

# Disassembling and assembling wing mirrors

## 1 – Disassemble exterior mirrors



### TECHNICAL INFORMATION

The training video illustrates the methodology for assembling and disassembling the exterior mirror.  
The training video does not replace the repair instructions.  
The training video is not subject to the update service.

- Follow repair instructions!

## 2 – Assemble exterior mirror



### TECHNICAL INFORMATION

The training video illustrates the methodology for assembling and disassembling the exterior mirror.  
The training video does not replace the repair instructions.  
The training video is not subject to the update service.

- Follow repair instructions!



### TECHNICAL INFORMATION

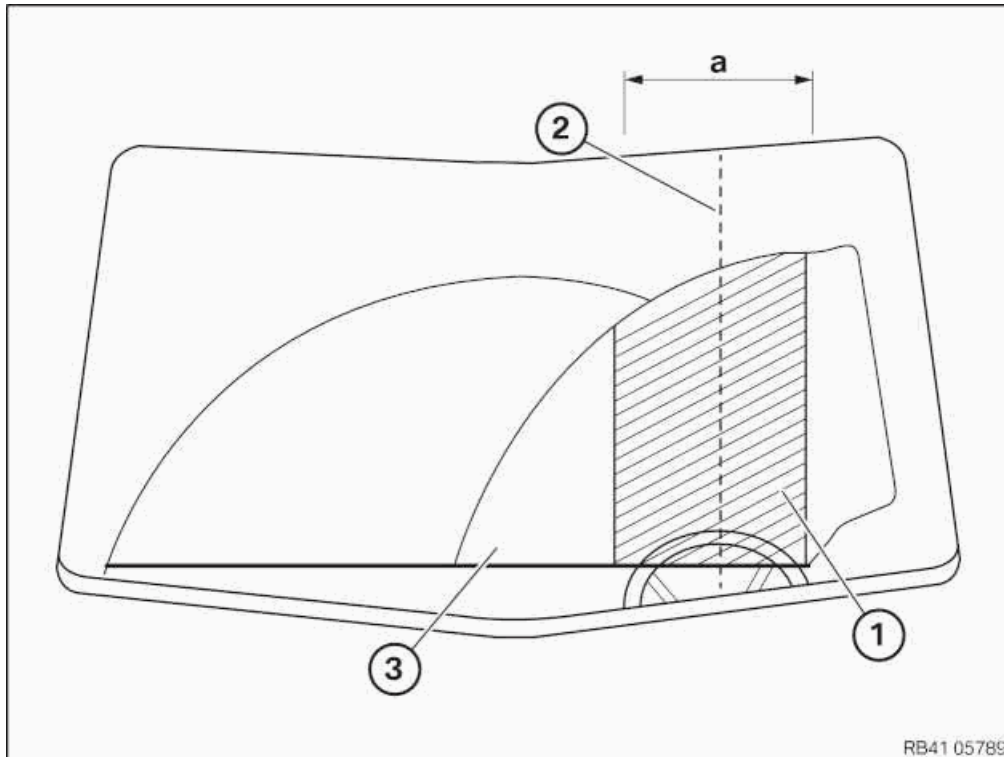
The training video illustrates the methodology for assembling and disassembling the exterior mirror.  
The training video does not replace the repair instructions.  
The training video is not subject to the update service.

- Follow repair instructions!

# Repair of damage caused by stone chips on the windshied

## General notes on repair of damage caused by stone chips

### Definition of field of vision



- 1 Field of vision** The field of vision is an approx. 30 cm wide strip (dimension a) centered above the steering wheel. The field of vision is bordered on the top and bottom by the wiper range.
- 2** Vertical line through the centre of the steering wheel
- 3** Wiper range

The repair of damage caused by stone chips is only permissible under the following conditions:

The conditions detailed below for repairing laminated safety glass conform to the legal regulations in Germany.

