

## 00 Safety information for working on vehicles with automatic engine start-stop function (MSA)



### Warning!

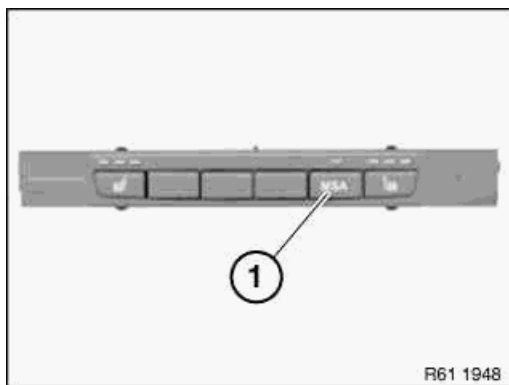
If the engine hood/bonnet contact is pulled upwards (workshop mode), the information "switch closed" is output. The automatic engine start-stop function is active.

An automatic engine start is possible.

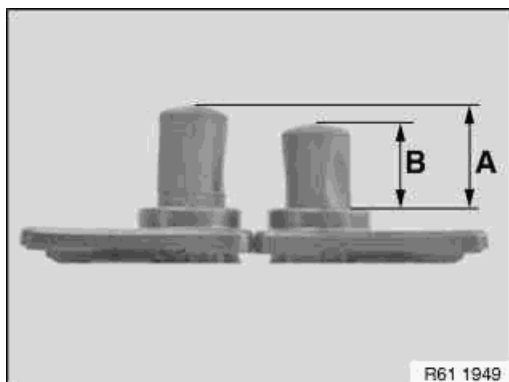
### Observe safety precautions when working on MSA vehicles.

Before carrying out practical work on the engine, always ensure that the MSA functionality is deactivated so as to prevent automatic engine starting while work is being carried out in the engine compartment.

### MSA function is deactivated by:



- Deactivate MSA by means of button (1) in passenger compartment
- Open seat belt buckle and driver's door



- Open engine bonnet/hood and ensure that engine hood/bonnet contact is not in workshop mode
  - Workshop mode  
A = 10 mm
  - Basic setting (engine hood/bonnet open)  
B = 7 mm

To make sure that the engine hood/bonnet contact is at the basic setting, if necessary press the hood/bonnet contact up to the limit position before starting work and slowly release.

### When working with diagnosis tools:

- Observe instructions in diagnosis tool



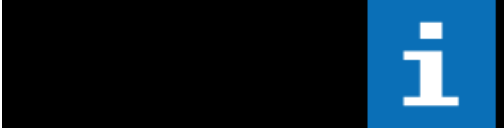


*Note:*

For further information on automatic engine start-stop function (MSA):

- Refer to the Service Information (bulletin) (for manual transmissions) [Service Information \(bulletin\) 61 01 07 335](#)
- Refer to the Service Information (bulletin) (for automatic transmissions or twin-clutch gearboxes) [Service Information \(bulletin\) 61 01 10 629](#)

## 67 11 510 Removing and installing/replacing actuator drive for front left or right door central locking drive

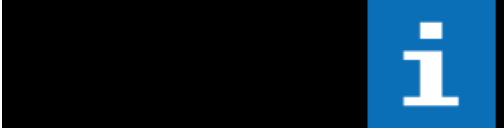


*Note:*

The controller drive for the central locking drive is integrated in the door lock in the front door.

The procedure is explained in the document [Remove and install/replace the door lock for the left or right front door](#).

## 67 11 530 Removing and installing/replacing actuator drive for rear left or right central locking



*Note:*

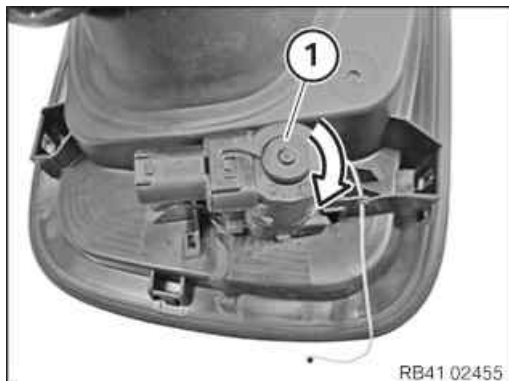
Actuator drive of central locking drive can only be replaced in conjunction with door lock.

