

54 10 ... Notes on glass slide/tilt sunroof (initialisation/normalisation/learning of characteristic curve)



Initialisation comprises:

- Normalisation
- Learning characteristic curve

The mechanical end positions are recorded and stored during normalisation.

The characteristic curve is learnt immediately after normalisation.

When the characteristic curve is learnt, the mechanical closing forces of the glass sunroof are recorded and stored for correct operation of the anti-trap mechanism.

Initialisation is started and implemented by pressing and holding switch in "Lift" direction.

Initialisation depends on installed roof system and software used.



Then carry out **initialisation**:

- if the glass sunroof has been mechanically moved by means of the emergency operation
- 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 repair work is carried out on the mechanism of the glass sunroof
- after exchange of the control unit
- after replacement of circumferential gasket



Warning!

The anti-trapping mechanism is not active during initialisation.

For correct initialisation and function, the following preconditions must be met:

- Ignition ON
- at room temperature ($23\text{ °C} \pm 5\text{ °C}$)
- No direct solar radiation
- only when vehicle is at a standstill
- Fully charged vehicle battery
- in addition, for US vehicles, let engine run to enable key, if necessary

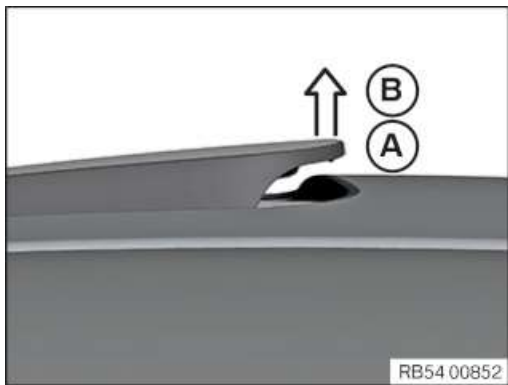


Note:

Subsequently described processes relate to a completely closed roof system. However, initialisation can be started from any position.

Initialisation:

- Operate switch in "Lift" direction and hold (roof system moves to "Lift" position)
- In the event of delayed start or sudden stop of the glass sunroof, continue operating the switch in the "Lift" direction



Note:

Hold switch depressed for entire process.

- After reaching the fully raised position (A), keep the switch further pressed for approx. 30 seconds (initialisation starts)
- Glass sunroof moves briefly from fully raised position (A) in direction of position (B)
- Shading system (sliding head liner) closes completely
- Shading system (sliding head liner) closes completely
- Glass sunroof moves to "Closed" position
- Glass sunroof then moves to "Open" end position and immediately back to "Closed" position
- After a brief pause, shading system closes completely

Note:

Once glass sunroof and shading system have closed completely, initialisation is finished. Button can be released.



Note:

- If the switch is released in the meantime, the entire procedure must be repeated
- On completion of successful initialisation, the corresponding messages in the check control and the control display go out
- Carry out function check (one-touch function, anti-trapping protection and, if necessary, comfort function)

41 00 ... Notes on the water drain hose of the slide/tilt sunroof

The water drain hoses for the slide/tilt sunroof are partially permanently integrated in the body and cannot be replaced individually.

These water drain hoses can only be completely replaced with extensive body repair work (e. g. after an accident).

Component	Vehicle	Individually replaceable
Water drain hose, front	All BMW	No
	All MINI	
Rear water drain hose	E60, F34	No
	All other BMWs	Yes
	All MINI	Yes

An individual solution is required for damage that was not caused by an accident.

Contact national hotline.

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Special tools required:

- [00 9 327](#)

1 General remarks on handling rubber seal profiles:

- If seals reveal partly detached protective film on delivery, they must not be bonded.
- Store seals at 5 °C to 40 °C.
- If, during the handling, the protective film has come off before bonding, it can still be bonded.
- Bonding at room and object temperature 25° ±5° C. Temperatures between 40 and 50 °C significantly increase initial adhesion.
- Seals, which are subjected to temperatures above 80 °C after bonding, will be very difficult to remove.
- Maximum storage time for replacement: see identification of the expiry date on packaging

2 Damage pattern, repair and replacement

A partially released bonding (rubber part adhesive tape or adhesive tape paint) up to 120 mm may be finished. Continue with Point 2.1.

A partially released bonding (rubber part adhesive tape or adhesive tape paint) above 120 mm may **not** be finished. Gasket must be replaced. Continue with Point 2.2.

2.1 Repair of partially released bonding (adhesive tape rubber part or adhesive tape paint)

2.1.1 Clean faulty areas

- Release adhesive area of paint side from recesses and degrease with [cleaning agent R2](#). Stick to air drying time > of 1 minute. Never use paint thinner!
- This will usually partially destroy intact edge adhesive areas.
- When removing, it is important to wipe off the adhesive area of the adhesive tape with a lint-free disposable cloth. (e.g. blue Kimtex)
- Carefully wipe off the adhesive areas.

Note:

Use necessary cotton- or fluff-free paper towel once only.

Do not touch the adhesive area after cleaning.

2.1.2 Apply adhesive

- Apply [profile rubber adhesive](#) evenly as a thin layer first on the gasket and then on the painted surface.
- Stick to air drying time of 2 to 3 minutes.

Attention:

Avoid contact with skin!

Do not apply adhesive to visible painted surfaces.

2.1.3 Press in rubber seal

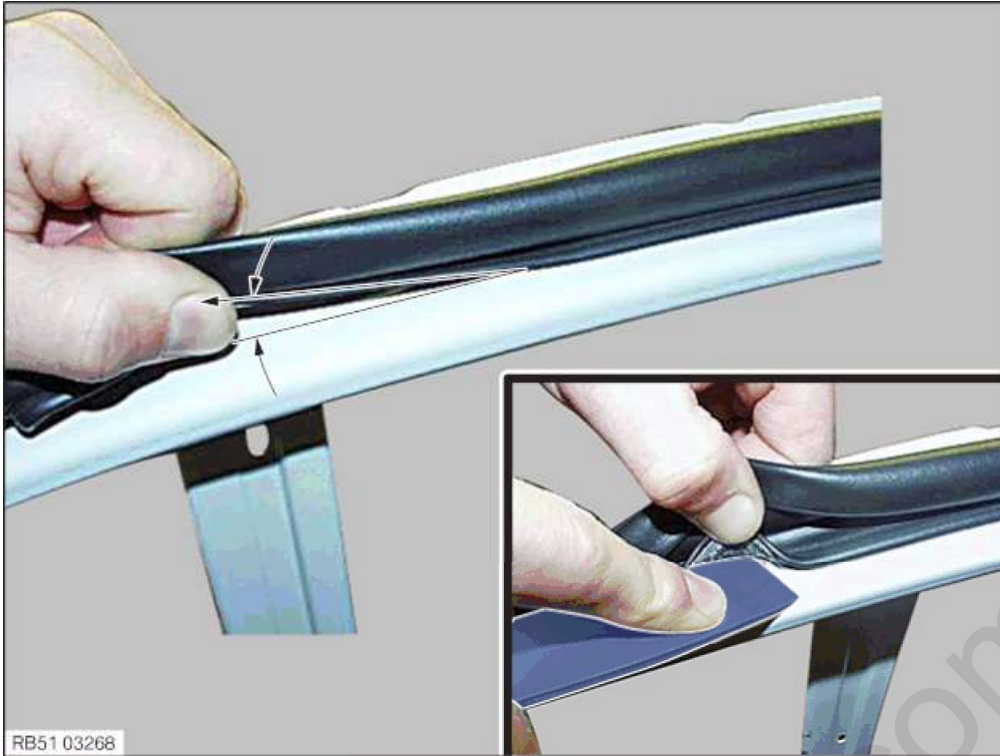
- Press down gasket using contact pressure (forced pressure not necessary) for > 1 minute.

Attention:

Load can be applied to the bonding only after a period of 2 minutes. This waiting time is absolutely essential.

2.2 Replacement

2.2.1 Peeling off the faulty rubber seal



- Remove bonded connection with fingers or cleaning agent liner [00 9 327](#).
- Overstretch gasket below an angle of maximum 20° very slowly under even tensile stress. If the gasket is pulled off too quickly, the adhesive tape can tear off and remain on the painted surface. The adhesive tape remaining on the painted surface must be removed with high cleaning costs.

