66 12 610 Replace the radio remote control

1 Blocking/enabling the radio remote control

- Carry out the service function as follows:
  - Body
  - Locking and security functions
  - Remote key, key
  - Block/enable

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66 12 ... Teach in radio remote control/radio remote control with display (BMW display key)

Functional description for teach-in of radio remote control/radio remote control with display (BMW display key).

The service function mentioned in the functional description can be found via the following path:

- Body
- Locking and security functions
- Remote key, key
- Lock and enable remote control key

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66 20 510 Remove and install/replace the control unit

RISK OF DAMAGE

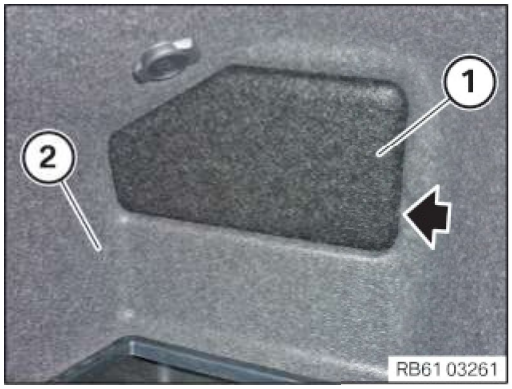
Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

PRELIMINARY WORK

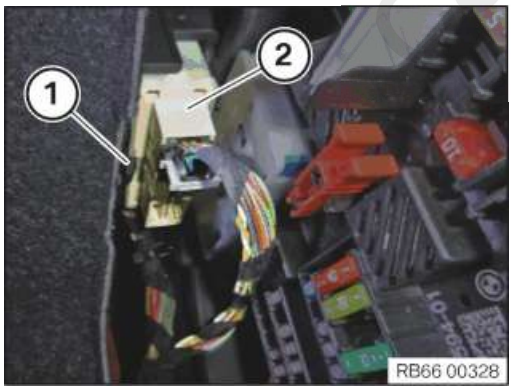
1 – Removing the flap in the luggage compartment wheel arch trim panel on the right



- Remove the flap (1) from the luggage compartment wheel arch trim panel on the right (2)

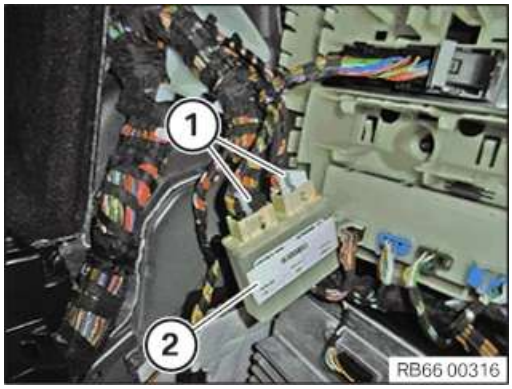
MAIN WORK

2 – Remove the PDC/PMA control unit



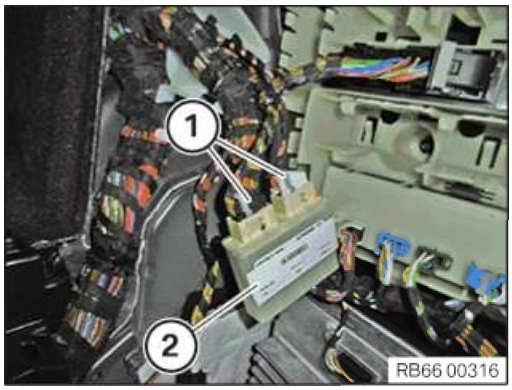
- Unlock lock (1).
- Pull out the PDC-/PMA-control unit(2) downwards form the holder.

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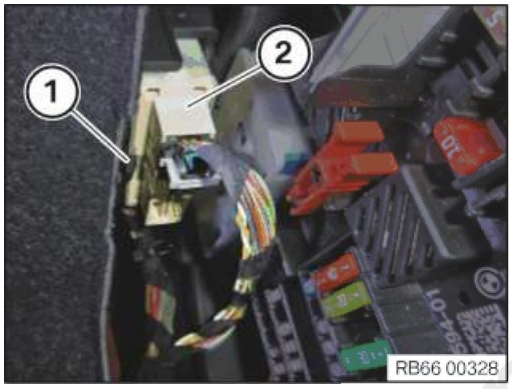


- Unlock and disconnect plug connections (1).
- Remove the PDC/PMA control unit (2).

3 – Install the PDC/PMA control unit



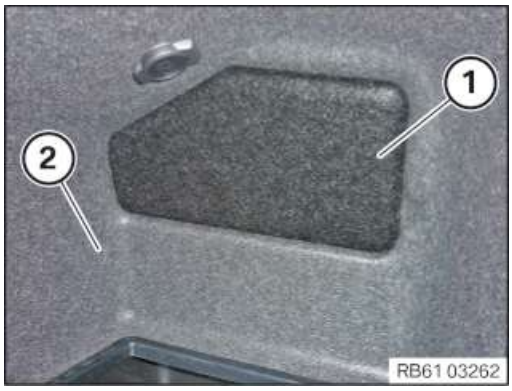
- Position PDC/PMA - control unit (2).
- Connect and lock the plug connections (1).



- Insert PDC-/PMA-control unit (2) upwards into the holder.
- Lock the lock (1).

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4 – Installing the flap in the luggage compartment wheel arch trim panel on the right



- Position the flap (1) correctly in the right luggage compartment wheel arch trim panel (2) and install.

5 – Encode/program control unit(s)

Prerequisite

Replacement of component.

TECHNICAL INFORMATION

Use the most recent software version to prevent faults during programming/encoding.
The battery voltage must not fall below 13.0 V during programming.
Use only chargers for a low volt-vehicle electrical system that are recommended by BMW.

TECHNICAL INFORMATION

No high-voltage switch off is required in electric vehicles or hybrid vehicles for programming/encoding.
The high-voltage system will be automatically switched off by the programming system.

- Connect the battery charger to the vehicle.
- Connect the programming system with the vehicle.
- Determine the action plan.
- Accept and fully process the measures plan.
- If applicable, connect the workshop system to the vehicle, depending on the reworking list.
- Carry out vehicle test.
- Delete the fault memory.
- The information about programming the workshop system and the corresponding notes in the user documentation must be observed.
- Wait until programming/encoding has been completed.
- Disconnect the programming system from the vehicle.
- Disconnect the battery charger from the vehicle.

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Additional Information

Links

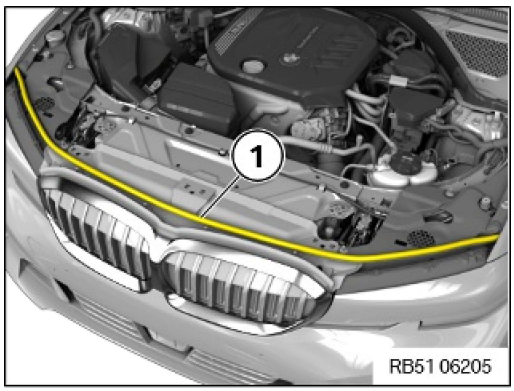
Repair instructions	Used in step
61 35 ... Notes on ESD protection (Electro Static Discharge)	

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66 20 515 Removing and installing/replacing on ultrasonic sensor at the front left

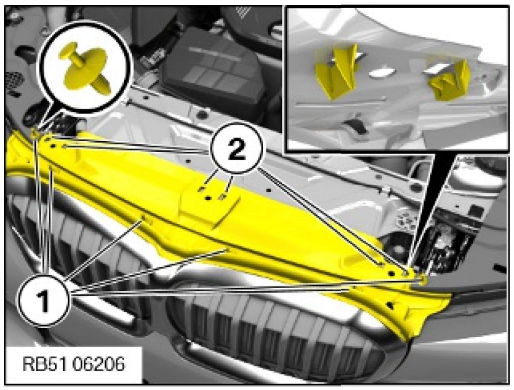
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



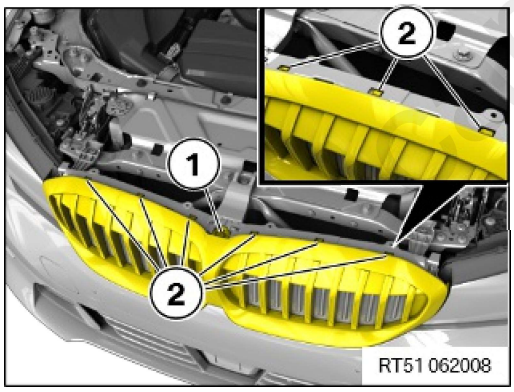
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove centre radiator ornamental grille



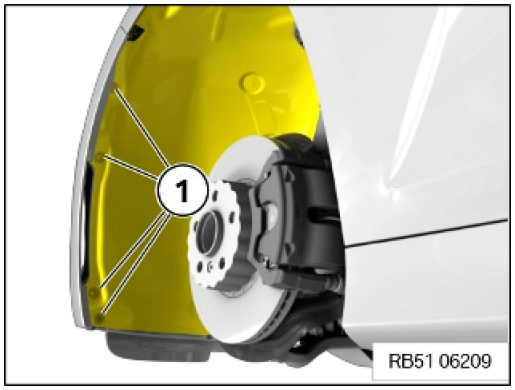
- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

4 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

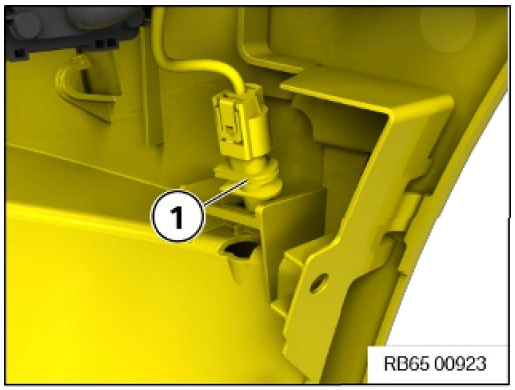


NOTICE

To provide a better overview: Schematic diagram without front wheel.

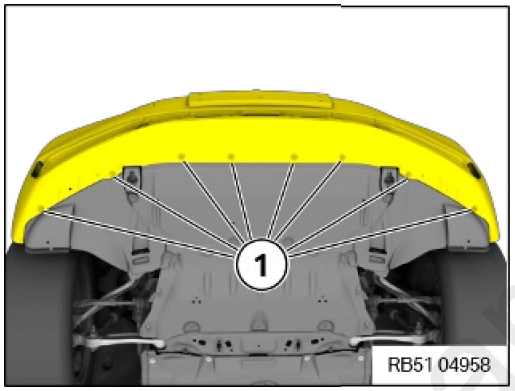
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

5 – Partially removing the temperature sensor



- Unclip temperature sensor (1) from the front bumper panel to the top.

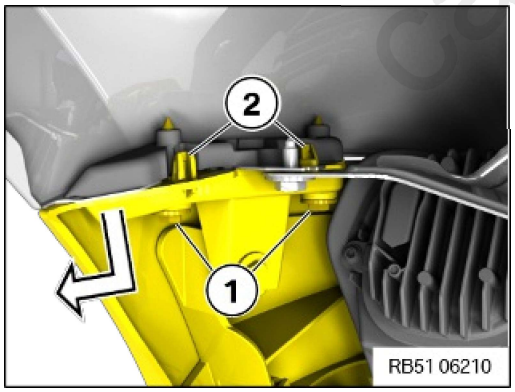
6 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

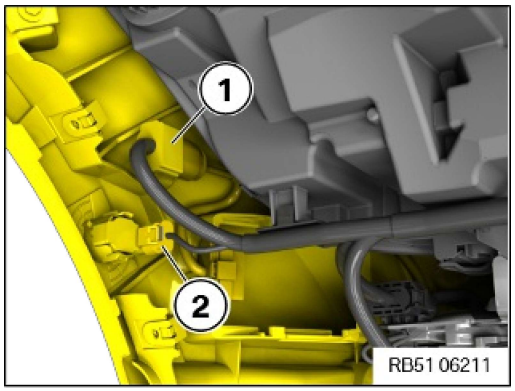
- Loosen screws (1).



NOTICE

Perform the operations on the left and right side.

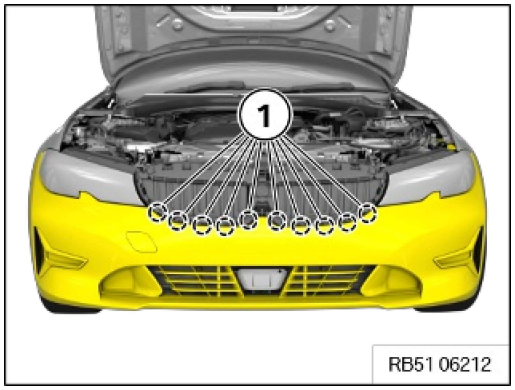
- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.



NOTICE

Perform the operations on the left and right side.

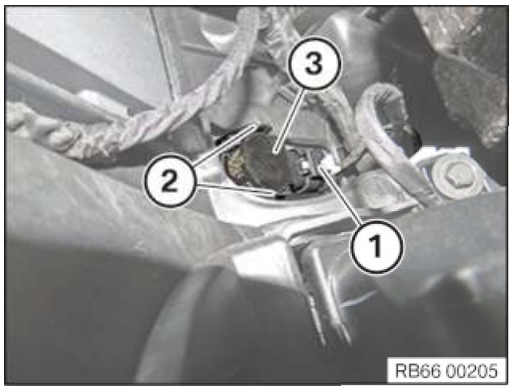
- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.



- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

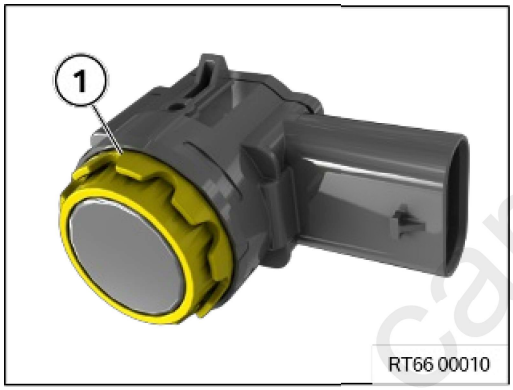
MAIN WORK

7 – Removing the ultrasonic sensor at the front left



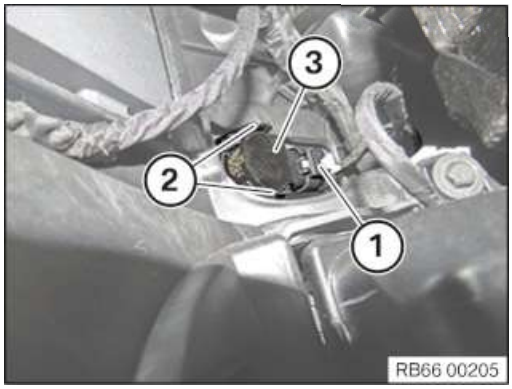
- Unlock and disconnect connector (1).
- Unlock the latch mechanisms (2).
- Remove the ultrasonic sensor (3).

8 – Installing the ultrasonic sensor at the front left



- Check the decoupling ring (1) for damage.

  Decoupling ring (1) must be installed.

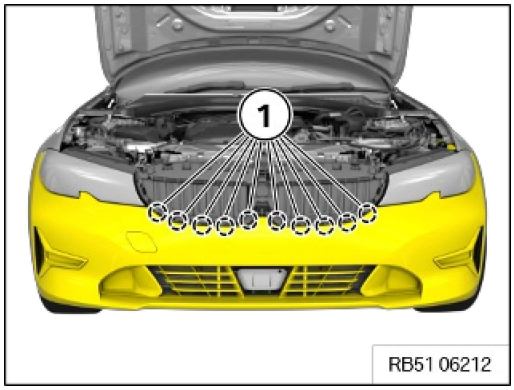


- Position the ultrasonic sensor (3) correctly and engage it in the latch mechanisms (2).
- Connect connectors (1) and lock.

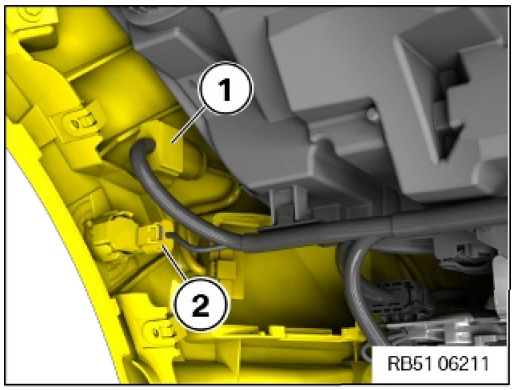
POSTPROCESSES

9 – Install bumper panel, front

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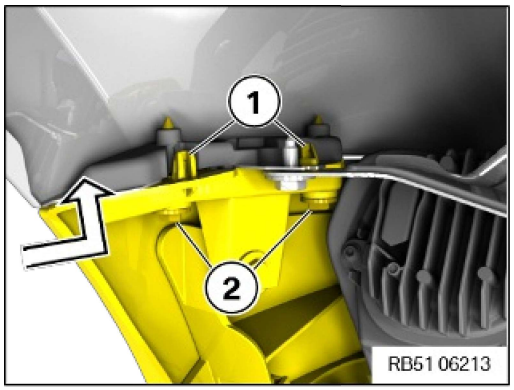
- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).



NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.



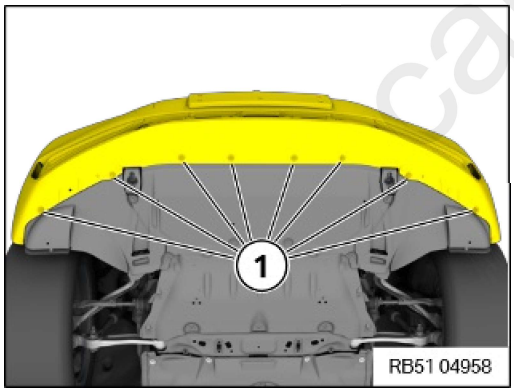
NOTICE

Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm



NOTICE

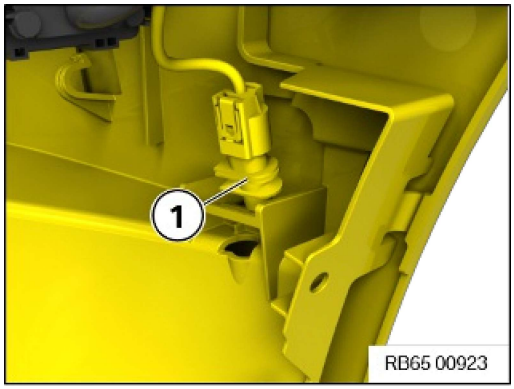
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

10 – Partially installing the temperature sensor



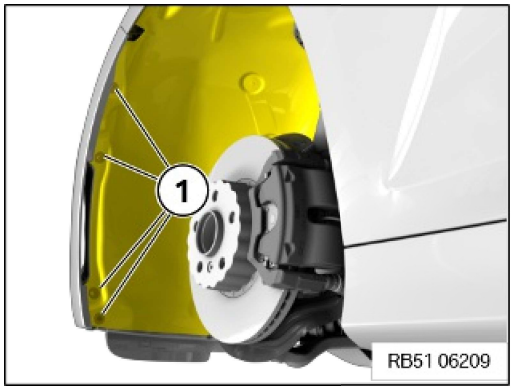
- Clip the temperature sensor (1) downwards into the front bumper panel.

11 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

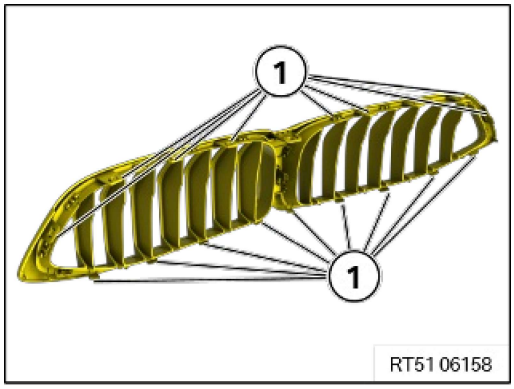
Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

12 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



Check

- Check latch mechanisms (1) for damage.

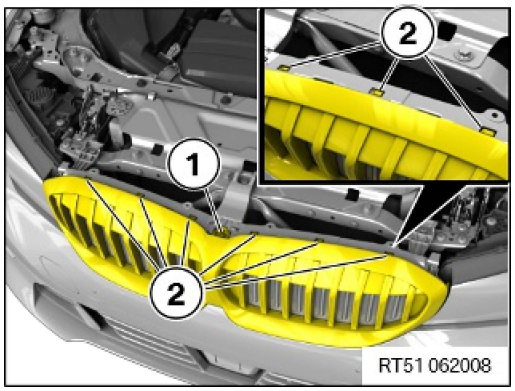
Result

» The latch mechanism (1) is damaged.

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Measure

- Renew the front ornamental grille, centre.

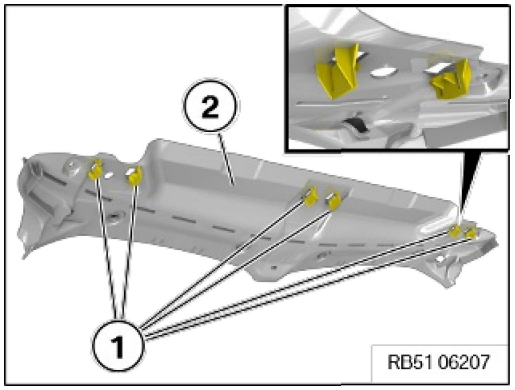


- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

13 – Installing cover for engine compartment centre



Check

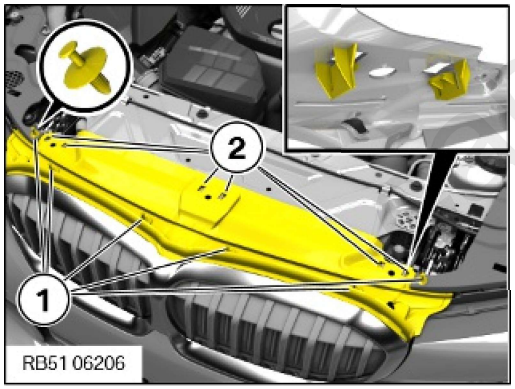
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

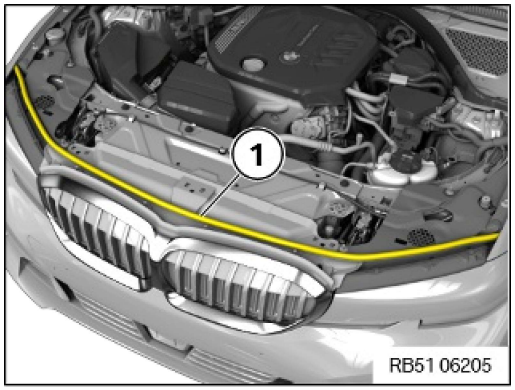
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

14 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Front bumper panel to front side panel — Used in step 9

Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection — Used in step 9

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Wheel arch trim panel, front — Used in step 11

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Centre of front ornamental grille to top air flap control — Used in step 12

Oval-head screwM6		Tightening torque	4,6 Nm

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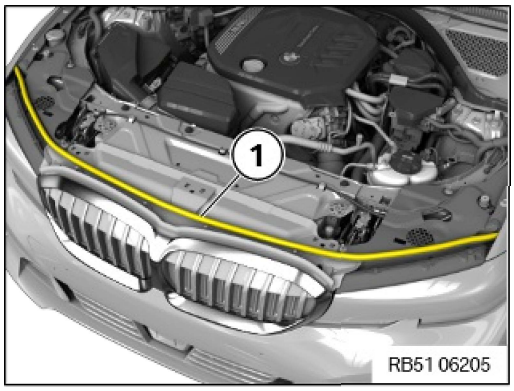
66 20 516 Removing and installing/replacing one ultrasonic sensor at the front right

NOTICE

Description is for left component only. Procedure on the right side is identical.

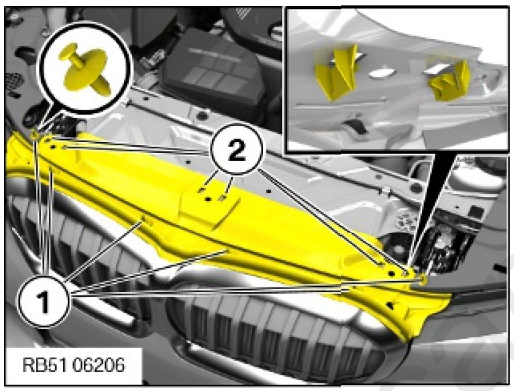
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



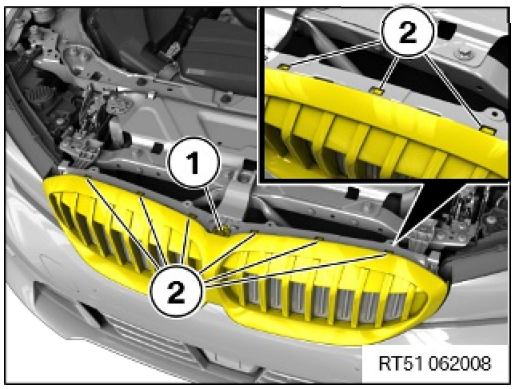
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove centre radiator ornamental grille



- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

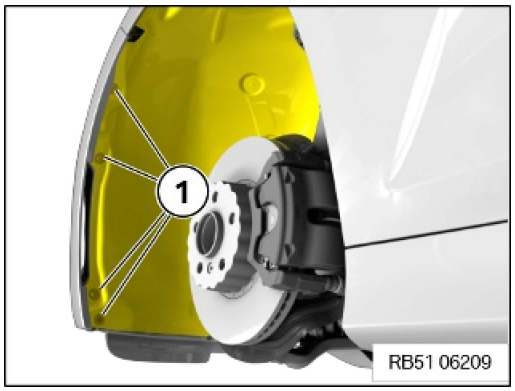
4 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

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▸ **Partially removing front wheel arch trim panel**

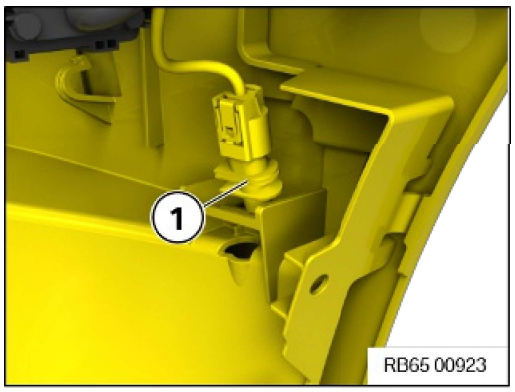


NOTICE

To provide a better overview: Schematic diagram without front wheel.

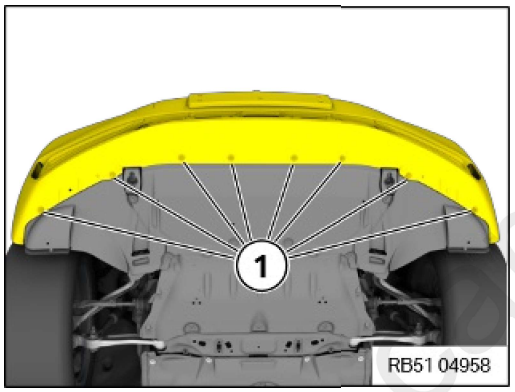
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

5 – Partially removing the temperature sensor



- Unclip temperature sensor (1) from the front bumper panel to the top.

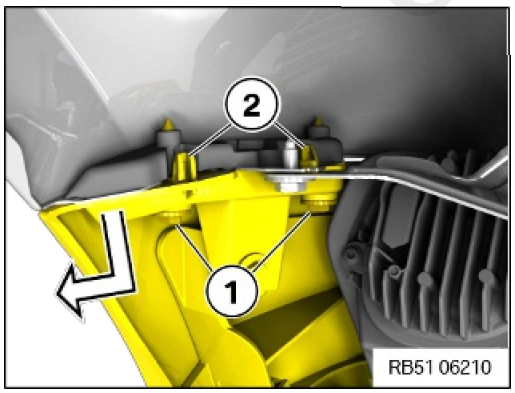
6 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

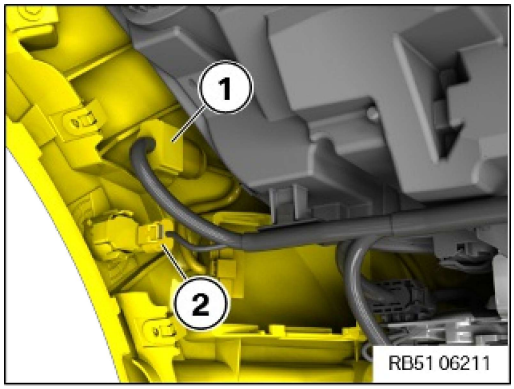
- Loosen screws (1).



NOTICE

Perform the operations on the left and right side.

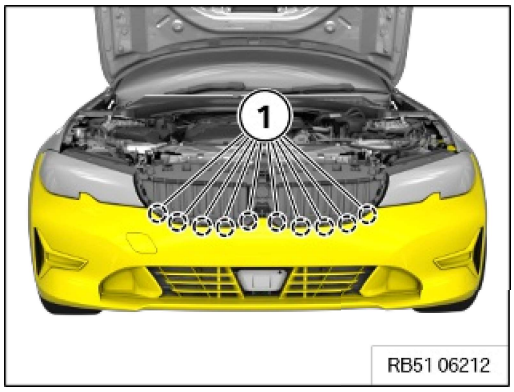
- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.



NOTICE

Perform the operations on the left and right side.

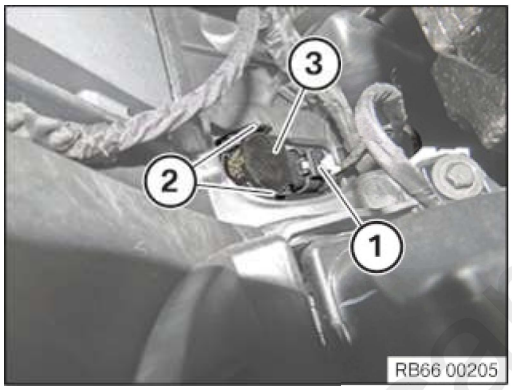
- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.



- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

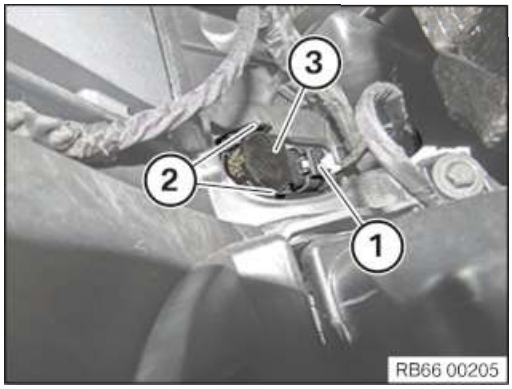
MAIN WORK

7 – Removing the ultrasonic sensor at the front right



- Unlock and disconnect connector (1).
- Unlock the latch mechanisms (2).
- Remove the ultrasonic sensor (3).

8 – Installing the ultrasonic sensor at the front right

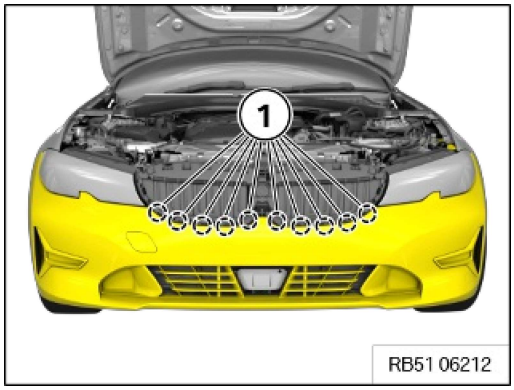


- Position the ultrasonic sensor (3) correctly and engage it in the latch mechanisms (2).
- Connect connectors (1) and lock.

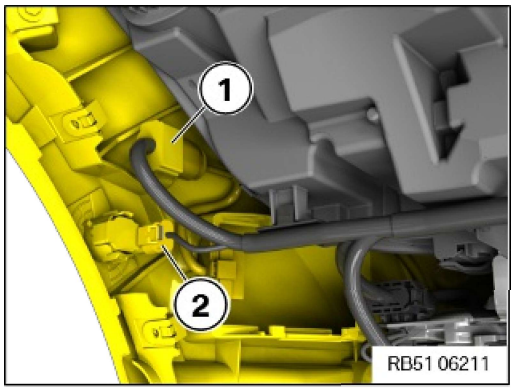
POSTPROCESSES

9 – Install bumper panel, front

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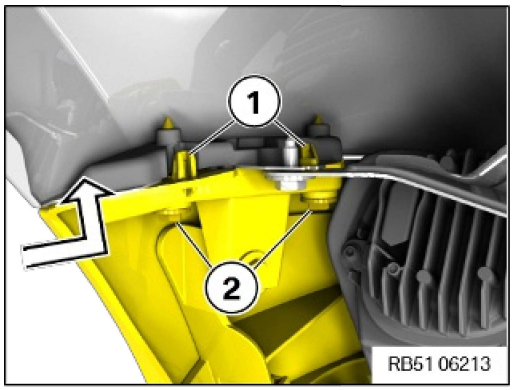
- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).



NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.



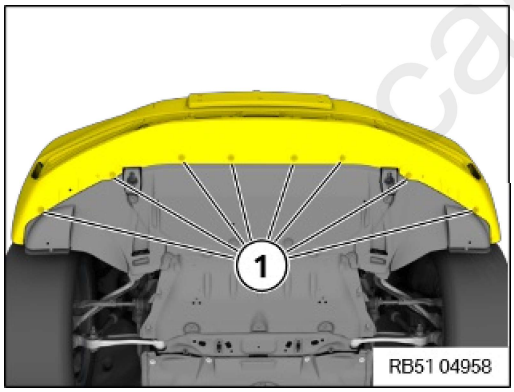
NOTICE

Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm



NOTICE

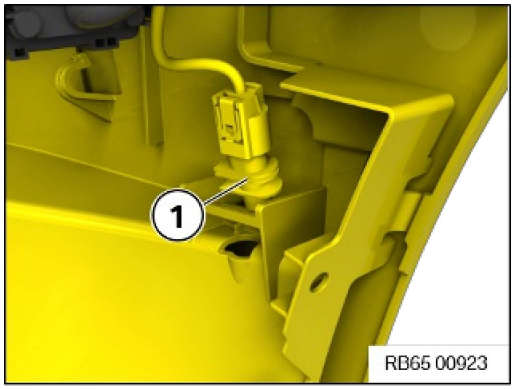
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

10 – Partially installing the temperature sensor



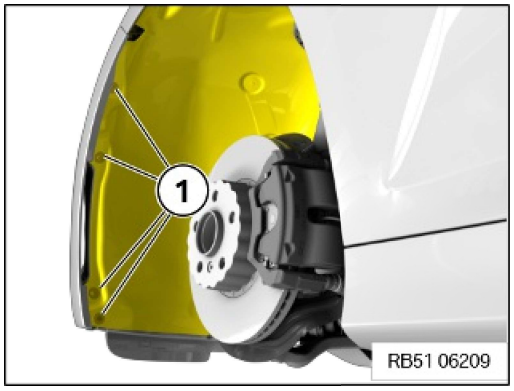
- Clip the temperature sensor (1) downwards into the front bumper panel.

11 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

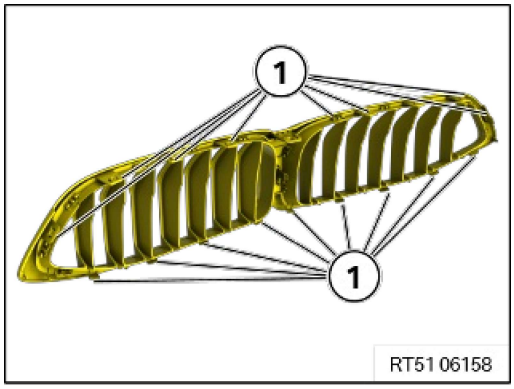
Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

12 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



Check

- Check latch mechanisms (1) for damage.

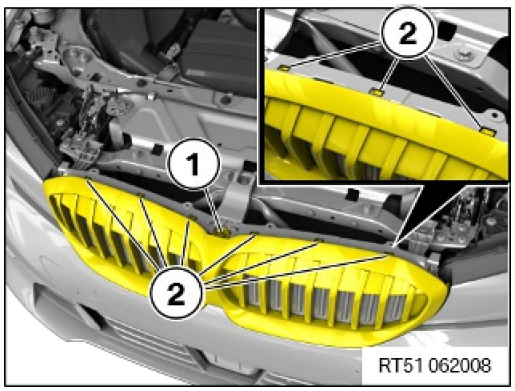
Result

» The latch mechanism (1) is damaged.

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Measure

- Renew the front ornamental grille, centre.

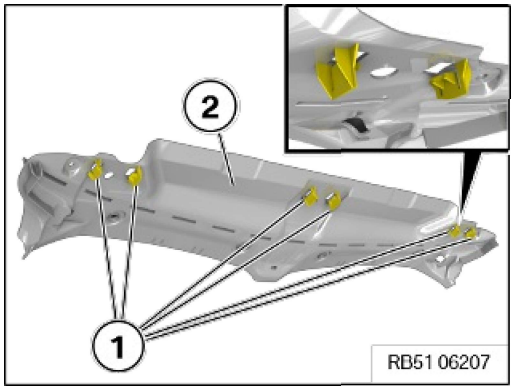


- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

13 – Installing cover for engine compartment centre



Check

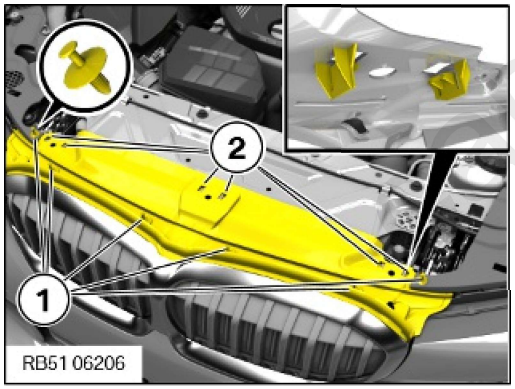
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

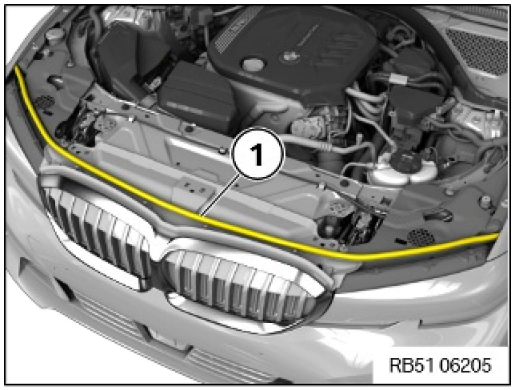
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

14 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Front bumper panel to front side panel — Used in step 9

Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection — Used in step 9

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Wheel arch trim panel, front — Used in step 11

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Centre of front ornamental grille to top air flap control — Used in step 12

Oval-head screwM6		Tightening torque	4,6 Nm

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66 20 517 Removing and installing/replacing one ultrasonic sensor at the front, centre, left

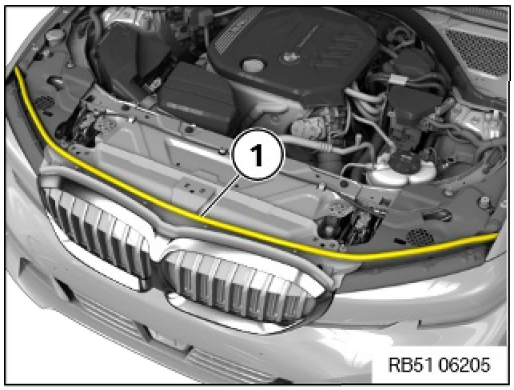
TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

Do not attach labels in the sampling range of the sensor.

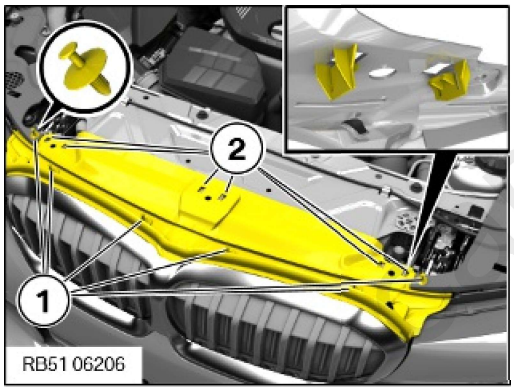
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



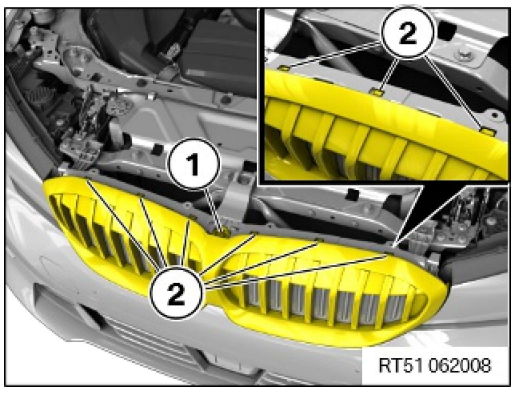
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove centre radiator ornamental grille



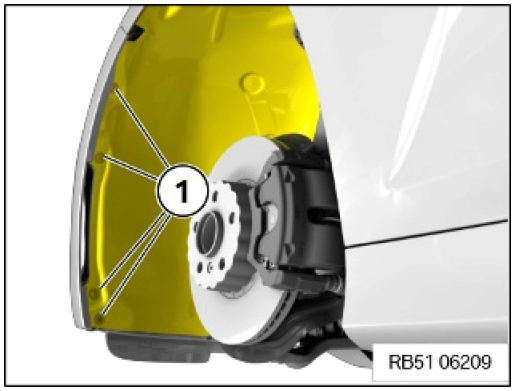
- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

4 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

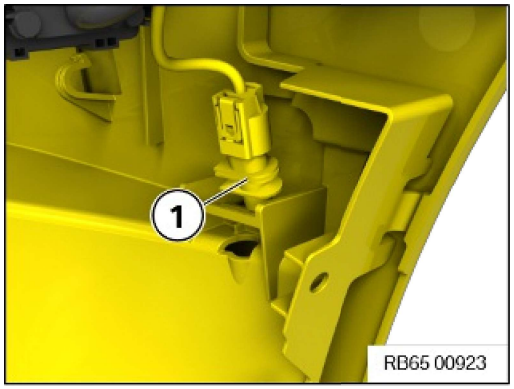


NOTICE

To provide a better overview: Schematic diagram without front wheel.

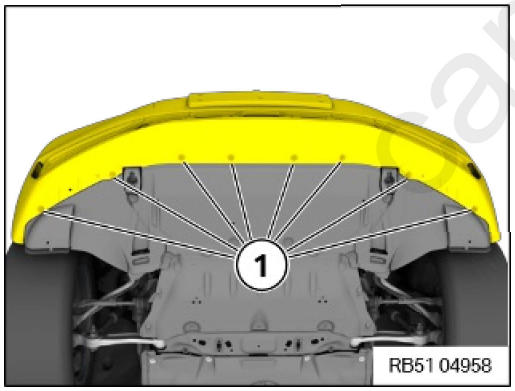
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

5 – Partially removing the temperature sensor



- Unclip temperature sensor (1) from the front bumper panel to the top.

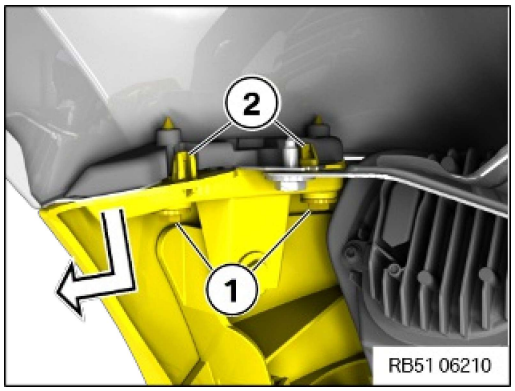
6 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Loosen screws (1).

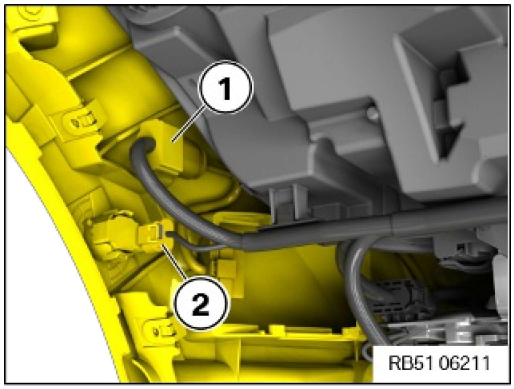


NOTICE

Perform the operations on the left and right side.

- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.

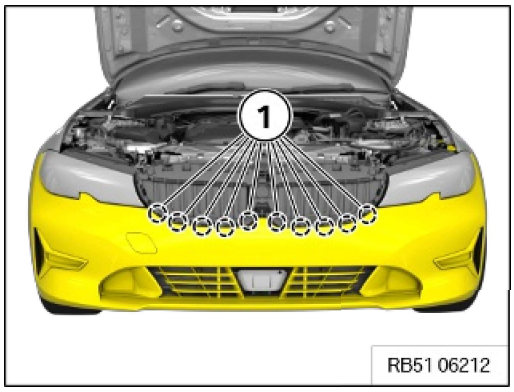
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NOTICE

Perform the operations on the left and right side.

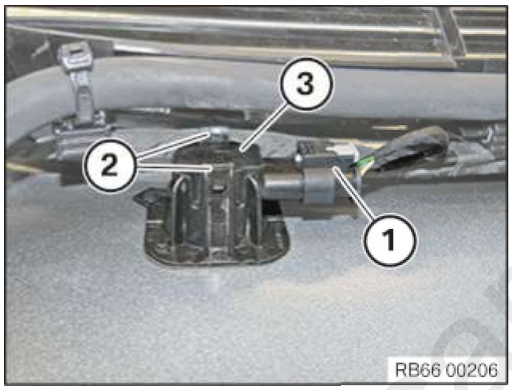
- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.



- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

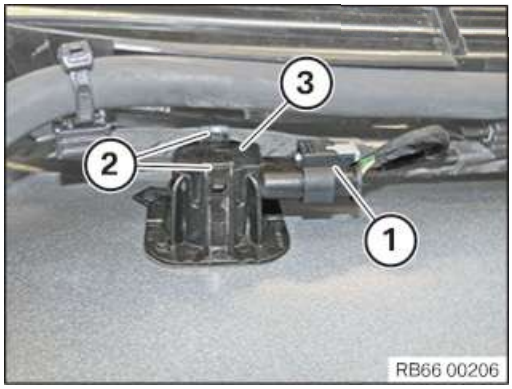
MAIN WORK

7 – Removing the ultrasonic sensor at the front left in the centre



- Unlock and disconnect connector (1).
- Unlock the latch mechanisms (2).
- Remove the ultrasonic sensor (3).

8 – Installing the ultrasonic sensor at the front, in the centre on the left

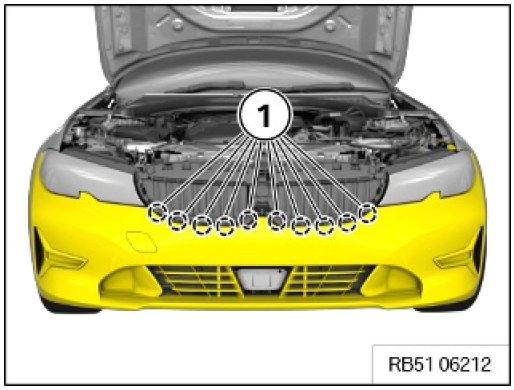


- Connect connectors (1) and lock.
- Position the ultrasonic sensor (3) correctly and engage it in the latch mechanisms (2).

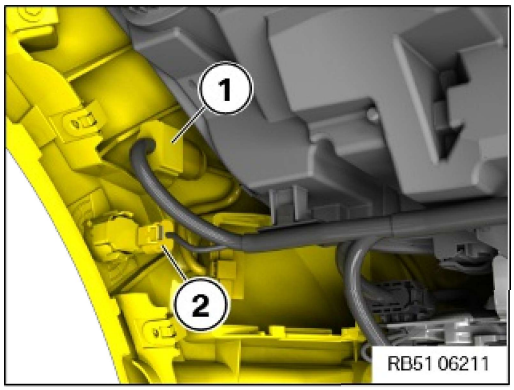
POSTPROCESSES

9 – Install bumper panel, front

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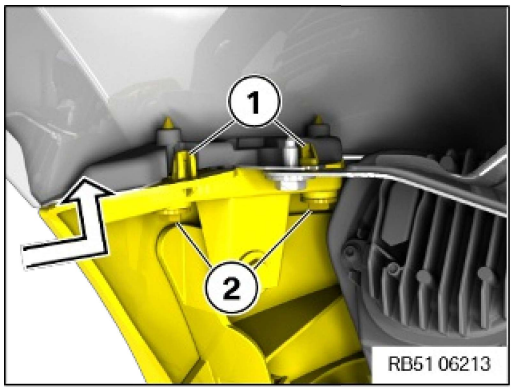
- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).



NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.



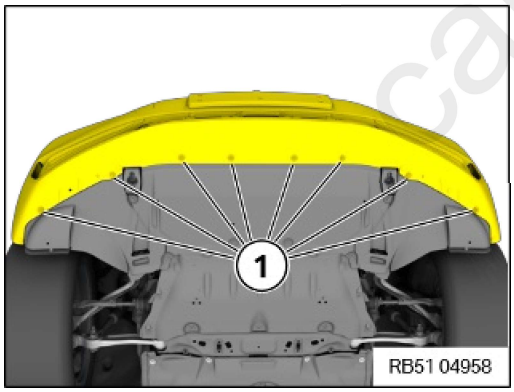
NOTICE

Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm



NOTICE

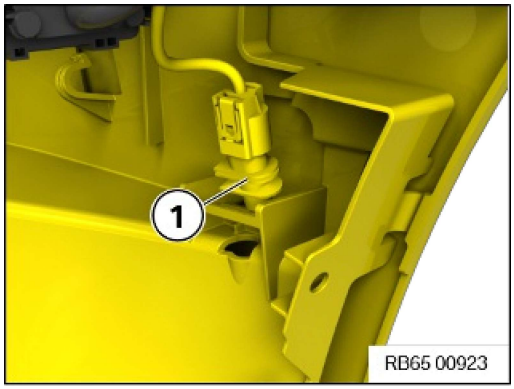
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

10 – Partially installing the temperature sensor



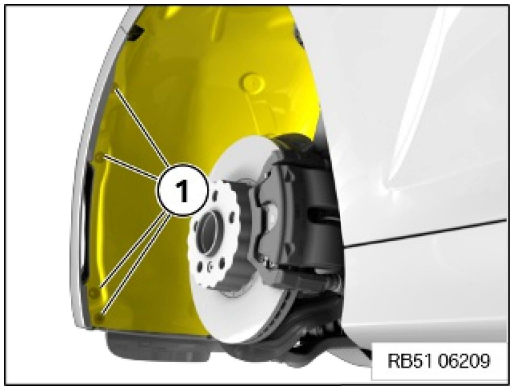
- Clip the temperature sensor (1) downwards into the front bumper panel.

11 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

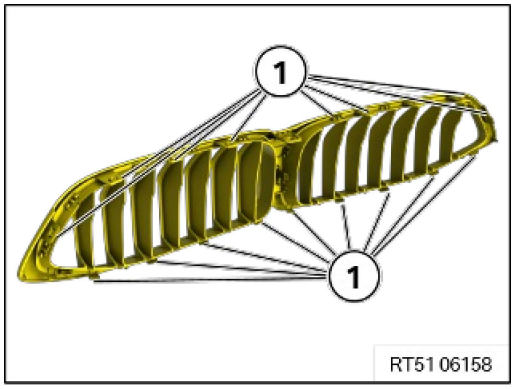
Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

12 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



Check

- Check latch mechanisms (1) for damage.

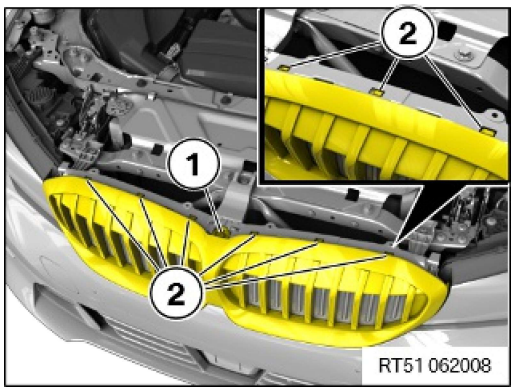
Result

» The latch mechanism (1) is damaged.

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Measure

- Renew the front ornamental grille, centre.

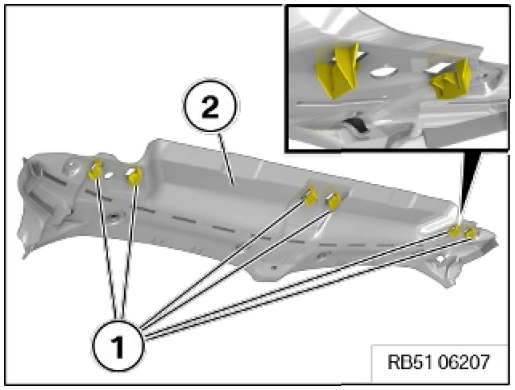


- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

13 – Installing cover for engine compartment centre



Check

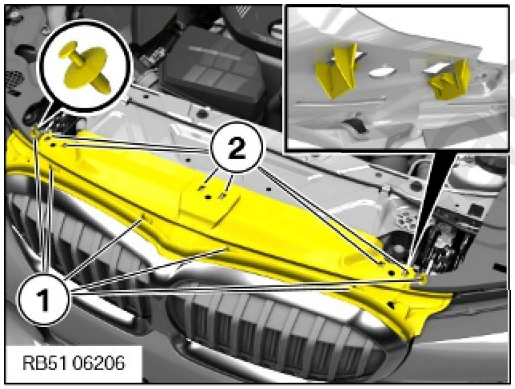
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

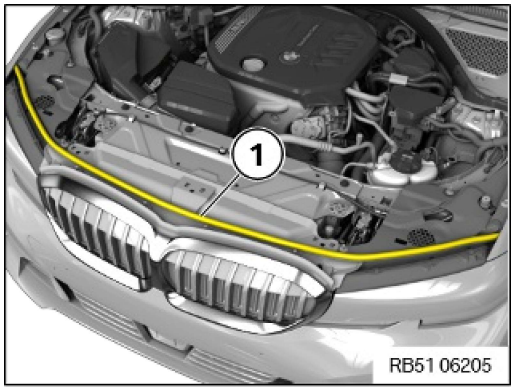
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

14 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Front bumper panel to front side panel — Used in step 9

Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection — Used in step 9

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Wheel arch trim panel, front — Used in step 11

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Centre of front ornamental grille to top air flap control — Used in step 12

Oval-head screwM6		Tightening torque	4,6 Nm

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66 20 519 Removing and installing/replacing one ultrasonic sensor at the front, centre, right

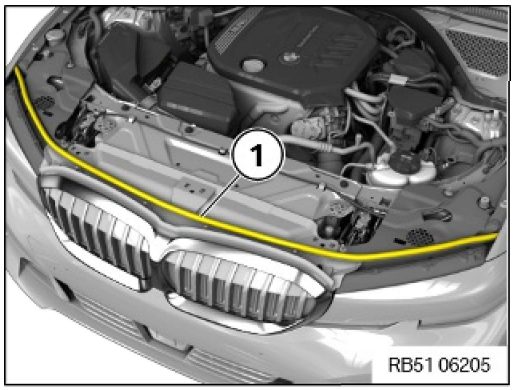
TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

Do not attach labels in the sampling range of the sensor.

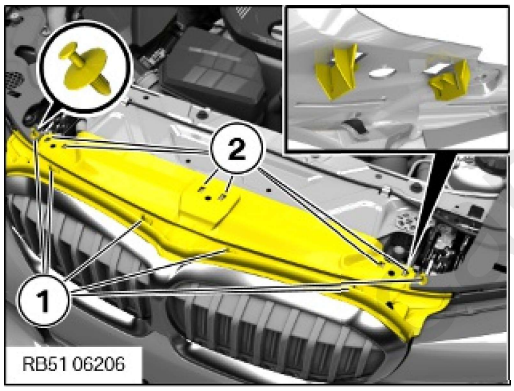
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



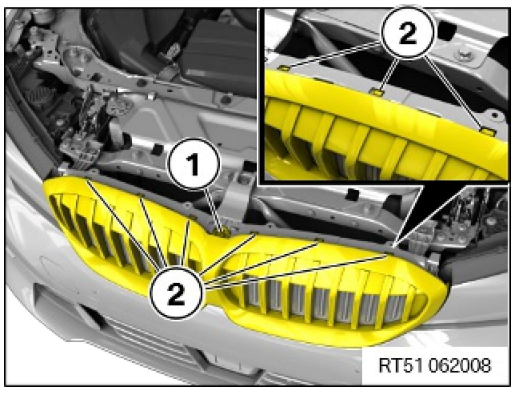
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove centre radiator ornamental grille



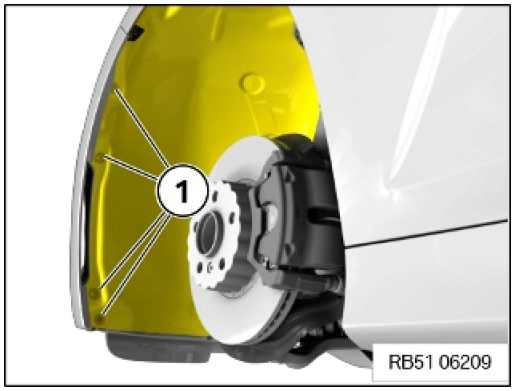
- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

4 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

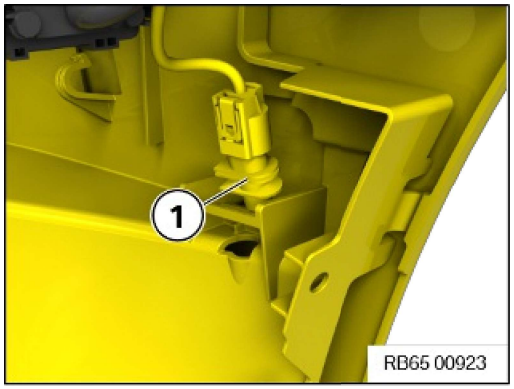


NOTICE

To provide a better overview: Schematic diagram without front wheel.

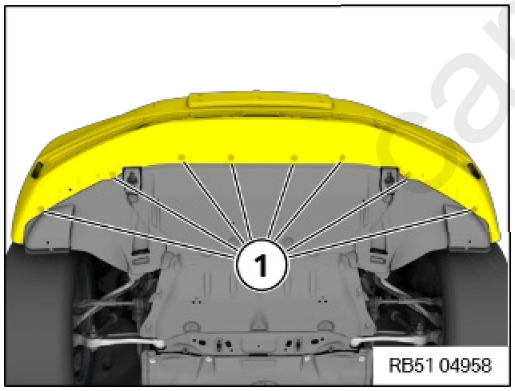
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

5 – Partially removing the temperature sensor



- Unclip temperature sensor (1) from the front bumper panel to the top.

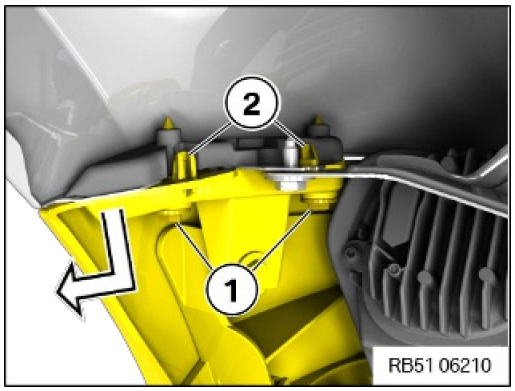
6 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Loosen screws (1).

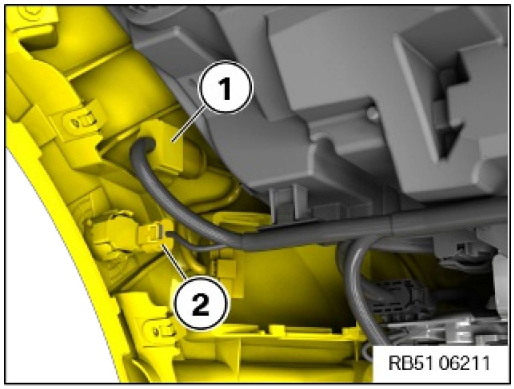


NOTICE

Perform the operations on the left and right side.

- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.

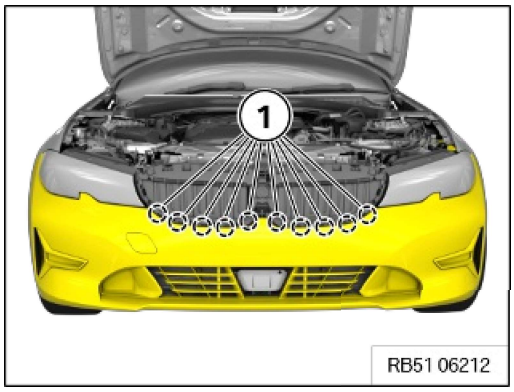
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NOTICE

Perform the operations on the left and right side.

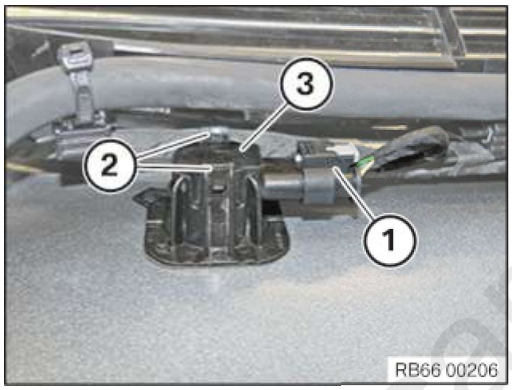
- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.



- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

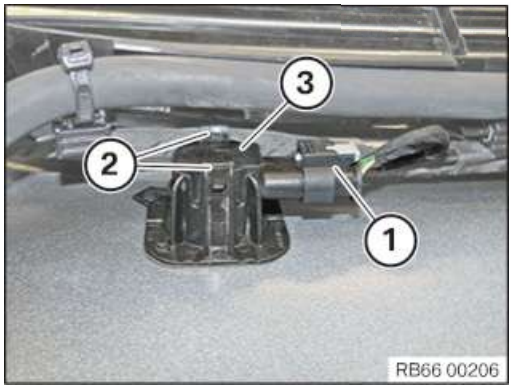
MAIN WORK

7 – Removing the ultrasonic sensor at the front right in the centre



- Unlock and disconnect connector (1).
- Unlock the latch mechanisms (2).
- Remove the ultrasonic sensor (3).

8 – Installing the ultrasonic sensor at the front right in the centre

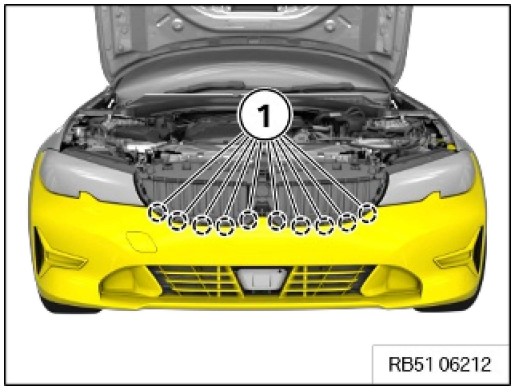


- Connect connectors (1) and lock.
- Position the ultrasonic sensor (3) correctly and engage it in the latch mechanisms (2).

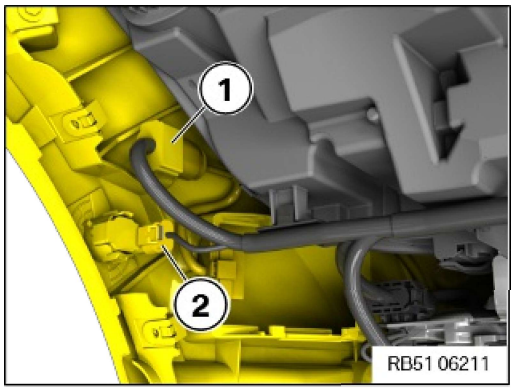
POSTPROCESSES

9 – Install bumper panel, front

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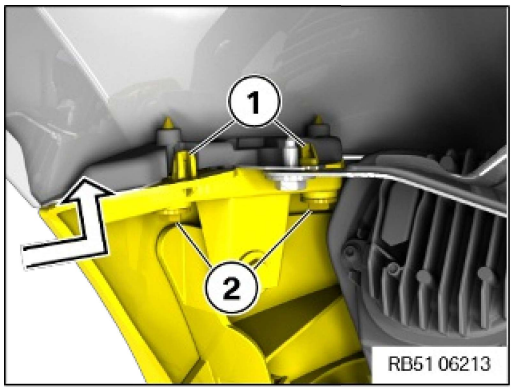
- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).



NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.



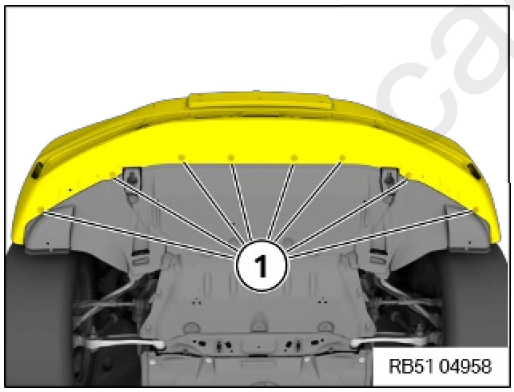
NOTICE

Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm



NOTICE

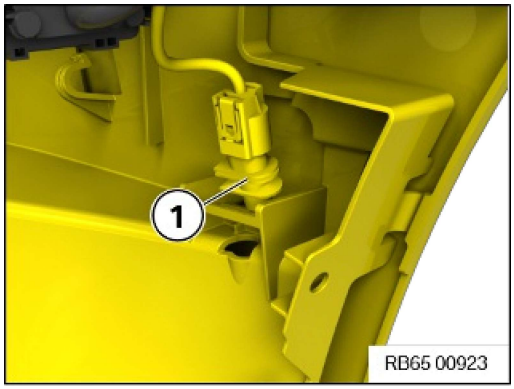
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

10 – Partially installing the temperature sensor



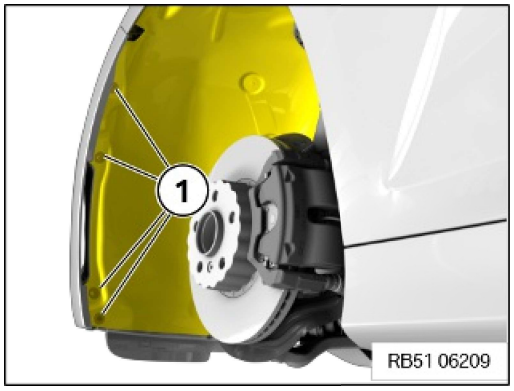
- Clip the temperature sensor (1) downwards into the front bumper panel.