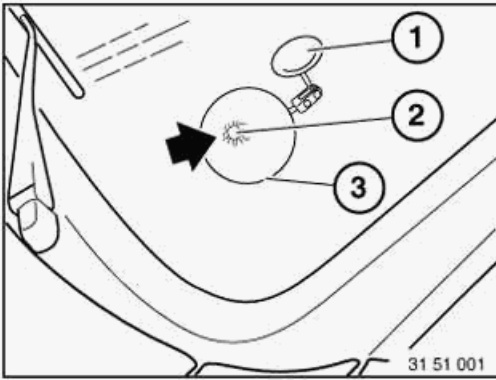
In other countries, the relevant regulations must be observed.

- The point of damage is located outside of the field of vision
- The point of damage is located outside of the contact surfaces of sensors and cameras
- Only the outer area of the windscreen was damaged
- The inner surface of the windscreen and the plastic film in between were not damaged
- The point of damage is free of moisture, dirt or similar
- The diameter of the point of damage is smaller than 5 mm
- Radial cracks originating from the point of damage are not longer than 50 mm
- Cracks do not reach to the outer edge of the windscreen
- Visibility through the repaired surface must be clear, transparent and with minimum distortion

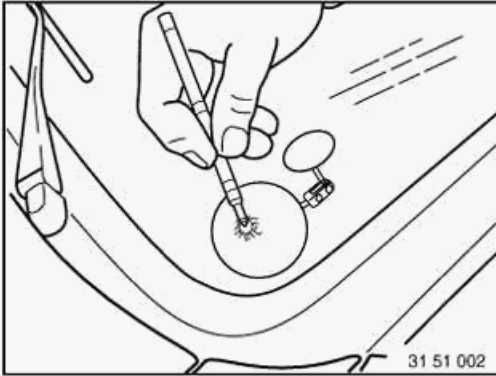
## 1 – Repair of damage caused by stone chips on the windscreen

### Prerequisite

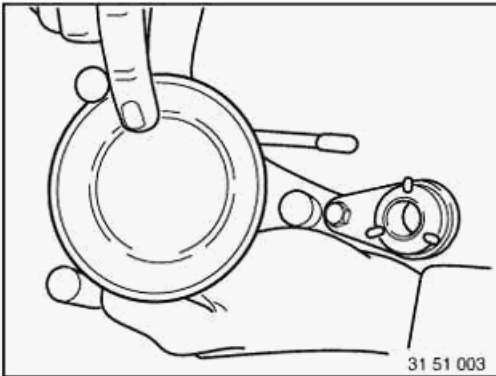
Windscreen temperature greater than 20 °C. If necessary, heat the windscreen from the inside.



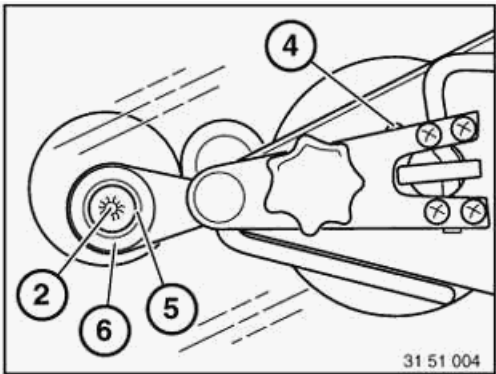
- Thinly coat the suction cup (1) of the concave mirror using the gel.
- Position the suction cup (1) on the windscreen from the inside so that the damaged area (2) can be viewed in the concave mirror (3) from the outside.



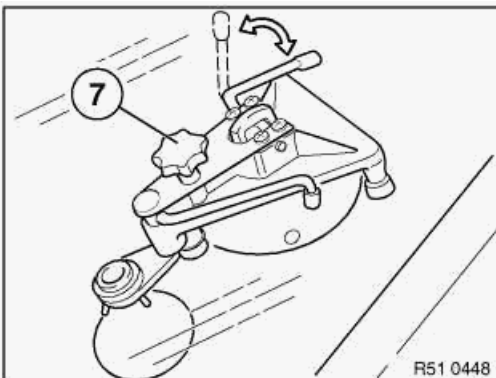
- Remove all glass shards from the damaged area using a scribe without enlarging the damaged area.