Note:

When the adhesive tape separates from the gasket, the adhesive tape remaining on the paint must be fully separated at one location by approx. 10 mm until it is easy to grip.

Pull off the adhesive tape by pulling strongly at an angle of approx. 20°.

When existing gaskets are being peeled off with a hot air blower: Do not damage paintwork.

2.2.2 Clean bonding surface

- if required, remove adhesive remains with [eraser disk](#) or [cleaning agent R2](#). do not damage paint. Stick to air drying time > of 1 minute.
- Before a new bond, treat the entire adhesive area with [Sika Aktivator 205](#). Stick to air drying time > of 1 minute.

Note:

Use necessary cotton- or fluff-free paper towel once only.

Do not touch the adhesive area after cleaning.

2.2.3 Pull off protective film of the bonding surface

- Pull off the protective film off of the new gasket by approx. 15 cm using the tab.

Attention:

Once the protective film has been removed, do not under any circumstances touch the exposed bonding surface.

2.2.4 Apply rubber seal

- Press on the gasket by hand continuously while pulling off the liner slightly at the same time.

Note:

If positioned incorrectly, the gasket can still be pulled off, repositioned and pressed on again.

Always ensure that you do not touch the bonding surface with your fingers or contaminate it in any way.

- Press gasket while moving in a straight line without compression or over-stretching.
- Compress the gasket the corners; never stretch it. (critical area)

2.2.5 Establish sealing joint

- Where the beginning and end meet, a mark is created from pressing the loose end onto the beginning of the gasket.
Cut off the gasket vertically along the marked line (use sharp knife or special scissors) and press in place.
- Visually check the pre-bonded gasket.

Note:

Small areas of gasket can remain stuck to adhesive tape of loose end.

2.2.6 Press gasket

- Always press gasket vertically to the bonding surface
- Press gasket by hand or hand roller
- Adhesive tape width up to 5 mm, contact pressure $> 5 \text{ N/cm}^2$
- Adhesive tape width up to 10 mm, contact pressure $> 10 \text{ N/cm}^2$

Note:

Firm thumb pressure has approx. 35 N/cm^2

3 Checking the rubber seal

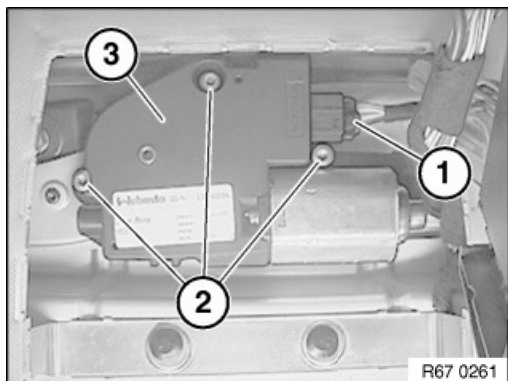
- Check the bonded gaskets for correct positioning and perfect adhesion. The bonding can be checked by pressing back the sealing lip.
- The peel strength of the gasket must be greater than 10 N/cm^2 for about 15 min after bonding.

67 61 515 Replacing electric motor with gearbox (front) for operation of slide/tilt sunroof



Necessary preliminary tasks:

- Remove [roof switch cluster](#)



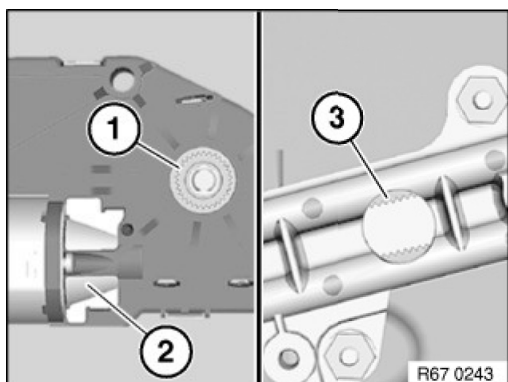
Note:

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

Unfasten plug connection (1) and disconnect.

Release screws (2), tightening torque [54 13 1AZ](#).

Remove drive with gearbox for actuating slide/tilt sunroof (3).



Installation note:

Insert gear (1) of electric motor with gearbox for operation of slide/tilt sunroof (2) exactly in gearing (3).



Installation note:

- Initialise [slide/tilt sunroof](#).

**Special tools required:**

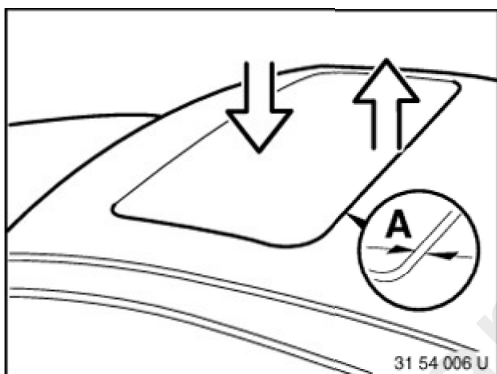
- [00 9 315](#)
- [00 9 340](#)

**Installation note:**

- Microencapsulated screws (Loctite) must be replaced and may not be reused
- Screw connection must be completed within 20 minutes (start of curing)
- Microencapsulated screws must not be retightened
- Clean thread of nut beforehand in event of repeated use

**Necessary preliminary tasks:**

- Remove both [gaiters](#)

**Ideal setting:**

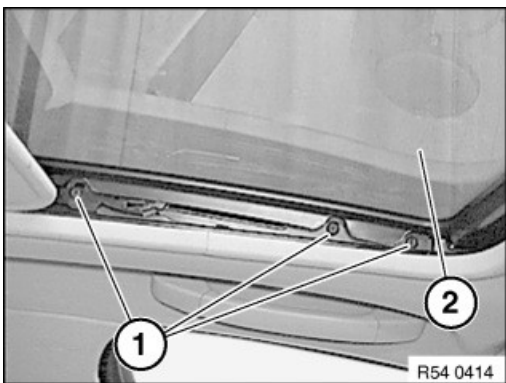
- Distance:
 - Distance A of glass slide/tilt sunroof panel (1) to roof (2) must be the same at the circumference
 - A = circumference 6.0 ± 0.5 mm
- Height:
 - Front - flush to 0.75 mm deeper
 - Rear - flush to 1.5 mm higher

Note:

Measure front and rear height adjustment over the entire cover width.

Height over the entire cover width must lie within tolerance.

Measuring range only at straight range of glass slide/tilt sunroof panel.

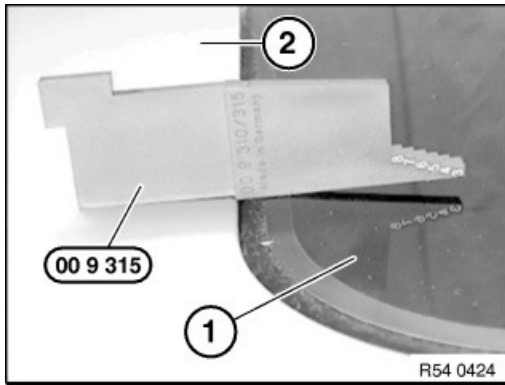


Loosen left and right screws (1).

Note:

For setting screws (1), only slacken until glass slide/tilt sunroof panel (2) can just be adjusted.

Tightening torque [54 12 01AZ](#).



Height adjustment:

Check height of glass slide/tilt sunroof panel (1) in relation to roof (2) with special tool [00 9 315](#) .

Press glass slide/tilt sunroof panel upwards and downwards until the ideal position has been reached.

Setting distance:

Check distance between gasket and roof (2) with special tool [00 9 340](#) .

It must be possible to slide the special tool against the same level of resistance.

Slide glass slide/tilt sunroof panel forward and back until ideal setting is reached.



Check function and adjustment.

[Initialise](#) glass slide/tilt sunroof.