11 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

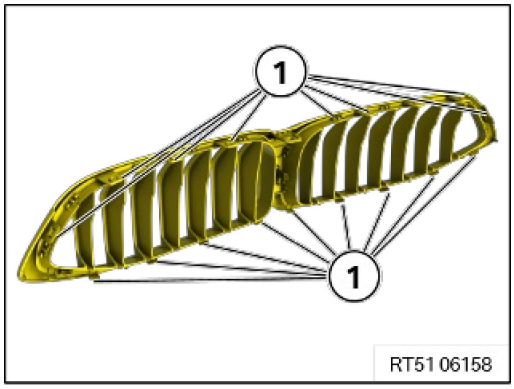
Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

12 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



Check

- Check latch mechanisms (1) for damage.

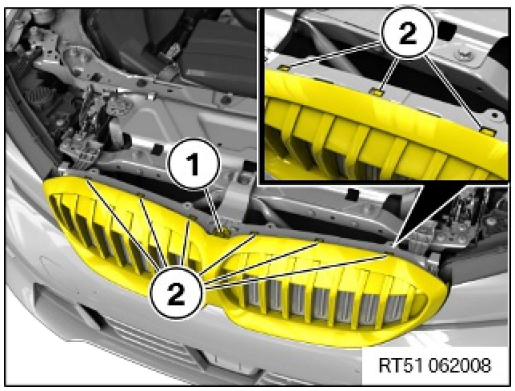
Result

» The latch mechanism (1) is damaged.

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Measure

- Renew the front ornamental grille, centre.

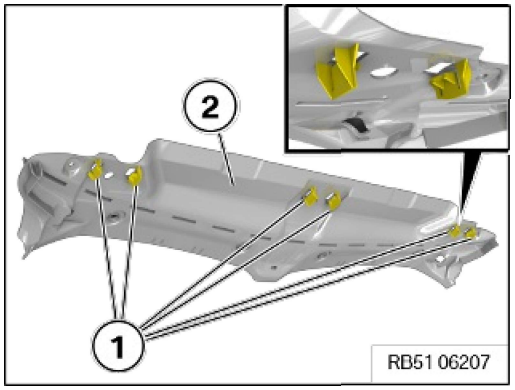


- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

13 – Installing cover for engine compartment centre



Check

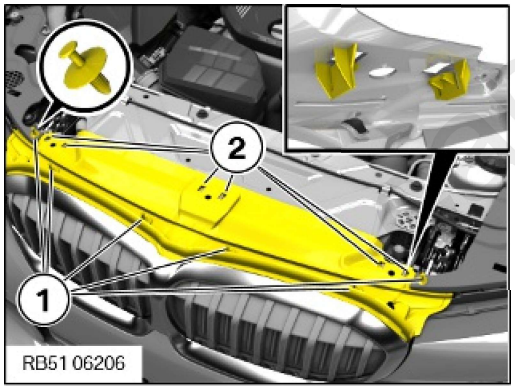
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

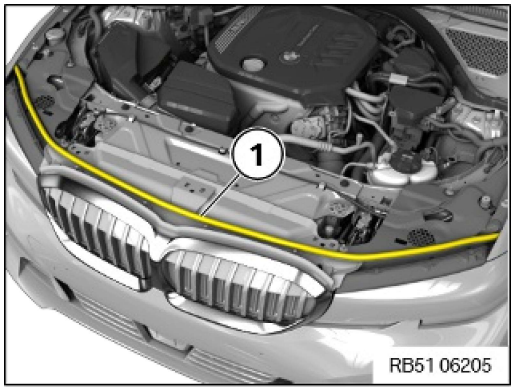
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

14 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Front bumper panel to front side panel — Used in step 9

Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection — Used in step 9

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Wheel arch trim panel, front — Used in step 11

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Centre of front ornamental grille to top air flap control — Used in step 12

Oval-head screwM6		Tightening torque	4,6 Nm

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66 20 534 Removing and installing/replacing rear left ultrasonic sensor

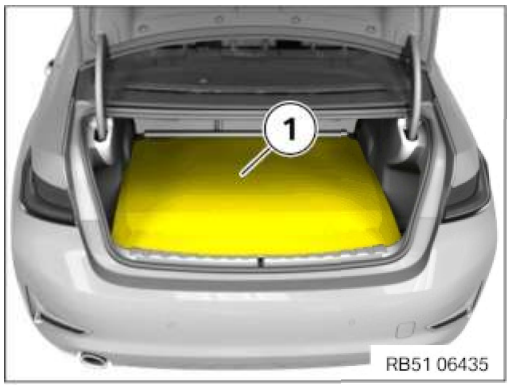
TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

Do not attach labels in the sampling range of the sensor.

PRELIMINARY WORK

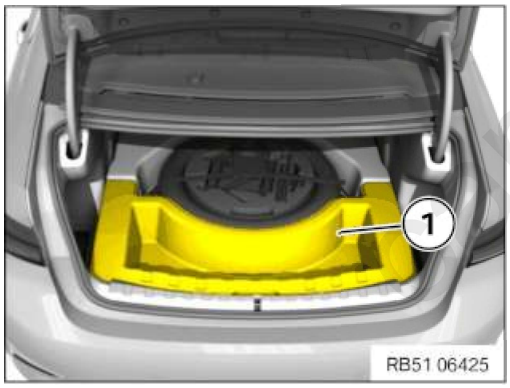
1 – Removing the luggage compartment floor trim panel



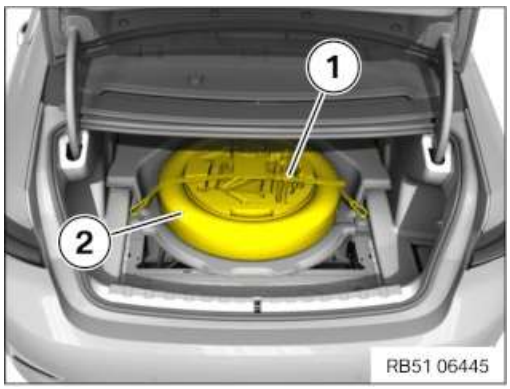
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

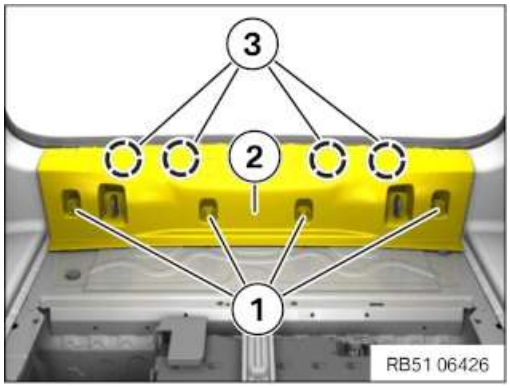


- Remove rear luggage compartment well (1).



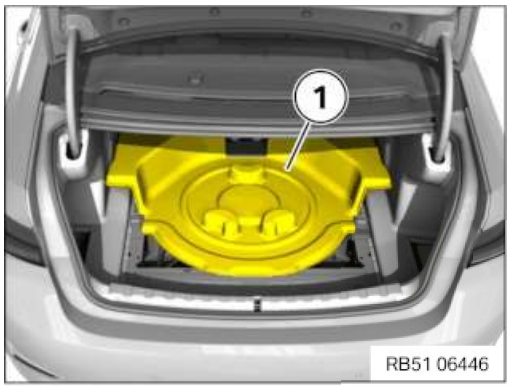
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

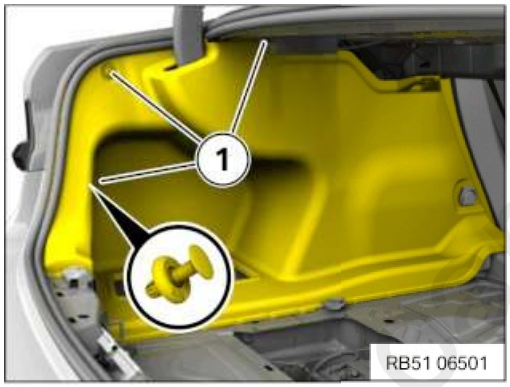
4 – Removing front luggage compartment well



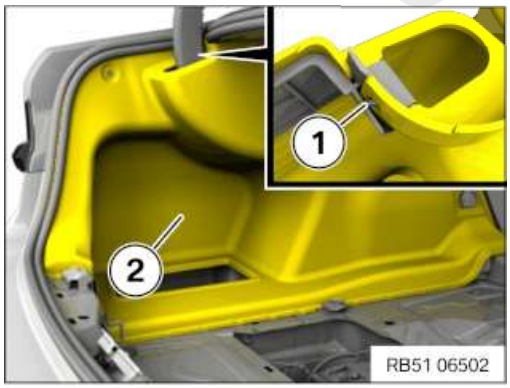
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Removing both luggage compartment wheel arch trim panels partially

▸ Partially remove luggage compartment wheel arch trim on left



- Loosen the expanding rivet (1).

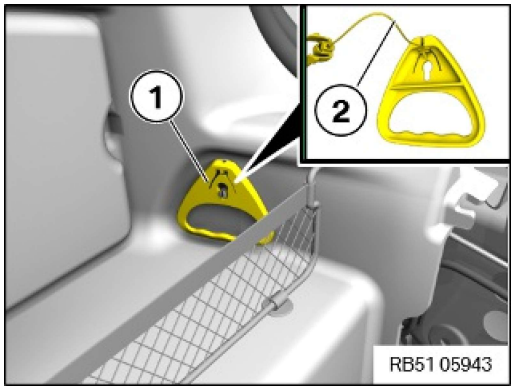


- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

▸ Partially remove luggage compartment wheel arch panel on right

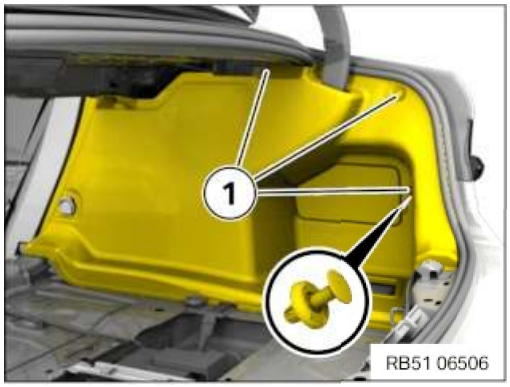
▹ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)

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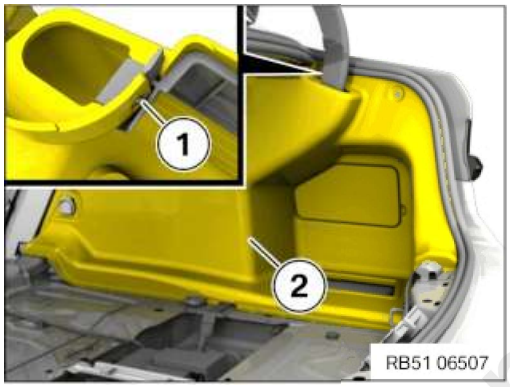


- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

◁



- Loosen the expanding rivet (1).



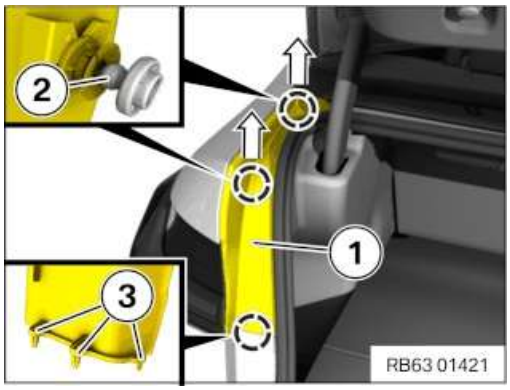
- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

6 – Removing both trims of water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim in the water channel**



- Unclip the trim in the water channel (1) from the ball pins (2) towards the top.
- Release the trim in the water channel (1) from the guides (3) and remove it.

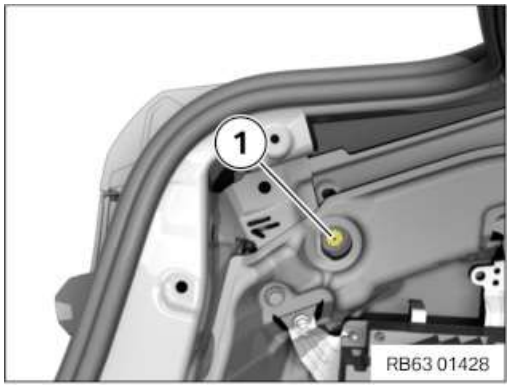
7 – Remove both rear lights from the side panel

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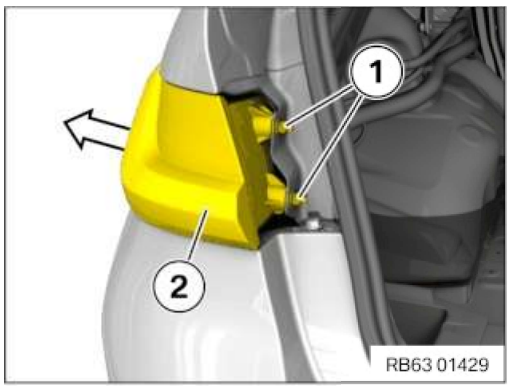
NOTICE

Description is for left component only. Procedure on the right side is identical.

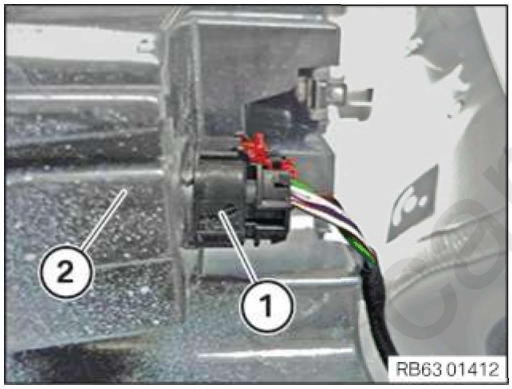
▶ **Remove the rear light on the side panel**



- Loosen nut (1).



- Release the nuts (1) and feed out the rear light on the side panel (2) in the direction of arrow.



TECHNICAL INFORMATION

Observe note on unlocking and disconnecting plug connections.

For additional information see: 6113 ... Unlocking and disconnecting different plug connections

- Unlock and disconnect plug connection (1) as described in position #28 in additional information.
- Remove the rear light on the side panel (2).

8 – Remove rear bumper panel

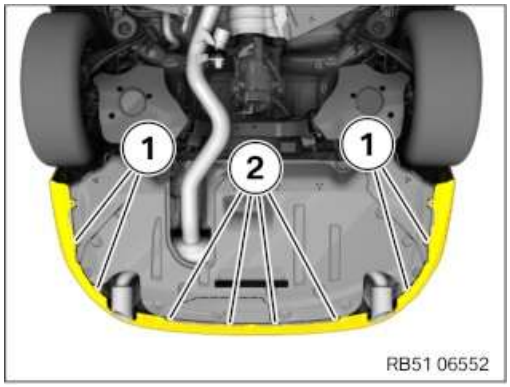


NOTICE

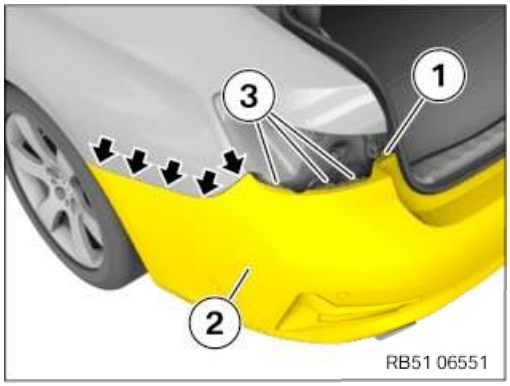
Perform the operations on the left and right side.

- Loosen screws (1).

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- Loosen screws (1).
- Release the bumper panel on latch mechanisms (2) with a suitable tool.



NOTICE

Perform the operations on the left and right side.

- Loosen screw (1).
- Release bumper panel (2) in the area of the rear light housing from latch mechanisms (3) with a suitable tool.
- Release side bumper panel (2) from the remaining latch mechanisms (arrows).

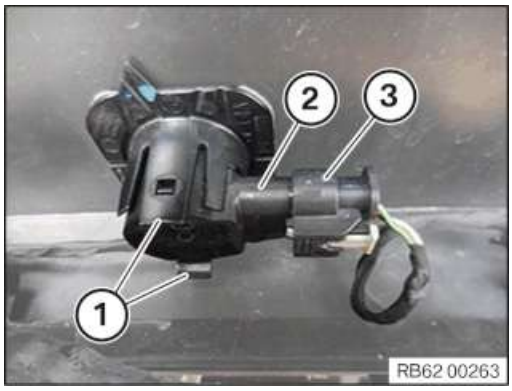


- Remove bumper panel (2) straight to the rear with the help of an auxiliary person.
- Unlock all plug connections and disconnect.
- Remove the bumper panel (1).

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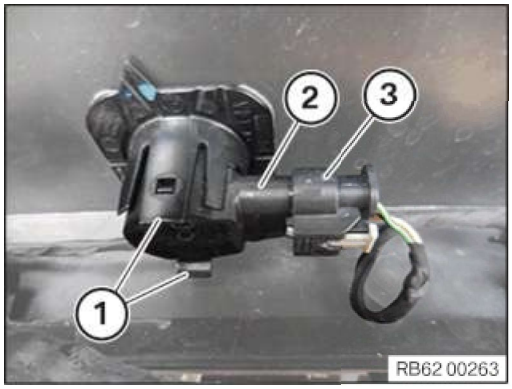
MAIN WORK

9 – Removing the ultrasonic sensor at the rear left



- Unlock plug connection (3) and disconnect.
- Unlock the latch mechanisms (1).
- Remove the ultrasonic sensor (2).

10 – Installing the ultrasonic sensor at the rear left

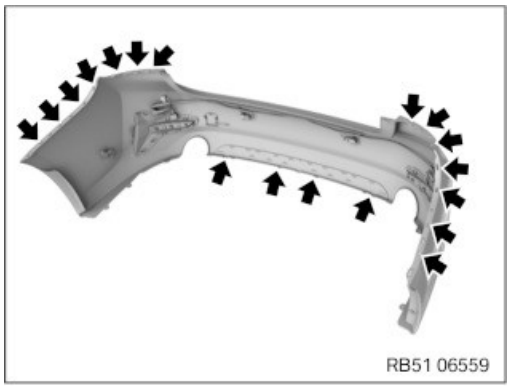


- Position the ultrasonic sensor (2) correctly and engage it in the latch mechanisms (1).
- Connect connectors (3) and lock.

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POSTPROCESSES

11 – Install rear bumper panel



Check

- Check the latch mechanisms (arrows) for damage.

Result

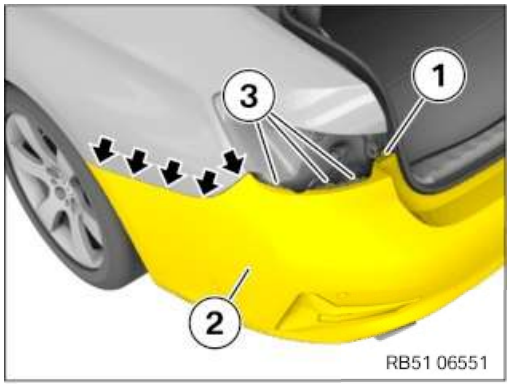
» Latch mechanisms are damaged.

Measure

- Renew the bumper panel.



- Position the bumper panel (1) straight with the help of another person.
- Connect all connectors and lock.



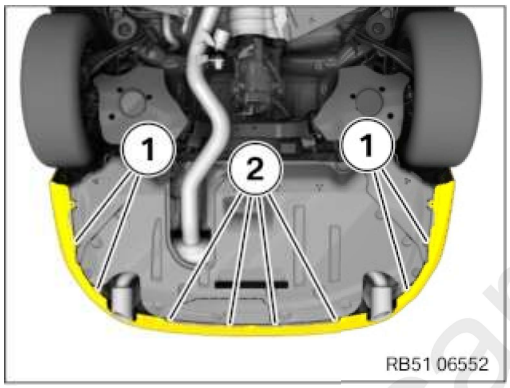
NOTICE

Perform the operations on the left and right side.

- Clip bumper panel (2) on the side in the latch mechanisms (arrows).
- Clip bumper panel (2) in the area of the rear light housing in latch mechanisms (3).
- Tighten down screw (1).

Rear bumper panel guide on rear centre guide

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm



- Clip bumper panel into latch mechanisms (2).
- Tighten the screws (1).

Mounting for rear bumper panel on support for rear bumper panel

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm



NOTICE

Perform the operations on the left and right side.

- Tighten the screws (1).

Rear bumper panel to rear side panel

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

12 – Install both rear lights on the side panel

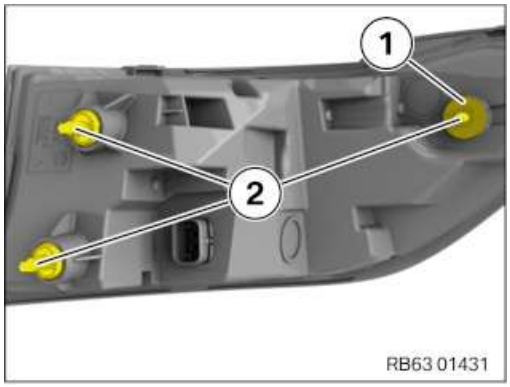
NOTICE

Description is for left component only. Procedure on the right side is identical.

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▸ **Install the rear light on the side panel**

Check



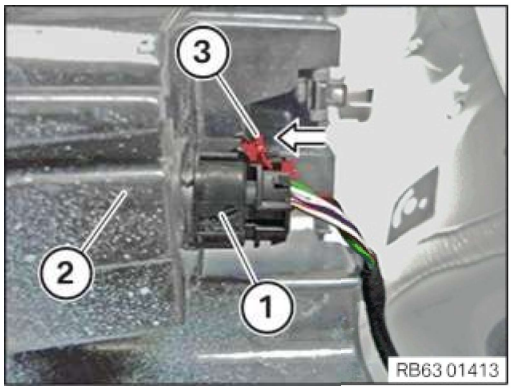
- Check the seal (1) for damage and renew if necessary.
- Check the threaded inserts (2) for damage.

Result

» The threaded inserts are damaged.

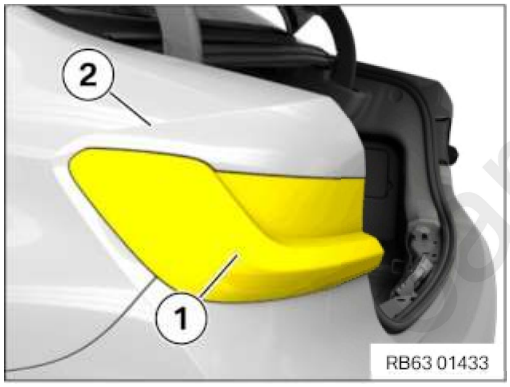
Measure

- Replace rear light.

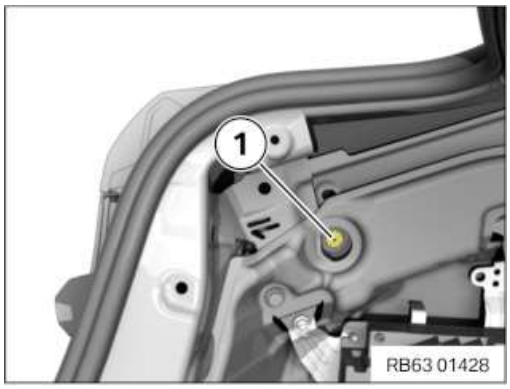


- Connect the connector (1) to the rear light on the side panel (2).

  The connector (1) must engage audibly.
- Lock the lock in direction of arrow (3).

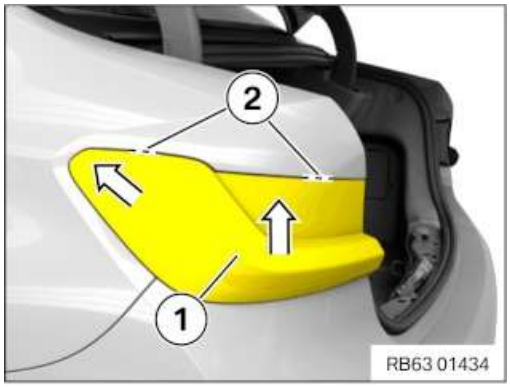


- Position the rear light on the side panel (1) on the side panel (2).

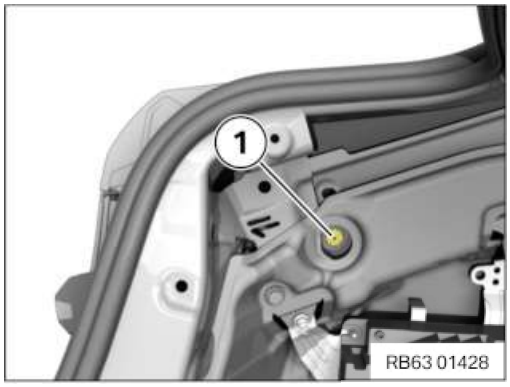


- Position the nut (1).

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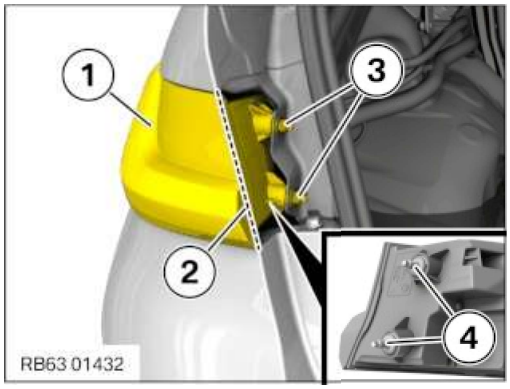
- Position the rear light on the side panel (1) to the front at the top.
- Move the contact surfaces (2) of the rear light on the side panel (1) upwards (arrow) so that they are in place.
- Hold the rear light on the side panel (1) in position.



- Tighten nut (1).

Rear light to side panel

Nut M5, AF 8		Tightening torque	3 Nm



- Position nuts (3).
- Align rear light on the side panel (1) with the connecting line (2).

  The alignment is done through threaded inserts (4) on the rear light on the side panel (2).
- If necessary, correct the position of the rear light on the side panel (1) by twisting threaded inserts (4).
- Tighten nuts (3).

Rear light to side panel

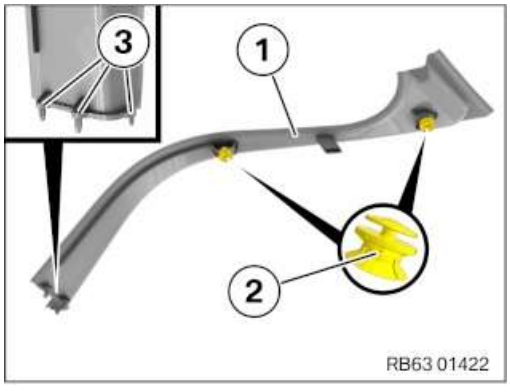
Nut M5, AF 10		Tightening torque	4 Nm

13 – Installing both trims of the water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the trim in the water channel**



Check

- Check the clips (2) for damage and renew if necessary.
- Check the guides (3) for damage.

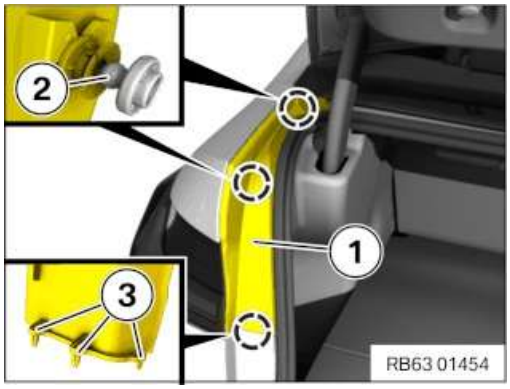
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Result

» The guides are damaged.

Measure

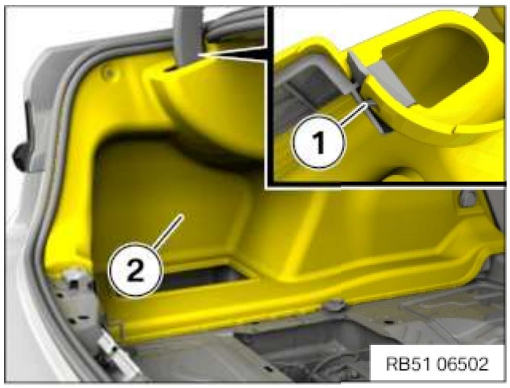
- Renew trim in the water channel .



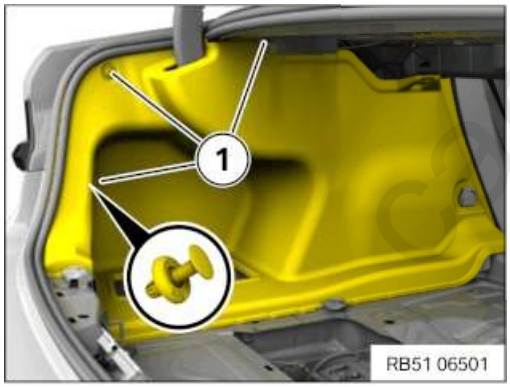
- Insert the trim in the water channel (1) in the guides (3).
- Clip in the water channel trim (1) from the front into the ball pin (2).

14 – Installing both luggage compartment wheel arch trim panels partially

▸ Partially installing the left luggage compartment wheel arch trim panel

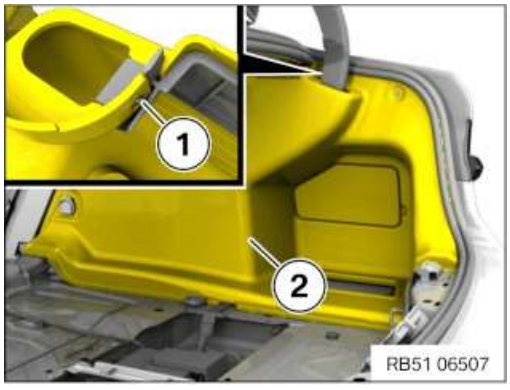


- Feed the luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal of the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



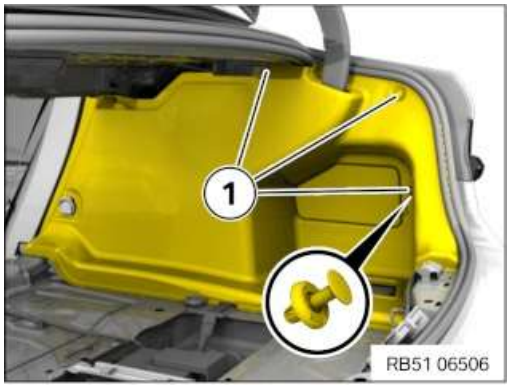
- Secure expanding rivet (1).

▸ Partially installing right luggage compartment wheel arch trim panel



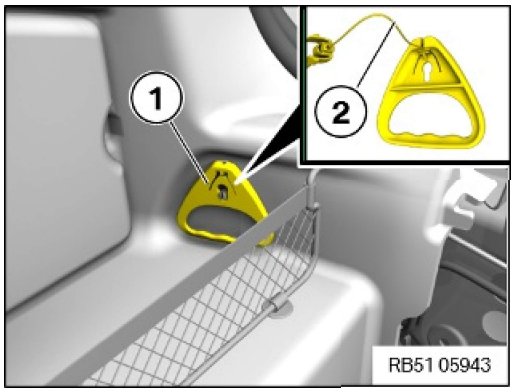
- Guide luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal for tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).

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- Secure expanding rivet (1).

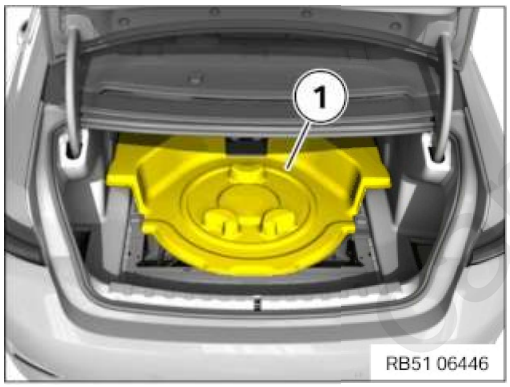
▷ **If installed: Installing the emergency tailgate release handle (additional work for US version)**



- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

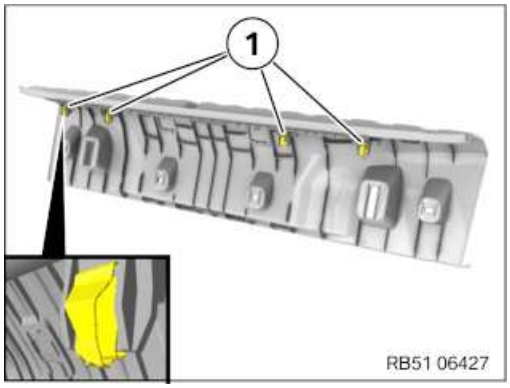
◁

15 – Install the luggage compartment well in front



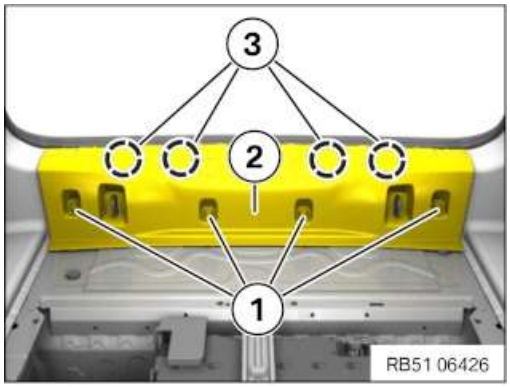
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

16 – Installing loading edge trim



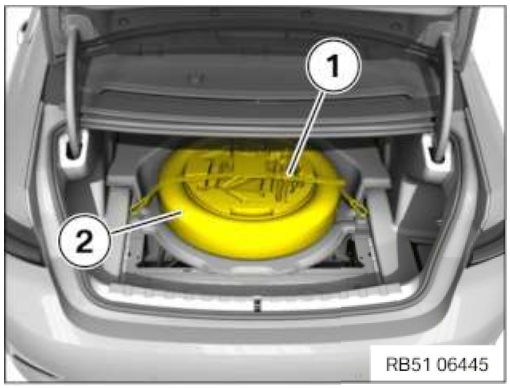
- Check the clamps (1) for damage and renew if necessary.

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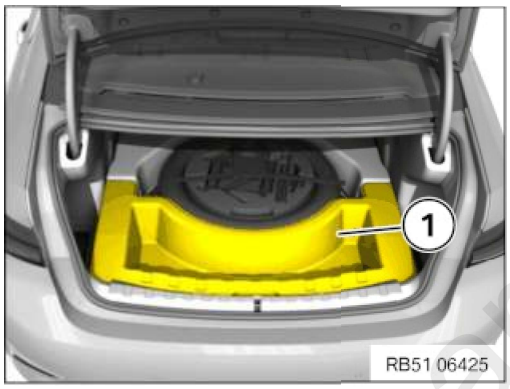
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

17 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

18 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

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Rear bumper panel guide on rear centre guide Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Mounting for rear bumper panel on support for rear bumper panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Rear bumper panel to rear side panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Rear light to side panel Used in step 12

Nut M5, AF 8		Tightening torque	3 Nm

Rear light to side panel Used in step 12

Nut M5, AF 10		Tightening torque	4 Nm

Links

Repair instructions	Used in step
61 13 ... Unlocking and disconnecting different plug connections	7

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66 20 536 Removing and installing/replacing rear middle left ultrasonic sensor

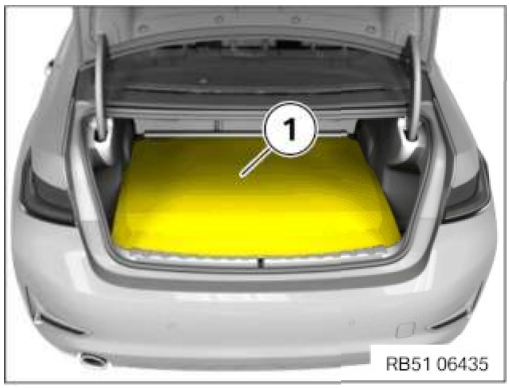
TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

Do not attach labels in the sampling range of the sensor.

PRELIMINARY WORK

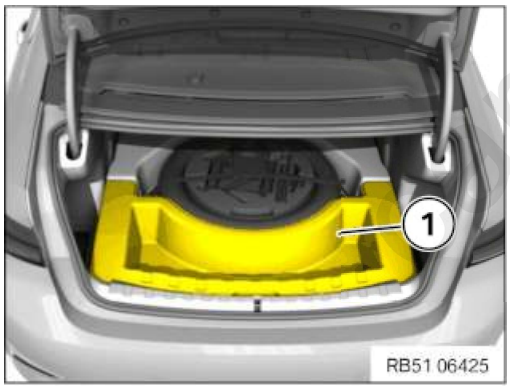
1 – Removing the luggage compartment floor trim panel



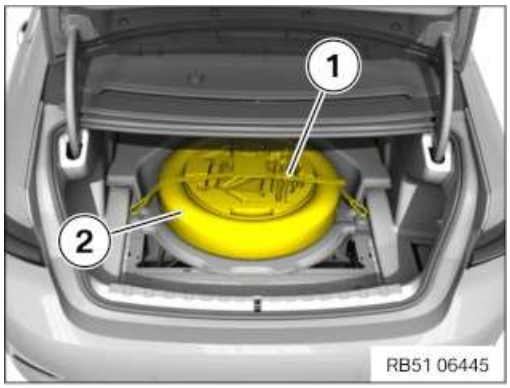
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

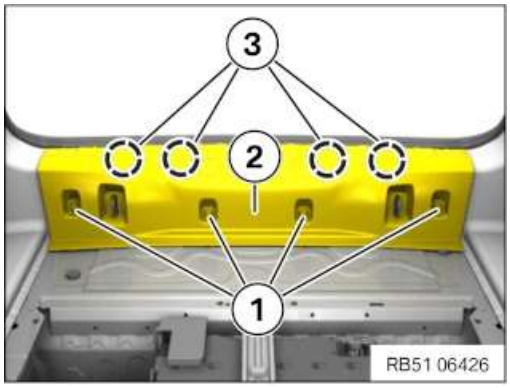


- Remove rear luggage compartment well (1).



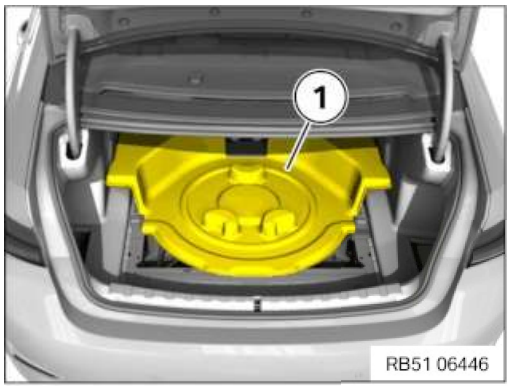
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

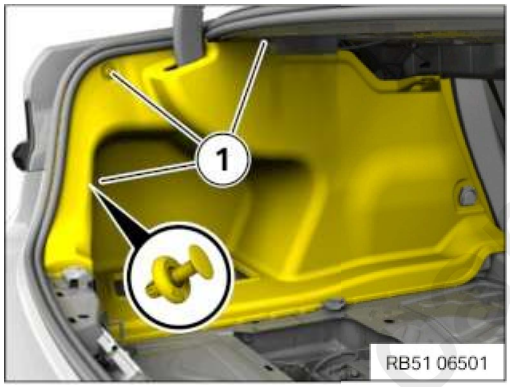
4 – Removing front luggage compartment well



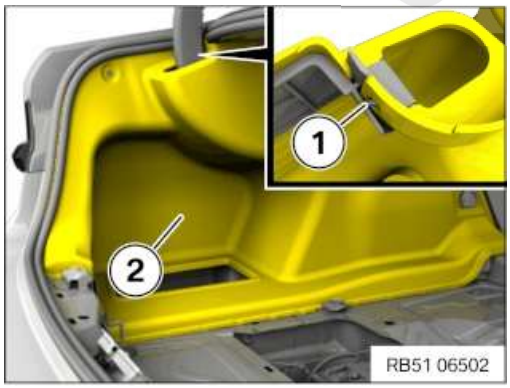
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Removing both luggage compartment wheel arch trim panels partially

▸ Partially remove luggage compartment wheel arch trim on left



- Loosen the expanding rivet (1).

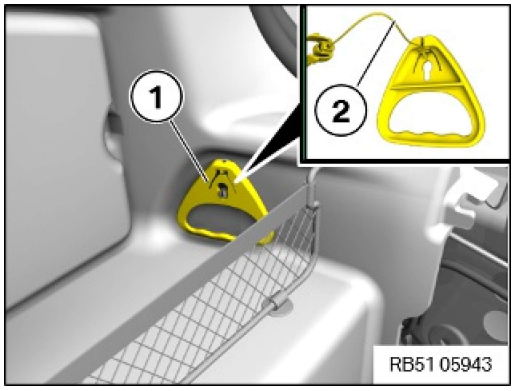


- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

▸ Partially remove luggage compartment wheel arch panel on right

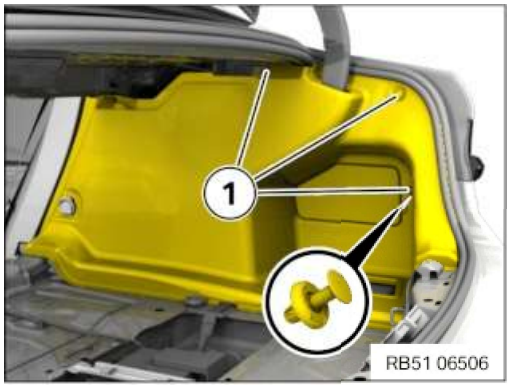
▹ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)

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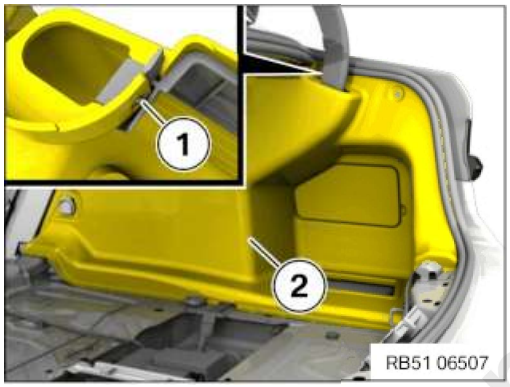


- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

◁



- Loosen the expanding rivet (1).



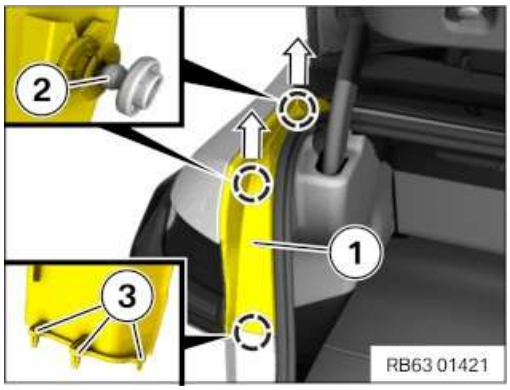
- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

6 – Removing both trims of water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim in the water channel**



- Unclip the trim in the water channel (1) from the ball pins (2) towards the top.
- Release the trim in the water channel (1) from the guides (3) and remove it.

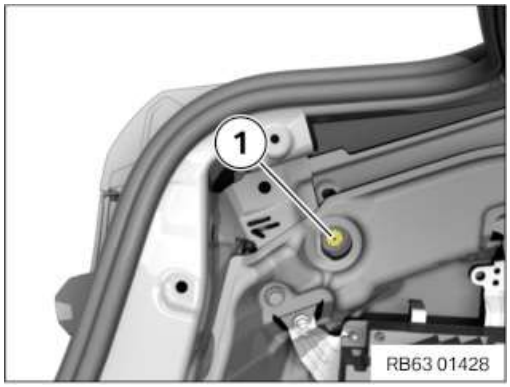
7 – Remove both rear lights from the side panel

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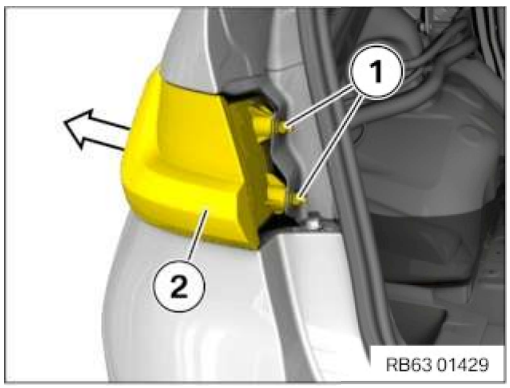
NOTICE

Description is for left component only. Procedure on the right side is identical.

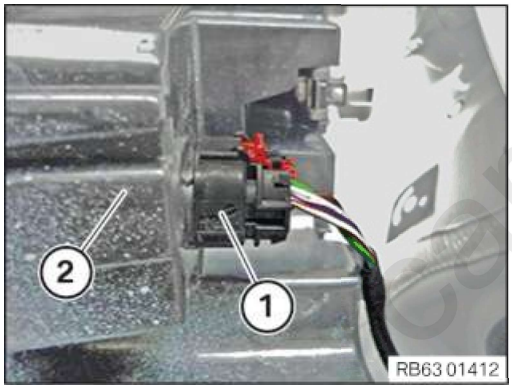
▶ **Remove the rear light on the side panel**



- Loosen nut (1).



- Release the nuts (1) and feed out the rear light on the side panel (2) in the direction of arrow.



TECHNICAL INFORMATION

Observe note on unlocking and disconnecting plug connections.

For additional information see: 6113 ... Unlocking and disconnecting different plug connections

- Unlock and disconnect plug connection (1) as described in position #28 in additional information.
- Remove the rear light on the side panel (2).

8 – Remove rear bumper panel

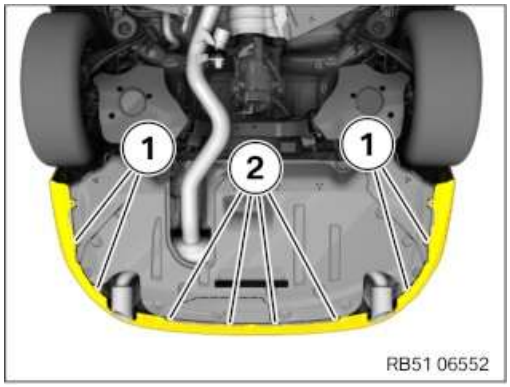


NOTICE

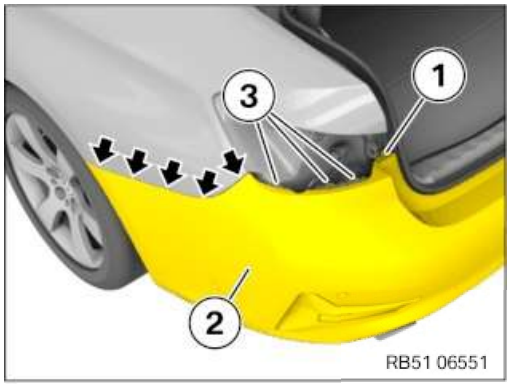
Perform the operations on the left and right side.

- Loosen screws (1).

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- Loosen screws (1).
- Release the bumper panel on latch mechanisms (2) with a suitable tool.



NOTICE

Perform the operations on the left and right side.

- Loosen screw (1).
- Release bumper panel (2) in the area of the rear light housing from latch mechanisms (3) with a suitable tool.
- Release side bumper panel (2) from the remaining latch mechanisms (arrows).

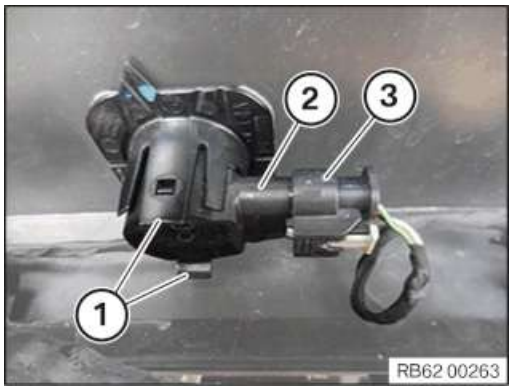


- Remove bumper panel (2) straight to the rear with the help of an auxiliary person.
- Unlock all plug connections and disconnect.
- Remove the bumper panel (1).

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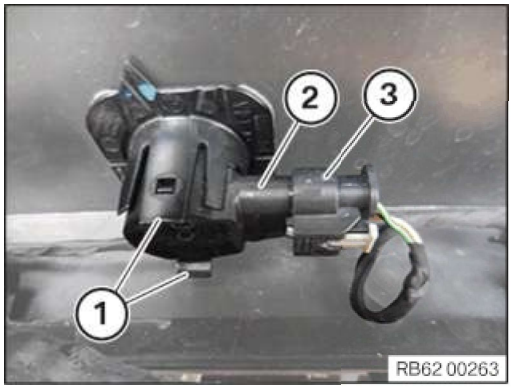
MAIN WORK

9 – Removing the ultrasonic sensor at the rear left in the centre



- Unlock plug connection (3) and disconnect.
- Unlock the latch mechanisms (1).
- Remove the ultrasonic sensor (2).

10 – Installing the ultrasonic sensor at the rear left in the centre

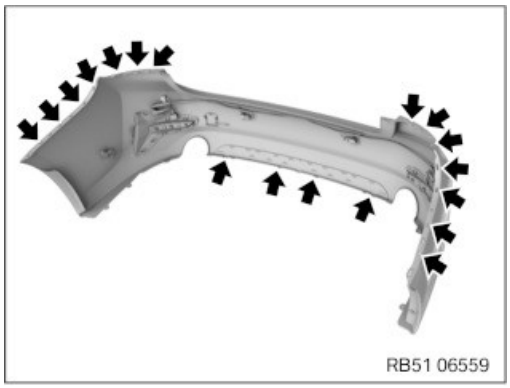


- Position the ultrasonic sensor (2) correctly and engage it in the latch mechanisms (1).
- Connect connectors (3) and lock.

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POSTPROCESSES

11 – Install rear bumper panel



Check

- Check the latch mechanisms (arrows) for damage.

Result

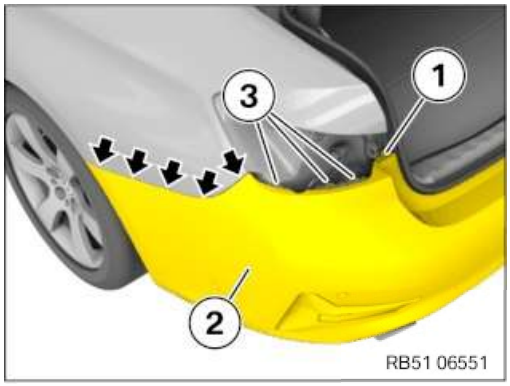
» Latch mechanisms are damaged.

Measure

- Renew the bumper panel.



- Position the bumper panel (1) straight with the help of another person.
- Connect all connectors and lock.



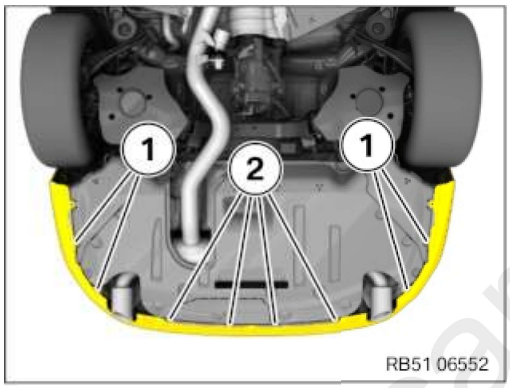
NOTICE

Perform the operations on the left and right side.

- Clip bumper panel (2) on the side in the latch mechanisms (arrows).
- Clip bumper panel (2) in the area of the rear light housing in latch mechanisms (3).
- Tighten down screw (1).

Rear bumper panel guide on rear centre guide

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm



- Clip bumper panel into latch mechanisms (2).
- Tighten the screws (1).

Mounting for rear bumper panel on support for rear bumper panel

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm



NOTICE

Perform the operations on the left and right side.

- Tighten the screws (1).

Rear bumper panel to rear side panel

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

12 – Install both rear lights on the side panel

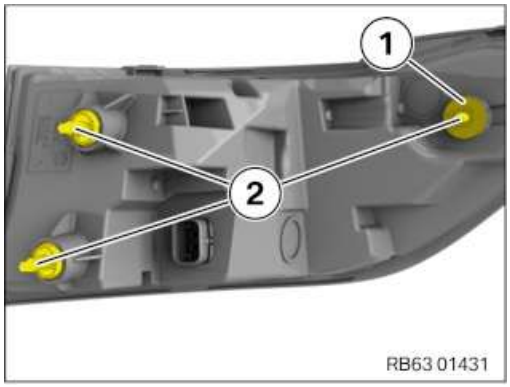
NOTICE

Description is for left component only. Procedure on the right side is identical.

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▸ **Install the rear light on the side panel**

Check



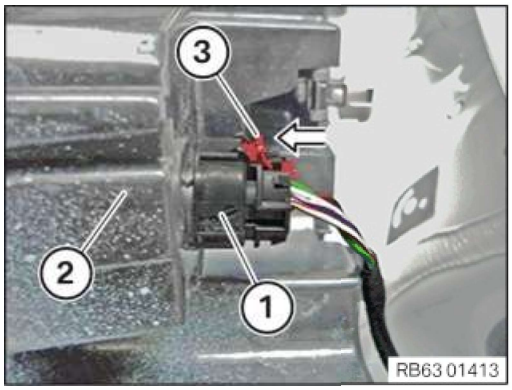
- Check the seal (1) for damage and renew if necessary.
- Check the threaded inserts (2) for damage.

Result

» The threaded inserts are damaged.

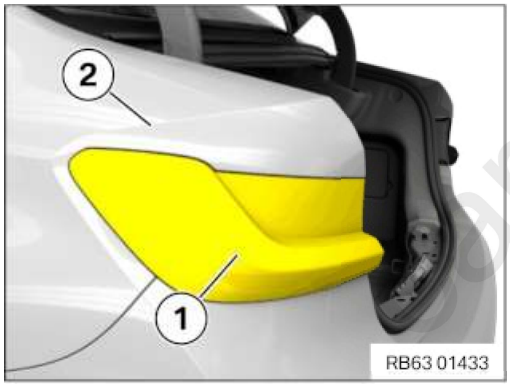
Measure

- Replace rear light.

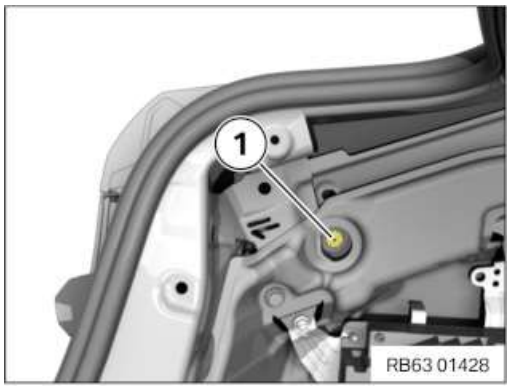


- Connect the connector (1) to the rear light on the side panel (2).

  The connector (1) must engage audibly.
- Lock the lock in direction of arrow (3).

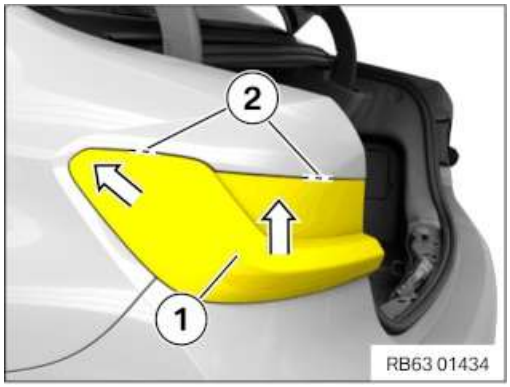


- Position the rear light on the side panel (1) on the side panel (2).

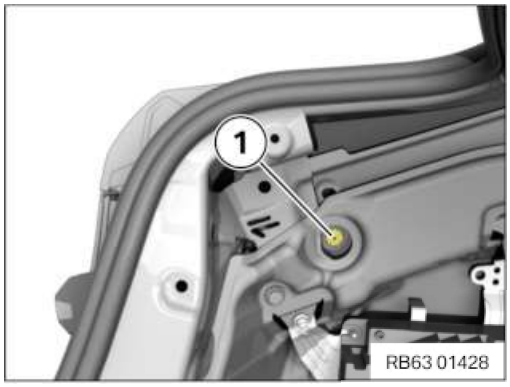


- Position the nut (1).

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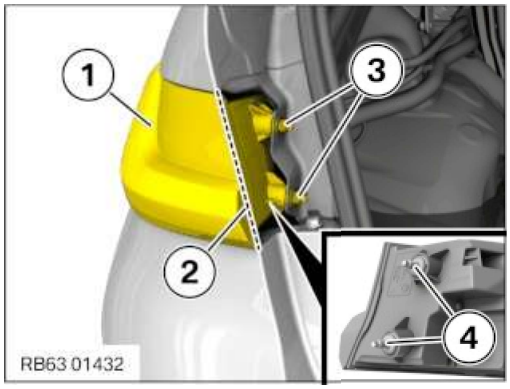
- Position the rear light on the side panel (1) to the front at the top.
- Move the contact surfaces (2) of the rear light on the side panel (1) upwards (arrow) so that they are in place.
- Hold the rear light on the side panel (1) in position.



- Tighten nut (1).

Rear light to side panel

Nut M5, AF 8		Tightening torque	3 Nm



- Position nuts (3).
- Align rear light on the side panel (1) with the connecting line (2).

  The alignment is done through threaded inserts (4) on the rear light on the side panel (2).
- If necessary, correct the position of the rear light on the side panel (1) by twisting threaded inserts (4).
- Tighten nuts (3).

Rear light to side panel

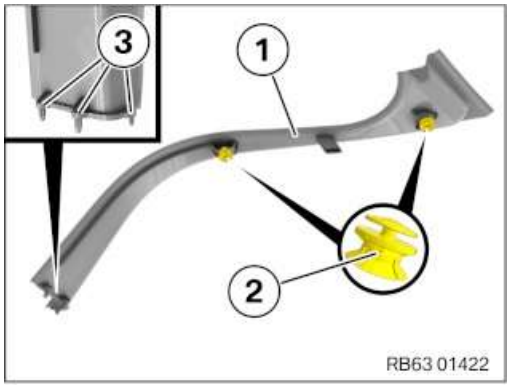
Nut M5, AF 10		Tightening torque	4 Nm

13 – Installing both trims of the water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the trim in the water channel**



Check

- Check the clips (2) for damage and renew if necessary.
- Check the guides (3) for damage.

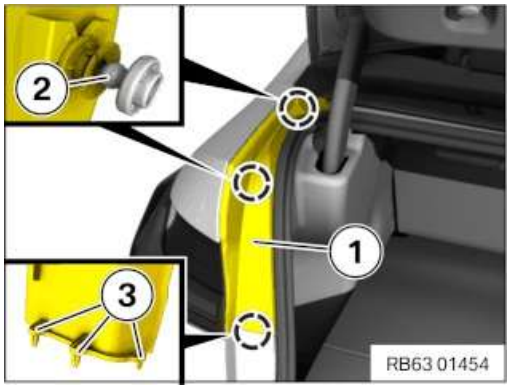
cardiagn.com

Result

» The guides are damaged.

Measure

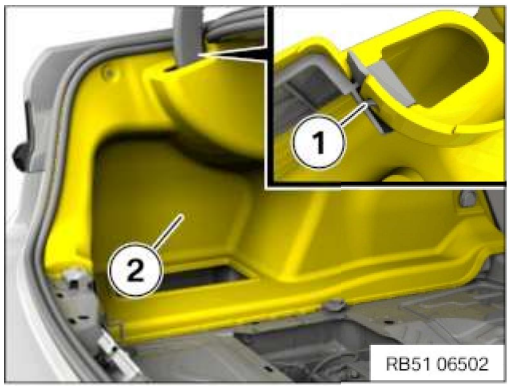
- Renew trim in the water channel .



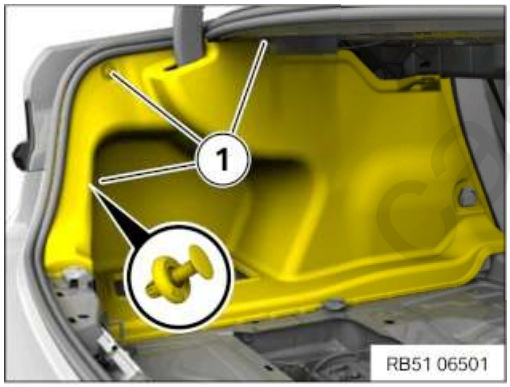
- Insert the trim in the water channel (1) in the guides (3).
- Clip in the water channel trim (1) from the front into the ball pin (2).

14 – Installing both luggage compartment wheel arch trim panels partially

▸ Partially installing the left luggage compartment wheel arch trim panel

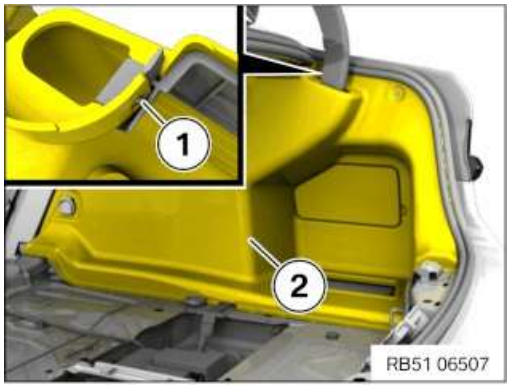


- Feed the luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal of the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



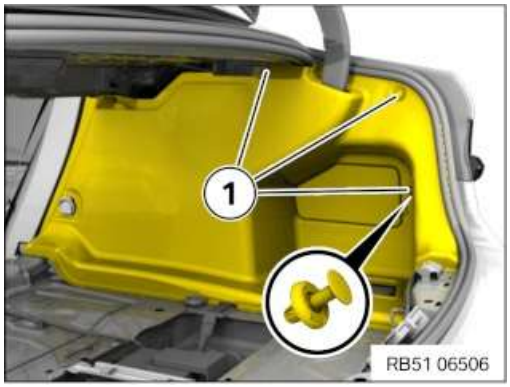
- Secure expanding rivet (1).

▸ Partially installing right luggage compartment wheel arch trim panel



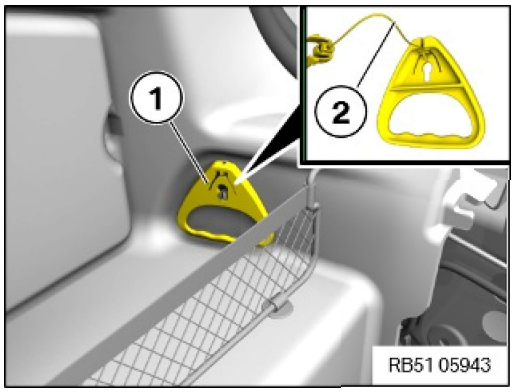
- Guide luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal for tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).

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- Secure expanding rivet (1).

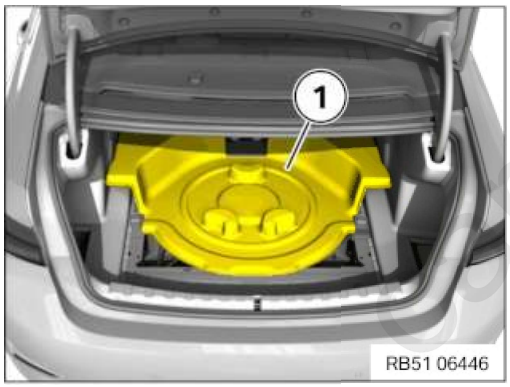
▷ **If installed: Installing the emergency tailgate release handle (additional work for US version)**



- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

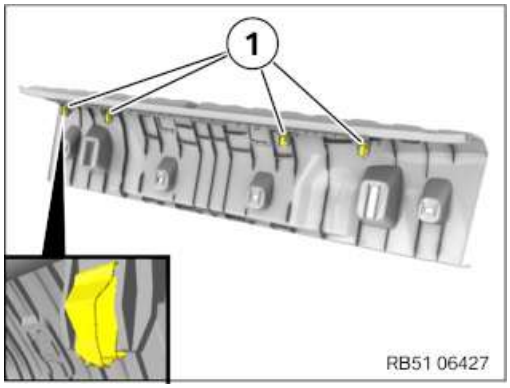
◁

15 – Install the luggage compartment well in front



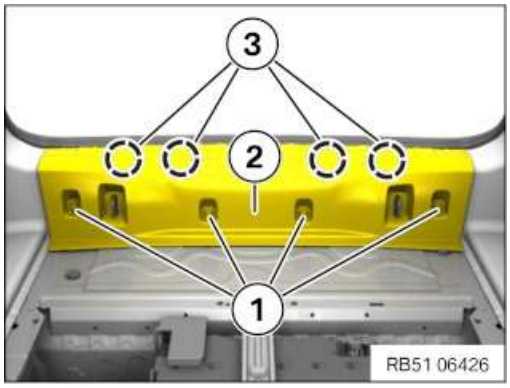
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

16 – Installing loading edge trim



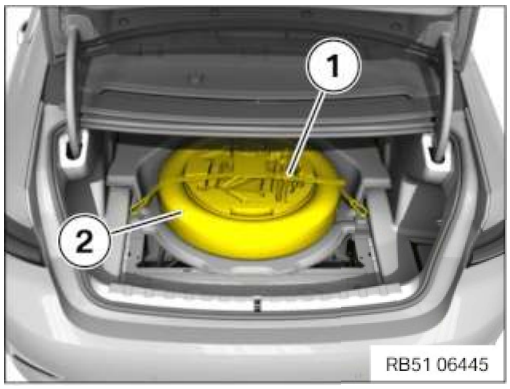
- Check the clamps (1) for damage and renew if necessary.