This operation is described in:

Remove and install/replace the [door lock on the rear door](#).

**Necessary preliminary tasks:**

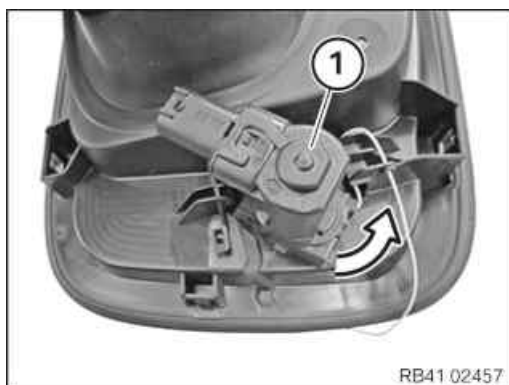
- Remove [cover housing](#)

**Removal:****Note:**

Schematic diagram is for example purposes.

Some parts may differ in certain details.

Loosen controller drive (1) in the direction of the arrow to remove it.

**Installation:****Note:**

Schematic diagram is for example purposes.

Some parts may differ in certain details.

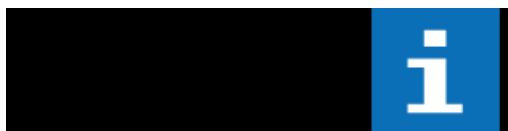
Insert controller drive (1) in the direction of the arrow and lock in place. *Note:* Make sure the servo drive for fuel filler flap is correctly installed!

Check central locking system of the controller drive before installation of cover bowl.

Make sure emergency release is correctly routed.

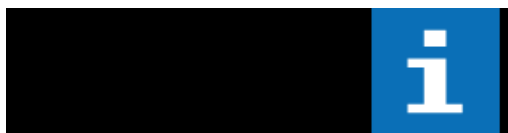
**Required reworking:**

- [Install cover housing](#)

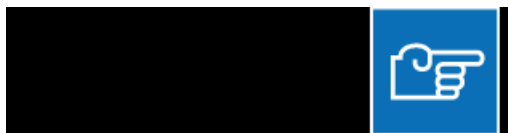
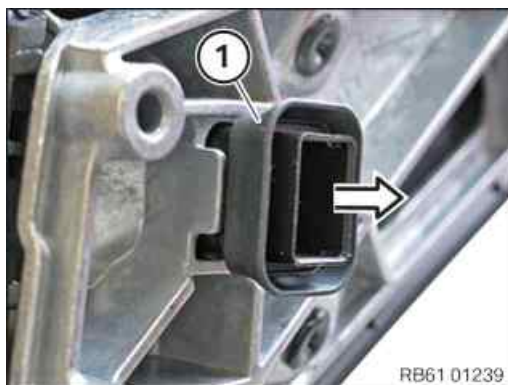


This operation is described in:

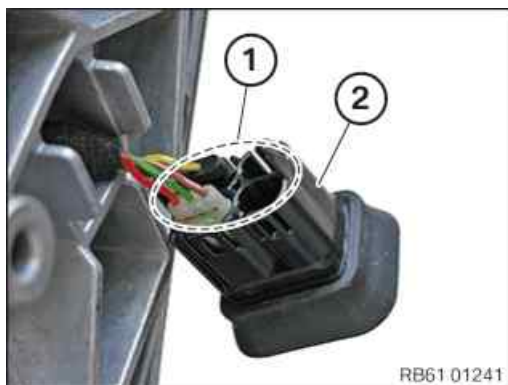
"Removing [tailgate lock](#)"

**Necessary preliminary tasks:**

- Remove the [exterior mirror on the left front door](#).
- Remove [retaining ring on exterior mirror, left](#).
- Remove [housing on exterior mirror, left](#).

**Removal:**

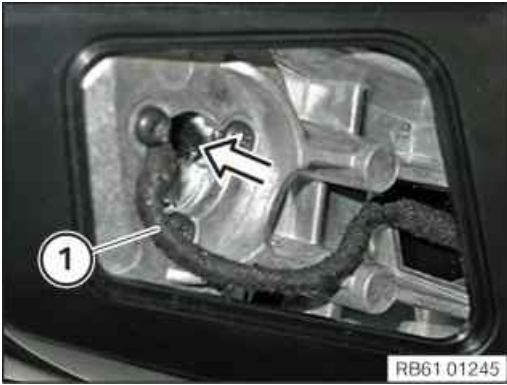
Pull out connector housing (1) in direction of arrow.