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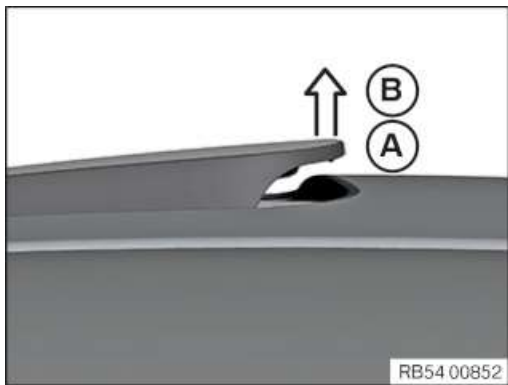


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Note:

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Note:

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- On completion of successful initialisation, the corresponding messages in the check control and the control display go out
- Carry out function check (one-touch function, anti-trapping protection and, if necessary, comfort function)

**Special tools required:**

- [2 348 128](#)
- [2 354 941](#)

**Necessary preliminary tasks:**

- Remove [glass slide/tilt sunroof panel](#)
- Lower [headlining](#)

Important!

The assistance of a second person is required when removing the glass slide/tilt sunroof.

**Important!**

Risk of damage!

Removed glass slide/tilt sunroof must only be placed on a level support.

Do not place glass slide/tilt sunroof on cross member.

Place glass slide/tilt sunroof broadly across side frame.

**Warning!**

During the following work the head airbag must not be damaged.

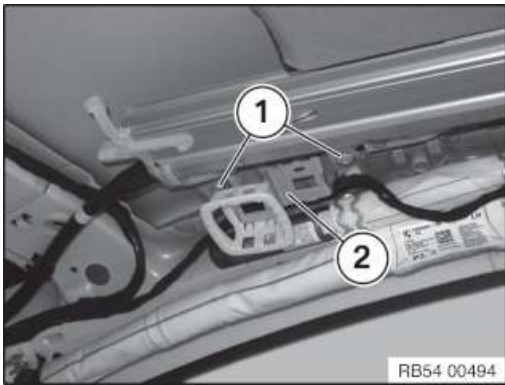
A damaged head airbag exhibits an impaired protective function and in extreme cases loses its protective function altogether.

A damaged head airbag must be [replaced](#).



Remove felt (1) on the left and right. *Installation note:*
Felt must be rebonded.

Without felt, there is a risk of damage to the sliding head liner.

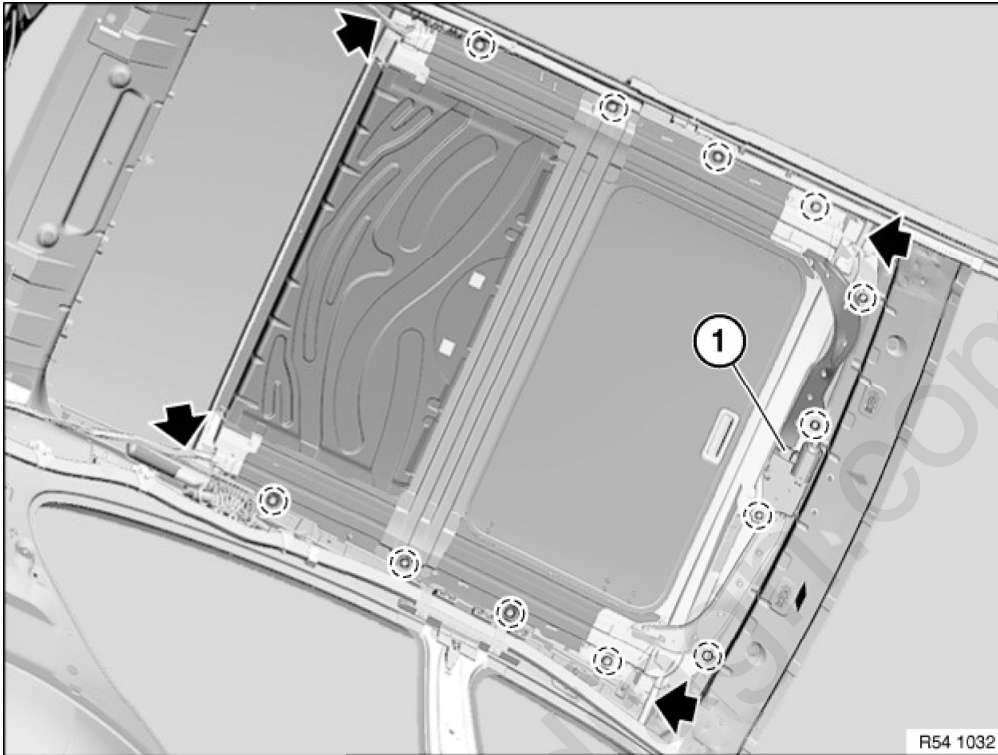


Important!

Lay out protective mats to protect the interior against swarf from the drilled-out rivets and damage.

Drill out rivets (1) and remove holder (2).

If necessary, press off rivet heads with special tool [2 348 128](#) and remove.

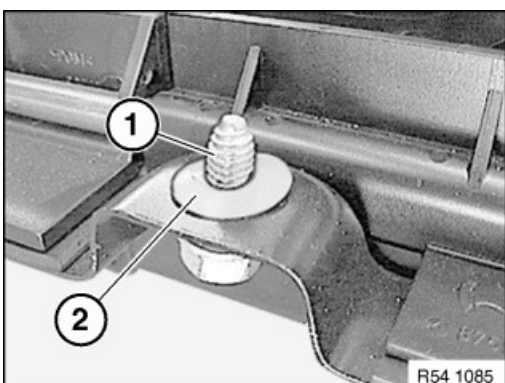


- Unfasten plug connection (1) and disconnect.
 - Detach water drain hoses
 - Helper must hold glass slide/tilt sunroof to prevent it falling out.
 - Release screws in marked area and carefully lower glass slide/tilt sunroof
- Tightening torque [54 12 02AZ](#).

Important!

Do not damage any surrounding components when removing the glass slide/tilt sunroof.

Completely remove the glass slide/tilt sunroof through the front passenger door:



Installation note:

If necessary, remove fabric adhesive tape.

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

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

**Important!**

Do not crush any cables when installing the glass slide/tilt sunroof.

Installation note:

To align glass slide/tilt sunroof to body aperture, insert the screws and tighten loosely.

Glass slide/tilt sunroof must still be able to move in the body aperture.

On account of leaks, glass slide/tilt sunroof must be exactly aligned to body aperture.

Insert special tool [2 354 941](#) in centring bore (left and right) up to limit position in glass slide/tilt sunroof and body.

Tighten down screws.

Tightening torque [54 12 02AZ](#).

Remove special tool [2 354 941](#) .

[Initialise](#) glass slide/tilt sunroof.

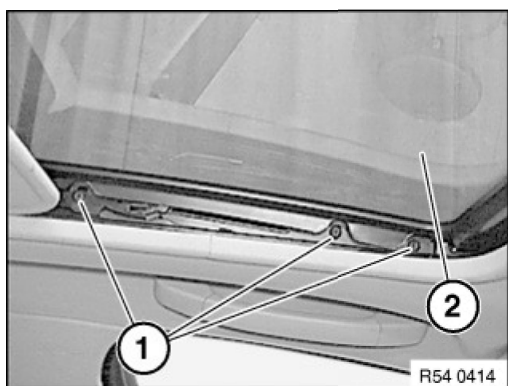
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*Installation note:*

- Microencapsulated screws (Loctite) must be replaced and may not be reused
- Screw connection must be completed within 20 minutes (start of curing)
- Microencapsulated screws must not be retightened
- Clean thread of nut beforehand in event of repeated use

**Necessary preliminary tasks:**

- Remove both [gaiters](#)



Release left and right screws (1).

Remove glass slide/tilt sunroof panel towards top.

Installation note:

Apply Loctite to screws.

[Adjust](#) glass slide/tilt sunroof panel.

Tightening torque [54 12 01AZ](#).

