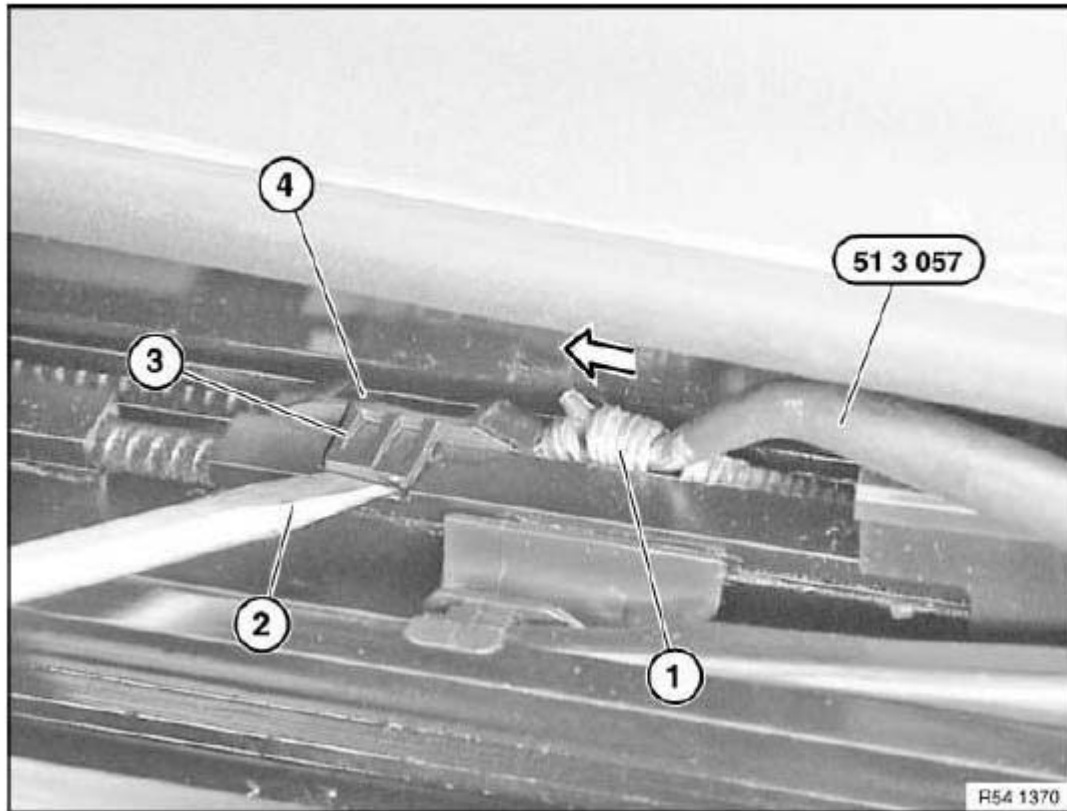


Fig. 27: Identifying Special Tools (51 3 057)

Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool 51 3 057 in spring (1). See **51 3 050 TOOL** .

Using a suitable tool (2), unlock catch (3) of fastener for wind deflector (4).

Slide fastener for wind deflector (4) and spring (1) with special tool 51 3 057 in direction of arrow up to opening in guide. See **51 3 050 TOOL** .

IMPORTANT: Special tool 51 3 057 may only be removed from spring (1) after new fastener for wind deflector has been installed. See **51 3 050 TOOL** .

Installation:

Make sure catch of fastener for wind deflector is correctly seated and engaged.

Feed centering element for wind deflector (1) in direction of arrow out of opening (2) in guide (3).

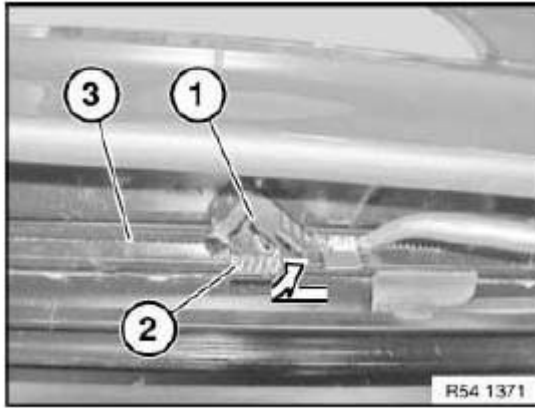


Fig. 28: Identifying Centering Element For Wind Deflector
 Courtesy of BMW OF NORTH AMERICA, INC.

Using a suitable tool (2), disengage spring (1) of fastener for wind deflector (3) in direction of arrow.

Installation:

- Check guide for cleanness, remove foreign bodies/dirt if necessary
- Make sure spring is correctly seated on fastener for wind deflector

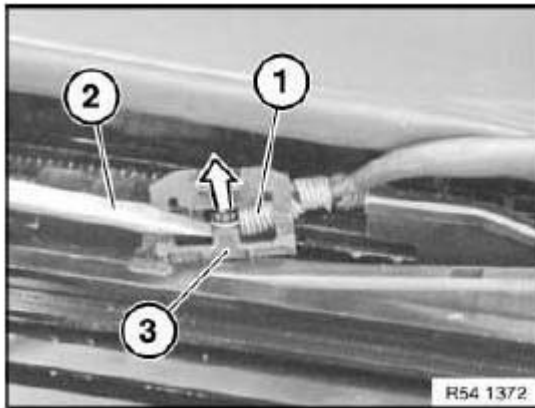


Fig. 29: Disengaging Spring Of Fastener For Wind Deflector
 Courtesy of BMW OF NORTH AMERICA, INC.

54 10 070 REMOVING AND INSTALLING/REPLACING SLIDER SET FOR FLOATING ROOFLINER

Necessary preliminary tasks:

- Remove glass slide/tilt sunroof. See **54 13 080 Removing and Installing Complete Glass Slide/Tilt Sunroof**.
- Remove rear floating roofliner. See **54 13 070 Removing and Installing/Replacing Both Floating Roofliners For Glass Slide/Tilt Sunroof**.

**IMPORTANT: Slider set can fall sideways out of guide rail.
Risk of damage to drag arm.**

Pull slider set sideways out of guide rail.

Remove drag arm from front mechanism for floating roofliner:

1. Turn drag arm downwards
2. Disengage drag arm upwards

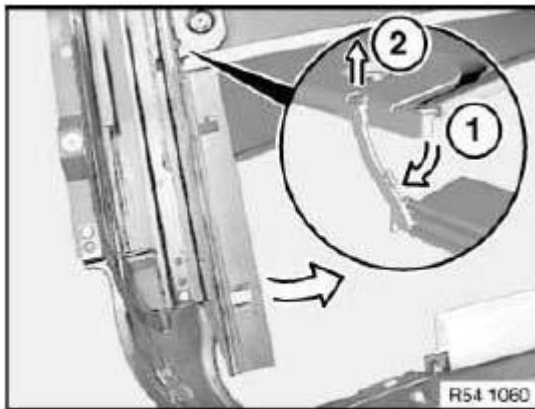


Fig. 30: Removing Drag Arm From Front Mechanism
Courtesy of BMW OF NORTH AMERICA, INC.

Remove arm (1) towards rear and replace if necessary.

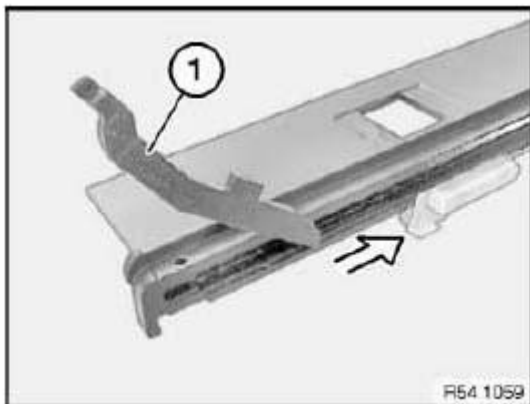


Fig. 31: Removing Arm
Courtesy of BMW OF NORTH AMERICA, INC.

54 10 160 REPLACING LEFT OR RIGHT GAITER FOR GLASS SLIDE/TILT SUNROOF

Necessary preliminary tasks:

- Close glass slide/tilt sunroof

Detach gaiter (1) from guide.

Installation:

Gaiter cannot be removed without incurring damage.

Replace gaiter.

Check that aluminum section inlay is firmly seated on guide.

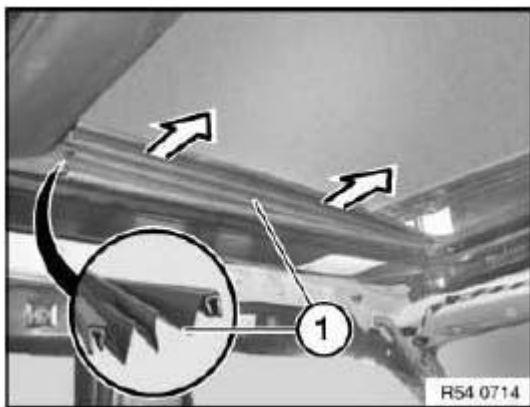


Fig. 32: Detaching Gaiter From Guide

Courtesy of BMW OF NORTH AMERICA, INC.

