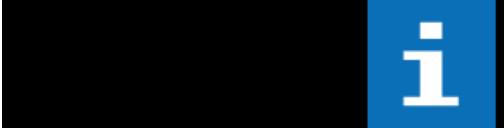
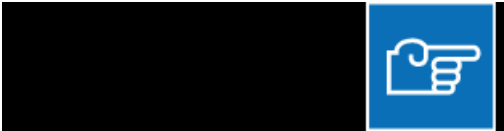


66 20 517 Remove and install/replace an ultrasonic sensor at front centre right (inside) (Park Distance Control)

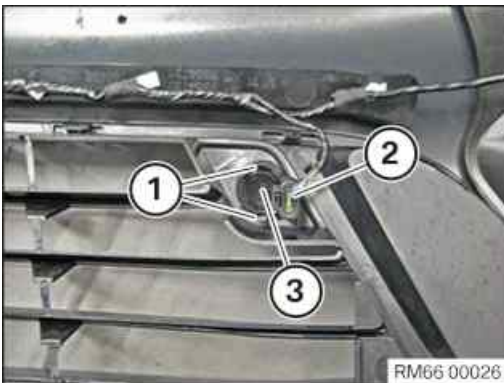


Necessary preliminary tasks:

- Remove [front bumper panel](#)



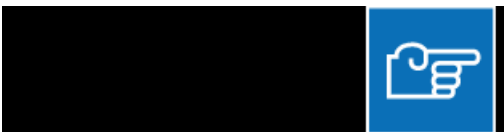
Removal:



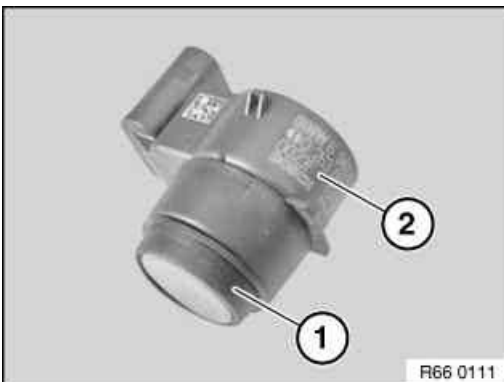
Unlock latch mechanisms (1).

Unlock and disconnect connector (2).

Pull the ultrasonic sensor (3) out of the holder toward the top.

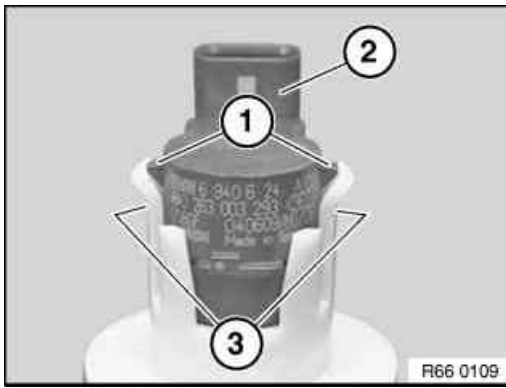


Installation:



Note:

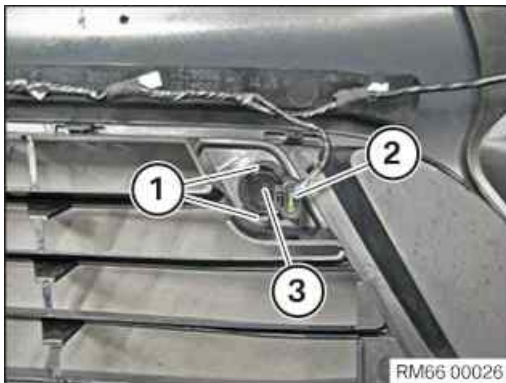
Make sure the rubber ring (1) is fitted correctly on the ultrasonic sensor (2).



Note:

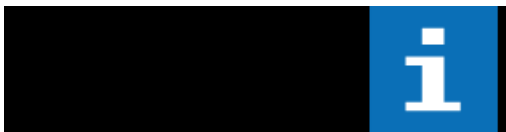
Clean the plug connection before installing the ultrasonic sensor (2) on the wiring harness!

Retaining hooks (1) of ultrasonic sensor (2) must engage exactly in mountings (3).



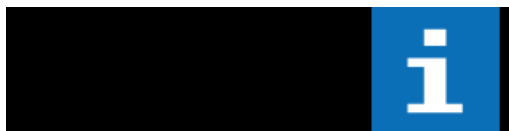
Latch ultrasonic sensor (3) into holder.

Connect plug connection (2).



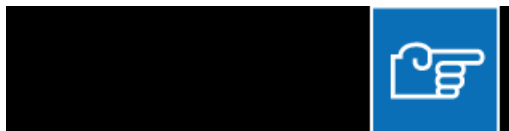
Required reworking:

- Install [front bumper panel](#)

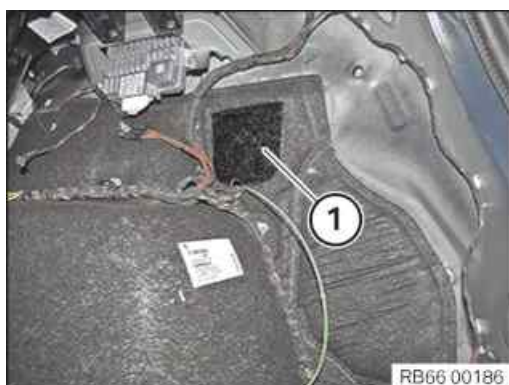


Necessary preliminary tasks:

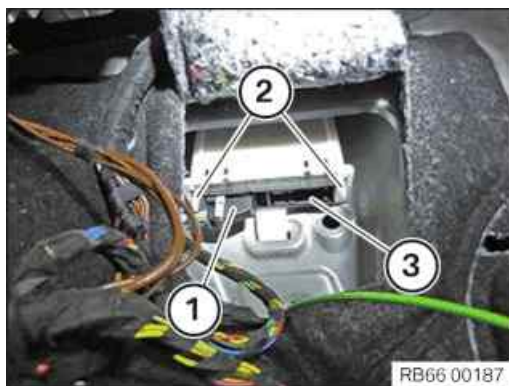
- Remove [right luggage compartment wheel arch panel](#)



Removal:



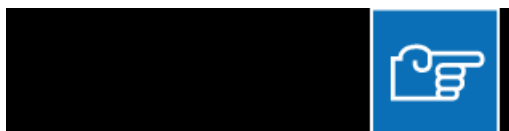
Open flap (1).