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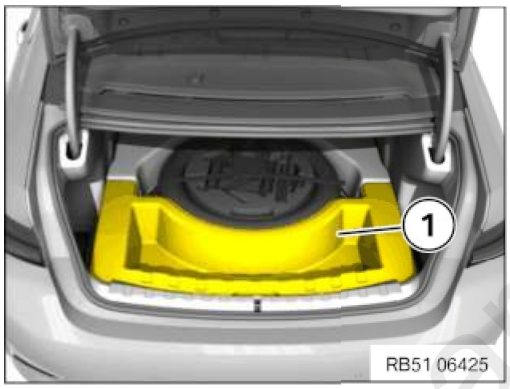
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

17 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

18 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

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Rear bumper panel guide on rear centre guide Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Mounting for rear bumper panel on support for rear bumper panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Rear bumper panel to rear side panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Rear light to side panel Used in step 12

Nut M5, AF 8		Tightening torque	3 Nm

Rear light to side panel Used in step 12

Nut M5, AF 10		Tightening torque	4 Nm

Links

Repair instructions	Used in step
61 13 ... Unlocking and disconnecting different plug connections	7

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66 20 537 Removing and installing/replacing rear middle right ultrasonic sensor

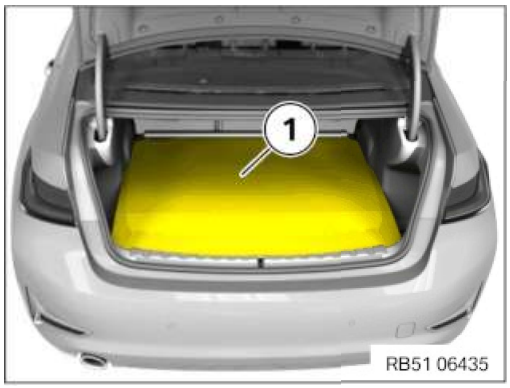
TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

Do not attach labels in the sampling range of the sensor.

PRELIMINARY WORK

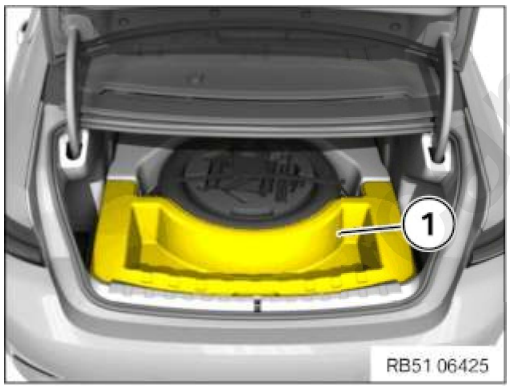
1 – Removing the luggage compartment floor trim panel



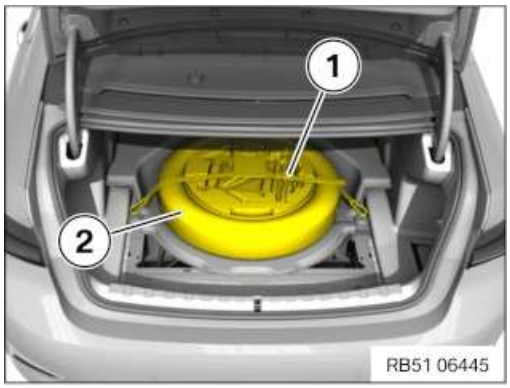
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

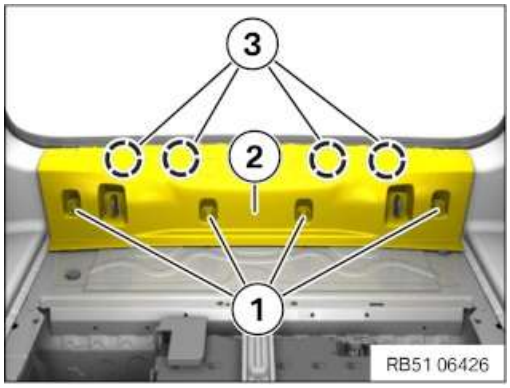


- Remove rear luggage compartment well (1).



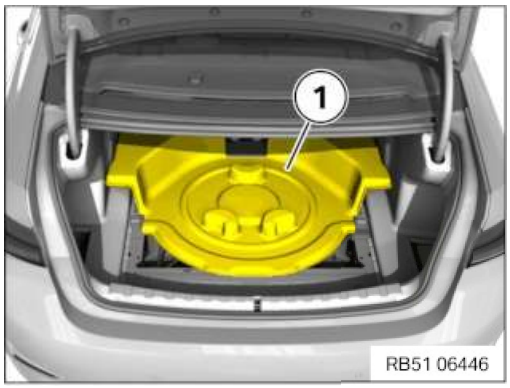
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

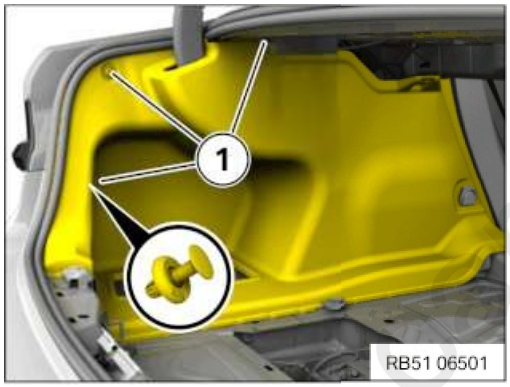
4 – Removing front luggage compartment well



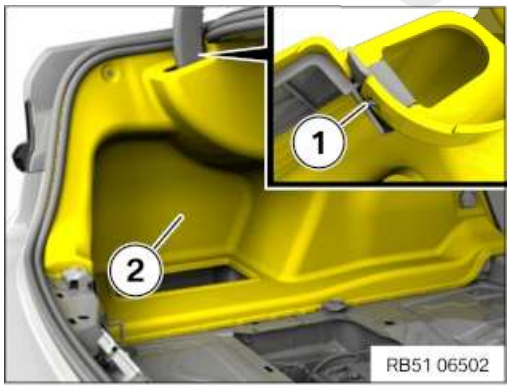
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Removing both luggage compartment wheel arch trim panels partially

▸ Partially remove luggage compartment wheel arch trim on left



- Loosen the expanding rivet (1).

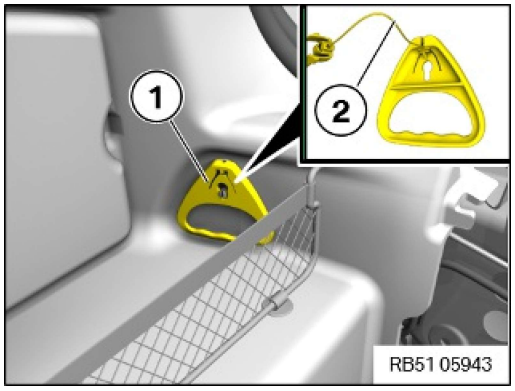


- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

▸ Partially remove luggage compartment wheel arch panel on right

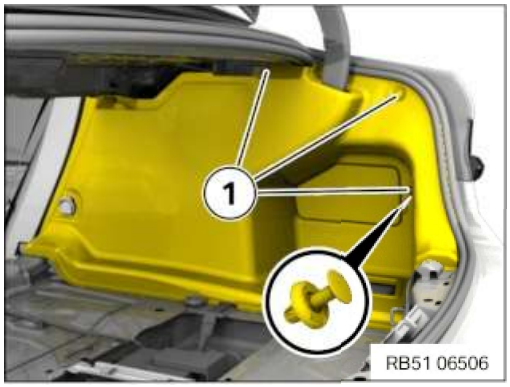
▹ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)

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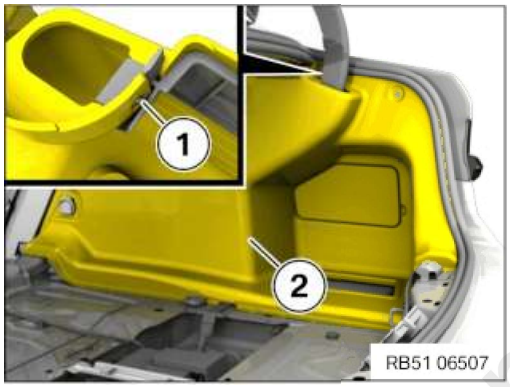


- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

◁



- Loosen the expanding rivet (1).



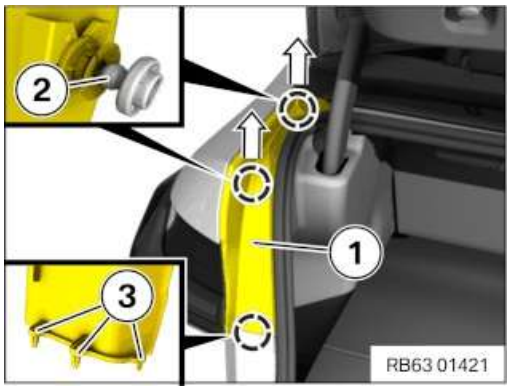
- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

6 – Removing both trims of water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim in the water channel**



- Unclip the trim in the water channel (1) from the ball pins (2) towards the top.
- Release the trim in the water channel (1) from the guides (3) and remove it.

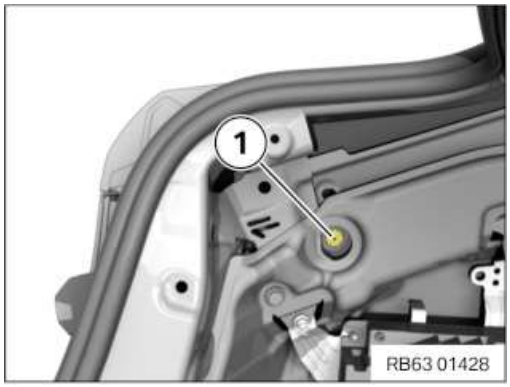
7 – Remove both rear lights from the side panel

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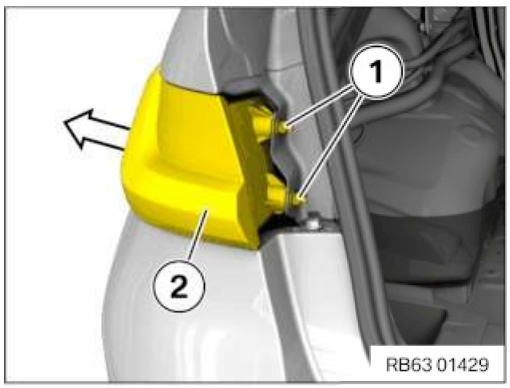
NOTICE

Description is for left component only. Procedure on the right side is identical.

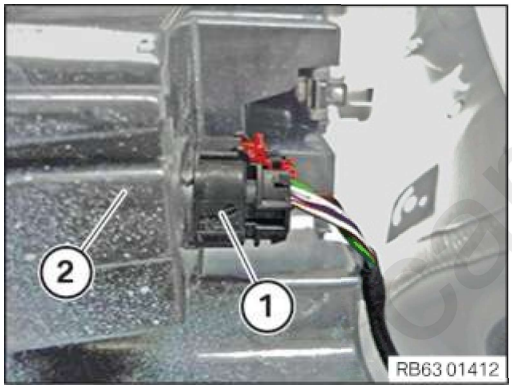
▶ **Remove the rear light on the side panel**



- Loosen nut (1).



- Release the nuts (1) and feed out the rear light on the side panel (2) in the direction of arrow.



TECHNICAL INFORMATION

Observe note on unlocking and disconnecting plug connections.

For additional information see: 6113 ... Unlocking and disconnecting different plug connections

- Unlock and disconnect plug connection (1) as described in position #28 in additional information.
- Remove the rear light on the side panel (2).

8 – Remove rear bumper panel

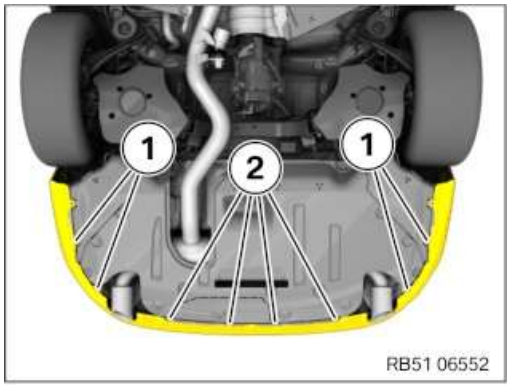


NOTICE

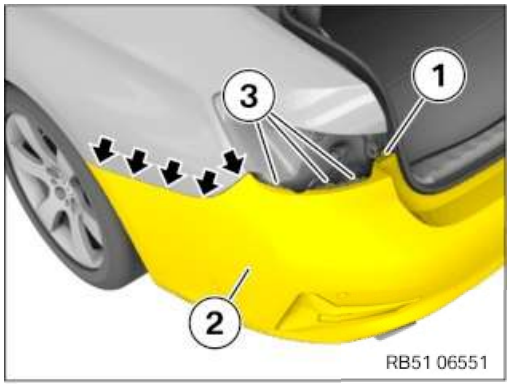
Perform the operations on the left and right side.

- Loosen screws (1).

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- Loosen screws (1).
- Release the bumper panel on latch mechanisms (2) with a suitable tool.



NOTICE

Perform the operations on the left and right side.

- Loosen screw (1).
- Release bumper panel (2) in the area of the rear light housing from latch mechanisms (3) with a suitable tool.
- Release side bumper panel (2) from the remaining latch mechanisms (arrows).

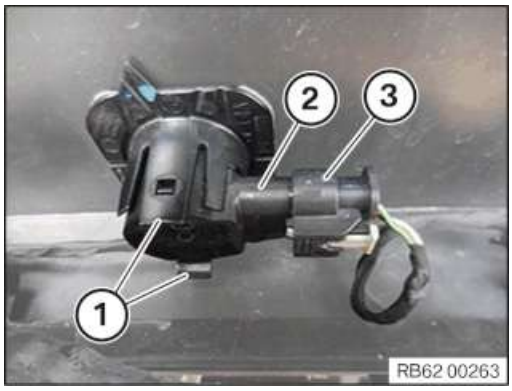


- Remove bumper panel (2) straight to the rear with the help of an auxiliary person.
- Unlock all plug connections and disconnect.
- Remove the bumper panel (1).

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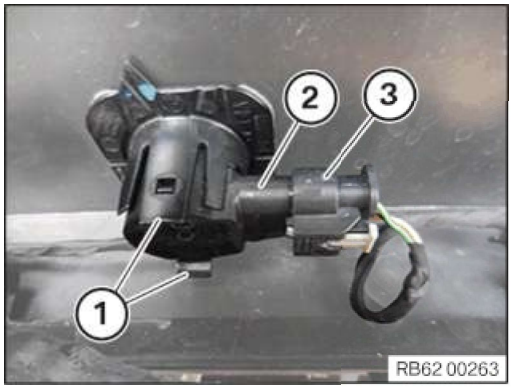
MAIN WORK

9 – Removing the rear right ultrasonic sensor in the centre



- Unlock plug connection (3) and disconnect.
- Unlock the latch mechanisms (1).
- Remove the ultrasonic sensor (2).

10 – Installing the rear right ultrasonic sensor in the centre

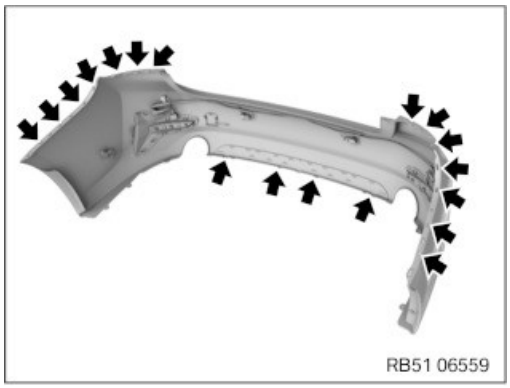


- Position the ultrasonic sensor (2) correctly and engage it in the latch mechanisms (1).
- Connect connectors (3) and lock.

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POSTPROCESSES

11 – Install rear bumper panel



Check

- Check the latch mechanisms (arrows) for damage.

Result

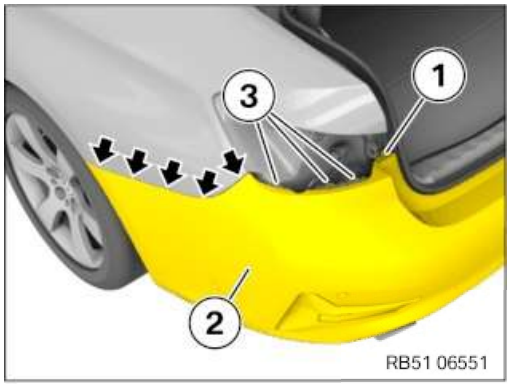
» Latch mechanisms are damaged.

Measure

- Renew the bumper panel.



- Position the bumper panel (1) straight with the help of another person.
- Connect all connectors and lock.



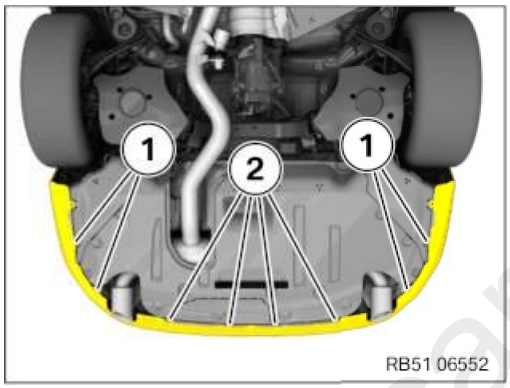
NOTICE

Perform the operations on the left and right side.

- Clip bumper panel (2) on the side in the latch mechanisms (arrows).
- Clip bumper panel (2) in the area of the rear light housing in latch mechanisms (3).
- Tighten down screw (1).

Rear bumper panel guide on rear centre guide

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm



- Clip bumper panel into latch mechanisms (2).
- Tighten the screws (1).

Mounting for rear bumper panel on support for rear bumper panel

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm



NOTICE

Perform the operations on the left and right side.

- Tighten the screws (1).

Rear bumper panel to rear side panel

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

12 – Install both rear lights on the side panel

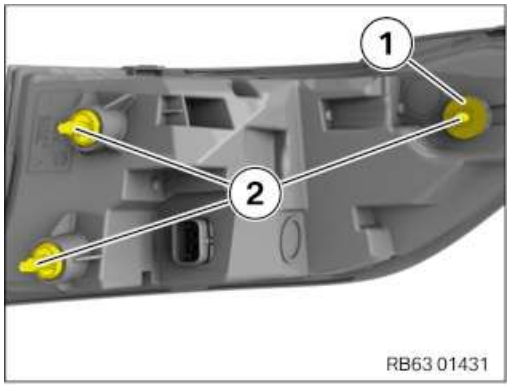
NOTICE

Description is for left component only. Procedure on the right side is identical.

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▸ **Install the rear light on the side panel**

Check



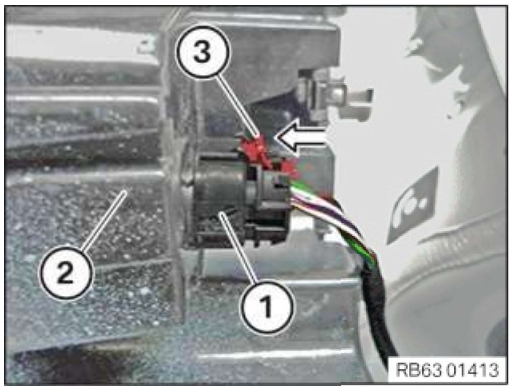
- Check the seal (1) for damage and renew if necessary.
- Check the threaded inserts (2) for damage.

Result

» The threaded inserts are damaged.

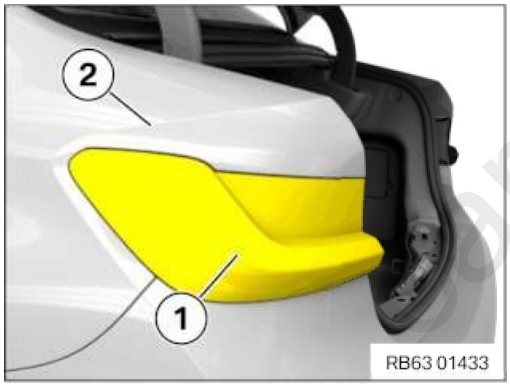
Measure

- Replace rear light.

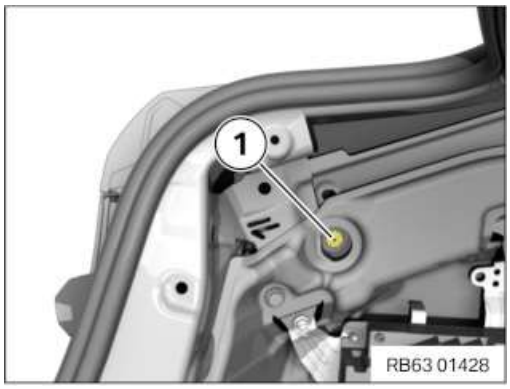


- Connect the connector (1) to the rear light on the side panel (2).

  The connector (1) must engage audibly.
- Lock the lock in direction of arrow (3).

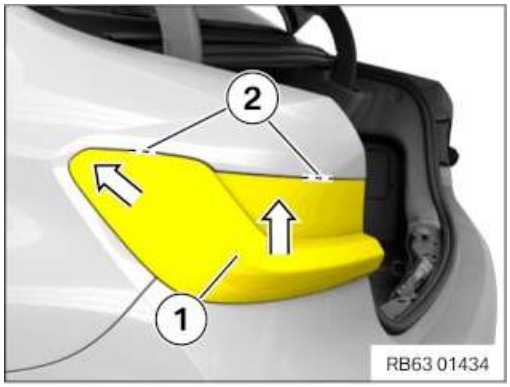


- Position the rear light on the side panel (1) on the side panel (2).

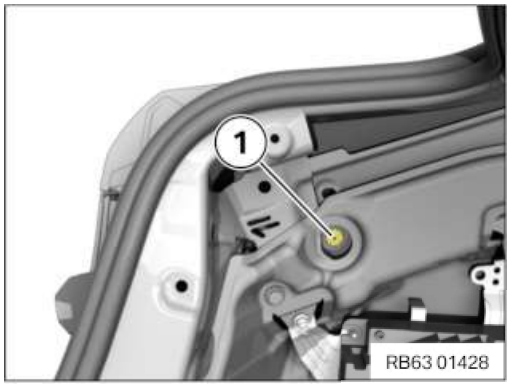


- Position the nut (1).

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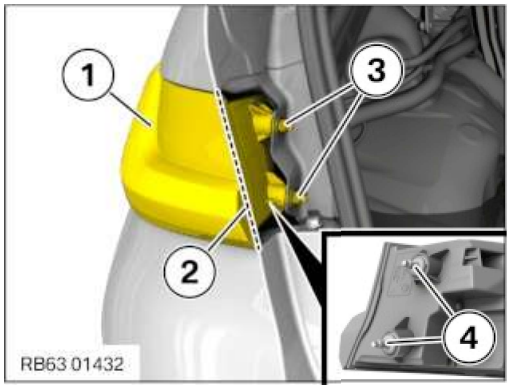
- Position the rear light on the side panel (1) to the front at the top.
- Move the contact surfaces (2) of the rear light on the side panel (1) upwards (arrow) so that they are in place.
- Hold the rear light on the side panel (1) in position.



- Tighten nut (1).

Rear light to side panel

Nut M5, AF 8		Tightening torque	3 Nm



- Position nuts (3).
- Align rear light on the side panel (1) with the connecting line (2).

  The alignment is done through threaded inserts (4) on the rear light on the side panel (2).
- If necessary, correct the position of the rear light on the side panel (1) by twisting threaded inserts (4).
- Tighten nuts (3).

Rear light to side panel

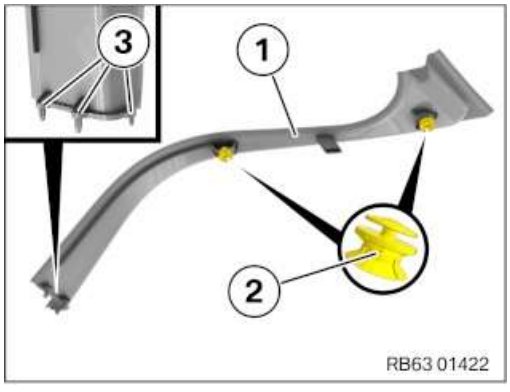
Nut M5, AF 10		Tightening torque	4 Nm

13 – Installing both trims of the water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the trim in the water channel**



Check

- Check the clips (2) for damage and renew if necessary.
- Check the guides (3) for damage.

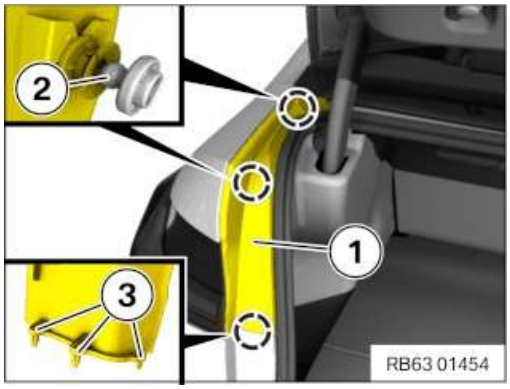
cardiagn.com

Result

» The guides are damaged.

Measure

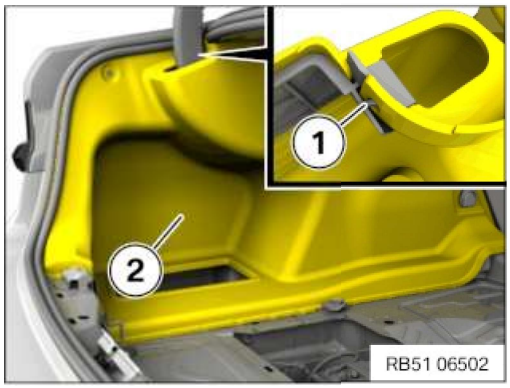
- Renew trim in the water channel .



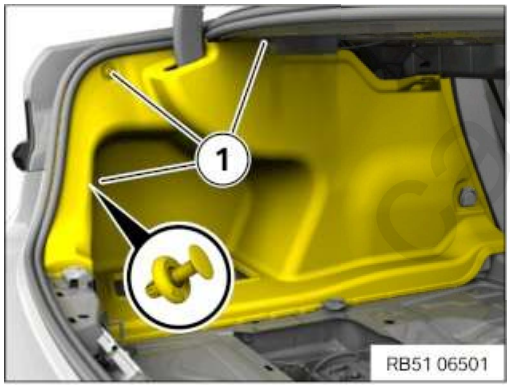
- Insert the trim in the water channel (1) in the guides (3).
- Clip in the water channel trim (1) from the front into the ball pin (2).

14 – Installing both luggage compartment wheel arch trim panels partially

▸ Partially installing the left luggage compartment wheel arch trim panel

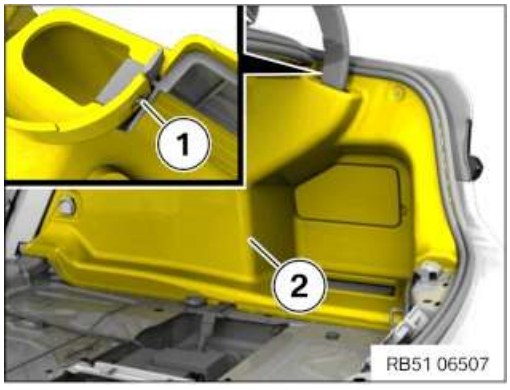


- Feed the luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal of the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



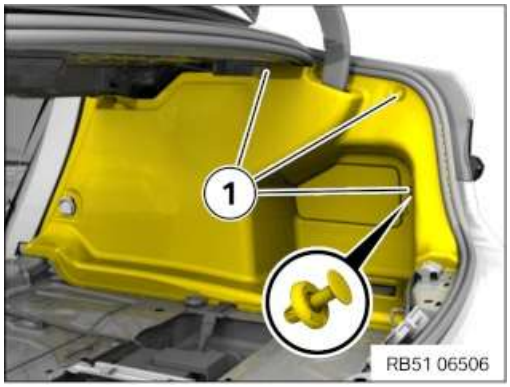
- Secure expanding rivet (1).

▸ Partially installing right luggage compartment wheel arch trim panel



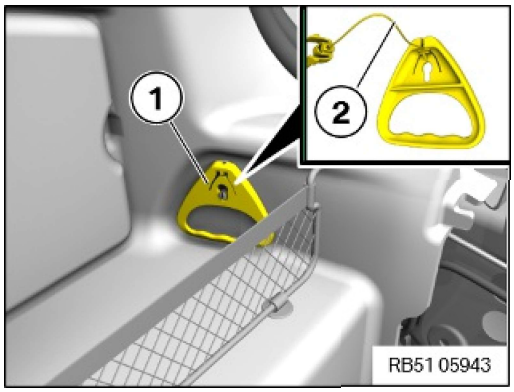
- Guide luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal for tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).

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- Secure expanding rivet (1).

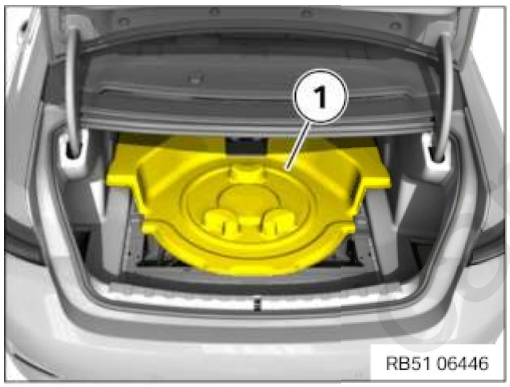
▷ **If installed: Installing the emergency tailgate release handle (additional work for US version)**



- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

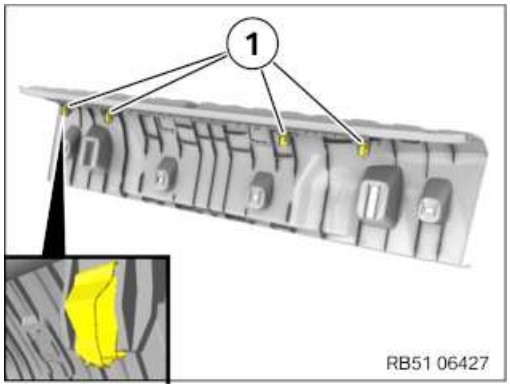
◁

15 – Install the luggage compartment well in front



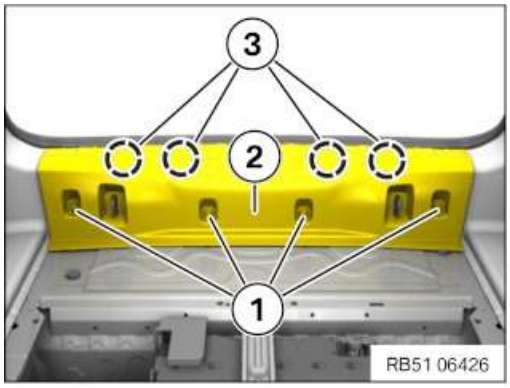
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

16 – Installing loading edge trim



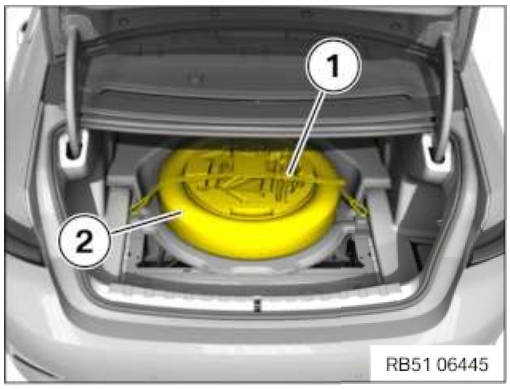
- Check the clamps (1) for damage and renew if necessary.

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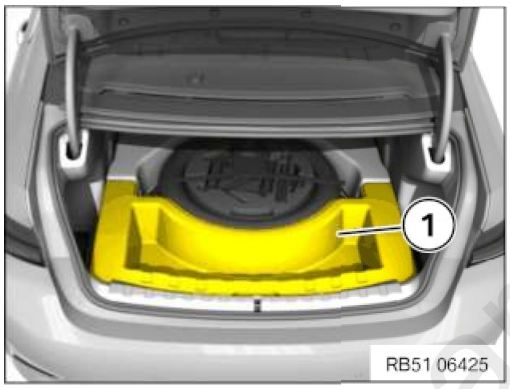
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

17 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

18 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

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Rear bumper panel guide on rear centre guide Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Mounting for rear bumper panel on support for rear bumper panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Rear bumper panel to rear side panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Rear light to side panel Used in step 12

Nut M5, AF 8		Tightening torque	3 Nm

Rear light to side panel Used in step 12

Nut M5, AF 10		Tightening torque	4 Nm

Links

Repair instructions	Used in step
61 13 ... Unlocking and disconnecting different plug connections	7

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66 20 535 Removing and installing/replacing rear right ultrasonic sensor

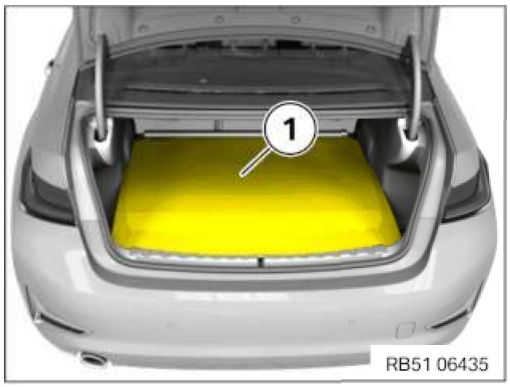
TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

Do not attach labels in the sampling range of the sensor.

PRELIMINARY WORK

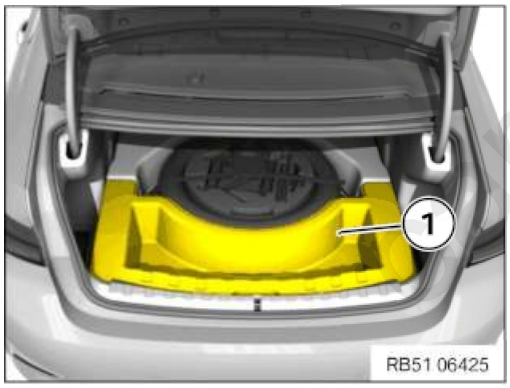
1 – Removing the luggage compartment floor trim panel



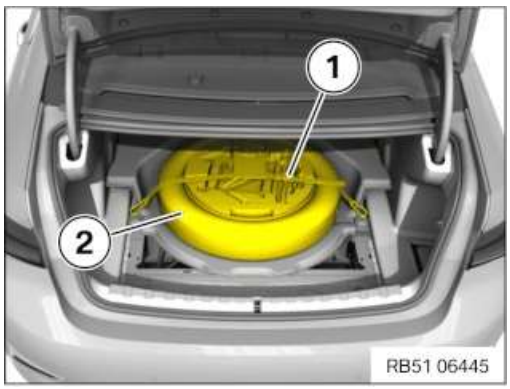
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

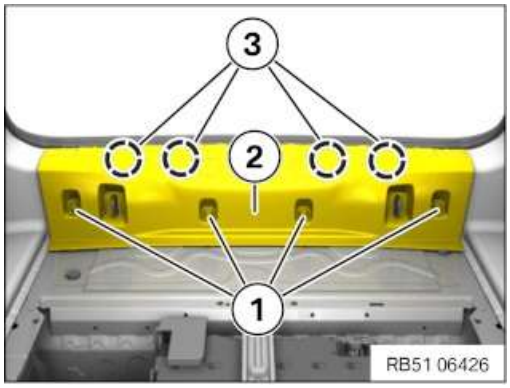


- Remove rear luggage compartment well (1).



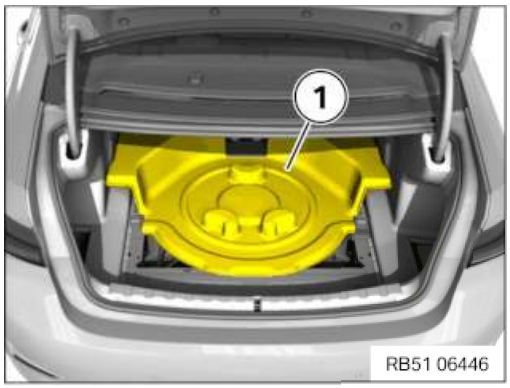
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

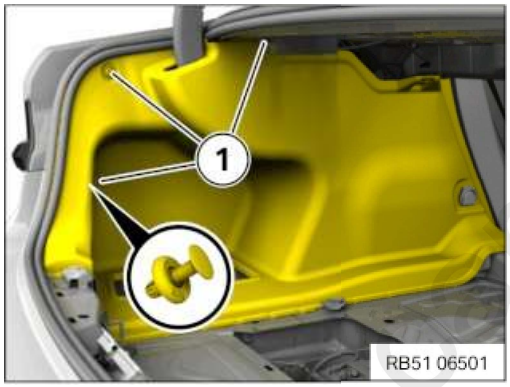
4 – Removing front luggage compartment well



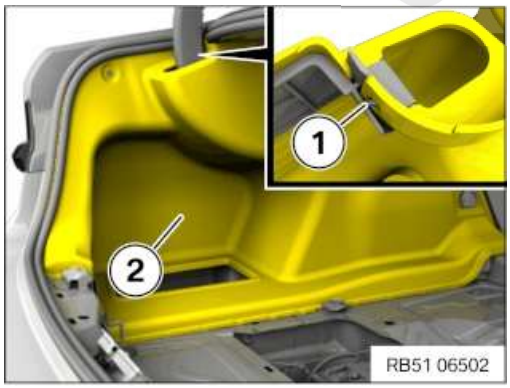
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Removing both luggage compartment wheel arch trim panels partially

▸ Partially remove luggage compartment wheel arch trim on left



- Loosen the expanding rivet (1).

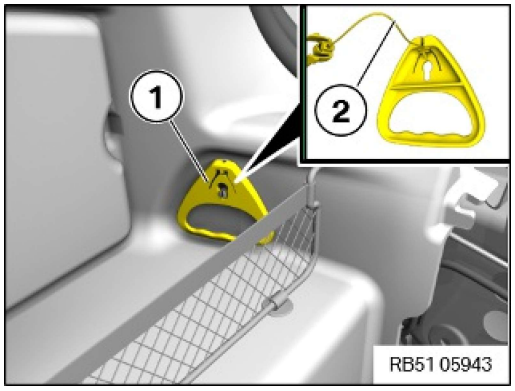


- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

▸ Partially remove luggage compartment wheel arch panel on right

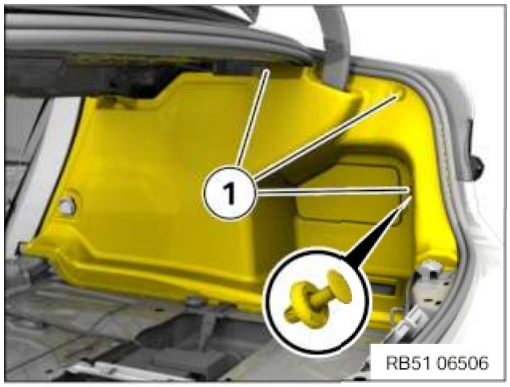
▹ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)

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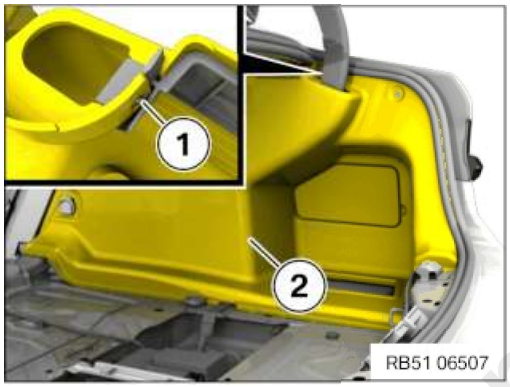


- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

◁



- Loosen the expanding rivet (1).



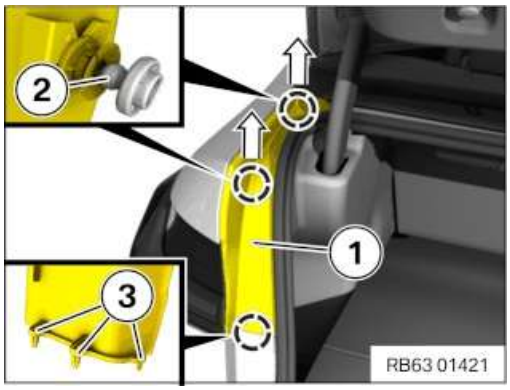
- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

6 – Removing both trims of water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim in the water channel**



- Unclip the trim in the water channel (1) from the ball pins (2) towards the top.
- Release the trim in the water channel (1) from the guides (3) and remove it.

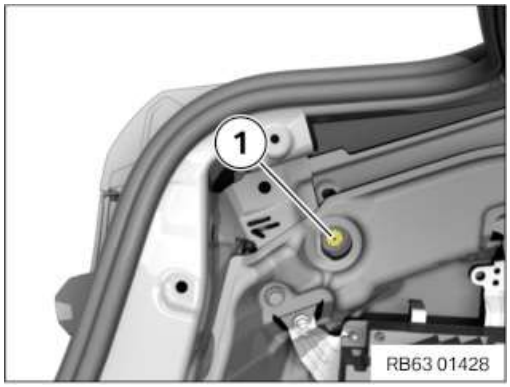
7 – Remove both rear lights from the side panel

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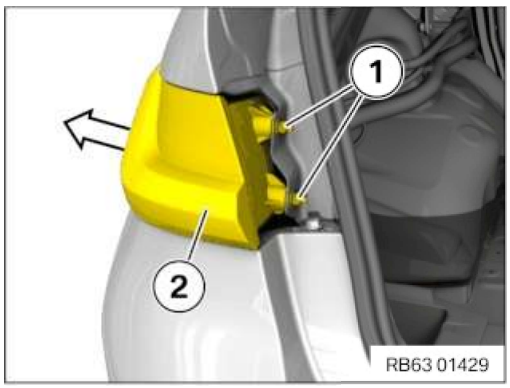
NOTICE

Description is for left component only. Procedure on the right side is identical.

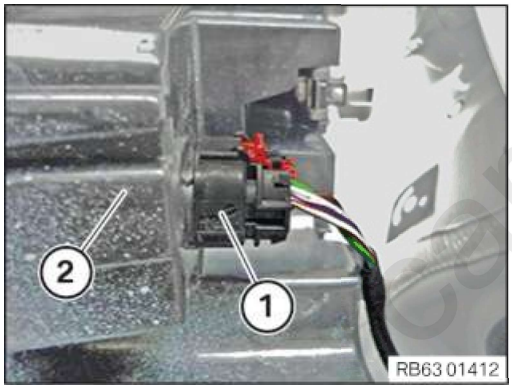
▶ **Remove the rear light on the side panel**



- Loosen nut (1).



- Release the nuts (1) and feed out the rear light on the side panel (2) in the direction of arrow.



TECHNICAL INFORMATION

Observe note on unlocking and disconnecting plug connections.

For additional information see: 6113 ... Unlocking and disconnecting different plug connections

- Unlock and disconnect plug connection (1) as described in position #28 in additional information.
- Remove the rear light on the side panel (2).

8 – Remove rear bumper panel

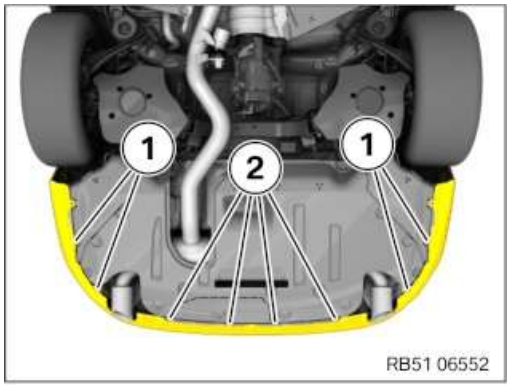


NOTICE

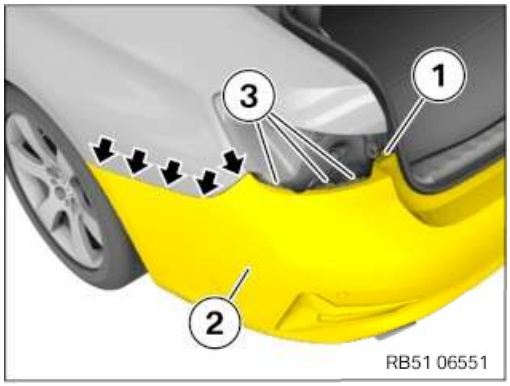
Perform the operations on the left and right side.

- Loosen screws (1).

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- Loosen screws (1).
- Release the bumper panel on latch mechanisms (2) with a suitable tool.



NOTICE

Perform the operations on the left and right side.

- Loosen screw (1).
- Release bumper panel (2) in the area of the rear light housing from latch mechanisms (3) with a suitable tool.
- Release side bumper panel (2) from the remaining latch mechanisms (arrows).

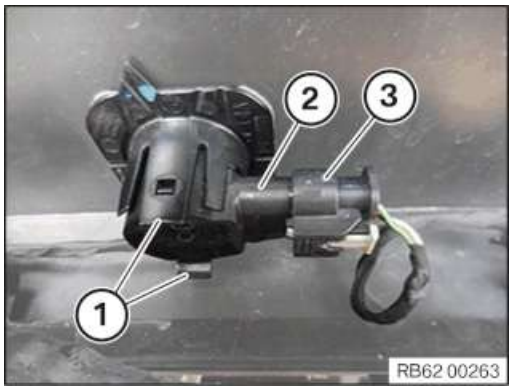


- Remove bumper panel (2) straight to the rear with the help of an auxiliary person.
- Unlock all plug connections and disconnect.
- Remove the bumper panel (1).

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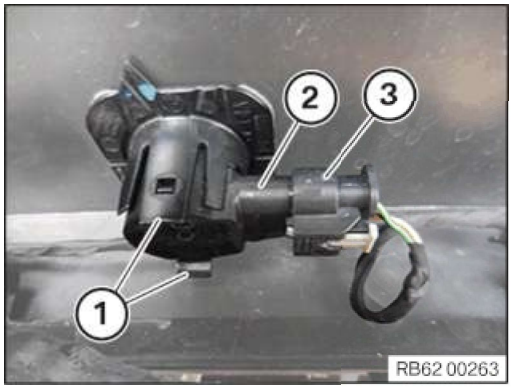
MAIN WORK

9 – Removing the ultrasonic sensor at the rear right



- Unlock plug connection (3) and disconnect.
- Unlock the latch mechanisms (1).
- Remove the ultrasonic sensor (2).

10 – Installing the rear right ultrasonic sensor

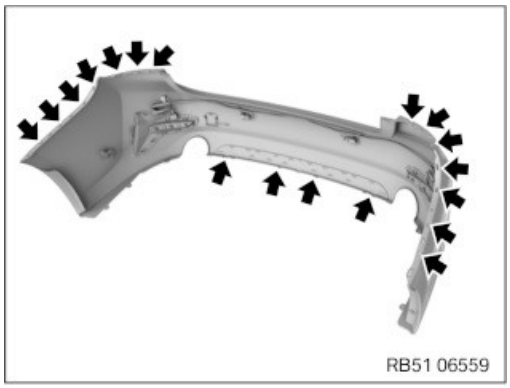


- Position the ultrasonic sensor (2) correctly and engage it in the latch mechanisms (1).
- Connect connectors (3) and lock.

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POSTPROCESSES

11 – Install rear bumper panel



Check

- Check the latch mechanisms (arrows) for damage.

Result

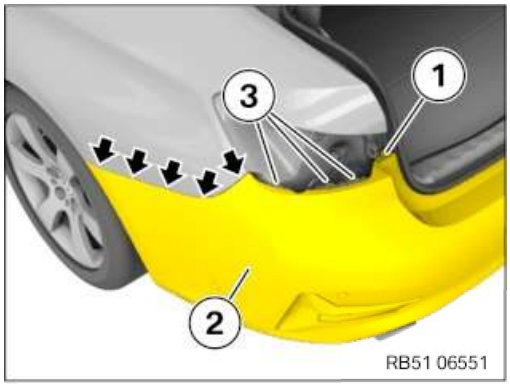
» Latch mechanisms are damaged.

Measure

- Renew the bumper panel.



- Position the bumper panel (1) straight with the help of another person.
- Connect all connectors and lock.



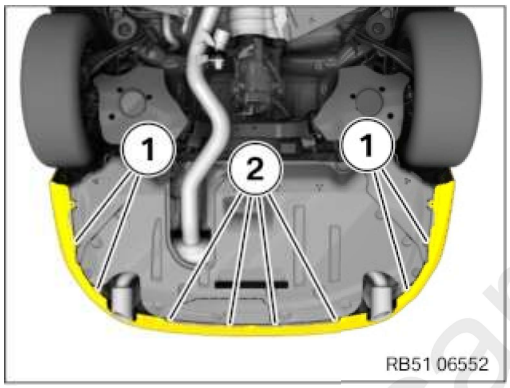
NOTICE

Perform the operations on the left and right side.

- Clip bumper panel (2) on the side in the latch mechanisms (arrows).
- Clip bumper panel (2) in the area of the rear light housing in latch mechanisms (3).
- Tighten down screw (1).

Rear bumper panel guide on rear centre guide

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm



- Clip bumper panel into latch mechanisms (2).
- Tighten the screws (1).

Mounting for rear bumper panel on support for rear bumper panel

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm



NOTICE

Perform the operations on the left and right side.

- Tighten the screws (1).

Rear bumper panel to rear side panel

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

12 – Install both rear lights on the side panel

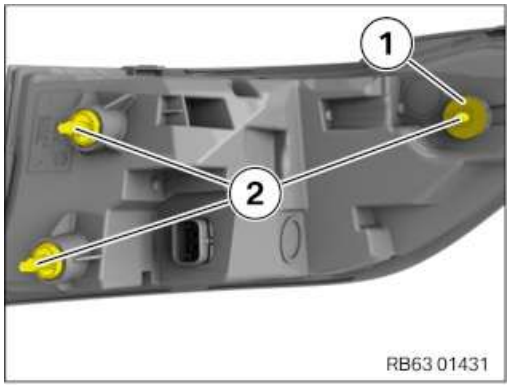
NOTICE

Description is for left component only. Procedure on the right side is identical.

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▸ **Install the rear light on the side panel**

Check



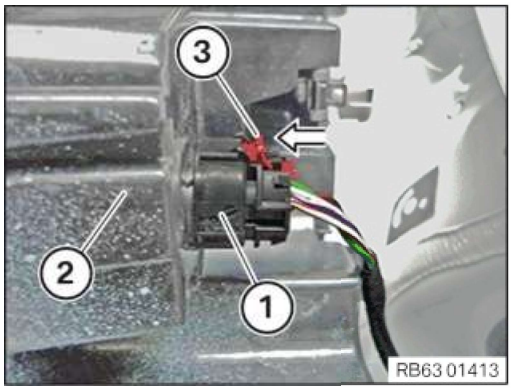
- Check the seal (1) for damage and renew if necessary.
- Check the threaded inserts (2) for damage.

Result

» The threaded inserts are damaged.

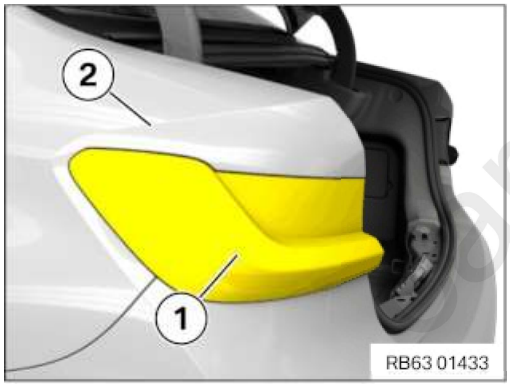
Measure

- Replace rear light.

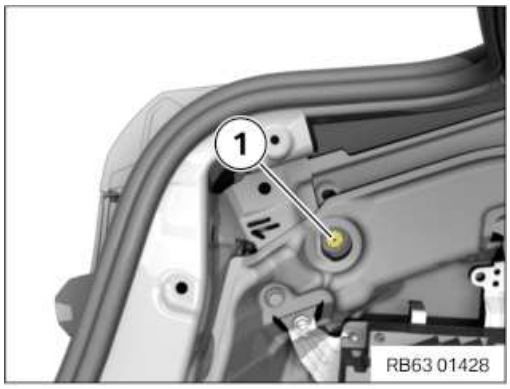


- Connect the connector (1) to the rear light on the side panel (2).

  The connector (1) must engage audibly.
- Lock the lock in direction of arrow (3).

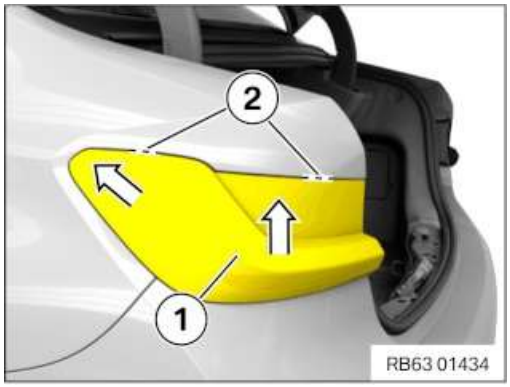


- Position the rear light on the side panel (1) on the side panel (2).

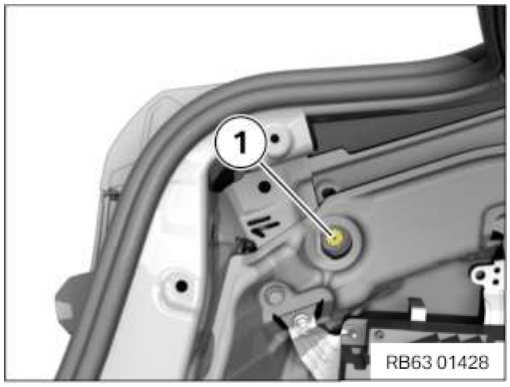


- Position the nut (1).

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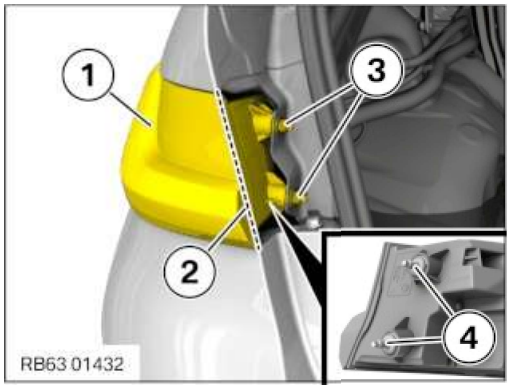
- Position the rear light on the side panel (1) to the front at the top.
- Move the contact surfaces (2) of the rear light on the side panel (1) upwards (arrow) so that they are in place.
- Hold the rear light on the side panel (1) in position.



- Tighten nut (1).

Rear light to side panel

Nut M5, AF 8		Tightening torque	3 Nm



- Position nuts (3).
- Align rear light on the side panel (1) with the connecting line (2).

  The alignment is done through threaded inserts (4) on the rear light on the side panel (2).
- If necessary, correct the position of the rear light on the side panel (1) by twisting threaded inserts (4).
- Tighten nuts (3).

Rear light to side panel

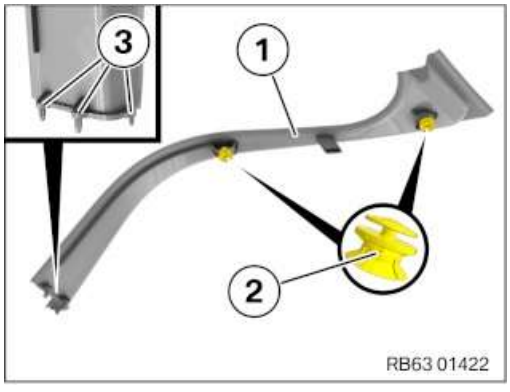
Nut M5, AF 10		Tightening torque	4 Nm

13 – Installing both trims of the water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the trim in the water channel**



Check

- Check the clips (2) for damage and renew if necessary.
- Check the guides (3) for damage.

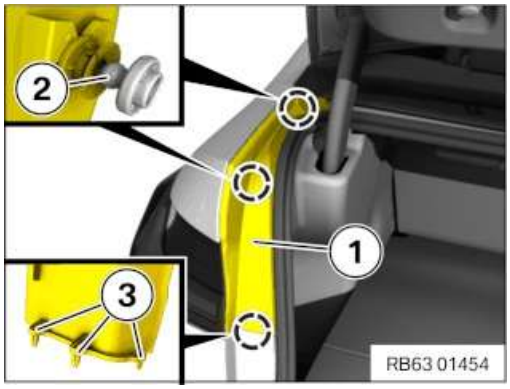
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Result

» The guides are damaged.

Measure

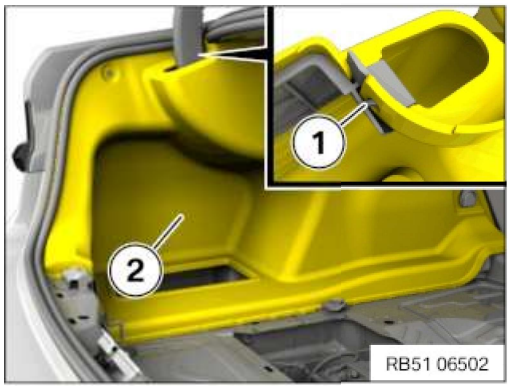
- Renew trim in the water channel .



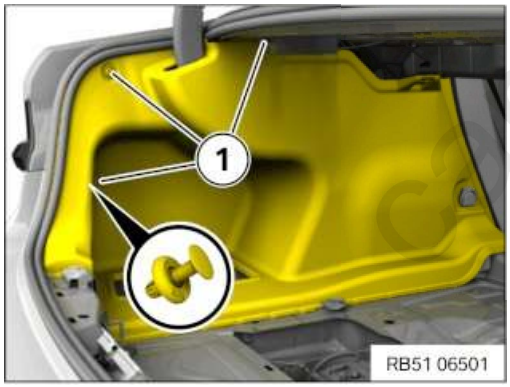
- Insert the trim in the water channel (1) in the guides (3).
- Clip in the water channel trim (1) from the front into the ball pin (2).

14 – Installing both luggage compartment wheel arch trim panels partially

▸ Partially installing the left luggage compartment wheel arch trim panel

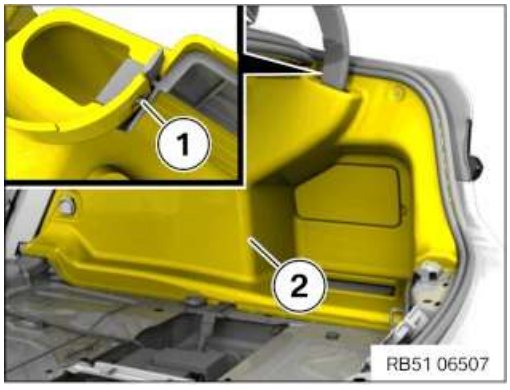


- Feed the luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal of the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



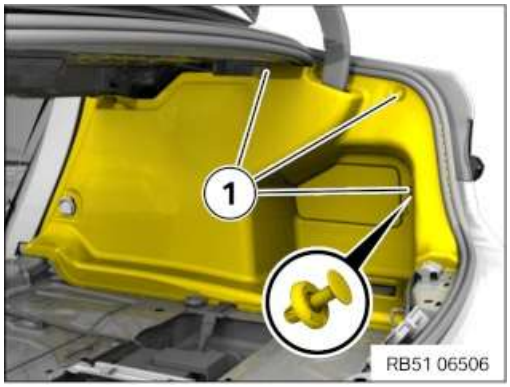
- Secure expanding rivet (1).

▸ Partially installing right luggage compartment wheel arch trim panel



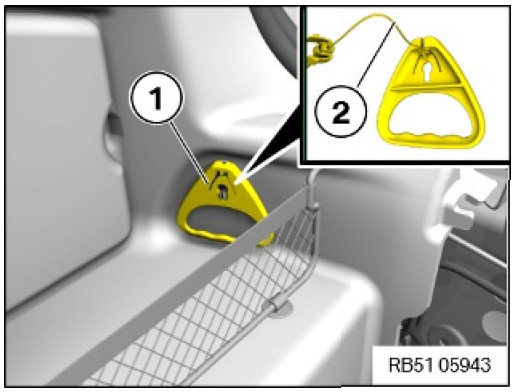
- Guide luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal for tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).

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- Secure expanding rivet (1).

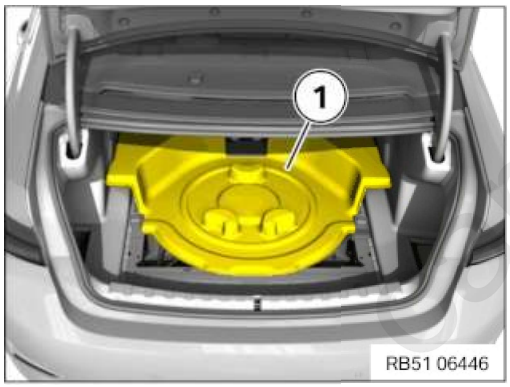
▷ **If installed: Installing the emergency tailgate release handle (additional work for US version)**



- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

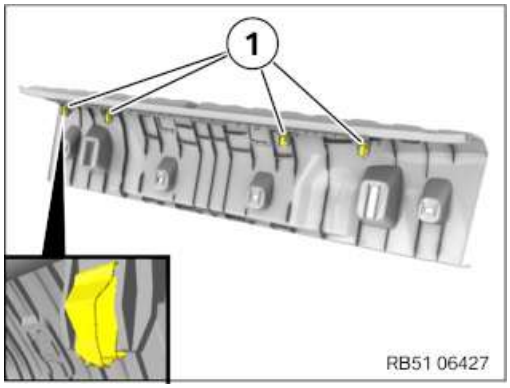
◁

15 – Install the luggage compartment well in front



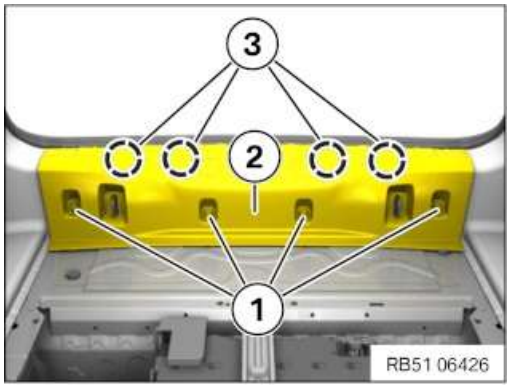
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

16 – Installing loading edge trim



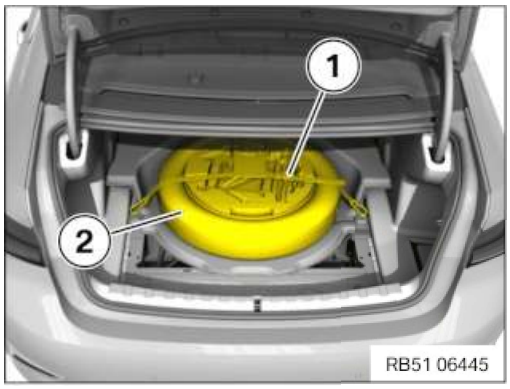
- Check the clamps (1) for damage and renew if necessary.

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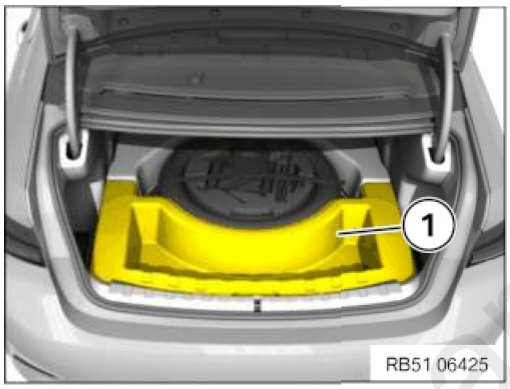
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

17 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

18 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

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Rear bumper panel guide on rear centre guide Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Mounting for rear bumper panel on support for rear bumper panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Rear bumper panel to rear side panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Rear light to side panel Used in step 12

Nut M5, AF 8		Tightening torque	3 Nm

Rear light to side panel Used in step 12

Nut M5, AF 10		Tightening torque	4 Nm

Links

Repair instructions	Used in step
61 13 ... Unlocking and disconnecting different plug connections	7

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66 31 111 Adjust front radar sensor

1 – Adjusting front radar sensor (FRS)

TECHNICAL INFORMATION

Notes on adjusting the ACC sensor are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 66 31 ... Notes on adjusting the ACC sensor

TECHNICAL INFORMATION

If there is a "Sensor misaligned" fault memory entry and the sensor cannot be aligned correctly using the adjusting screw, a front impact damage may be suspected.

In this case, the vehicle must be inspected thoroughly for damage. Damaged parts must be renewed if necessary. Then adjust the ACC sensor again.

A damaged/bent holder indicates mechanical misuse of the vehicle and must not be charged as a warranty case.

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▸ **Checking vehicle and components for damage**

Check

- In the visible areas, visually check for:
  - damage
  - Deformation

Result

» Damage or deformation.

Measure

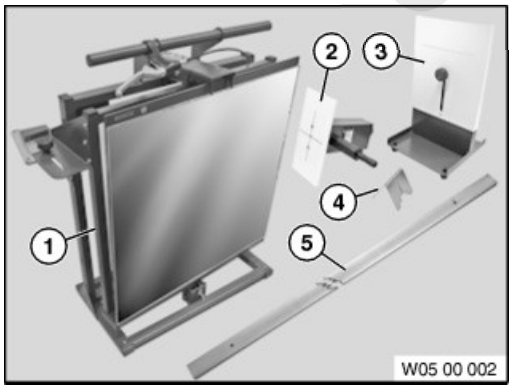
- Identify and renew damaged, deformed vehicle parts.