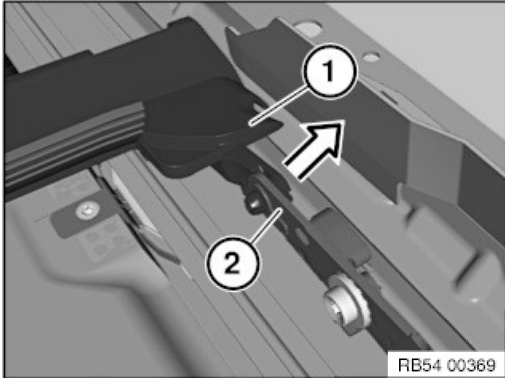
[Initialise](#) glass slide/tilt sunroof.

54 12 138 Removing and installing/renewing water channel for glass slide/tilt sunroof



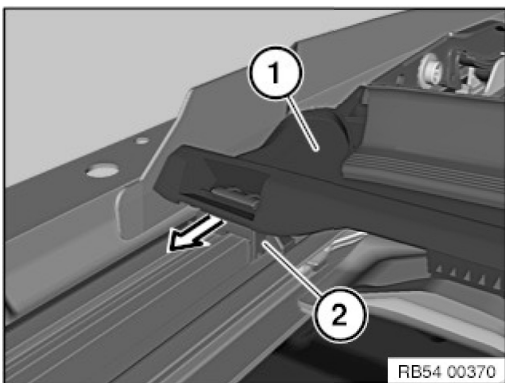
Necessary preliminary tasks:

- Remove [glass tilt sunroof cover](#)



Lever out linkage of left and right water channels (1) from gate (2). *Installation note:*

Linkage must audibly engage in gate.



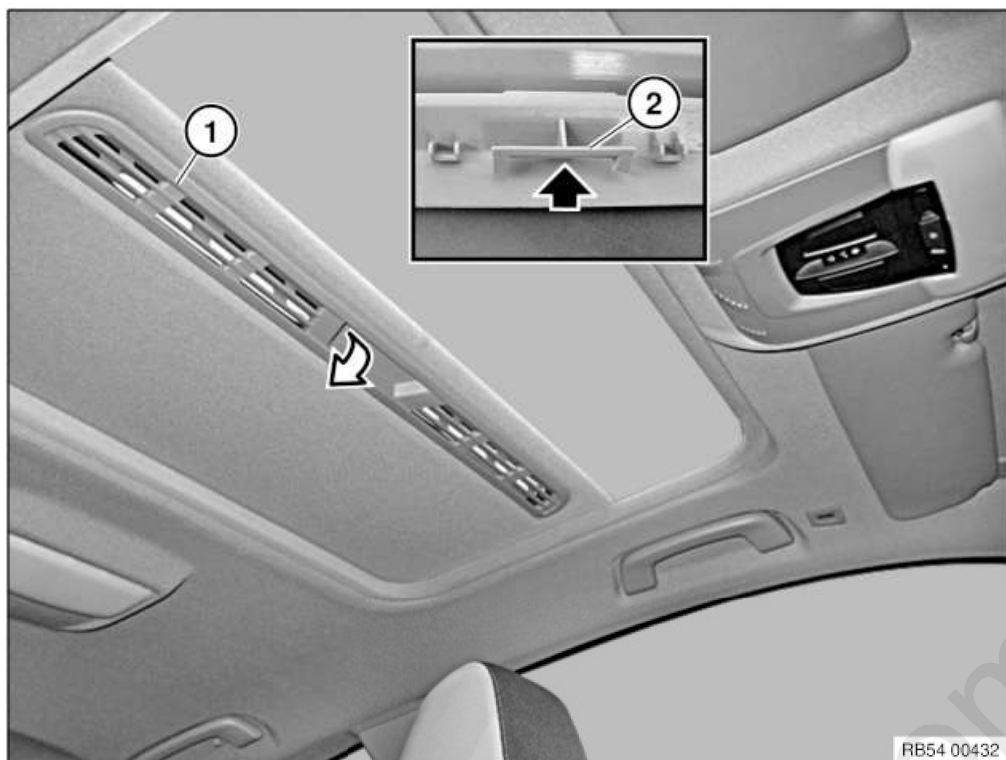
Unclip left and right water channels (1) from carriage (2) towards rear. *Installation note:*

Water channel must audibly engage in carriage.



Important!

Perform function check only with fitted water channel. (Risk of damage).



Partially open sliding head liner.

Reach between glass slide/tilt sunroof panel and sliding head liner with one hand and unlock retaining lugs (2) one after the other.

At the same time remove handle strip (1) downwards.

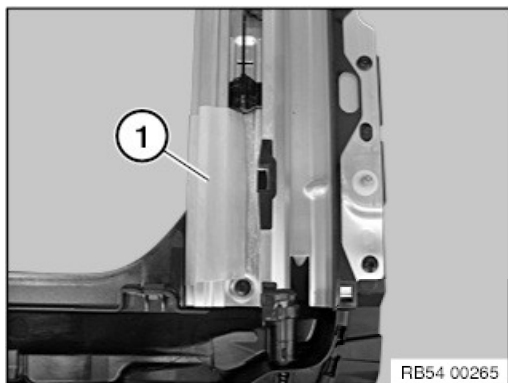
Installation note:

Retaining lugs must not be damaged.



Necessary preliminary tasks:

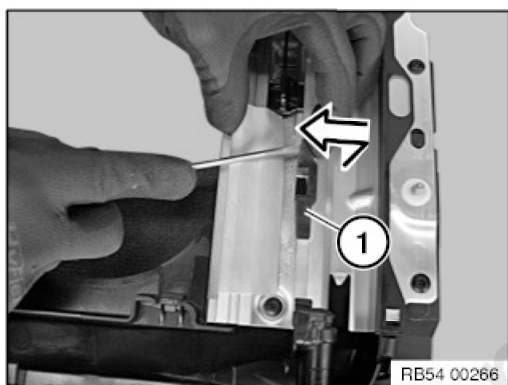
- Remove [wind deflector](#)
- Remove [glass slide/tilt sunroof panel](#)



Note:

Removal operation is shown on left side, right analogous to that.

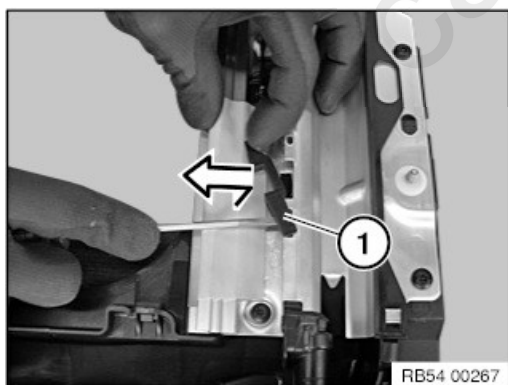
Tape off working area with adhesive tape (1).



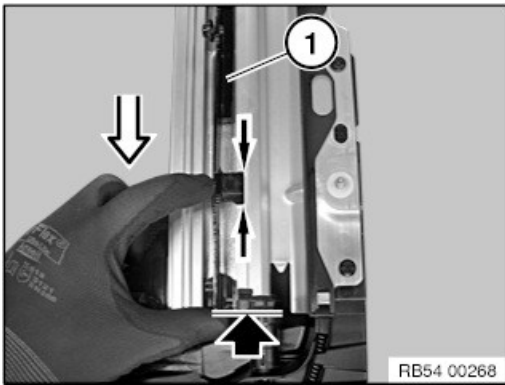
Note:

Replace the control gate (1) after disassembly.

Lift one side of the control gate (1) with a screwdriver and press away from the guide rail.



Lift the other side of the control gate (1) with the screwdriver and push it out.

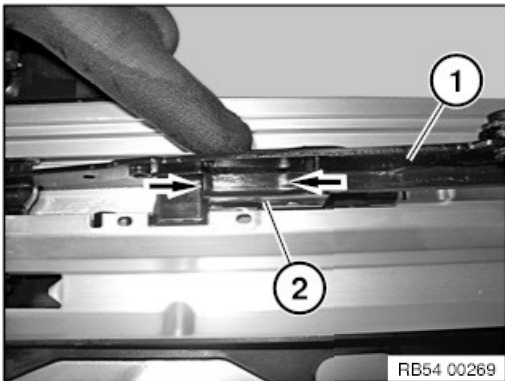


Move the mechanism (1) to the end of the guide rail.

