

2001-2003 ACCESSORIES AND EQUIPMENT

Electrical Drive Units - Repair Instructions - X5 (3.0i) M54

MIRROR ADJUSTMENT

67 13 005 REPLACING DRIVE FOR LEFT OR RIGHT ELECTRICALLY ADJUSTABLE DOOR MIRROR (WITH MIRROR MEMORY)

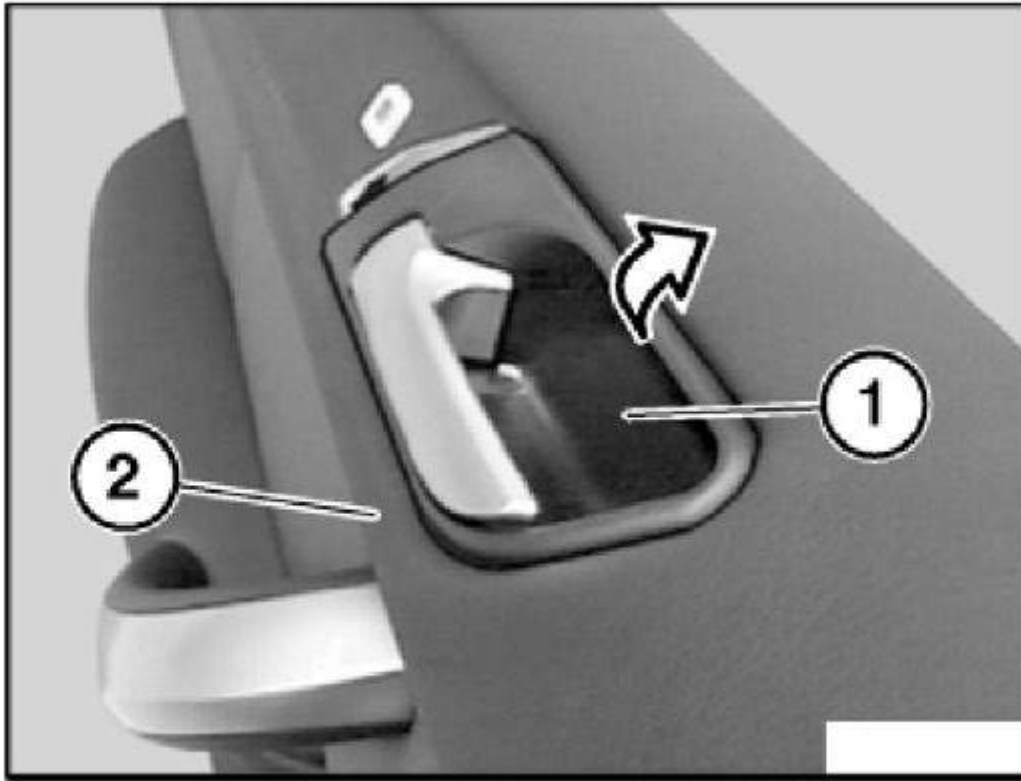
Remove mirror glass. Refer to **51 16 026 REPLACING MIRROR GLASS FOR REAR-VIEW MIRROR (ON FRONT DOOR)** .

Remove housing from door mirror. Refer to **51 16 040 REMOVING AND INSTALLING/REPLACING HOUSING ON LEFT OR RIGHT DOOR MIRROR** .

NOTE: **Secure drive for electrically adjustable door mirror (2) against falling out.**

Loosen screws (1).

Remove drive for electrically adjustable door mirror (2) in direction of arrow.



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Fig. 1: Removing Drive For Electrically Adjustable Door Mirror
Courtesy of BMW OF NORTH AMERICA, INC.

Detach wiring harness directly from drive for electrically adjustable door mirror (2).

SERVO/POSITIONING DRIVES

67 16 010 REMOVING AND INSTALLING/REPLACING LEFT HEADLIGHT VERTICAL AIM ADJUSTER

Necessary Preliminary Tasks:

- **M54 Only** : Remove suction filter housing. Refer to **13 71 000 REMOVING AND INSTALLING INTAKE FILTER HOUSING (M54)** .

Up To 10/2003:

Subsequent work is described in: **67 16 011 REMOVING AND INSTALLING/REPLACING LEFT**

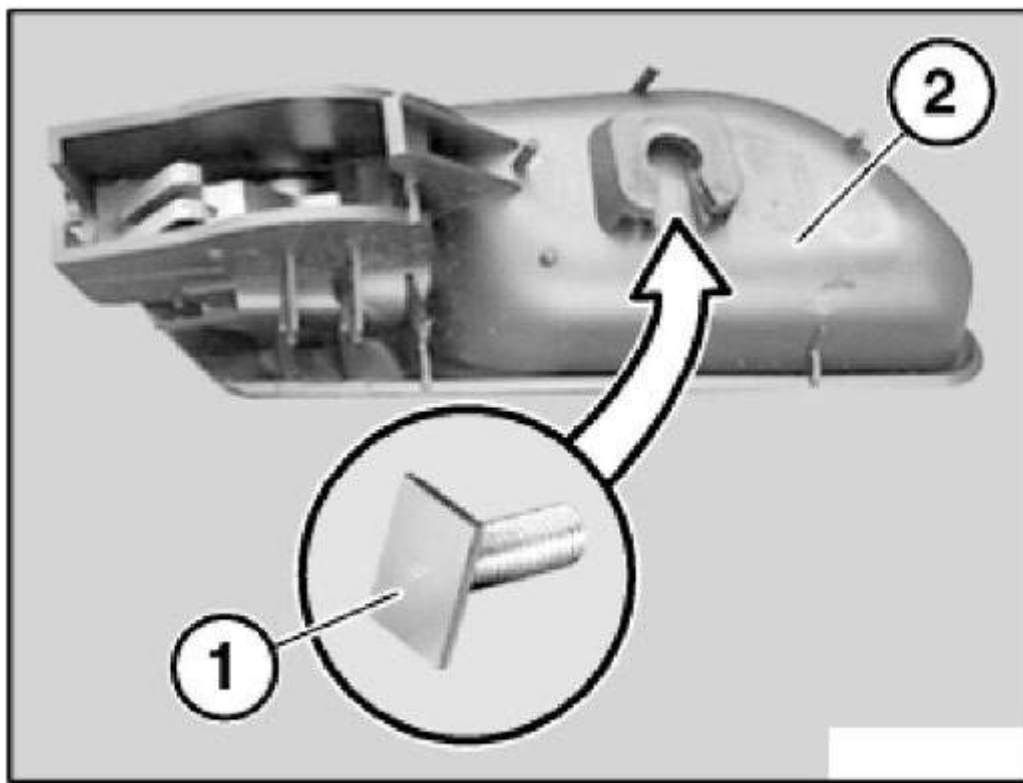
HEADLIGHT VERTICAL AIM ADJUSTER (XENON HEADLIGHT)

From 10/2003:

Release screws (1) and remove cover (2) in direction of arrow.

Installation:

Make sure seal of cover (2) is correctly seated.



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Fig. 2: Removing Cover And Screws

Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect plug connection (1).

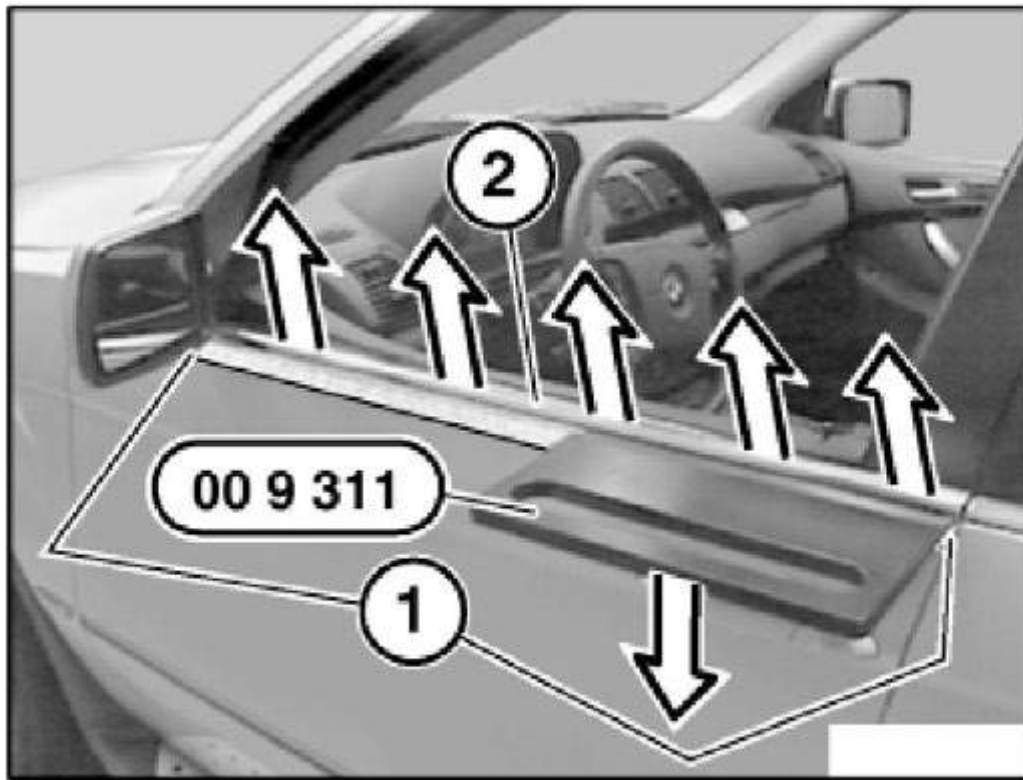
Release screws (3).

Feed headlight vertical aim adjuster (2) with ball head (4) in direction of arrow out of associated fixture and pull

out.

Installation:

Make sure ball head (4) is correctly seated in associated fixture.



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Fig. 3: Disconnecting Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

All:

Installation:

Adjust headlights. Refer to **63 10 004 ADJUSTING HEADLIGHTS** .

67 16 011 REMOVING AND INSTALLING/REPLACING LEFT HEADLIGHT VERTICAL AIM ADJUSTER (XENON HEADLIGHT)

Necessary Preliminary Tasks:

- **M54 Only:** Remove suction filter housing. Refer to **13 71 000 REMOVING AND INSTALLING INTAKE FILTER HOUSING (M54)**.

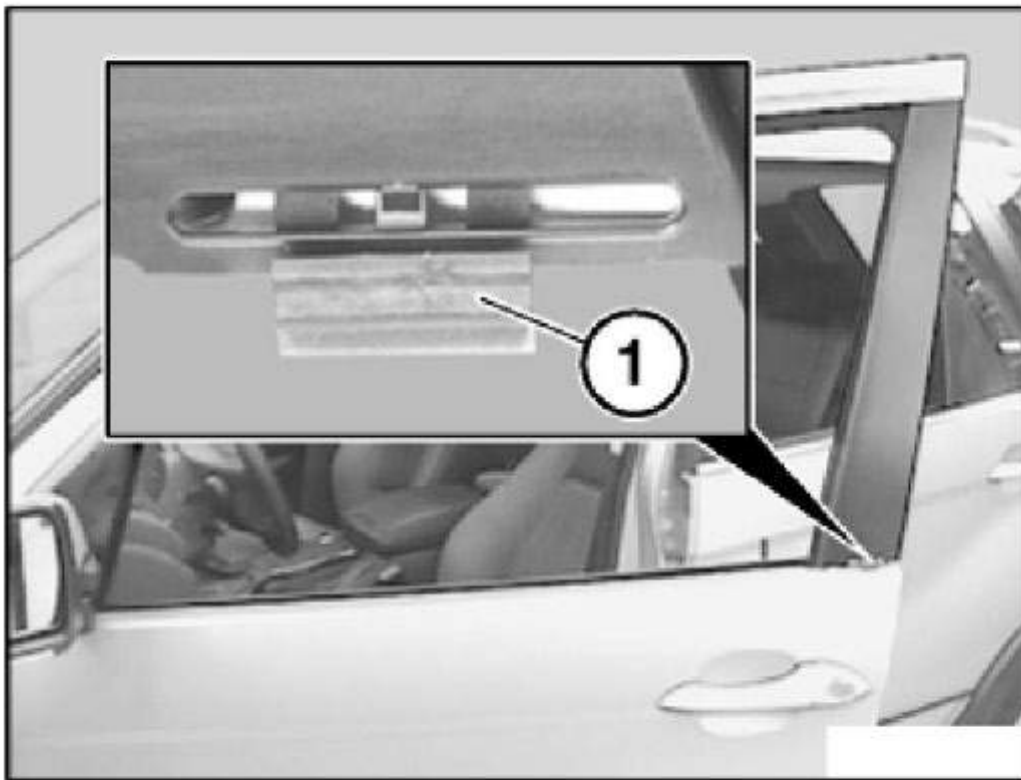
Up To 10/2003:

NOTE: For purposes of clarity, illustration shows component removed.