Result

» No damage or deformation

Measure

- Adjust the front radar sensor (FRS).



- Stage special tools 0 442 898 and 2 338 466.
- Set up special tool as per enclosed operating instructions.



- Connect diagnosis system.
  - Service functions
  - Driver assistance
  - Front radar sensor (FRS)
  - Front radar sensor start-up (FRS)



NOTICE

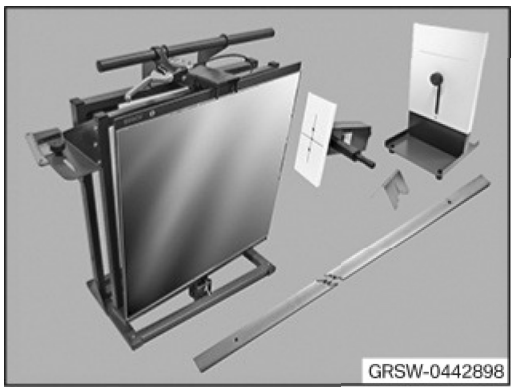
Schematic diagram is for example purposes. Some parts may differ in certain details.

- To adjust the front radar sensor (FRS), twist screw (1) with special tool .

Additional Information

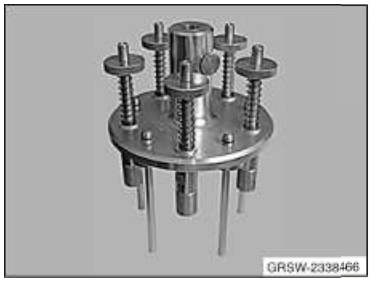
Overview of Special Tools

0 442 898 Measuring device



Common	Used in step 1
Usage	ACC adjusting device. Using this adjusting device, an ACC sensor built into the vehicle can be adjusted in the workshop. Prerequisite is a suitable measuring station.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	02 04 05 (208)

2 338 466 Holder



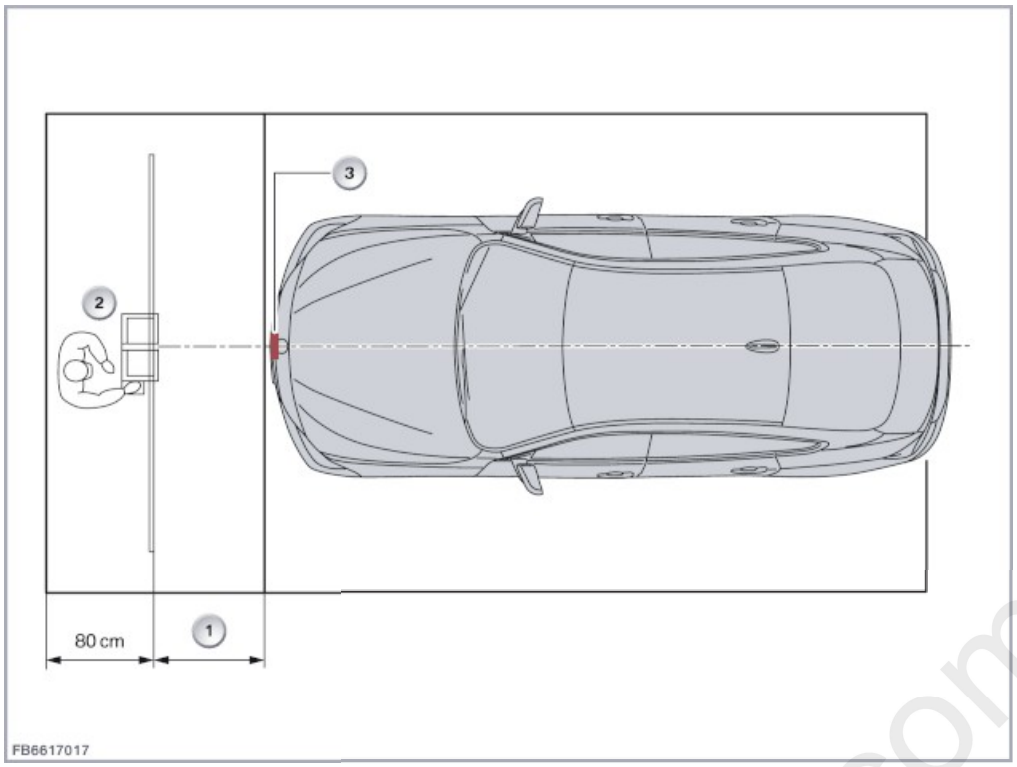
Common	Used in step 1
Usage	Replacement for holder 36 1 100 (0493771). Holder has longer guide pins and lengthened magnetic guides.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	

Links

Repair instructions	Used in step
66 31 010 Instructions for ACC adjusting device	1
66 31 010 Instructions for ACC adjusting device	

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66 31 010 Instructions for ACC adjusting device



Requirements for the measurement area for ACC adjusting device

Dimensions:

1. Area behind the mirror of at least 80 cm that cane be entered

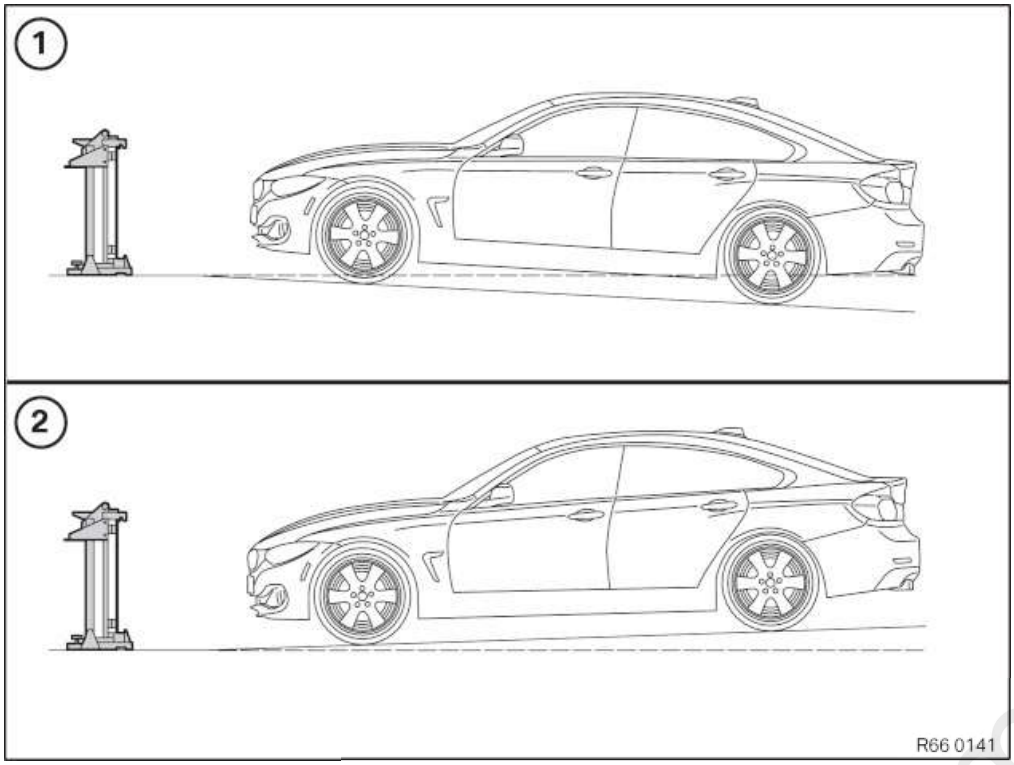
   For information about the required distance (1) between front radar sensor / front radar sensor long range and mirror for the correct adjustment,

   refer to the vehicle-specific service function.
2. Total area of work area 360 cm x 660 cm

Maximum irregularity of floor surface:

- Floor surface - adjusting device ≤ 1 mm
- Floor surface - vehicle ≤ 10 mm

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Maximum angle of inclination of floor surface - vehicle:

- Downward incline of floor surface maximum 3°, see graphic above (1)
- Upward incline of floor surface maximum 1°, see graphic above (2)

Note:
Setting up the ACC adjusting device (one-off task) comprises the following steps:

- Assembly of adjusting device
- Assembly of rail
- Basic setting of adjusting device on measurement area

Detailed setup and operating instructions are enclosed with every ACC adjusting device.

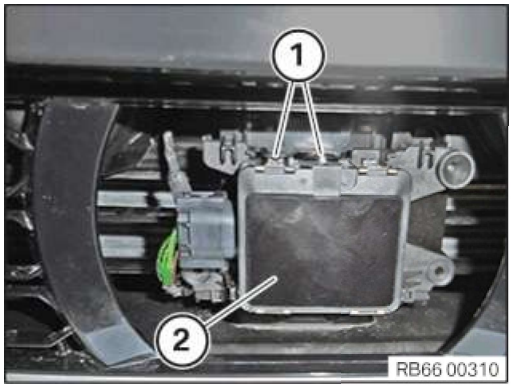
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66 31 120 Removing and installing front radar sensor

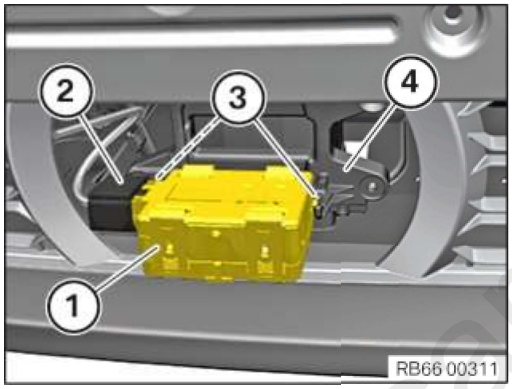
1 – Removing the front radar sensor (FRS)



- Disengage the latch mechanisms (1).
- Remove the cover (2) from the bumper panel grille (3).

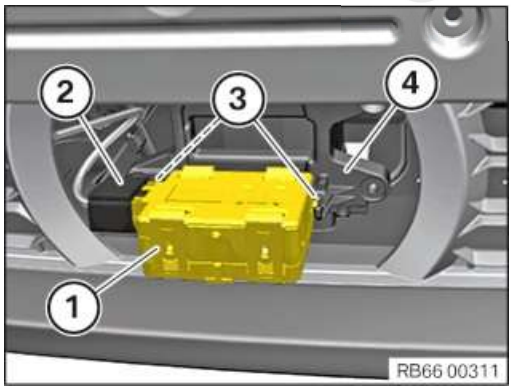


- Disengage the retaining lugs (1) for the front radar sensor (2).



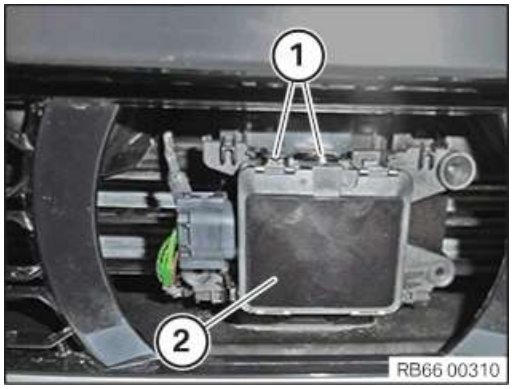
- Fold the front radar sensor (1) towards the front as shown.
- Unlock and disconnect connector (2).
- Remove the front radar sensor (1) including guide pin (3) from the bracket (4).

2 – Installing the front radar sensor (FRS)

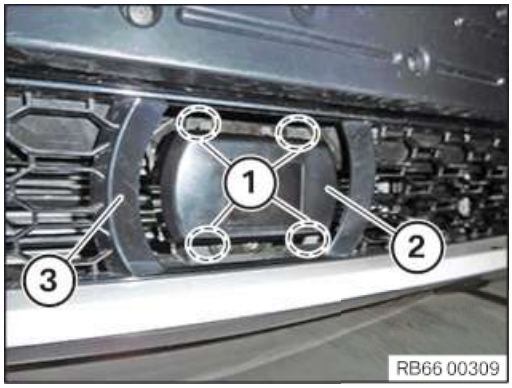


- Feed the front radar sensor (1) with guide pins (3) in holder (4) correctly.
- Connect connectors (2) and lock.

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- Fold front radar sensor (2) to the top and engage in retaining lugs (1).



- Insert cover (2) in the grating of bumper panel (3) correctly.
- Engage the cover (2) at the latch mechanisms (1).

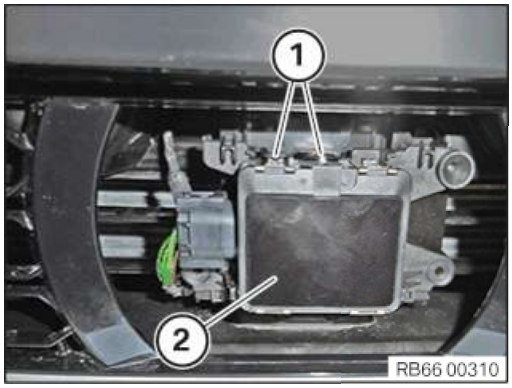
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66 31 120 Removing and installing front radar sensor

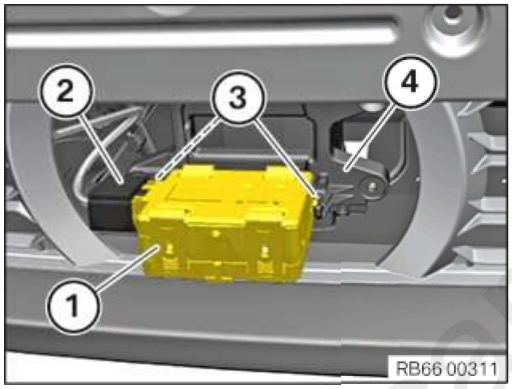
1 – Removing the front radar sensor (FRS)



- Disengage the latch mechanisms (1).
- Remove the cover (2) from the bumper panel grille (3).

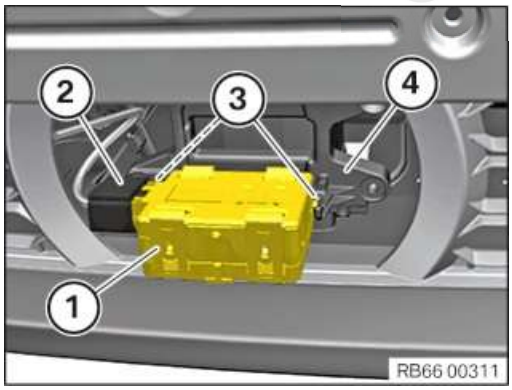


- Disengage the retaining lugs (1) for the front radar sensor (2).



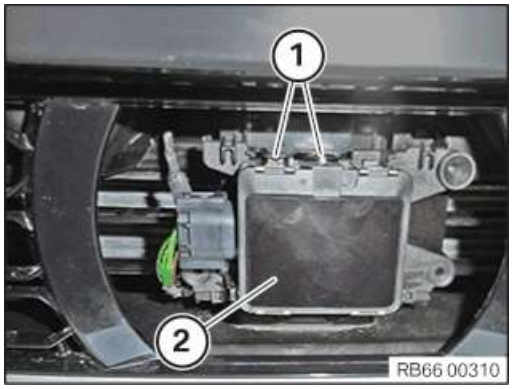
- Fold the front radar sensor (1) towards the front as shown.
- Unlock and disconnect connector (2).
- Remove the front radar sensor (1) including guide pin (3) from the bracket (4).

2 – Installing the front radar sensor (FRS)

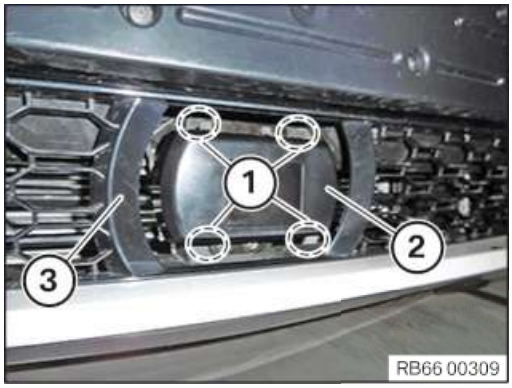


- Feed the front radar sensor (1) with guide pins (3) in holder (4) correctly.
- Connect connectors (2) and lock.

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- Fold front radar sensor (2) to the top and engage in retaining lugs (1).

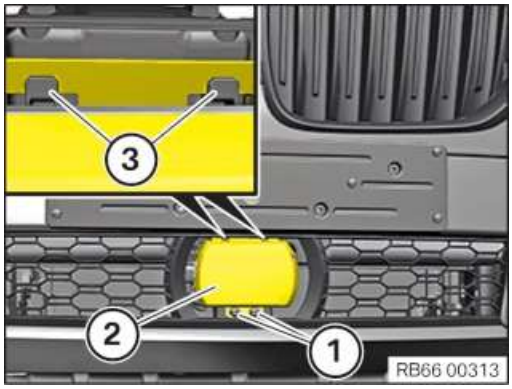


- Insert cover (2) in the grating of bumper panel (3) correctly.
- Engage the cover (2) at the latch mechanisms (1).

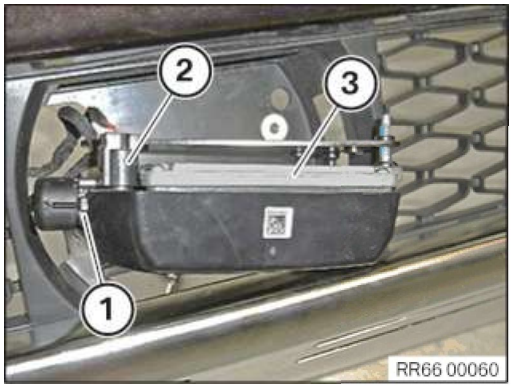
cardiagn.com

66 31 115 Removing and installing the front radar sensor long range

1 – Removing the far range front radar sensor (FRS)

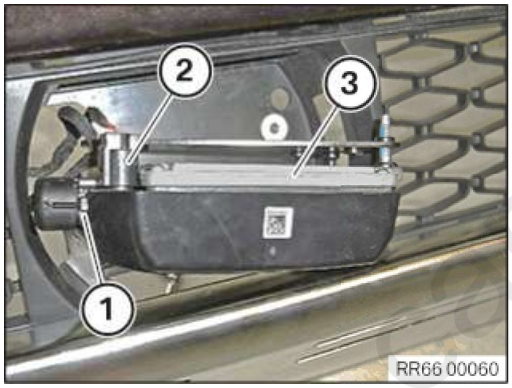


- Loosen screws (1).
- Slide the front radar sensor (2) up slightly and thread it out on the guides (3).
- Pull the front radar sensors (2) out slightly from the grille of the bumper panel.

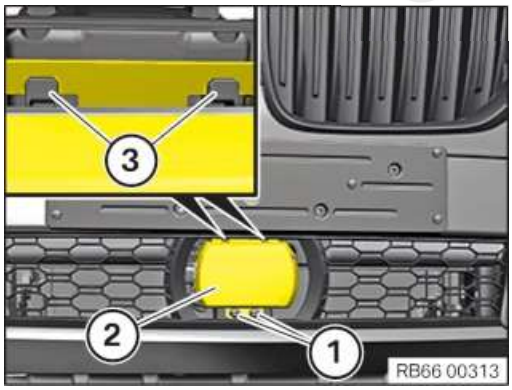


- Unlock and disconnect connector (1).
- Unlock and disconnect connector (2).
- Remove front radar sensor (3).

2 – Installing the front radar sensor long range (FRS)



- Position the front radar sensor (3).
- Connect connectors (2) and lock.
- Connect connectors (1) and lock.



- Guide the front radar sensor (2) into the grille of the bumper panel.
- Guide in the front radar sensor (2) at the guides (3) and position it correctly.
- Tighten the screws (1).

Front radar sensor (FRS) to holder

Screw		Tightening torque	8 Nm

3 – Adjusting front radar sensor (FRS)

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TECHNICAL INFORMATION

Notes on adjusting the ACC sensor are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 66 31 ... Notes on adjusting the ACC sensor

TECHNICAL INFORMATION

If there is a "Sensor misaligned" fault memory entry and the sensor cannot be aligned correctly using the adjusting screw, a front impact damage may be suspected.

In this case, the vehicle must be inspected thoroughly for damage. Damaged parts must be renewed if necessary. Then adjust the ACC sensor again.

A damaged/bent holder indicates mechanical misuse of the vehicle and must not be charged as a warranty case.

▸ **Checking vehicle and components for damage**

Check

- In the visible areas, visually check for:
  - damage
  - Deformation

Result

» Damage or deformation.

Measure

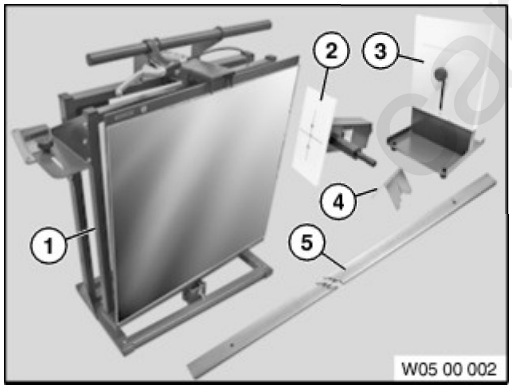
- Identify and renew damaged, deformed vehicle parts.

Result

» No damage or deformation

Measure

- Adjust the front radar sensor (FRS).
- Stage special tools 0 442 898 and 2 338 466.
- Set up special tool as per enclosed operating instructions.





- Connect diagnosis system.
  - Service functions
  - Driver assistance
  - Front radar sensor (FRS)
  - Front radar sensor start-up (FRS)

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NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- To adjust the front radar sensor (FRS), twist screw (1) with special tool .

Additional Information

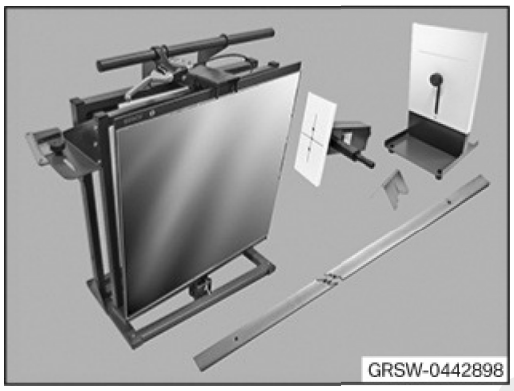
Overview of Tightening Torques

Front radar sensor (FRS) to holder — Used in step 2

Screw		Tightening torque	8 Nm

Overview of Special Tools

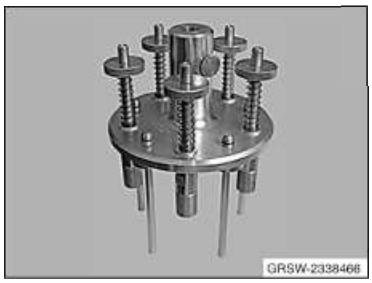
0 442 898 Measuring device



Common — Used in step 3

Usage	ACC adjusting device. Using this adjusting device, an ACC sensor built into the vehicle can be adjusted in the workshop. Prerequisite is a suitable measuring station.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	02 04 05 (208)

2 338 466 Holder



Common — Used in step 3

Usage	Replacement for holder 36 1 100 (0493771). Holder has longer guide pins and lengthened magnetic guides.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	

Links

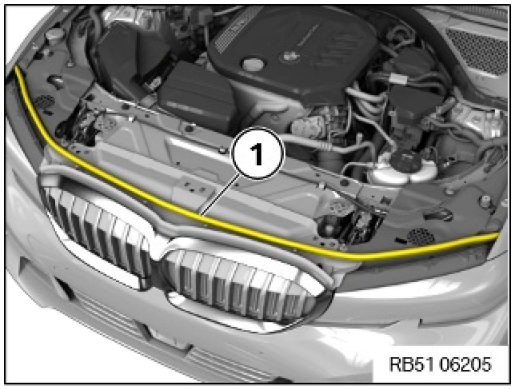
Repair instructions	Used in step
66 31 010 Instructions for ACC adjusting device	3

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66 31 115 Removing and installing the front radar sensor long range

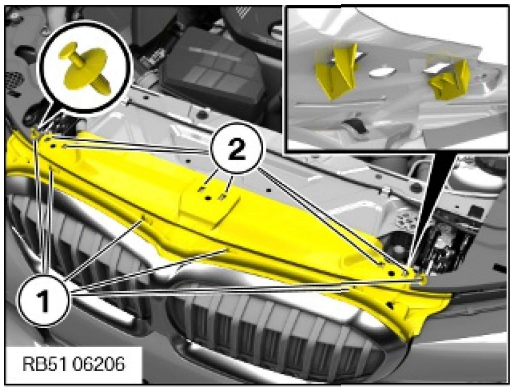
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



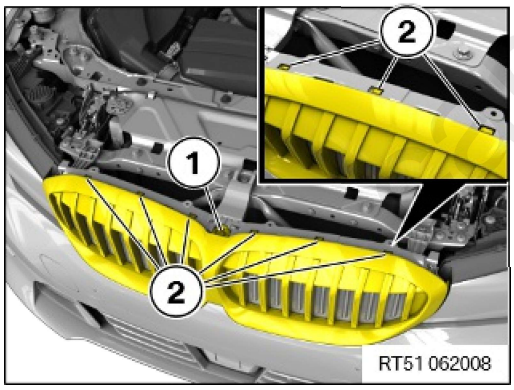
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove centre radiator ornamental grille



- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

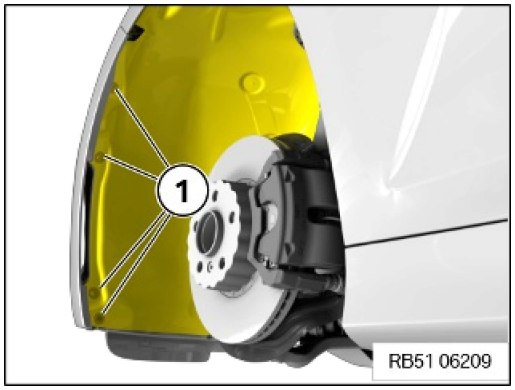
4 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

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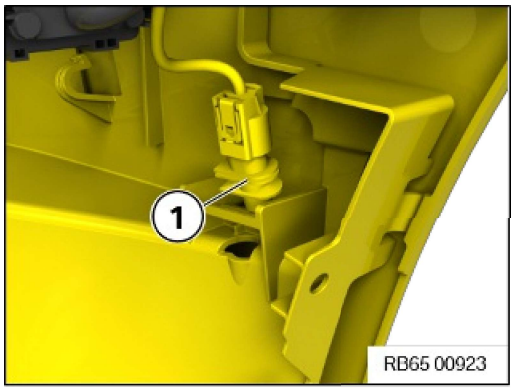


NOTICE

To provide a better overview: Schematic diagram without front wheel.

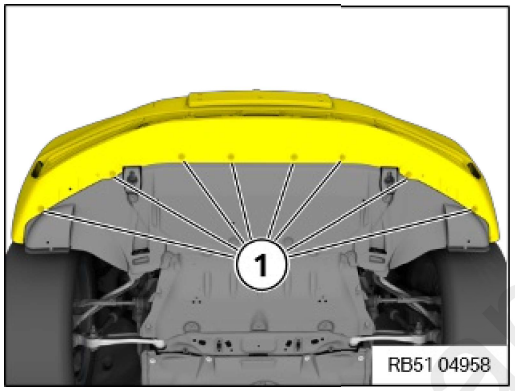
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

5 – Partially removing the temperature sensor



- Unclip temperature sensor (1) from the front bumper panel to the top.

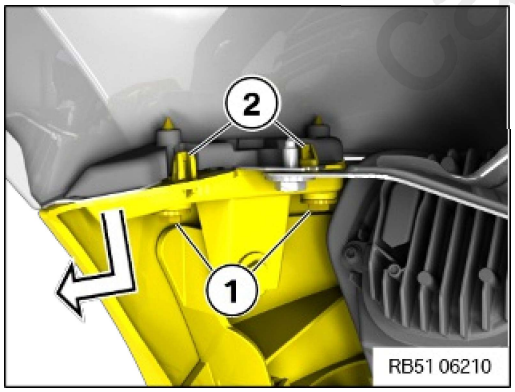
6 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

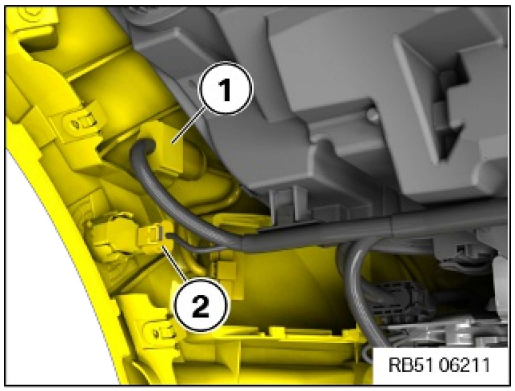
- Loosen screws (1).



NOTICE

Perform the operations on the left and right side.

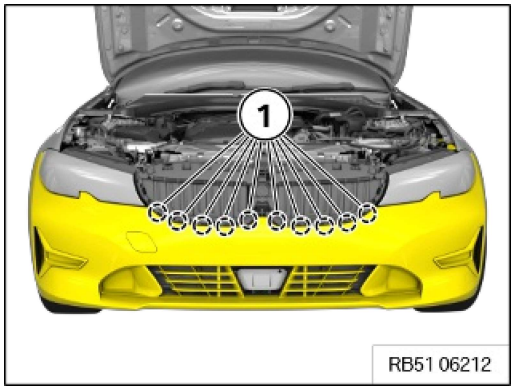
- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.



NOTICE

Perform the operations on the left and right side.

- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.



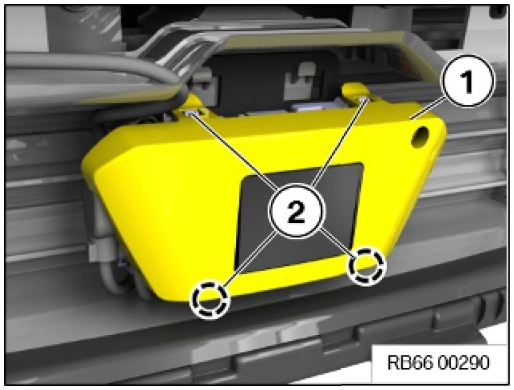
- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

MAIN WORK

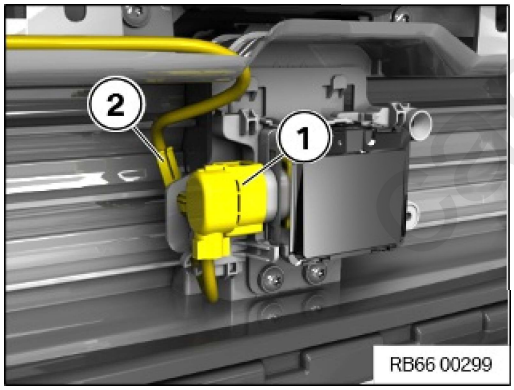
7 – If installed: Removing the front radar sensor (FRS)

NOTICE

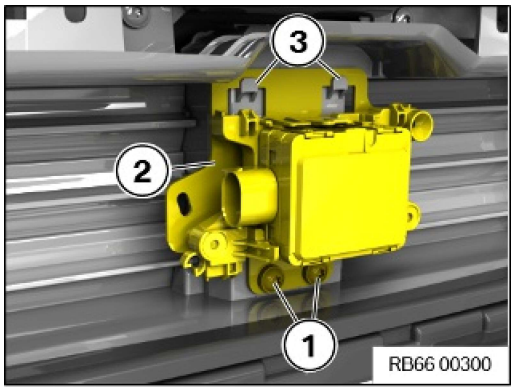
Schematic diagram is for example purposes. Some parts may differ in certain details.



- Release cover (1) from the latch mechanisms (2) and remove it to the front.



- Unlock plug connection (1) and disconnect.
- Unclip the vehicle wiring harness with the bracket (2) and place aside.



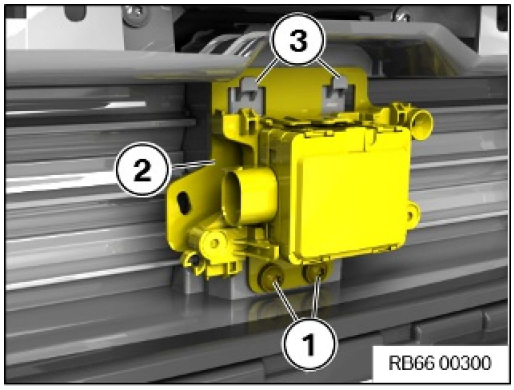
- Loosen screws (1).
- Guide out and remove the front radar sensor (FRS) with holder (2) out of tabs (3) .

8 – If installed: Installing the front radar sensor (FRS)

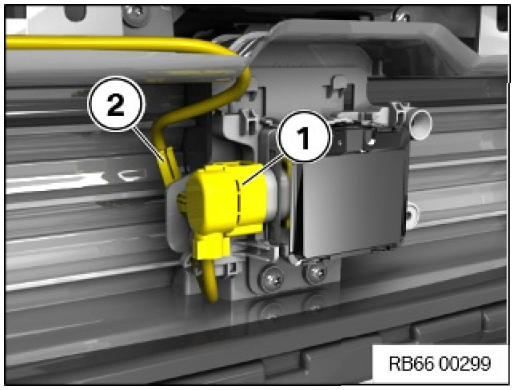
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NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

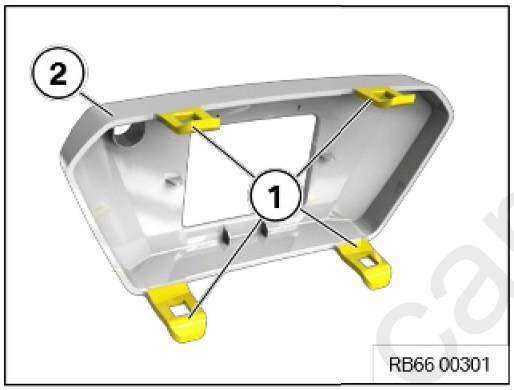


- Fit the front radar sensor (FRS) with the holder (2) in the tabs(3) .
- Tighten the screws (1).



- Clip in the vehicle wiring harness including bracket. (2)
- Connect connectors (1) and lock.

Check



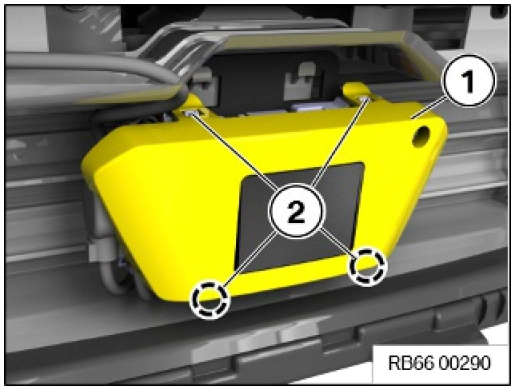
- Check tabs (1) on cover(2) for damage.

Result

» The tab is damaged.

Measure

- Renew the cover.



- Position cover (1) and clip it into latch mechanisms .

▸ **Adjusting front radar sensor (FRS)**

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TECHNICAL INFORMATION

Notes on adjusting the ACC sensor are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 66 31 ... Notes on adjusting the ACC sensor

TECHNICAL INFORMATION

If there is a "Sensor misaligned" fault memory entry and the sensor cannot be aligned correctly using the adjusting screw, a front impact damage may be suspected.

In this case, the vehicle must be inspected thoroughly for damage. Damaged parts must be renewed if necessary. Then adjust the ACC sensor again.

A damaged/bent holder indicates mechanical misuse of the vehicle and must not be charged as a warranty case.

▷ **Checking vehicle and components for damage**

Check

- In the visible areas, visually check for:
  - damage
  - Deformation

Result

» Damage or deformation.

Measure

- Identify and renew damaged, deformed vehicle parts.

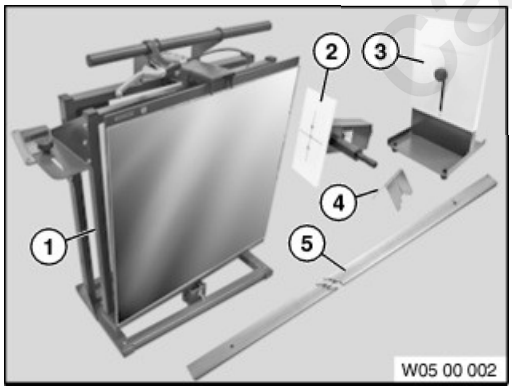
Result

» No damage or deformation

Measure

- Adjust the front radar sensor (FRS).

◁





- Stage special tools 0 442 898 and 2 338 466.
- Set up special tool as per enclosed operating instructions.
- Connect diagnosis system.
  - Service functions
  - Driver assistance
  - Front radar sensor (FRS)
  - Front radar sensor start-up (FRS)

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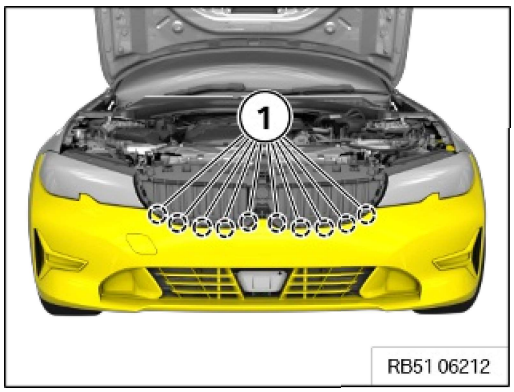
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

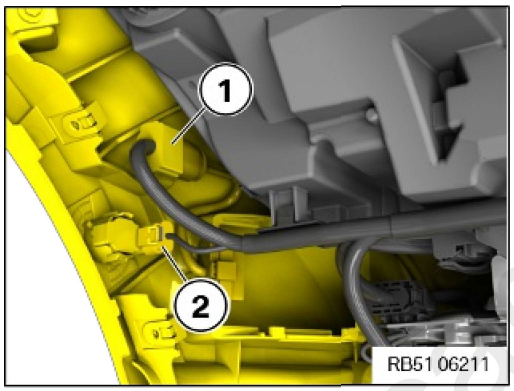
- To adjust the front radar sensor (FRS), twist screw (1) with special tool .

POSTPROCESSES

9 – Install bumper panel, front



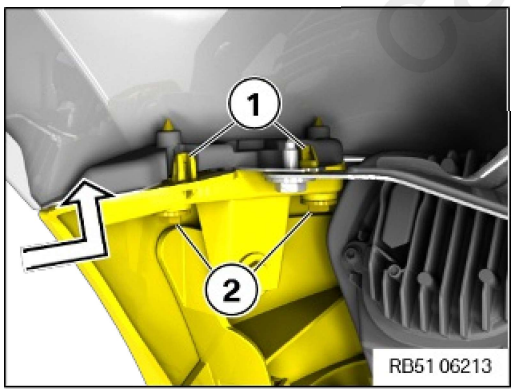
- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).



NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.



NOTICE

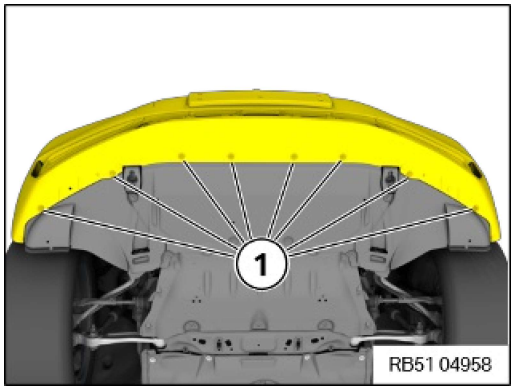
Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm

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NOTICE

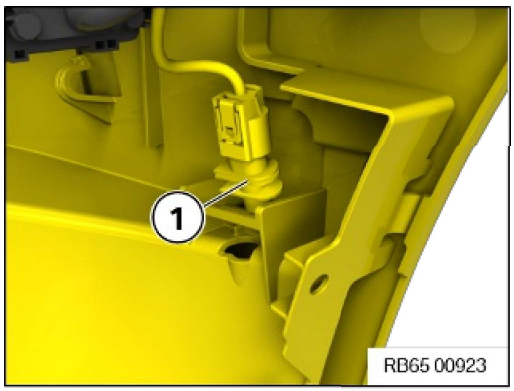
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

10 – Partially installing the temperature sensor



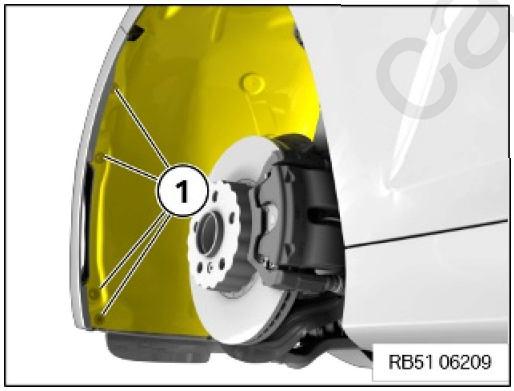
- Clip the temperature sensor (1) downwards into the front bumper panel.

11 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

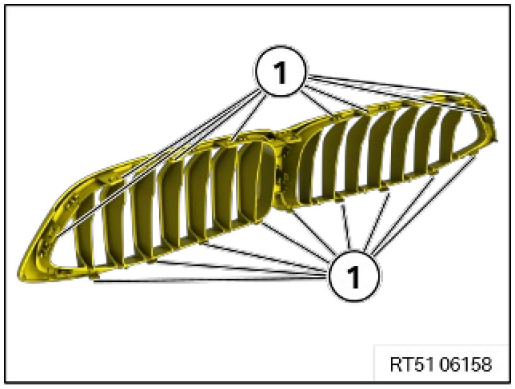
12 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

Check

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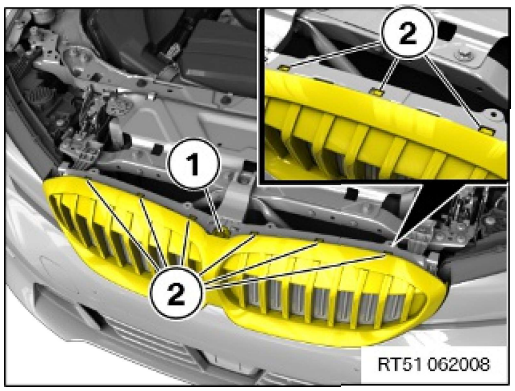
- Check latch mechanisms (1) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

- Renew the front ornamental grille, centre.

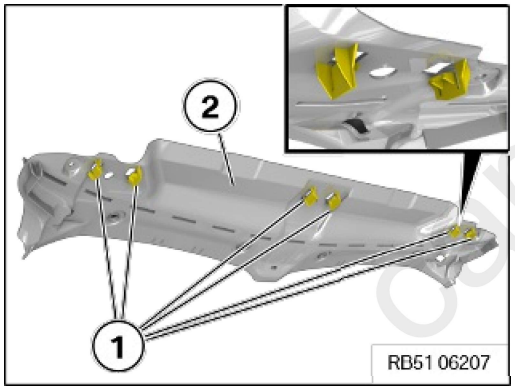


- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

13 – Installing cover for engine compartment centre



Check

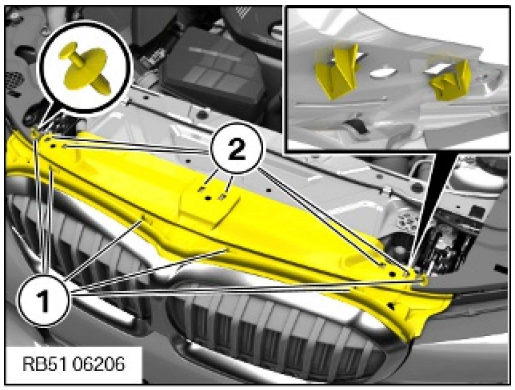
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

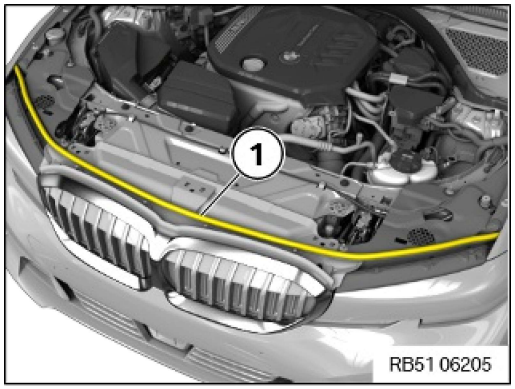
- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

14 – Install the seal for the front bonnet

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- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Front bumper panel to front side panel — Used in step 9

Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection — Used in step 9

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Wheel arch trim panel, front — Used in step 11

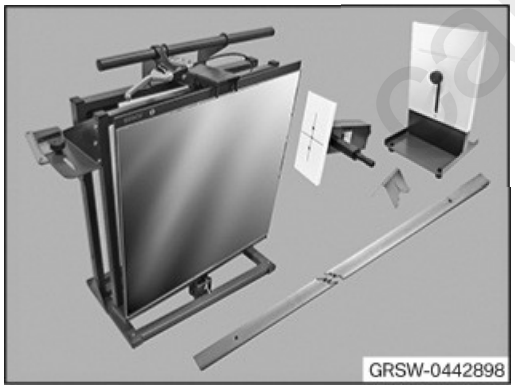
Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Centre of front ornamental grille to top air flap control — Used in step 12

Oval-head screwM6		Tightening torque	4,6 Nm

Overview of Special Tools

0 442 898 Measuring device

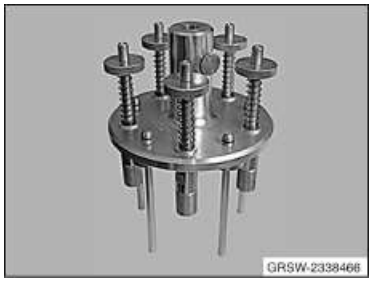


Common — Used in step 8

Usage	ACC adjusting device. Using this adjusting device, an ACC sensor built into the vehicle can be adjusted in the workshop. Prerequisite is a suitable measuring station.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	02 04 05 (208)

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2 338 466 Holder



Common	Used in step 8
Usage	Replacement for holder 36 1 100 (0493771). Holder has longer guide pins and lengthened magnetic guides.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	

Links

Repair instructions	Used in step
66 31 010 Instructions for ACC adjusting device	8

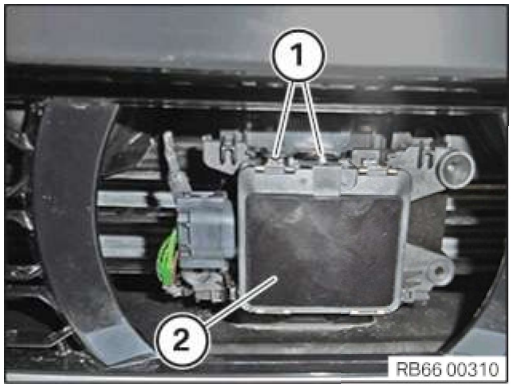
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66 31 621 Replace front radar sensor

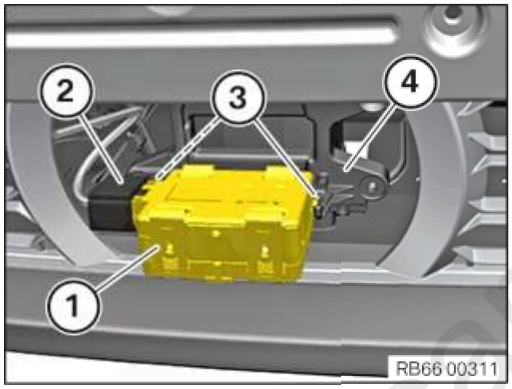
1 – Removing the front radar sensor (FRS)



- Disengage the latch mechanisms (1).
- Remove the cover (2) from the bumper panel grille (3).

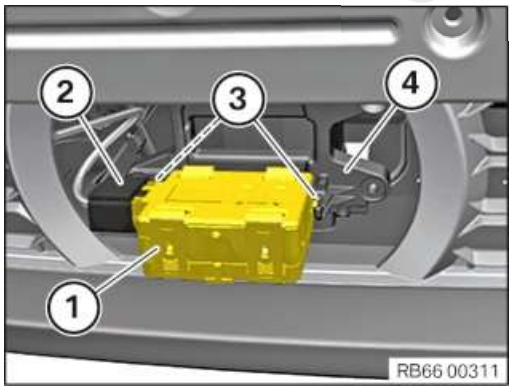


- Disengage the retaining lugs (1) for the front radar sensor (2).



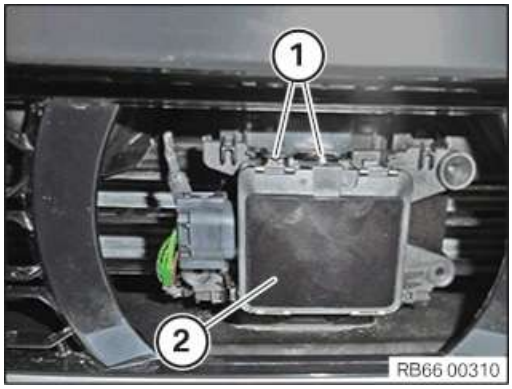
- Fold the front radar sensor (1) towards the front as shown.
- Unlock and disconnect connector (2).
- Remove the front radar sensor (1) including guide pin (3) from the bracket (4).

2 – Installing the front radar sensor (FRS)

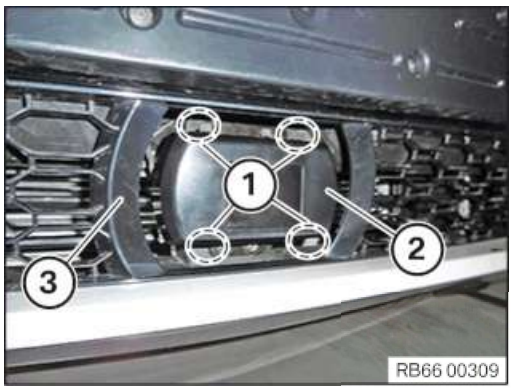


- Feed the front radar sensor (1) with guide pins (3) in holder (4) correctly.
- Connect connectors (2) and lock.

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- Fold front radar sensor (2) to the top and engage in retaining lugs (1).



- Insert cover (2) in the grating of bumper panel (3) correctly.
- Engage the cover (2) at the latch mechanisms (1).

3 – Adjusting front radar sensor (FRS)

TECHNICAL INFORMATION

Notes on adjusting the ACC sensor are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 66 31 ... Notes on adjusting the ACC sensor

TECHNICAL INFORMATION

If there is a "Sensor misaligned" fault memory entry and the sensor cannot be aligned correctly using the adjusting screw, a front impact damage may be suspected.

In this case, the vehicle must be inspected thoroughly for damage. Damaged parts must be renewed if necessary. Then adjust the ACC sensor again.

A damaged/bent holder indicates mechanical misuse of the vehicle and must not be charged as a warranty case.

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▸ **Checking vehicle and components for damage**

Check

- In the visible areas, visually check for:
  - damage
  - Deformation

Result

» Damage or deformation.

Measure

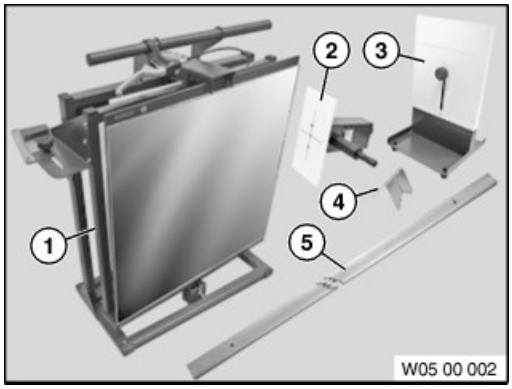
- Identify and renew damaged, deformed vehicle parts.

Result

» No damage or deformation

Measure

- Adjust the front radar sensor (FRS).



- Stage special tools 0 442 898 and 2 338 466.
- Set up special tool as per enclosed operating instructions.



- Connect diagnosis system.
  - Service functions
  - Driver assistance
  - Front radar sensor (FRS)
  - Front radar sensor start-up (FRS)



NOTICE

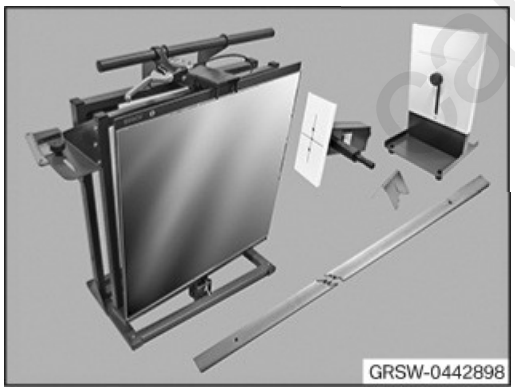
Schematic diagram is for example purposes. Some parts may differ in certain details.

- To adjust the front radar sensor (FRS), twist screw (1) with special tool .

Additional Information

Overview of Special Tools

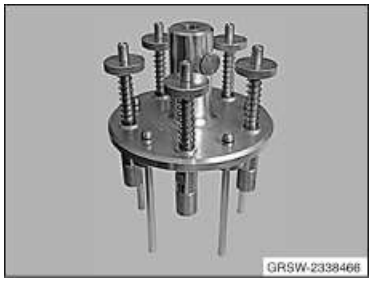
0 442 898 Measuring device



Common	Used in step 3
Usage	ACC adjusting device. Using this adjusting device, an ACC sensor built into the vehicle can be adjusted in the workshop. Prerequisite is a suitable measuring station.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	02 04 05 (208)

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2 338 466 Holder



Common	Used in step 3
Usage	Replacement for holder 36 1 100 (0493771). Holder has longer guide pins and lengthened magnetic guides.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	

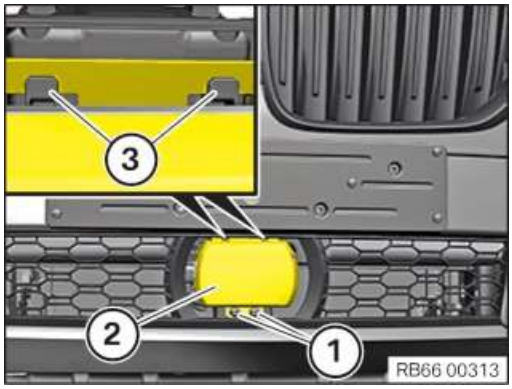
Links

Repair instructions	Used in step
66 31 010 Instructions for ACC adjusting device	3

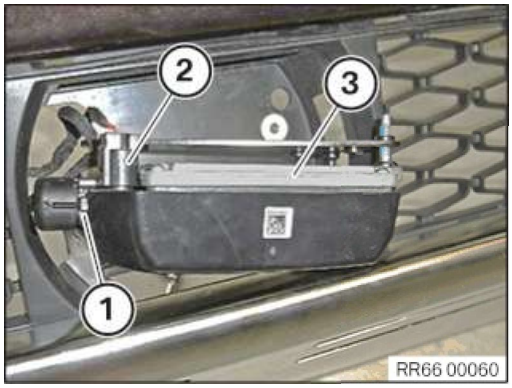
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66 31 616 Replace front radar sensor long range

1 – Removing the far range front radar sensor (FRS)

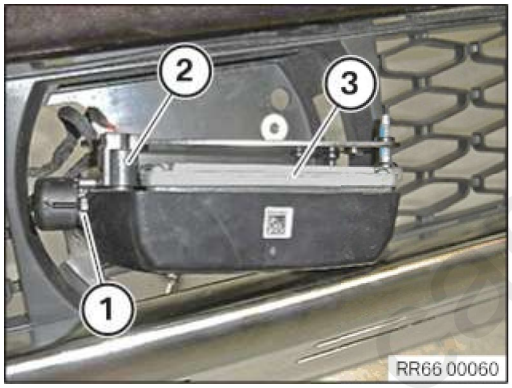


- Loosen screws (1).
- Slide the front radar sensor (2) up slightly and thread it out on the guides (3).
- Pull the front radar sensors (2) out slightly from the grille of the bumper panel.

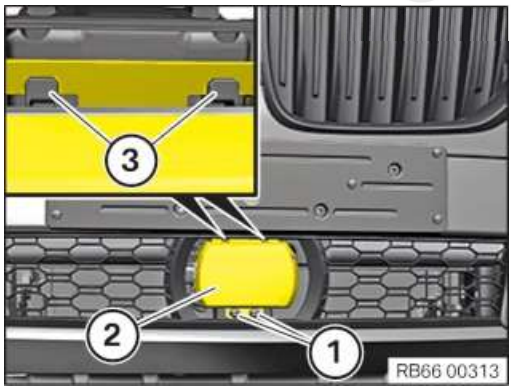


- Unlock and disconnect connector (1).
- Unlock and disconnect connector (2).
- Remove front radar sensor (3).

2 – Installing the front radar sensor long range (FRS)



- Position the front radar sensor (3).
- Connect connectors (2) and lock.
- Connect connectors (1) and lock.



- Guide the front radar sensor (2) into the grille of the bumper panel.
- Guide in the front radar sensor (2) at the guides (3) and position it correctly.
- Tighten the screws (1).

Front radar sensor (FRS) to holder

Screw		Tightening torque	8 Nm

3 – Adjusting front radar sensor (FRS)

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TECHNICAL INFORMATION

Notes on adjusting the ACC sensor are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 66 31 ... Notes on adjusting the ACC sensor

TECHNICAL INFORMATION

If there is a "Sensor misaligned" fault memory entry and the sensor cannot be aligned correctly using the adjusting screw, a front impact damage may be suspected.

In this case, the vehicle must be inspected thoroughly for damage. Damaged parts must be renewed if necessary. Then adjust the ACC sensor again.

A damaged/bent holder indicates mechanical misuse of the vehicle and must not be charged as a warranty case.

▸ **Checking vehicle and components for damage**

Check

- In the visible areas, visually check for:
  - damage
  - Deformation

Result

» Damage or deformation.

Measure

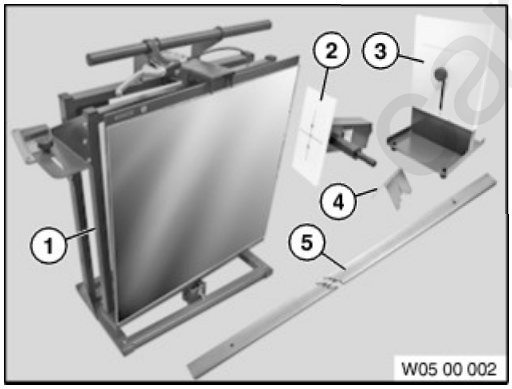
- Identify and renew damaged, deformed vehicle parts.

Result

» No damage or deformation

Measure

- Adjust the front radar sensor (FRS).
- Stage special tools 0 442 898 and 2 338 466.
- Set up special tool as per enclosed operating instructions.





- Connect diagnosis system.
  - Service functions
  - Driver assistance
  - Front radar sensor (FRS)
  - Front radar sensor start-up (FRS)

carqtagn.com



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- To adjust the front radar sensor (FRS), twist screw (1) with special tool .

Additional Information

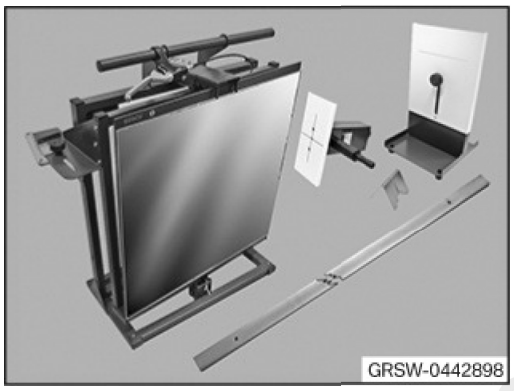
Overview of Tightening Torques

Front radar sensor (FRS) to holder — Used in step 2

Screw		Tightening torque	8 Nm

Overview of Special Tools

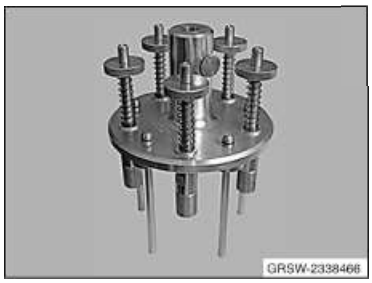
0 442 898 Measuring device



Common — Used in step 3

Usage	ACC adjusting device. Using this adjusting device, an ACC sensor built into the vehicle can be adjusted in the workshop. Prerequisite is a suitable measuring station.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	02 04 05 (208)

2 338 466 Holder



Common — Used in step 3

Usage	Replacement for holder 36 1 100 (0493771). Holder has longer guide pins and lengthened magnetic guides.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	

Links

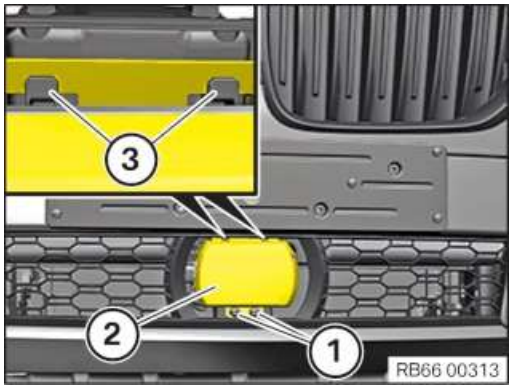
Repair instructions	Used in step
66 31 010 Instructions for ACC adjusting device	3

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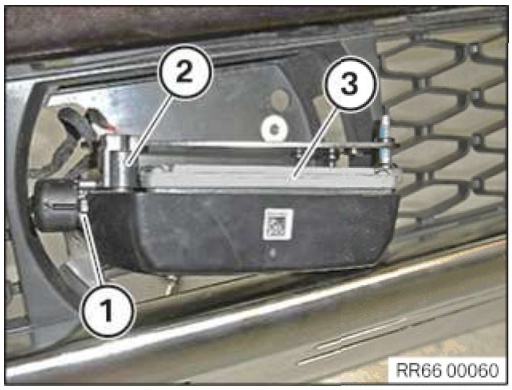
66 31 540 Replace radome

PRELIMINARY WORK

1 – Removing the far range front radar sensor (FRS)



- Loosen screws (1).
- Slide the front radar sensor (2) up slightly and thread it out on the guides (3).
- Pull the front radar sensors (2) out slightly from the grille of the bumper panel.



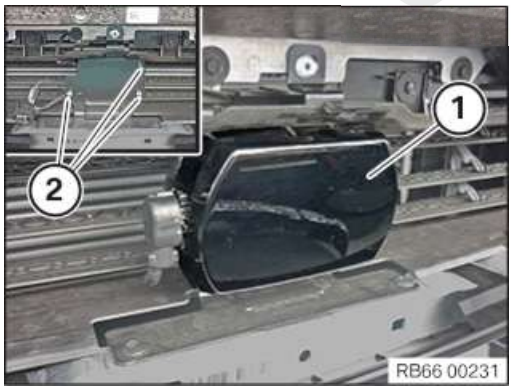
- Unlock and disconnect connector (1).
- Unlock and disconnect connector (2).
- Remove front radar sensor (3).

MAIN WORK

2 – Removing the radome

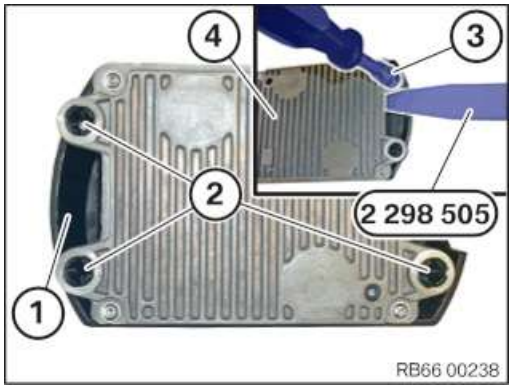
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Disengage front radar sensor (FRS) for the wide area with the radome (1) from the ball pin (2) with the special tool 0 496 569 (00 9 325).

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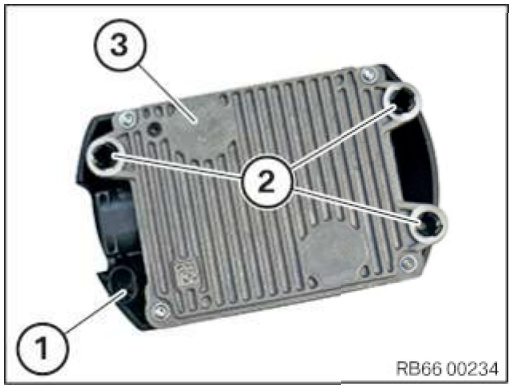
- Release and remove the radome (1) at the latch mechanisms (2) with the special tool 2 298 505 and a socket of 9 mm (3) from the ACC sensor (4).

Note: Carefully clamp front radar sensor (FRS) in a vice at the metal frame. That will ease the disassembly of the radome.

3 – Install radome

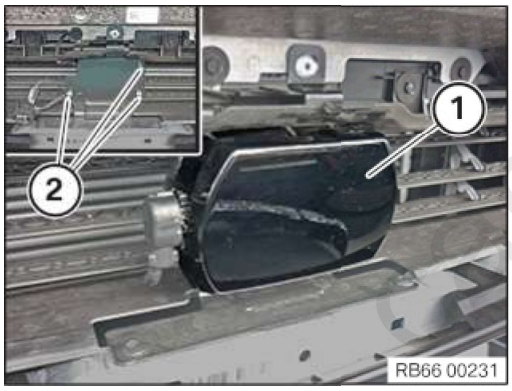
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Check the latch mechanisms (2) and replace the radome as needed.

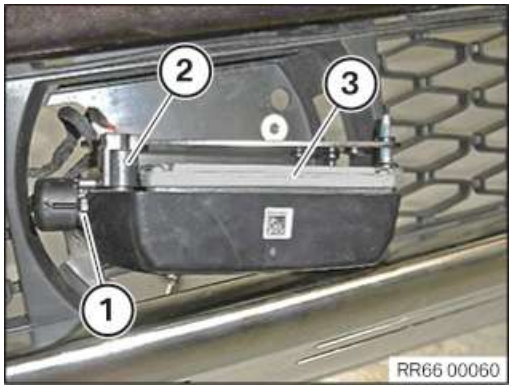
  The latch mechanisms must not be damaged or missing.
- Mount the radome (1) on the front radar sensor (FRS) (3) and engage it.



- Check the ball pin (2) for damage and replace if necessary.
- Engage front radar sensor (FRS) with radome (1) to the ball pin (2).