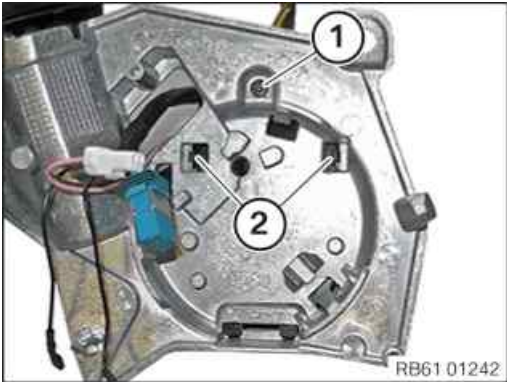
Unlock all connectors (1) on connector housing (2) and disconnect.



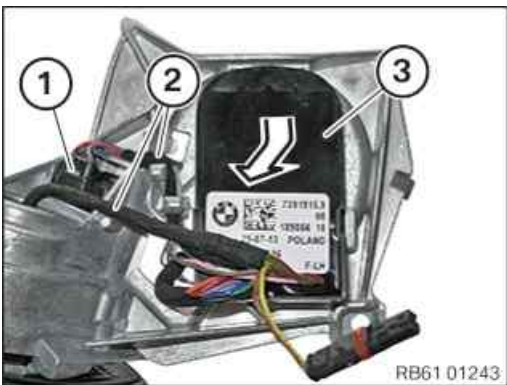
Unclip cover (1).



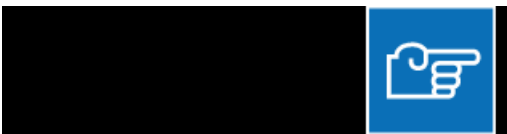
Pull out cable (1) in the direction of arrow.



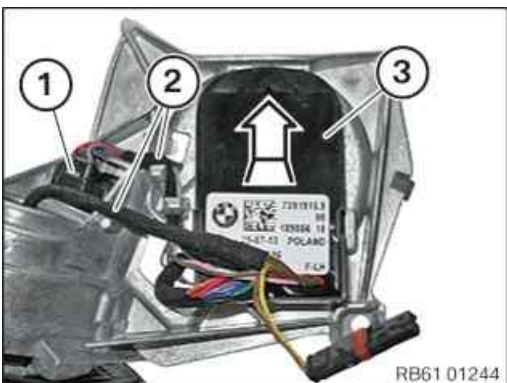
Release screws (1).  
Unlock retaining lugs (2) on both sides.



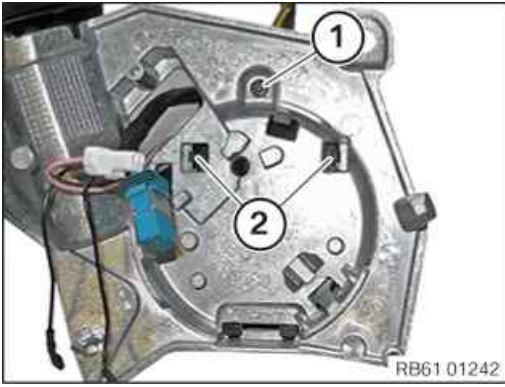
Unlock and disconnect the connector (1).  
Feed out cable (2).  
Feed out mirror electronics (3) in direction of arrow.



**Installation:**



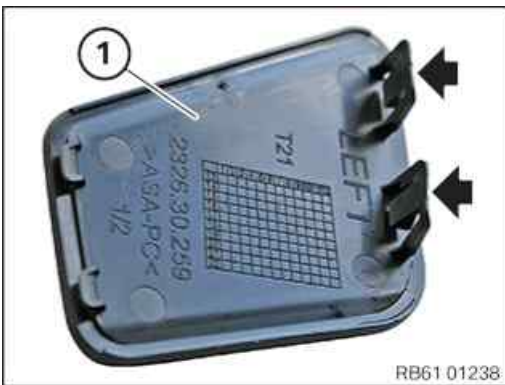
Join mirror electronics (3) in direction of arrow.  
Feed in cable (2).  
Connect the connector (1).