Release screws (1) and remove protective cap (2).

Installation:

If necessary, replace seal of protective cap (2).



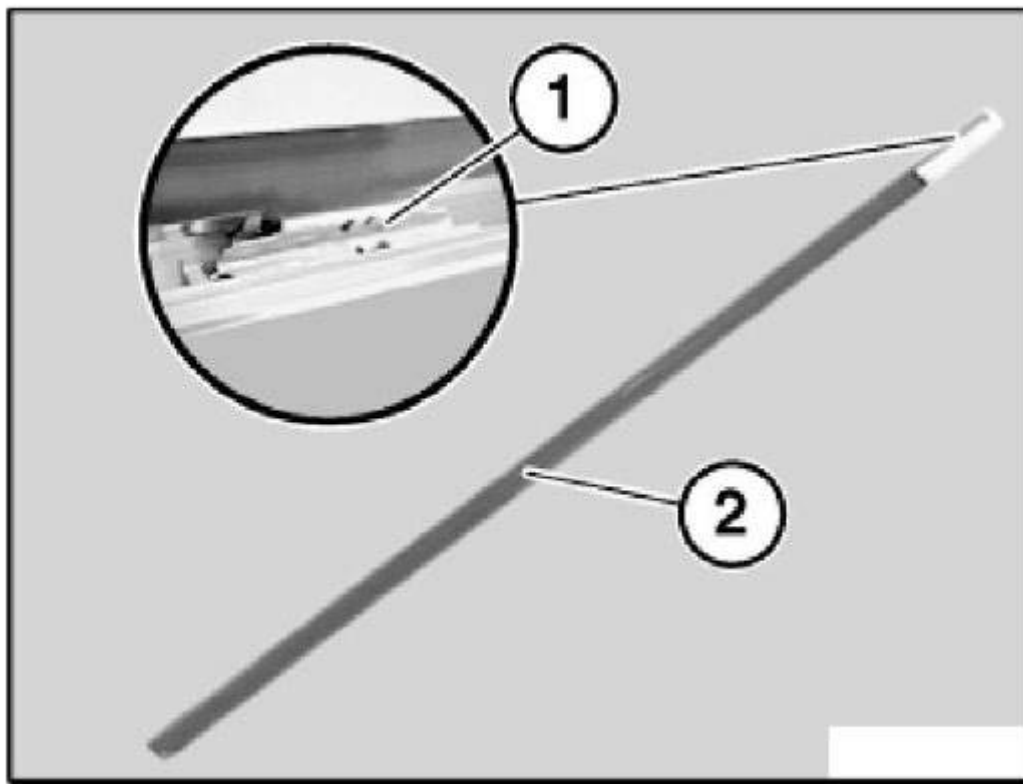
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Fig. 4: Identifying Protective Cap
Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect plug connection (1).

Loosen screws (2).

Feed out headlight vertical aim adjuster (3) in direction of arrow and pull out.



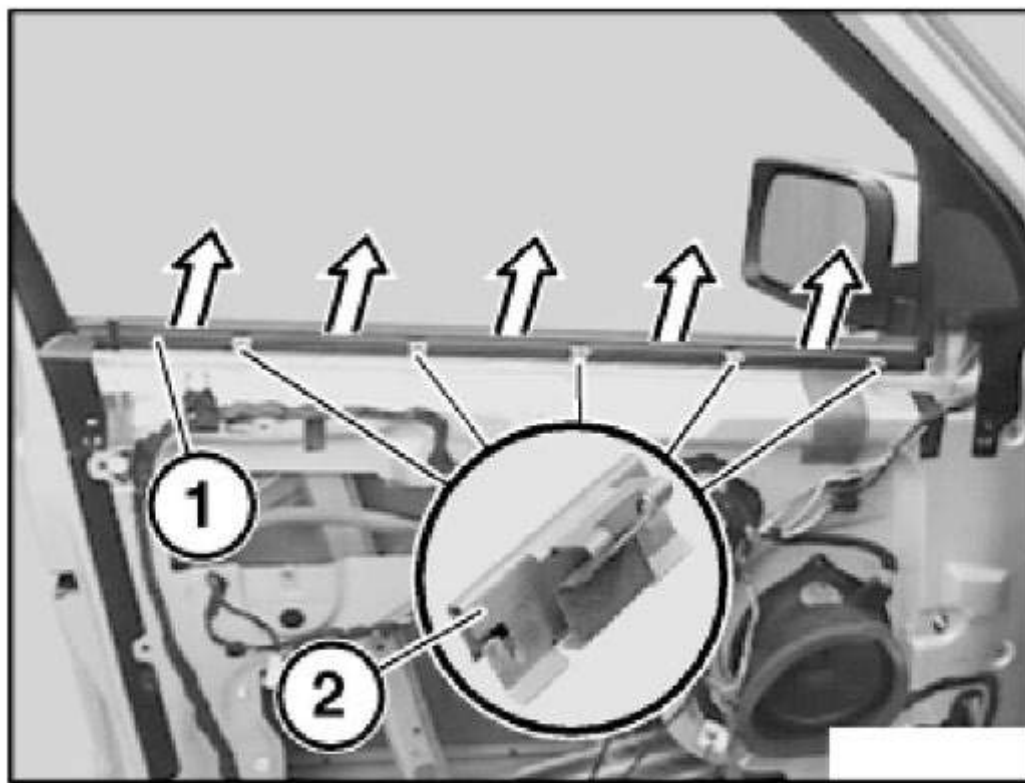
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Fig. 5: Locating Headlight Vertical Aim Adjuster
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Pull out bulb holder of high-beam headlight.

Feed ball head (1) of headlight vertical aim adjuster into guide (2).



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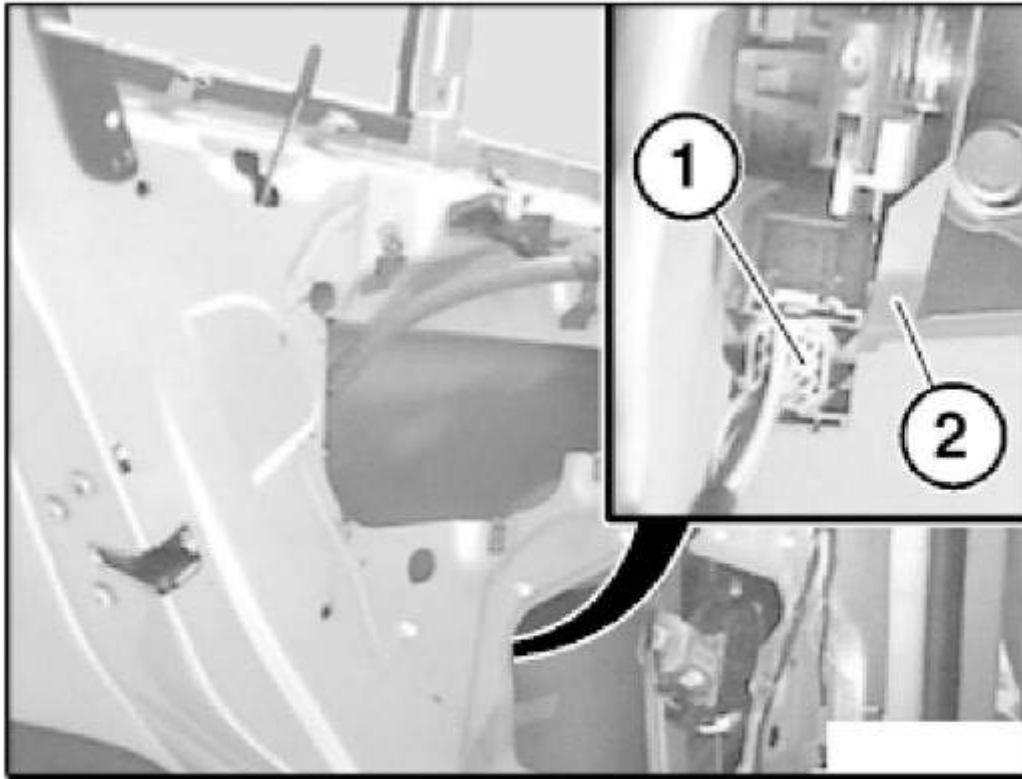
Fig. 6: Removing High-Beam Headlight Bulb Holder
Courtesy of BMW OF NORTH AMERICA, INC.

From 10/2003:

Release screws (1) and remove cover (2) in direction of arrow.

Installation:

Make sure seal of cover (2) is correctly seated.



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Fig. 7: Removing Cover And Releasing Screws
Courtesy of BMW OF NORTH AMERICA, INC.

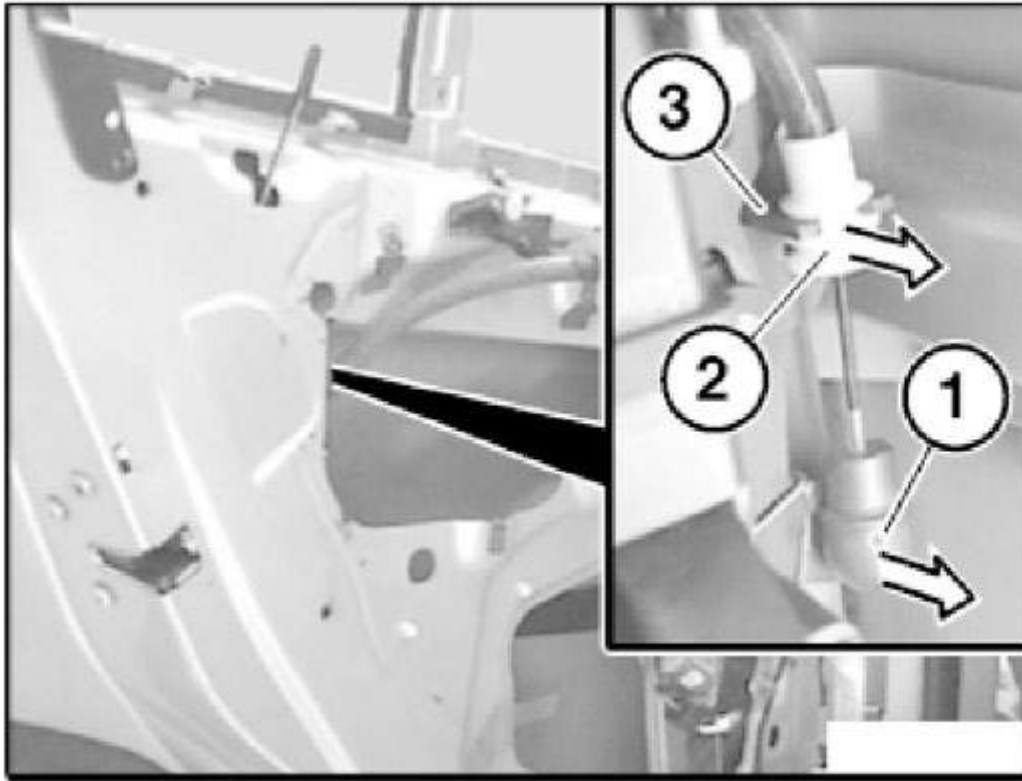
Disconnect plug connection (1).

Loosen screws (2).

Feed headlight vertical aim adjuster (3) with ball head (4) in direction of arrow out of associated fixture and pull out.

Installation:

Make sure ball head (4) is correctly seated in associated fixture.