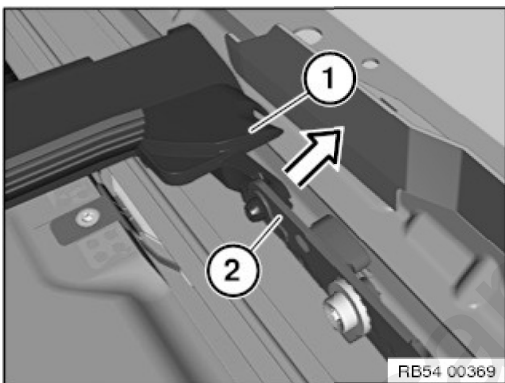
Slider must be positioned in the aperture for the control gate (arrows).

Note:

For the next operation, counter-hold the mechanism at the end of the guide rail as shown here.

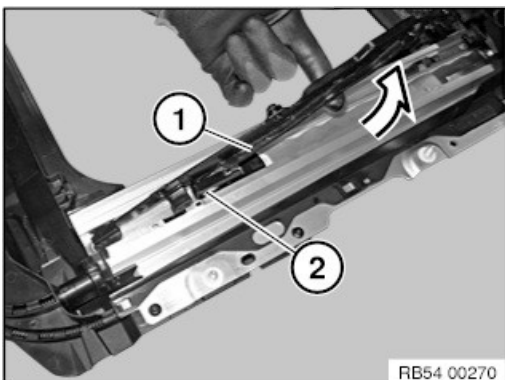


Counter-hold the mechanism (1) at the end of the guide rail and move the carriage (2) forward until the carriage (2) is positioned in the aperture of mechanism (1).

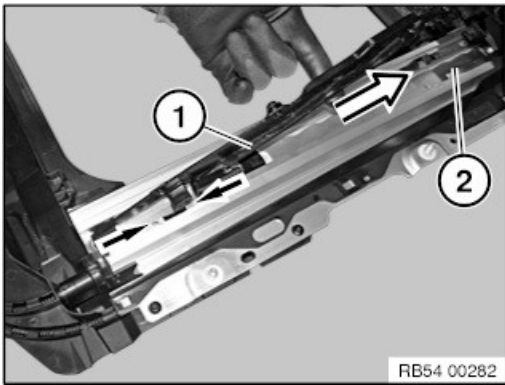


Unclip the linkage for the water channel (1) from the mechanism (2). *Installation note:*

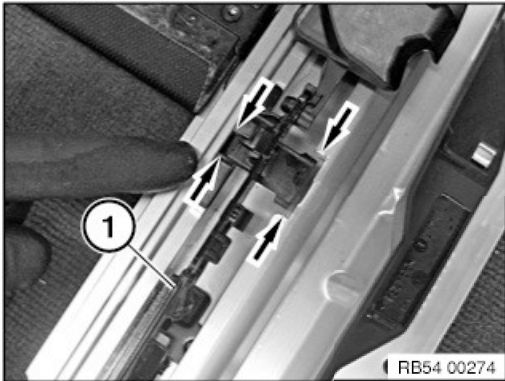
Engaging of water channel linkage in gate must be felt.



Lift the mechanism (1) out of the carriage (2) and guide rail.



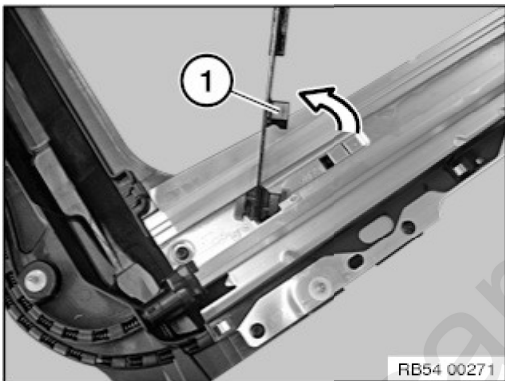
Hold the left and right of the mechanism (1) raised and move the carriage (2) back until the aperture for the control gate is exposed.



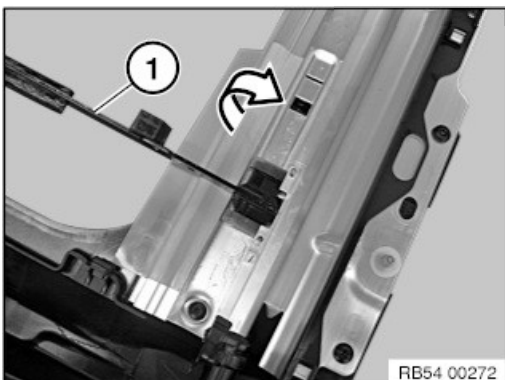
Installation note:

Move the carriage forward until it is positioned with the opening below the cover carrier (1) and can be immersed.

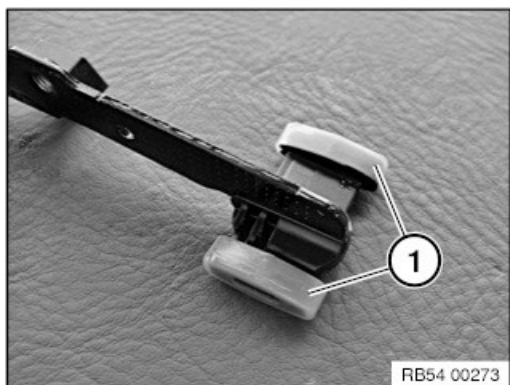
Insert the mechanism (1) outside in the guide rail and inside in the rear control gate.



Pull the mechanism (1) back to the aperture and turn it out of the guide rail in the direction of the arrow by 90°.



Lift the mechanism (1) out of the guide rail in the direction of the arrow.



Note:

Horn cheeks (1) may remain in the guide rail.

Horn cheeks (1) must be mounted correctly on the mechanism.



Installation note:

Keep to installation sequence.

[Initialise](#) glass slide/tilt sunroof.

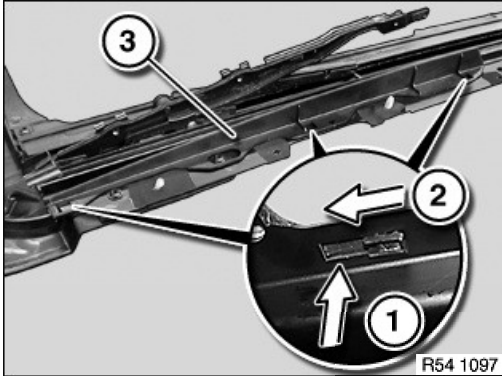
If the movement is stiff, lightly lubricate the guide channel with lubricating grease RHF1 (Fuchs).

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Necessary preliminary tasks:

- Remove [complete glass slide/tilt sunroof](#)



Press screen panel (3) towards inside of vehicle and simultaneously slide forwards in direction of arrow (2).

Remove screen panel (3) upwards in direction of arrow (1).

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54 12 136 Removing and installing/replacing sliding head liner for glass slide/tilt sunroof panel



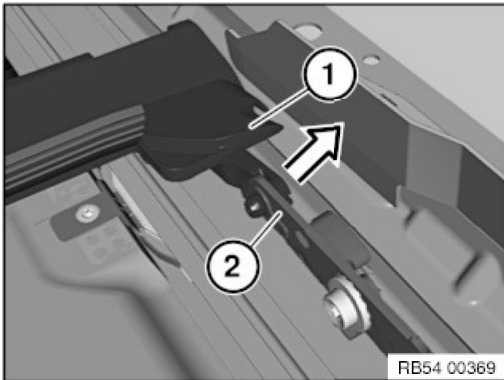
Special tools required:

- [00 9 460](#)

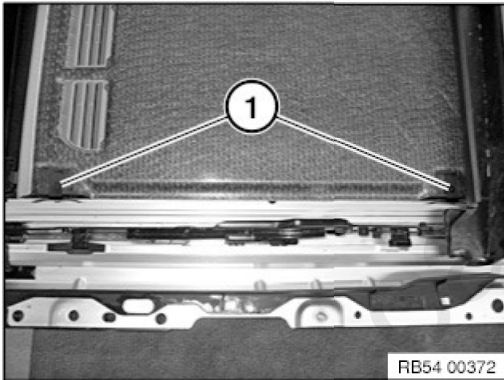


Necessary preliminary tasks:

- Remove [glass slide/tilt sunroof panel](#)



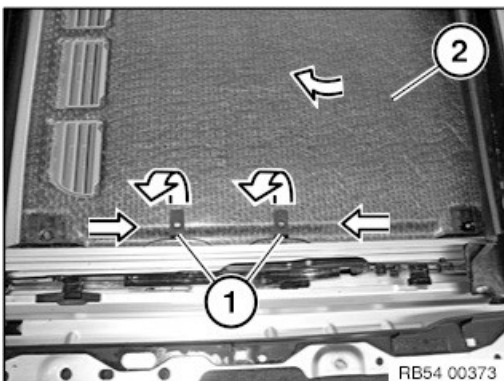
Lever out linkage of left and right water channels (1) from gate (2). *Installation note:*
Linkage must audibly engage in gate.