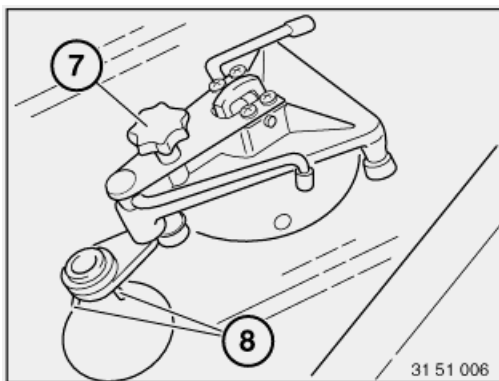
- Thinly coat the suction cup of the tool holder with the gel.



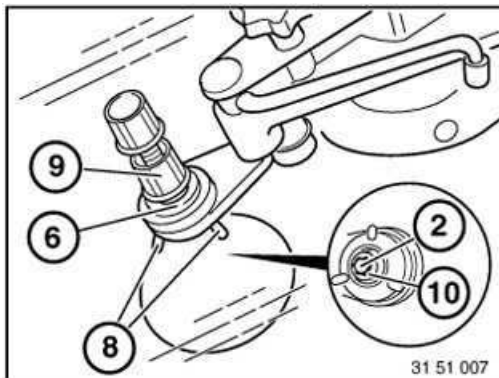
- Position the tool holder (4) on the windscreen from the outside so that the opening (5) of the head (6) is positioned exactly over the damaged area (2).



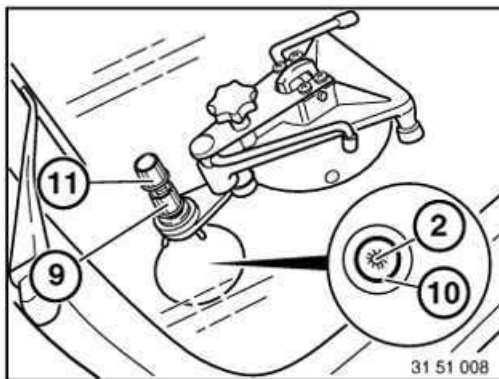
- Unscrew knurled screw (7).
- Move the stop lever towards the front and rear once until the suction cup has been secured to the windscreen.



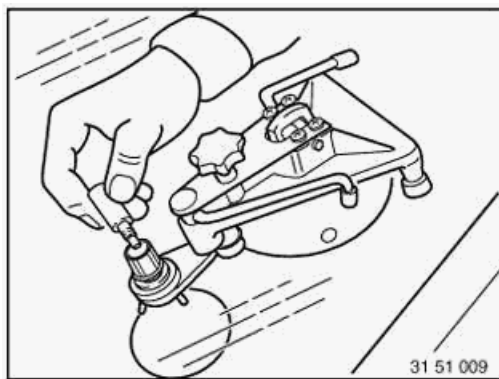
- Screw in the knurled screw (7) until the feet (8) are positioned straight and securely on the windscreen.



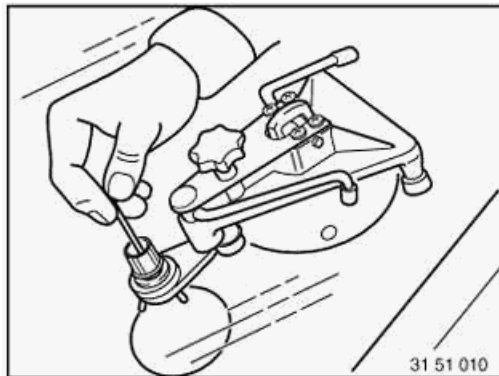
- Screw in the cylinder (9) into the head (6) until the rubber seal (10) firmly surrounds the damaged area (2) on the windscreen and the feet (8) just about lift slightly.