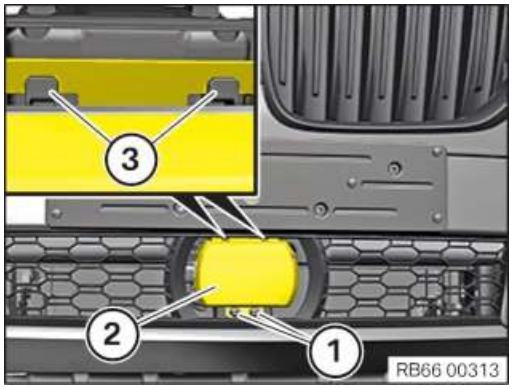
POSTPROCESSES

4 – Installing the front radar sensor long range (FRS)



- Position the front radar sensor (3).
- Connect connectors (2) and lock.
- Connect connectors (1) and lock.

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- Guide the front radar sensor (2) into the grille of the bumper panel.
- Guide in the front radar sensor (2) at the guides (3) and position it correctly.
- Tighten the screws (1).

Front radar sensor (FRS) to holder

Screw		Tightening torque	8 Nm

5 – Adjusting front radar sensor (FRS)

TECHNICAL INFORMATION

Notes on adjusting the ACC sensor are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 66 31 ... Notes on adjusting the ACC sensor

TECHNICAL INFORMATION

If there is a "Sensor misaligned" fault memory entry and the sensor cannot be aligned correctly using the adjusting screw, a front impact damage may be suspected.

In this case, the vehicle must be inspected thoroughly for damage. Damaged parts must be renewed if necessary. Then adjust the ACC sensor again.

A damaged/bent holder indicates mechanical misuse of the vehicle and must not be charged as a warranty case.

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▸ **Checking vehicle and components for damage**

Check

- In the visible areas, visually check for:
  - damage
  - Deformation

Result

» Damage or deformation.

Measure

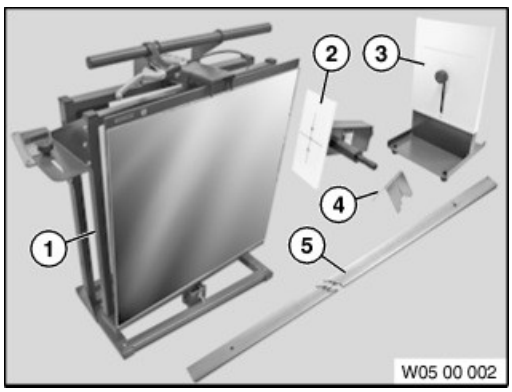
- Identify and renew damaged, deformed vehicle parts.

Result

» No damage or deformation

Measure

- Adjust the front radar sensor (FRS).



- Stage special tools 0 442 898 and 2 338 466.
- Set up special tool as per enclosed operating instructions.

- Connect diagnosis system.
  - Service functions
  - Driver assistance
  - Front radar sensor (FRS)
  - Front radar sensor start-up (FRS)



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- To adjust the front radar sensor (FRS), twist screw (1) with special tool .

Additional Information

Overview of Tightening Torques

Front radar sensor (FRS) to holder — Used in step 4

Screw		Tightening torque	8 Nm

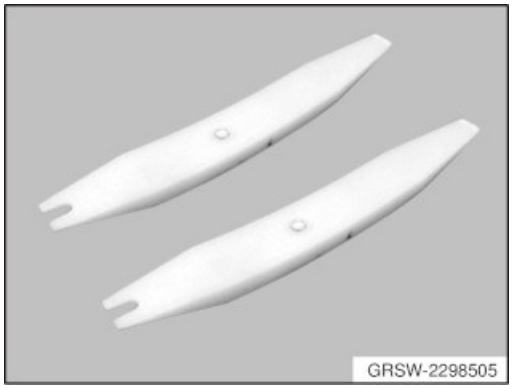
Overview of Special Tools

0 496 569 (00 9 325) Wedge



Common	Used in step 2
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

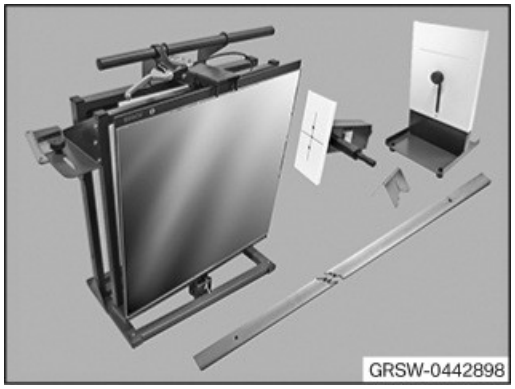
2 298 505 Wedge



Common	Used in step 2
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

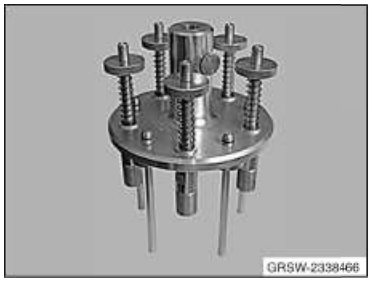
cardiagn.com

0 442 898 Measuring device



Common	Used in step 5
Usage	ACC adjusting device. Using this adjusting device, an ACC sensor built into the vehicle can be adjusted in the workshop. Prerequisite is a suitable measuring station.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	02 04 05 (208)

2 338 466 Holder



Common	Used in step 5
Usage	Replacement for holder 36 1 100 (0493771). Holder has longer guide pins and lengthened magnetic guides.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	

Links

Repair instructions	Used in step
66 31 010 Instructions for ACC adjusting device	5

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66 32 180 Removing and installing rear radar sensor short range left

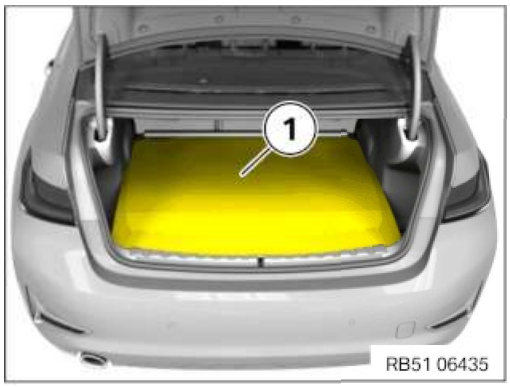
TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

Do not attach labels in the sampling range of the sensor.

PRELIMINARY WORK

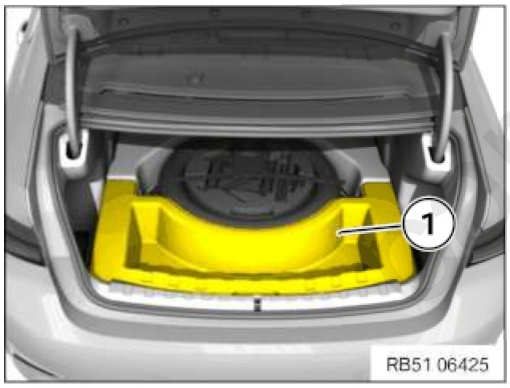
1 – Removing the luggage compartment floor trim panel



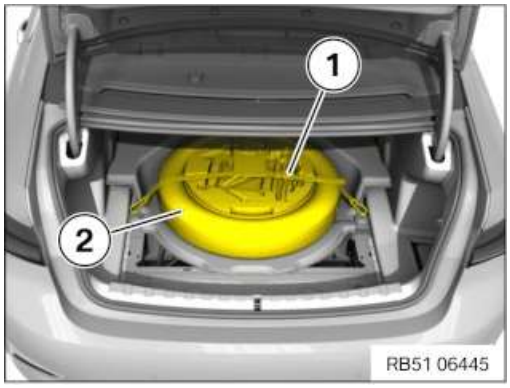
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

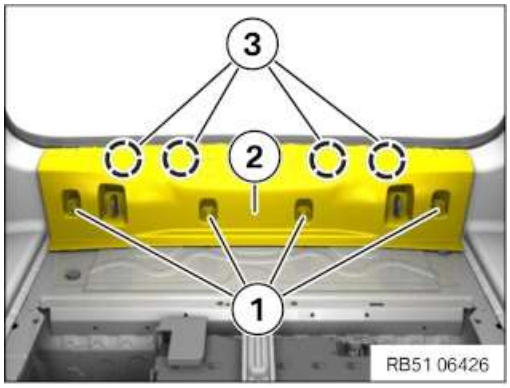


- Remove rear luggage compartment well (1).



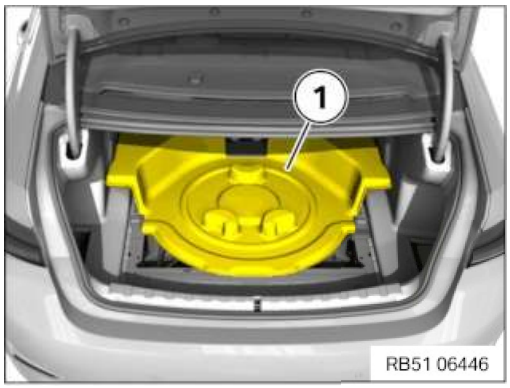
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

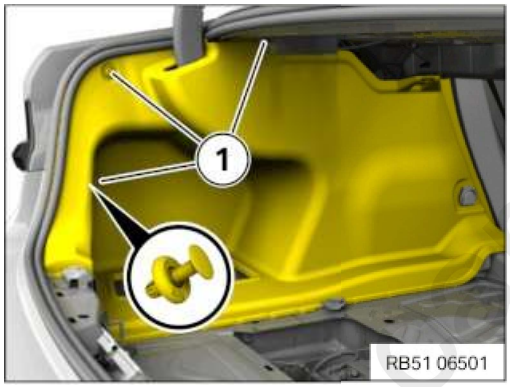
4 – Removing front luggage compartment well



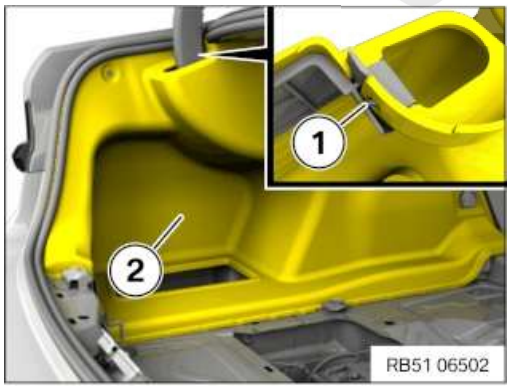
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Removing both luggage compartment wheel arch trim panels partially

▸ Partially remove luggage compartment wheel arch trim on left



- Loosen the expanding rivet (1).

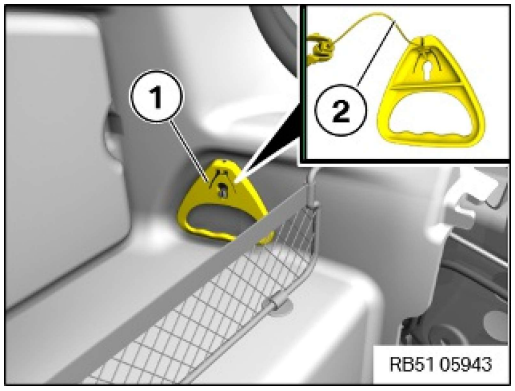


- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

▸ Partially remove luggage compartment wheel arch panel on right

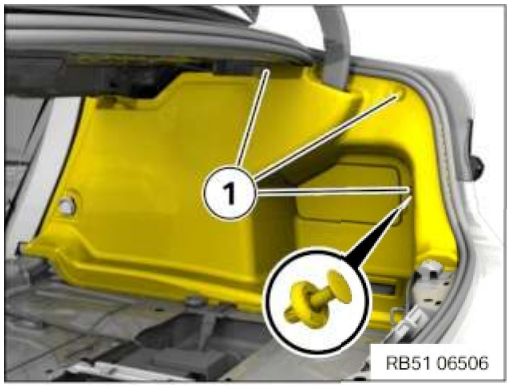
▹ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)

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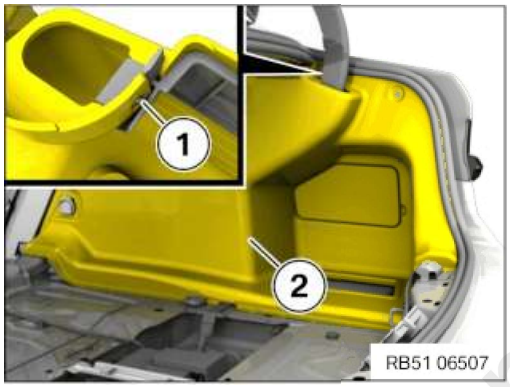


- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

◁



- Loosen the expanding rivet (1).



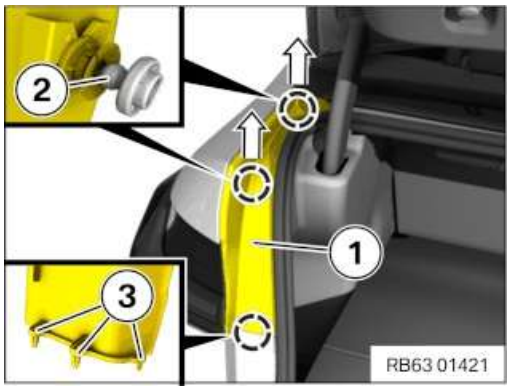
- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

6 – Removing both trims of water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim in the water channel**



- Unclip the trim in the water channel (1) from the ball pins (2) towards the top.
- Release the trim in the water channel (1) from the guides (3) and remove it.

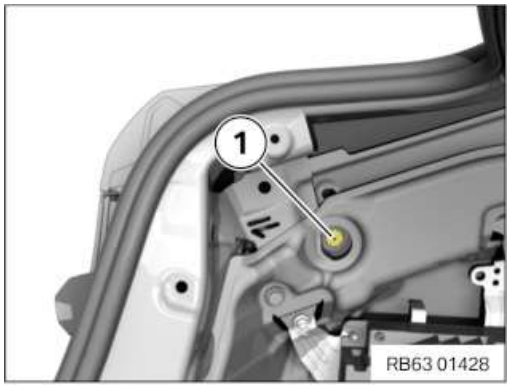
7 – Remove both rear lights from the side panel

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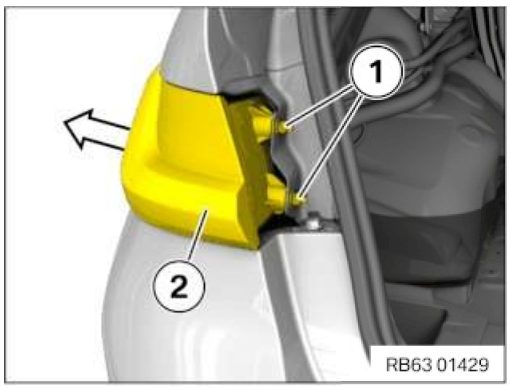
NOTICE

Description is for left component only. Procedure on the right side is identical.

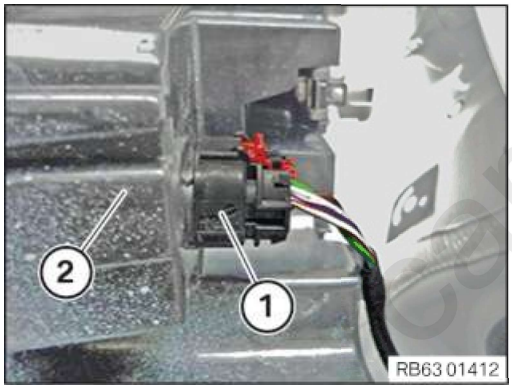
▶ **Remove the rear light on the side panel**



- Loosen nut (1).



- Release the nuts (1) and feed out the rear light on the side panel (2) in the direction of arrow.



TECHNICAL INFORMATION

Observe note on unlocking and disconnecting plug connections.

For additional information see: 6113 ... Unlocking and disconnecting different plug connections

- Unlock and disconnect plug connection (1) as described in position #28 in additional information.
- Remove the rear light on the side panel (2).

8 – Remove rear bumper panel

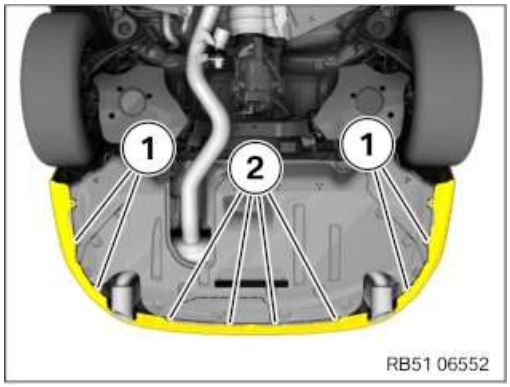


NOTICE

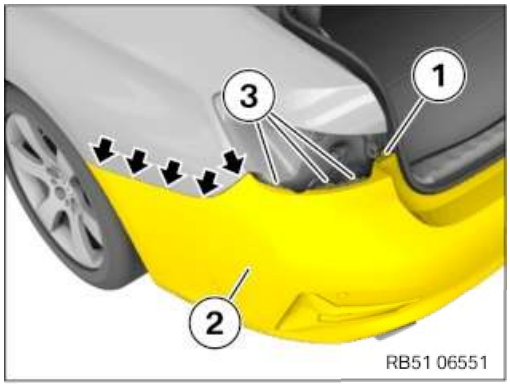
Perform the operations on the left and right side.

- Loosen screws (1).

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- Loosen screws (1).
- Release the bumper panel on latch mechanisms (2) with a suitable tool.



NOTICE

Perform the operations on the left and right side.

- Loosen screw (1).
- Release bumper panel (2) in the area of the rear light housing from latch mechanisms (3) with a suitable tool.
- Release side bumper panel (2) from the remaining latch mechanisms (arrows).



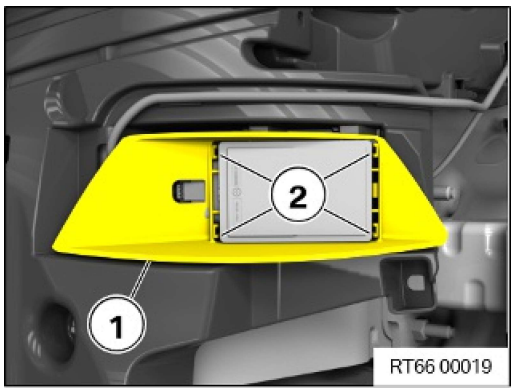
- Remove bumper panel (2) straight to the rear with the help of an auxiliary person.
- Unlock all plug connections and disconnect.
- Remove the bumper panel (1).

MAIN WORK

9 – Removing the rear side radar sensor

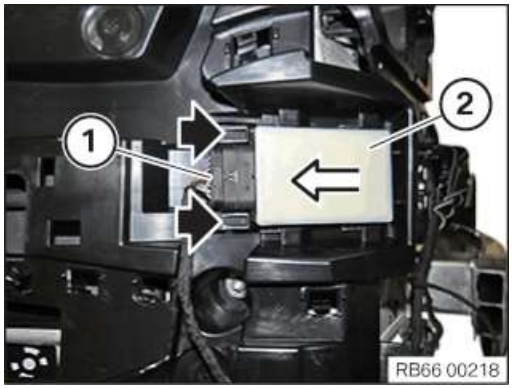
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Unlock and remove funnel (1) from retaining lugs (2).

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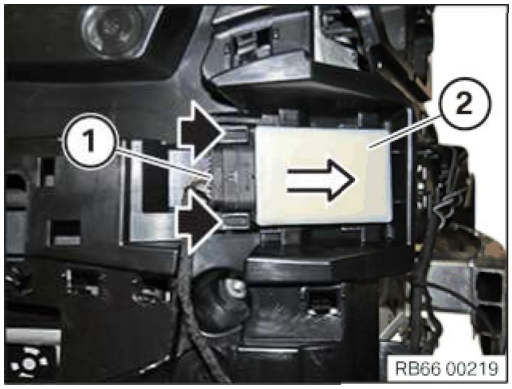


- Unlock and disconnect connector (1).
- Unlock the latch mechanisms and remove the lane change warning sensor (2) in the direction of the arrow.

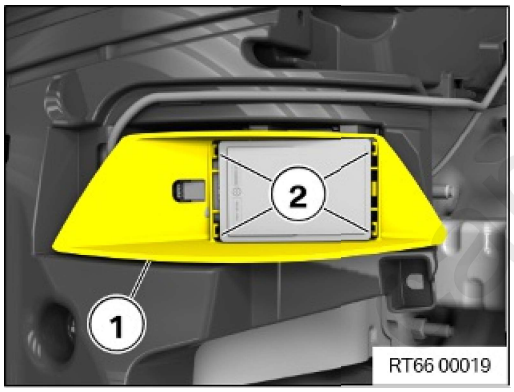
10 – Installing rear side radar sensor

NOTICE

Description is for left component only. Procedure on the right side is identical.



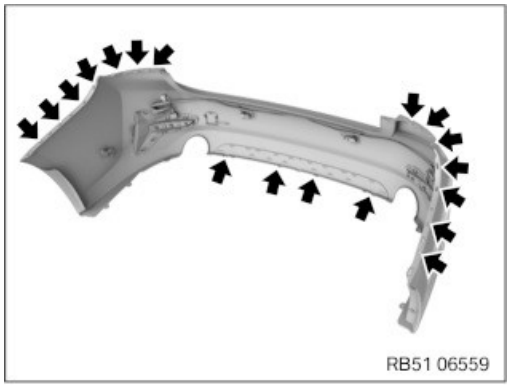
- Correctly position the lane change warning sensor (2) and move it in the direction of the arrow.
- Make sure that the latch mechanisms are properly locked at the marked points.
- Insert and connect the connector (1).



- Position funnel (1) and lock it with the retaining lugs (2).

POSTPROCESSES

11 – Install rear bumper panel



Check

- Check the latch mechanisms (arrows) for damage.

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Result

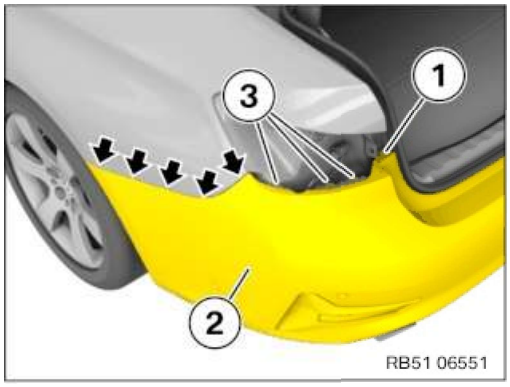
» Latch mechanisms are damaged.

Measure

- Renew the bumper panel.



- Position the bumper panel (1) straight with the help of another person.
- Connect all connectors and lock.



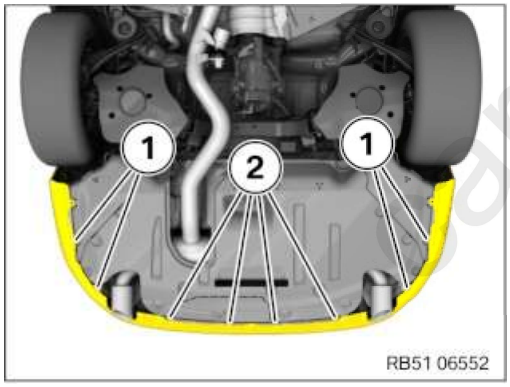
NOTICE

Perform the operations on the left and right side.

- Clip bumper panel (2) on the side in the latch mechanisms (arrows).
- Clip bumper panel (2) in the area of the rear light housing in latch mechanisms (3).
- Tighten down screw (1).

Rear bumper panel guide on rear centre guide

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm



- Clip bumper panel into latch mechanisms (2).
- Tighten the screws (1).

Mounting for rear bumper panel on support for rear bumper panel

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm



NOTICE

Perform the operations on the left and right side.

- Tighten the screws (1).

Rear bumper panel to rear side panel

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

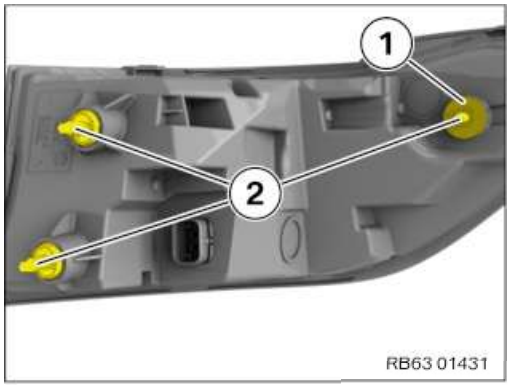
12 – Install both rear lights on the side panel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Install the rear light on the side panel**

Check



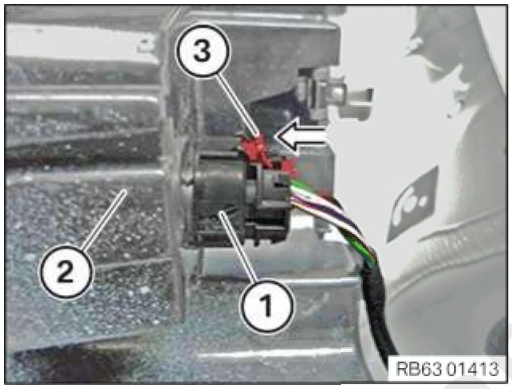
- Check the seal (1) for damage and renew if necessary.
- Check the threaded inserts (2) for damage.

Result

» The threaded inserts are damaged.

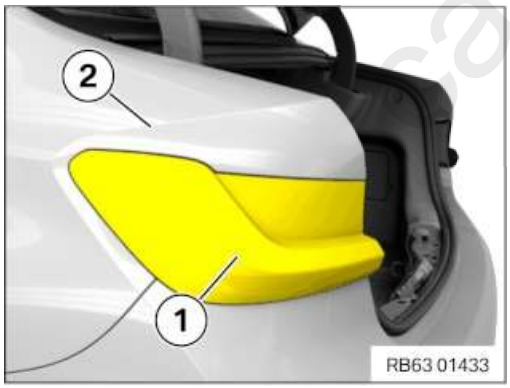
Measure

- Replace rear light.

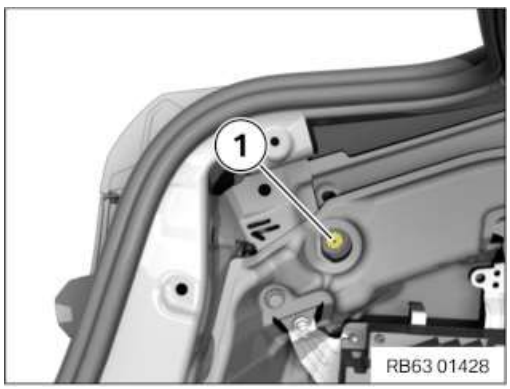


- Connect the connector (1) to the rear light on the side panel (2).

  The connector (1) must engage audibly.
- Lock the lock in direction of arrow (3).

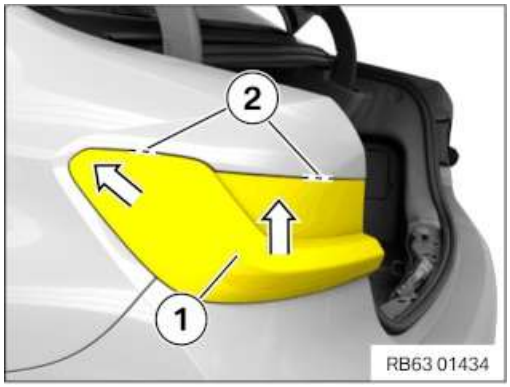


- Position the rear light on the side panel (1) on the side panel (2).

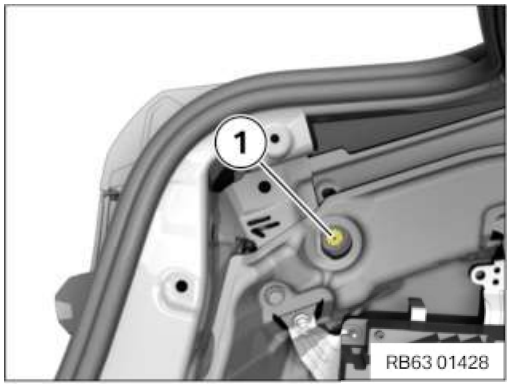


- Position the nut (1).

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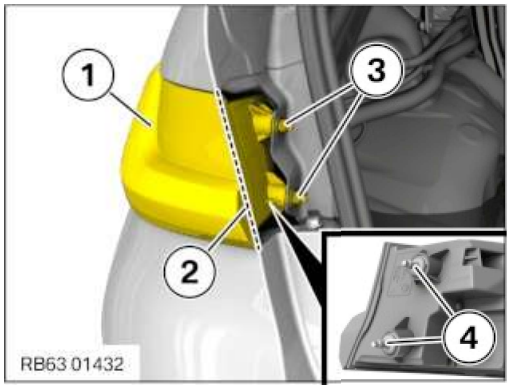
- Position the rear light on the side panel (1) to the front at the top.
- Move the contact surfaces (2) of the rear light on the side panel (1) upwards (arrow) so that they are in place.
- Hold the rear light on the side panel (1) in position.



- Tighten nut (1).

Rear light to side panel

Nut M5, AF 8		Tightening torque	3 Nm



- Position nuts (3).
- Align rear light on the side panel (1) with the connecting line (2).

  The alignment is done through threaded inserts (4) on the rear light on the side panel (2).
- If necessary, correct the position of the rear light on the side panel (1) by twisting threaded inserts (4).
- Tighten nuts (3).

Rear light to side panel

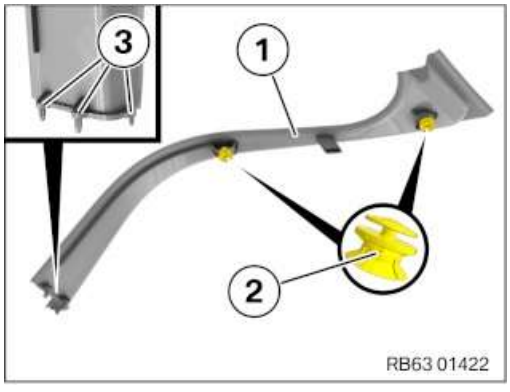
Nut M5, AF 10		Tightening torque	4 Nm

13 – Installing both trims of the water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the trim in the water channel**



Check

- Check the clips (2) for damage and renew if necessary.
- Check the guides (3) for damage.

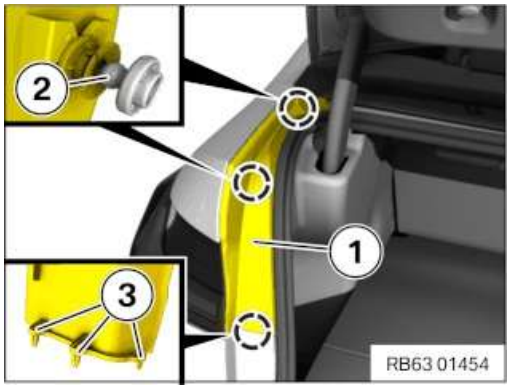
cardiagn.com

Result

» The guides are damaged.

Measure

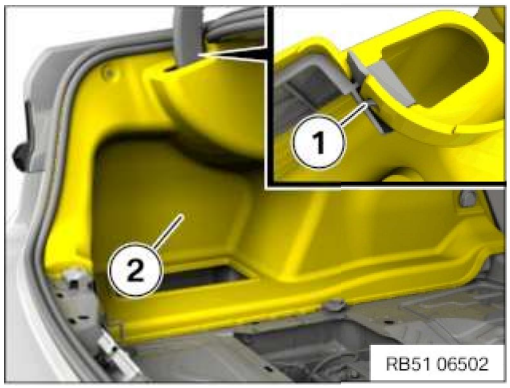
- Renew trim in the water channel .



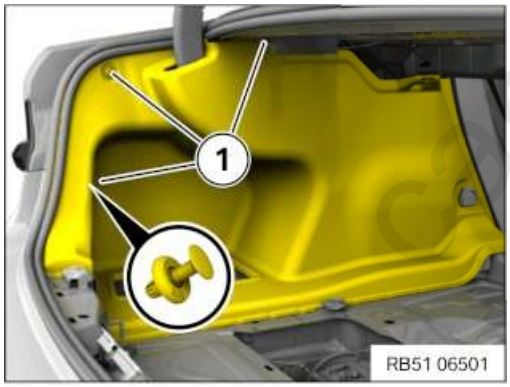
- Insert the trim in the water channel (1) in the guides (3).
- Clip in the water channel trim (1) from the front into the ball pin (2).

14 – Installing both luggage compartment wheel arch trim panels partially

▸ Partially installing the left luggage compartment wheel arch trim panel

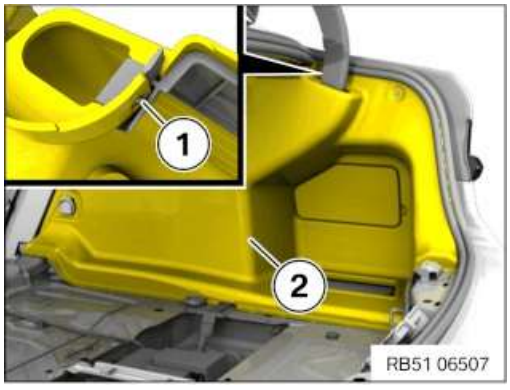


- Feed the luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal of the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



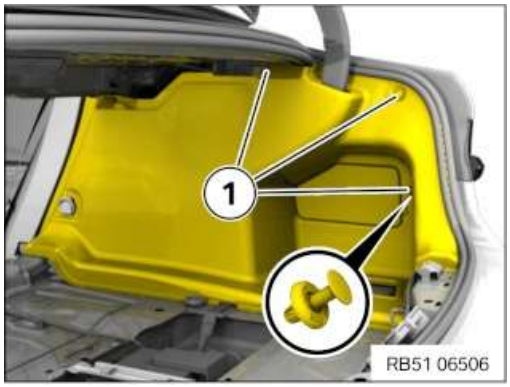
- Secure expanding rivet (1).

▸ Partially installing right luggage compartment wheel arch trim panel



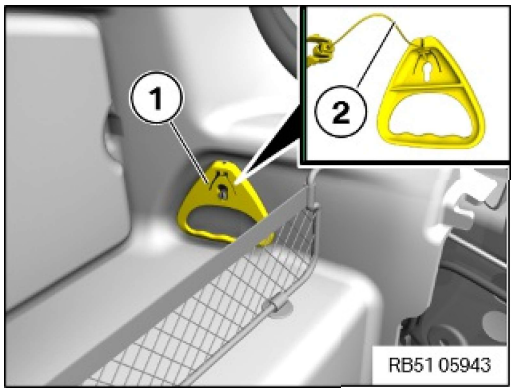
- Guide luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal for tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).

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- Secure expanding rivet (1).

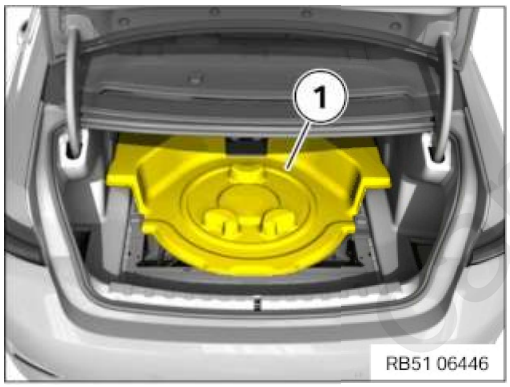
▷ **If installed: Installing the emergency tailgate release handle (additional work for US version)**



- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

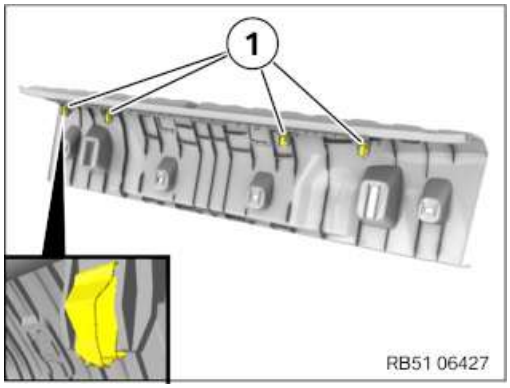
◁

15 – Install the luggage compartment well in front



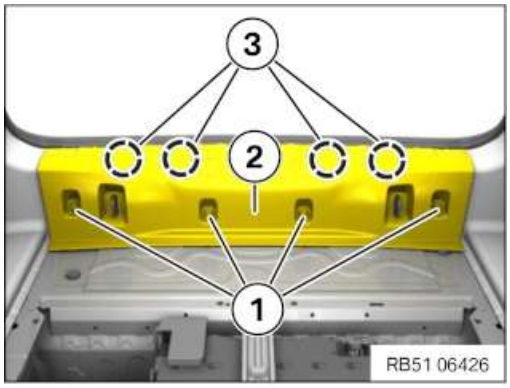
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

16 – Installing loading edge trim



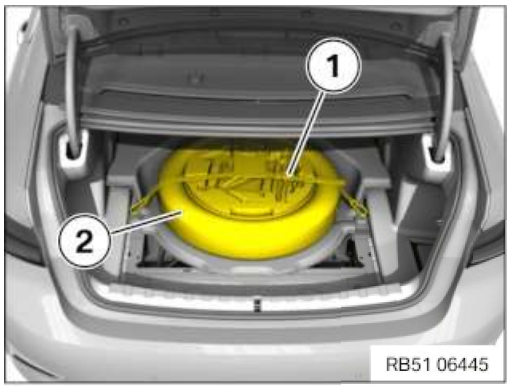
- Check the clamps (1) for damage and renew if necessary.

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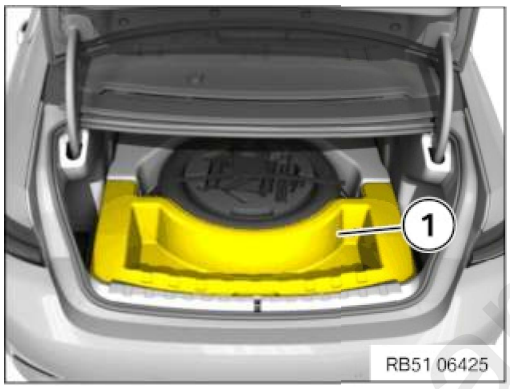
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

17 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

18 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

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Rear bumper panel guide on rear centre guide Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Mounting for rear bumper panel on support for rear bumper panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Rear bumper panel to rear side panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Rear light to side panel Used in step 12

Nut M5, AF 8		Tightening torque	3 Nm

Rear light to side panel Used in step 12

Nut M5, AF 10		Tightening torque	4 Nm

Links

Repair instructions	Used in step
61 13 ... Unlocking and disconnecting different plug connections	7

cardiagn.com

66 32 185 Removing and installing rear radar sensor short range right

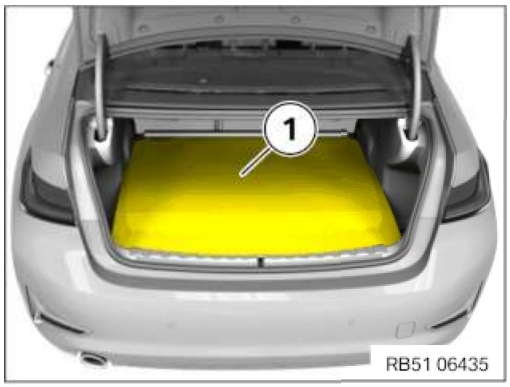
TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

Do not attach labels in the sampling range of the sensor.

PRELIMINARY WORK

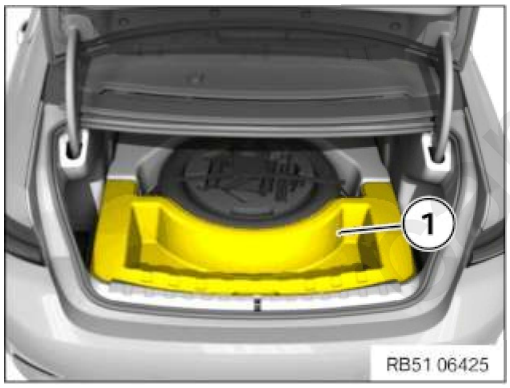
1 – Removing the luggage compartment floor trim panel



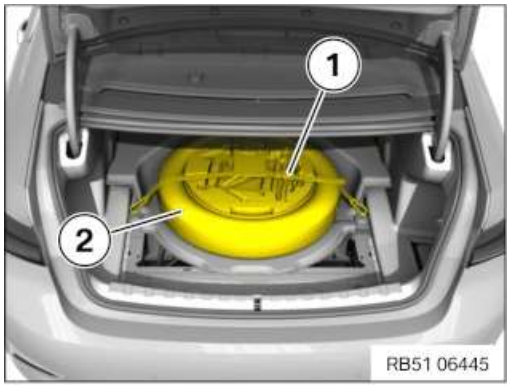
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

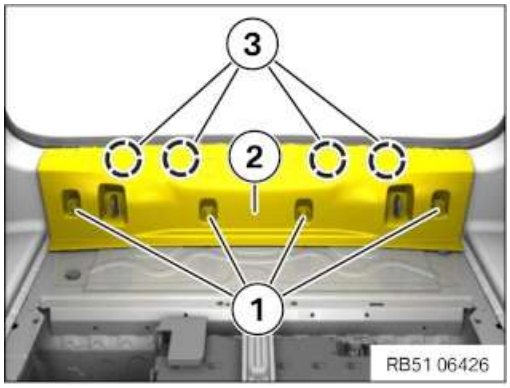


- Remove rear luggage compartment well (1).



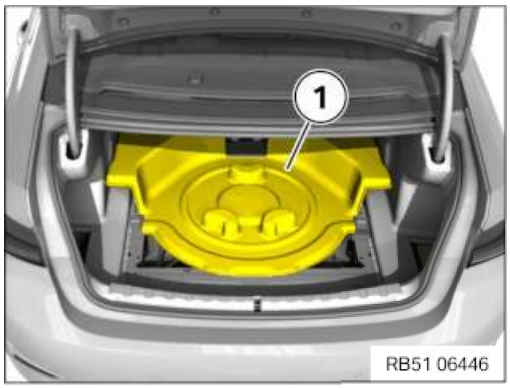
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

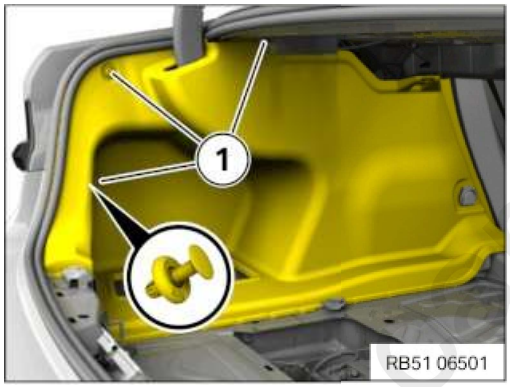
4 – Removing front luggage compartment well



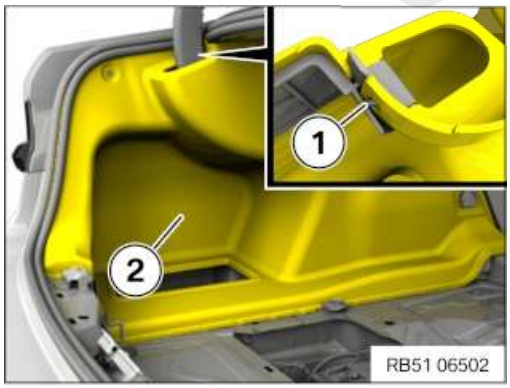
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Removing both luggage compartment wheel arch trim panels partially

▸ Partially remove luggage compartment wheel arch trim on left



- Loosen the expanding rivet (1).

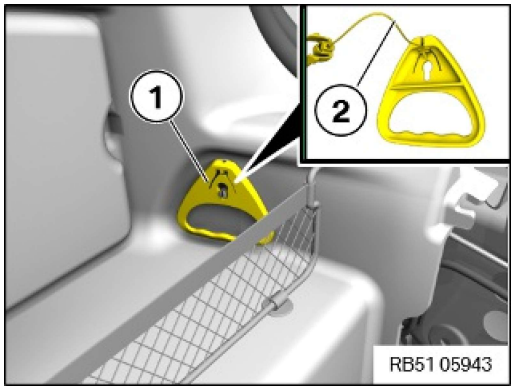


- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

▸ Partially remove luggage compartment wheel arch panel on right

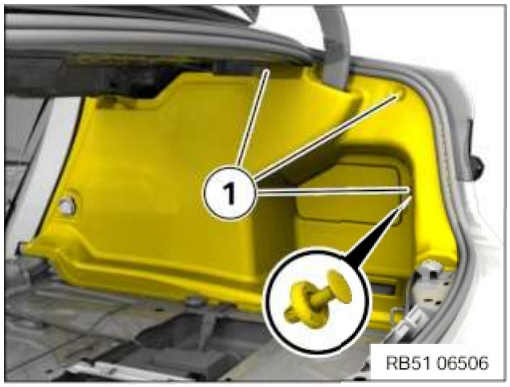
▹ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)

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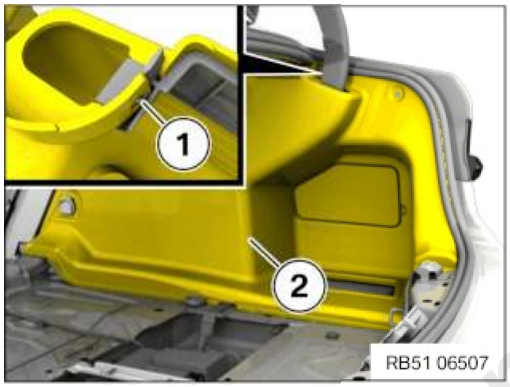


- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

◁



- Loosen the expanding rivet (1).



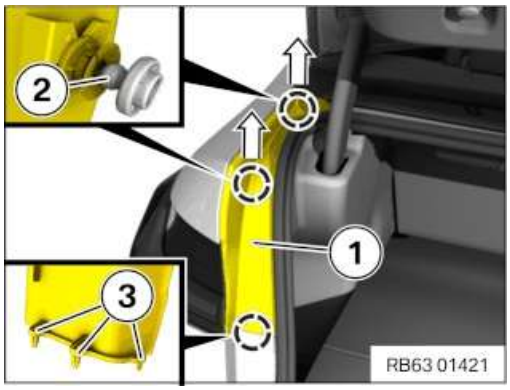
- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

6 – Removing both trims of water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim in the water channel**



- Unclip the trim in the water channel (1) from the ball pins (2) towards the top.
- Release the trim in the water channel (1) from the guides (3) and remove it.

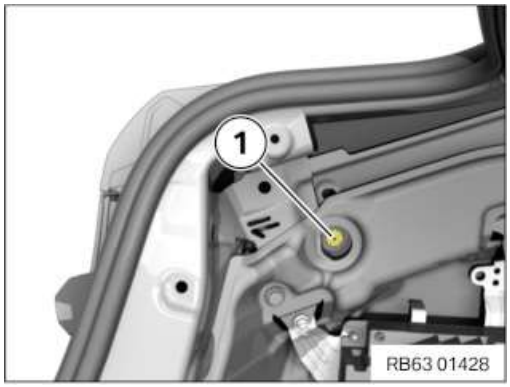
7 – Remove both rear lights from the side panel

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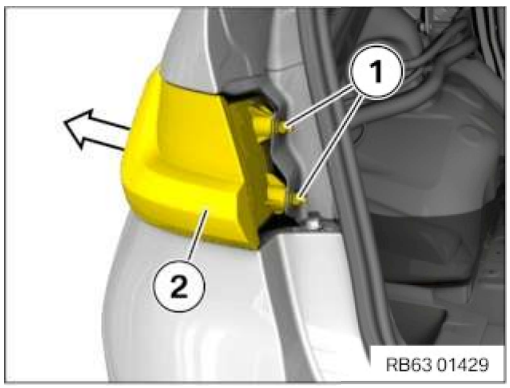
NOTICE

Description is for left component only. Procedure on the right side is identical.

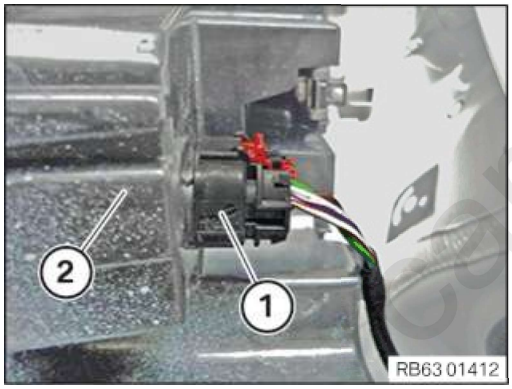
▶ **Remove the rear light on the side panel**



- Loosen nut (1).



- Release the nuts (1) and feed out the rear light on the side panel (2) in the direction of arrow.



TECHNICAL INFORMATION

Observe note on unlocking and disconnecting plug connections.

For additional information see: 6113 ... Unlocking and disconnecting different plug connections

- Unlock and disconnect plug connection (1) as described in position #28 in additional information.
- Remove the rear light on the side panel (2).

8 – Remove rear bumper panel

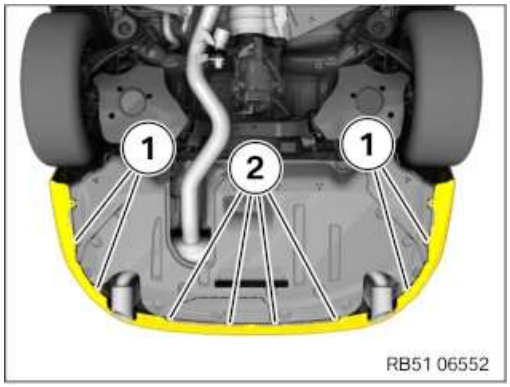


NOTICE

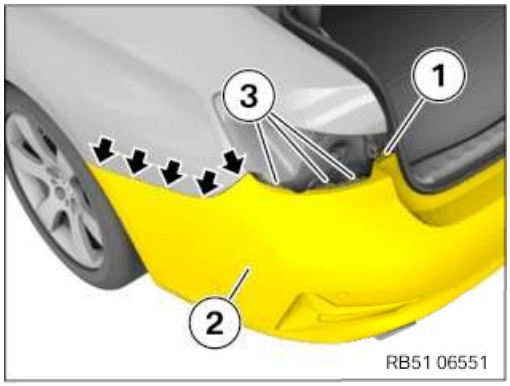
Perform the operations on the left and right side.

- Loosen screws (1).

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- Loosen screws (1).
- Release the bumper panel on latch mechanisms (2) with a suitable tool.



NOTICE

Perform the operations on the left and right side.

- Loosen screw (1).
- Release bumper panel (2) in the area of the rear light housing from latch mechanisms (3) with a suitable tool.
- Release side bumper panel (2) from the remaining latch mechanisms (arrows).



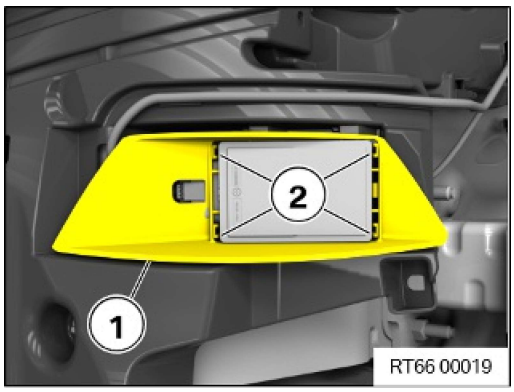
- Remove bumper panel (2) straight to the rear with the help of an auxiliary person.
- Unlock all plug connections and disconnect.
- Remove the bumper panel (1).

MAIN WORK

9 – Removing the rear side radar sensor

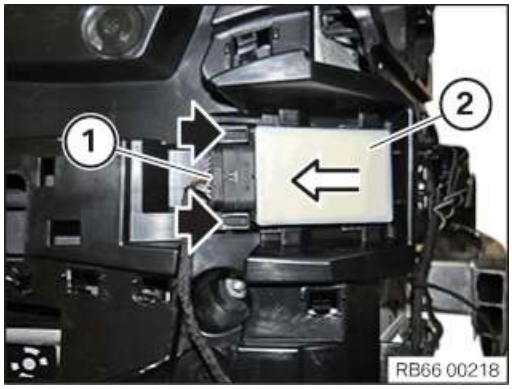
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Unlock and remove funnel (1) from retaining lugs (2).

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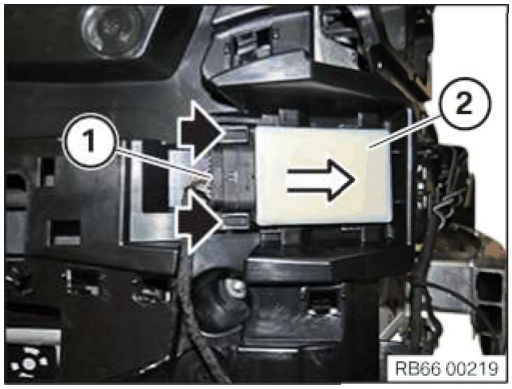


- Unlock and disconnect connector (1).
- Unlock the latch mechanisms and remove the lane change warning sensor (2) in the direction of the arrow.

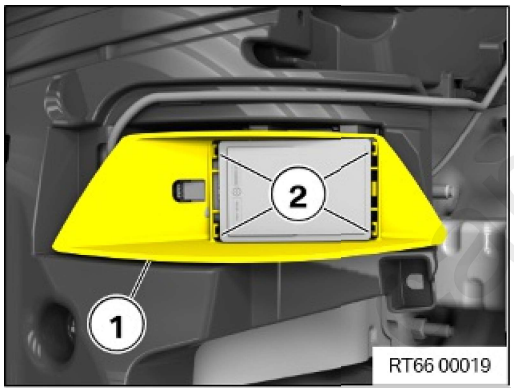
10 – Installing rear side radar sensor

NOTICE

Description is for left component only. Procedure on the right side is identical.



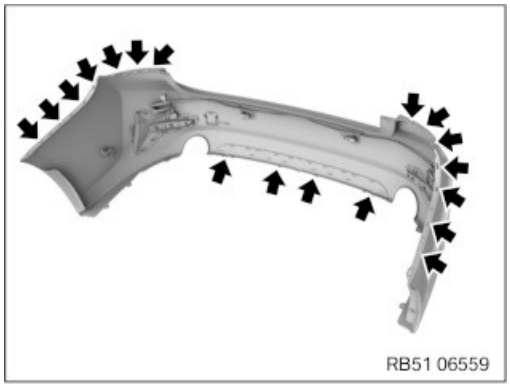
- Correctly position the lane change warning sensor (2) and move it in the direction of the arrow.
- Make sure that the latch mechanisms are properly locked at the marked points.
- Insert and connect the connector (1).



- Position funnel (1) and lock it with the retaining lugs (2).

POSTPROCESSES

11 – Install rear bumper panel



Check

- Check the latch mechanisms (arrows) for damage.

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Result

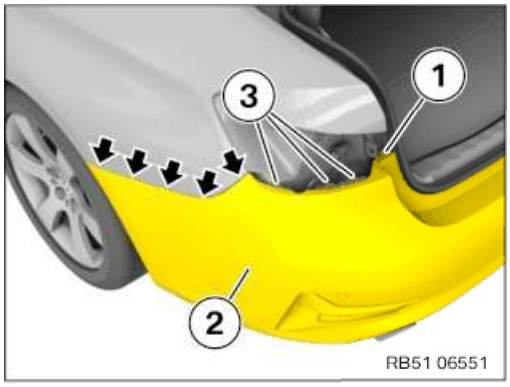
» Latch mechanisms are damaged.

Measure

- Renew the bumper panel.



- Position the bumper panel (1) straight with the help of another person.
- Connect all connectors and lock.



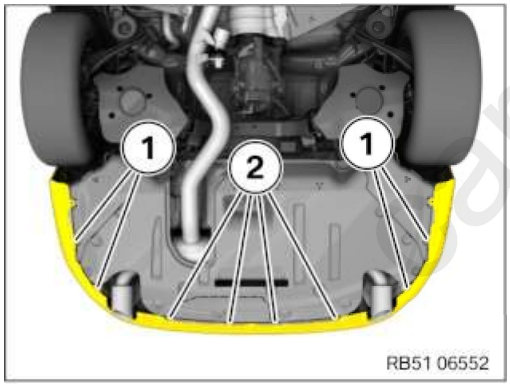
NOTICE

Perform the operations on the left and right side.

- Clip bumper panel (2) on the side in the latch mechanisms (arrows).
- Clip bumper panel (2) in the area of the rear light housing in latch mechanisms (3).
- Tighten down screw (1).

Rear bumper panel guide on rear centre guide

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm



- Clip bumper panel into latch mechanisms (2).
- Tighten the screws (1).

Mounting for rear bumper panel on support for rear bumper panel

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm



NOTICE

Perform the operations on the left and right side.

- Tighten the screws (1).

Rear bumper panel to rear side panel

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

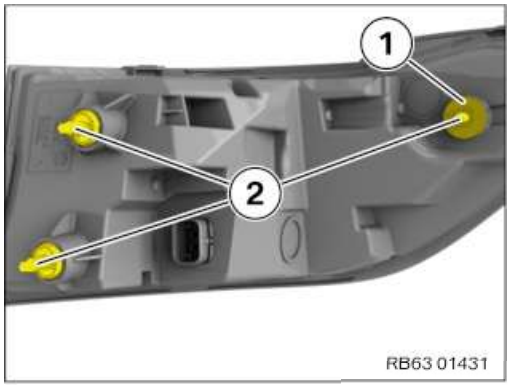
12 – Install both rear lights on the side panel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Install the rear light on the side panel**

Check



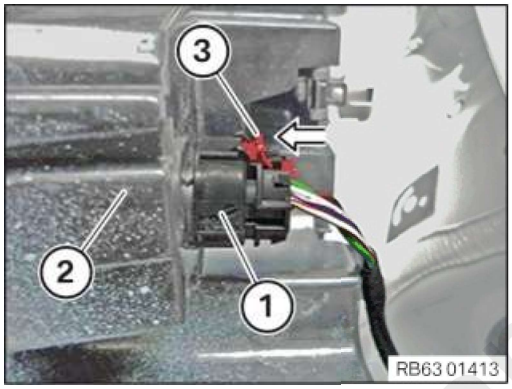
- Check the seal (1) for damage and renew if necessary.
- Check the threaded inserts (2) for damage.

Result

» The threaded inserts are damaged.

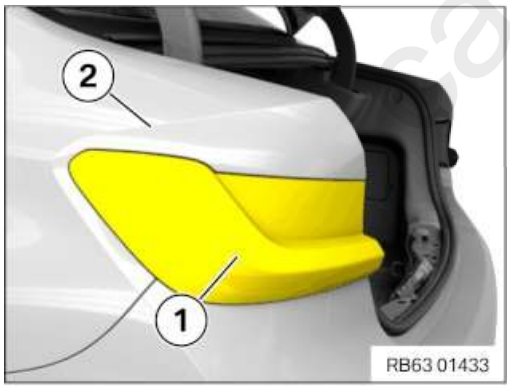
Measure

- Replace rear light.

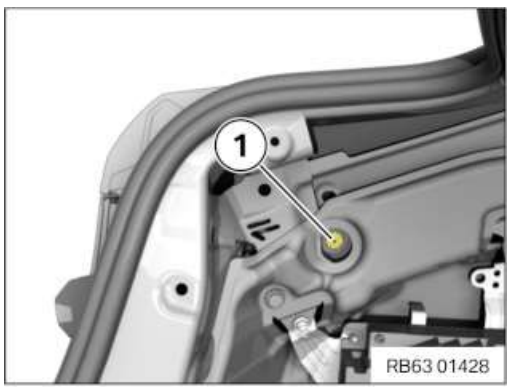


- Connect the connector (1) to the rear light on the side panel (2).

  The connector (1) must engage audibly.
- Lock the lock in direction of arrow (3).

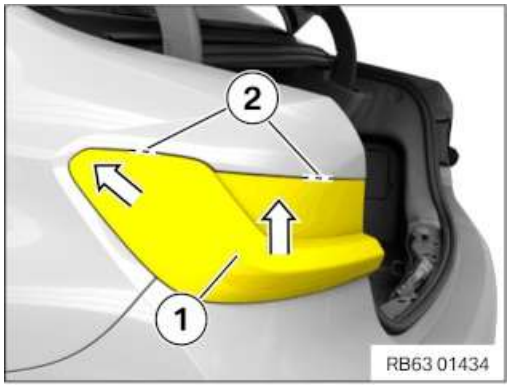


- Position the rear light on the side panel (1) on the side panel (2).

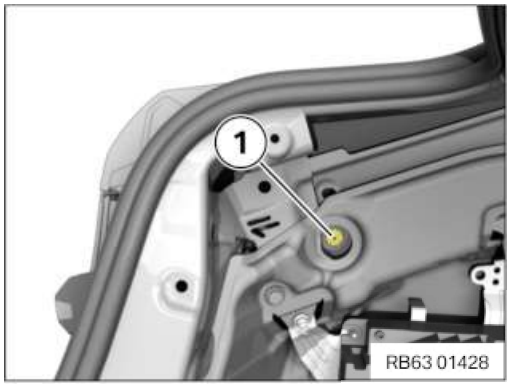


- Position the nut (1).

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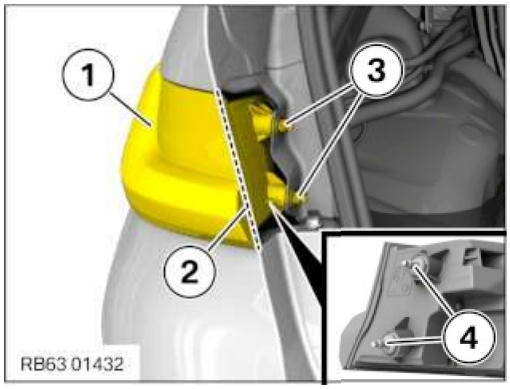
- Position the rear light on the side panel (1) to the front at the top.
- Move the contact surfaces (2) of the rear light on the side panel (1) upwards (arrow) so that they are in place.
- Hold the rear light on the side panel (1) in position.



- Tighten nut (1).

Rear light to side panel

Nut M5, AF 8		Tightening torque	3 Nm



- Position nuts (3).
- Align rear light on the side panel (1) with the connecting line (2).

  The alignment is done through threaded inserts (4) on the rear light on the side panel (2).
- If necessary, correct the position of the rear light on the side panel (1) by twisting threaded inserts (4).
- Tighten nuts (3).

Rear light to side panel

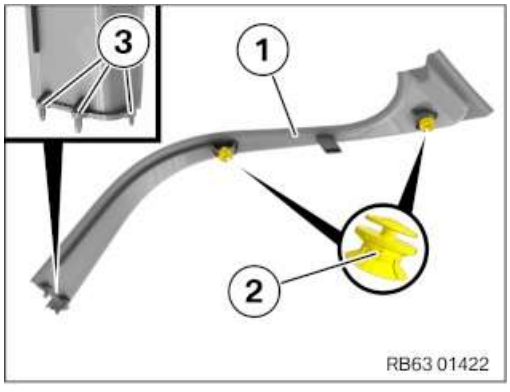
Nut M5, AF 10		Tightening torque	4 Nm

13 – Installing both trims of the water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the trim in the water channel**



Check

- Check the clips (2) for damage and renew if necessary.
- Check the guides (3) for damage.

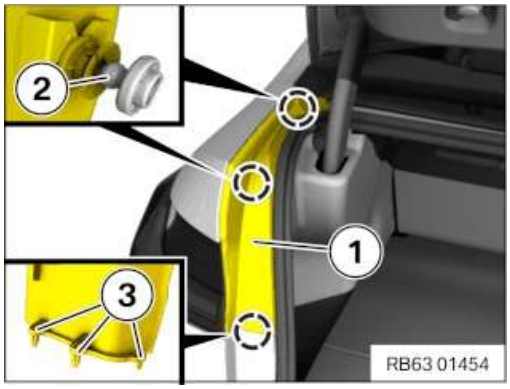
cardiagn.com

Result

» The guides are damaged.

Measure

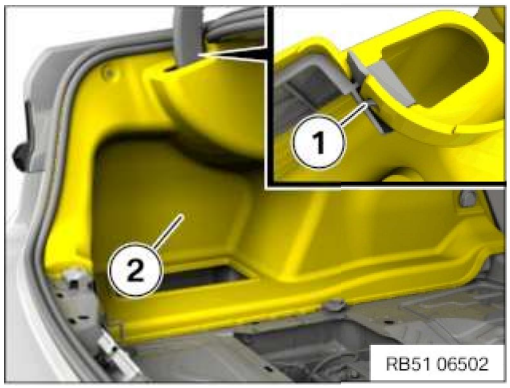
- Renew trim in the water channel .



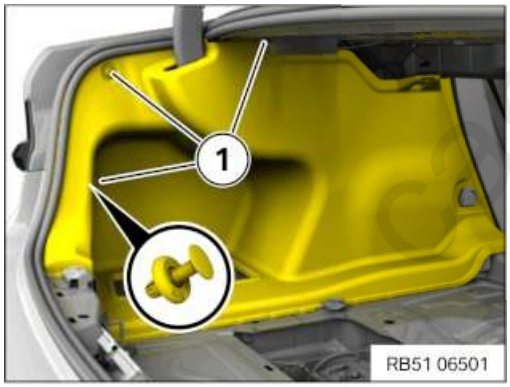
- Insert the trim in the water channel (1) in the guides (3).
- Clip in the water channel trim (1) from the front into the ball pin (2).

14 – Installing both luggage compartment wheel arch trim panels partially

▸ Partially installing the left luggage compartment wheel arch trim panel

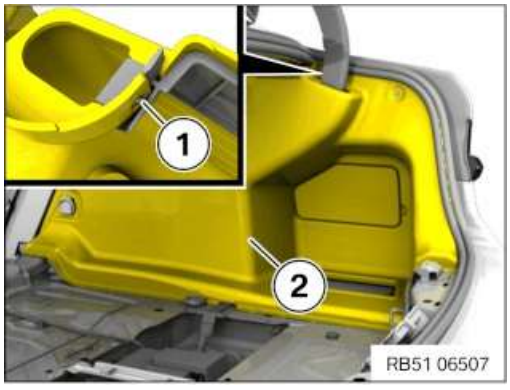


- Feed the luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal of the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



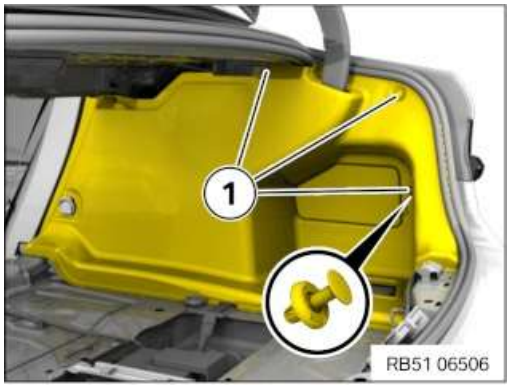
- Secure expanding rivet (1).