Tighten down screws (1). *Note:*  
Make sure the mirror electronics are latched correctly (2).



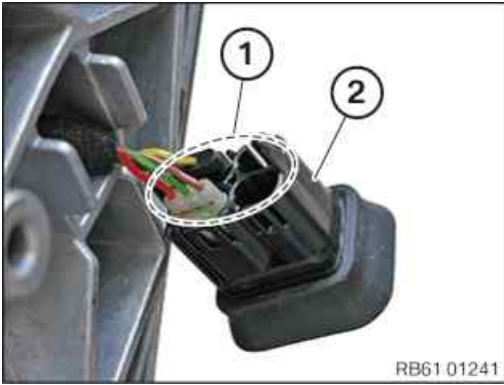
Feed in cable(s) (1) in direction of arrow.



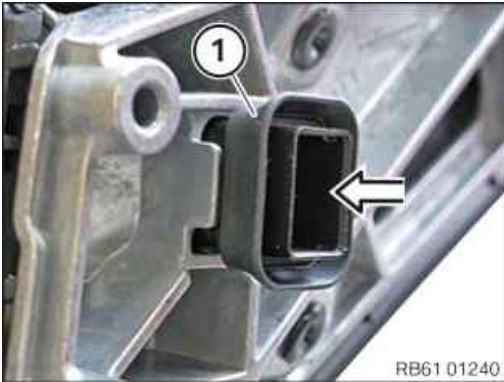
*Note:*  
Retaining lugs on cover (1) must not be damaged or missing.



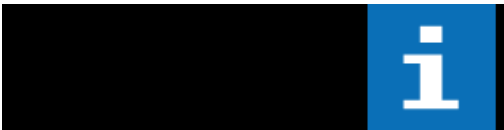
Clip in cover (1).



Connect all covers (1) with the connector housing (2).



Join connector housing (1) in direction of arrow.



**Required follow-up work:**

- Fit [housing to exterior mirror, left](#).
- Fit [retaining ring to exterior mirror, left](#).
- Install the [exterior mirror on the left front door](#).



**Necessary preliminary tasks:**

- Remove [mirror glass](#)



**Removal:**



Release screw (1).

Disconnect connector (2).

Remove the drive (3).



**Installation:**



Connect connector (2).

Position drive (3) correctly.

Tighten screw (1).

Tightening torque [67 13 1AZ](#).

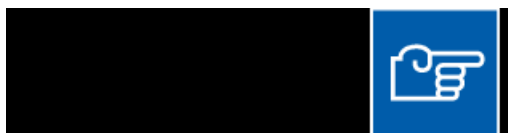
*Note:*

Make sure drive (3) is correctly fitted.



**Required reworking:**

- Install [mirror glass](#)

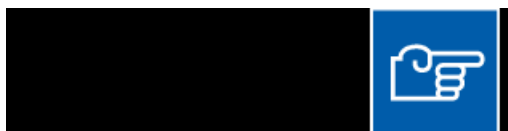
*Note:*

Initialization is carried out at the adjusting switch of the relevant seat.

In this process, the end positions of the relevant electric seat actuator drive are recorded and stored.

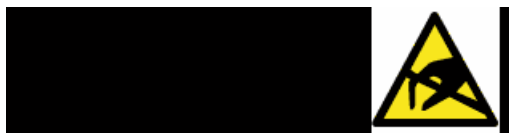
An initialisation must be performed:

- After replacing a drive unit for seat adjustment.
- After replacing/programming control unit for seat adjustment.

Operating procedure for initialisation:

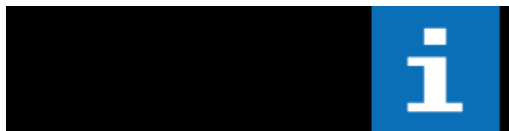
Move corresponding seat actuator drive(s) into both end positions.