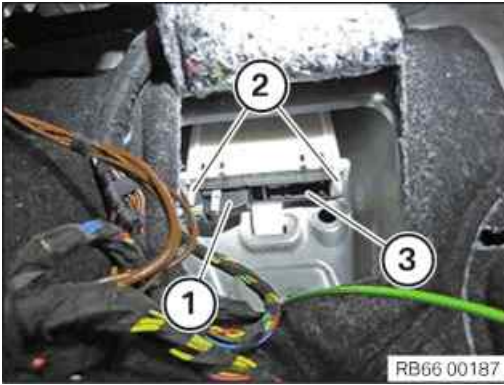
Unlock and disconnect the connector (1).

Unlock latch mechanisms (2).

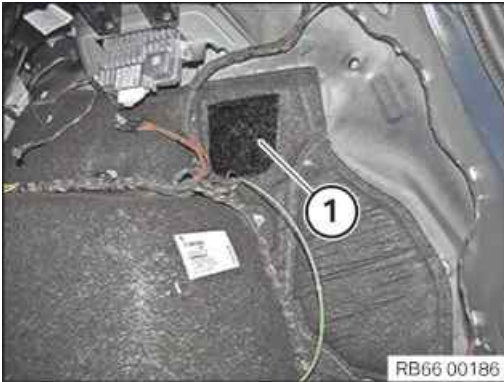
Pull out control unit (3) downwards.



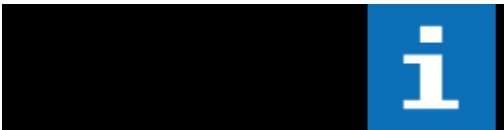
Installation:



Push in control unit (3) upwards.
 Latch mechanisms (2) must lock correctly.
 Connect and lock the connector (1).



Close flap (1).



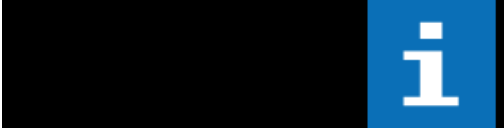
Required reworking:

- Install [luggage compartment wheel arch panel, right](#)



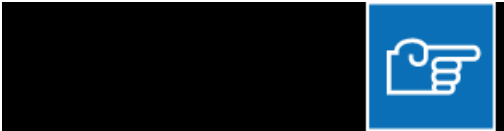
Replacement:

Carry out [programming/encoding](#).

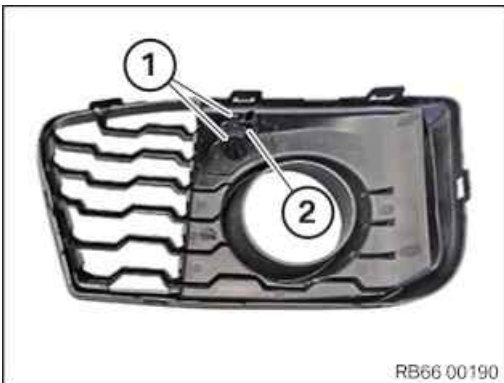


Necessary preliminary tasks:

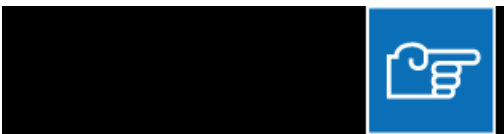
- Remove [front ornamental grille for bumper panel](#) at front left



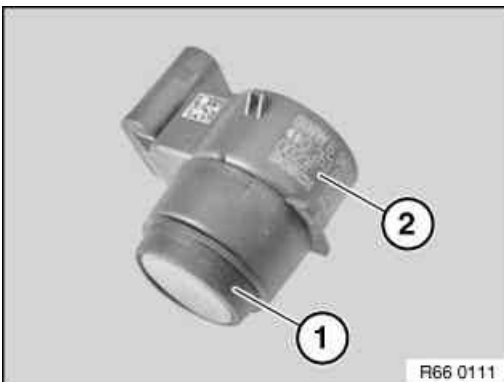
Removal:



Unlock latch mechanisms (1) and pull ultrasonic sensor (2) out of bracket.

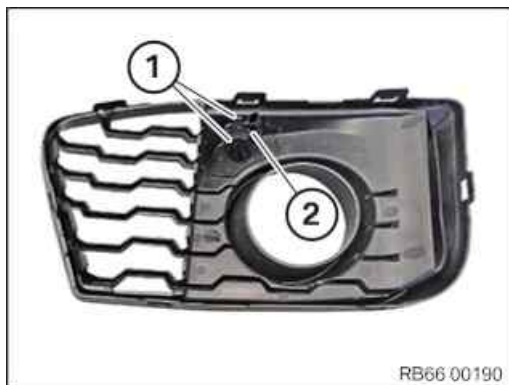


Installation:

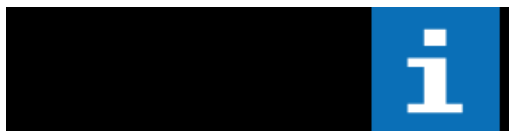


Note:

Make sure rubber ring (1) is correctly seated on ultrasonic sensor (2).

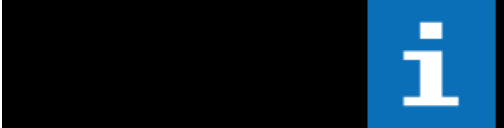


Engage ultrasonic sensor (2) correctly in bracket. *Note:*
Latch mechanisms (1) must not be damaged.
Make sure ultrasonic sensor is securely seated.



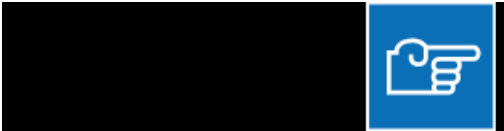
Required reworking:

- Install [front ornamental grille for bumper panel](#) at front left

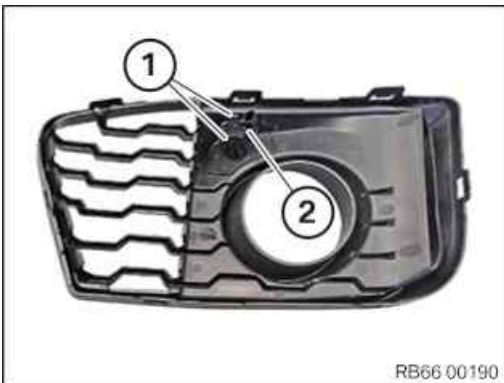


Necessary preliminary tasks:

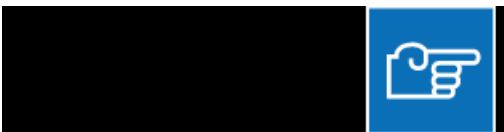
- Removing front right [ornamental grille for bumper panel](#)



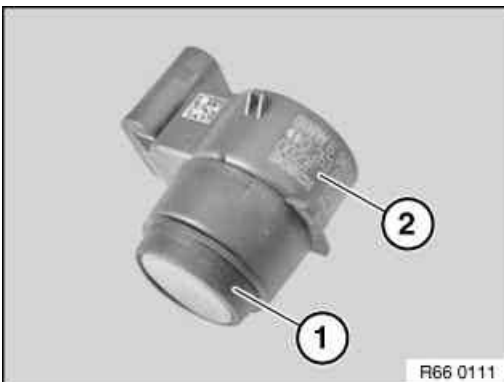
Removal:



Unlock latch mechanisms (1) and pull ultrasonic sensor (2) out of bracket.