Release left and right screws (1).

Installation note:
Replace micro-encapsulated screws (1).

Tighten down screws (1) with special tool [00 9 460](#) .
Tightening torque [54 12 04AZ](#).



Slide spring glider (1) inwards and remove in direction of arrow.

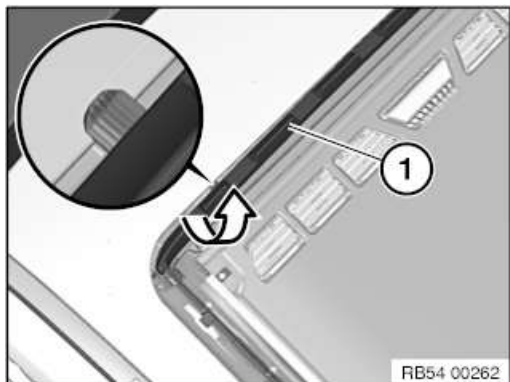
Remove headlining frame (2) upwards in direction of arrow.

Installation note:
Make sure spring glider is installed in correct position.

Run a function check.

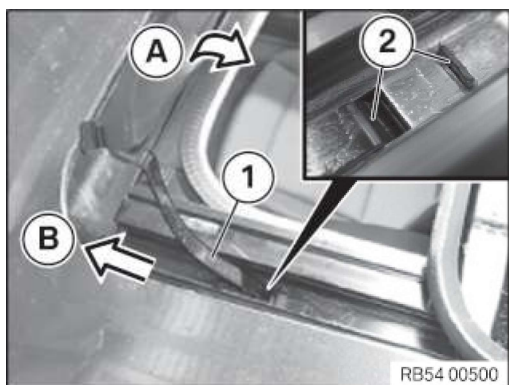
If headlining frame has stiff movement, apply a light coat of grease RHF 1 (manufactured by Fuchs) to guide duct.

54 12 497 Removing and installing/replacing wind deflector for glass slide/tilt sunroof



Open glass slide/tilt sunroof.

Carefully detach rubber stops from left and right of wind deflector (1) in direction of arrow.



Raise wind deflector (1) in vertical position in direction of arrow (A).

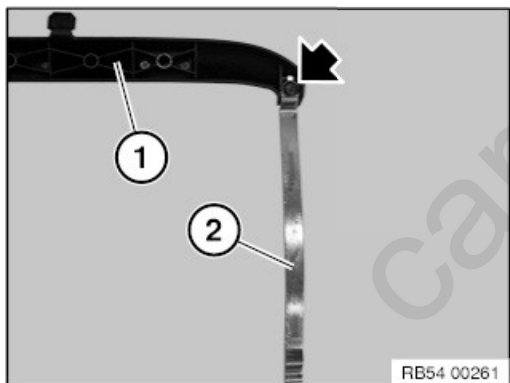
Pull left and right wind deflector (1) in direction of arrow (B) out of slide/tilt sunroof unit.

Installation note:

Make sure rubber stops are installed.

Position wind deflector with rubber stops under roof outer skin.

Make sure spring clamps (2) are correctly fitted in the slide/tilt sunroof unit.



Replacement only:

Screw wind deflector (1) with wire spring clip (2) on the left and right.

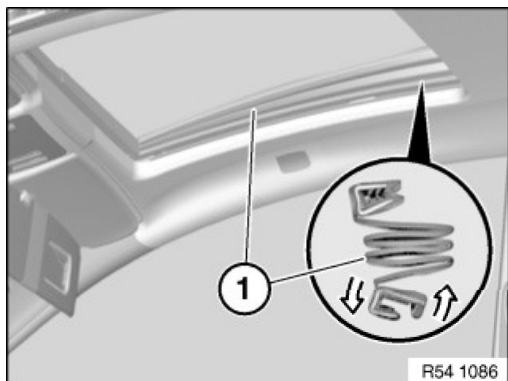
Tightening torque [54 12 03AZ](#).

**Important!**

Handle the gaiter with extreme care throughout the entire procedure.

Soft component is highly susceptible to tearing and kinking.

Grip the gaiter by its attachment strip and do not pull on the rubber (risk of damage!).



Move glass slide/tilt sunroof into vent position.

- I. Carefully detach gaiter (1) at top from guide.
- II. Twist gaiter (1) out of lower guide.

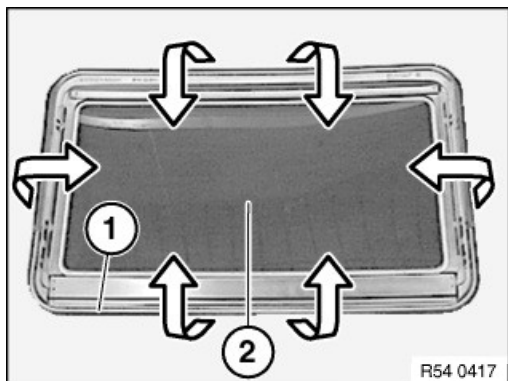
Installation note:

Check that attachment strips are firmly seated on guides.

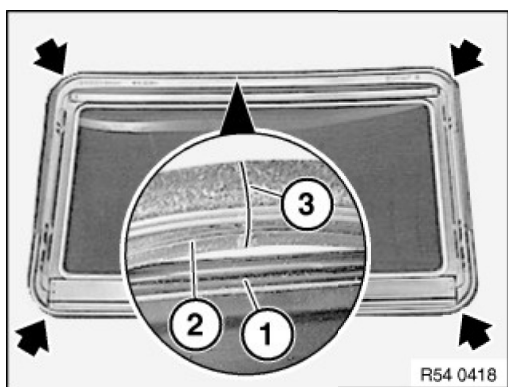
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**Necessary preliminary tasks:**

- Remove [glass slide/tilt sunroof panel](#)



Pull off sealing (1) from glass slide/tilt sunroof panel (2).

**Installation note:**

Coat guide duct (1) and sealing (2) with soapy water.

Installation rear centre, start with sealing joint (3).

Do not pull sealing too tight in the radii (leaks).

**Important!**

Make sure operations sequence is followed without exception. (Risk of damage).

**Necessary preliminary work:**

1. Remove [glass slide/tilt sunroof panel](#)
2. Remove [complete glass slide/tilt sunroof](#)
3. Remove [wind deflector](#)
4. Remove [drive unit with transmission](#)
5. Remove [water gutter](#)
6. Remove [headlining frame](#)

*Installation note:*

We recommend following the installation sequence of operations 6 to 1.

- [Adjusting glass slide/tilt sunroof panel](#)
- [Initialise](#) glass slide/tilt sunroof

54 10 ... Notes on glass slide/tilt sunroof (initialisation/normalisation/learning of characteristic curve)



Initialisation comprises:

- Normalisation
- Learning characteristic curve

The mechanical end positions are recorded and stored during normalisation.

The characteristic curve is learnt immediately after normalisation.

When the characteristic curve is learnt, the mechanical closing forces of the glass sunroof are recorded and stored for correct operation of the anti-trap mechanism.

Initialisation is started and implemented by pressing and holding switch in "Lift" direction.

Initialisation depends on installed roof system and software used.