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Fig. 8: Removing Headlight Vertical Aim Adjuster
Courtesy of BMW OF NORTH AMERICA, INC.

All:

Installation:

Adjust headlights. Refer to **63 10 004 ADJUSTING HEADLIGHTS** .

67 16 015 REMOVING AND INSTALLING/REPLACING RIGHT HEADLIGHT VERTICAL AIM ADJUSTER

Subsequent work is described in:

"Removing and installing/replacing left headlight vertical aim adjuster". Refer to **67 16 010 REMOVING AND INSTALLING/REPLACING LEFT HEADLIGHT VERTICAL AIM ADJUSTER** .

67 16 016 REMOVING AND INSTALLING/REPLACING RIGHT HEADLIGHT VERTICAL AIM

ADJUSTER (XENON HEADLIGHT)

Subsequent work is described in:

"Removing and installing/replacing left headlight vertical aim adjuster (xenon headlight)". Refer to **67 16 011 REMOVING AND INSTALLING/REPLACING LEFT HEADLIGHT VERTICAL AIM ADJUSTER (XENON HEADLIGHT)** .

DRIVE, SEAT ADJUSTMENT**67 31 501 REMOVING AND INSTALLING/REPLACING DRIVE FOR LONGITUDINAL SEAT ADJUSTMENT (FRONT SEAT REMOVED)**

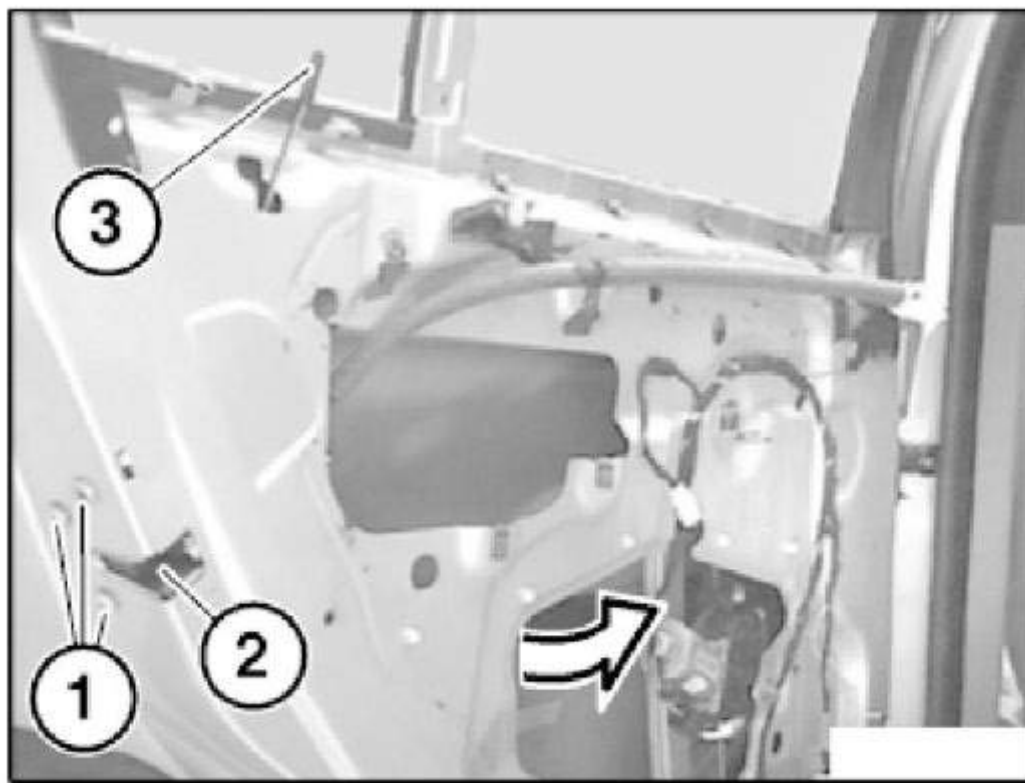
Disconnect plug connection (1).

Unclip plug housing (2) in direction of arrow from retaining fixture underneath.

NOTE: **Secure drive for longitudinal seat adjustment (4) against falling out.**

Release screws (3) and remove drive for longitudinal seat adjustment (4) in direction of arrow from flange (5).

If necessary, remove inner drive shaft from drive for longitudinal seat adjustment (4).



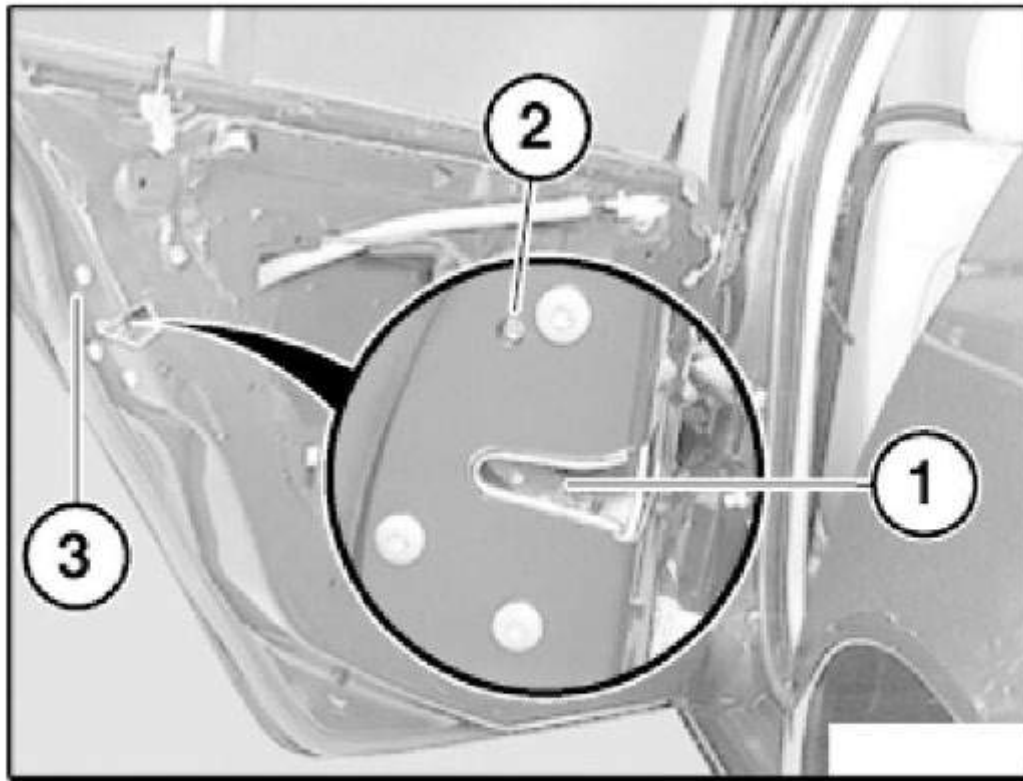
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Fig. 9: Removing Drive For Longitudinal Seat Adjustment
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Make sure drive shaft (1) is correctly seated.

Make sure drive for longitudinal seat adjustment (2) is correctly seated on flange (3).



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Fig. 10: Identifying Drive For Longitudinal Seat Adjustment
Courtesy of BMW OF NORTH AMERICA, INC.

**67 31 511 REMOVING AND INSTALLING/REPLACING DRIVE FOR SEAT TILT ADJUSTMENT
(FRONT SEAT REMOVED)**

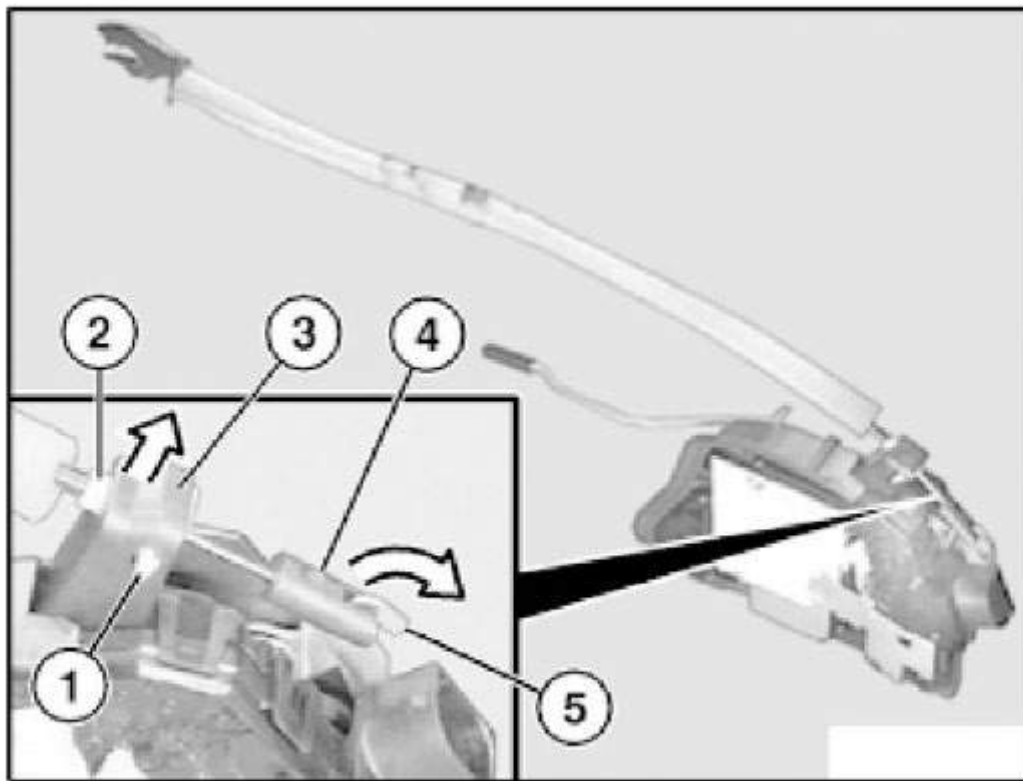
Disconnect plug connection (4).

NOTE: **Secure drive for seat tilt adjustment (5) against falling out.**

Loosen screws (1).

Remove drive for seat tilt adjustment (5) with fixture for plug connection (3) in direction of arrow from flange (2).

If necessary, remove inner drive shaft from drive for seat tilt adjustment (5).



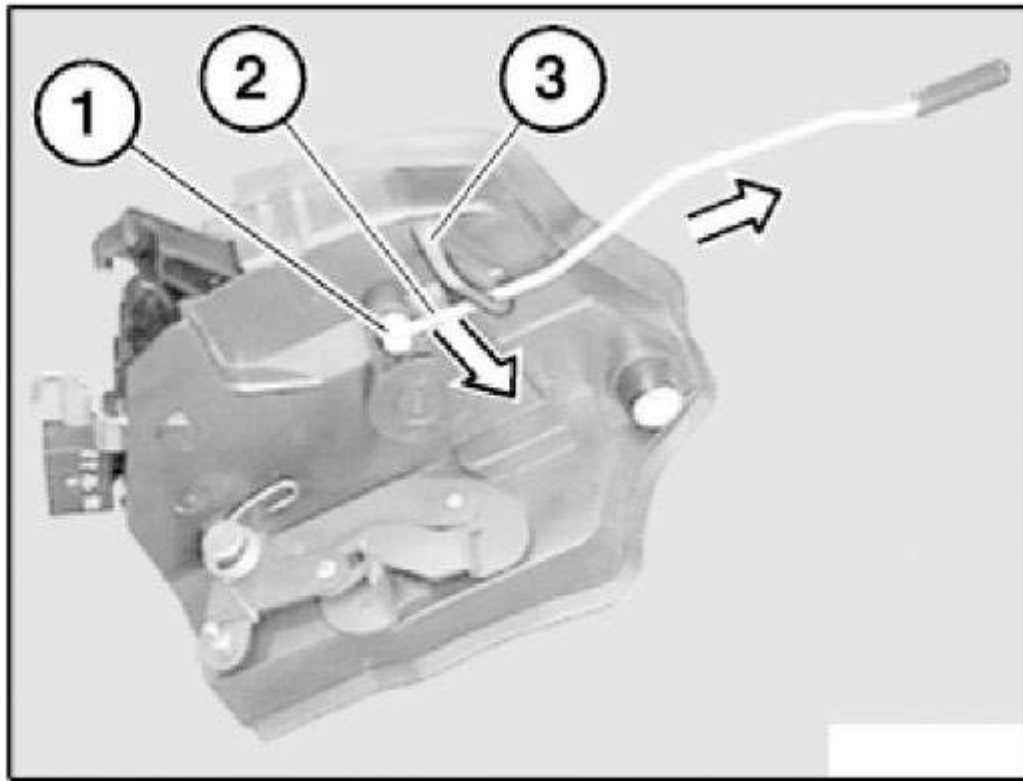
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Fig. 11: Removing Drive For Seat Tilt Adjustment
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Make sure drive shaft (1) is correctly seated.