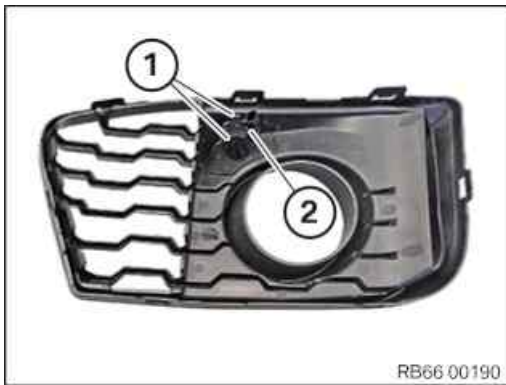


Installation:

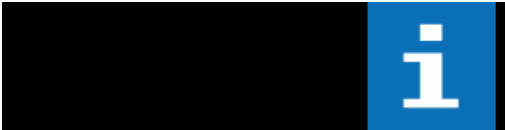


Note:

Make sure rubber ring (1) is correctly seated on ultrasonic sensor (2).



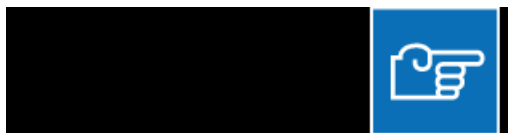
Engage ultrasonic sensor (2) correctly in bracket. *Note:*
Latch mechanisms (1) must not be damaged.
Make sure ultrasonic sensor is securely seated.



Required reworking:

- Removing front right [ornamental grille for bumper panel](#)

66 20 537 Removing and installing/replacing a rear centre right ultrasonic transducer (PDC)



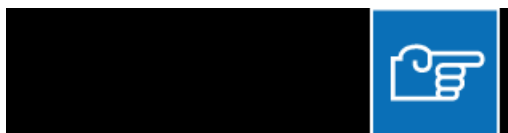
REMOVAL:



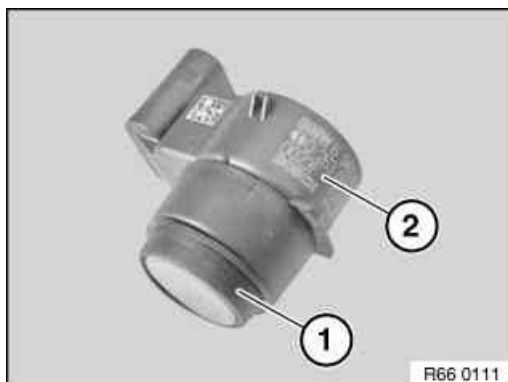
Unlock and disconnect the connector (1).

Unlock latches at marked points.

Remove ultrasonic sensor (2) from holder.

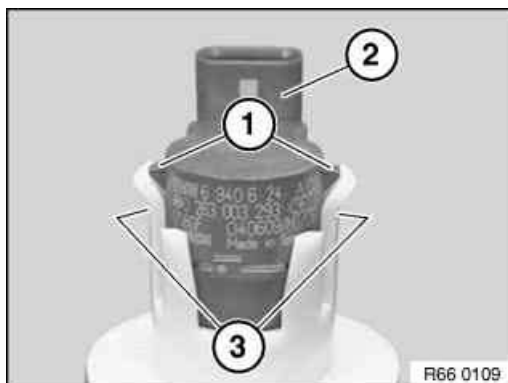


INSTALLATION:



Note:

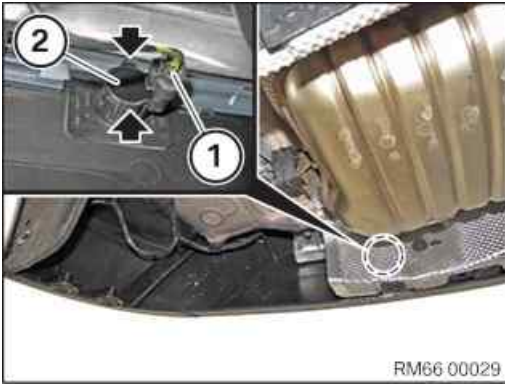
Make sure rubber ring (1) is correctly seated on ultrasonic sensor (2).



Note:

Before installation of ultrasonic sensor (2) on wiring harness, clean plug connection!

Retaining hooks (1) of ultrasonic transducer (2) must engage exactly in mountings (3).



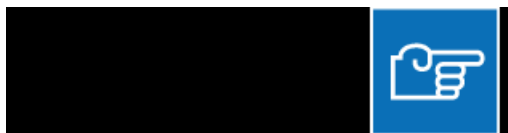
Engage ultrasonic sensor (2) in holder.
Attach and lock connector (1).



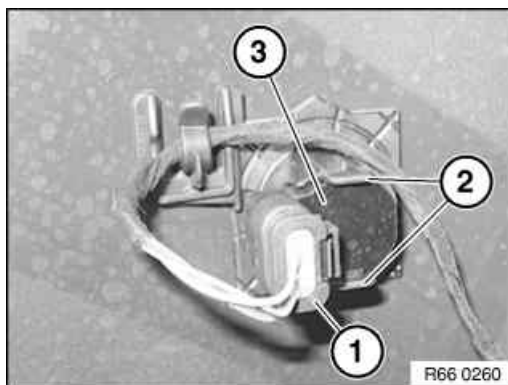
Warning!

Risk of burning!

Work on the exhaust system may only be carried out when it has cooled down!



Removal:

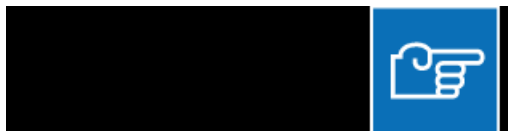


Note:

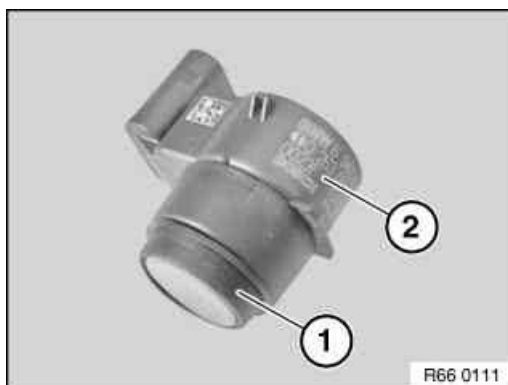
Ultrasonic transducers (3) can be reached from below with bumper installed.