Then carry out **initialisation**:

- if the glass sunroof has been mechanically moved by means of the emergency operation
- 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 repair work is carried out on the mechanism of the glass sunroof
- after exchange of the control unit
- after replacement of circumferential gasket



Warning!

The anti-trapping mechanism is not active during initialisation.

For correct initialisation and function, the following preconditions must be met:

- Ignition ON
- at room temperature ($23\text{ °C} \pm 5\text{ °C}$)
- No direct solar radiation
- only when vehicle is at a standstill
- Fully charged vehicle battery
- in addition, for US vehicles, let engine run to enable key, if necessary

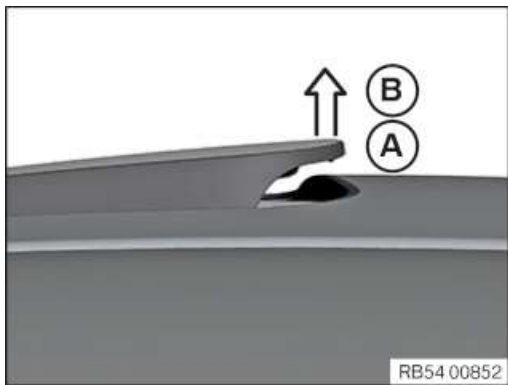


Note:

Subsequently described processes relate to a completely closed roof system. However, initialisation can be started from any position.

Initialisation:

- Operate switch in "Lift" direction and hold (roof system moves to "Lift" position)
- In the event of delayed start or sudden stop of the glass sunroof, continue operating the switch in the "Lift" direction



Note:

Hold switch depressed for entire process.

- After reaching the fully raised position (A), keep the switch further pressed for approx. 30 seconds (initialisation starts)
- Glass sunroof moves briefly from fully raised position (A) in direction of position (B)
- Shading system (sliding head liner) closes completely
- Shading system (sliding head liner) closes completely
- Glass sunroof moves to "Closed" position
- Glass sunroof then moves to "Open" end position and immediately back to "Closed" position
- After a brief pause, shading system closes completely

Note:

Once glass sunroof and shading system have closed completely, initialisation is finished. Button can be released.



Note:

- If the switch is released in the meantime, the entire procedure must be repeated
- On completion of successful initialisation, the corresponding messages in the check control and the control display go out
- Carry out function check (one-touch function, anti-trapping protection and, if necessary, comfort function)

41 00 ... Notes on the water drain hose of the slide/tilt sunroof

The water drain hoses for the slide/tilt sunroof are partially permanently integrated in the body and cannot be replaced individually.

These water drain hoses can only be completely replaced with extensive body repair work (e. g. after an accident).

Component	Vehicle	Individually replaceable
Water drain hose, front	All BMW	No
	All MINI	
Rear water drain hose	E60, F34	No
	All other BMWs	Yes
	All MINI	Yes

An individual solution is required for damage that was not caused by an accident.

Contact national hotline.

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Special tools required:

- [00 9 327](#)

1 General remarks on handling rubber seal profiles:

- If seals reveal partly detached protective film on delivery, they must not be bonded.
- Store seals at 5 °C to 40 °C.
- If, during the handling, the protective film has come off before bonding, it can still be bonded.
- Bonding at room and object temperature 25° ±5° C. Temperatures between 40 and 50 °C significantly increase initial adhesion.
- Seals, which are subjected to temperatures above 80 °C after bonding, will be very difficult to remove.
- Maximum storage time for replacement: see identification of the expiry date on packaging

2 Damage pattern, repair and replacement

A partially released bonding (rubber part adhesive tape or adhesive tape paint) up to 120 mm may be finished. Continue with Point 2.1.

A partially released bonding (rubber part adhesive tape or adhesive tape paint) above 120 mm may **not** be finished. Gasket must be replaced. Continue with Point 2.2.

2.1 Repair of partially released bonding (adhesive tape rubber part or adhesive tape paint)

2.1.1 Clean faulty areas

- Release adhesive area of paint side from recesses and degrease with [cleaning agent R2](#). Stick to air drying time > of 1 minute. Never use paint thinner!
- This will usually partially destroy intact edge adhesive areas.
- When removing, it is important to wipe off the adhesive area of the adhesive tape with a lint-free disposable cloth. (e.g. blue Kimtex)
- Carefully wipe off the adhesive areas.

Note:

Use necessary cotton- or fluff-free paper towel once only.

Do not touch the adhesive area after cleaning.

2.1.2 Apply adhesive

- Apply [profile rubber adhesive](#) evenly as a thin layer first on the gasket and then on the painted surface.
- Stick to air drying time of 2 to 3 minutes.

Attention:

Avoid contact with skin!

Do not apply adhesive to visible painted surfaces.

2.1.3 Press in rubber seal

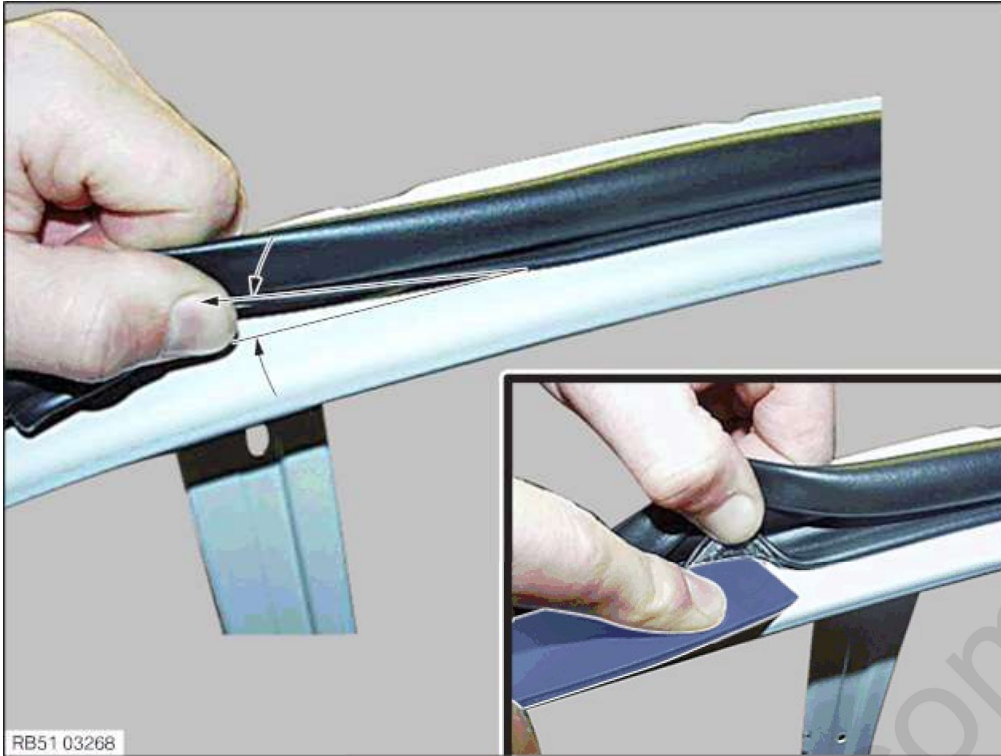
- Press down gasket using contact pressure (forced pressure not necessary) for > 1 minute.

Attention:

Load can be applied to the bonding only after a period of 2 minutes. This waiting time is absolutely essential.

2.2 Replacement

2.2.1 Peeling off the faulty rubber seal



- Remove bonded connection with fingers or cleaning agent liner [00 9 327](#).
- Overstretch gasket below an angle of maximum 20° very slowly under even tensile stress. If the gasket is pulled off too quickly, the adhesive tape can tear off and remain on the painted surface. The adhesive tape remaining on the painted surface must be removed with high cleaning costs.

Note:

When the adhesive tape separates from the gasket, the adhesive tape remaining on the paint must be fully separated at one location by approx. 10 mm until it is easy to grip.

Pull off the adhesive tape by pulling strongly at an angle of approx. 20°.

When existing gaskets are being peeled off with a hot air blower: Do not damage paintwork.

2.2.2 Clean bonding surface

- if required, remove adhesive remains with [eraser disk](#) or [cleaning agent R2](#). do not damage paint. Stick to air drying time > of 1 minute.
- Before a new bond, treat the entire adhesive area with [Sika Aktivator 205](#). Stick to air drying time > of 1 minute.