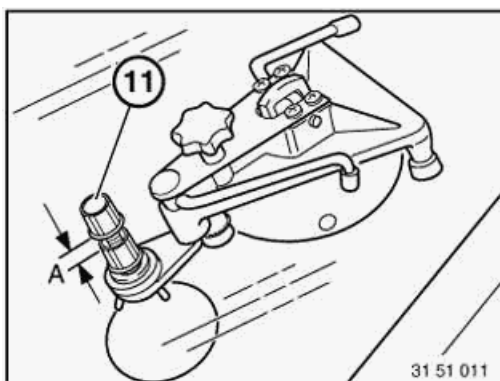
- Unscrew the injector (11) from the cylinder (9).
- Look into the cylinder (9) from the top and check whether the rubber seal (10) is centrally over the damaged area (2).
- Correct the position if necessary.



- Open the bottle of resin and fill approximately 1/3 of its contents into the cylinder.
- Once again close the bottle of resin.



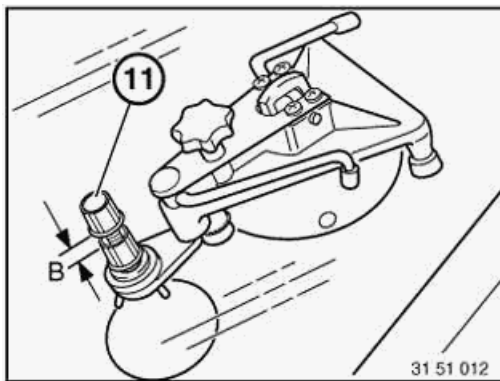
- Stir out any potentially available air bubbles in the filled resin using a wooden stick.



- Screw the injector (11) into the cylinder up to dimension (A) (slightly perceptible resistance) and let it rest for approximately 5 minutes.

Dimension (A) = 5 mm

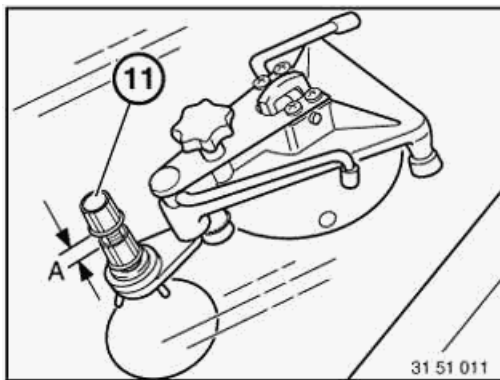
**Note:** In this position there is a pressure of approximately 16 bar. When monitoring the impact spot it is possible to see that the air trapped in the damaged area slowly escapes (noticeable as black shadows).



- Quickly unscrew the injector (11) to dimension (B).

Dimension (B) = 12 mm

**Note:** In this position a vacuum now takes effect and extracts the remaining air from the damaged area.

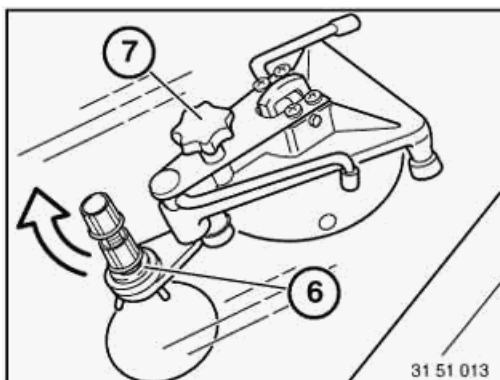


- Once again screw the injector (11) into the cylinder to dimension (A) (slightly perceptible resistance) and once again leave everything to rest for a few minutes.