Ensure fixture for plug connection (3) and drive for seat tilt adjustment (4) on flange (2) are correctly seated.



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Fig. 12: Locating Fixture For Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

67 31 521 REMOVING AND INSTALLING/REPLACING DRIVE FOR SEAT HEIGHT ADJUSTMENT (FRONT SEAT REMOVED)

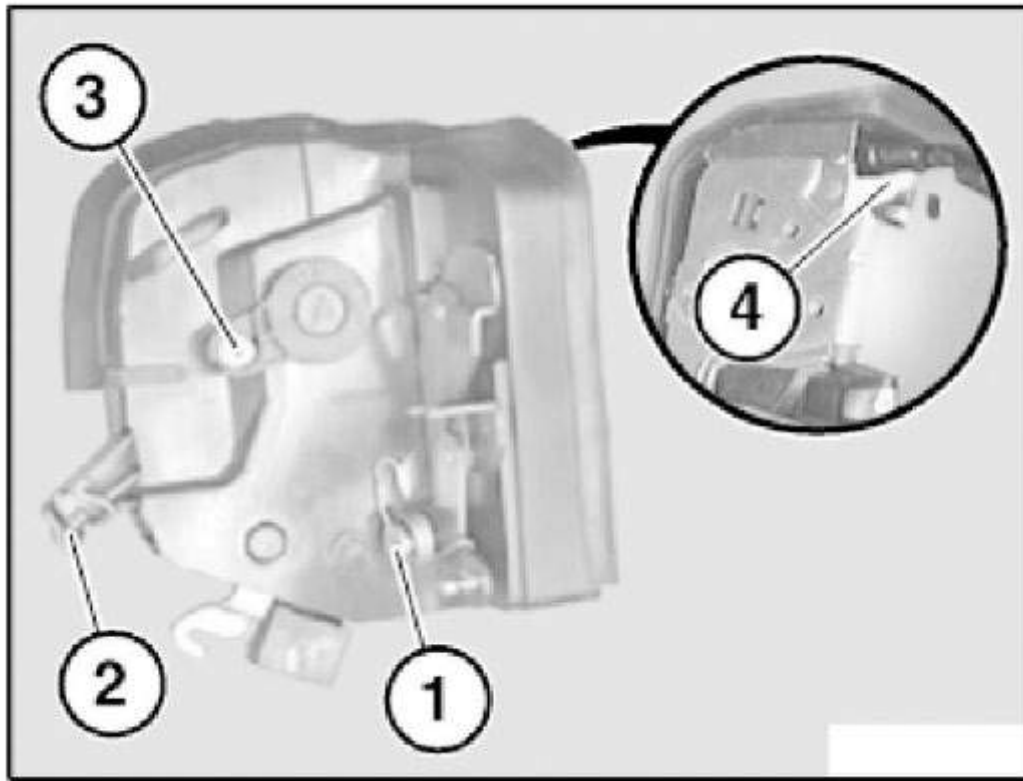
Disconnect connector (2).

NOTE: Secure drive for seat height adjustment (3) against falling out.

Loosen screws (1).

Remove drive for seat height adjustment (3) with fixture for plug connection (4) in direction of arrow from flange (5).

If necessary, remove inner drive shaft from drive for seat height adjustment (3).



- 1 Spring
- 2 Support for Bowden cable of lock plate
- 3 Mount for linkage of locking knob
- 4 Lever for child safety catch

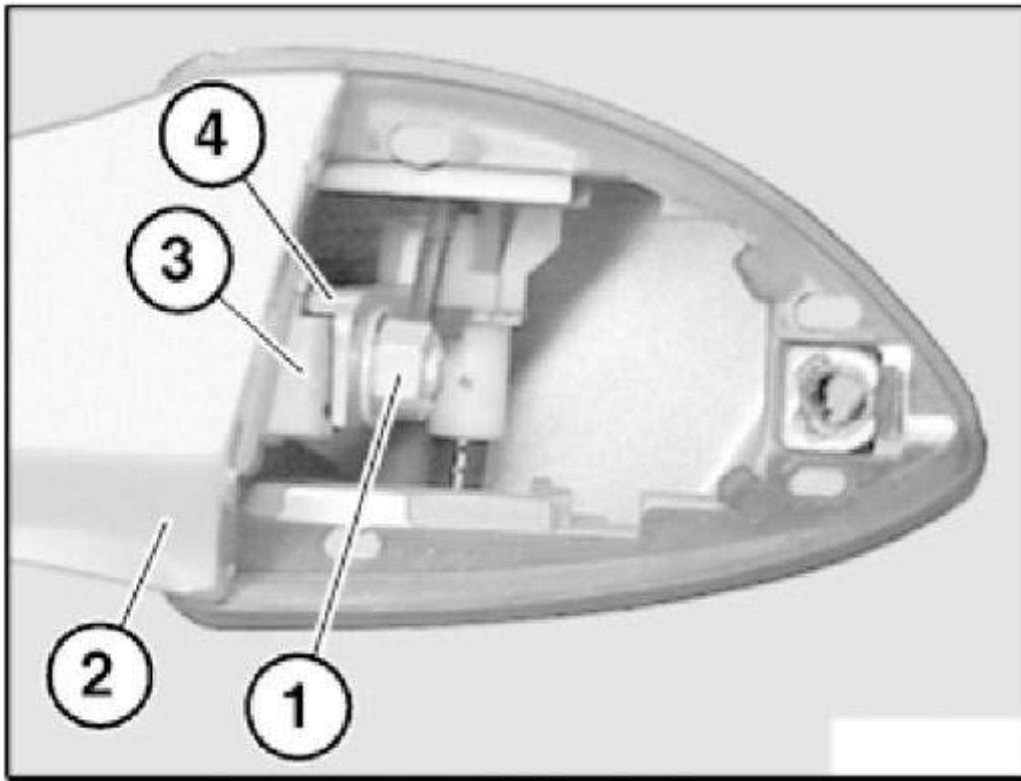
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Fig. 13: Removing Drive For Seat Height Adjustment
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Make sure drive shaft (1) is correctly seated.

Ensure fixture for plug connection (2) and drive for seat height adjustment (3) on flange (4) are correctly seated.



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Fig. 14: Identifying Drive For Seat Height Adjustment
Courtesy of BMW OF NORTH AMERICA, INC.

67 31 531 REMOVING AND INSTALLING/REPLACING DRIVE FOR BACKREST ANGLE ADJUSTMENT (FRONT SEAT REMOVED)

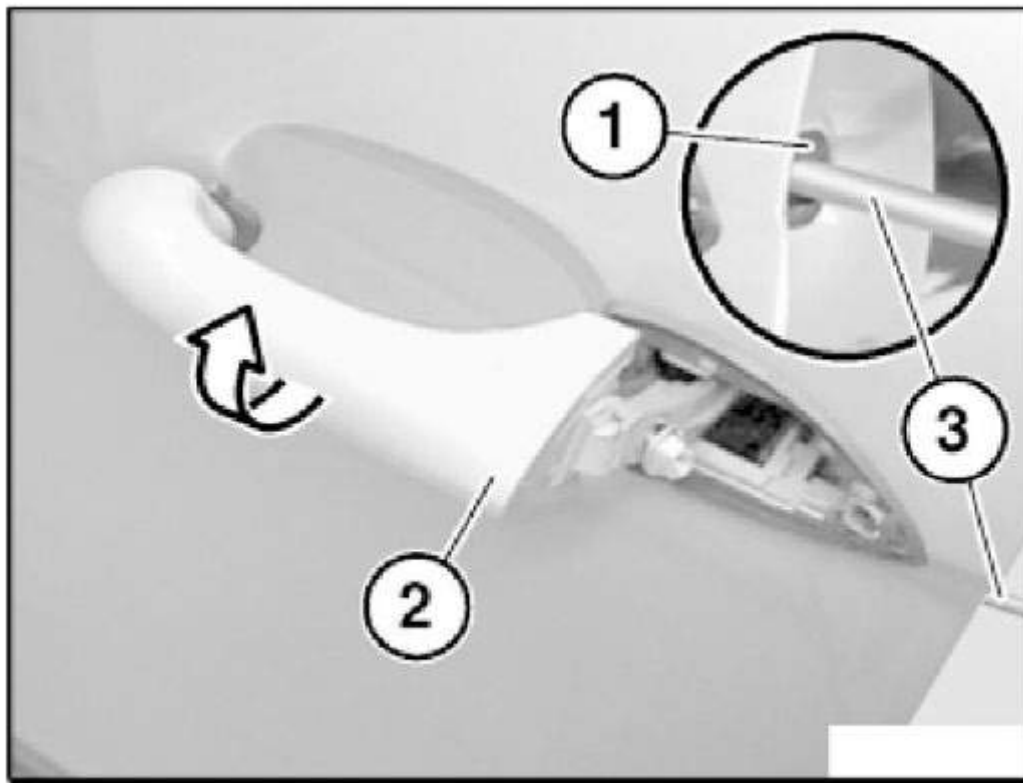
Disconnect plug connection (1).

NOTE: **Secure drive for backrest angle adjustment (5) against falling out.**

Release screws (3).

Remove drive for backrest angle adjustment (5) with fixture for plug connection (2) in direction of arrow from flange (4).

If necessary, remove inner drive shaft from drive for backrest angle adjustment (5).



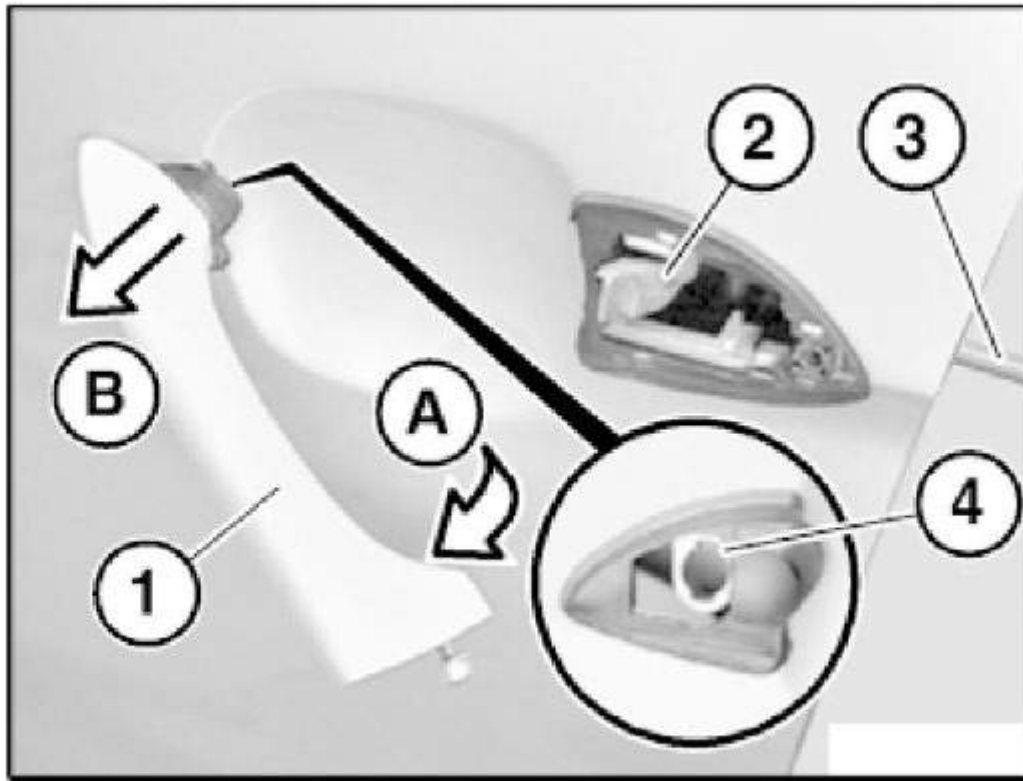
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Fig. 15: Removing Drive For Backrest Angle Adjustment
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Make sure drive shaft (1) is correctly seated.