▸ Partially installing right luggage compartment wheel arch trim panel



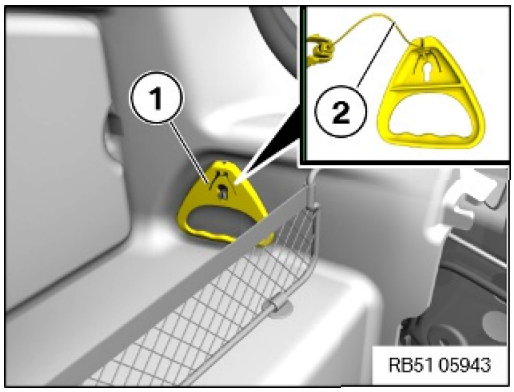
- Guide luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal for tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).

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- Secure expanding rivet (1).

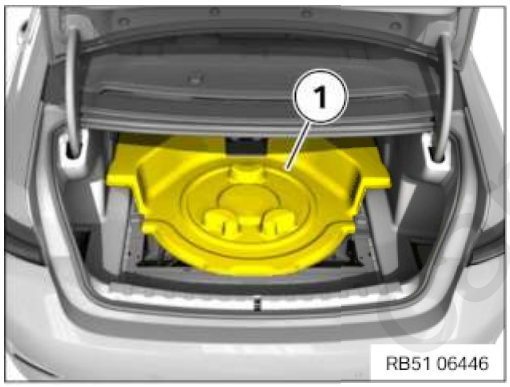
▷ **If installed: Installing the emergency tailgate release handle (additional work for US version)**



- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

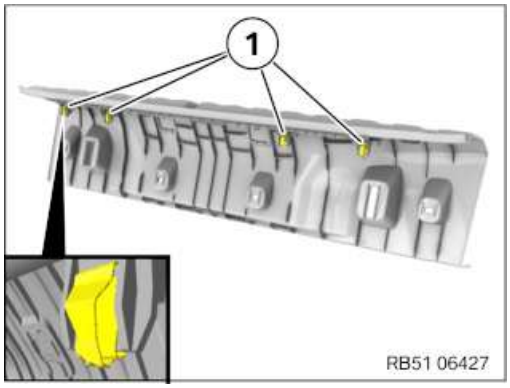
◁

15 – Install the luggage compartment well in front



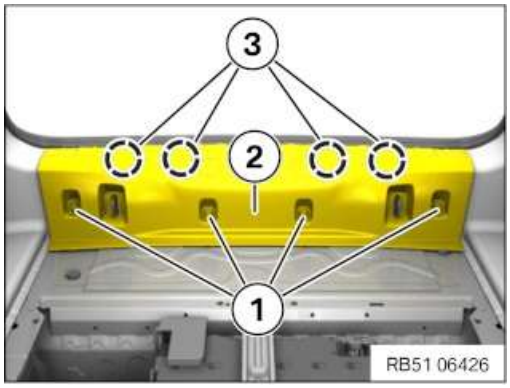
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

16 – Installing loading edge trim



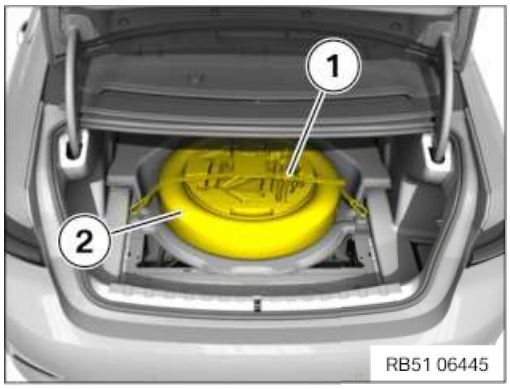
- Check the clamps (1) for damage and renew if necessary.

carfdiagn.com



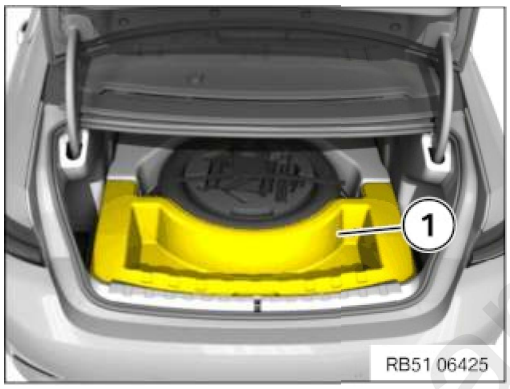
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

17 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

18 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

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Rear bumper panel guide on rear centre guide Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Mounting for rear bumper panel on support for rear bumper panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Rear bumper panel to rear side panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Rear light to side panel Used in step 12

Nut M5, AF 8		Tightening torque	3 Nm

Rear light to side panel Used in step 12

Nut M5, AF 10		Tightening torque	4 Nm

Links

Repair instructions	Used in step
61 13 ... Unlocking and disconnecting different plug connections	7

cardiagn.com

66 32 165 Removing and installing side radar sensor short range front left

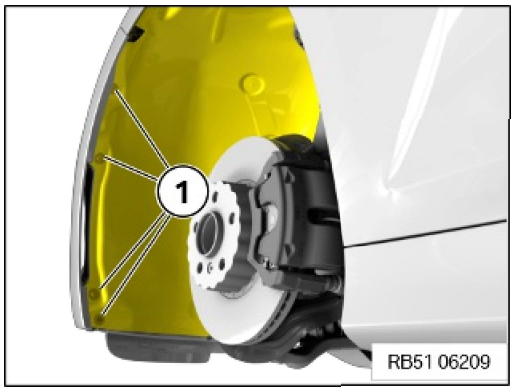
TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

Do not attach labels in the sampling range of the sensor.

PRELIMINARY WORK

1 – Partially removing front wheel arch trim panel



NOTICE

To provide a better overview: Schematic diagram without front wheel.

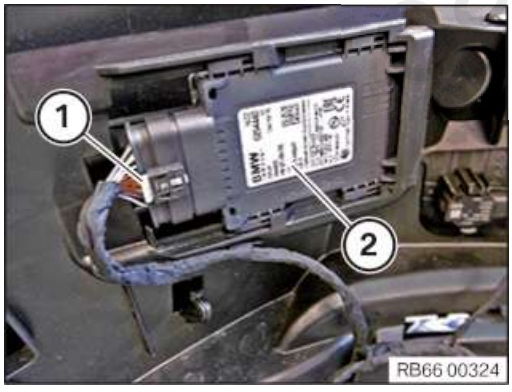
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

MAIN WORK

2 – Removing front side radar

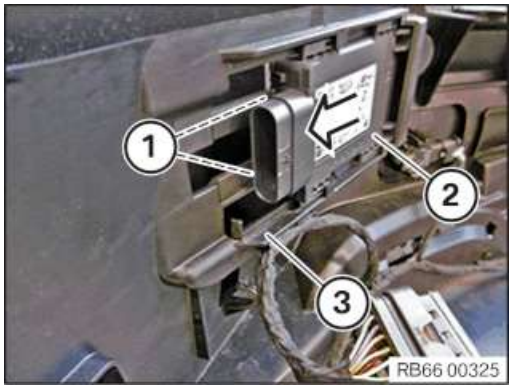
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Unlock and disconnect the connector (1) on the side radar (2).

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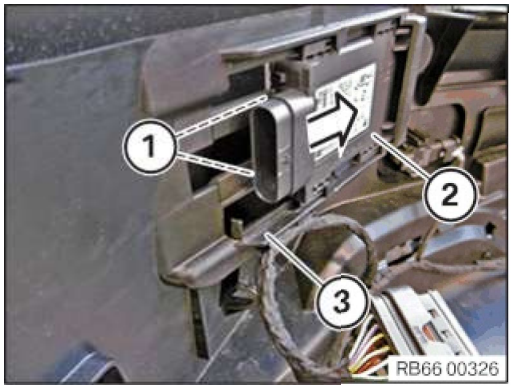


- Unlock lock (1).
- Push the side radar (2) out of the holder in the direction of the arrow (3) and remove it.

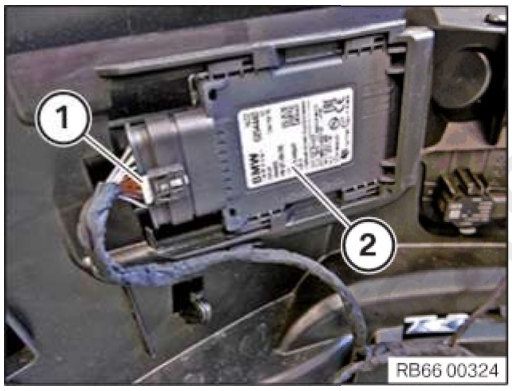
3 – Installing front side radar

NOTICE

Description is for left component only. Procedure on the right side is identical.



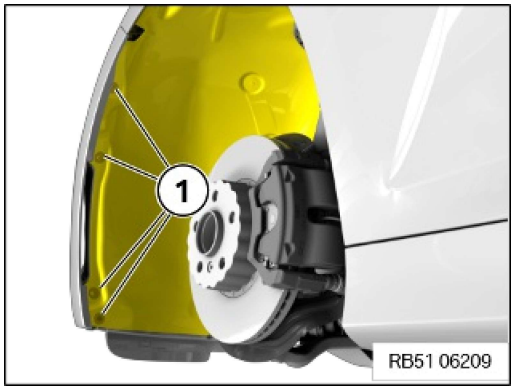
- Slide side radar (2) into holder (3) in the direction of the arrow.
- Lock lock (1).



- Connect and lock connector (1) on side radar (2).

POSTPROCESSES

4 – Partially installing front wheel arch trim panel



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

tdiagn.com

Additional Information

Overview of Tightening Torques

Wheel arch trim panel, front Used in step 4

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

cardiagn.com

66 32 170 Removing and installing side radar sensor short range front right

TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

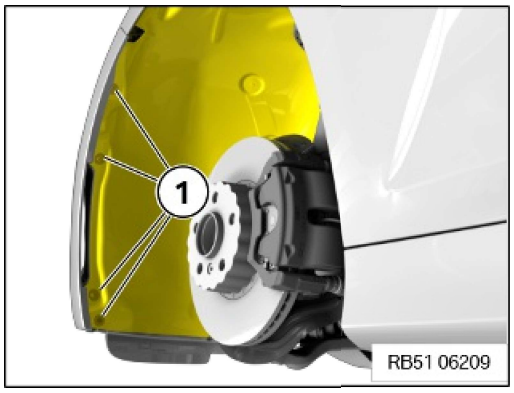
Do not attach labels in the sampling range of the sensor.

PRELIMINARY WORK

1 – Partially removing front right wheel arch trim panel

NOTICE

Description is for left component only. Procedure on the right side is identical.



NOTICE

To provide a better overview: Schematic diagram without front wheel.

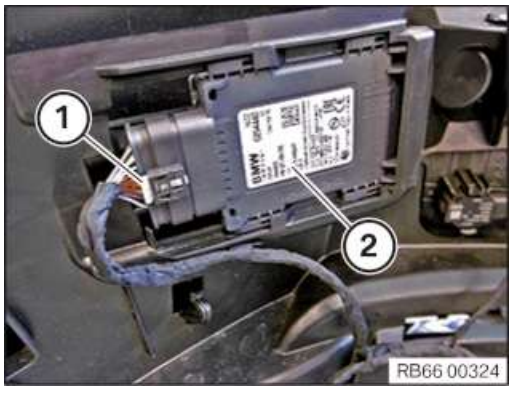
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

MAIN WORK

2 – Removing front side radar

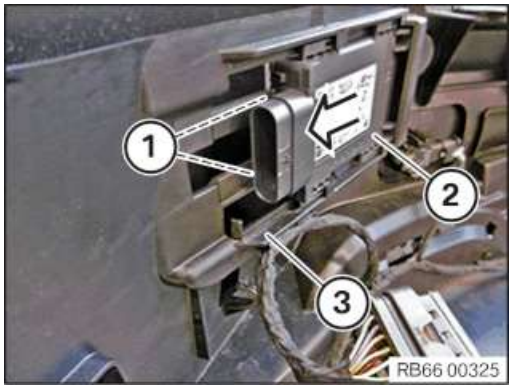
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Unlock and disconnect the connector (1) on the side radar (2).

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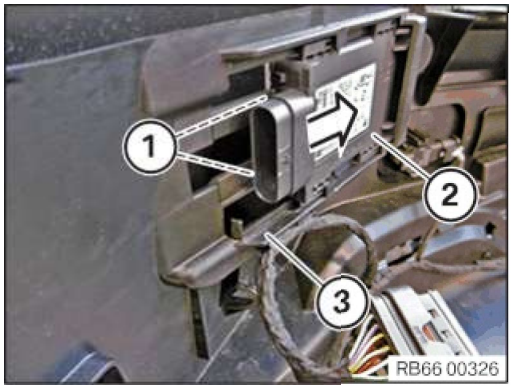


- Unlock lock (1).
- Push the side radar (2) out of the holder in the direction of the arrow (3) and remove it.

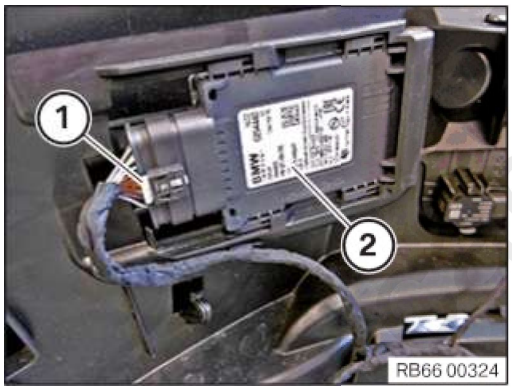
3 – Installing front side radar

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Slide side radar (2) into holder (3) in the direction of the arrow.
- Lock lock (1).



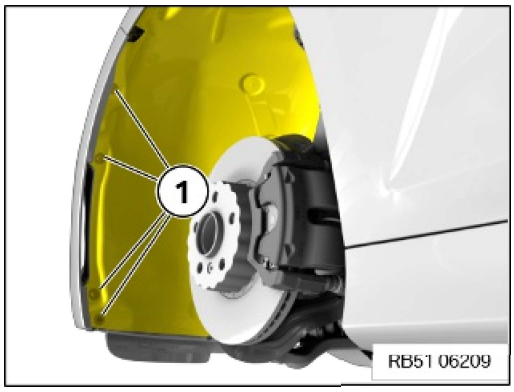
- Connect and lock connector (1) on side radar (2).

fdiagn.com

4 – Partly installing the right front wheel arch trim panel

NOTICE

Description is for left component only. Procedure on the right side is identical.



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Additional Information

Overview of Tightening Torques

Wheel arch trim panel, front Used in step 4

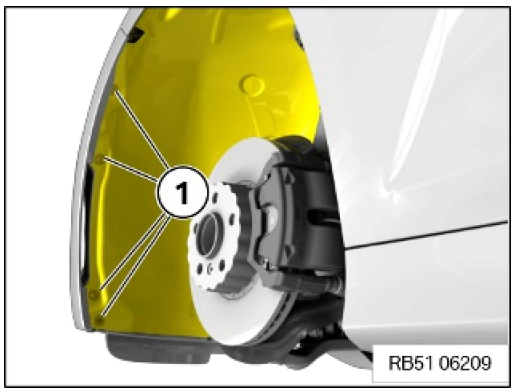
Thermoplastic hexagon screw		Tightening torque	2,6 Nm

cardiagn.com

66 33 110 Removing and installing ultrasonic sensor for Parking Manoeuvring Assistant, front left

PRELIMINARY WORK

1 – Partially removing front wheel arch trim panel



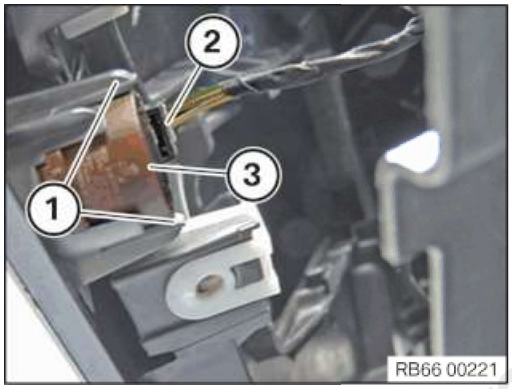
NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

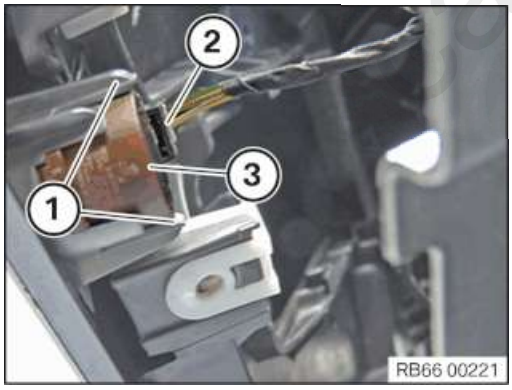
MAIN WORK

2 – Removing the ultrasonic sensor for the front Parking Manoeuvring Assistant (PMA)



- Unlock the latch mechanisms (1).
- Unlock plug connection (2) and disconnect.
- Remove the ultrasonic sensor (3).

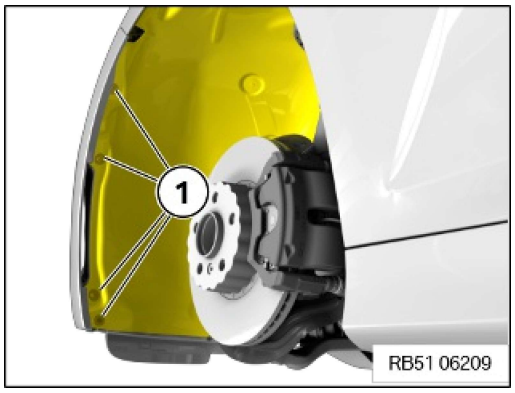
3 – Installing the ultrasonic sensor for the front Parking Manoeuvring Assistant (PMA)



- Position the ultrasonic sensor (3) correctly and engage it in the latch mechanisms (1).
- Connect connectors (2) and lock.

cardiagn.com

4 – Partially installing front wheel arch trim panel



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Additional Information

Overview of Tightening Torques

Wheel arch trim panel, front Used in step 4

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

cardiagn.com

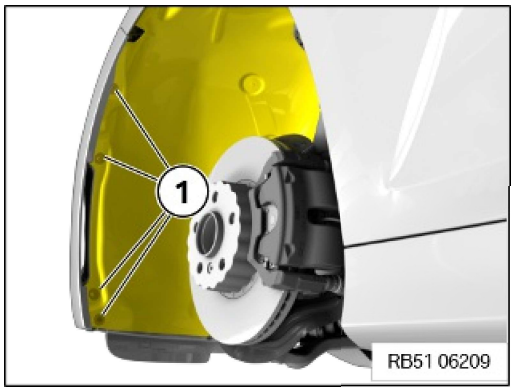
66 33 120 Removing and installing ultrasonic sensor for Parking Manoeuvring Assistant, front right

PRELIMINARY WORK

1 – Partially removing front right wheel arch trim panel

NOTICE

Description is for left component only. Procedure on the right side is identical.



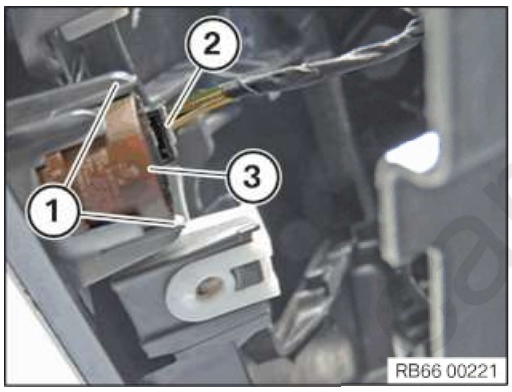
NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

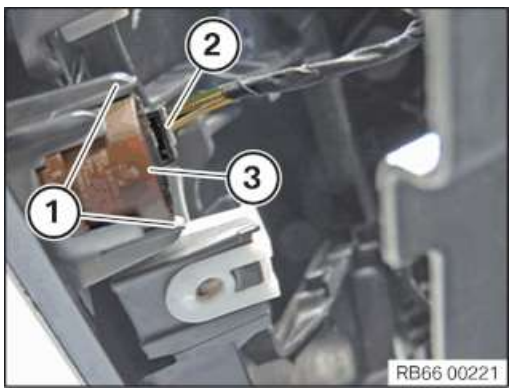
MAIN WORK

2 – Removing the ultrasonic sensor for the front Parking Manoeuvring Assistant (PMA)



- Unlock the latch mechanisms (1).
- Unlock plug connection (2) and disconnect.
- Remove the ultrasonic sensor (3).

3 – Installing the ultrasonic sensor for the front Parking Manoeuvring Assistant (PMA)



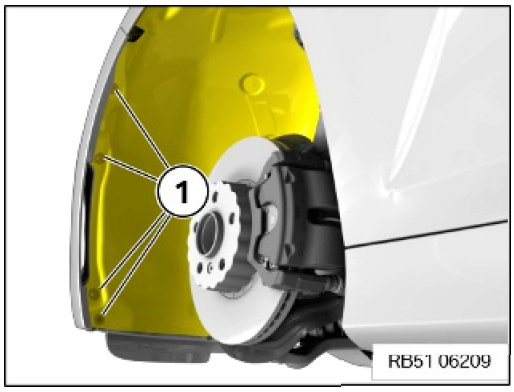
- Position the ultrasonic sensor (3) correctly and engage it in the latch mechanisms (1).
- Connect connectors (2) and lock.

bardiagn.com

4 – Partly installing the right front wheel arch trim panel

NOTICE

Description is for left component only. Procedure on the right side is identical.



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Additional Information

Overview of Tightening Torques

Wheel arch trim panel, front Used in step 4

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

cardiagn.com

66 33 140 Removing and installing ultrasonic sensor for Parking Manoeuvring Assistant, rear left

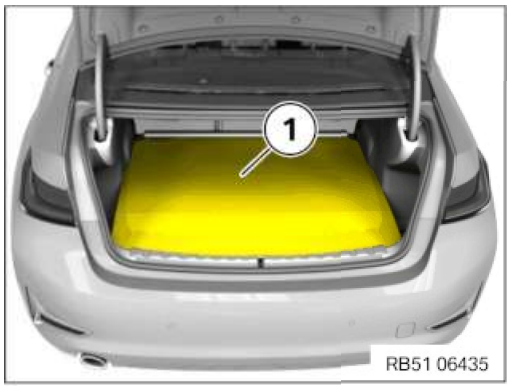
TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

Do not attach labels in the sampling range of the sensor.

PRELIMINARY WORK

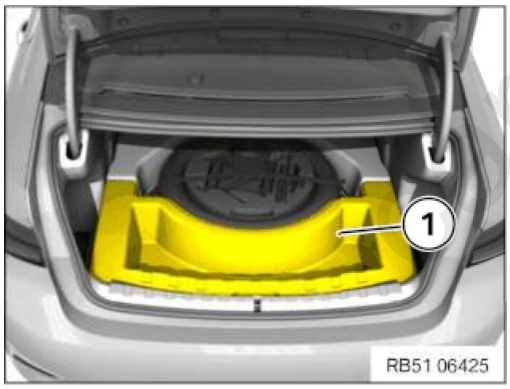
1 – Removing the luggage compartment floor trim panel



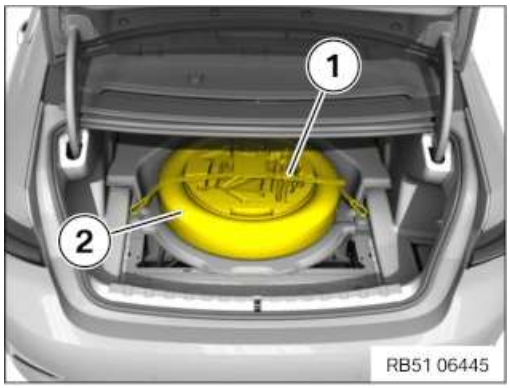
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

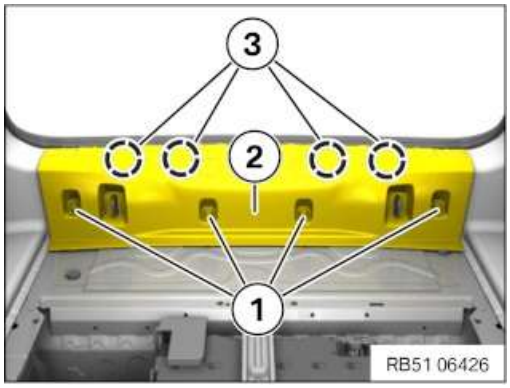


- Remove rear luggage compartment well (1).



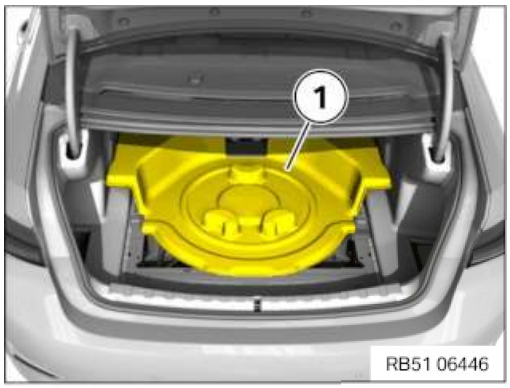
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

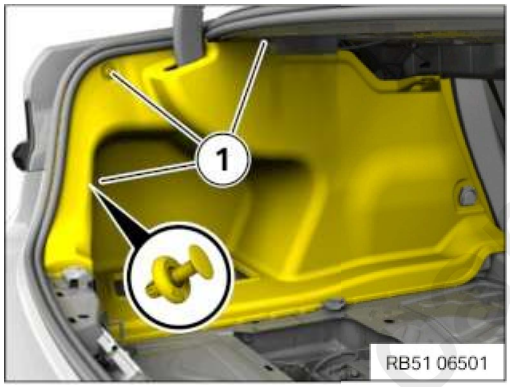
4 – Removing front luggage compartment well



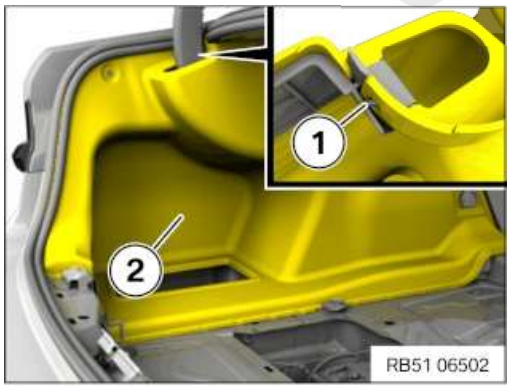
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Removing both luggage compartment wheel arch trim panels partially

▸ Partially remove luggage compartment wheel arch trim on left



- Loosen the expanding rivet (1).

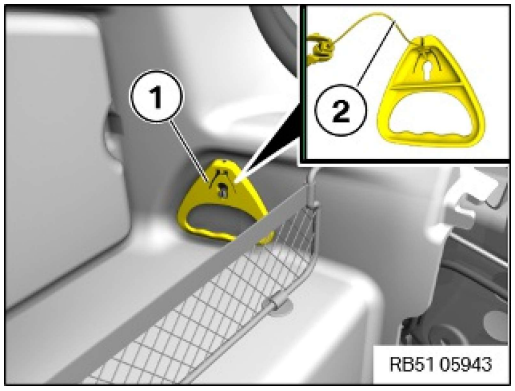


- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

▸ Partially remove luggage compartment wheel arch panel on right

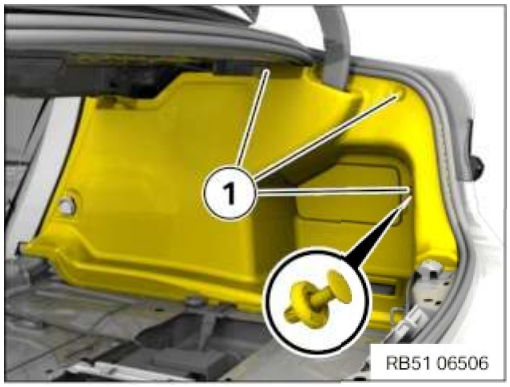
▹ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)

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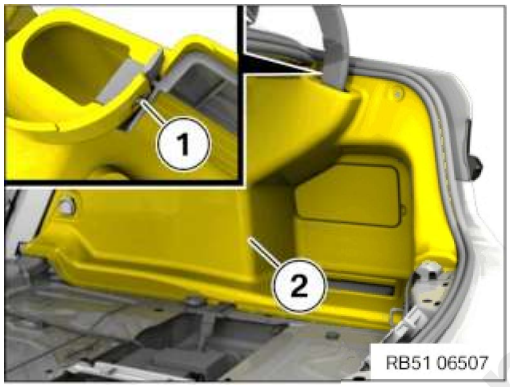


- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

◁



- Loosen the expanding rivet (1).



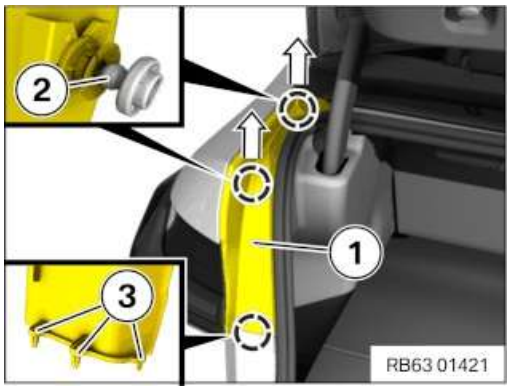
- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

6 – Removing both trims of water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim in the water channel**



- Unclip the trim in the water channel (1) from the ball pins (2) towards the top.
- Release the trim in the water channel (1) from the guides (3) and remove it.

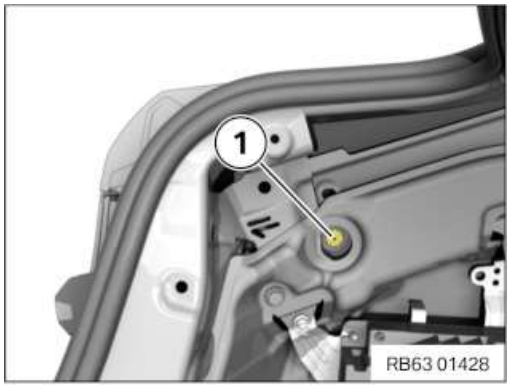
7 – Remove both rear lights from the side panel

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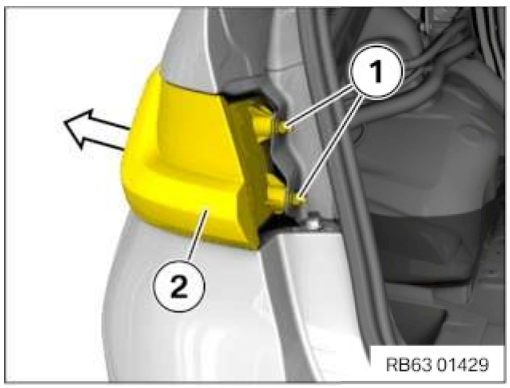
NOTICE

Description is for left component only. Procedure on the right side is identical.

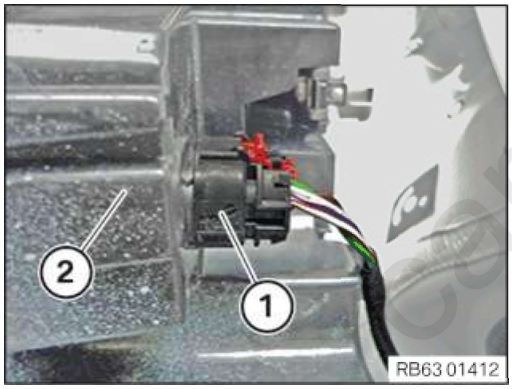
▶ **Remove the rear light on the side panel**



- Loosen nut (1).



- Release the nuts (1) and feed out the rear light on the side panel (2) in the direction of arrow.



TECHNICAL INFORMATION

Observe note on unlocking and disconnecting plug connections.

For additional information see: 6113 ... Unlocking and disconnecting different plug connections

- Unlock and disconnect plug connection (1) as described in position #28 in additional information.
- Remove the rear light on the side panel (2).

8 – Remove rear bumper panel

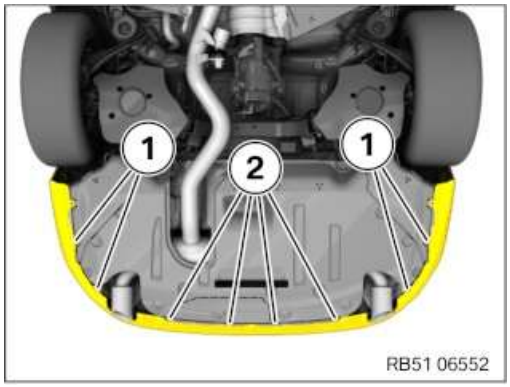


NOTICE

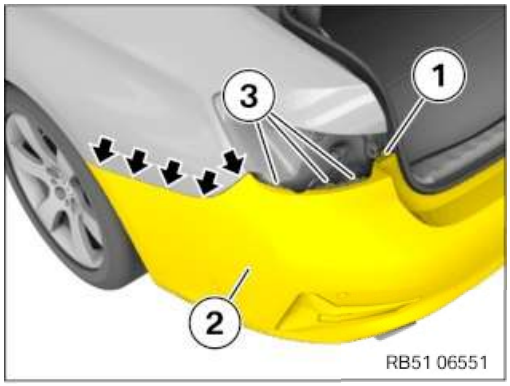
Perform the operations on the left and right side.

- Loosen screws (1).

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- Loosen screws (1).
- Release the bumper panel on latch mechanisms (2) with a suitable tool.



NOTICE

Perform the operations on the left and right side.

- Loosen screw (1).
- Release bumper panel (2) in the area of the rear light housing from latch mechanisms (3) with a suitable tool.
- Release side bumper panel (2) from the remaining latch mechanisms (arrows).

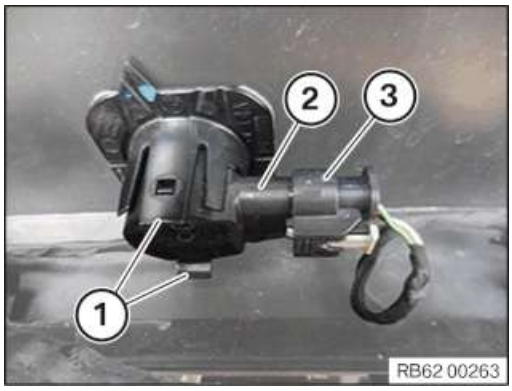


- Remove bumper panel (2) straight to the rear with the help of an auxiliary person.
- Unlock all plug connections and disconnect.
- Remove the bumper panel (1).

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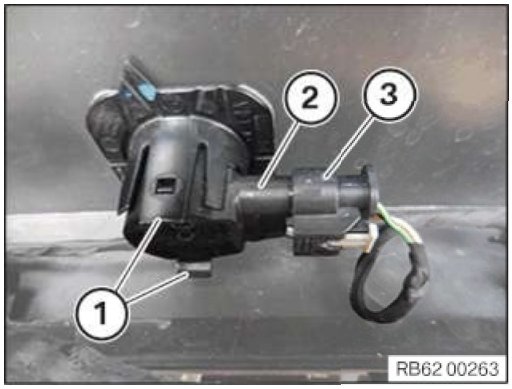
MAIN WORK

9 – Removing the ultrasonic sensor for the rear Parking Manoeuvring Assistant (PMA)



- Unlock the latch mechanisms (1).
- Unlock plug connection (3) and disconnect.
- Remove the ultrasonic sensor (2).

10 – Installing the ultrasonic sensor for the rear Parking Manoeuvring Assistant (PMA)

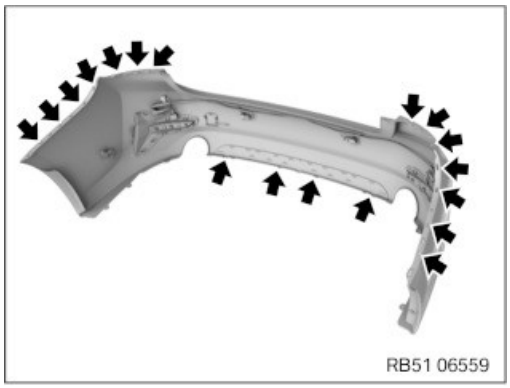


- Position the ultrasonic sensor (2) correctly and engage it in the latch mechanisms (1).
- Connect connectors (3) and lock.

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POSTPROCESSES

11 – Install rear bumper panel



Check

- Check the latch mechanisms (arrows) for damage.

Result

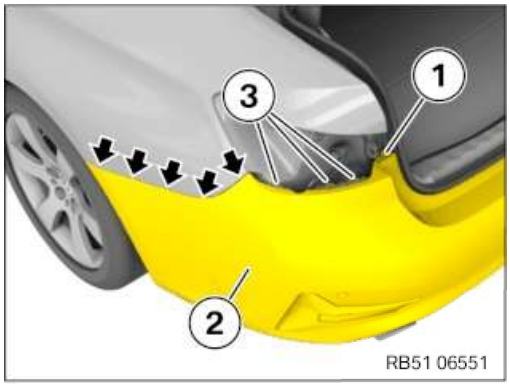
» Latch mechanisms are damaged.

Measure

- Renew the bumper panel.



- Position the bumper panel (1) straight with the help of another person.
- Connect all connectors and lock.



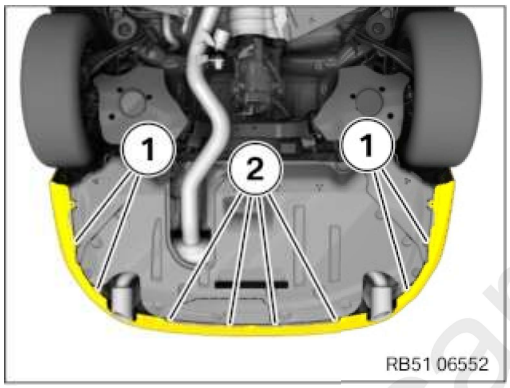
NOTICE

Perform the operations on the left and right side.

- Clip bumper panel (2) on the side in the latch mechanisms (arrows).
- Clip bumper panel (2) in the area of the rear light housing in latch mechanisms (3).
- Tighten down screw (1).

Rear bumper panel guide on rear centre guide

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm



- Clip bumper panel into latch mechanisms (2).
- Tighten the screws (1).

Mounting for rear bumper panel on support for rear bumper panel

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm



NOTICE

Perform the operations on the left and right side.

- Tighten the screws (1).

Rear bumper panel to rear side panel

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

12 – Install both rear lights on the side panel

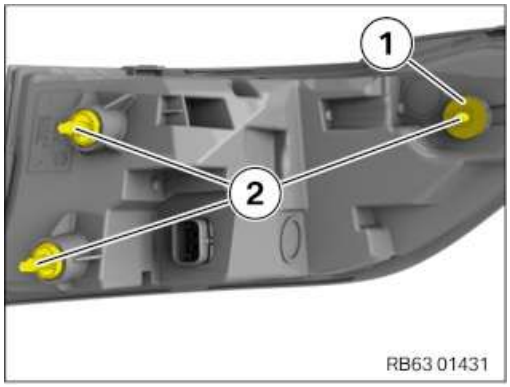
NOTICE

Description is for left component only. Procedure on the right side is identical.

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▸ **Install the rear light on the side panel**

Check



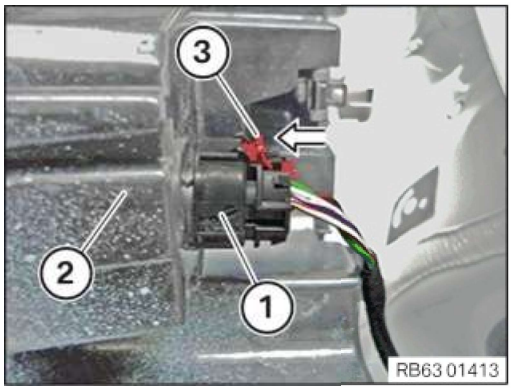
- Check the seal (1) for damage and renew if necessary.
- Check the threaded inserts (2) for damage.

Result

» The threaded inserts are damaged.

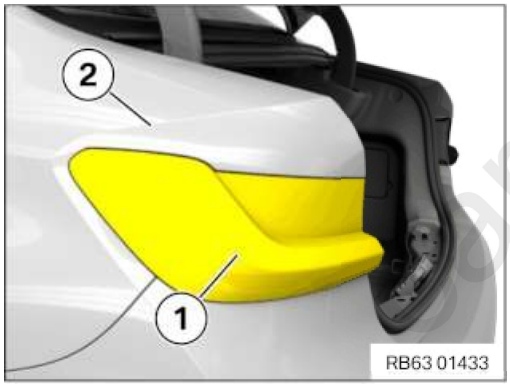
Measure

- Replace rear light.

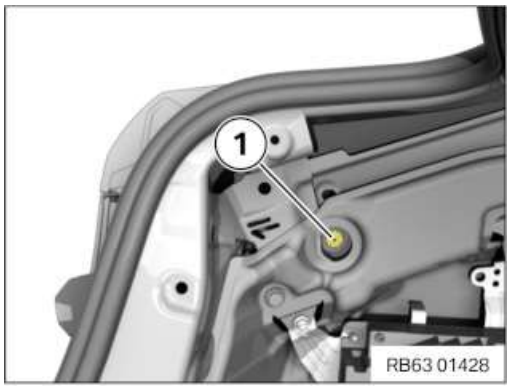


- Connect the connector (1) to the rear light on the side panel (2).

  The connector (1) must engage audibly.
- Lock the lock in direction of arrow (3).

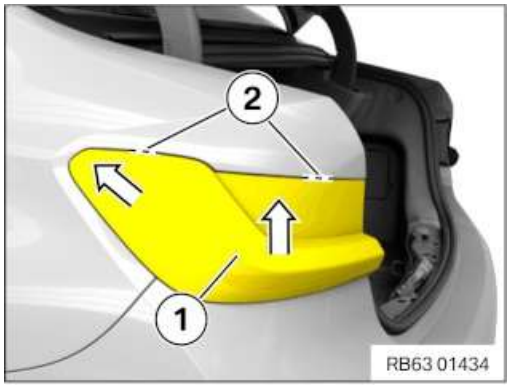


- Position the rear light on the side panel (1) on the side panel (2).

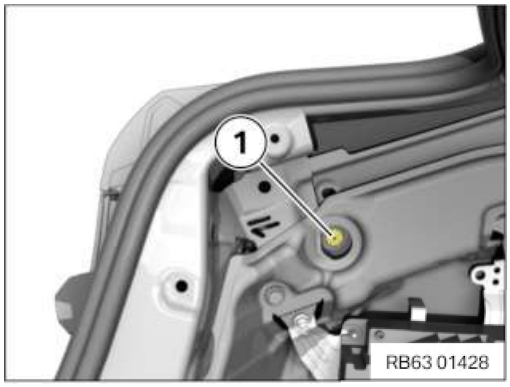


- Position the nut (1).

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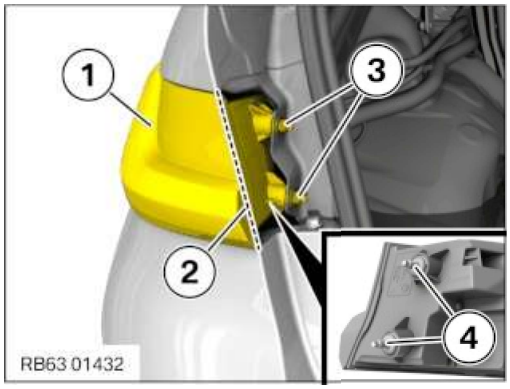
- Position the rear light on the side panel (1) to the front at the top.
- Move the contact surfaces (2) of the rear light on the side panel (1) upwards (arrow) so that they are in place.
- Hold the rear light on the side panel (1) in position.



- Tighten nut (1).

Rear light to side panel

Nut M5, AF 8		Tightening torque	3 Nm



- Position nuts (3).
- Align rear light on the side panel (1) with the connecting line (2).

  The alignment is done through threaded inserts (4) on the rear light on the side panel (2).
- If necessary, correct the position of the rear light on the side panel (1) by twisting threaded inserts (4).
- Tighten nuts (3).

Rear light to side panel

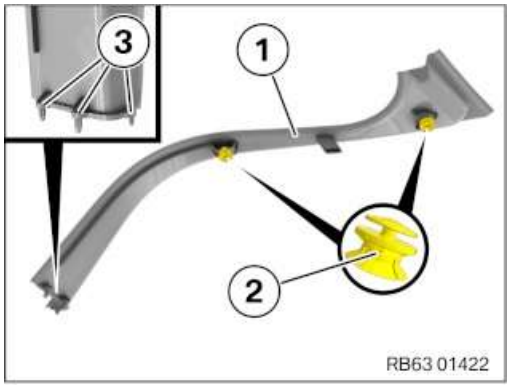
Nut M5, AF 10		Tightening torque	4 Nm

13 – Installing both trims of the water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the trim in the water channel**



Check

- Check the clips (2) for damage and renew if necessary.
- Check the guides (3) for damage.

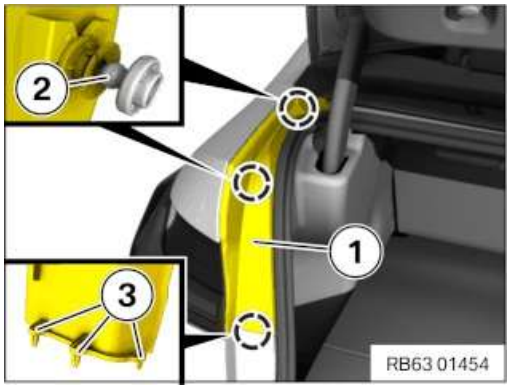
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Result

» The guides are damaged.

Measure

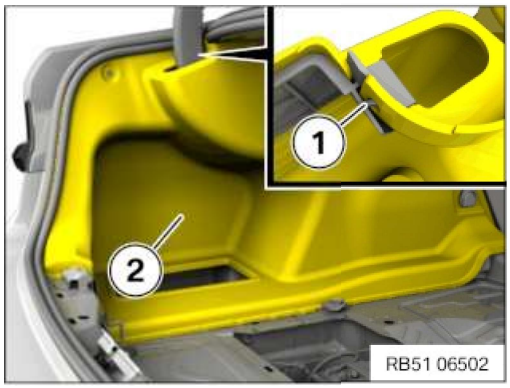
- Renew trim in the water channel .



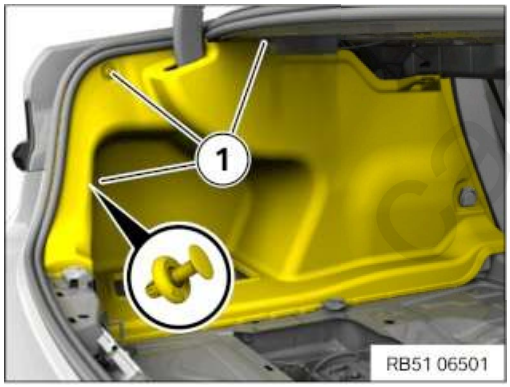
- Insert the trim in the water channel (1) in the guides (3).
- Clip in the water channel trim (1) from the front into the ball pin (2).

14 – Installing both luggage compartment wheel arch trim panels partially

▸ Partially installing the left luggage compartment wheel arch trim panel

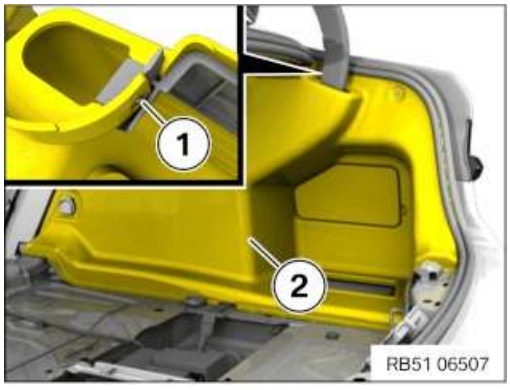


- Feed the luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal of the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



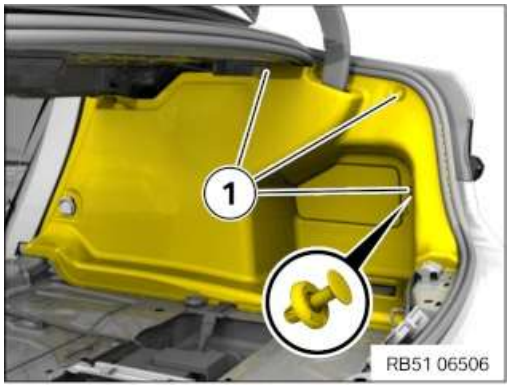
- Secure expanding rivet (1).

▸ Partially installing right luggage compartment wheel arch trim panel



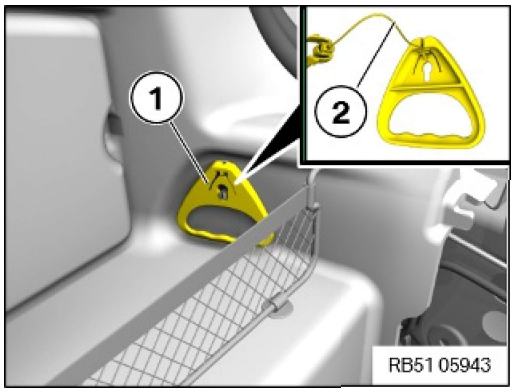
- Guide luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal for tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).

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- Secure expanding rivet (1).

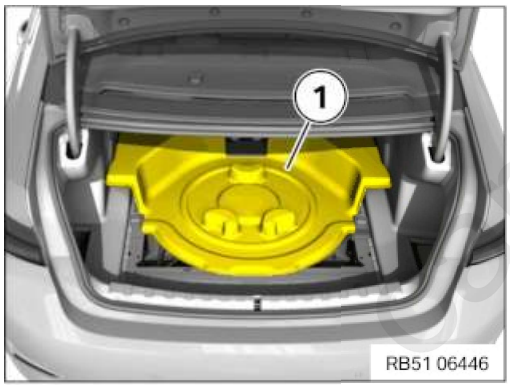
▷ **If installed: Installing the emergency tailgate release handle (additional work for US version)**



- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

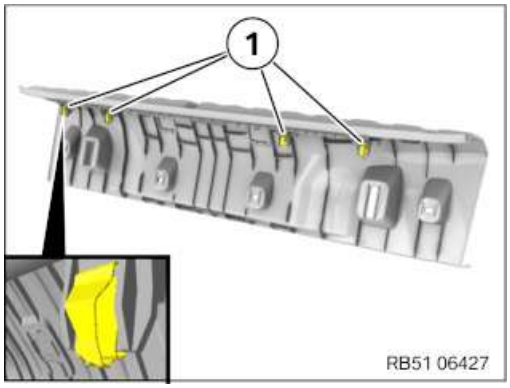
◁

15 – Install the luggage compartment well in front



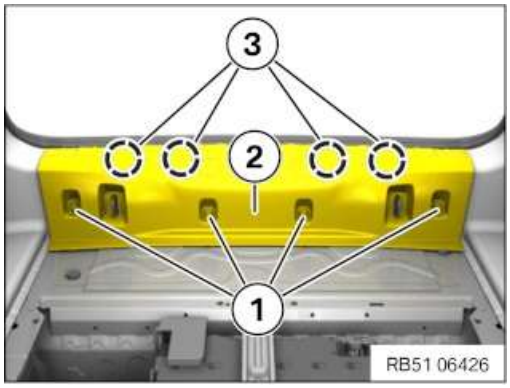
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

16 – Installing loading edge trim



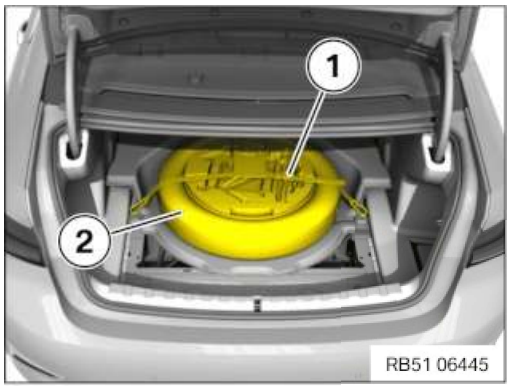
- Check the clamps (1) for damage and renew if necessary.

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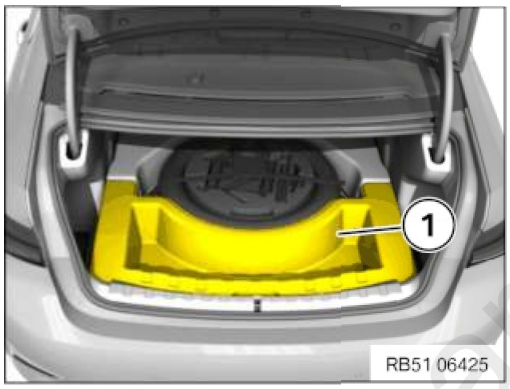
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

17 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

18 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

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Rear bumper panel guide on rear centre guide Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Mounting for rear bumper panel on support for rear bumper panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Rear bumper panel to rear side panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Rear light to side panel Used in step 12

Nut M5, AF 8		Tightening torque	3 Nm

Rear light to side panel Used in step 12

Nut M5, AF 10		Tightening torque	4 Nm

Links

Repair instructions	Used in step
61 13 ... Unlocking and disconnecting different plug connections	7

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66 33 150 Removing and installing ultrasonic sensor for Parking Manoeuvring Assistant, rear right

TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

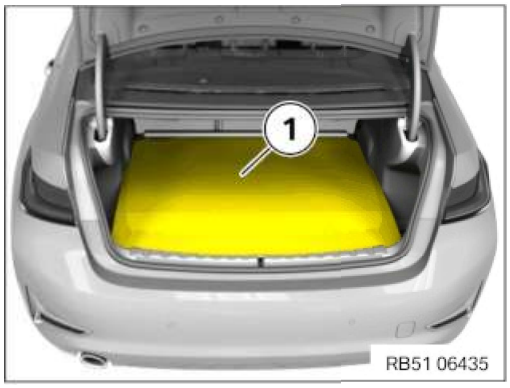
Do not attach labels in the sampling range of the sensor.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

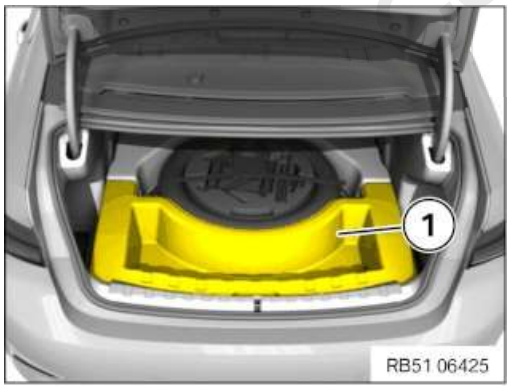
1 – Removing the luggage compartment floor trim panel



- Remove luggage compartment floor trim panel (1).

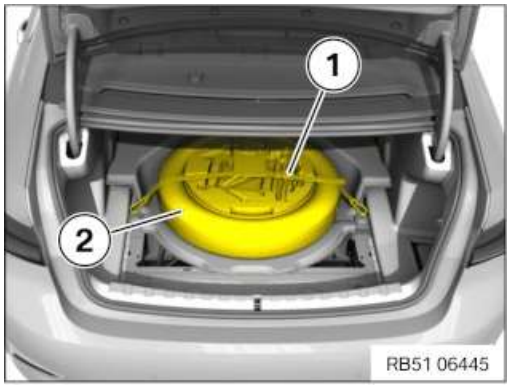
2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**



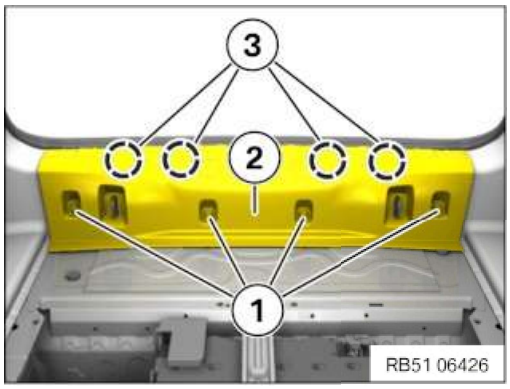
- Remove rear luggage compartment well (1).

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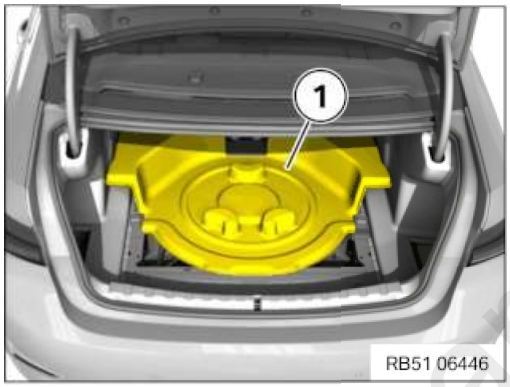
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

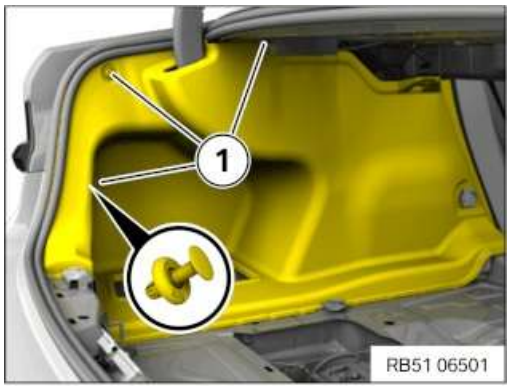
4 – Removing front luggage compartment well



- Guide out and remove front luggage compartment well (1) on the seat belt strap.

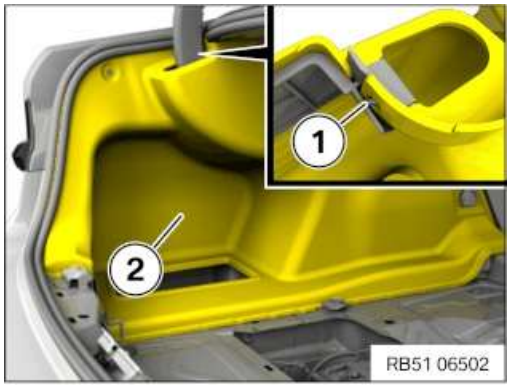
5 – Removing both luggage compartment wheel arch trim panels partially

▸ **Partially remove luggage compartment wheel arch trim on left**



- Loosen the expanding rivet (1).

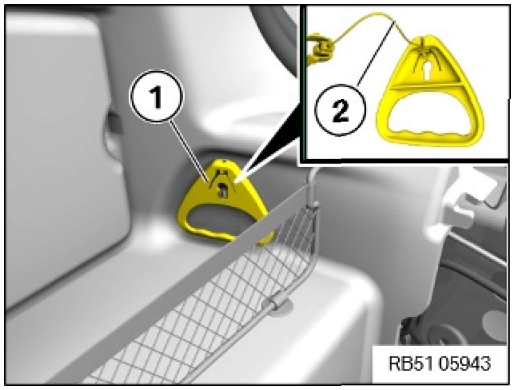
cardiagn.com



- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

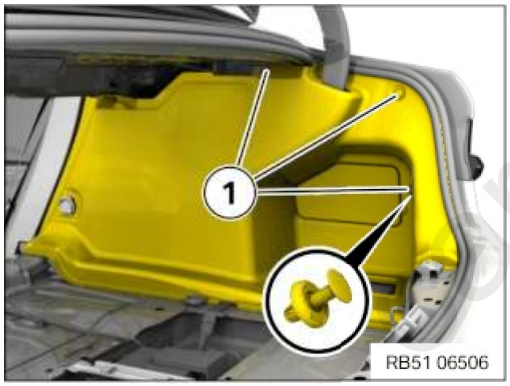
▶ Partially remove luggage compartment wheel arch panel on right

▷ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)

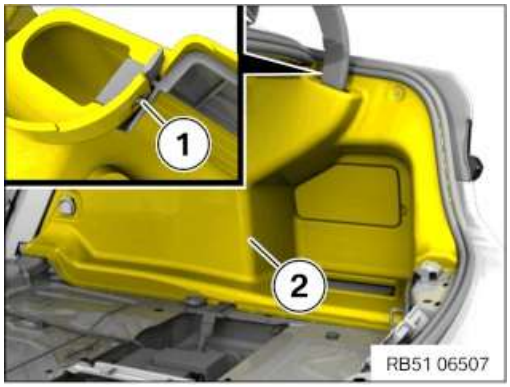


- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

◁



- Loosen the expanding rivet (1).



- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

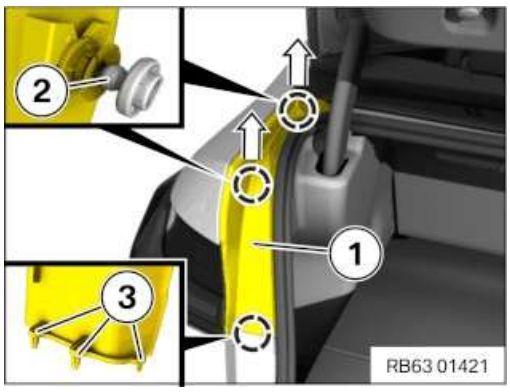
6 – Removing both trims of water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

autodiagn.com

▶ **Remove the trim in the water channel**



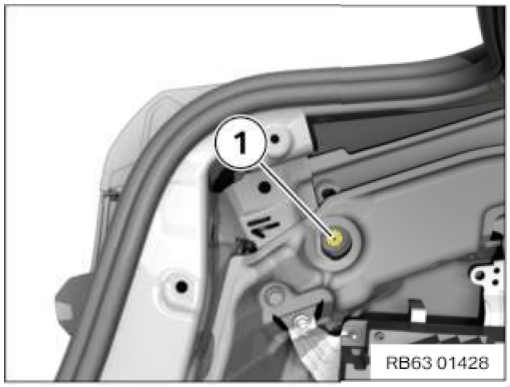
- Unclip the trim in the water channel (1) from the ball pins (2) towards the top.
- Release the trim in the water channel (1) from the guides (3) and remove it.

7 – Remove both rear lights from the side panel

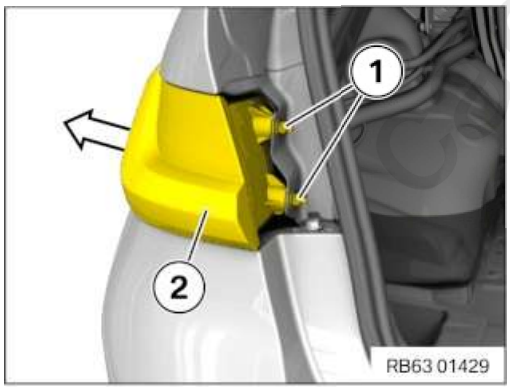
NOTICE

Description is for left component only. Procedure on the right side is identical.

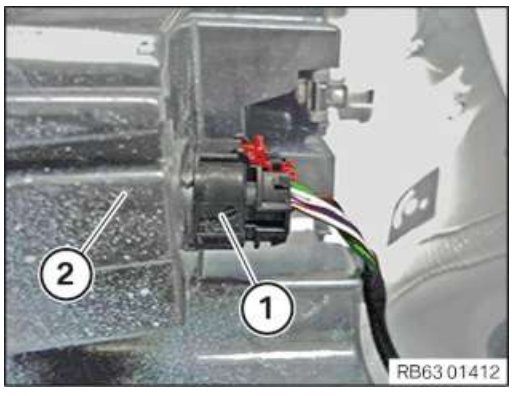
▶ **Remove the rear light on the side panel**



- Loosen nut (1).



- Release the nuts (1) and feed out the rear light on the side panel (2) in the direction of arrow.



TECHNICAL INFORMATION

Observe note on unlocking and disconnecting plug connections.

For additional information see: 6113 ... Unlocking and disconnecting different plug connections

- Unlock and disconnect plug connection (1) as described in position #28 in additional information.
- Remove the rear light on the side panel (2).

8 – Remove rear bumper panel

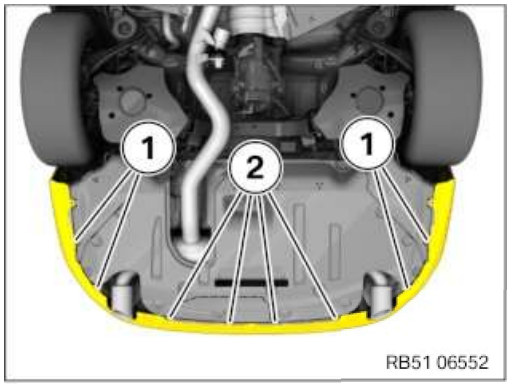
carsdiagn.com



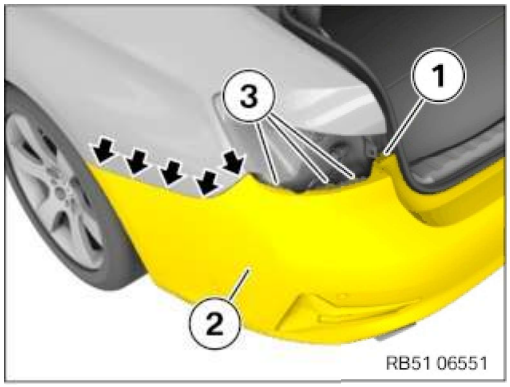
NOTICE

Perform the operations on the left and right side.

- Loosen screws (1).



- Loosen screws (1).
- Release the bumper panel on latch mechanisms (2) with a suitable tool.