Unlock and disconnect the connector (1).

Unlock latch mechanisms (2) and pull ultrasonic transducer (3) out of bracket.

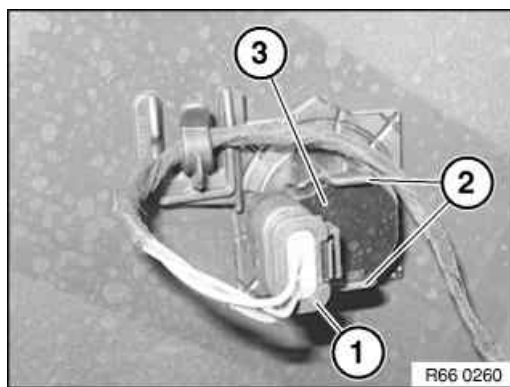


Installation:



Installation note:

Make sure rubber ring (1) is correctly seated on ultrasonic sensor (2).



Engage ultrasonic sensor (3) correctly in bracket.

Connect the plug (1).

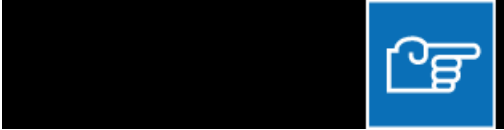
Note:

Before installation of ultrasonic sensor (3) on wiring harness, clean plug connection!

Retaining tabs (2) must not be damaged!

Make sure ultrasonic sensor is securely seated.

66 20 535 Removing and installing/replacing a rear right ultrasonic transducer (PDC)



Removal:



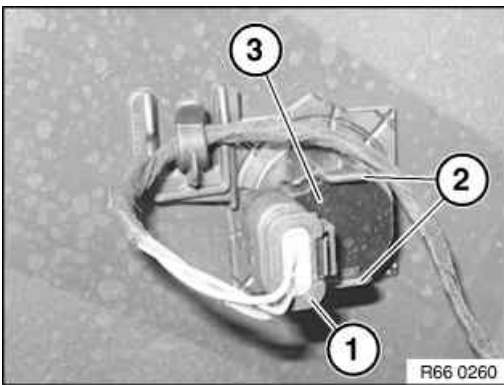
Warning!

Risk of burning!

Work on the exhaust system may only be carried out when it has cooled down!

Only engine B48:

Release screws (1).

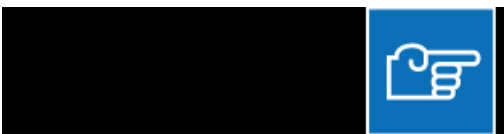


Note:

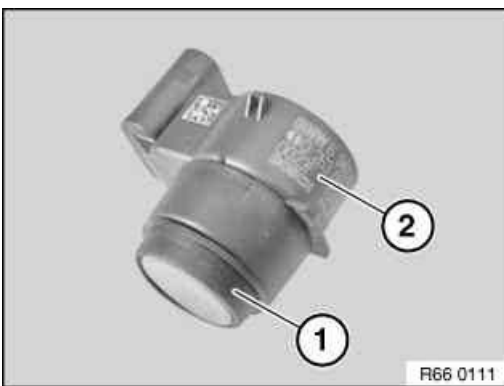
Ultrasonic transducers (3) can be reached from below with bumper installed.

Unlock and disconnect the connector (1).

Unlock latch mechanisms (2) and pull ultrasonic transducer (3) out of bracket.

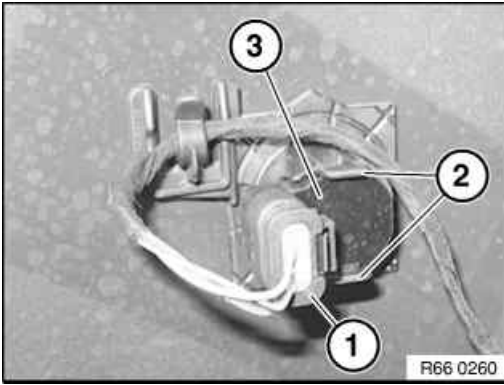


Installation:



Installation note:

Make sure rubber ring (1) is correctly seated on ultrasonic sensor (2).



Engage ultrasonic sensor (3) correctly in bracket.

Connect the plug (1).

Note:

Before installation of ultrasonic sensor (3) on wiring harness, clean plug connection!

Retaining tabs (2) must not be damaged!

Make sure ultrasonic sensor is securely seated.



Warning!

Risk of burning!

Work on the exhaust system may only be carried out when it has cooled down!

Only engine B48:

Tighten down screws (1).

66 20 536 Removing and installing/replacing a rear, centre left ultrasonic transducer (PDC)



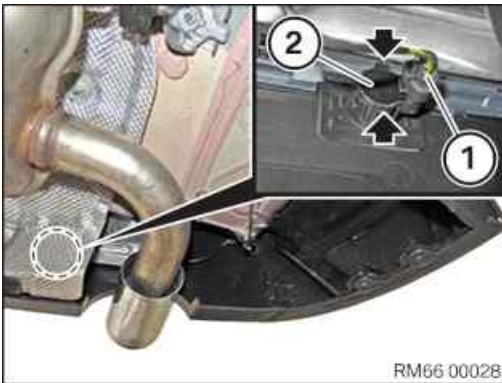
Warning!

Risk of burning!

Work on the exhaust system may only be carried out when it has cooled down!



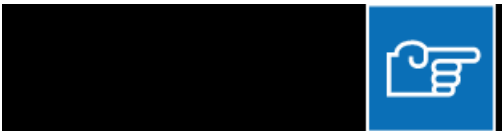
REMOVAL:



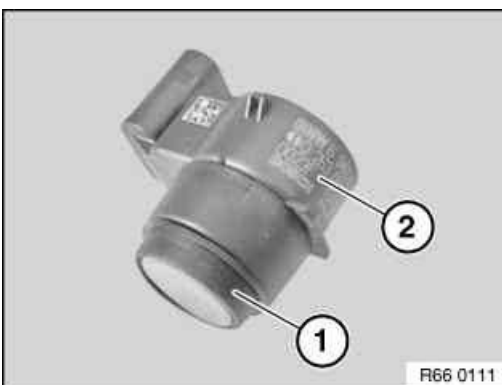
Unlock and disconnect the connector (1).

Unlock latches at marked points.

Remove ultrasonic sensor (2) from holder.