54 10 170 REMOVING AND INSTALLING FRONT GLASS SLIDE/TILT SUNROOF COVER

Necessary preliminary tasks:

- Remove gaiter. See 54 10 160 Replacing Left Or Right Gaiter For Glass Slide/Tilt Sunroof.

NOTE: The following steps can be carried out inside the vehicle with the glass roof panel fully closed.
Open floating roofliner fully.
Make sure that grease at the ends of the rail do not come into contact with the roofliner.
Not necessary for replacement:
Before removing the Torx screws, make a mark around the washers in order to ensure correct alignment during installation.

Remove and dispose of the Torx screws (1) securing the glass panel to the mechanism.

Installation:

Insert new Torx screws with Loctite and align washers to markings.

Tightening torque 54 12 2AZ. See **54 12 MECHANICAL SUN ROOF COMPONENTS** .

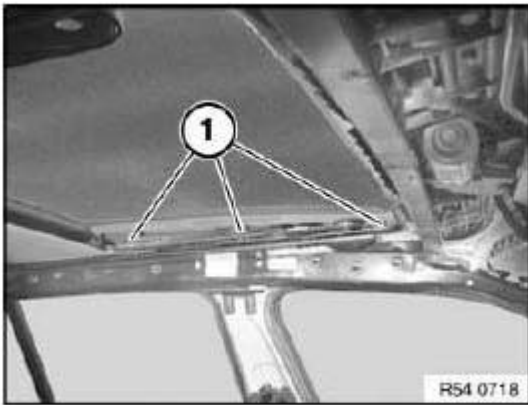


Fig. 33: Identifying Torx Screws

Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: A second person is required to help in removing and installing the glass slide/tilt sunroof lid!

Lift out glass slide/tilt sunroof cover (1).

Installation:

Tape off installation area on left and right at roof aperture with fabric adhesive tape.

Install glass slide/tilt sunroof cover carefully (twist in) as seal can be damaged during installation.

Check glass slide/tilt sunroof cover for correct alignment and adjust if necessary. See **54 13 003 Adjusting Glass Slide/Tilt Sunroof Lid**.

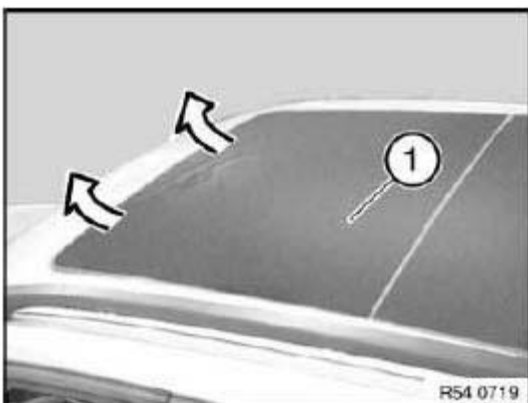


Fig. 34: Lifting Out Glass Slide/Tilt Sunroof Cover

Courtesy of BMW OF NORTH AMERICA, INC.

54 10 175 REMOVING AND INSTALLING REAR GLASS SLIDE/TILT SUNROOF COVER

NOTE: The following steps can be carried out inside the vehicle with the glass roof panel fully closed.
Open floating roofliner fully.
Make sure that grease at the ends of the rail do not come into contact with the roofliner.
Not necessary for replacement:
Before removing the Torx screws, make a mark around the washers in order to ensure correct alignment during installation.

Remove and dispose of the Torx screws (1) securing the glass panel to the mechanism.

Installation:

Insert new Torx screws with Loctite and align washers to markings.

Tightening torque 54 12 2AZ. See **54 12 MECHANICAL SUN ROOF COMPONENTS** .

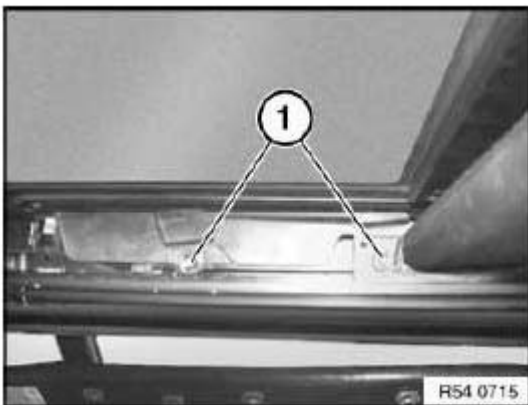


Fig. 35: Identifying Torx Screws

Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: A second person is required to help in removing and installing the glass slide/tilt sunroof lid!

Lift out glass slide/tilt sunroof cover (1).

Installation:

Tape off complete edge area at roof aperture with fabric adhesive tape (risk of damage).

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Install glass slide/tilt sunroof cover carefully (twist in) as seal can be damaged during installation.

Check glass slide/tilt sunroof cover for correct alignment (See **54 13 003 Adjusting Glass Slide/Tilt Sunroof Lid**) and adjust if necessary.

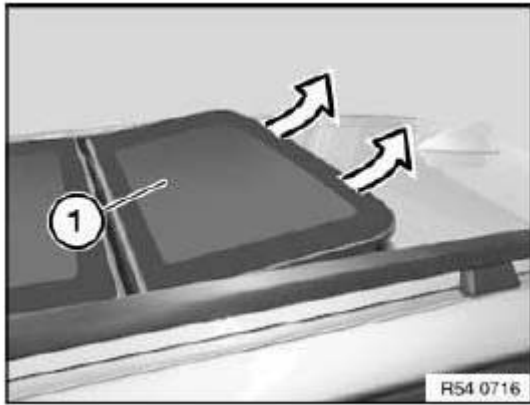


Fig. 36: Lifting Out Glass Slide/Tilt Sunroof Cover
Courtesy of BMW OF NORTH AMERICA, INC.

54 13 130 REMOVING AND INSTALLING FRONT CROSSMEMBER

Necessary preliminary tasks:

- Remove glass slide/tilt sunroof. See **54 13 080 Removing and Installing Complete Glass Slide/Tilt Sunroof**.
- Remove drive. See **67 61 005 REPLACING DRIVE WITH GEAR (FRONT) FOR ACTUATING SLIDE/TILT SUNROOF**.

Release screws in marked area.

Tightening torque: 54 12 03AZ. See **54 12 MECHANICAL SUN ROOF COMPONENTS**.

Remove crossmember (1).

If necessary, release fabric adhesive tape and replace.

Installation:

Pitch cables must be correctly located in guide

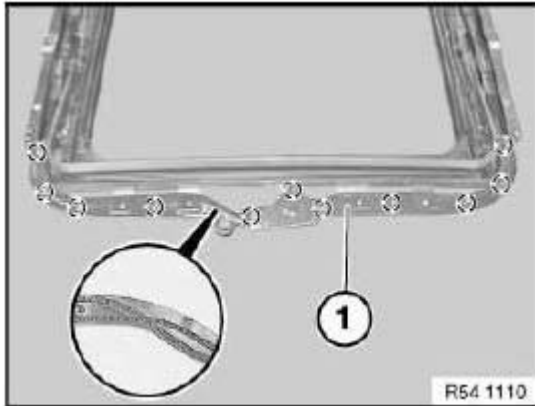


Fig. 37: Identifying Crossmember

Courtesy of BMW OF NORTH AMERICA, INC.

54 13 150 REMOVING AND INSTALLING REAR CROSSMEMBER

Necessary preliminary tasks:

- Remove glass slide/tilt sunroof. See **54 13 080 Removing and Installing Complete Glass Slide/Tilt Sunroof.**
- Remove drive. See **67 61 007 REMOVING AND INSTALLING/REPLACING DRIVE WITH GEAR (REAR) FOR ACTUATING SLIDE/TILT SUNROOF (REAR) .**

Release screws in marked area.

Tightening torque: 54 12 03AZ. See **54 12 MECHANICAL SUN ROOF COMPONENTS .**

Remove crossmember (1).

Installation:

Pitch cables must be correctly laid diagonally in guide.

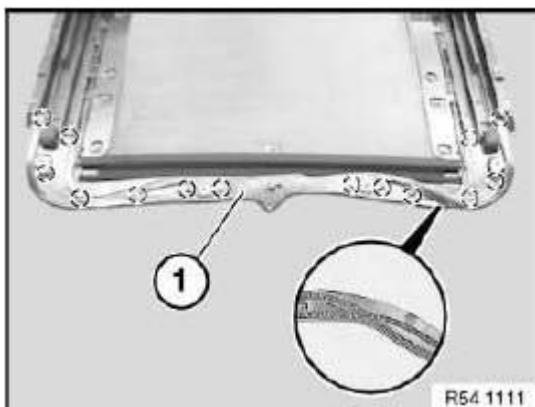


Fig. 38: Identifying Crossmember

Courtesy of BMW OF NORTH AMERICA, INC.