Ensure fixture for plug connection (3) and drive for backrest angle adjustment (4) on flange (2) are correctly seated.



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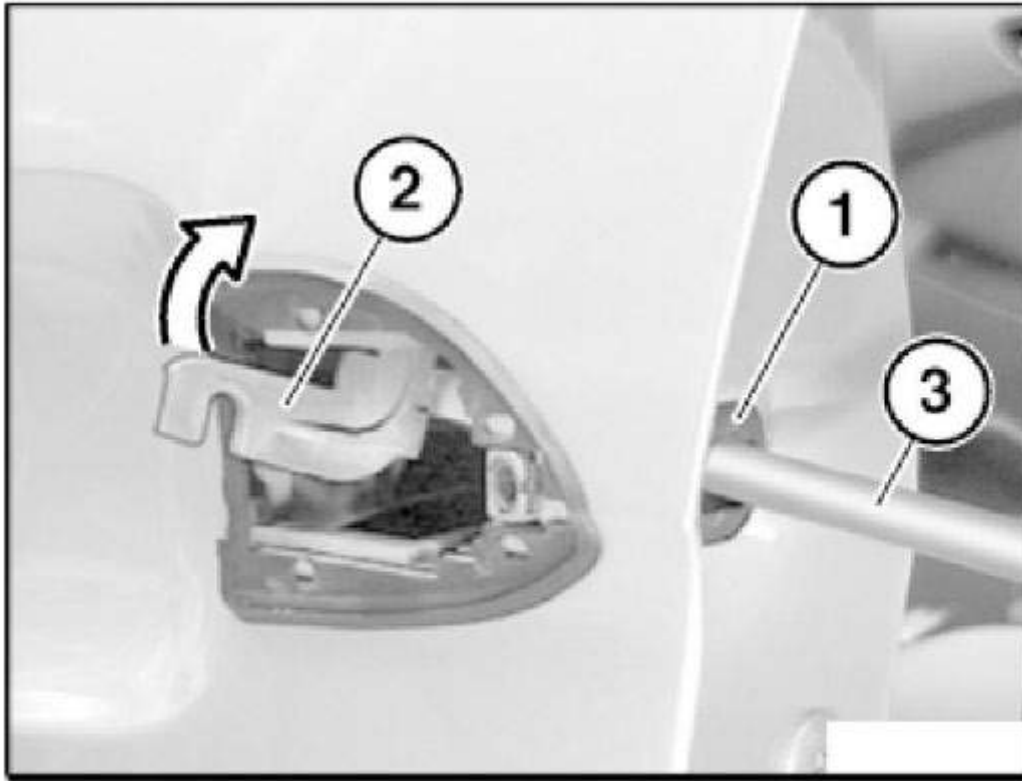
Fig. 16: Identifying Fixture For Plug Connection
Courtesy of BMW OF NORTH AMERICA, INC.

67 31 540 REMOVING AND INSTALLING/REPLACING DRIVE UNIT FOR HEAD RESTRAINT ADJUSTMENT (COMFORT SEAT)

Remove rear panel at top and bottom from front seat backrest. Refer to **52 17 202 REMOVING AND INSTALLING/REPLACING BACKREST (LUXURY SEAT)** .

Turn plug connection (1) in direction of arrow and disconnect from backrest frame (2).

Disconnect plug connection (1).



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Fig. 17: Locating Plug Connection

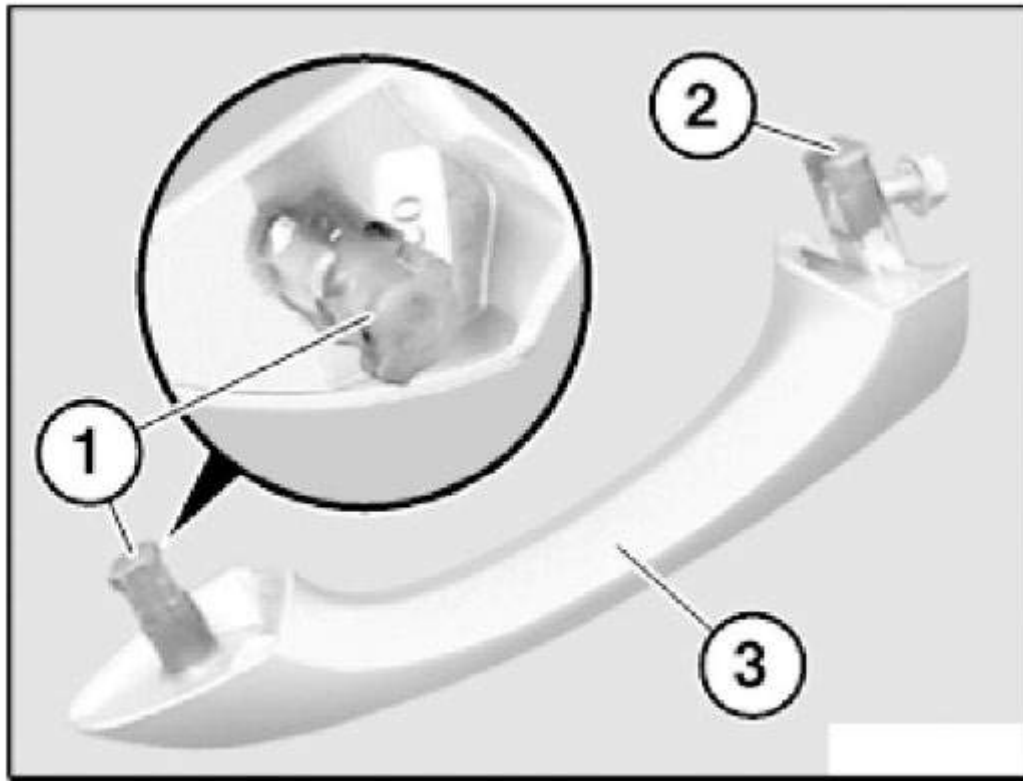
Courtesy of BMW OF NORTH AMERICA, INC.

Detach shaft (1) in direction of arrow from drive unit for head restraint adjustment (3). Remove retaining rings (2).

Remove drive unit for head restraint adjustment (3) in direction of arrow from backrest frame (4).

Installation:

Make sure shaft (1) is correctly located in metal fold of backrest frame (4).



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Fig. 18: Identifying Retaining Rings

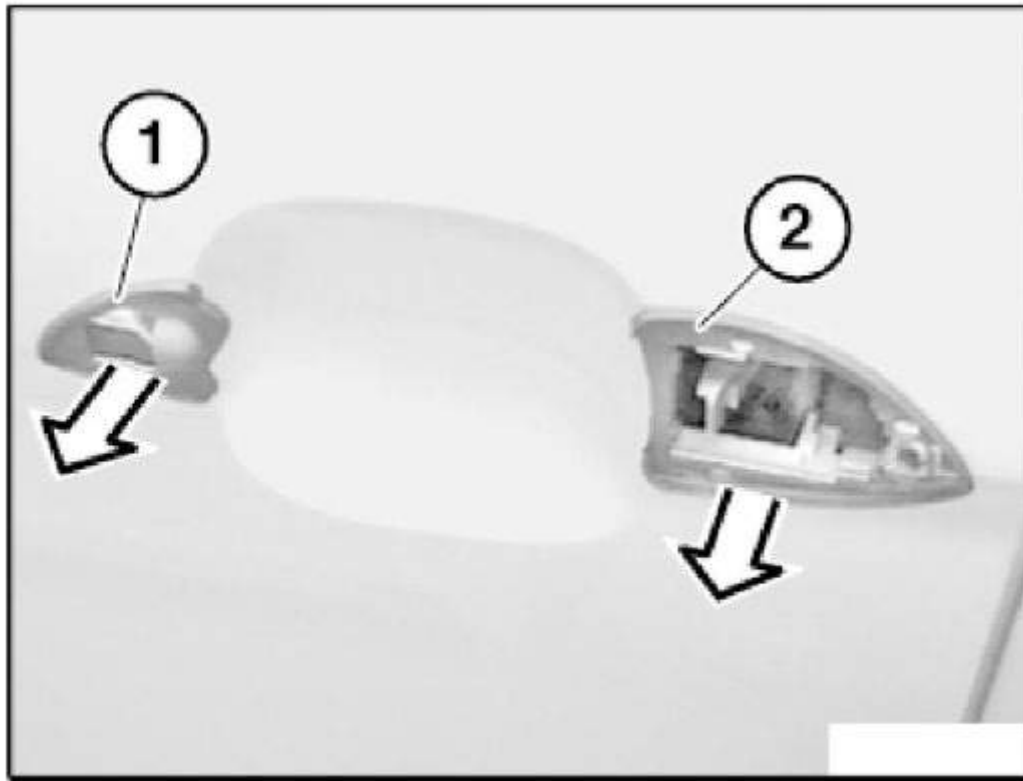
Courtesy of BMW OF NORTH AMERICA, INC.

Removal And Installation Only:

Do not turn spindle (1) in order not to change measurement A.

Replacement only:

Adopt measurement A of removed drive unit for head restraint adjustment (2); if necessary, adjust by turning spindle (1).



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Fig. 19: Identifying Spindle

Courtesy of BMW OF NORTH AMERICA, INC.

67 31 570 REMOVING AND INSTALLING/REPLACING DRIVE FOR HEAD RESTRAINT HEIGHT ADJUSTMENT ON LEFT OR RIGHT FRONT SEAT

This operation is described in:

"Removing and installing/replacing head restraint mount on left or right front seat". Refer to **52 17 380 REMOVING AND INSTALLING/REPLACING HEAD RESTRAINT MOUNT ON LEFT OR RIGHT FRONT SEAT (COMFORT)** .

DRIVE, SLIDE TILT SUNROOF CONV. TOP

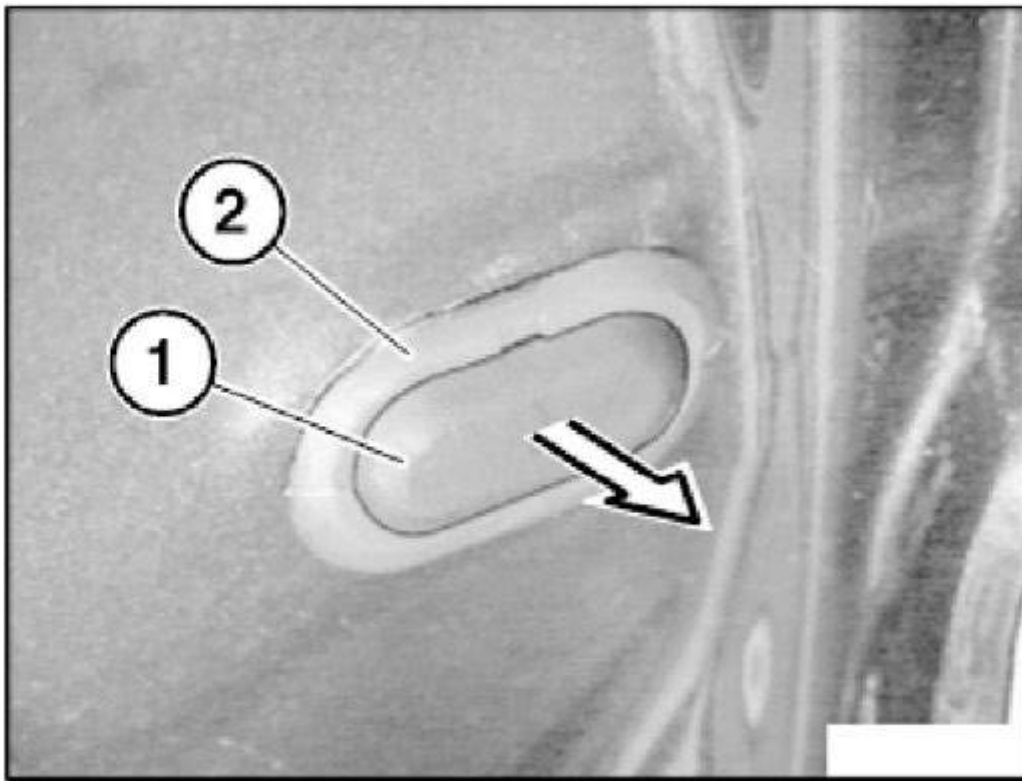
67 61 515 REPLACING DRIVE WITH GEAR (FRONT) FOR ACTUATING SLIDE/TILT SUNROOF

Necessary Preliminary Tasks:

- Remove bracket from roofliner at front. Refer to **51 44 020 REMOVING AND INSTALLING/REPLACING BRACKET ON ROOF LINING AT FRONT**.