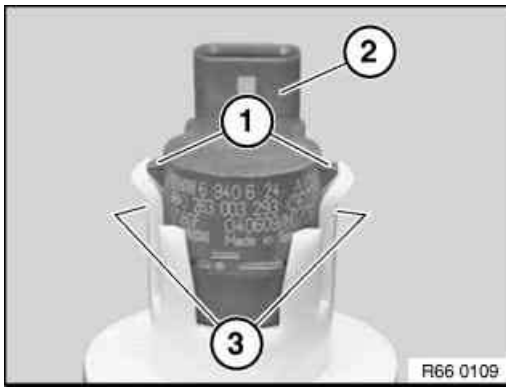


INSTALLATION:



Note:

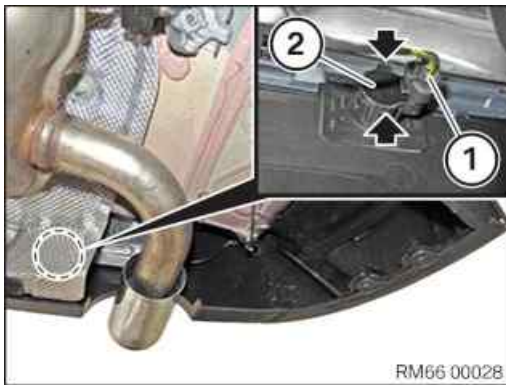
Make sure rubber ring (1) is correctly seated on ultrasonic sensor (2).



Note:

Before installation of ultrasonic sensor (2) on wiring harness, clean plug connection!

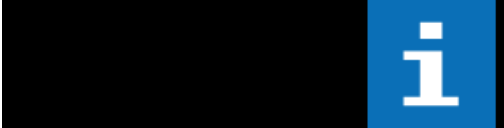
Retaining hooks (1) of ultrasonic transducer (2) must engage exactly in mountings (3).



Engage ultrasonic sensor (2) in holder.

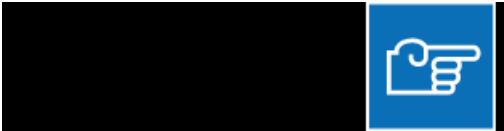
Attach and lock connector (1).

66 20 517 Removing and installing/replacing an ultrasonic sensor at front centre left (inside) (Park Distance Control)

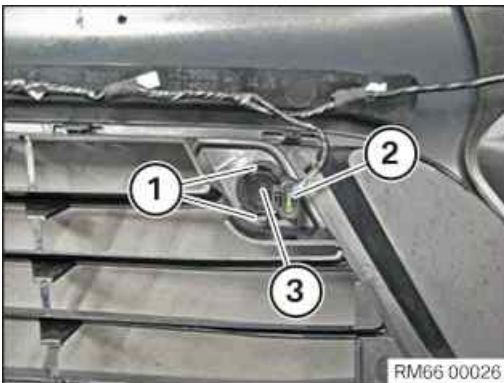


Necessary preliminary tasks:

- Remove [front bumper panel](#)



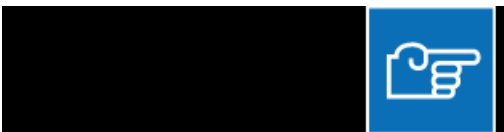
Removal:



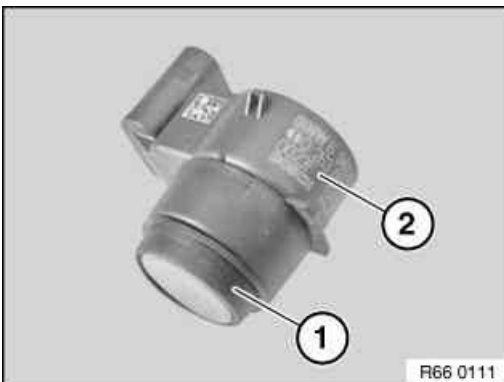
Unlock latch mechanisms (1).

Unlock and disconnect connector (2).

Pull the ultrasonic sensor (3) out of the holder toward the top.

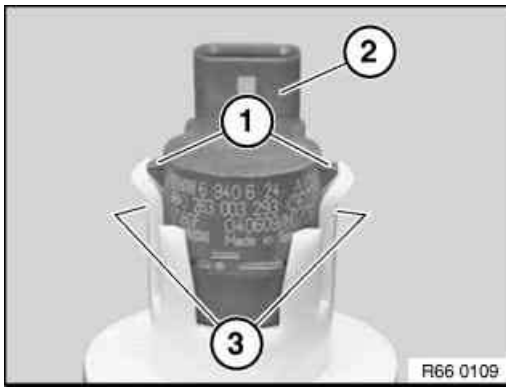


Installation:



Note:

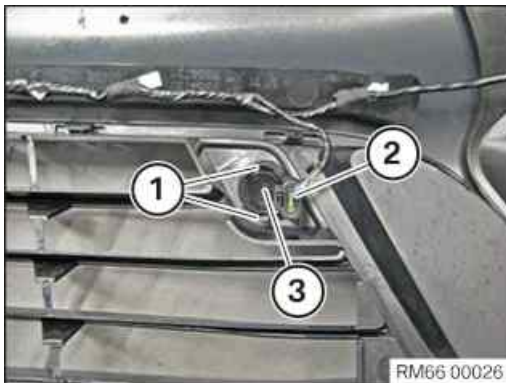
Make sure the rubber ring (1) is fitted correctly on the ultrasonic sensor (2).



Note:

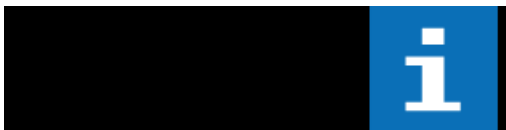
Clean the plug connection before installing the ultrasonic sensor (2) on the wiring harness!

Retaining hooks (1) of ultrasonic sensor (2) must engage exactly in mountings (3).



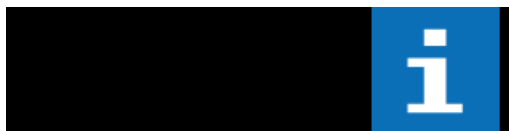
Latch ultrasonic sensor (3) into holder.

Connect plug connection (2).