NOTICE

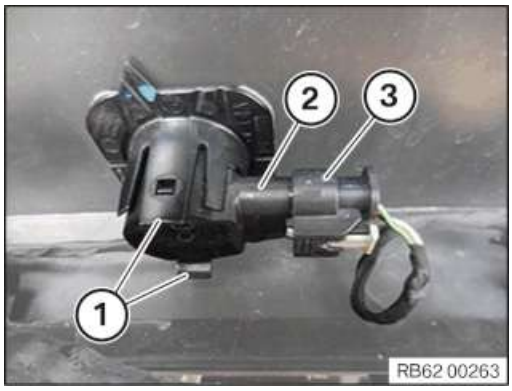
Perform the operations on the left and right side.

- Loosen screw (1).
- Release bumper panel (2) in the area of the rear light housing from latch mechanisms (3) with a suitable tool.
- Release side bumper panel (2) from the remaining latch mechanisms (arrows).
- Remove bumper panel (2) straight to the rear with the help of an auxiliary person.
- Unlock all plug connections and disconnect.
- Remove the bumper panel (1).



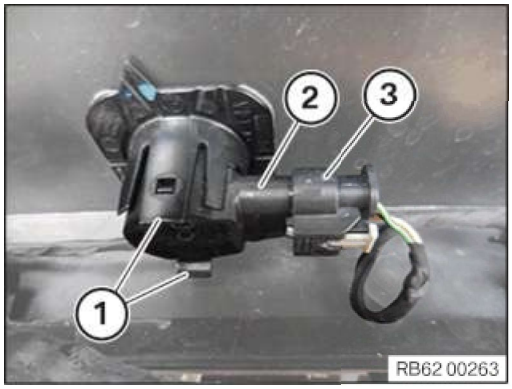
MAIN WORK

9 – Removing the ultrasonic sensor for the rear Parking Manoeuvring Assistant (PMA)



- Unlock the latch mechanisms (1).
- Unlock plug connection (3) and disconnect.
- Remove the ultrasonic sensor (2).

10 – Installing the ultrasonic sensor for the rear Parking Manoeuvring Assistant (PMA)

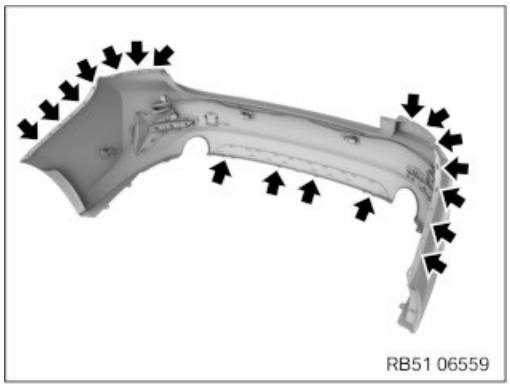


- Position the ultrasonic sensor (2) correctly and engage it in the latch mechanisms (1).
- Connect connectors (3) and lock.

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POSTPROCESSES

11 – Install rear bumper panel



Check

- Check the latch mechanisms (arrows) for damage.

Result

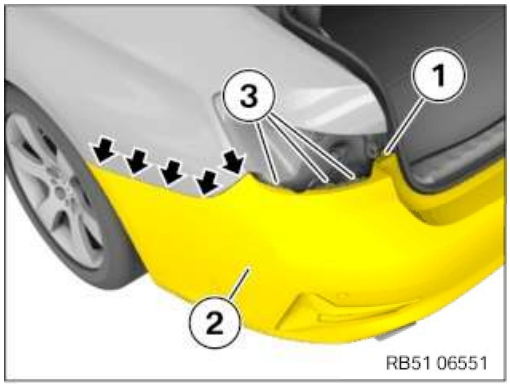
» Latch mechanisms are damaged.

Measure

- Renew the bumper panel.



- Position the bumper panel (1) straight with the help of another person.
- Connect all connectors and lock.



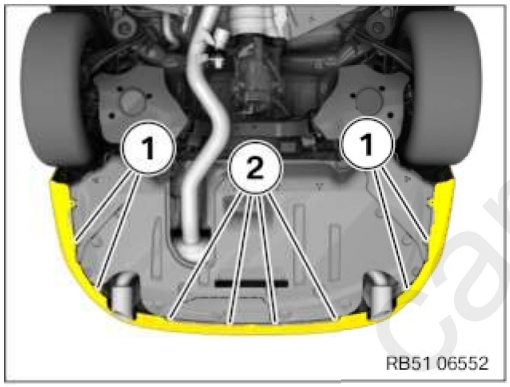
NOTICE

Perform the operations on the left and right side.

- Clip bumper panel (2) on the side in the latch mechanisms (arrows).
- Clip bumper panel (2) in the area of the rear light housing in latch mechanisms (3).
- Tighten down screw (1).

Rear bumper panel guide on rear centre guide

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm



- Clip bumper panel into latch mechanisms (2).
- Tighten the screws (1).

Mounting for rear bumper panel on support for rear bumper panel

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm



NOTICE

Perform the operations on the left and right side.

- Tighten the screws (1).

Rear bumper panel to rear side panel

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

12 – Install both rear lights on the side panel

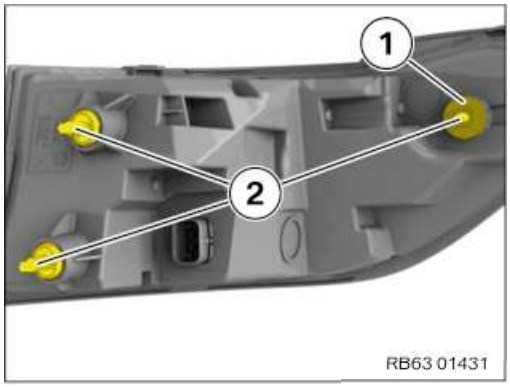
carmagn.com

NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Install the rear light on the side panel**

Check



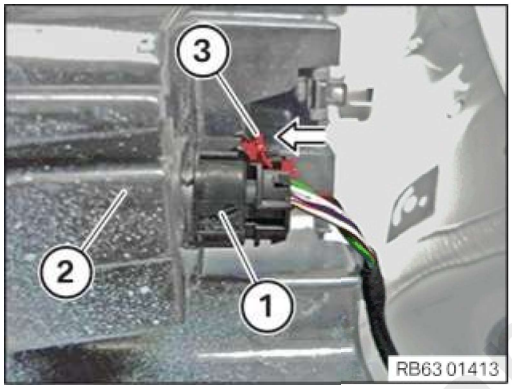
- Check the seal (1) for damage and renew if necessary.
- Check the threaded inserts (2) for damage.

Result

» The threaded inserts are damaged.

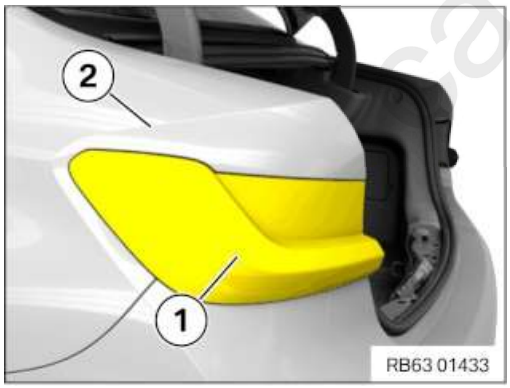
Measure

- Replace rear light.

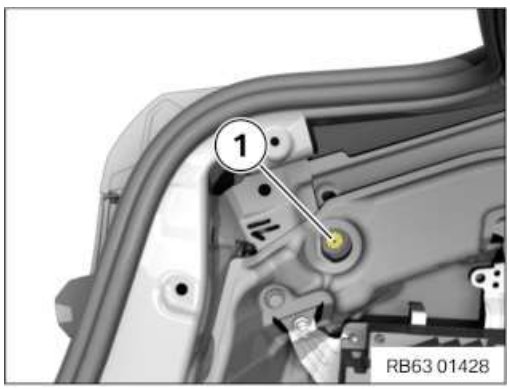


- Connect the connector (1) to the rear light on the side panel (2).

  The connector (1) must engage audibly.
- Lock the lock in direction of arrow (3).

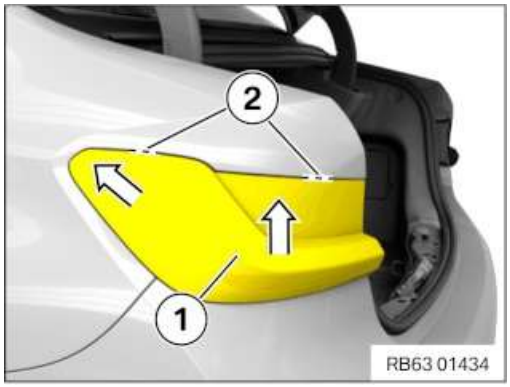


- Position the rear light on the side panel (1) on the side panel (2).

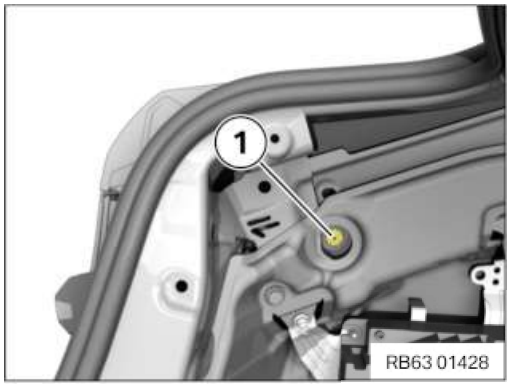


- Position the nut (1).

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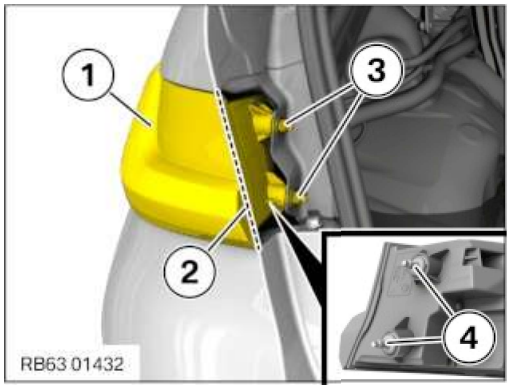
- Position the rear light on the side panel (1) to the front at the top.
- Move the contact surfaces (2) of the rear light on the side panel (1) upwards (arrow) so that they are in place.
- Hold the rear light on the side panel (1) in position.



- Tighten nut (1).

Rear light to side panel

Nut M5, AF 8		Tightening torque	3 Nm



- Position nuts (3).
- Align rear light on the side panel (1) with the connecting line (2).

  The alignment is done through threaded inserts (4) on the rear light on the side panel (2).
- If necessary, correct the position of the rear light on the side panel (1) by twisting threaded inserts (4).
- Tighten nuts (3).

Rear light to side panel

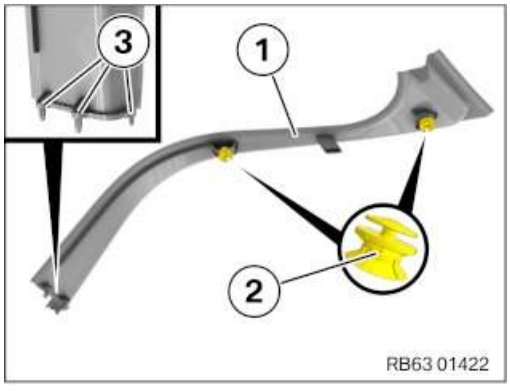
Nut M5, AF 10		Tightening torque	4 Nm

13 – Installing both trims of the water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the trim in the water channel**



Check

- Check the clips (2) for damage and renew if necessary.
- Check the guides (3) for damage.

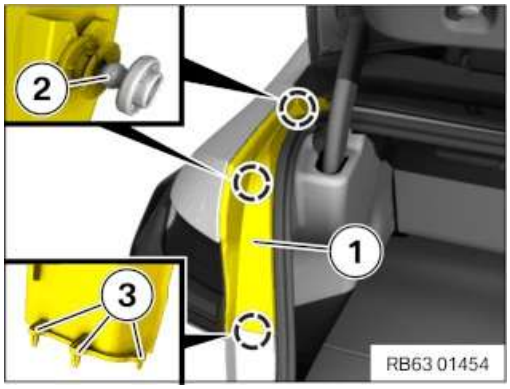
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Result

» The guides are damaged.

Measure

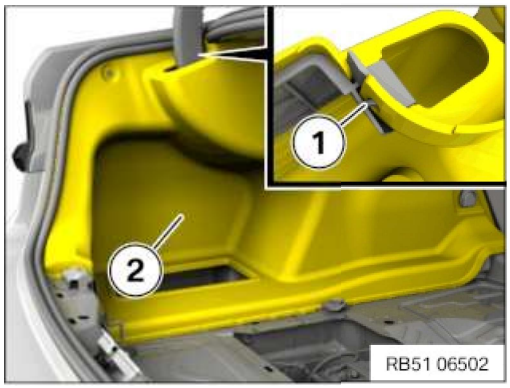
- Renew trim in the water channel .



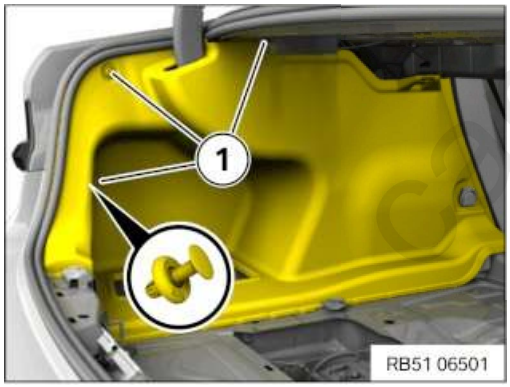
- Insert the trim in the water channel (1) in the guides (3).
- Clip in the water channel trim (1) from the front into the ball pin (2).

14 – Installing both luggage compartment wheel arch trim panels partially

▸ Partially installing the left luggage compartment wheel arch trim panel

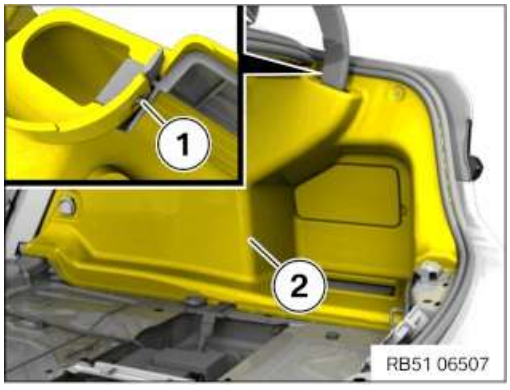


- Feed the luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal of the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



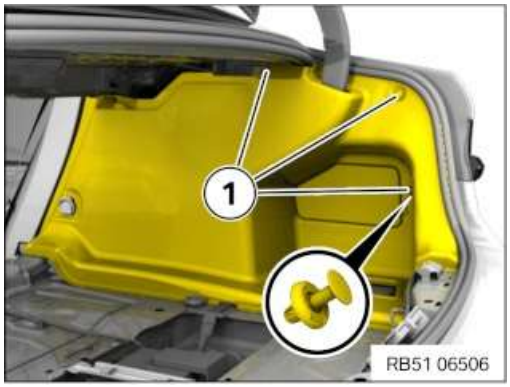
- Secure expanding rivet (1).

▸ Partially installing right luggage compartment wheel arch trim panel



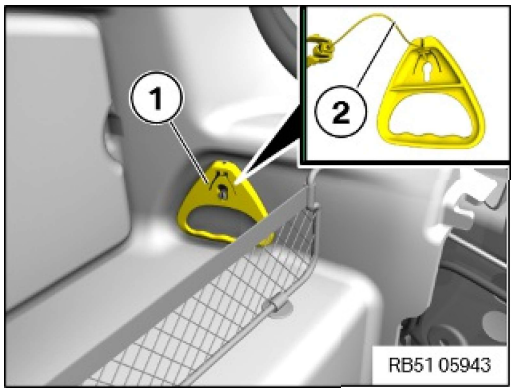
- Guide luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal for tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).

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- Secure expanding rivet (1).

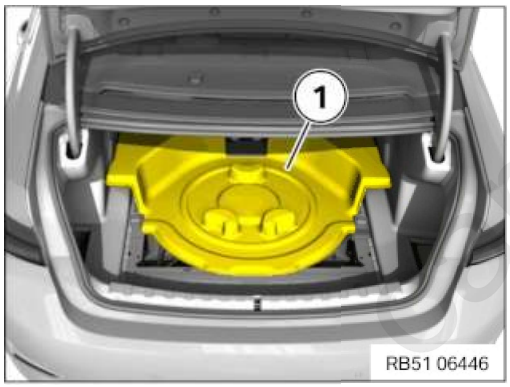
▷ **If installed: Installing the emergency tailgate release handle (additional work for US version)**



- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

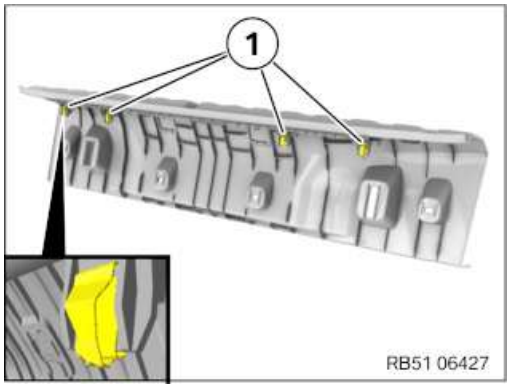
◁

15 – Install the luggage compartment well in front



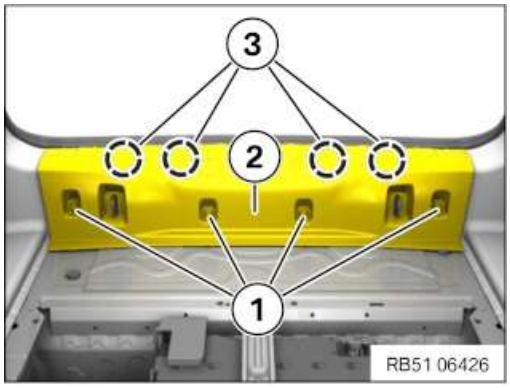
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

16 – Installing loading edge trim



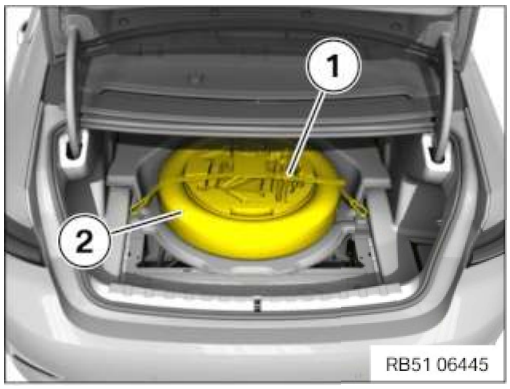
- Check the clamps (1) for damage and renew if necessary.

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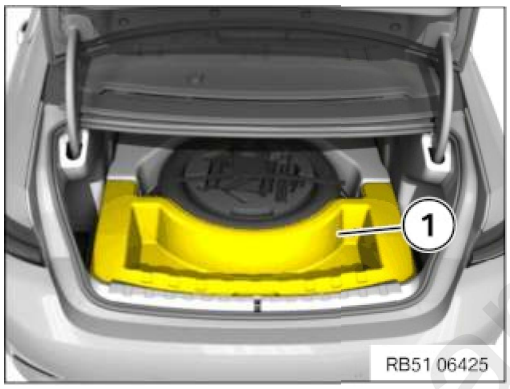
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

17 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

18 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

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Rear bumper panel guide on rear centre guide Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Mounting for rear bumper panel on support for rear bumper panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Rear bumper panel to rear side panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Rear light to side panel Used in step 12

Nut M5, AF 8		Tightening torque	3 Nm

Rear light to side panel Used in step 12

Nut M5, AF 10		Tightening torque	4 Nm

Links

Repair instructions	Used in step
61 13 ... Unlocking and disconnecting different plug connections	7

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66 33 519 Replacing control unit for Parking Manoeuvring Assistant

RISK OF DAMAGE

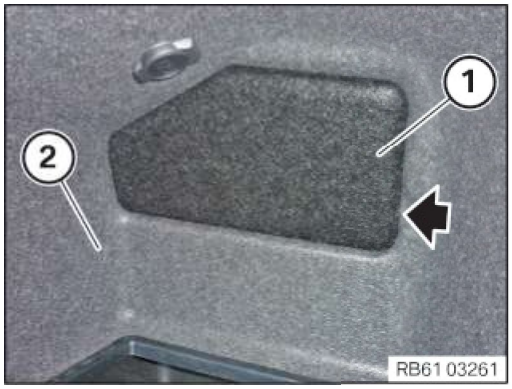
Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

PRELIMINARY WORK

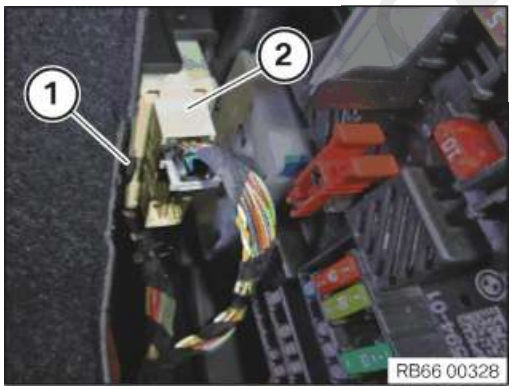
1 – Removing the flap in the luggage compartment wheel arch trim panel on the right



- Remove the flap (1) from the luggage compartment wheel arch trim panel on the right (2)

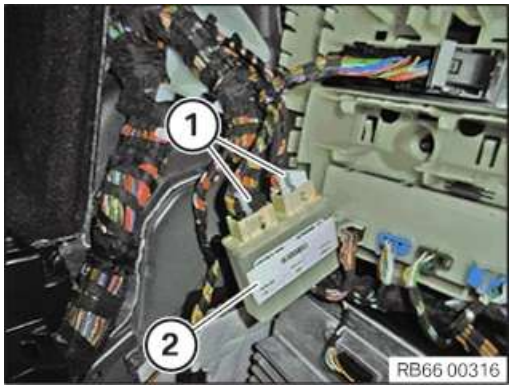
MAIN WORK

2 – Remove the PDC/PMA control unit



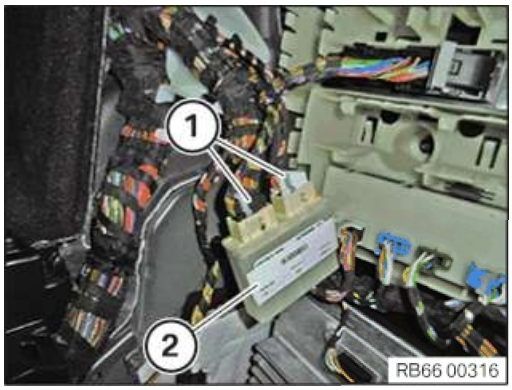
- Unlock lock (1).
- Pull out the PDC-/PMA-control unit(2) downwards form the holder.

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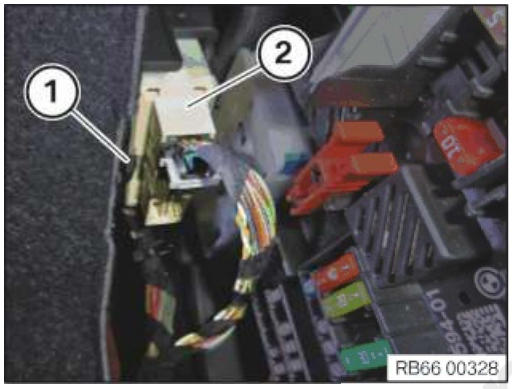


- Unlock and disconnect plug connections (1).
- Remove the PDC/PMA control unit (2).

3 – Install the PDC/PMA control unit



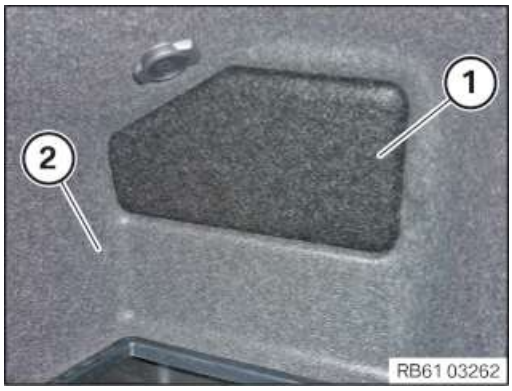
- Position PDC/PMA - control unit (2).
- Connect and lock the plug connections (1).



- Insert PDC-/PMA-control unit (2) upwards into the holder.
- Lock the lock (1).

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4 – Installing the flap in the luggage compartment wheel arch trim panel on the right



- Position the flap (1) correctly in the right luggage compartment wheel arch trim panel (2) and install.

5 – Encode/program control unit(s)

Prerequisite

Replacement of component.

TECHNICAL INFORMATION

Use the most recent software version to prevent faults during programming/encoding.
The battery voltage must not fall below 13.0 V during programming.
Use only chargers for a low volt-vehicle electrical system that are recommended by BMW.

TECHNICAL INFORMATION

No high-voltage switch off is required in electric vehicles or hybrid vehicles for programming/encoding.
The high-voltage system will be automatically switched off by the programming system.

- Connect the battery charger to the vehicle.
- Connect the programming system with the vehicle.
- Determine the action plan.
- Accept and fully process the measures plan.
- If applicable, connect the workshop system to the vehicle, depending on the reworking list.
- Carry out vehicle test.
- Delete the fault memory.
- The information about programming the workshop system and the corresponding notes in the user documentation must be observed.
- Wait until programming/encoding has been completed.
- Disconnect the programming system from the vehicle.
- Disconnect the battery charger from the vehicle.

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Additional Information

Links

Repair instructions	Used in step
61 35 ... Notes on ESD protection (Electro Static Discharge)	

cardiagn.com

66 51 070 Removing and installing KAFAS camera with integrated control unit

RISK OF DAMAGE

Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

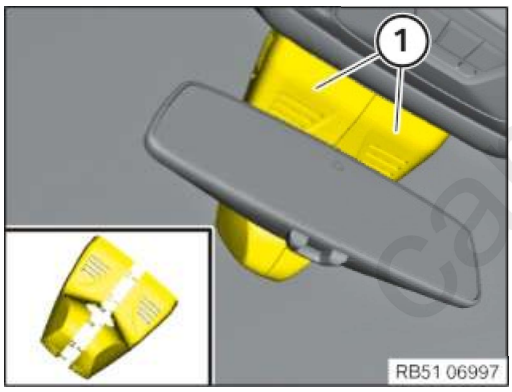
TECHNICAL INFORMATION

The heating of the KAFAS camera is integrated in the windscreen. If the heating is faulty, replace the windscreen.

PRELIMINARY WORK

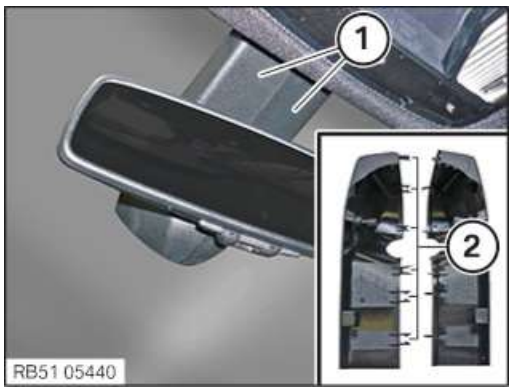
1 – Removing the covers for the interior mirror

- **Version A:**



- Release the cover (1) at the centre from the latch mechanisms (2) with a suitable plastic wedge and remove.

- **Version B:**

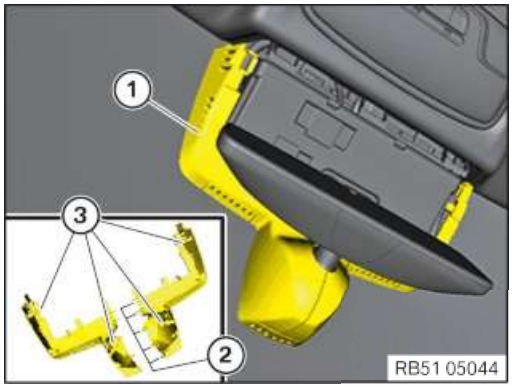


- Release the cover (1) from the latch mechanisms (2) with a suitable plastic wedge and remove sideways.

- **Version C:**

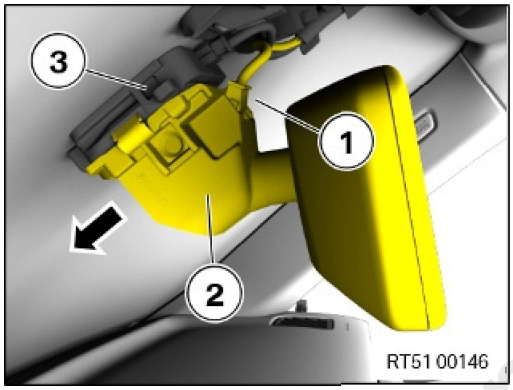


- Detach cover (1) from the clamps (2) in the marked area using a suitable plastic wedge and pull down a certain distance.
- Release cover (1) at the retaining lugs (3) and remove from the guides to the rear.



- Release cover (1) from the latch mechanisms (2) and (3) and remove sideways.
- Remove cover (1) from mirror base (2).

2 – Remove inside mirror



TECHNICAL INFORMATION

Carry out the work at temperatures between 18 °C and 23 °C only.

- Unlock plug connection (1) and disconnect.

RISK OF DAMAGE

Damage to the component.

Excessive force may damage the component.

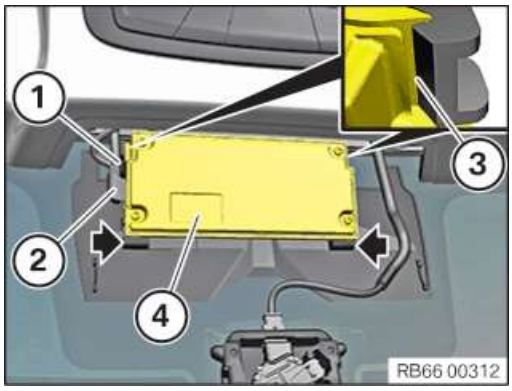
- Handle component carefully.

- Jerk and pull off the interior mirror (2) in the direction of the arrow from the mirror base (3).

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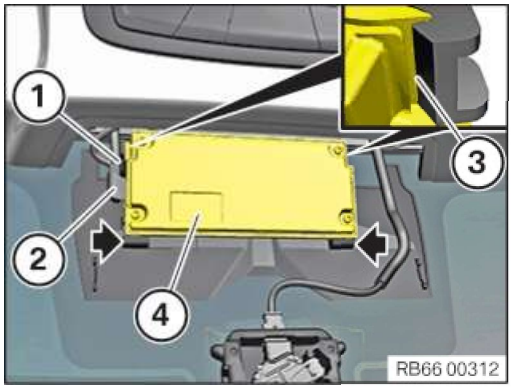
MAIN WORK

3 – Remove KAFAS camera (high version)



- Unlock plug connection (1) and disconnect.
- Unlock plug connection (2) and disconnect.
- Disengage the retaining lugs (3).
- Thread out KAFAS camera (4) at the guides (arrows) and remove.

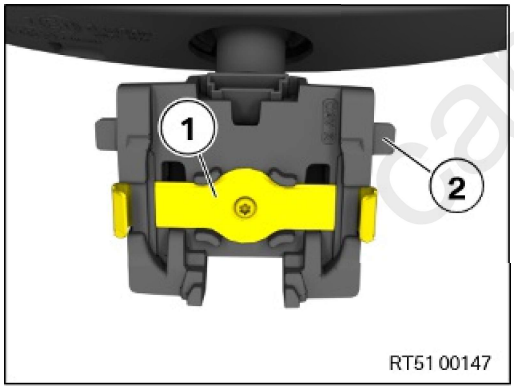
4 – Install KAFAS camera (high version)



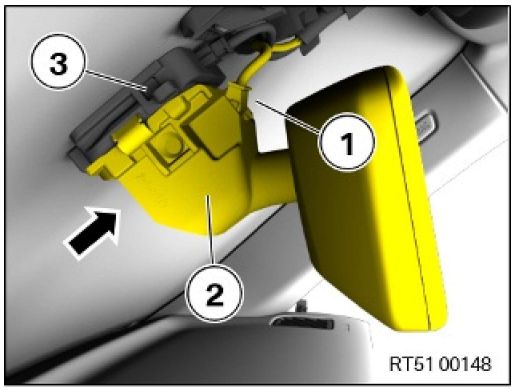
- Guide in the KAFAS camera (4) on the guides (arrows) and engage on the retaining lugs (3).
- Connect and lock the plug connection (2).
- Connect plug connection (1) and lock.

POSTPROCESSES

5 – Install interior mirror



- Check the clamp (1) on both sides of the mirror base (2) for damage and renew as needed.



TECHNICAL INFORMATION

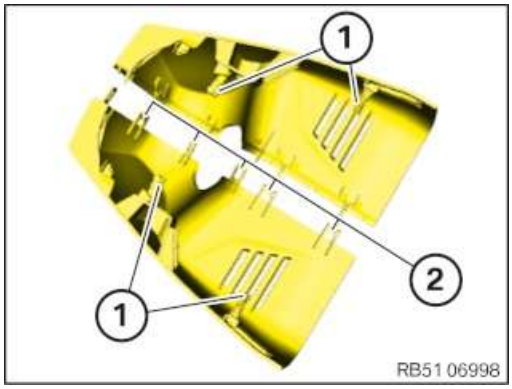
Carry out the work at temperatures between 18 °C and 23 °C only.

- Position the interior mirror (2) at the mirror base and slide it on in direction of the arrow.
- Check the correct installation position of the interior mirror (2) at the mirror base (3).
- Connect connectors (1) and lock.

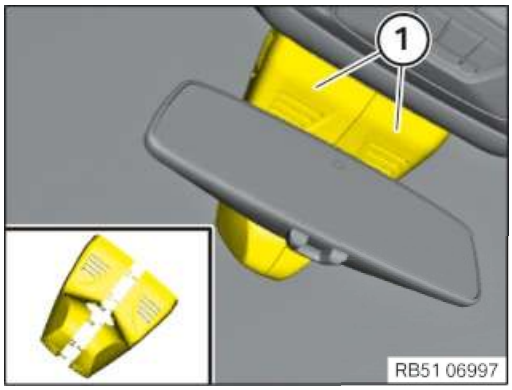
6 – Installing the covers for the interior mirror

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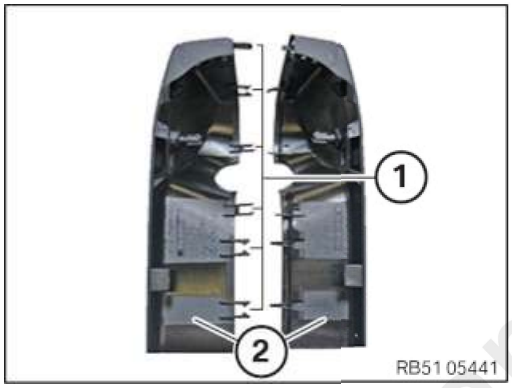
- **Version A:**



- Check latch mechanisms (1) and (2).
- If the latch mechanisms (1) or (2) are faulty, renew the covers.

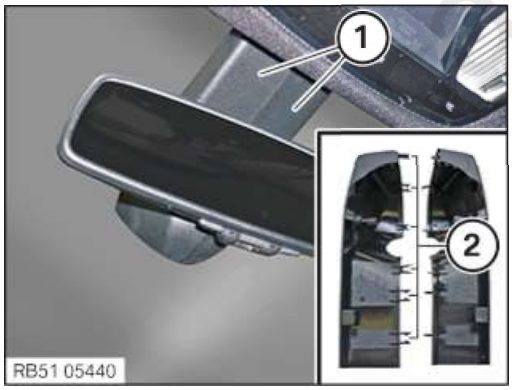


- Feed cover (1) in and lock.
- **Version B:**



- Check the latch mechanisms (1) on the two covers (2) for damage, renew the covers (2) if necessary.

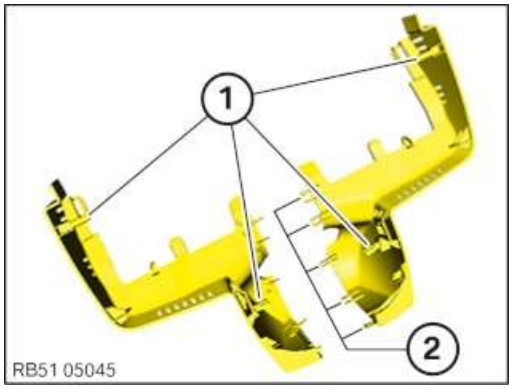
  The covers (2) must not be damaged or missing.



- Position the covers (1) correctly on the mirror and engage with the latch mechanisms (2).
- **Version C:**

Check

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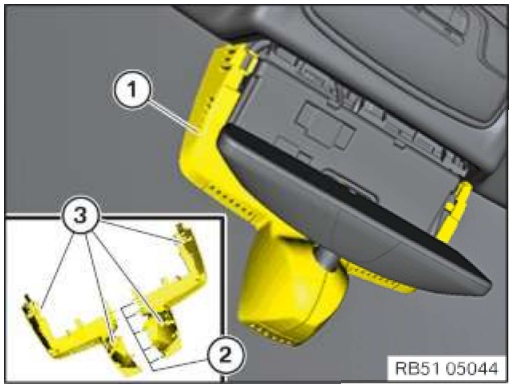
- Check the latch mechanisms (1) and (2) of the covers for damage.

Result

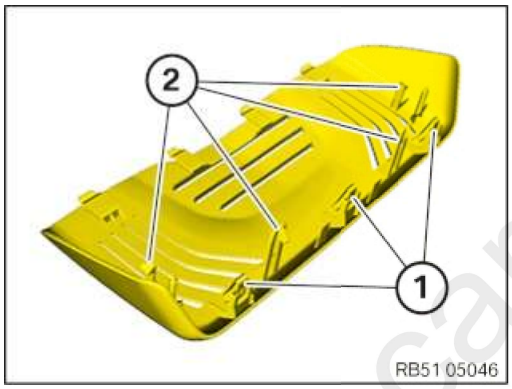
» The latch mechanism is damaged.

Measure

- Renew the cover.



- Guide in cover (1) on left and right and engage using latch mechanisms (2) and (3).



Check

- Check clamps (1) for damage; renew if necessary.
- Check latch mechanisms (2) for damage.

Result

» The latch mechanism is damaged.

Measure

- Renew the cover.



- Guide cover (1) into front guides and engage using retaining lugs (3) and clamps (2).

7 – Calibrate KAFAS camera

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TECHNICAL INFORMATION

The calibration process of the KAFAS camera is not complete until the vehicle drives in traffic. Tell the customer that some assistance systems are temporarily unavailable after vehicle pick-up.

- Perform camera calibration using diagnosis system.

  Under Service Functions menu:

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

Additional Information

Links

Repair instructions	Used in step
61 35 ... Notes on ESD protection (Electro Static Discharge)	

cardiagn.com

66 51 060 Removing and installing KAFAS camera with integrated control unit

RISK OF DAMAGE



Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

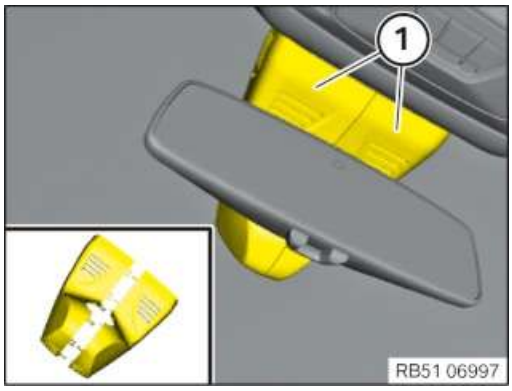
TECHNICAL INFORMATION

The heating of the KAFAS camera is integrated in the windscreen. If the heating is faulty, replace the windscreen.

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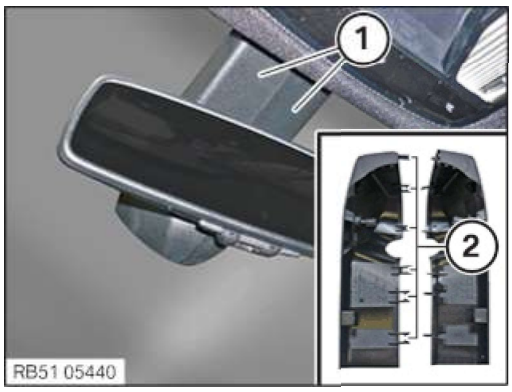
1 – Removing the covers for the interior mirror

- **Version A:**



- Release the cover (1) at the centre from the latch mechanisms (2) with a suitable plastic wedge and remove.

- **Version B:**

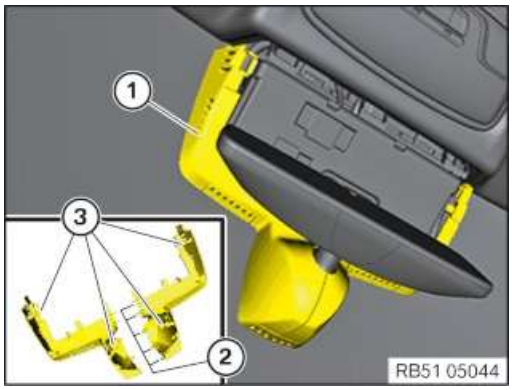


- Release the cover (1) from the latch mechanisms (2) with a suitable plastic wedge and remove sideways.

- **Version C:**



- Detach cover (1) from the clamps (2) in the marked area using a suitable plastic wedge and pull down a certain distance.
- Release cover (1) at the retaining lugs (3) and remove from the guides to the rear.

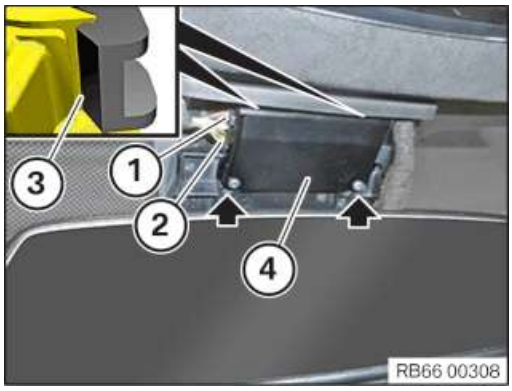


- Release cover (1) from the latch mechanisms (2) and (3) and remove sideways.
- Remove cover (1) from mirror base (2).

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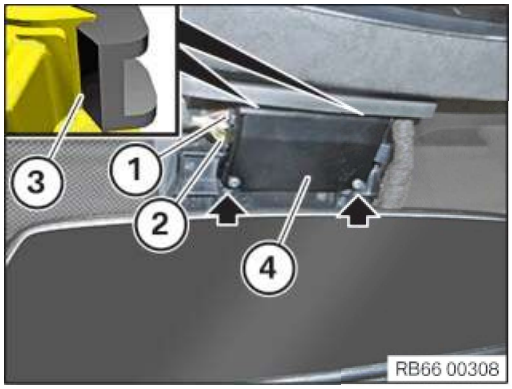
MAIN WORK

2 – Remove KAFAS camera (Mid variant)



- Unlock plug connection (1) and disconnect.
- Unlock plug connection (2) and disconnect.
- Disengage the retaining lugs (3).
- Thread out KAFAS camera (4) at the guides (arrows) and remove.

3 – Install KAFAS camera (Mid variant)

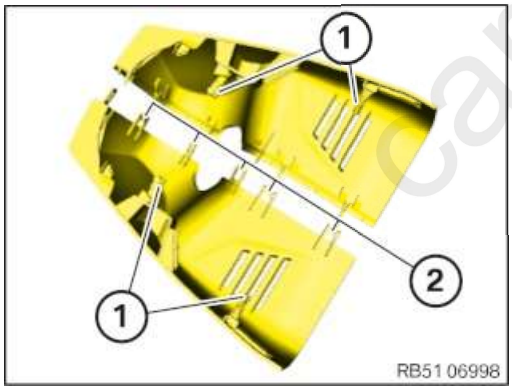


- Feed in KAFAS camera (4) on the guides (arrows) and engage the retaining lugs (3).
- Connect plug connection (2) and lock.
- Connect plug connection (1) and lock.

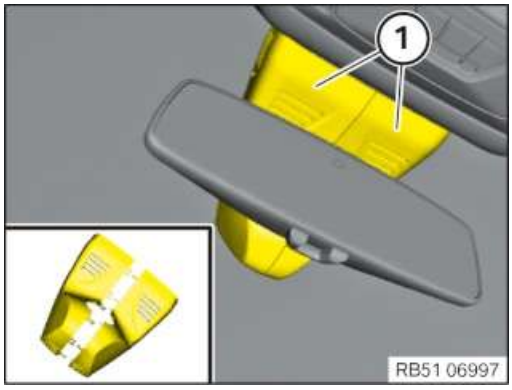
POSTPROCESSES

4 – Installing the covers for the interior mirror

- **Version A:**

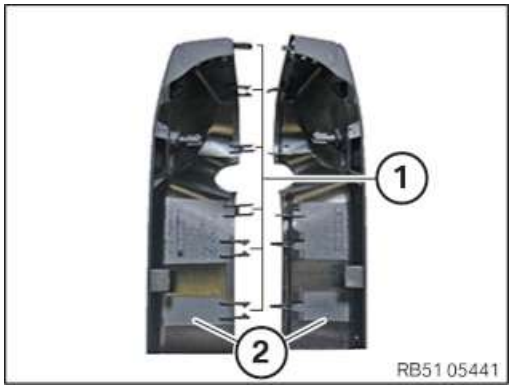


- Check latch mechanisms (1) and (2).
- If the latch mechanisms (1) or (2) are faulty, renew the covers.



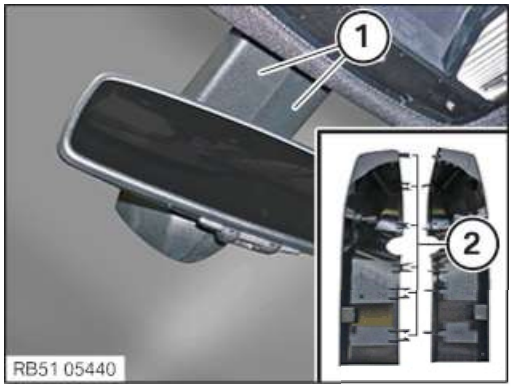
- Feed cover (1) in and lock.
- **Version B:**

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- Check the latch mechanisms (1) on the two covers (2) for damage, renew the covers (2) if necessary.

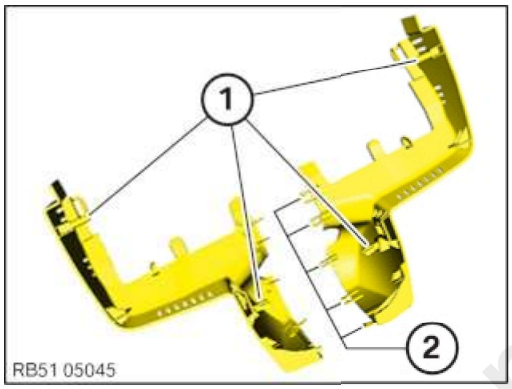
  The covers (2) must not be damaged or missing.



- Position the covers (1) correctly on the mirror and engage with the latch mechanisms (2).

- **Version C:**

Check



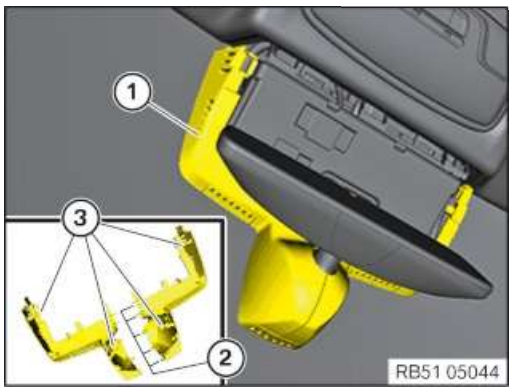
- Check the latch mechanisms (1) and (2) of the covers for damage.

Result

» The latch mechanism is damaged.

Measure

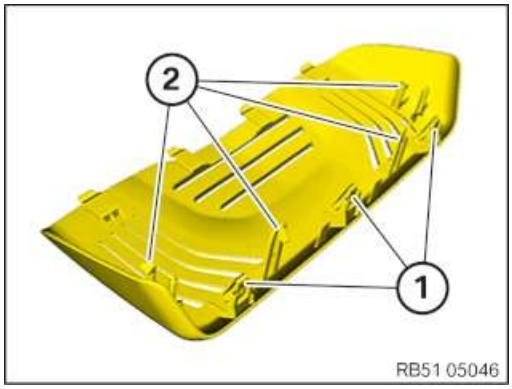
- Renew the cover.



- Guide in cover (1) on left and right and engage using latch mechanisms (2) and (3).

Check

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- Check clamps (1) for damage; renew if necessary.
- Check latch mechanisms (2) for damage.

Result

» The latch mechanism is damaged.

Measure

- Renew the cover.



- Guide cover (1) into front guides and engage using retaining lugs (3) and clamps (2).

5 – Calibrate KAFAS camera



TECHNICAL INFORMATION

The calibration process of the KAFAS camera is not complete until the vehicle drives in traffic. Tell the customer that some assistance systems are temporarily unavailable after vehicle pick-up.

- Perform camera calibration using diagnosis system.

  Under Service Functions menu:

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

Additional Information

Links

Repair instructions	Used in step
61 35 ... Notes on ESD protection (Electro Static Discharge)	

carmagn.com

66 52 511 Replace Driver Camera System (DCS) (After vehicle diagnosis) (without programming/encoding, see 61 00 ...)

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

RISK OF DAMAGE

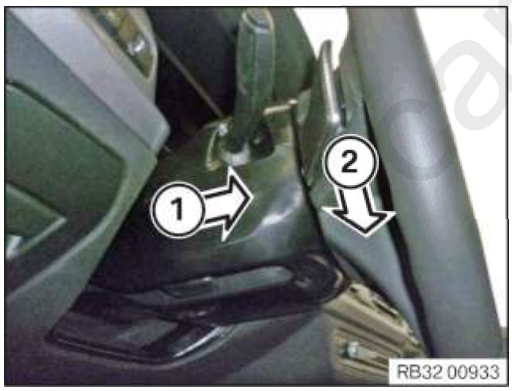
Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

PRELIMINARY WORK

1 – Adjust the steering column position



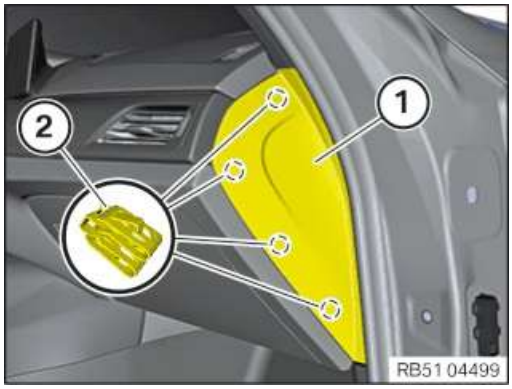
- Adjust the length of the steering column to the maximum length in the direction of arrow (1).
- Move the steering column to the lowest steering column position in the direction of arrow (2).

2 – Disconnecting all battery earth leads



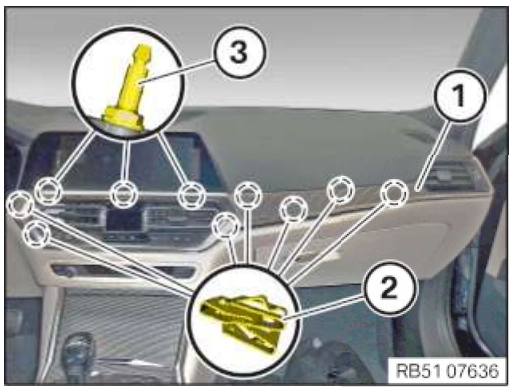
- See additional information.

3 – Remove the side panel on the right instrument panel



- Unclip and remove the side panel (1) towards the outside from the clamps (2).
- If necessary, unlock associated plug connection and disconnect.

4 – Remove the finisher on the right instrument panel



- Unclip the decorative strip (1) towards rear at the clamps (2) and the pins (3).
- Unlock associated plug connection and disconnect.

  Remove the decorative strip (1).

5 – Remove Central Information Display (CID)

RISK OF DAMAGE

Electrostatic discharge.

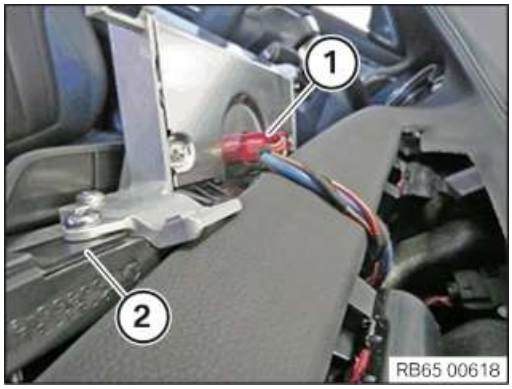
Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.



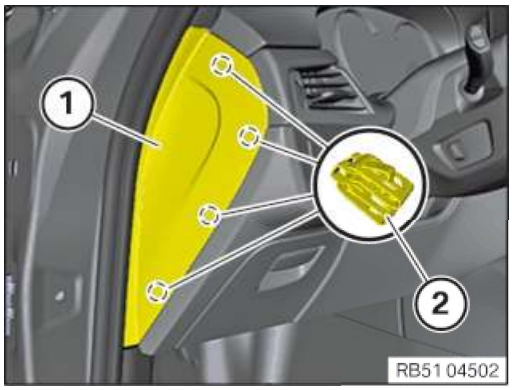
- Loosen screws (1).
- Pull out central information display (CID) (2) slightly off the instrument panel.

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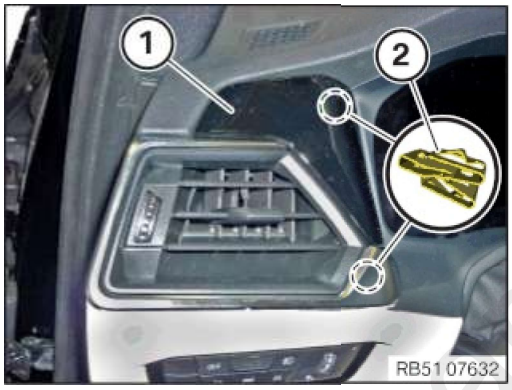
- Unlock plug connection (1) and disconnect.
- Remove the central information display (CID) (2).

6 – Remove the side panel on the left instrument panel



- Unclip and remove the side panel (1) towards the outside from the clamps (2).

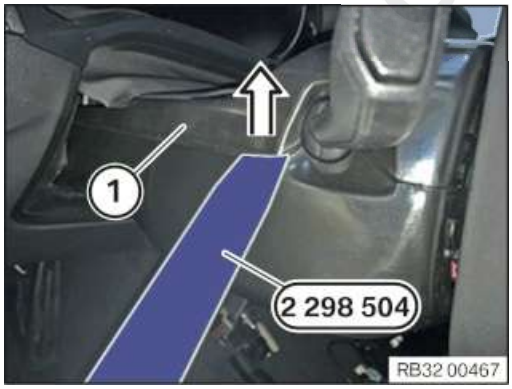
7 – Remove the finisher on the instrument panel on the left



- Unclip decorative strip (1) to the rear out of the clamps (2).
- Unlock associated plug connection and disconnect.

  Remove the decorative strip (1).

8 – Removing steering column shroud upper section

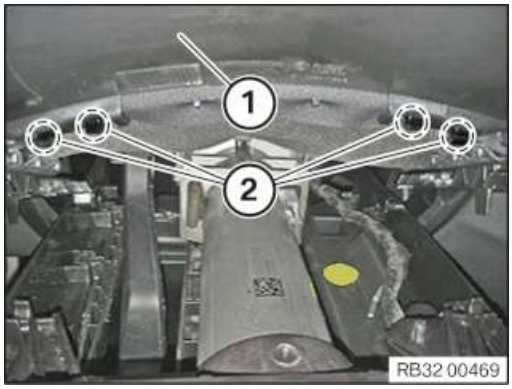


NOTICE

Perform the operations on the left and right side.

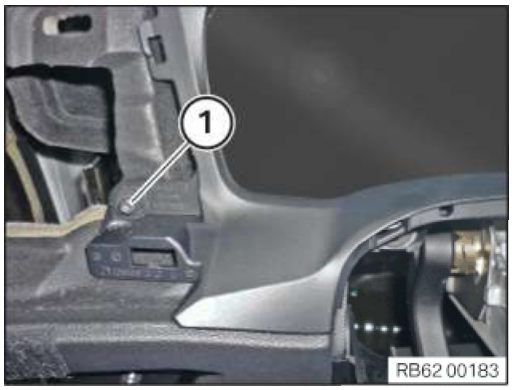
- Unlock the steering column shroud upper section (1) with the special tool 2 298 504 and fold up.

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- Unclip the steering column shroud upper section (1) from the brackets (2).
- Remove the steering column shroud upper section (1).

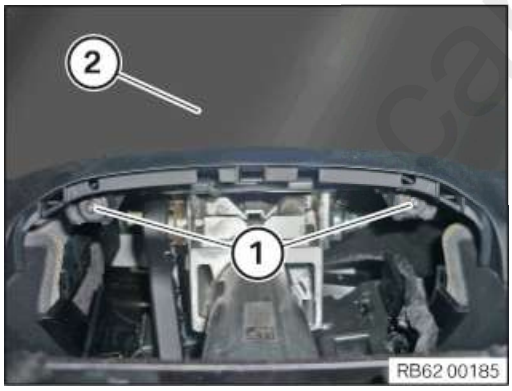
9 – Removing the instrument cluster (KOMBI)



- Loosen screw (1).

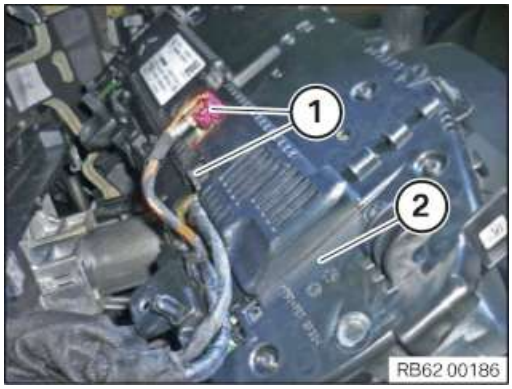


- Loosen screw (1).



- Loosen screws (1).
- Feed out instrument cluster (KOMBI) (2).

carsdiagn.com



RISK OF DAMAGE

Damage to the instrument cluster (KOMBI)

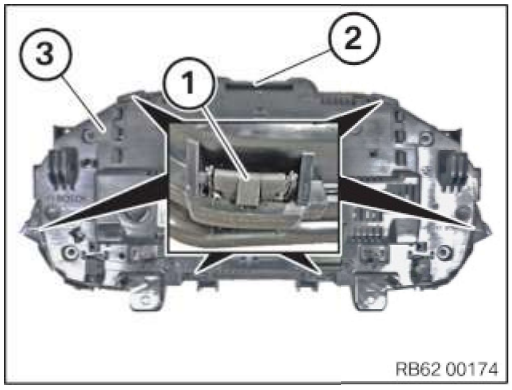
While releasing and connecting the cable, it could lead to a ground offset. Thereby, currents could arise, that make the instrument cluster (KOMBI) useless.

- While releasing: Release APIX data cable (blue) first.
- While connecting: Connect APIX data cable (blue) at the last.

- **If installed:** Release the blue plug connection first.
- Unlock and disconnect plug connections (1) from instrument cluster (KOMBI) (2).
- Remove the instrument cluster (KOMBI) (2).

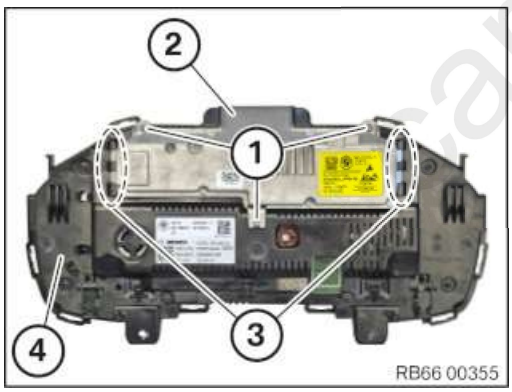
MAIN WORK

10 – Remove the cover of the instrument cluster (cluster)



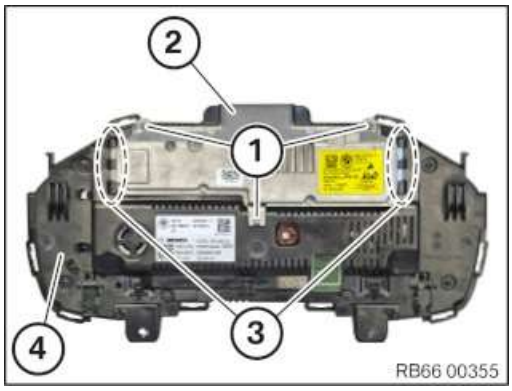
- Loosen the clasps (1).
- Remove the cover adapter (2) from the instrument cluster (cluster) (3).

11 – Remove the Driver Camera System (DCS)



- Release screws (1) on Driver Camera System (DCS) (2).
- Feed out the Driver Camera System (DCS) (2) upwards on the guides (3) of the instrument cluster (4) and remove it.

12 – Installing the Driver Camera System (DCS)



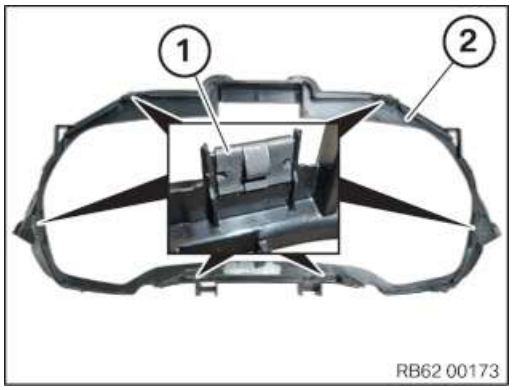
- Feed the Driver Camera System (DCS) (2) into the guides (3) of the instrument cluster (4) from the top.
- Tighten the screws (1) on the Driver Camera System (DCS) (2).

Driver Camera System (DCS) to instrument cluster

Screw		Tightening torque	1.05 Nm

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13 – Install the adapter for the cover of the instrument cluster (cluster)



Check

- Check clasps (1) and guides on the adapter for the cover (2) for damage.

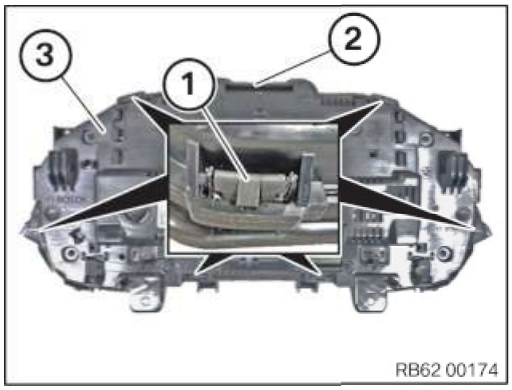
Result

» Clasps (1) or guides are damaged.

Measure

- Replace the adapter for the cover (2).

  Parts: Adapter for the cover of the instrument cluster (cluster)

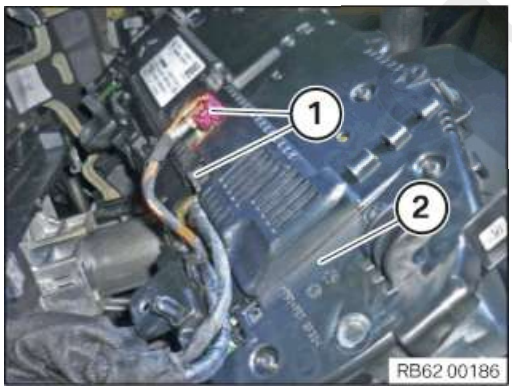


- Position the adapter for the cover (2) on the instrument cluster (cluster) (3) and clip into place.

  The clasps (1) must engage audibly.

POSTPROCESSES

14 – Installing the instrument cluster (KOMBI)



RISK OF DAMAGE

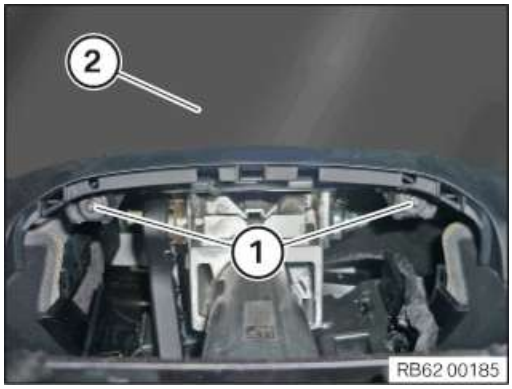
Damage to the instrument cluster (KOMBI)

While releasing and connecting the cable, it could lead to a ground offset. Thereby, currents could arise, that make the instrument cluster (KOMBI) useless.

- While releasing: Release APIX data cable (blue) first.
- While connecting: Connect APIX data cable (blue) at the last.

- **If installed:** Connect the blue connector at the last and lock it.
- Connect and lock connector (1) to the instrument cluster (KOMBI) (2).

mbdiagn.com



- Feed in and position the instrument cluster (KOMBI) (2).
- Tighten the screws (1).

Instrument cluster (KOMBI) to support

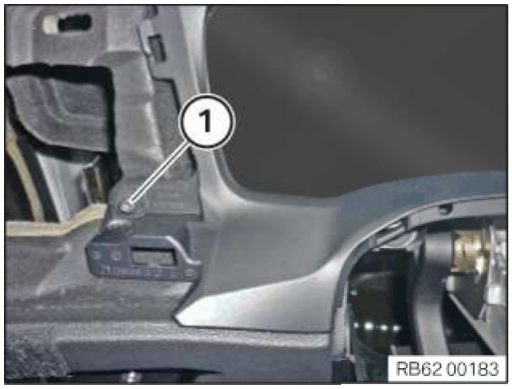
Oval-head screw		Tightening torque	1,8 Nm



- Tighten down screw (1).

Instrument cluster (KOMBI) to support

Oval-head screw		Tightening torque	1,8 Nm

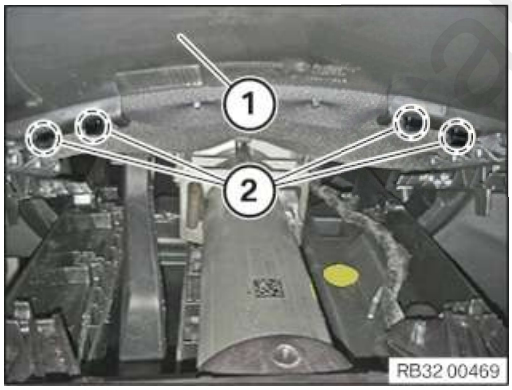


- Tighten down screw (1).