## 67 61 007 Removing and installing/replacing drive with gearbox (rear) for actuating slide/tilt sunroof (rear)



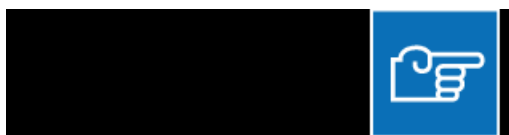
### Important!

Read and comply with notes on [protection against electrostatic discharge \(ESD protection\)](#)!

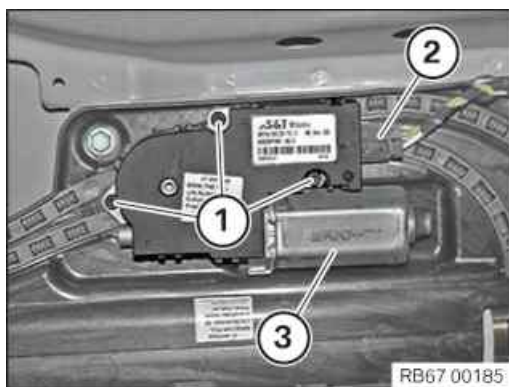


### Necessary preliminary tasks:

- Lower [roofliner](#)



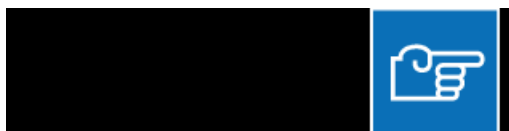
### Removal:



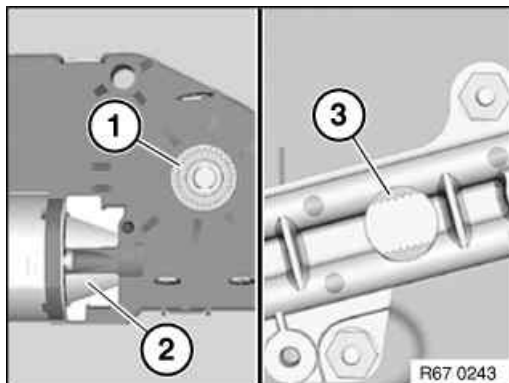
Release screws (1).

Unlock and disconnect connector (2).

Remove electric motor (3).

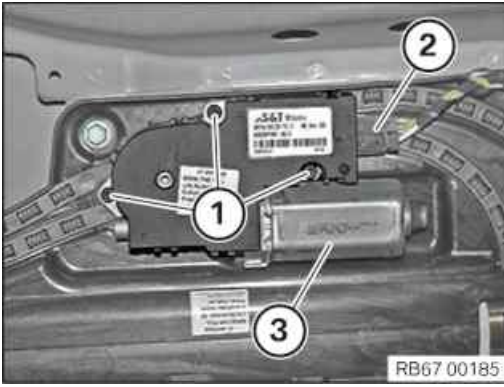


### Installation:

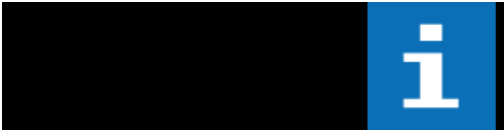


### Note:

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



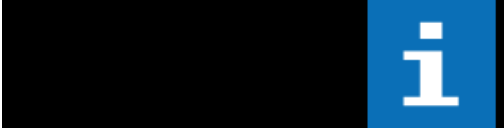
Position drive (3) correctly.  
Tighten down screws (1).  
Connect connector (2).  
Tightening torque [54 13 1AZ](#).



**Required reworking:**

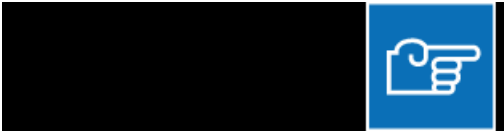
- Fit the [headlining](#)
- Initialise [slide/tilt sunroof](#).