Dimension (A) = 5 mm

- Repeat the process of alternating between pressure and vacuum multiple times and then let the injector (11) rest in an intermediate setting between dimension (A) and dimension (B) for a few minutes.

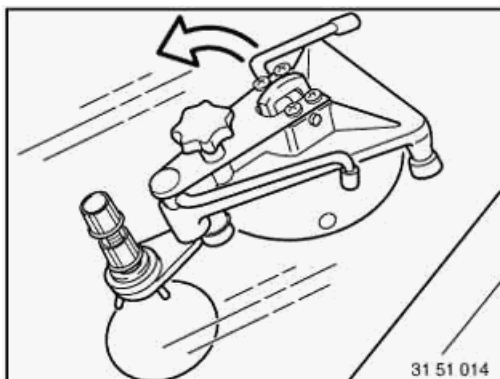
**Note:** If not all air has escaped yet, preheat the windscreen from the inside for a few seconds using a lighter during the pressure process.



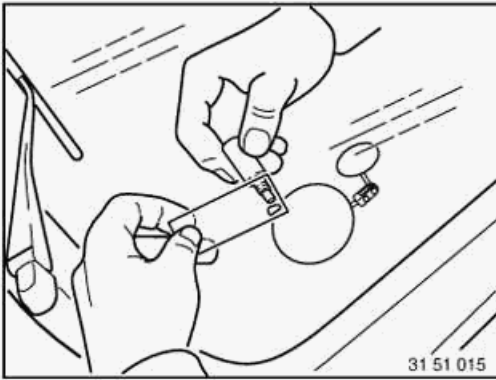
- Slacken the knurled screw (7).
- Swivel the head (6) to the side.
- Check the repair area from the top and in the concave mirror from different angles of view.

There should no longer be visible air pockets.

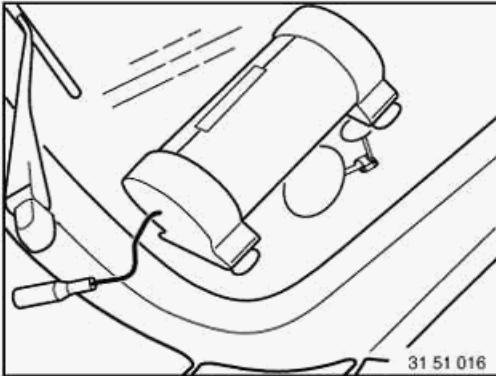
- If air pockets are still visible, swivel the head (6) back over the damaged area and screw in the knurled screw (7) as far as was previously the case.
- Repeat operations starting with pressure/vacuum process.



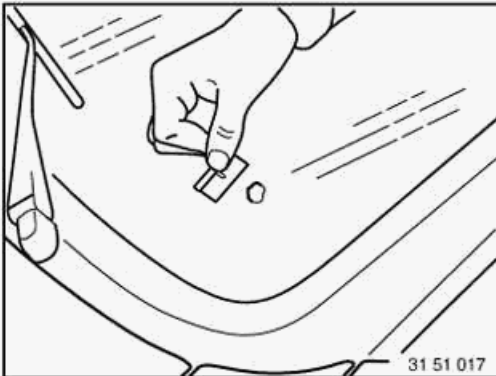
- Swivel the stop lever towards the front and remove the tool holder from the windscreen.



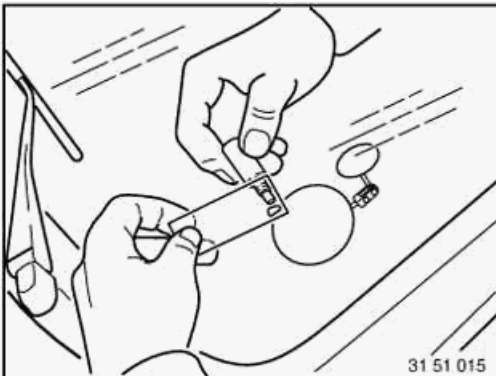
- Apply a drop of resin to the damaged area and cover with plastic film without applying pressure.