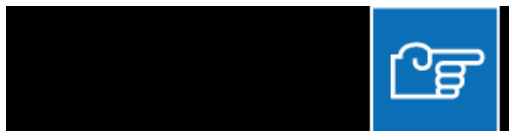
Required reworking:

- Install [front bumper panel](#)

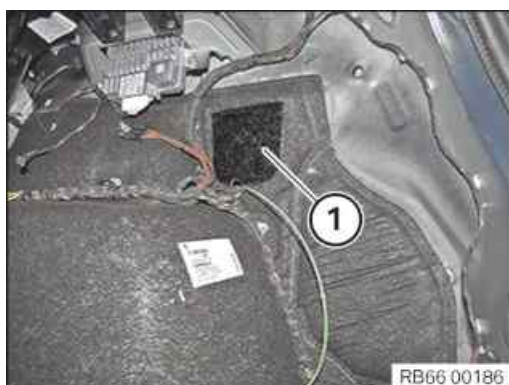


Necessary preliminary tasks:

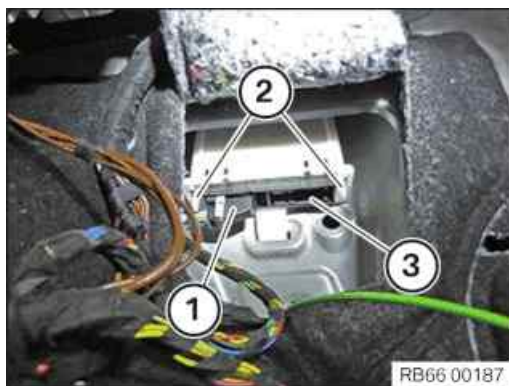
- Remove [right luggage compartment wheel arch panel](#)



Removal:



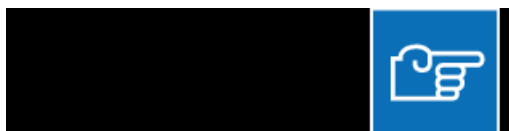
Open flap (1).



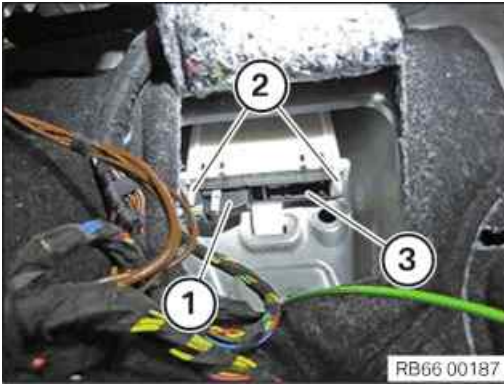
Unlock and disconnect the connector (1).

Unlock latch mechanisms (2).

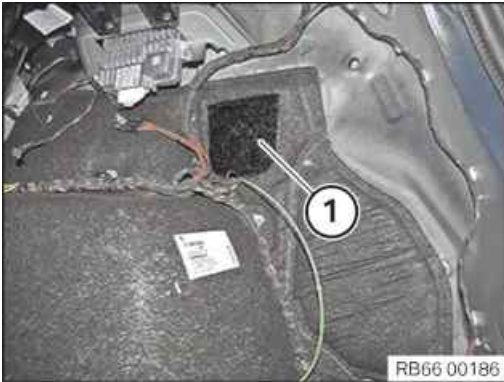
Pull out control unit (3) downwards.



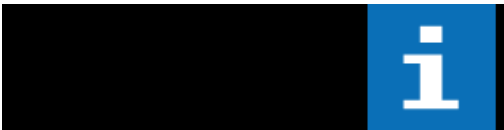
Installation:



Push in control unit (3) upwards.
 Latch mechanisms (2) must lock correctly.
 Connect and lock the connector (1).



Close flap (1).



Required reworking:

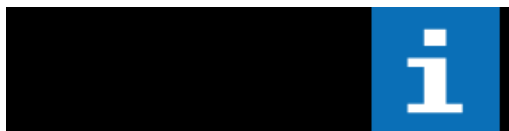
- Install [luggage compartment wheel arch panel, right](#)



Replacement:

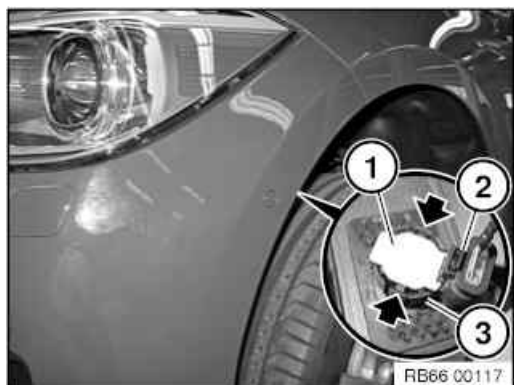
Carry out [programming/encoding](#).

66 33 010 Removing and installing / replacing ultrasonic sensors for Parking Manoeuvring Assistant



Necessary preliminary tasks:

- Partially remove [wheel arch cover, front left or right](#)



Unfasten plug connection (2) and disconnect.

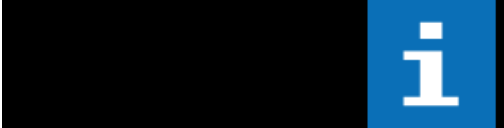
Unlock latch mechanisms where marked and pull ultrasonic sensor (1) out of bracket (3).

Installation note:

Latch mechanisms must not be damaged or missing.

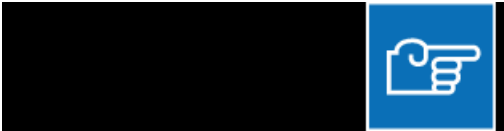
Make sure ultrasonic sensor is seated securely!

66 33 008 Removing and installing/replacing of the Parking Manoeuvring Assistant control unit

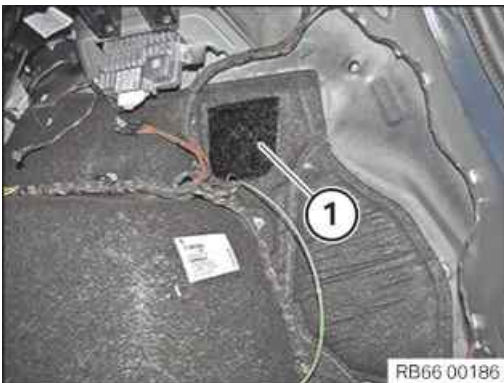


Necessary preliminary tasks:

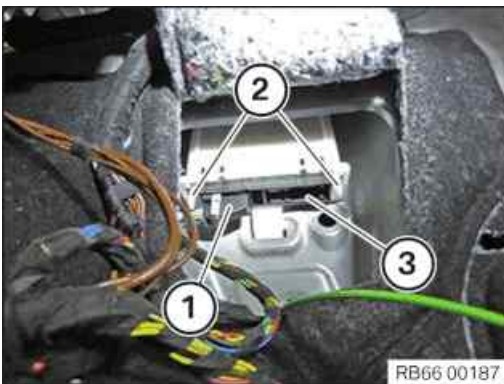
- Remove [right luggage compartment wheel arch panel](#)



Removal:



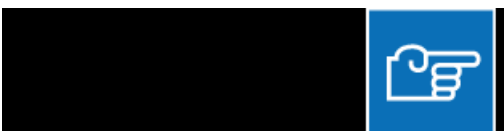
Open flap (1).