NOTE: **Secure drive (3) against falling out.**

Release screws (1) and (2), tightening torque, (2.8 N.m.). Lower drive with gear for actuating slide/tilt sunroof (3).



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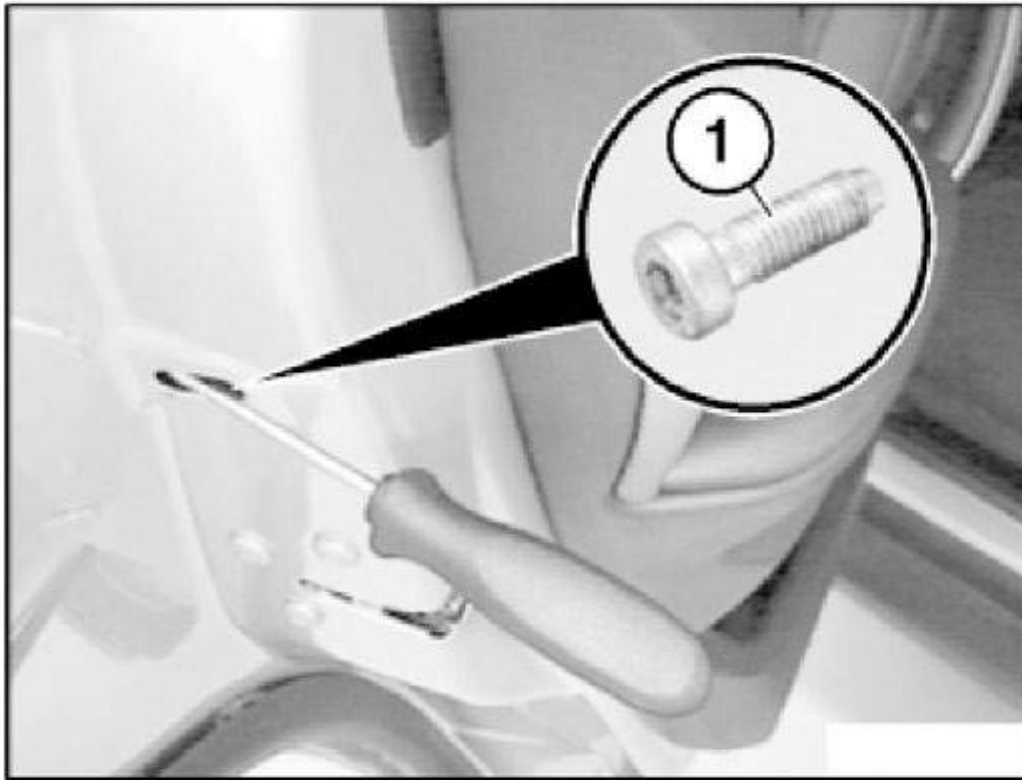
Fig. 20: Locating Drive With Gear For Actuating Slide/Tilt Sunroof
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: **Screws (1) and (2) are microencapsulated.**

Unlock associated plug connection, disconnect and remove drive with gear for actuating slide/tilt sunroof (3).

Installation:

Insert gear wheel (1) of drive with gear for actuating slide/tilt sunroof (2) in gear teeth.



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Fig. 21: Inserting Gear Wheel Of Drive With Gear For Actuating Slide/Tilt Sunroof
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

- Initialize slide/tilt sunroof. Refer to **54 0 ... NOTES ON STEEL AND GLASS SLIDE/TILT SUNROOFS (INITIALIZATION/NORMALIZATION/LEARNING OF CHARACTERISTIC CURVE)** .

67 61 515 REPLACING DRIVE WITH GEAR (FRONT) FOR ACTUATING SLIDE/TILT SUNROOF (PANORAMA GLASS SUNROOF)

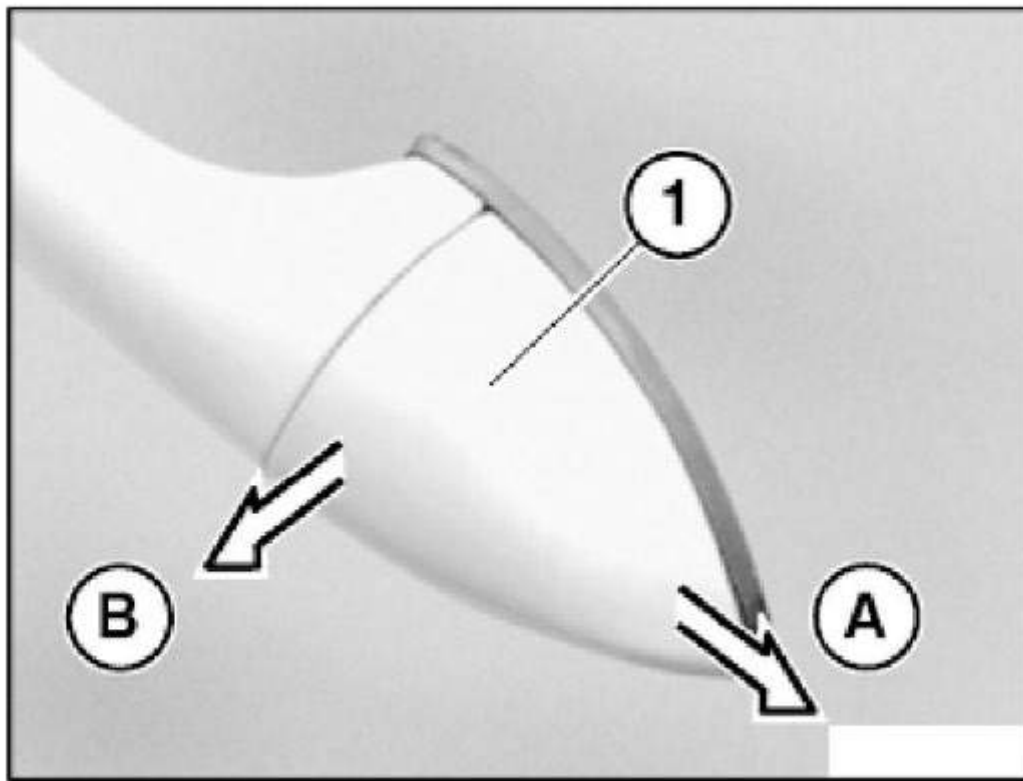
Necessary Preliminary Tasks:

- **E53** : Remove mounting bracket from roofliner at front. Refer to **51 44 020 REMOVING AND INSTALLING/REPLACING BRACKET ON ROOF LINING AT FRONT** .

NOTE: Secure drive with gear for actuating slide/tilt sunroof (2) against falling out.

Release screws (1), tightening torque, (2.8 N.m.).

Lower drive with gear for actuating slide/tilt sunroof (2).



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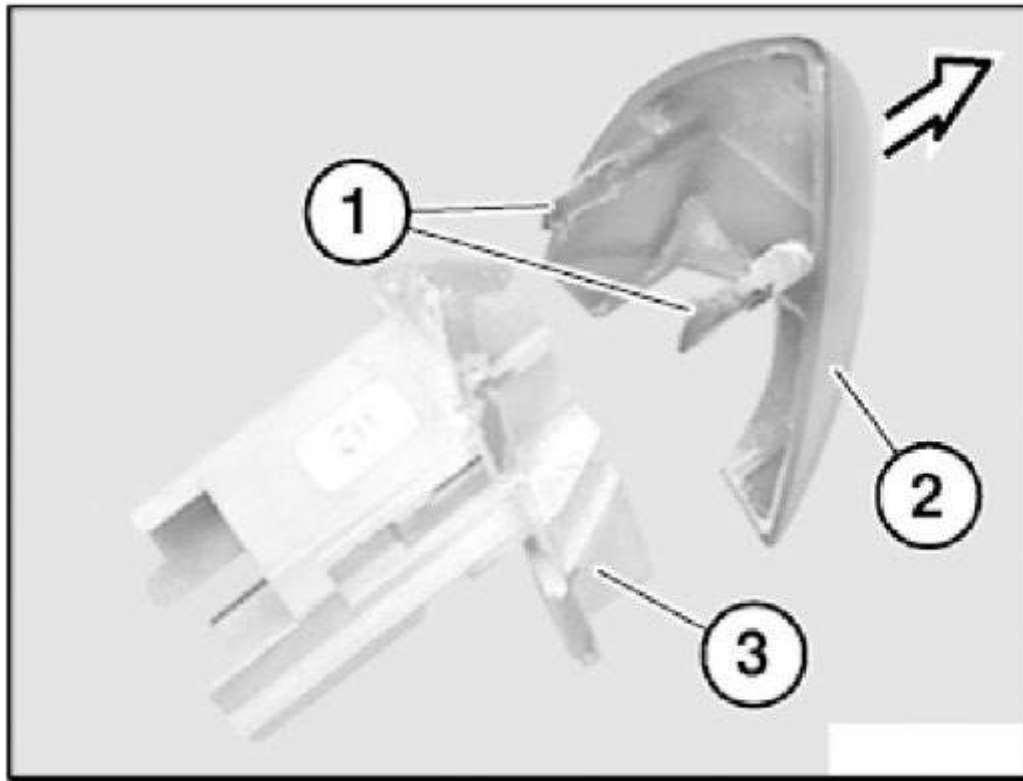
Fig. 22: Identifying Drive With Gear For Actuating Slide/Tilt Sunroof
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Screws (1) are microencapsulated.

Unlock plug connection (3), disconnect and remove drive with gear for actuating slide/tilt sunroof (2).

Installation:

Insert gear wheel (1) of drive with gear for actuating slide/tilt sunroof (2) exactly in gear teeth (3).



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Fig. 23: Inserting Gear Wheel Of Drive
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Initialize slide/tilt sunroof. Refer to **54 0 ... NOTES ON STEEL AND GLASS SLIDE/TILT SUNROOFS (INITIALIZATION/NORMALIZATION/LEARNING OF CHARACTERISTIC CURVE)** .