13 ELECTRICAL SUN ROOF COMPONENTS

54 0 ... NOTES ON PANORAMA GLASS ROOF (INITIALIZATION/NORMALIZATION/LEARNING OF CHARACTERISTIC CURVE)

NOTE: *Initialization* comprises:

- Normalization
- Learning characteristic curve

The mechanical end positions are recorded and stored during normalization.

The characteristic curve is learned immediately after normalization.

When the characteristic curve is learned, the mechanical closing forces of the panorama glass roof are recorded and stored for correct operation of the anti-trapping mechanism.

NOTE: Then carry out an *initialization*:

- if the panorama glass roof has been mechanically moved by means of the emergency actuator
- in the event of malfunctions, e.g. no one-touch function, no opening or no comfort function possible
- after disengagement of the drive unit
- after work is carried out on the mechanism of the panorama glass roof
- after the control unit has been replaced

WARNING: There is no anti-trapping protection during initialization.

NOTE: Starting situation in accordance with following description:

- Panorama glass sunroof closed
- Floating roofliner completely open

Normalization:

- Press and hold the switch in the "Lift" direction
- In the event of delayed starting or sudden stopping of the panorama glass roof, continue pressing the switch in the "Lift" direction

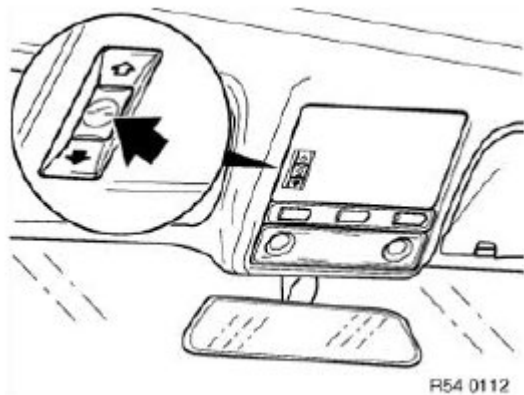


Fig. 39: Pressing Panorama Glass Roof Switch
 Courtesy of BMW OF NORTH AMERICA, INC.

- After reaching the lift end position (A), keep the switch pressed for approx. 15 seconds further
- Normalization is completed when the panorama glass roof in lift end position (A) presses again briefly in the direction of position (B).

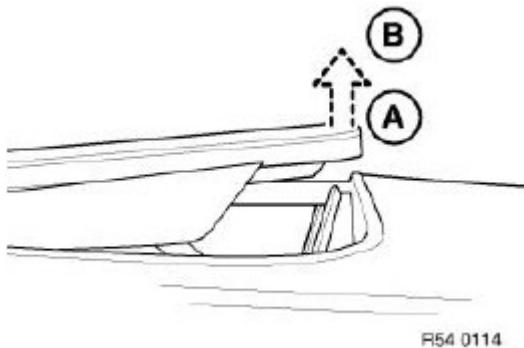


Fig. 40: Identifying Panorama Glass Roof In Lift End Position
 Courtesy of BMW OF NORTH AMERICA, INC.

Learning characteristic curve:

E53/E61/E83 only:

The curve is learned manually in the following steps:

- After normalization, keep switch pressed in "Lift" direction.
- The panorama glass roof stops for 5 seconds in the final raise position after normalization.
- Floating roofliner closes completely.
- Floating roofliner opens completely.
- The panorama glass roof then moves into the "Closed" position (learning of the "Closing from raising" curve)
- The panorama glass roof then moves into the "Open" end position and immediately back into the

"Closed" position (learning of the "Closing" curve).

- Floating roofliner closes completely.
- Release switch.

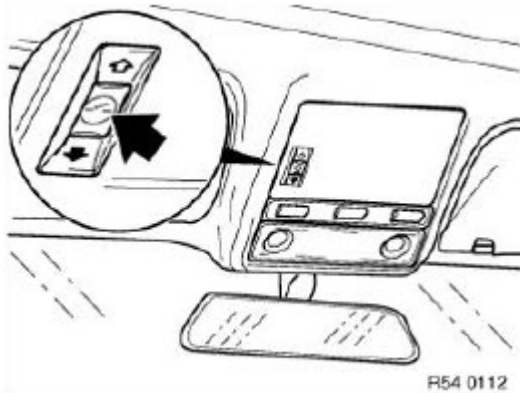


Fig. 41: Pressing Panorama Glass Roof Switch
Courtesy of BMW OF NORTH AMERICA, INC.

E63 only:

The curve is learned manually in the following steps:

- After normalization, keep switch pressed in "Lift" direction.
- The panorama glass roof stops for 5 seconds in the final raise position after normalization.
- Floating roofliner closes completely.
- Floating roofliner opens completely.
- The panorama glass roof then moves into the "Closed" position (learning of the "Closing from raising" curve)
- Floating roofliner closes completely.
- Release switch.

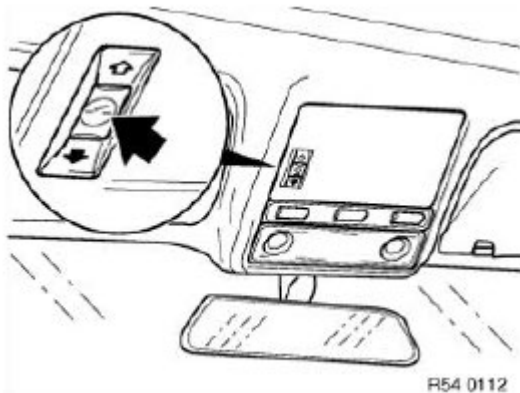


Fig. 42: Pressing Panorama Glass Roof Switch

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE:

- The entire operation lasts approx. 75 seconds
- Learning of the curve is terminated when the switch is released
- If the switch is released in the meantime, the entire procedure must be repeated
- On completion of successful initialization, the corresponding messages in the check control and the control display go out
- Carry out function check (tip function, anti-trapping protection and, if necessary, comfort function)

54 10 052 REPLACING FASTENER FOR WIND DEFLECTOR ON LEFT OR RIGHT

Special tools required:

- 51 3 057. See 51 3 050 TOOL .

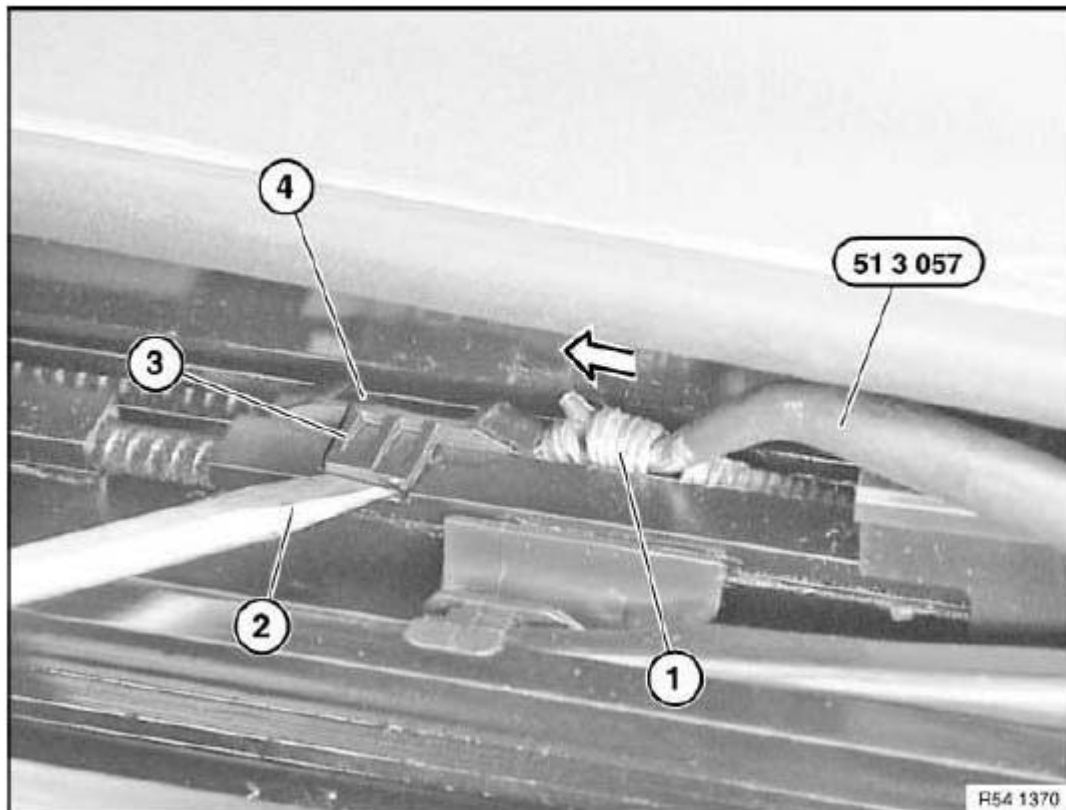


Fig. 43: Identifying Special Tools (51 3 057)

Courtesy of BMW OF NORTH AMERICA, INC.

Using a suitable tool (2), unlock catch (3) of fastener for wind deflector (4).