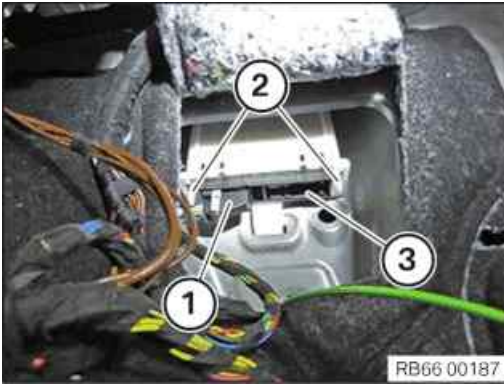
Unlock and disconnect the connector (1).

Unlock latch mechanisms (2).

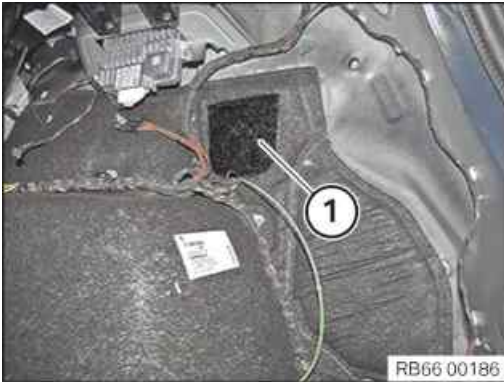
Pull out control unit (3) downwards.



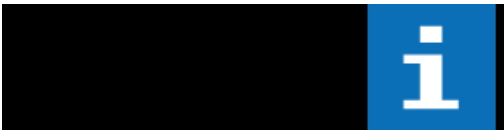
Installation:



Push in control unit (3) upwards.
 Latch mechanisms (2) must lock correctly.
 Connect and lock the connector (1).



Close flap (1).



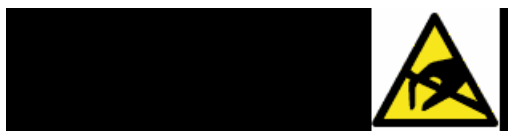
Required reworking:

- Install [luggage compartment wheel arch panel, right](#)

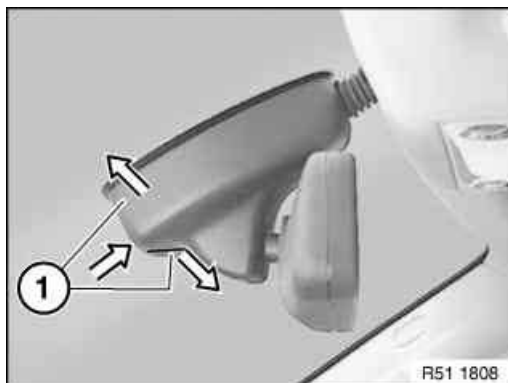


Replacement:

Carry out [programming/encoding](#).

**Attention!**

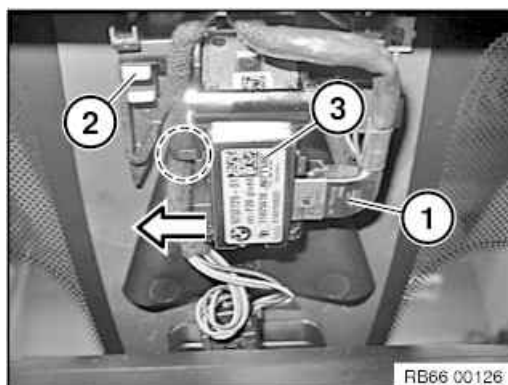
Read and comply with notes on protection against electrostatic damage ([ESD protection](#)).



Expand two-part mirror base cover (1) by pressing from below and detach. Feed out two-part mirror base cover (1) and remove.

Note:

Latch mechanisms of two-part mirror base cover (1) must not be damaged.



Disconnect plug connection (1).

Unclip cable in marked area.

Unlock retaining clips (2) and remove camera (3) in direction of arrow.

**Installation note:**

Guides (2) on camera (1) must be correctly inserted in counter supports on windscreen!

Make sure camera (1) is securely seated.

**When replacing windscreen:**Carry out the service function:

- Driver assistance
- Camera-based driver assistance systems
- Calibration of camera-based driver support systems



Note:

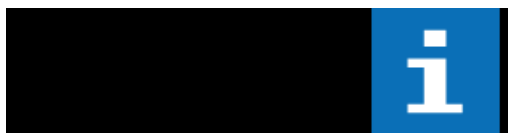
The calibration process of the KAFAS camera is not complete until the vehicle drives in traffic.

Tell the customer that some driver assistance systems are temporarily unavailable after vehicle pick-up.

Note:

Heating of the KAFAS camera is integrated in the windscreen.

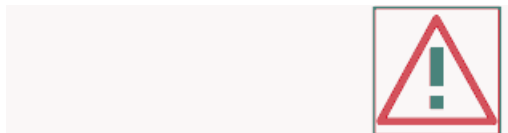
If the heating is defective, the windscreen must be replaced!



Note:

Calibration of reversing camera must be carried out after the following work:

- Replace the RFK
- Repair work on the rear area of the body
- Adjusting work at tailgate



Attention!

Follow instructions and specifications in procedure.

To obtain an optimum result, always adhere to the following conditions:

- Vehicle standing level on headlight aiming station
- Rear seat bench is unoccupied
- Do not swap seats during calibration
- Steering wheel in straight-ahead position
- Do not move steering wheel



Note:

Also switch on reversing camera by means of PDC button.

Calibration can only be carried out with the diagnosis system.

Equipment specification with rear view camera:

Carry out the service function:

- Driver assistance
- Rear view camera
- Calibration of the reversing camera

Equipment specification with all-round vision camera:

Carry out the service function:

- Driver assistance
- All-round vision camera
- Calibration and teaching in for all-round vision camera

Using a special tool is no longer required for vehicles with a production date from 03/2011!

66 53 010 Calibrating the rear view camera

1 – Calibrating reversing camera

Prerequisite

The vehicle is parked horizontally at the headlight adjustment station. The steering wheel is in the straight-ahead position. The rear seat is not occupied.

- Press the PDC button to switch on the rear view camera (RFK).

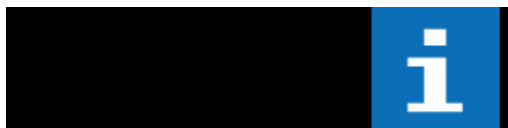
Note: The use of special tools is no longer required for vehicles with a production date from 03/2011.