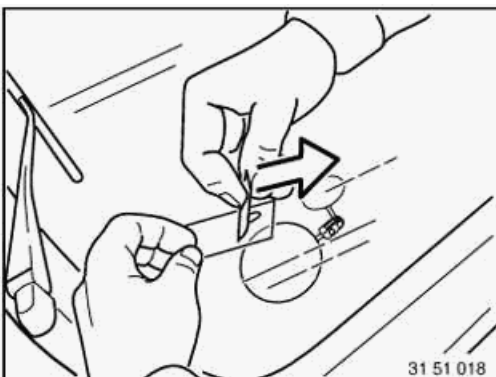
- Position the ultraviolet lamp over the repair area and severely press on the suction cups.
- Connect the ultraviolet lamp and allow the resin to harden for approximately 10 minutes.



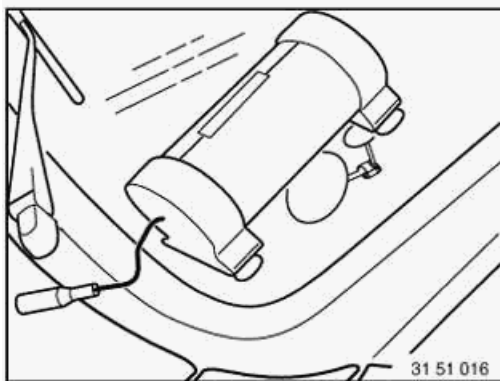
- Remove the ultraviolet lamp.
- Pull off the plastic film.
- Scrape off protruding resin using a razor blade.



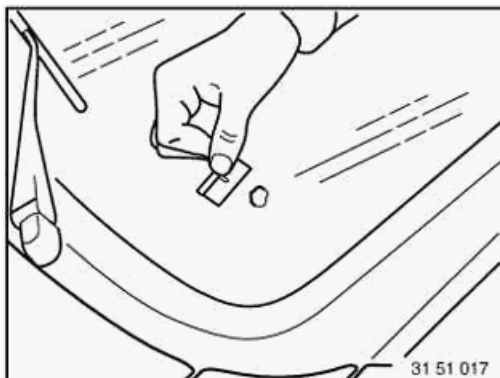
- Once again apply a drop of resin to the damaged area.
- Cover the area using a new sheet of plastic film.



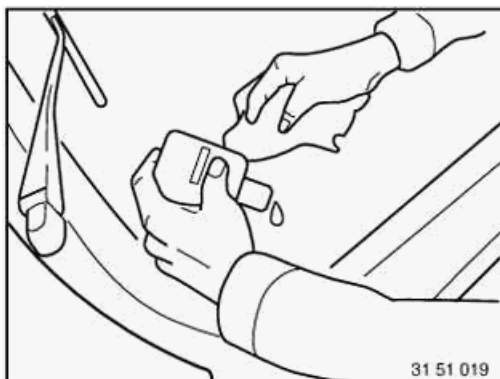
- Carefully rub over the plastic film with the razor blade so excess resin escapes at the sides.



- Position the ultraviolet lamp over the repair area and severely press on the suction cups.
- Connect the ultraviolet lamp and allow the resin to harden for approximately 10 minutes.



- Remove the ultraviolet lamp.
- Pull off the plastic film.
- Scrape off protruding resin around the damaged area with the razor blade.

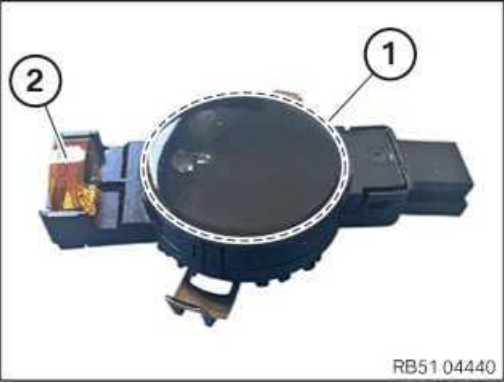


- Polish the repair area using a lint-free cloth and polish until the surface is clean and smooth.