Slide fastener for wind deflector (4) and spring (1) with special tool **51 3 050 TOOL** in direction of arrow up to opening in guide.

IMPORTANT: Special tool 51 3 050 TOOL may only be removed from spring (1) after new fastener for wind deflector has been installed.

Installation:

Make sure catch of fastener for wind deflector is correctly seated and engaged.

Feed centering element for wind deflector (1) in direction of arrow out of opening (2) in guide (3).

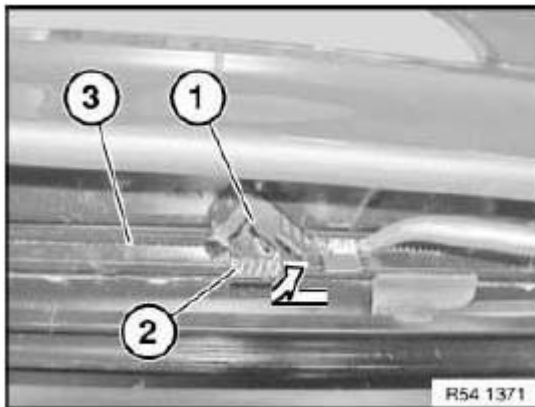


Fig. 44: Identifying Centering Element For Wind Deflector
Courtesy of BMW OF NORTH AMERICA, INC.

Using a suitable tool (2), disengage spring (1) of fastener for wind deflector (3) in direction of arrow.

Installation:

- Check guide for cleanness, remove foreign bodies/dirt if necessary
- Make sure spring is correctly seated on fastener for wind deflector

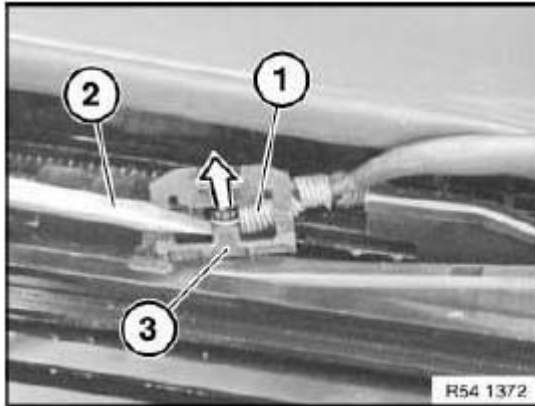


Fig. 45: Disengaging Spring Of Fastener For Wind Deflector
 Courtesy of BMW OF NORTH AMERICA, INC.

54 13 003 ADJUSTING GLASS SLIDE/TILT SUNROOF LID

Special tools required:

- 00 9 315 ASSEMBLY WEDGES (SET IN PLASTIC CASE)
- 00 9 340 DISASSEMBLY AID (2)

Necessary preliminary tasks:

- Remove gaiter on left and right. See **54 10 160 Replacing Left Or Right Gaiter For Glass Slide/Tilt Sunroof.**
- Close glass slide/tilt sunroof completely

If the glass slide/tilt sunroof is outside the adjustment tolerances, adjust as follows:

Adjusting glass slide/tilt sunroof unit:

Carry out the following step on one side first and then the other (first left, then right or vice versa):

- Insert Torx screws (1) on left/right so that glass roof panel can still just be adjusted
- Move glass slide/tilt sunroof lid as required
- Make sure all screws are tightened down.
- Tightening torque, 54 12 2AZ. See **54 12 MECHANICAL SUN ROOF COMPONENTS** .
- Repeat procedure on other side.

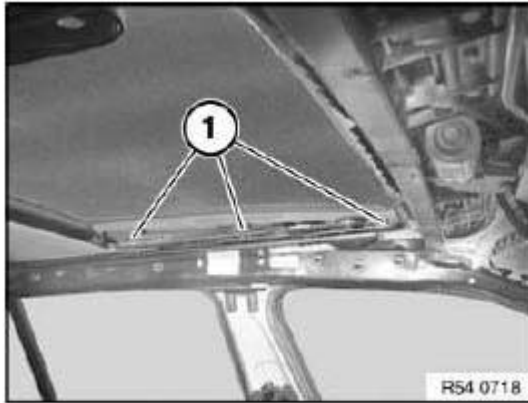


Fig. 46: Identifying Torx Screws

Courtesy of BMW OF NORTH AMERICA, INC.

Distance setting:

Distance A between body and glass lid (without seal):

$A = 5.8 \pm 0.3$ mm all round

Check same gap of glass lid and body with special tool 00 9 340. See **DISASSEMBLY AID (2)**.

Slide special tool 00 9 340. See **DISASSEMBLY AID (2)** or similar between seal and insert. It must be possible to slide the card against the same level of resistance.

Slide glass lid towards front or rear until ideal position is reached.

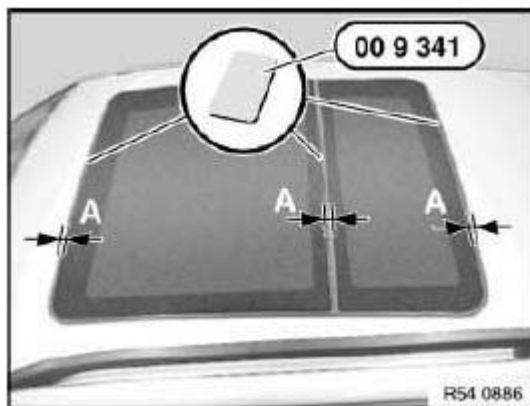


Fig. 47: Identifying Special Tools (00 9 341)

Courtesy of BMW OF NORTH AMERICA, INC.

Height adjustment:

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NOTE: Front glass lid must be adjusted first.

Check height of glass lid (1) in relation to body (2) with special tool 00 9 315. See **ASSEMBLY WEDGES (SET IN PLASTIC CASE)**.

Press glass lid (1) at front and rear towards top or bottom until ideal position is reached.

Height:

- Front edge of glass lid at front 0 to 1 mm under roof edge
- Rear edge of glass lid at front 0 to 0.5 mm over glass lid at rear
- Rear edge of glass lid at rear 0 to 1 mm over roof edge

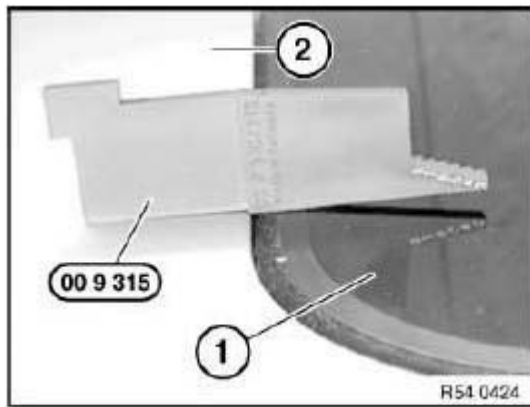


Fig. 48: Identifying Special Tools (00 9 315)
Courtesy of BMW OF NORTH AMERICA, INC.

Check function and adjustment.

54 13 050 REPLACING SEAL FOR SLIDE/TILT SUNROOF LID AT REAR

Necessary preliminary tasks:

- Open glass slide/tilt sunroof

NOTE: Follow repair instructions for bonded seals on glass slide/tilt sunroof. See **54 0 ... Repair Instructions For Bonded Seals.**

Detach seal (1) from slide/tilt sunroof lid.

Installation:

Clean bonding surface with adhesive remover (sourcing reference: BMW Parts Service).

Press seal without stretching (squashing).

IMPORTANT: Do not touch bonding surface.
Surface temperature > or =20 °C
Incorrect bonding of the seal will result in leakage.

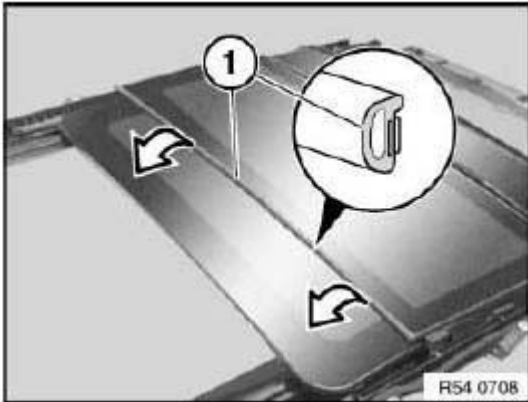


Fig. 49: Detaching Seal From Slide/Tilt Sunroof Lid
 Courtesy of BMW OF NORTH AMERICA, INC.

54 13 055 REPLACING SEAL FOR SLIDE/TILT SUNROOF FRAME

Necessary preliminary tasks:

- Remove glass slide/tilt sunroof lid at rear. See 54 10 175 Removing and Installing Rear Glass Slide/Tilt Sunroof Cover.
- Lower (open) glass slide/tilt sunroof lid at front

NOTE: Follow repair instructions for bonded seals on glass slide/tilt sunroof. See 54 0 ... Repair Instructions For Bonded Seals.

Pull off seal of sunroof cut-out at contact edge starting from body. (Peel off)

Installation:

Clean bonding surface with adhesive remover (sourcing reference: BMW Parts Service).