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

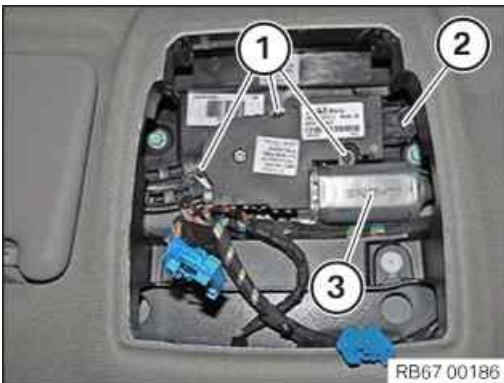


### Necessary preliminary tasks:

- Remove [roof switch cluster](#)



### Removal:

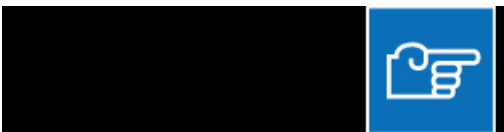


#### *Note:*

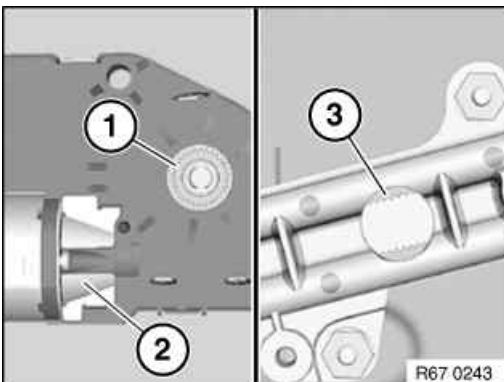
Secure drive with gearbox for actuating slide/tilt sunroof (3) against falling out.

Unlock and disconnect connector (2).

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

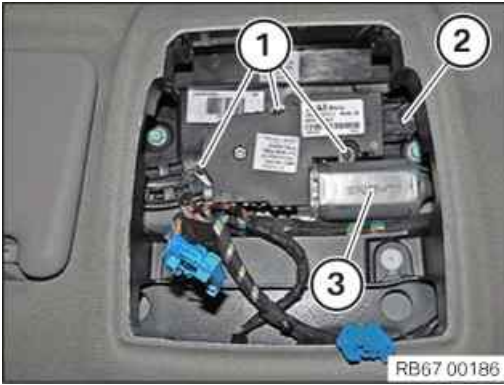


### Installation:



#### *Note:*

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

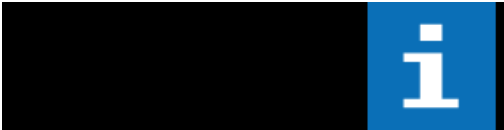


Correctly attach drive with transmission for slide/tilt sunroof operation (3).

Tighten down screws (1).

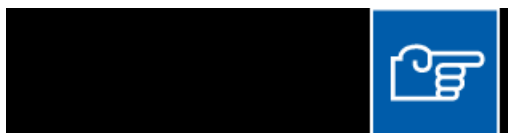
Tightening torque [54 13 1AZ](#).

Connect connector (2).



**Required reworking:**

- Install [roof switch cluster](#)
- Initialise [slide/tilt sunroof](#).

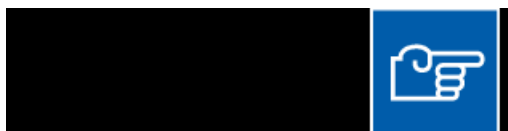
*Note:*

Initialization is carried out at the adjusting switch of the relevant seat.

In this process, the end positions of the relevant electric seat actuator drive are recorded and stored.

An initialisation must be performed:

- After replacing a drive unit for seat adjustment.
- After replacing/programming control unit for seat adjustment.

Operating procedure for initialisation:

Move corresponding seat actuator drive(s) into both end positions.



*Note:*

**Initialisation** is performed on the power window switch of the relevant door.

**Initialisation** comprises:

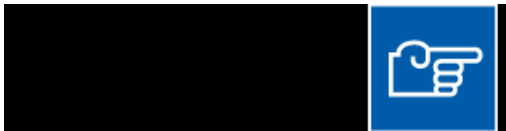
- Normalisation
- Learning characteristic curve

With normalisation, the mechanical end stops of the power window regulator are recorded and stored.

The characteristic curve is learnt immediately after normalisation.

When the characteristic curve is learnt, the mechanical closing forces of the power windows are recorded and stored for correct operation of the anti-trapping mechanism.

Initialisation, i.e. normalisation and learning of characteristic curve, is performed in a continuous operation.