67 61 517 REPLACING DRIVE WITH GEAR (REAR) FOR ACTUATING SLIDE/TILT SUNROOF (PANORAMIC GLASS SUNROOF)

Necessary Preliminary Tasks:

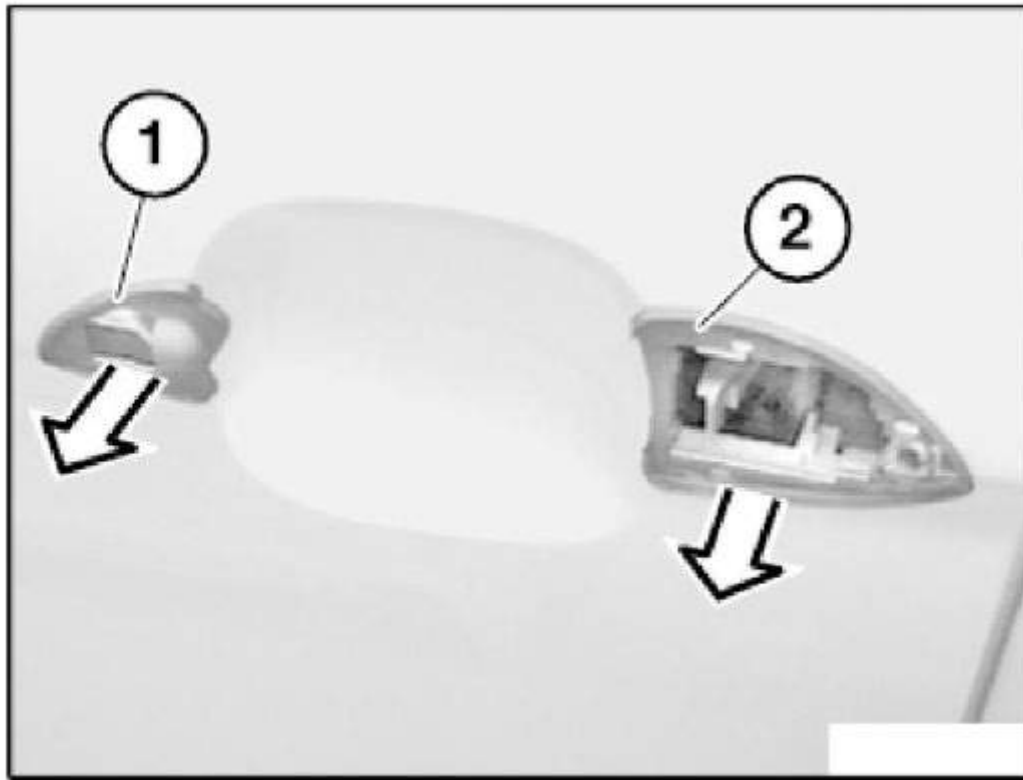
- Remove rear grab handles. Refer to **51 16 450 REMOVING AND INSTALLING/REPLACING REAR LEFT/RIGHT GRAB HANDLE** .
- Remove trim for rear left and right roof pillar (C-pillar). Refer to **51 43 251 REMOVING AND INSTALLING/REPLACING TRIM PANEL FOR LEFT OR RIGHT REAR ROOF PILLAR (C-PILLAR)** .

- Remove trim for rear left and right roof pillar (D-pillar). Refer to **51 43 252 REMOVING AND INSTALLING/REPLACING PANEL FOR REAR ROOF PILLAR (D-PILLAR), LEFT OR RIGHT**.
- Detach mocket in area of roofliner.

Unclip covers (1) in direction of arrow and remove. Release screws (2).

IMPORTANT: Do not under any circumstance kink roofliner (3).

Unclip roofliner (3) at retaining points (4) towards bottom and lower.



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Fig. 24: Unclipping Roofliner At Retaining Points
Courtesy of BMW OF NORTH AMERICA, INC.

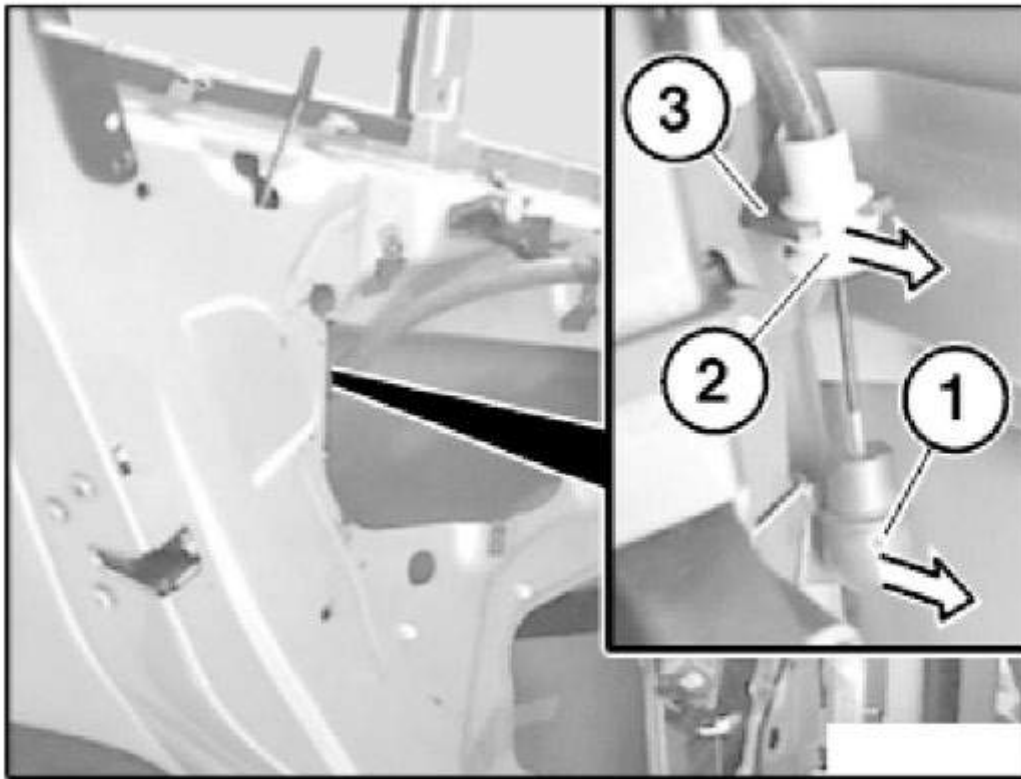
NOTE: Secure drive with gear for actuating slide/tilt sunroof (3) against falling out.

Release screws (2), tightening torque, (2.8 N.m.).

Lower drive with gear for actuating slide/tilt sunroof (3).

NOTE: **Screws (2) are microencapsulated.**

Unlock plug connection (1), disconnect and remove drive with gear for actuating slide/tilt sunroof (3).

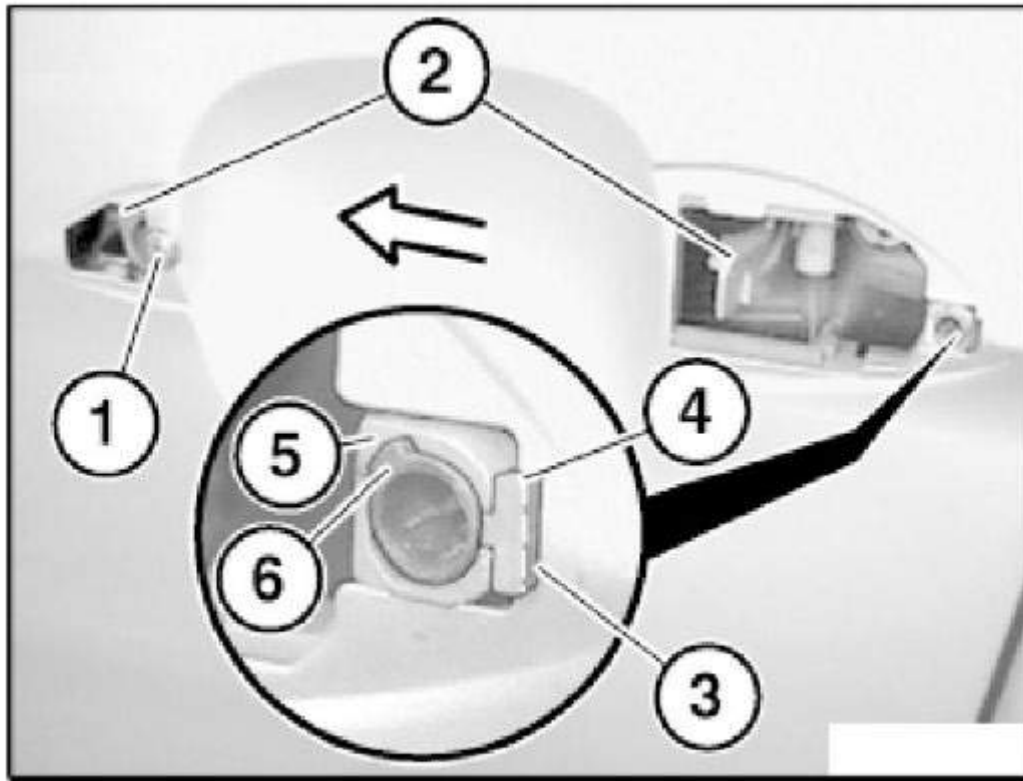


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Fig. 25: Identifying Drive With Gear For Actuating Slide/Tilt Sunroof
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Insert gear wheel (1) of drive with gear for actuating slide/tilt sunroof (2) exactly in gear teeth (3).



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Fig. 26: Inserting Gear Wheel

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Initialize slide/tilt sunroof. Refer to **54 0 ... NOTES ON STEEL AND GLASS SLIDE/TILT SUNROOFS (INITIALIZATION/NORMALIZATION/LEARNING OF CHARACTERISTIC CURVE)** .

DRIVE, WINDOW REGULATOR

67 62 000 REMOVING AND INSTALLING/REPLACING FLAT MOTOR FOR FRONT LEFT OR RIGHT POWER WINDOW REGULATOR

Remove power window regulator. Refer to **51 33 000 REMOVING AND INSTALLING POWER WINDOW REGULATOR IN LEFT OR RIGHT FRONT DOOR** .

67 62 020 REMOVING AND INSTALLING/REPLACING FLAT MOTOR FOR REAR LEFT OR RIGHT POWER WINDOW REGULATOR

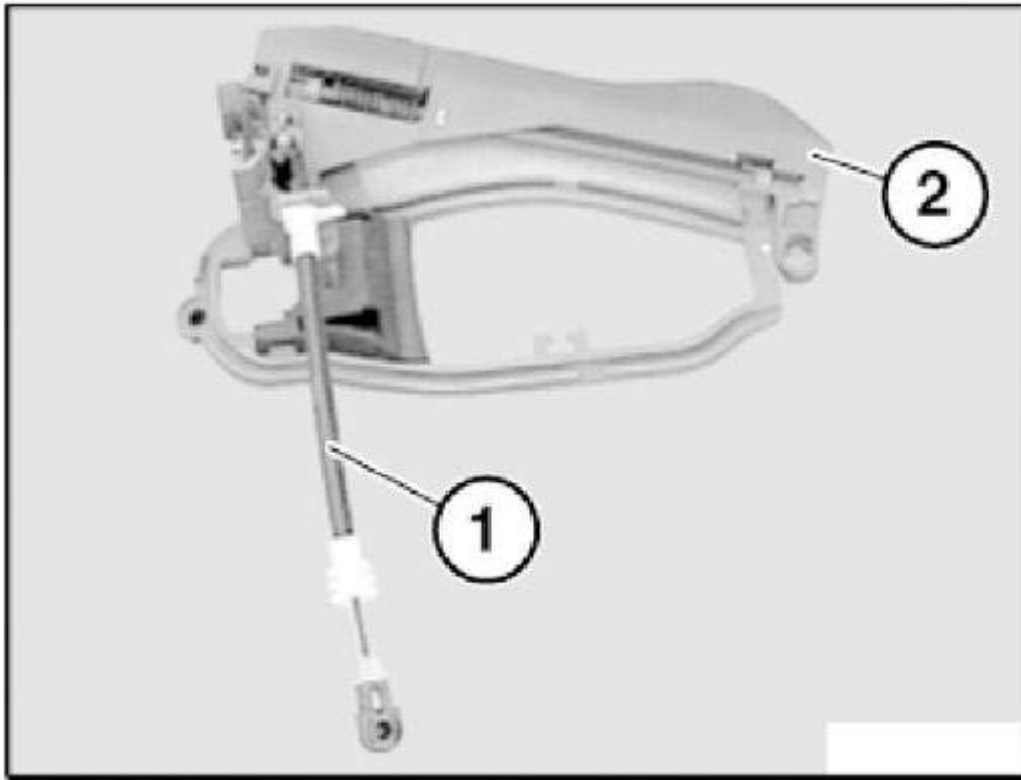
Remove sound insulation in rear door. Refer to **51 48 ... REMOVING AND INSTALLING/REPLACING SOUND INSULATION IN REAR DOOR, LEFT OR RIGHT** .

NOTE: **Make sure that door window glass is not in one of its end positions.**

Disconnect plug connection (1).

Loosen screws (2).