Press seal without stretching (squashing).

Stick on seal in sections.

Establish seal joint.

IMPORTANT: Do not touch bonding surface.
Surface temperature > or =20 °C
Incorrect bonding of the seal will result in leakage.

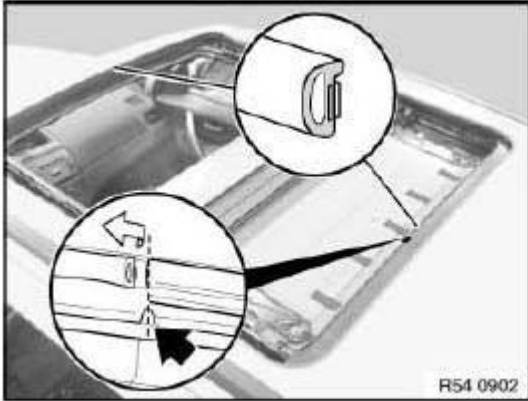


Fig. 50: Pulling Off Seal Of Sunroof Cut-Out
 Courtesy of BMW OF NORTH AMERICA, INC.

54 13 060 REMOVING AND INSTALLING/REPLACING FRONT FLOATING ROOFLINER FOR GLASS SLIDE/TILT SUNROOF

This operation is described in section on:

- Removing both floating roofliners for glass slide/tilt sunroof. See **54 13 070 Removing and Installing/Replacing Both Floating Roofliners For Glass Slide/Tilt Sunroof.**

54 13 065 REMOVING AND INSTALLING/REPLACING REAR FLOATING ROOFLINER FOR GLASS SLIDE/TILT SUNROOF

This operation is described in section on:

- Removing both floating roofliners for glass slide/tilt sunroof. See **54 13 070 Removing and Installing/Replacing Both Floating Roofliners For Glass Slide/Tilt Sunroof.**

54 13 070 REMOVING AND INSTALLING/REPLACING BOTH FLOATING ROOFLINERS FOR GLASS SLIDE/TILT SUNROOF

Necessary preliminary tasks:

- Remove glass slide/tilt sunroof lid at front and rear. See **54 10 170 Removing and Installing Front Glass Slide/Tilt Sunroof Cover** and **54 10 175 Removing and Installing Rear Glass Slide/Tilt Sunroof Cover.**

NOTE: Front and rear floating roofliners can be removed separately from each other. Make sure that grease on the rails does not come into contact with the floating roofliner.

Open floating headliner approx. halfway.

Front rain channel must be situated between first and second screws.

Release screws (1).

Tightening torque. See **54 12 MECHANICAL SUN ROOF COMPONENTS** .

Remove star shims.

Installation:

Replace microencapsulated screws and insert with Loctite.

Make sure star shims are correctly positioned.

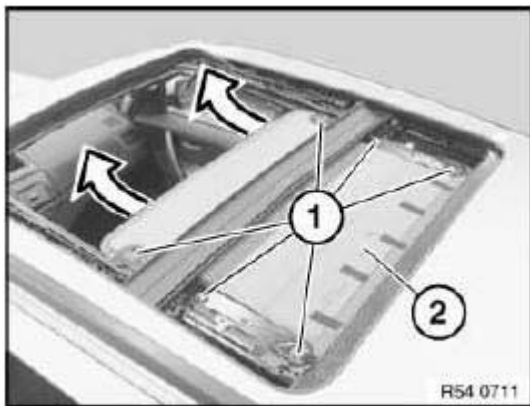


Fig. 51: Removing Star Shims

Courtesy of BMW OF NORTH AMERICA, INC.

Pull out floating roofliner (2) in direction of arrow.

If necessary, press wind deflector downwards.

Installation:

Carefully raise floating roofliner mechanism.

Rear floating roofliner:

Close floating roofliner.

Release screws (1).

Tightening torque. See **54 12 MECHANICAL SUN ROOF COMPONENTS** .

Installation:

Replace microencapsulated screws and insert with Loctite.

Remove tensioning springs (left side only) and shims.

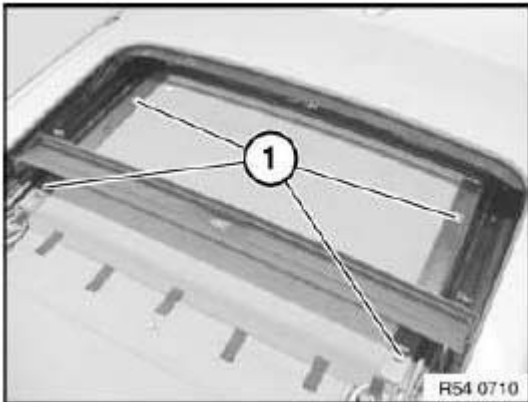


Fig. 52: Identifying Screw

Courtesy of BMW OF NORTH AMERICA, INC.

Slide floating roofliner (4) in direction of arrow (1) between outer body skin and roofliner.

Slide floating roofliner (4) up to end of control rail (3).

Raise floating roofliner (4) and remove over control rail (3) in direction of arrow (2).

IMPORTANT: Slider set can fall sideways out of guide rail.

Risk of damage to drag arm.

Secure slider set or if necessary remove. See 54 10 070 Removing and Installing/Replacing Slider Set For Floating Roofliner.

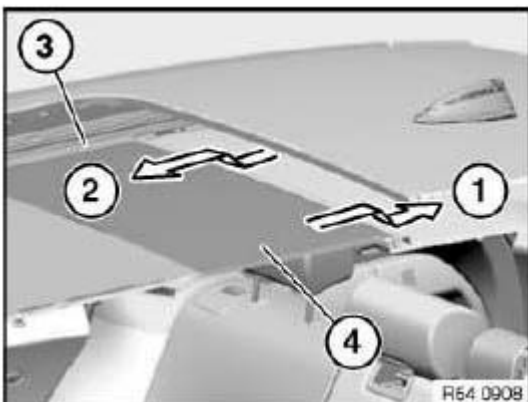


Fig. 53: Raising Floating Roofliner

Courtesy of BMW OF NORTH AMERICA, INC.

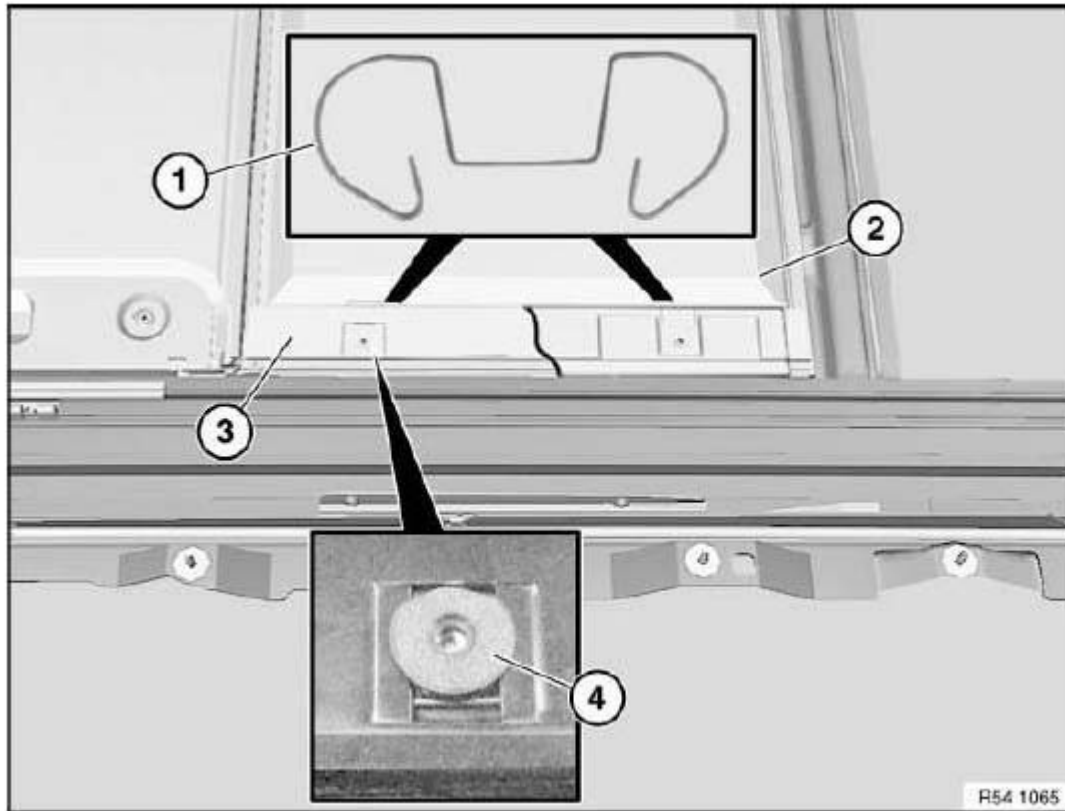


Fig. 54: Identifying Spring And Recess Of Rear Floating Roofliner
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Tensioning springs (1) must rest correctly in recess of rear floating roofliner (2).

Left side: make sure washer (4) is correctly positioned with turning lock.