*Note:*

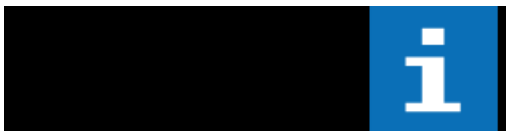
An **initialisation** must be performed:

- In the event of malfunctions, e.g. no one-touch function, no opening or no convenience function possible.
- After the power windows drive or door module has been replaced.
- After work is carried out on the power windows mechanism.



### **Warning!**

There is no anti-trap mechanism during initialisation.



### **Necessary preliminary work:**

- Vehicle stationary
- Sufficient battery voltage available / connect charger if necessary
- Terminal "15" switched on
- All doors closed
- F12 up to 02/2012 soft top open, from 03/2012 soft top closed



Operating procedure for initialisation (manual):

**Deleting the initialisation:**

- Move side window into lower end position.
- Press and hold switch in "Open one-touch function" position (second switch position) for between 15 and 25 seconds.

*Note:*

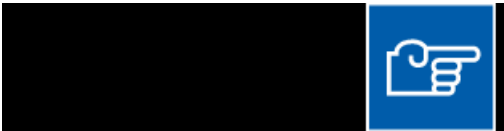
Deletion of initialisation was successful if toll function and anti-trap mechanism have been rendered inoperative.

**Performing initialisation:**

- Move side window to upper end position
- Pull and hold switch in "Close one-touch function" (2nd switch position) during the entire process.

*Note:*

Re-initialisation was successful if toll function and anti-trap mechanism function flawlessly.

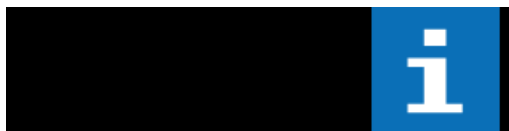


Alternatively, initialisation of the power window regulation can also be carried out via the Service function in ISTA.

Selection via:

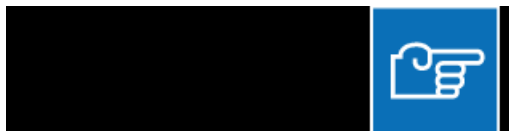
- Body
  - Locking and security functions
    - Power window regulator
      - Initialise power window regulators

## 67 62 000 Removing and installing or replacing flat motor for front left or right power window regulator

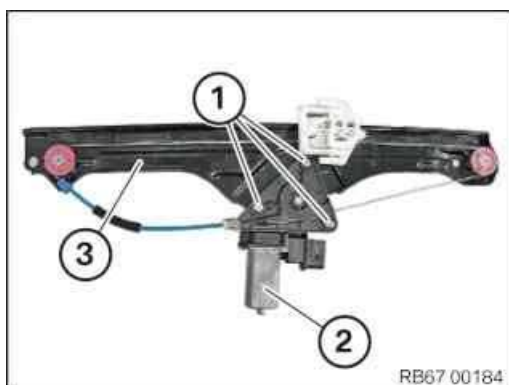


### Necessary preliminary tasks:

- Remove [front power windows](#)

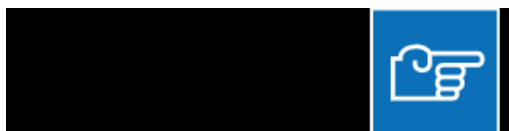


### REMOVAL:

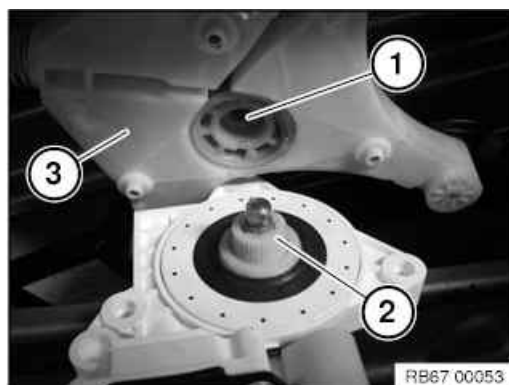


Release screws (1).

Detach flat motor (2) from power window regulator (3).