Turn flat motor for window regulator (3) in direction of arrow until it can be removed.



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Fig. 27: Disconnecting Plug Connection On Regulator
Courtesy of BMW OF NORTH AMERICA, INC.

DRIVE, SEAT ADJUSTMENT

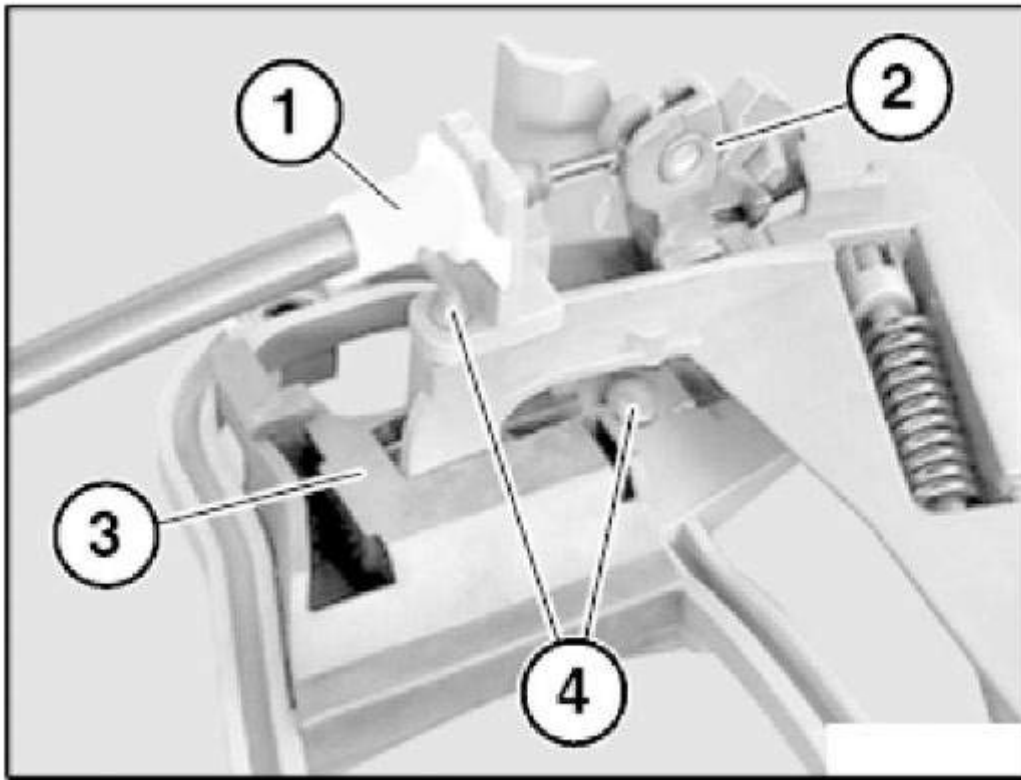
ON FRONT SEAT, LEFT OR RIGHT**Necessary Preliminary Tasks:**

- Remove rear panel on front seat backrest. Refer to **52 13 198 REMOVING AND INSTALLING/REPLACING REAR PANEL ON LEFT OR RIGHT FRONT SEAT BACKREST (NORMAL/MANUAL)** or **52 14 198 REMOVING AND INSTALLING/REPLACING REAR PANEL ON LEFT OR RIGHT FRONT SEAT BACKREST (NORMAL/ELECTRIC)** .

E53 Comfort Seat:

- Remove rear panel at bottom. Refer to **52 17 202 REMOVING AND INSTALLING/REPLACING BOTTOM REAR PANEL ON FRONT SEAT BACKREST (LUXURY SEAT)** .

Detach backrest cover (1) in direction of arrow from backrest frame (2).



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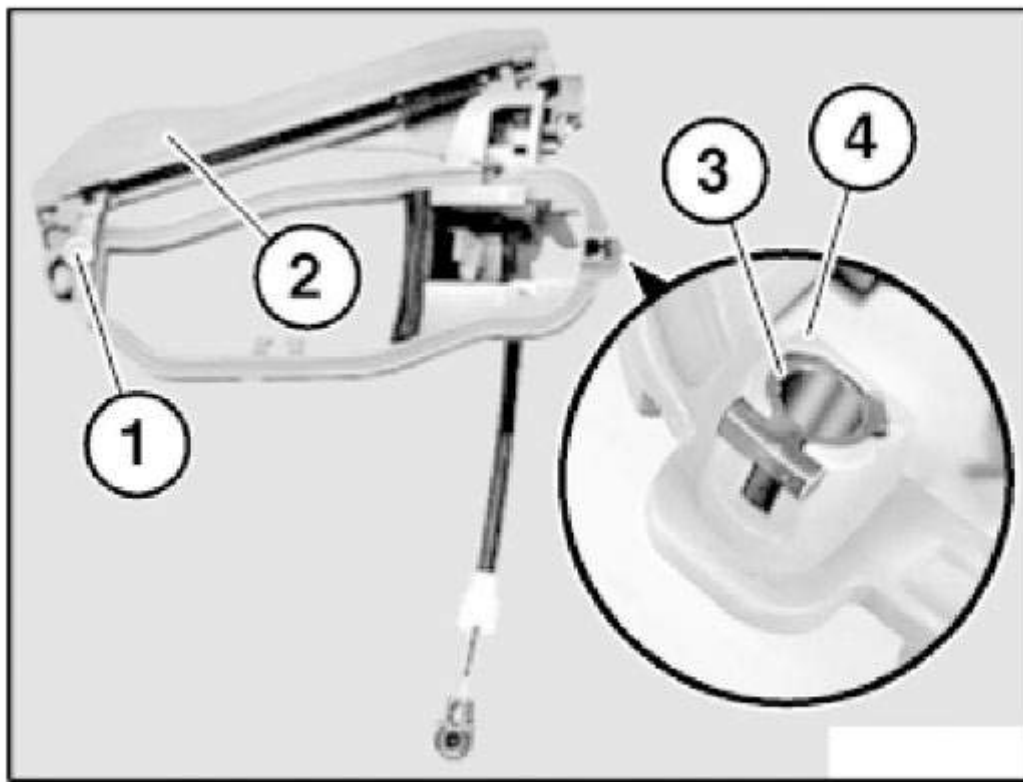
Fig. 28: Detaching Backrest Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect plug connection (1).

Detach transparent hose (2) from valve housing (3).

NOTE: If necessary, gently heat transparent hose (2) if firmly seated. If necessary, detach fabric adhesive tape (4).

Detach drive unit for lumbar support (5) with jacket in direction of arrow.

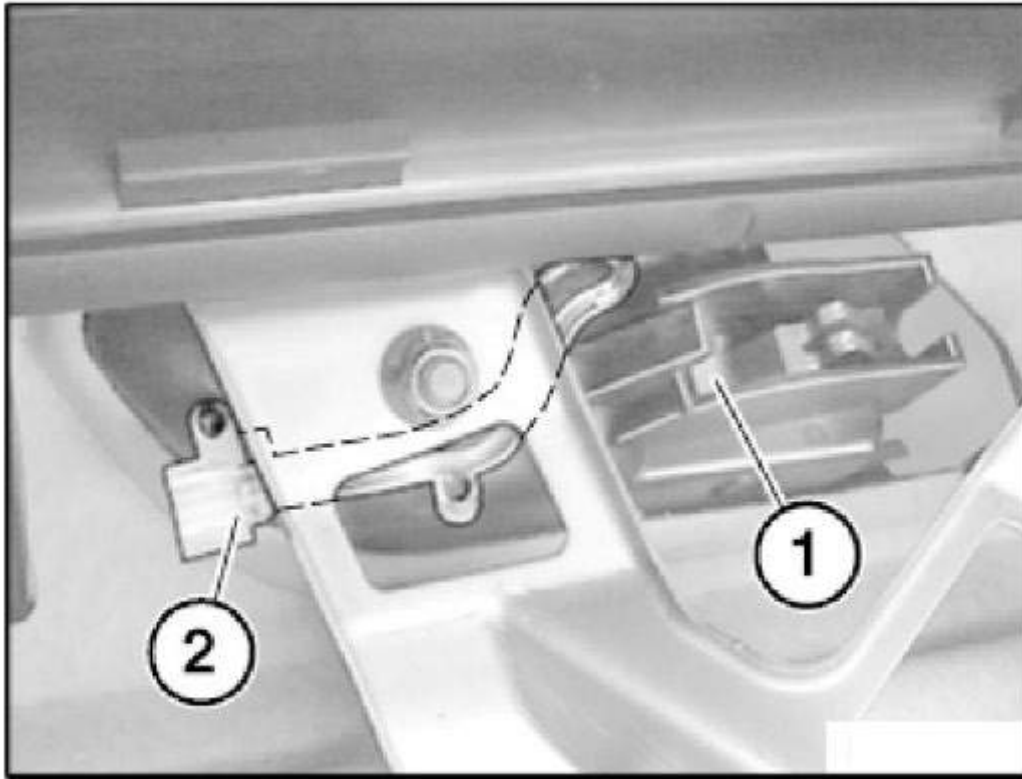


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Fig. 29: Detaching Drive Unit For Lumbar Support
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Clean adhesive area (1) on backrest frame (2).



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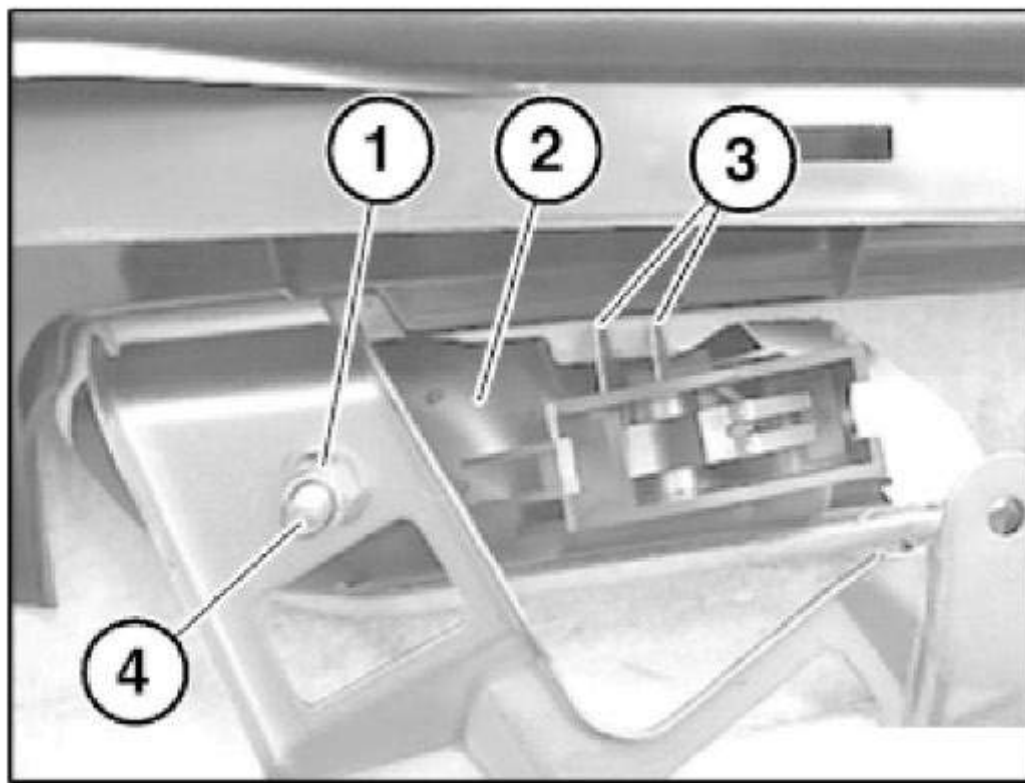
Fig. 30: Identifying Adhesive Area On Backrest Frame
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Transparent hose (1) of drive unit for lumbar support must not be kinked.

Pull off protective film (3) from jacket (2). Stick drive unit for lumbar support to backrest frame.

If necessary, secure jacket (2) with cable strap.



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Fig. 31: Removing Protective Film From Jacket
Courtesy of BMW OF NORTH AMERICA, INC.