Right side: insert white plastic shims.

Replace microencapsulated screws and insert with Loctite.

Tightening torque. See **54 12 MECHANICAL SUN ROOF COMPONENTS**

IMPORTANT: A gap of light between the floating roofliners is not permitted.

Performing function check:

- Floating roofliner must be able to move in control rail in X-direction.
- Floating roofliner is positioned on right and can be pressed towards left under spring tension.
- Floating roofliner springs back towards right into initial position.

54 13 080 REMOVING AND INSTALLING COMPLETE GLASS SLIDE/TILT SUNROOF**Special tools required:**

- 54 1 110

Necessary preliminary tasks:

- Remove roofliner. See **51 44 013 REMOVING AND INSTALLING/REPLACING ROOFLINER (VERSION WITH PANORAMA SUNROOF)** .
- Remove head airbag gas generator. See **72 12 060 REMOVING AND INSTALLING/REPLACING LEFT OR RIGHT HEAD AIRBAG** .
- Open rear lid

IMPORTANT: Two persons are required to help in removing the glass slide/tilt sunroof.

Unfasten plug connection (1) and disconnect.

Installation:

Initialize glass slide/tilt sunroof. See **54 0 ... Notes on Panorama Glass Roof (Initialization/Normalization/Learning Of Characteristic Curve)**.



Fig. 55: Identifying Plug Connection

Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Airbag lead must not be damaged.

Unclip holder with airbag lead from glass slide/tilt sunroof frame.

Installation:

Lay airbag lead without tension or kinks.

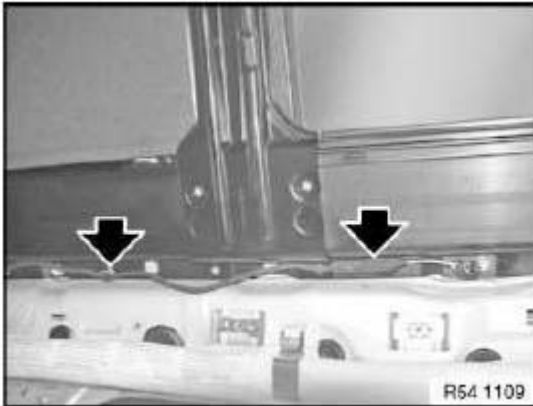


Fig. 56: Locating Holder With Airbag Lead
Courtesy of BMW OF NORTH AMERICA, INC.

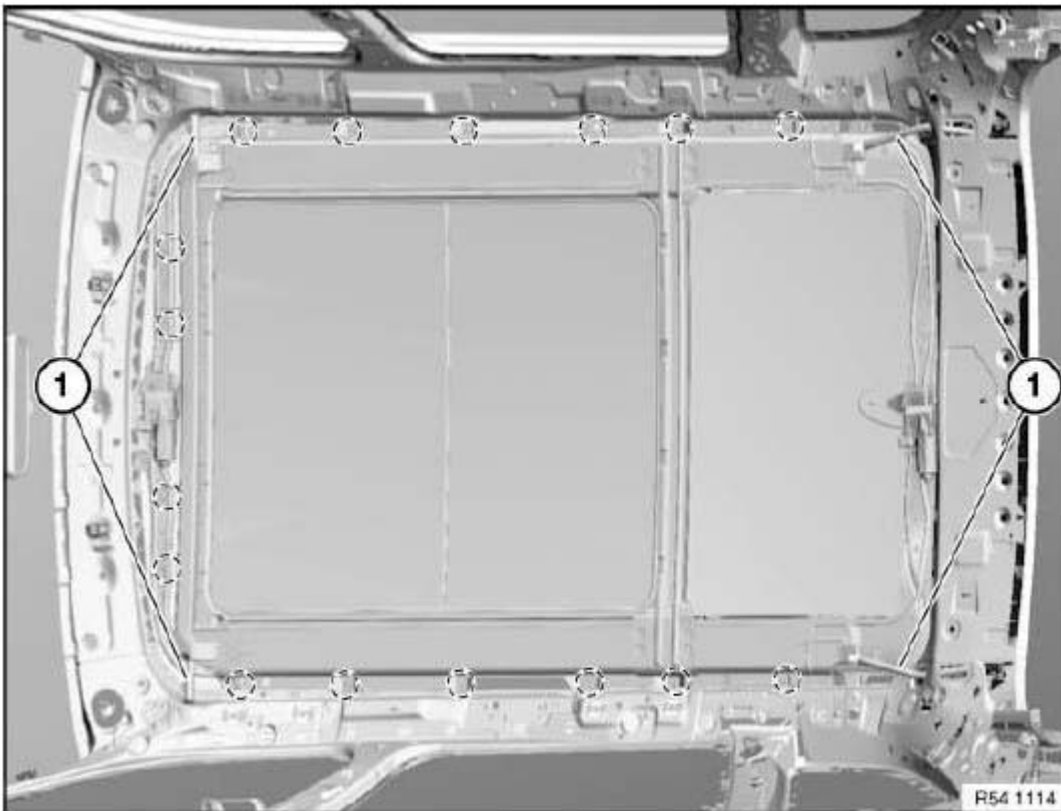


Fig. 57: Identifying Water Drain Hoses
Courtesy of BMW OF NORTH AMERICA, INC.

- Detach water drain hoses (1)

NOTE: Check hoses for damage and moisten with water before fitting

- Release screws in marked area

Tightening torque: 54 12 6AZ. See **54 12 MECHANICAL SUN ROOF COMPONENTS**.

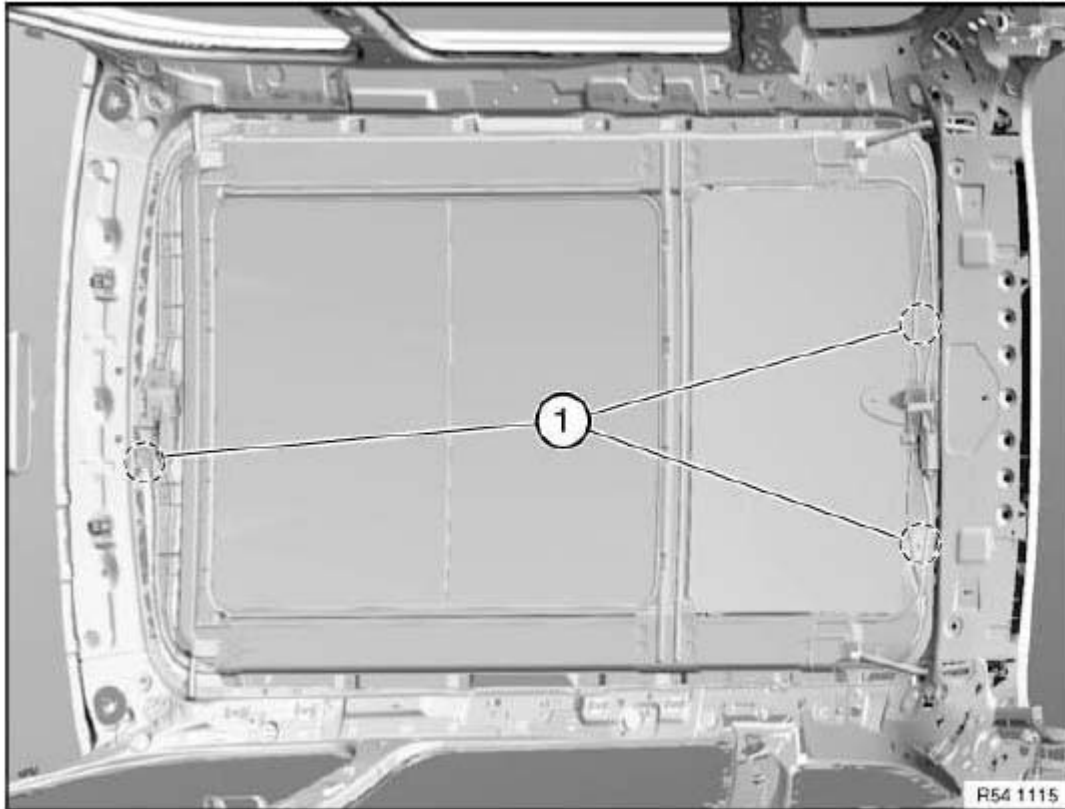


Fig. 58: Identifying Screw

Courtesy of BMW OF NORTH AMERICA, INC.

- Helper must hold glass slide/tilt sunroof to prevent it falling out.
- Release screws (1) on and carefully lower slide/tilt sunroof.

IMPORTANT: Do not damage any surrounding parts when removing the glass slide/tilt sunroof.

- Remove glass slide/tilt sunroof completely (through rear lid at rear).

Installation:

If necessary, remove fabric adhesive tape.

To stop grating noises, secure all screws (1) prior to installation with plastic washers (2).

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If the standard screws can no longer grip, use "repair screws" (have larger threads).

IMPORTANT: Do not crush any cables when fitting the glass slide/tilt sunroof. Initialize glass slide/tilt sunroof. See 54 0 ... Notes on Panorama Glass Roof (Initialization/Normalization/Learning Of Characteristic Curve).