# Replace the gel pad for rain-light-solar-condensation sensors

Not valid for sensors with 35 mm diameter.  
Rain-light-solar-condensation sensor removed

## 1 – Replacing the gel pad



### RISK OF DAMAGE

**Damage to the surface.**

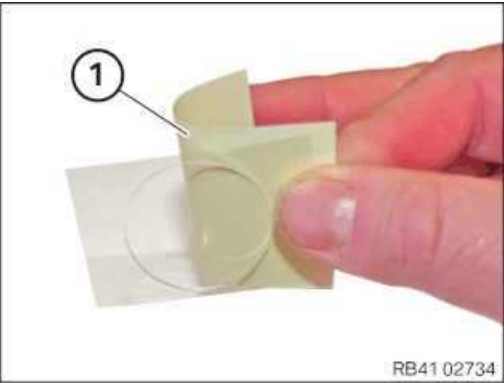
**The use of sharp-edged tools may damage the surface.**

- Use only microfibre cloths.

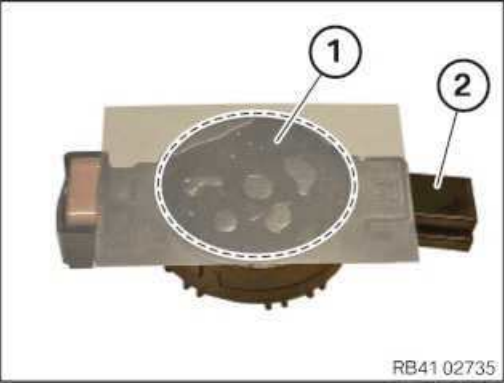
- Remove the gel pad (1) by hand.  
Do not touch or damage the printed circuit (2).
- If necessary, remove any gel residue using a microfibre cloth.
- Clean the surface of the rain-light-solar-fogging sensor using a microfibre cloth R2 soaked in cleaning agent.

### Expendable materials

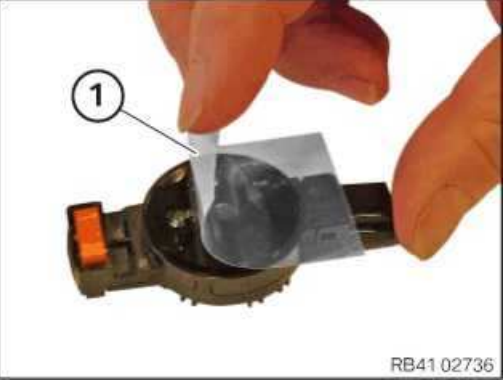
|                   |        |             |
|-------------------|--------|-------------|
| Cleaning agent R2 | 500 ml | 83190417324 |
|-------------------|--------|-------------|



- Remove the yellow protective film (1).



- Place the gel pad (1) in the centre of the surface of the rain-light-solar-fogging sensor (2).  
Do not eliminate existing air bubbles.  
Air pockets disappear within 30 min after mounting the sensor on the windscreen.



- Remove transparent protective film (1).

## 6.2.6 Other seats

### Validities

BMW PASSENGER CAR, BMW i, MINI PASSENGER CAR, ROLLS-ROYCE

### Official method according to EG PTI:

Visual inspection

### Fault determination according to EG PTI:

|    |                                                                                                                         |
|----|-------------------------------------------------------------------------------------------------------------------------|
| a) | Seats faulty or unsafe (secondary parts): Seats faulty or unsafe (primary parts)                                        |
| b) | Seats not installed as specified: permissible number of seats exceeded; arrangements of seats not according to approval |

### Methods according to vehicle manufacturer:

The number of seats installed can be found on the registration certificate.