Note:

Use necessary cotton- or fluff-free paper towel once only.

Do not touch the adhesive area after cleaning.

2.2.3 Pull off protective film of the bonding surface

- Pull off the protective film off of the new gasket by approx. 15 cm using the tab.

Attention:

Once the protective film has been removed, do not under any circumstances touch the exposed bonding surface.

2.2.4 Apply rubber seal

- Press on the gasket by hand continuously while pulling off the liner slightly at the same time.

Note:

If positioned incorrectly, the gasket can still be pulled off, repositioned and pressed on again.

Always ensure that you do not touch the bonding surface with your fingers or contaminate it in any way.

- Press gasket while moving in a straight line without compression or over-stretching.
- Compress the gasket the corners; never stretch it. (critical area)

2.2.5 Establish sealing joint

- Where the beginning and end meet, a mark is created from pressing the loose end onto the beginning of the gasket.
Cut off the gasket vertically along the marked line (use sharp knife or special scissors) and press in place.
- Visually check the pre-bonded gasket.

Note:

Small areas of gasket can remain stuck to adhesive tape of loose end.

2.2.6 Press gasket

- Always press gasket vertically to the bonding surface
- Press gasket by hand or hand roller
- Adhesive tape width up to 5 mm, contact pressure $> 5 \text{ N/cm}^2$
- Adhesive tape width up to 10 mm, contact pressure $> 10 \text{ N/cm}^2$

Note:

Firm thumb pressure has approx. 35 N/cm^2

3 Checking the rubber seal

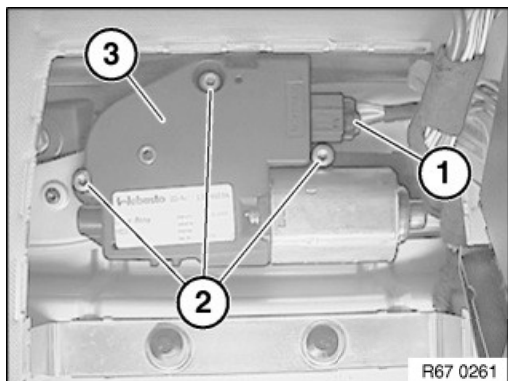
- Check the bonded gaskets for correct positioning and perfect adhesion. The bonding can be checked by pressing back the sealing lip.
- The peel strength of the gasket must be greater than 10 N/cm^2 for about 15 min after bonding.

67 61 515 Replacing electric motor with gearbox (front) for operation of slide/tilt sunroof



Necessary preliminary tasks:

- Remove [roof switch cluster](#)



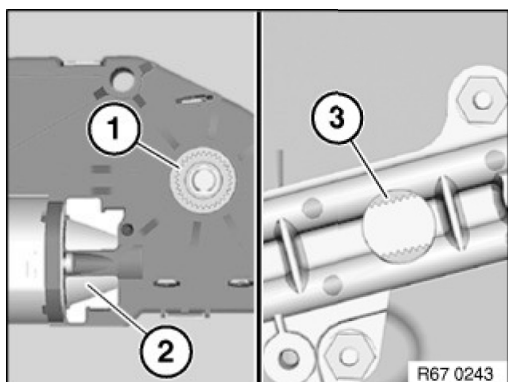
Note:

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

Unfasten plug connection (1) and disconnect.

Release screws (2), tightening torque [54 13 1AZ](#).

Remove drive with gearbox for actuating slide/tilt sunroof (3).



Installation note:

Insert gear (1) of electric motor with gearbox for operation of slide/tilt sunroof (2) exactly in gearing (3).



Installation note:

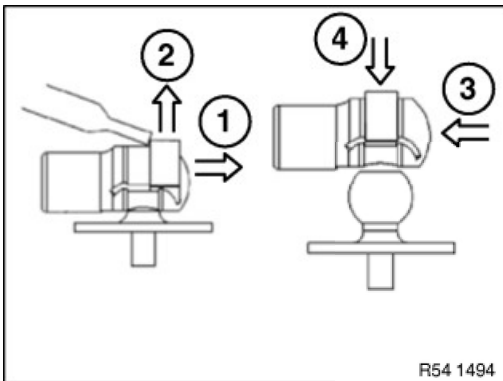
- Initialise [slide/tilt sunroof](#).

**Warning!**

Danger of injury! When installed, the gas pressurised shock absorber is under preload. Minimise preload as far as possible before removing.

**Important!**

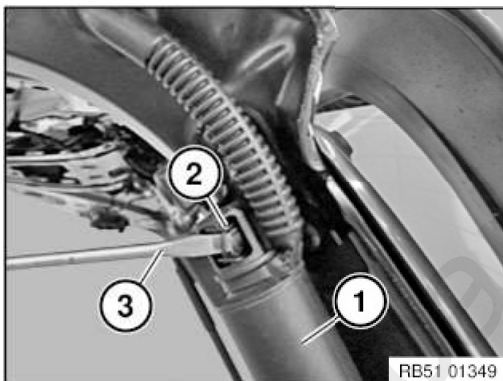
Never lift off ball socket with engaged clamp.

**Version A:**

1. Push on clamp in direction of groove with screwdriver
2. Lift off ball socket from ball pin
3. Slide clamp back
4. Fit ball socket on ball stud and snap into place with force

Installation note:

Pack grease into two opposite positions in socket. The grease spreads after installation on the ball pin all round in the ball socket.

**Version B:****Important!**

Risk of damage!

If you are not careful, retaining spring (2) may be bent to such an extent that the entire drive spindle will have to be replaced.

Press drive spindle (1) against ball pin in order to relieve strain on retaining spring (2) at ball pin.

Pull out retaining spring (2) approx. 2-3 mm with screwdriver (3).

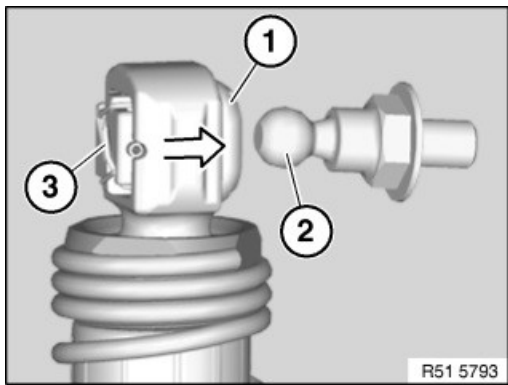
Pull off spindle foot.

**Warning!**

Observe warning notices on the damper.

Electrical spindle drive for tailgate is under mechanical spring load!

The component must be secured against falling down.



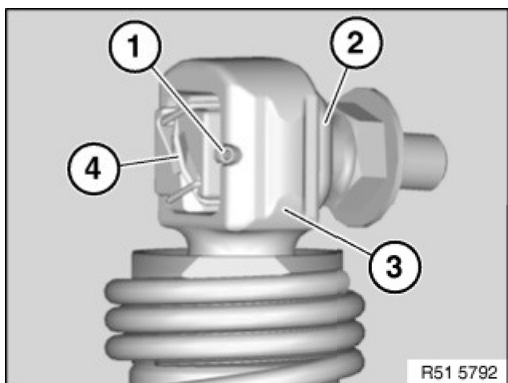
Attention!

Risk of damage!

Do not press on spindle drive at an angle or twisted.

Installation note:

Press ball socket (1) onto ball pin (2) until retaining spring (3) engages correctly (clicking sound).



Important!

If retaining spring (4) is damaged!

Release pin (1).

Remove spindle drive (3).

Remove ball socket (2).

Remove retaining spring (4) and replace if necessary.

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Screw securing adhesive is a means of preventing a screwed connection from being loosened by external influences.

Once the screw has been coated with adhesive, the adhesive remains inactive until such time that it is activated by the encapsulation breaking when the screw is inserted and then cures (hardens) at room temperature.



Installation note:

- Screw connection must be completed within 20 mins. (start of curing)
- Microencapsulated screws must not be retightened
- Thread of nut must be cleaned beforehand in event of repeated use

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