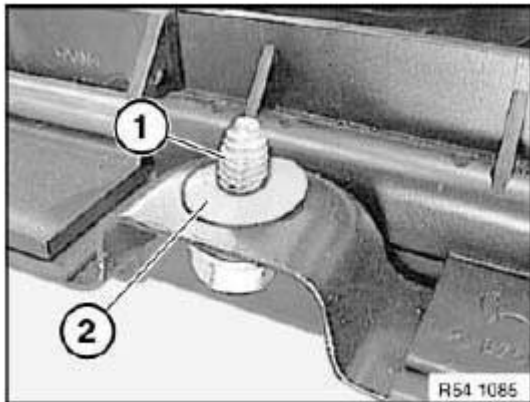


Fig. 59: Identifying Plastic Washers And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

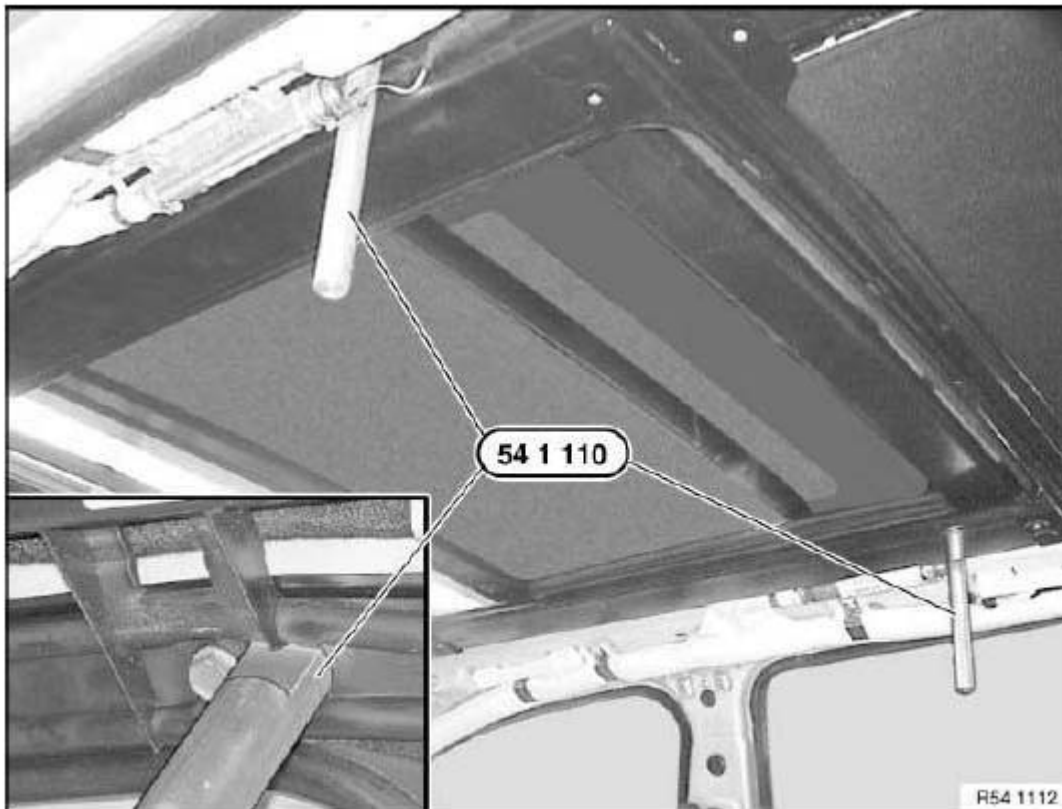


Fig. 60: Identifying Special Tools (54 1 110)
Courtesy of BMW OF NORTH AMERICA, INC.

To align panorama sunroof to body-cutout, insert screws and tighten loosely.

Panorama sunroof must still be able to move in the body-cutout.

On account of leaks, panorama sunroof must be exactly aligned to body-cutout.

Insert special tool 54 1 110 into centering bores up to stop in panorama sunroof and body.

Tighten down screws.

Tightening torque: 54 12 6AZ. Refer to **54 12 MECHANICAL SUN ROOF COMPONENTS**

IMPORTANT: Do not crush any cables when fitting the glass slide/tilt sunroof.
Initialize glass slide/tilt sunroof. See **54 0 ... Notes on Panorama Glass Roof (Initialization/Normalization/Learning Of Characteristic Curve)**.

54 13 090 REMOVING AND INSTALLING/REPLACING WIND DEFLECTOR

Necessary preliminary tasks:

- Open slide/tilt sunroof

NOTE: Shown removed here for purposes of clarity.
Pull plastic strip (1) on net of wind deflector out of retainers (2).

IMPORTANT: Do not pull on the net so as to avoid tearing the net.

Installation:

If necessary, reinstall retainers in frame.

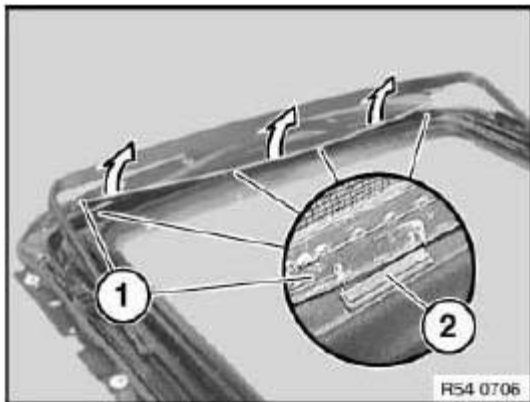


Fig. 61: Pulling Plastic Strip
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Tape off paintwork in working area.
Avoid bending wind deflector (1).

NOTE: Pictures show removal on the left side, proceed in the same way for the right side.
Slide control carriage (4) for wind deflector with plastic wedge towards front.

Carefully lift wind deflector (1) in direction of arrow with guide (2) out of rail (3).

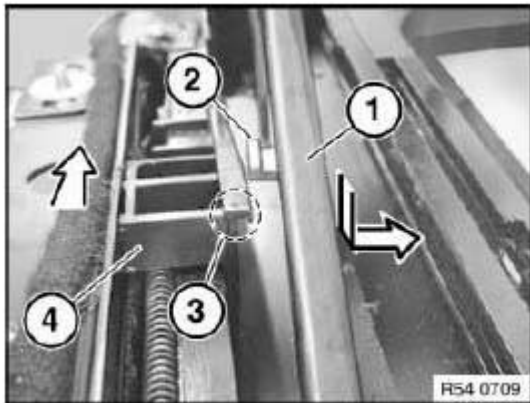


Fig. 62: Lifting Wind Deflector With Guide
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Make sure clamping elements are correctly seated.

Tilt wind deflector (1) into vertical position and remove.

Installation:

Make sure wind deflector (1) is correctly seated in pivot point (2).

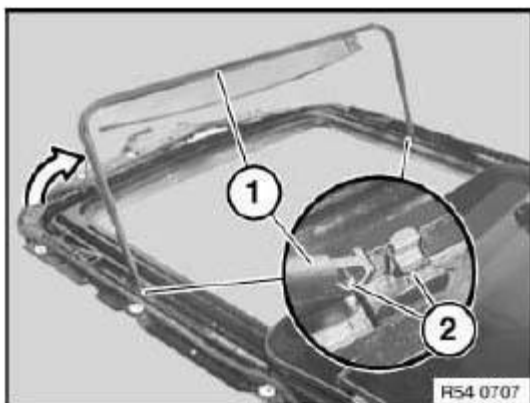


Fig. 63: Identifying Wind Deflector And Pivot Point
Courtesy of BMW OF NORTH AMERICA, INC.

54 13 095 REPLACING/CLEANING NET FOR WIND DEFLECTOR

Necessary preliminary tasks:

- Open slide/tilt sunroof

Cleaning:

The wind deflector net can be cleaned while installed as follows:

- Accelerate vehicle with glass slide/tilt sunroof open to over 5 km/h
- Stop vehicle and turn ignition key to position 2.

NOTE: This prevents the wind deflector from retracting, and thereby leaving it fully open.

Net is now accessible and easy to clean.

Replacement:

Pull plastic strip (1) out of retainers (2) on panorama glass sunroof and wind deflector.

Installation:

If necessary, reinstall retainers.

Clip new net into place.

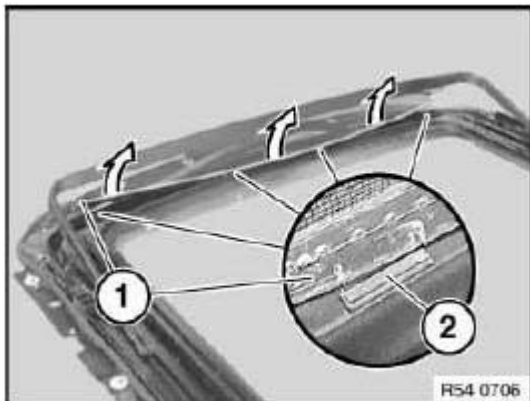


Fig. 64: Pulling Plastic Strip
Courtesy of BMW OF NORTH AMERICA, INC.