### INSTALLATION:

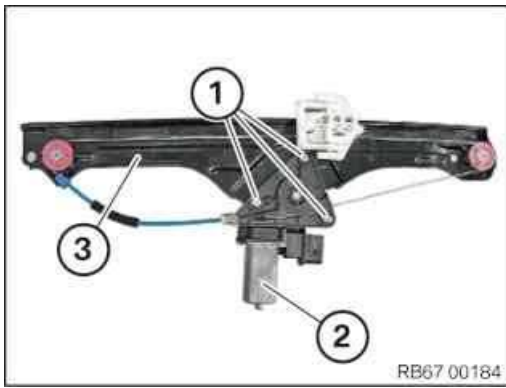


#### *Note:*

Diagram similar.

Make sure drive shaft (2) is correctly seated in mounting (1) at power window regulator (3)!

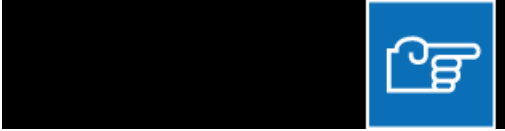
Ensure that the flat motor (2) is assembled without tension.



Position flat motor (2) correctly on power window regulator (3).

Tighten down screws (1).

Tightening torque [51 33 4AZ](#).



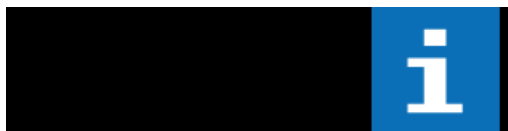
#### Required reworking:

- Install [front power window regulator](#)

An initialisation must be carried out in order to activate anti-trap mechanism.

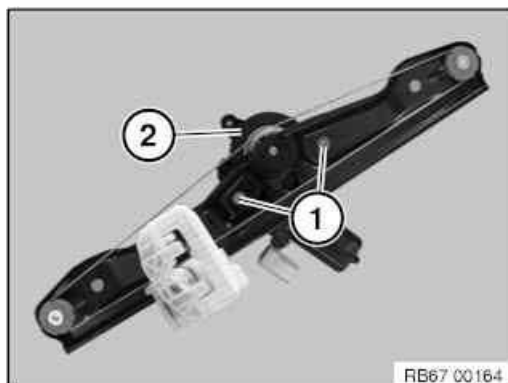
Read and comply with [notes](#) on initialisation of power window regulator.

## 67 62 020 Removing and installing/replacing flat motor for rear left or right power window regulator



### Necessary preliminary tasks:

- Remove [rear power window regulator](#)



Release screw connections (1).

Remove flat motor (2) from power window regulator.

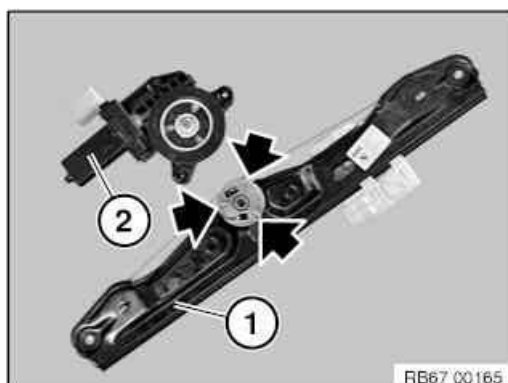
Cable must not come loose from power window.

#### *Installation note:*

Simultaneously tighten both screw connections (1).

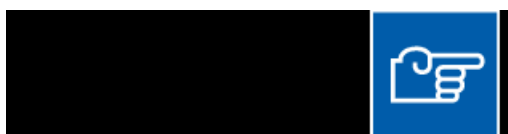
The shaft of the flat motor (2) must be pulled into the holder of the power window regulator under slight tension.

Tightening torque [51 35 1AZ](#).



Flat motor (2) must engage exactly at the marked points of the power window regulator (1). **Important!**

Ensure that the flat motor (2) is assembled without tension.

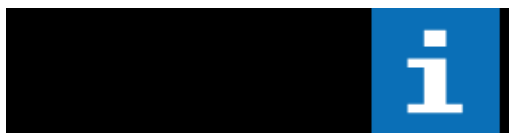


### After installation:

An initialisation must be carried out in order to activate anti-trap mechanism.

Read and comply with [notes](#) on initialisation of power window regulator.

## 67 63 512 Replacing wiper motor



*Note:*

The wiper motor can only be replaced in conjunction with the wiper console.

Procedure is described in the document "[Removing and installing complete wiper console](#)".