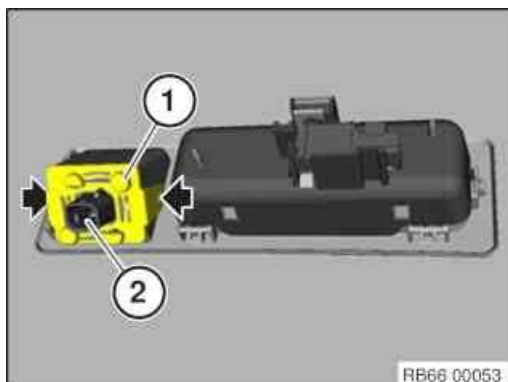
- Connect diagnosis system:
 - Service functions
 - Driver assistance
 - Reversing camera
- **For vehicles with rear view camera (RFK):**
 - Calibration of the reversing camera (RFK)
- **For vehicles with all-round vision camera:**
 - Calibration and teaching in for all-round vision camera
- Do not move the steering wheel during calibration and do not switch seats.

**Attention!**

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

**Necessary preliminary tasks:**

- Remove [button for tailgate activation](#)



Unlock latches at marked points.

Take off holder (1).

Remove reversing camera (2).

**Replacement:**

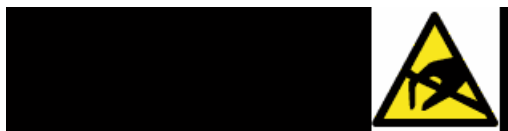
Carry out [programming/encoding](#).

[Calibrate reversing camera](#).

In addition, for equipment specification with all-round vision camera:

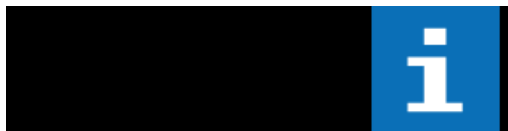
Carry out the service function:

- Driver assistance
- All-round vision camera
- All-round vision camera programming



Important!

Read and comply with [notes](#) on protection against electrostatic damage (ESD protection).

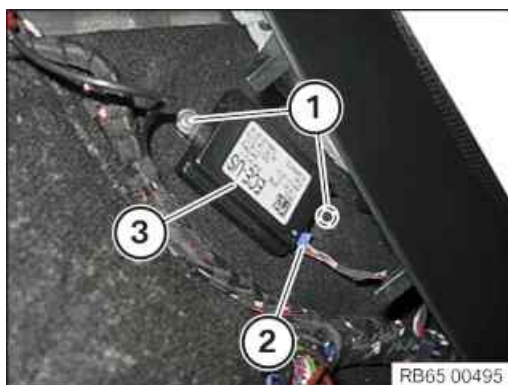


Necessary preliminary tasks:

- Remove [luggage compartment wheel arch panel on left](#).



REMOVAL:



Release screws (1).

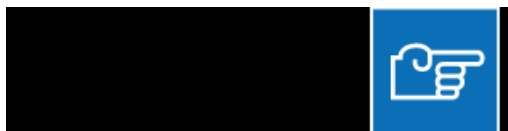
Disconnect connector (2).

Remove control unit (3).

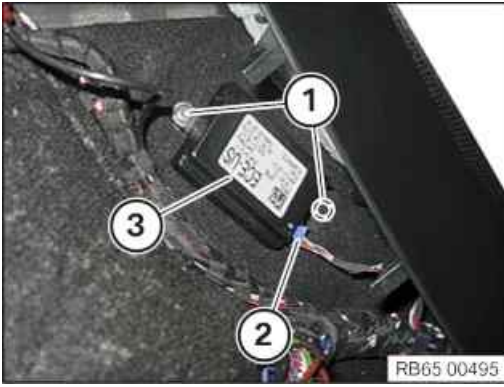


Replacement:

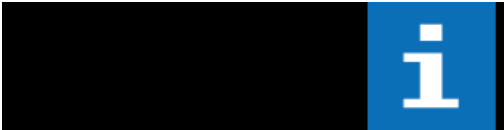
Carry out [vehicle programming and encoding](#).



INSTALLATION:



Position control unit (3).
Tighten down screws (1).
Connect connector (2).

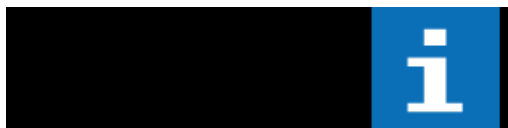


Required reworking:

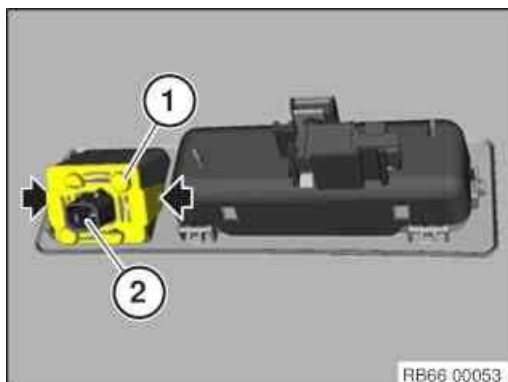
- Install [left luggage compartment wheel arch panel](#)

**Attention!**

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

**Necessary preliminary tasks:**

- Remove [button for tailgate activation](#)



Unlock latches at marked points.

Take off holder (1).

Remove reversing camera (2).

**Replacement:**

Carry out [programming/encoding](#).

[Calibrate reversing camera](#).

In addition, for equipment specification with all-round vision camera:

Carry out the service function:

- Driver assistance
- All-round vision camera
- All-round vision camera programming

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



Warning!

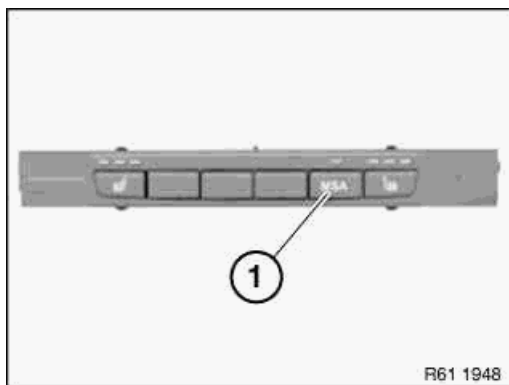
If the engine hood/bonnet contact is pulled upwards (workshop mode), the information "switch closed" is output. The automatic engine start-stop function is active.

An automatic engine start is possible.

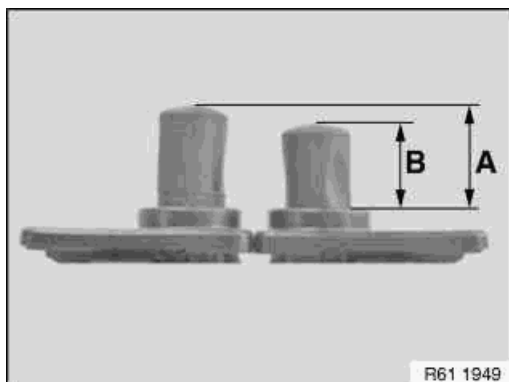
Observe safety precautions when working on MSA vehicles.

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](#)