54 13 100 REMOVING AND INSTALLING/REPLACING DRIP MOLDING

Necessary preliminary tasks:

- Remove complete glass slide/tilt sunroof. See **54 13 080 Removing and Installing Complete Glass Slide/Tilt Sunroof.**
- Remove glass slide/tilt sunroof lid at rear. See **54 10 175 Removing and Installing Rear Glass Slide/Tilt Sunroof Cover.**
- Remove glass slide/tilt sunroof lid at front. See **54 10 175 Removing and Installing Rear Glass Slide/Tilt Sunroof Cover.**

IMPORTANT: Risk of damage to drip molding carrier.

Carefully unclip drip molding (1) upwards out of carrier (2).

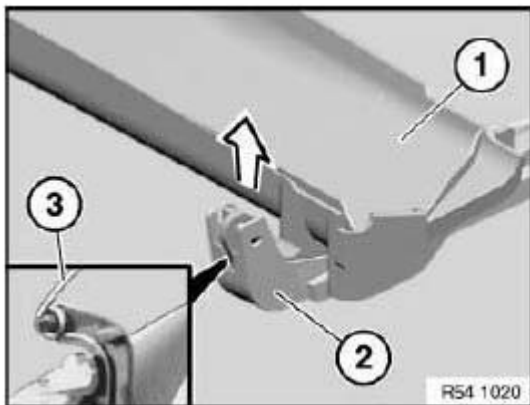


Fig. 65: Uncoupling Drip Molding

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Attach spring (3) to drip molding pivot point.

Make sure spring is correctly positioned in drip molding.

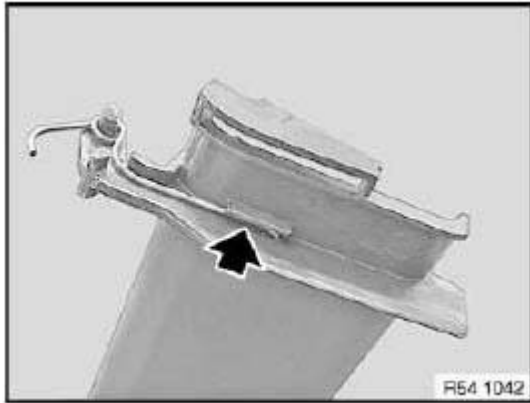


Fig. 66: Locating Spring

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Observe installation sequence:

1. Suspend spring in drip molding carrier
2. Press drip molding onto glass slide/tilt sunroof
3. Clip pivot point (bearing) of drip molding into carrier

Check drip molding for spring tension.

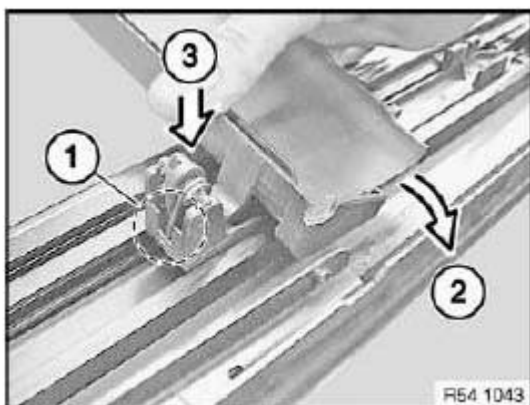


Fig. 67: Pressing Drip Molding Onto Glass Slide/Tilt Sunroof

Courtesy of BMW OF NORTH AMERICA, INC.

54 13 105 REMOVING AND INSTALLING/REPLACING REAR DRIP MOLDING

Necessary preliminary tasks:

- Remove complete glass slide/tilt sunroof. See 54 13 080 Removing and Installing Complete Glass Slide/Tilt Sunroof.

- Remove glass slide/tilt sunroof lid at rear. See **54 10 175 Removing and Installing Rear Glass Slide/Tilt Sunroof Cover.**

Unlock tab (2) and remove drip molding (1) towards top.

NOTE: **2 springs are loosely connected to guide for drip molding.**

Installation:

Make sure springs are reinstalled on drip molding carriers.

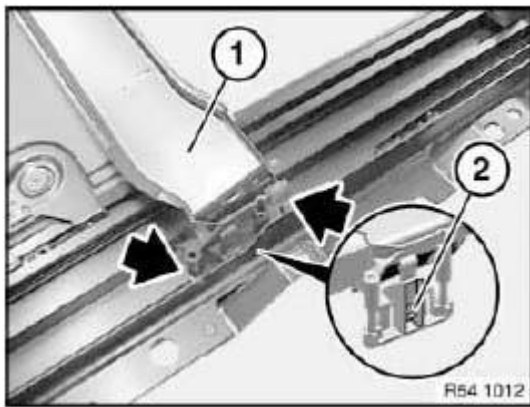


Fig. 68: Locating Drip Molding And Tab
Courtesy of BMW OF NORTH AMERICA, INC.

Removing drip molding carrier:

NOTE: **Drip molding carrier cannot be removed without incurring damage.**

Break out tabs with a screwdriver and lever out carrier.

Installation:

Replace drip molding carrier and hook into place.

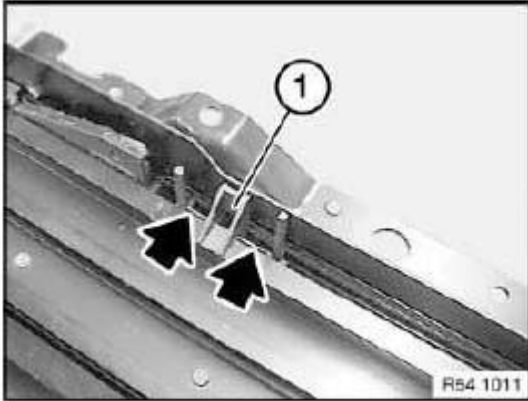


Fig. 69: Identifying Tabs

Courtesy of BMW OF NORTH AMERICA, INC.

54 13 130 REMOVING AND INSTALLING FRONT CROSSMEMBER

Necessary preliminary tasks:

- Remove glass slide/tilt sunroof. See **54 13 080 Removing and Installing Complete Glass Slide/Tilt Sunroof.**
- Remove drive. See **67 61 005 REPLACING DRIVE WITH GEAR (FRONT) FOR ACTUATING SLIDE/TILT SUNROOF.**

Release screws in marked area.

Tightening torque: 54 12 03AZ. See **54 12 MECHANICAL SUN ROOF COMPONENTS.**

Remove cross-member (1).

If necessary, release fabric adhesive tape and replace.

Installation:

Pitch cables must be correctly located in guide

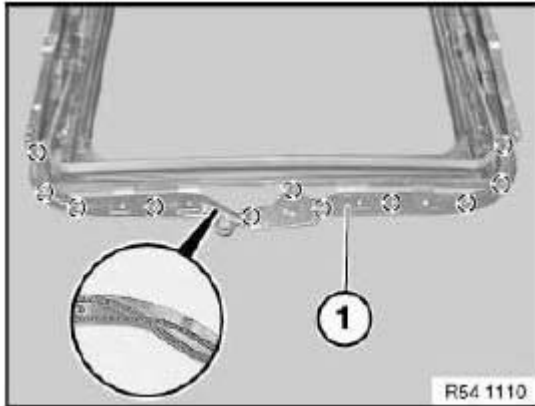


Fig. 70: Identifying Crossmember

Courtesy of BMW OF NORTH AMERICA, INC.

54 13 150 REMOVING AND INSTALLING REAR CROSSMEMBER

Necessary preliminary tasks:

- Remove glass slide/tilt sunroof. See **54 13 080 Removing and Installing Complete Glass Slide/Tilt Sunroof.**
- Remove drive. See **67 61 005 REPLACING DRIVE WITH GEAR (FRONT) FOR ACTUATING SLIDE/TILT SUNROOF .**

Release screws in marked area.

Tightening torque: 54 12 03AZ. See **54 12 MECHANICAL SUN ROOF COMPONENTS .**

Remove cross-member (1).

Installation:

Pitch cables must be correctly laid diagonally in guide.

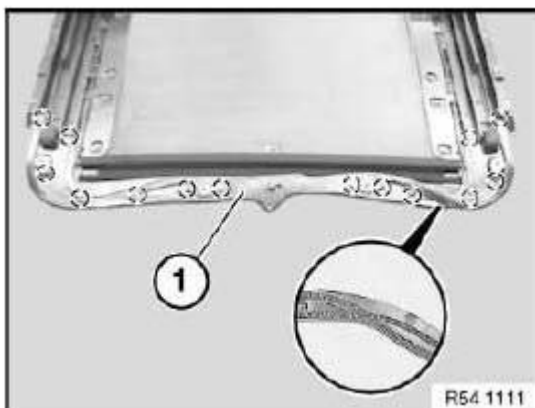


Fig. 71: Identifying Crossmember

Courtesy of BMW OF NORTH AMERICA, INC.