Instrument cluster (KOMBI) to support

Oval-head screw		Tightening torque	1,8 Nm

15 – Fit steering column shroud upper section



- Clip in the steering column shroud upper section (1) at the brackets (2).



NOTICE

Perform the operations on the left and right side.

- Clip in the steering column shroud upper section (1)into the guide (2).

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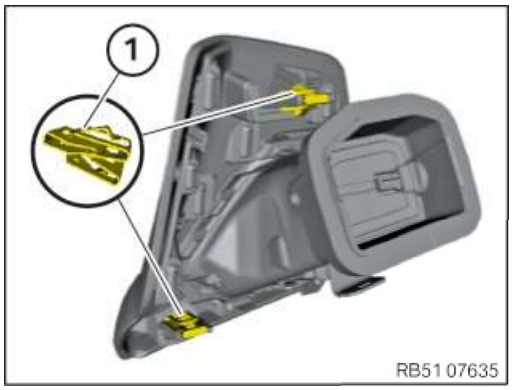
NOTICE

Perform the operations on the left and right side.

- Press the upper section of the steering column shroud (1) downwards in direction of arrow.

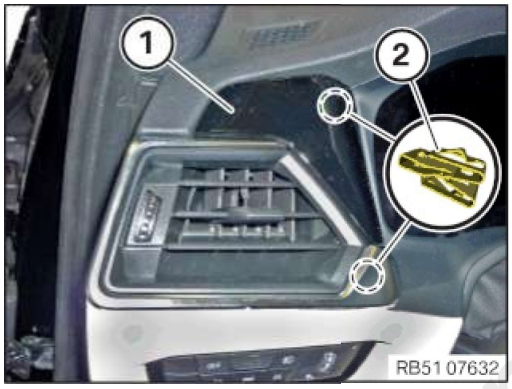
  The upper section of the steering column shroud must engage audibly and perceptibly.

16 – Install the finisher on the instrument panel on the left



- Check the clamps (1).

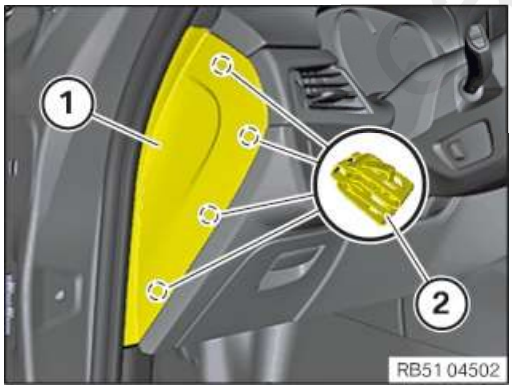
  Replace broken or missing clamps (1).



- Install the decorative strip (1).

  Connect and lock the associated connectors.
- Clip decorative strip (1) into clamps (2).

17 – Install the side panel on left instrument panel



- Feed in the side panel (1) and clip it in at the clamps (2).

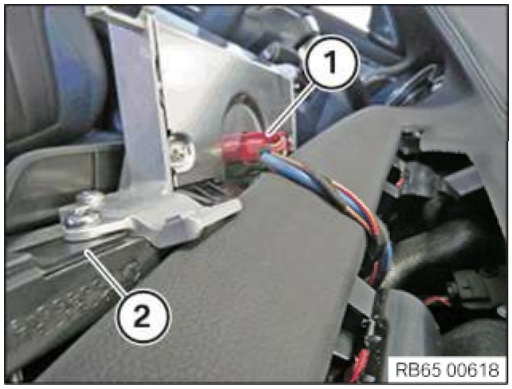
18 – Install the central information display (CID)

RISK OF DAMAGE

Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.



- Position Central Information Display (CID) (2).
- Connect plug connection (1) and lock.

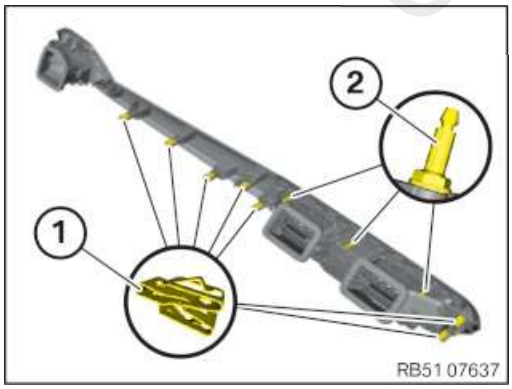


- Insert the central information display (CID) (2) in the instrument panel and position correctly.
- Tighten the screws (1).

Central information display to instrument panel

Screw		Tightening torque	1,8 Nm

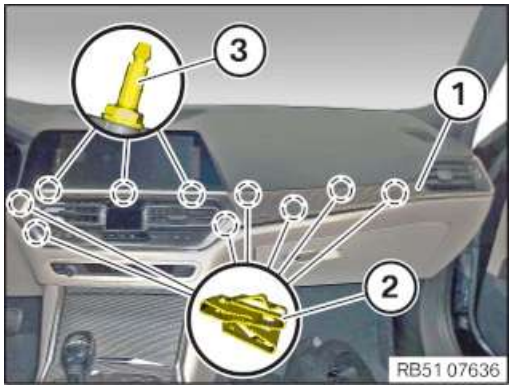
19 – Install the finisher on the right instrument panel



- Check the clamps (1).

  Replace broken or missing clamps (1).
- Check the pins (2) and the corresponding clamps on the instrument panel trim and renew if necessary.

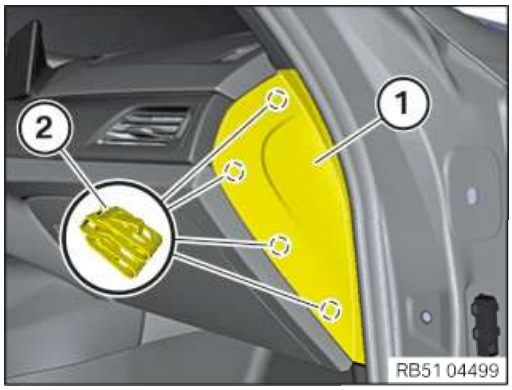
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- Install the decorative strip (1).

  Connect and lock the associated connectors.
- Correctly position the decorative strip (1) and at the clamps (2) and clip in the pins (3).

20 – Install the side panel on instrument panel on the right



- If required, connect the associated connector.
- Feed in the side panel (1) and clip it in at the clamps (2).

21 – Disconnecting all battery earth leads



- See additional information.

22 – Encode/program control unit(s)

Prerequisite

Replacement of component.

TECHNICAL INFORMATION

Use the most recent software version to prevent faults during programming/encoding.
The battery voltage must not fall below 13.0 V during programming.
Use only chargers for a low volt-vehicle electrical system that are recommended by BMW.

TECHNICAL INFORMATION

No high-voltage switch off is required in electric vehicles or hybrid vehicles for programming/encoding.
The high-voltage system will be automatically switched off by the programming system.

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- Connect the battery charger to the vehicle.
- Connect the programming system with the vehicle.
- Determine the action plan.
- Accept and fully process the measures plan.
- If applicable, connect the workshop system to the vehicle, depending on the reworking list.
- Carry out vehicle test.
- Delete the fault memory.
- The information about programming the workshop system and the corresponding notes in the user documentation must be observed.
- Wait until programming/encoding has been completed.
- Disconnect the programming system from the vehicle.
- Disconnect the battery charger from the vehicle.

Additional Information

Overview of Tightening Torques

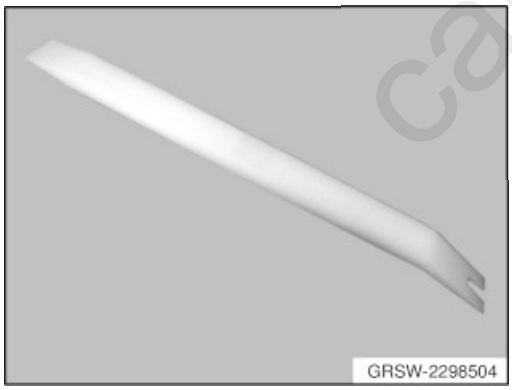
Driver Camera System (DCS) to instrument cluster			Used in step 12
Screw		Tightening torque	1.05 Nm

Instrument cluster (KOMBI) to support			Used in step 14
Oval-head screw		Tightening torque	1,8 Nm

Central information display to instrument panel			Used in step 18
Screw		Tightening torque	1,8 Nm

Overview of Special Tools

2 298 504 Wedge



Common	Used in step 8
Usage	Wedge with angled lug
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

Links

Repair instructions	**Used in step**
61 20 900 Disconnecting and connecting battery earth lead	221
61 20 900 Disconnecting and connecting battery earth lead	221
61 20 900 Disconnecting and connecting battery earth lead	221
61 20 900 Disconnecting and connecting battery earth lead	221
61 20 900 Disconnecting and connecting battery earth lead	221

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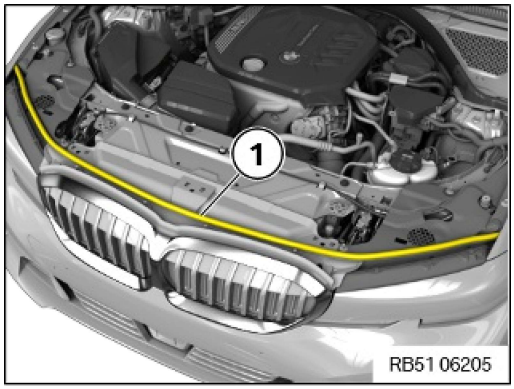
61 20 900 Disconnecting and connecting battery earth lead 221
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads) 221
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads) 221
61 20 900 Disconnecting and connecting battery earth lead 221
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads) 221
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle) 221
61 20 900 Disconnecting and connecting battery earth lead 221
61 20 900 Disconnecting and connecting battery earth lead 221
61 20 900 Disconnecting and connecting battery earth lead 221
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61 20 900 Disconnecting and connecting battery earth lead 221
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads) 221
61 20 900 Disconnecting and connecting battery earth lead 221
61 20 900 Disconnecting and connecting battery earth lead 221
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61 20 900 Disconnecting and connecting battery earth lead 221
61 20 900 Disconnecting and connecting battery earth lead 221
61 20 900 Disconnecting and connecting battery earth lead 221
61 20 900 Disconnecting and connecting battery earth lead 221
61 35 ... Notes on ESD protection (Electro Static Discharge) 518

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66 53 120 Remove and install front camera

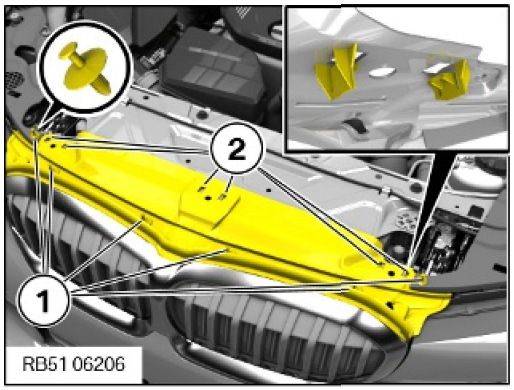
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



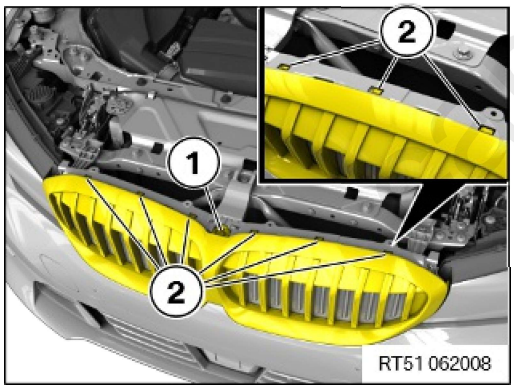
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

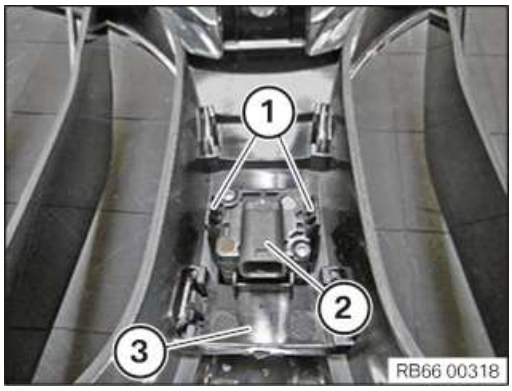
3 – Remove centre radiator ornamental grille



- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

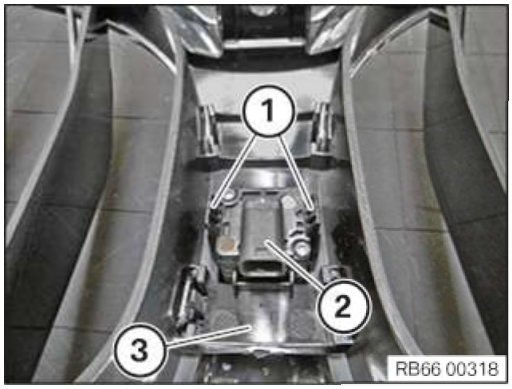
MAIN WORK

4 – Removing the front camera



- Unlock the locks (1).
- Remove front camera (2) from the front radiator grill centre (3).

5 – Installing the front camera



- Insert front camera (2) correctly in the radiator grille (3).
- Lock the locks (1).

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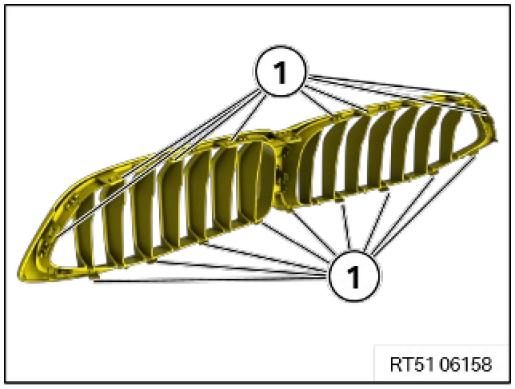
POSTPROCESSES

6 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

Check



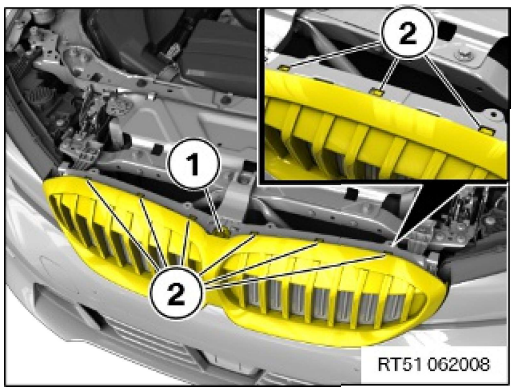
- Check latch mechanisms (1) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

- Renew the front ornamental grille, centre.

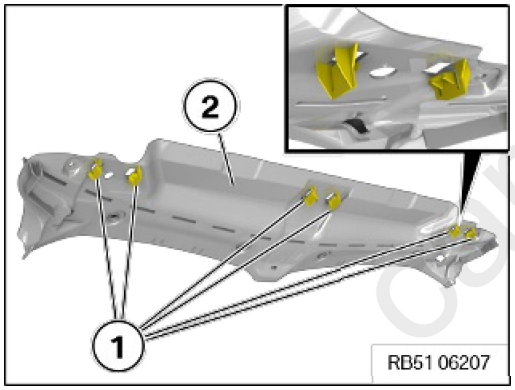


- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

7 – Installing cover for engine compartment centre



Check

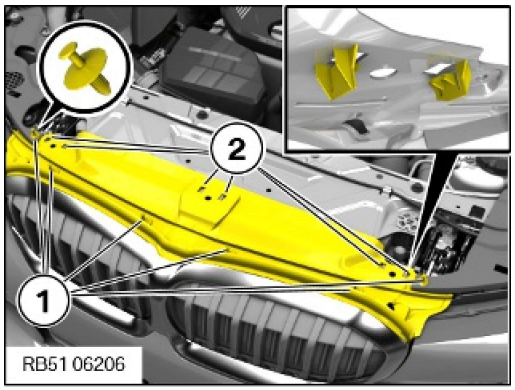
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

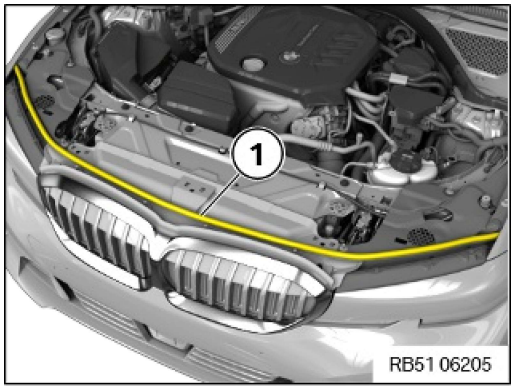
- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

8 – Install the seal for the front bonnet

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- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Centre of front ornamental grille to top air flap control Used in step 6

Oval-head screwM6		Tightening torque	4,6 Nm

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66 53 060 Removing and installing left or right top view camera

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Removing the mirror glass

CAUTION

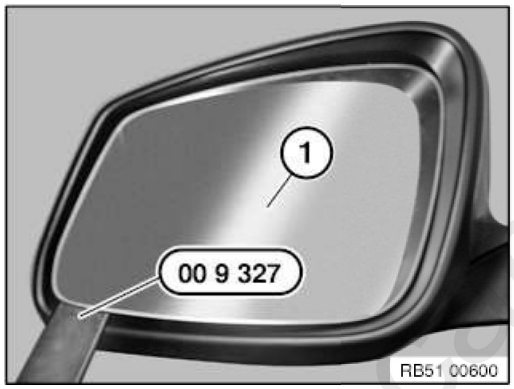
Glass splinters.

Danger of injury!

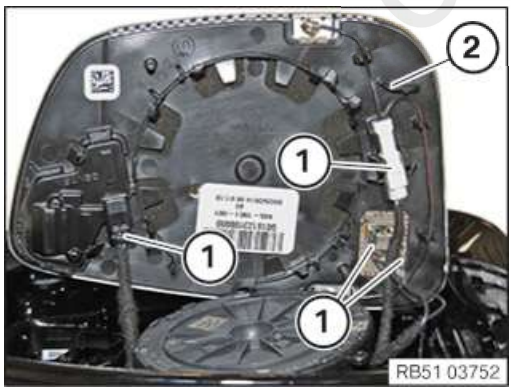
- If the mirror glass is damaged, wear safety goggles and protective gloves.

TECHNICAL INFORMATION

Carry out the work at temperatures between 18 °C and 23 °C only.



- Manually press the mirror glass (1) on the side of vehicle up to the end stop.
- Unclip the mirror glass (1) using special tool 0 496 571 (00 9 327) all the way around, starting with the outer side.



- Disconnect plug connection (1).
- Remove mirror glass (2).

2 – Removing the protective cap of the exterior mirror

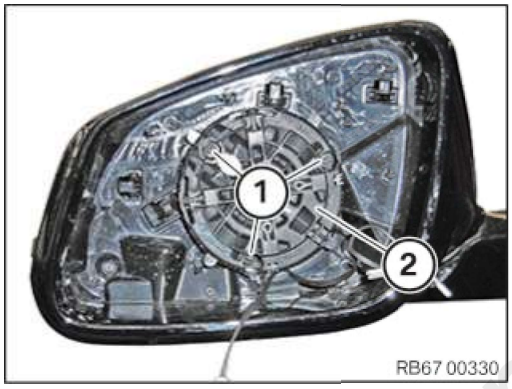


- Spread and release the latch mechanisms (1) of the protective cap on the exterior mirror.



- Remove the protective cap (1) in the direction of the arrow.
- Disconnect associated plug connection.

3 – Removing the drive for exterior mirror adjustment



- **Version A**
- Release the screws (1) and pull out the drive for exterior mirror adjustment (2) a little.

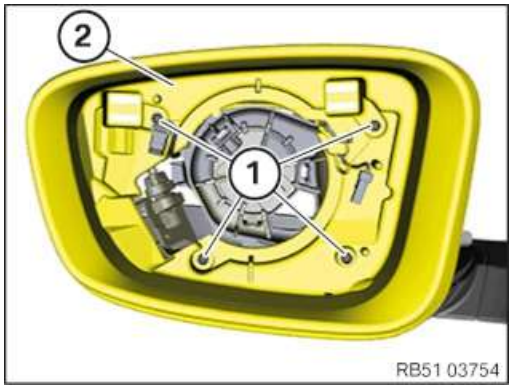


- **Version B**
- Loosen screw (1).
- Pull off the drive for exterior mirror adjustment (2).



- Unlock plug connection (1) and disconnect and remove the drive for exterior mirror adjustment (2) .

4 – Removing retaining ring from exterior rearview mirror



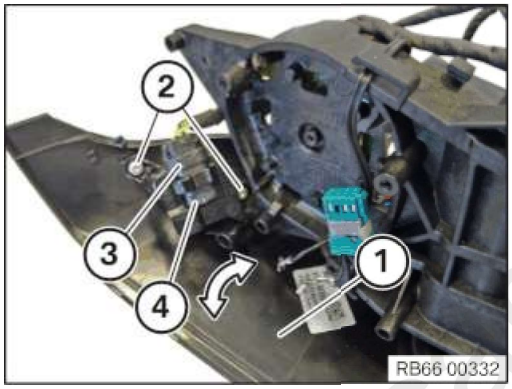
- Loosen screws (1).
- If necessary, feed out cable.
- Guide out retaining ring of exterior rearview mirror (2) in forward direction.

MAIN WORK

5 – Removing the top view camera

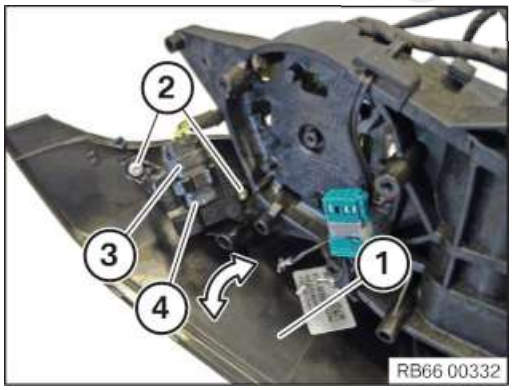


- Loosen the screw (1) on the lower part of the mirror housing (2).



- Carefully pull the lower part of the mirror housing (1) back in the direction of the arrow until the screws (2) are accessible.
- Loosen screws (2).
- Unlock plug connection (3) and disconnect.
- Removing the Top View Camera (4).

6 – Installing the top view camera



- Install and correctly position the top view camera (4).
- Connect connectors (3) and lock.
- Tighten the screws (2).

Top view camera to exterior mirror

Screw		Tightening torque	0,85 Nm

- Push lower section of the mirror housing (1) in the direction of arrow to the front and position it correctly.

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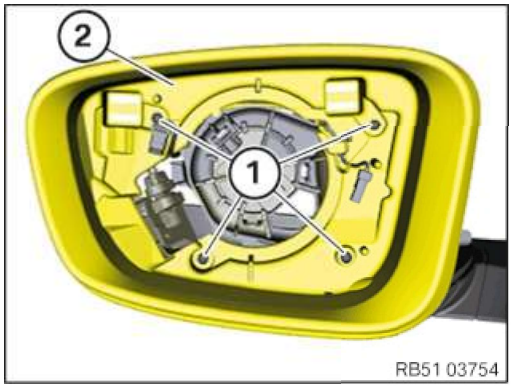
- Tighten screw (1) on the lower section of the mirror housing (2).

Housing to exterior mirror

		Tightening torque	0,85 Nm

POSTPROCESSES

7 – Installing the retaining ring on the exterior rearview mirror



- Feed in the retaining ring on the exterior rearview mirror (2).
- If necessary, feed in cable.
- Tighten the screws (1).

8 – Installing the drive for exterior mirror adjustment



- Position drive for exterior mirror adjustment (2).
- Connect connectors (1) and lock.



- **Version A**
- Position drive for exterior mirror adjustment (2) correctly.
- Tighten the screws (1).

Drive for exterior mirror adjustment

		Tightening torque	1,2 Nm



- **Version B**
- Correctly position the drive for exterior mirror adjustment (2) and press it in.
- Tighten down screw (1).

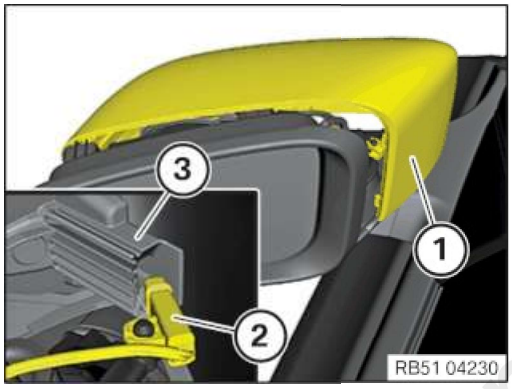
Drive for exterior mirror adjustment

	Tightening torque	1,2 Nm

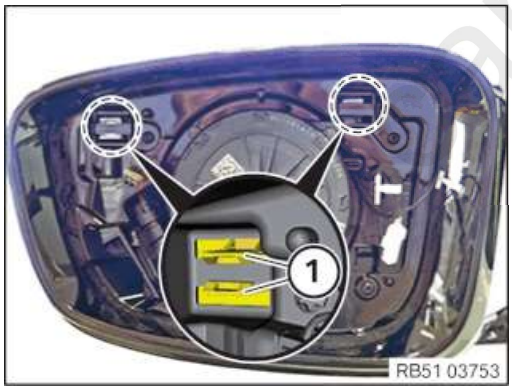
9 – Installing the protective cap of the exterior mirror



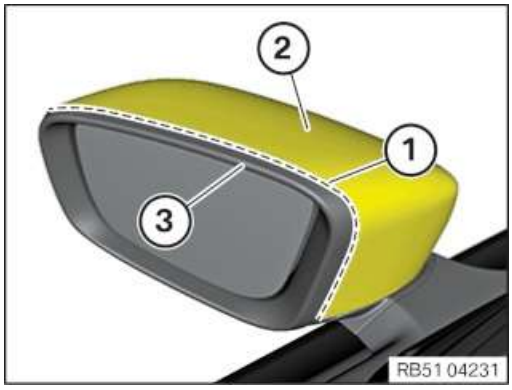
- Position the connector (1) on the mounting (2).
- Position connector (1) as shown.



- Position the protective cap (1) on the exterior mirror.
- Feed in the connector (2) for the side repeater (3).
- Push protective cap (1) on exterior mirror and lock.

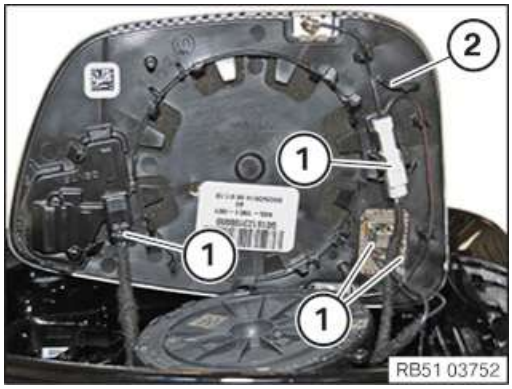


- Make sure that the latch mechanisms (1) are correctly fitted.

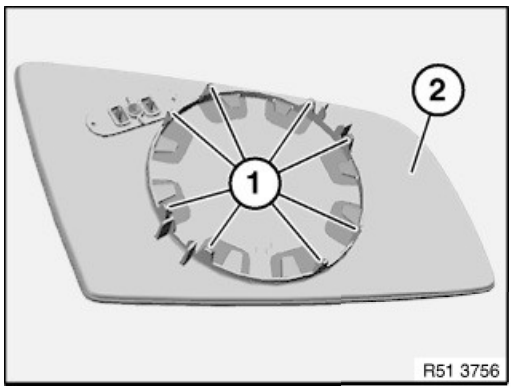


- Check the correct seating of the protective cap (2) on retaining ring (3) around (1).

10 – Installing the mirror glass



- Position mirror glass (2).
- Connect plug connections (1).



- Check whether retaining lugs (1) are missing or damaged and, if required, renew the mirror glass.
- Position the mirror glass (2) with the retaining lugs (1) flush with the drive for exterior mirror adjustment and clip in.
- Ensure correct locking.
- Check if the drive for exterior mirror adjustment is functioning correctly.

Additional Information

Overview of Tightening Torques

Top view camera to exterior mirror — Used in step 6

Screw		Tightening torque	0,85 Nm

Housing to exterior mirror — Used in step 6

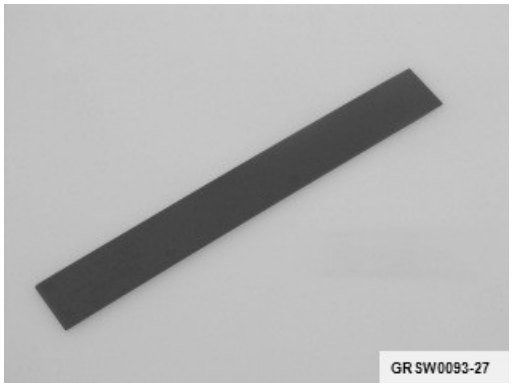
		Tightening torque	0,85 Nm

Drive for exterior mirror adjustment — Used in step 8

		Tightening torque	1,2 Nm

Overview of Special Tools

0 496 571 (00 9 327) Wedge



Common — Used in step 1

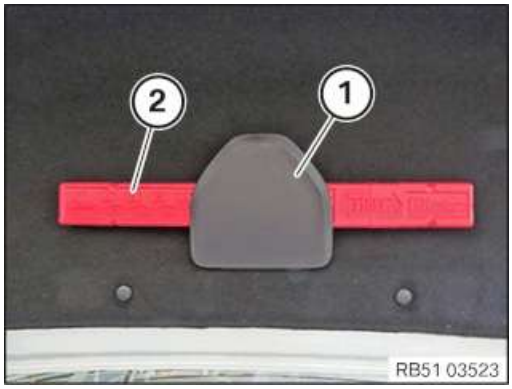
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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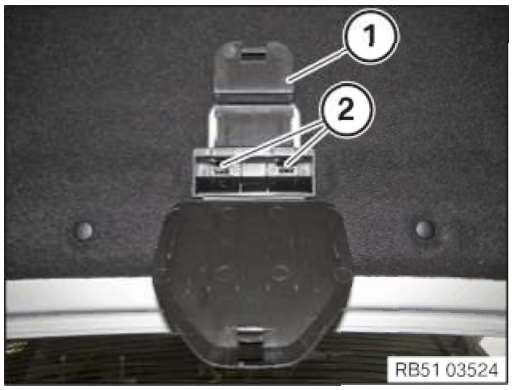
66 53 020 Removing and installing rear view camera

PRELIMINARY WORK

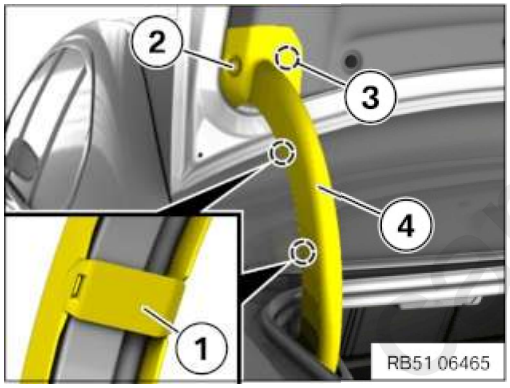
1 – Remove tailgate trim panel



- Fold the cover (1) towards the bottom.
- Remove the warning triangle (2).



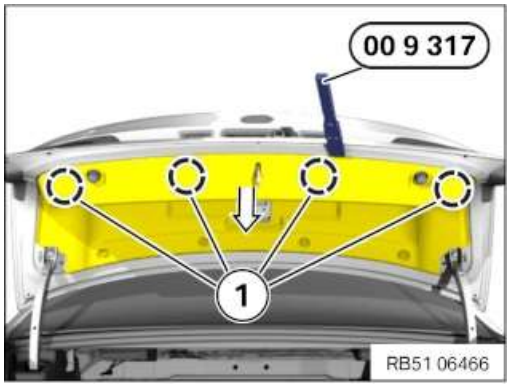
- Detach the warning triangle holder (1) from the latch mechanisms (2) and slide downwards.



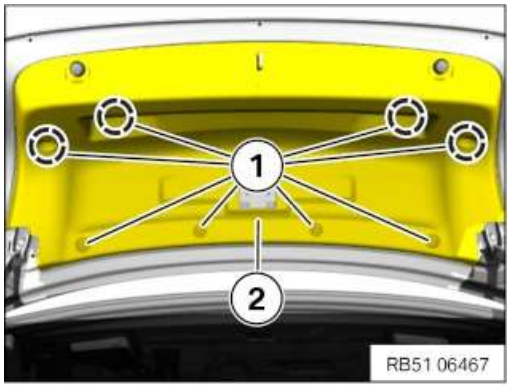
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Unclip the tabs (1).
- Loosen expanding rivet (2).
- To avoid damage, release the trim panel for the hinge of the tailgate (4) without using a tool by jerking it along the hinge bracket and out of the clip fastening (3).



- Unclip clips (1) with special tool 0 490 534 (00 9 317) in the direction of arrow.



- Release expanding rivet (1) on the tailgate trim panel (2).
- Remove tailgate trim panel (2).
- **If installed**: Unlock plug connection of the switch for the tailgate lift and disconnect.

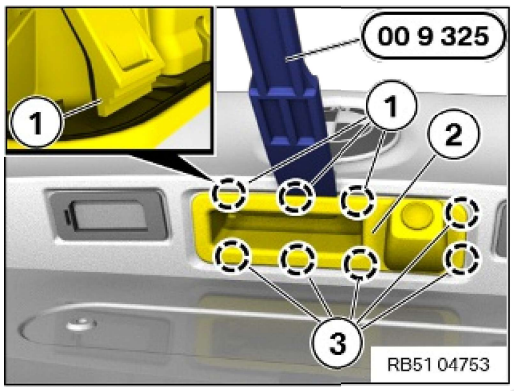
2 – Remove tailgate pushbutton

RISK OF DAMAGE

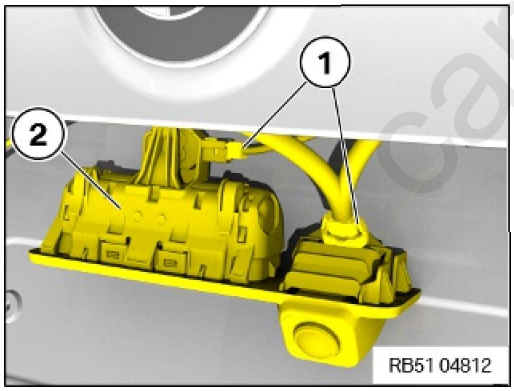
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



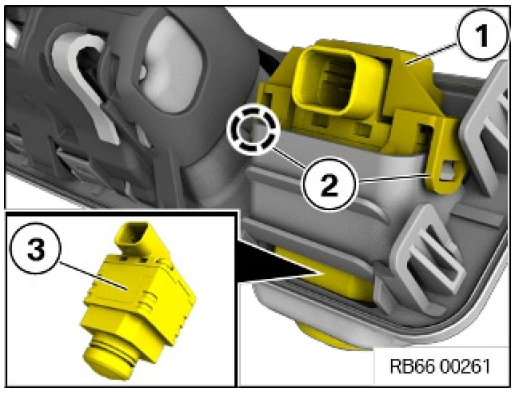
- Mount special tool 0 496 569 (00 9 325) as illustrated.
- Open the latch mechanisms (1) of the tailgate button (2) by carefully knocking onto the special tool 0 496 569 (00 9 325).
- Disengage the latch mechanisms (3) from the inside unclip the tailgate button (2) toward the bottom.



- Disconnect the connector (1) and remove the tailgate button (2).
- If necessary, remove broken off parts of the tailgate button (2) from the tailgate.

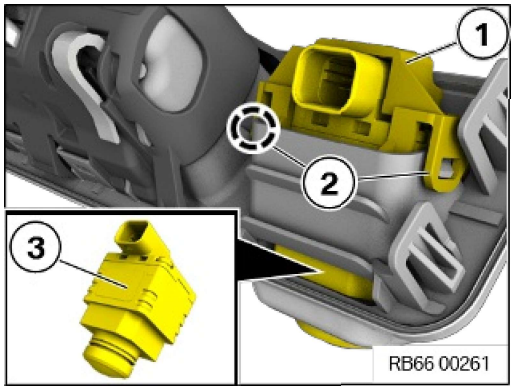
MAIN WORK

3 – Remove rear view camera



- Unclip the holder (1) from the latch mechanisms (2) and remove it.
- Remove the rear view camera (3) from button for tailgate activation.

4 – Installing the rear view camera

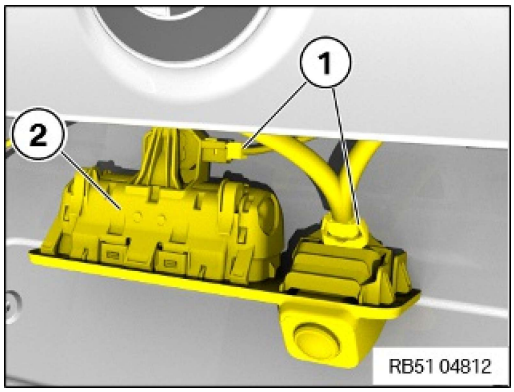


- Insert rear view camera (3) in the button for the tailgate activation.
- Clip the holder (1) into the latch mechanisms (2).

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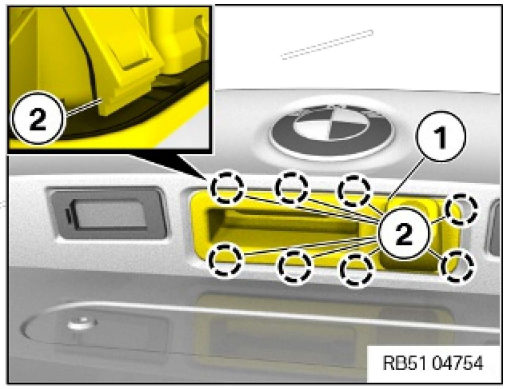
POSTPROCESSES

5 – Install the tailgate button



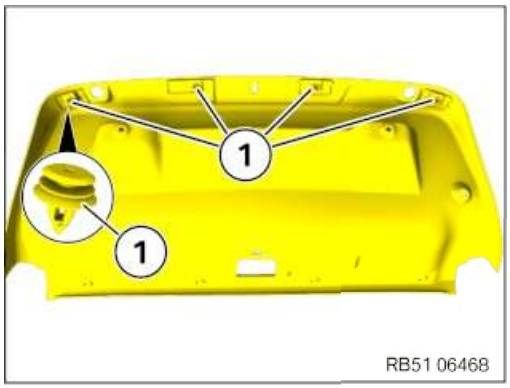
- Renew the tailgate button (2).

  Parts: Tailgate button
- Check the tailgate in the area of the tailgate button (2) for damage and repair where required.
- Connect the connector (1) with the tailgate button (2).

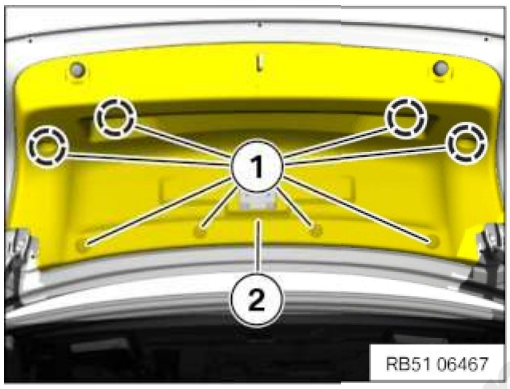


- Insert the tailgate button (1) in the tailgate and clip it into the latch mechanisms (2).

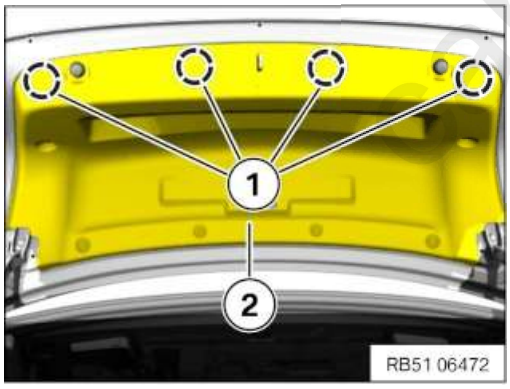
6 – Installing the tailgate trim panel



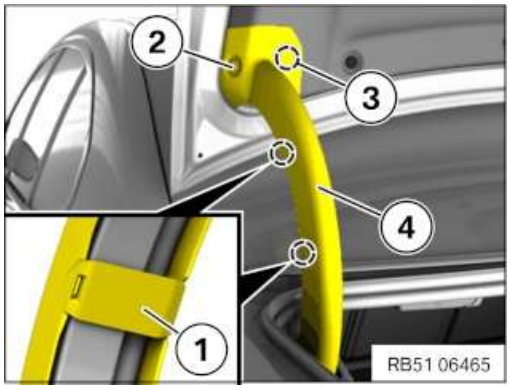
- Check the clips (1) for damage and renew if necessary.



- Fit the tailgate trim panel (2) and fasten in place with the expanding rivets (1).
- **If installed**: Connect and lock plug connection on the switch for the tailgate lift.



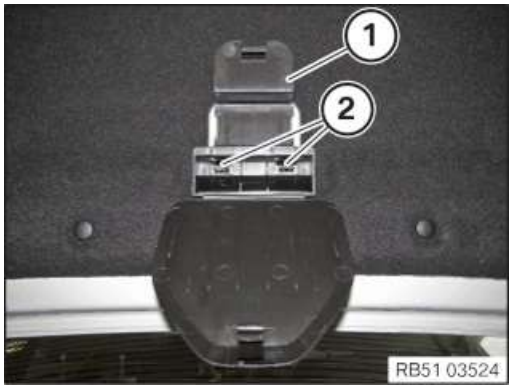
- Clip in the tailgate trim panel (2) with the clips (1).



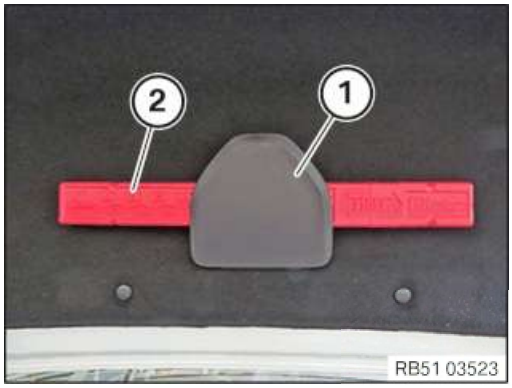
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Clip in the trim panel for the hinge of the tailgate (4) to the clip fastening (3).
- Fasten expanding rivet (2).
- Clip in tabs (1).



- Position the warning triangle holder (1) and snap into the latch mechanisms (2).

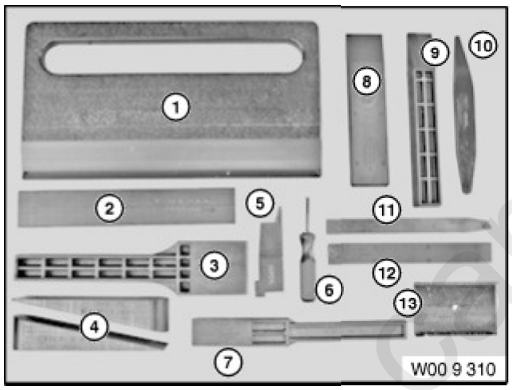


- Install the warning triangle (2).
- Clip in the cover (1).

Additional Information

Overview of Special Tools

0 490 534 (00 9 317) Wedge



Common	Used in step 1
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

0 496 569 (00 9 325) Wedge



Common	Used in step 2
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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66 53 170 Removing and installing the control unit of the top rear side view camera (TRSVC) (with holder)

RISK OF DAMAGE

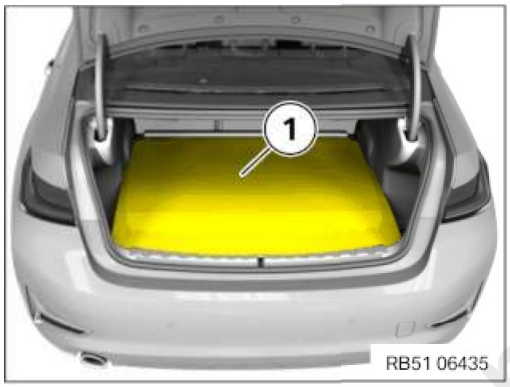
Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

PRELIMINARY WORK

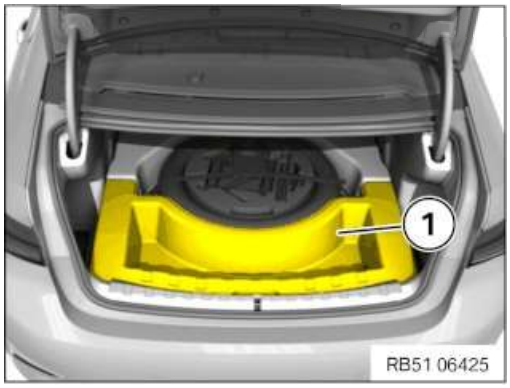
1 – Removing the luggage compartment floor trim panel



- Remove luggage compartment floor trim panel (1).

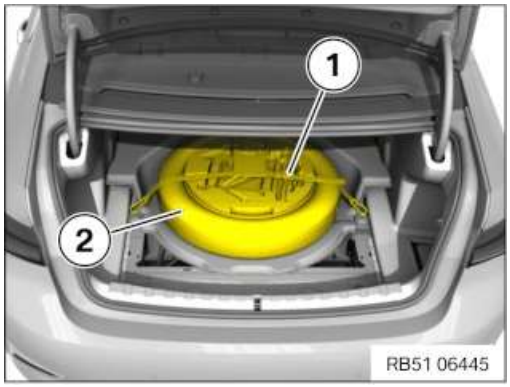
2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**



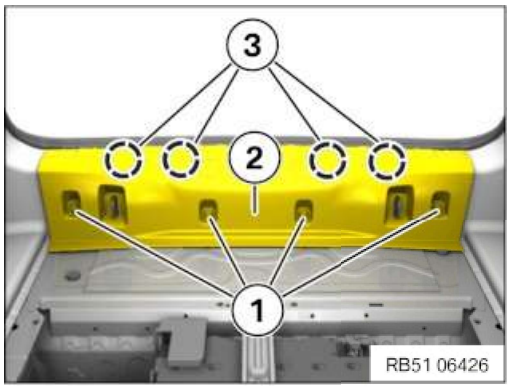
- Remove rear luggage compartment well (1).

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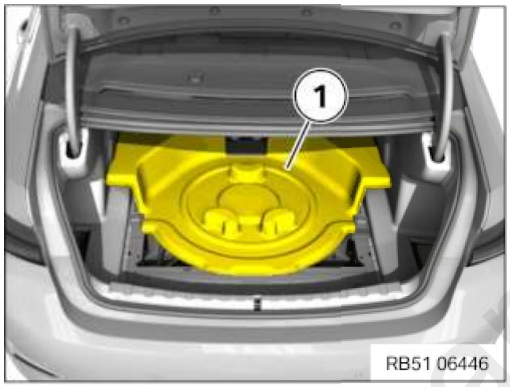
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



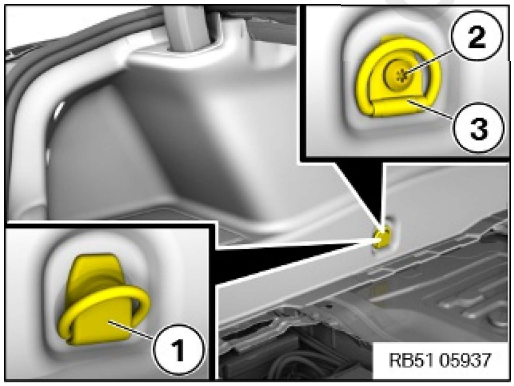
- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

4 – Removing front luggage compartment well



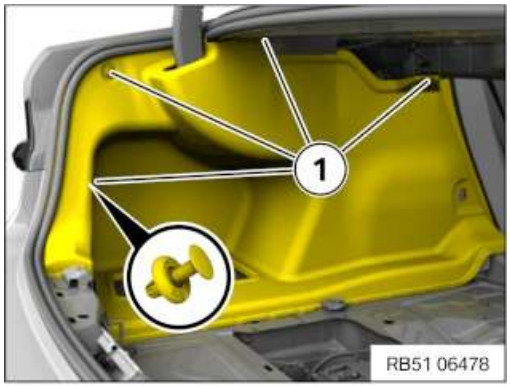
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Remove luggage compartment wheel arch trim panel on left.

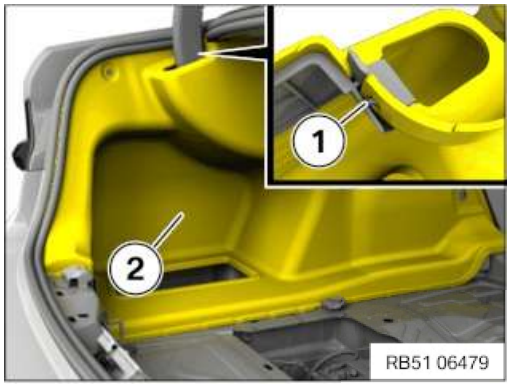


- Remove the cover (1).
- Loosen screw (2).
- Remove lashing eye (3).

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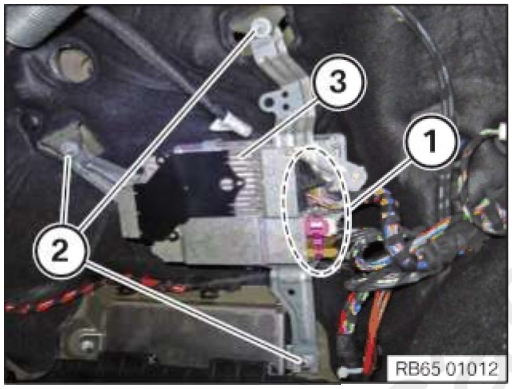
- Reposition left rear seat backrest.
- Loosen the expanding rivet (1).



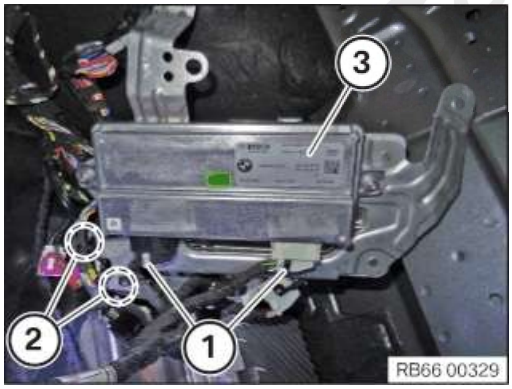
- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip for the tailgate and the side trim panel in the rear passenger compartment.
- Remove luggage compartment wheel arch trim panel (2).

MAIN WORK

6 – Remove the TRSVC control unit

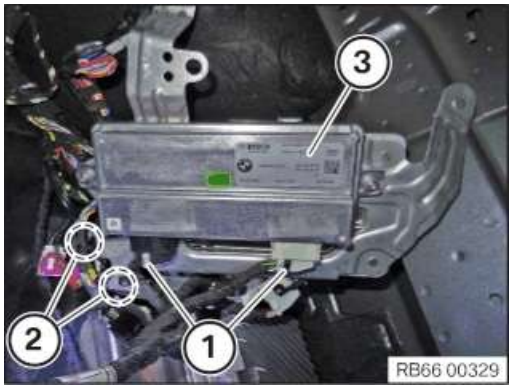


- Unlock and disconnect all connectors in area (1).
- Loosen nuts (2).
- Feed out Receiver audio module (RAM) (3) with the holder and turn.

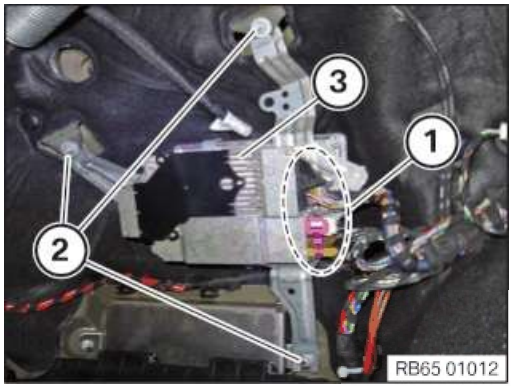


- Unlock and disconnect connector (1).
- Release cable latch mechanisms (2).
- Feed out the TRSVC control unit (3) with the holder and remove it.

7 – Install the TRSVC control unit



- Feed in the TRSVC control unit (3) with the holder and position it.
- Engage the cable latch mechanisms (2).
- Connect connectors (1) and lock.
- Turn the TRSVC-control unit (3) with the holder.



- Feed in the Receiver audio module (RAM) (3) with the holder and position it correctly.
- Tighten nuts (2).

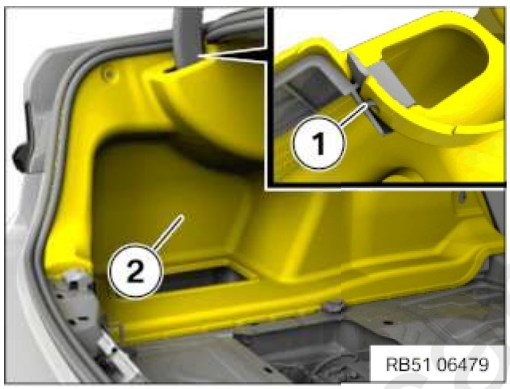
Bracket to body

Nut		Tightening torque	6 Nm
Screw		Tightening torque	6 Nm

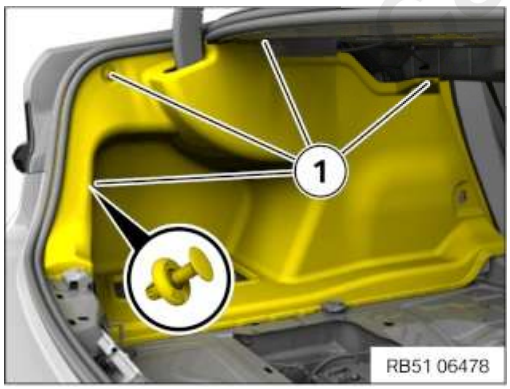
- Connect and lock all connectors in the area (1).

POSTPROCESSES

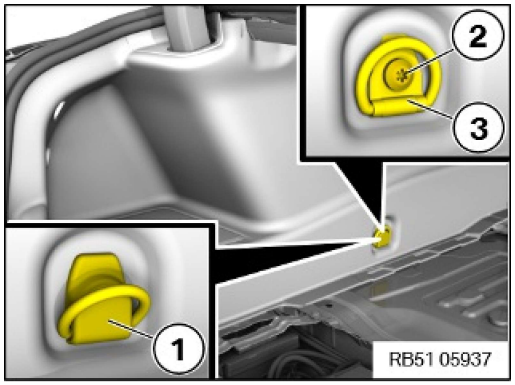
8 – Install luggage compartment wheel arch trim panel at left



- Feed luggage compartment wheel arch trim panel (2) under the side trim panel in the rear passenger compartment and the sealing lip for the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



- Secure expanding rivet (1).
- Raise the link rear seat backrest.



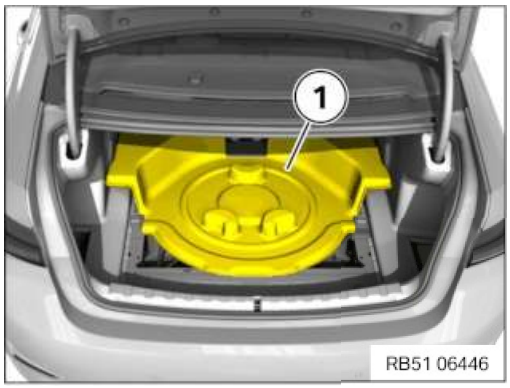
- Position the lashing eye (3).
- Tighten down screw (2).

Lashing eye to body

	Tightening torque	19 Nm

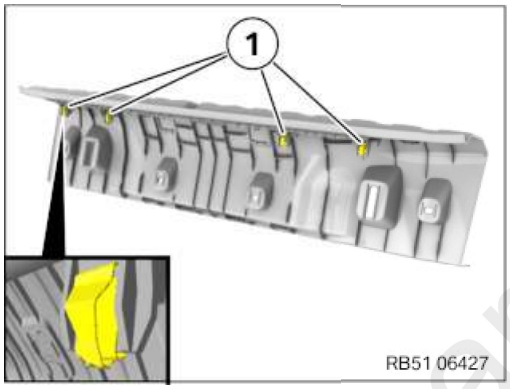
- Install the cover (1).

9 – Install the luggage compartment well in front

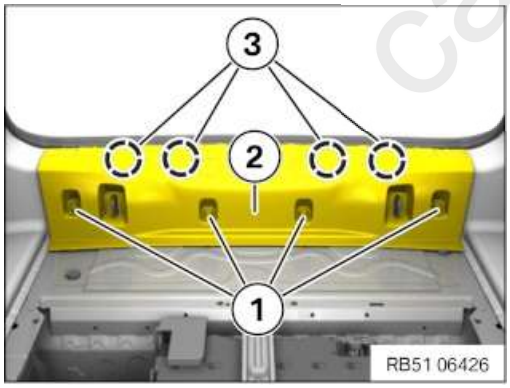


- Feed in and insert front luggage compartment well (1) on the seat belt strap.

10 – Installing loading edge trim



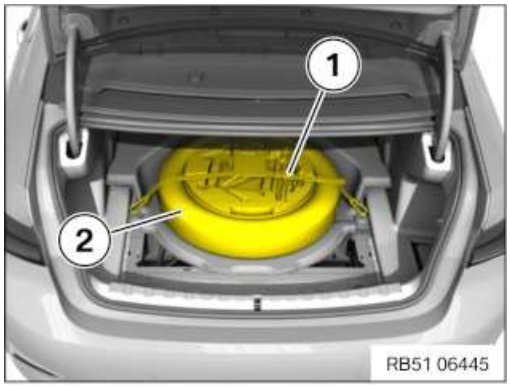
- Check the clamps (1) for damage and renew if necessary.



- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

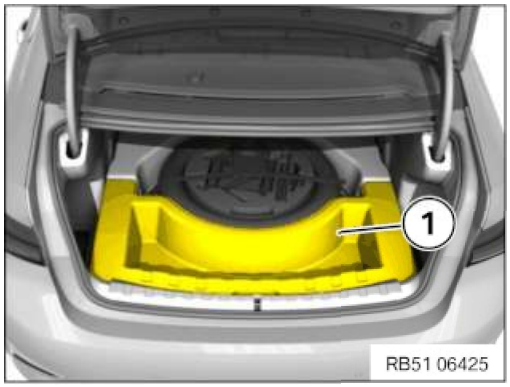
11 – If installed: Install the emergency wheel

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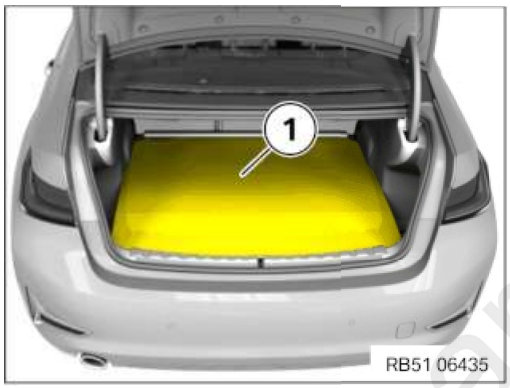
- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

12 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

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Additional Information

Overview of Tightening Torques

Bracket to body			Used in step 7
Nut		Tightening torque	6 Nm
Screw		Tightening torque	6 Nm

Lashing eye to body			Used in step 8
		Tightening torque	19 Nm

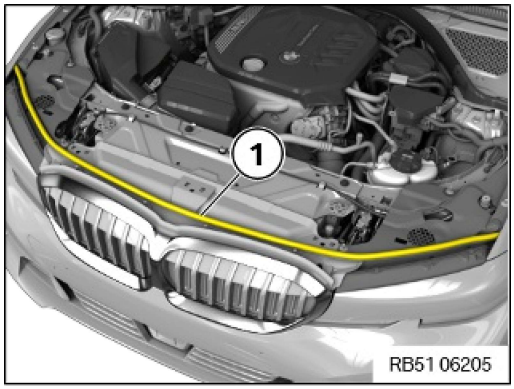
Links

Repair instructions	**Used in step**
61 35 ... Notes on ESD protection (Electro Static Discharge)	

66 53 621 Replace front camera

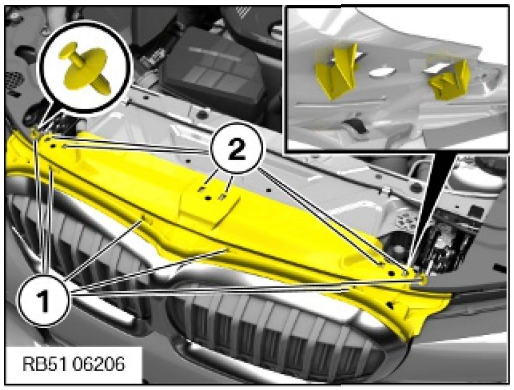
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



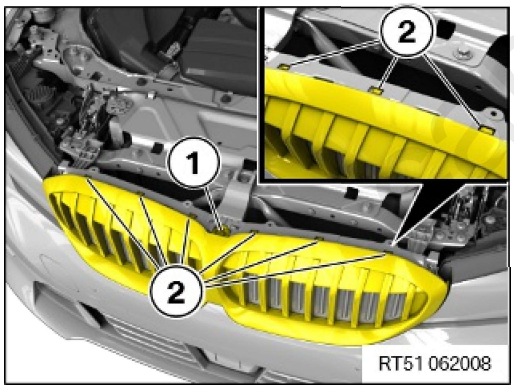
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

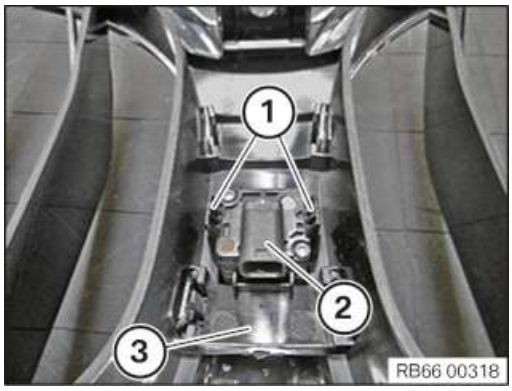
3 – Remove centre radiator ornamental grille



- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

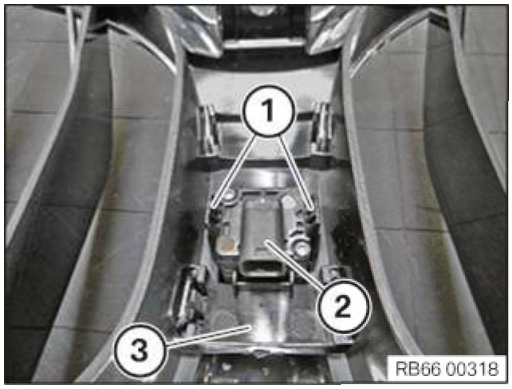
MAIN WORK

4 – Removing the front camera



- Unlock the locks (1).
- Remove front camera (2) from the front radiator grill centre (3).

5 – Installing the front camera



- Insert front camera (2) correctly in the radiator grille (3).
- Lock the locks (1).

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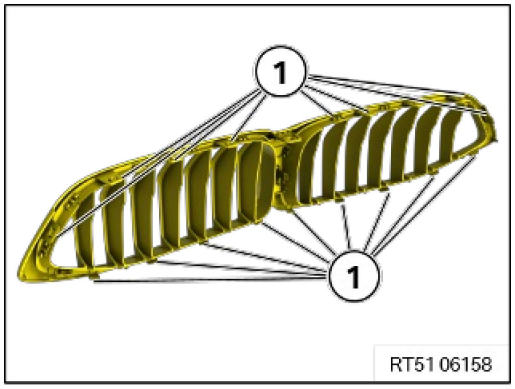
POSTPROCESSES

6 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

Check



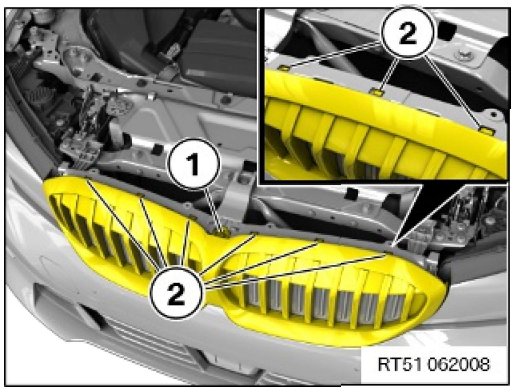
- Check latch mechanisms (1) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

- Renew the front ornamental grille, centre.

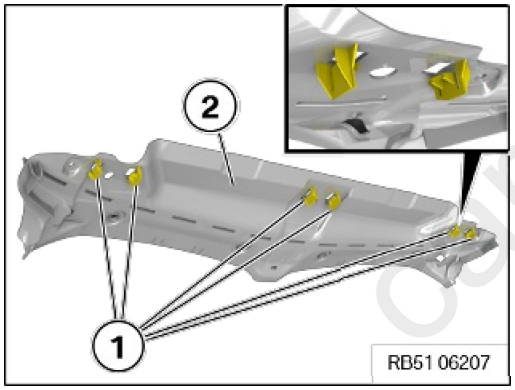


- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

7 – Installing cover for engine compartment centre



Check

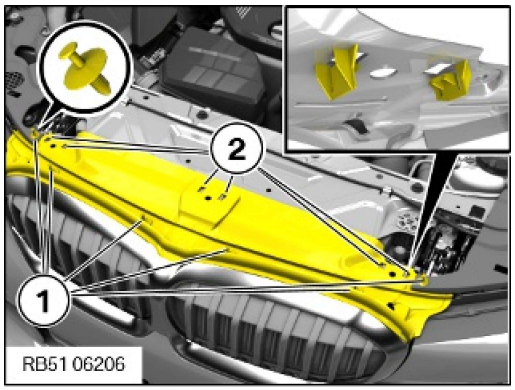
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

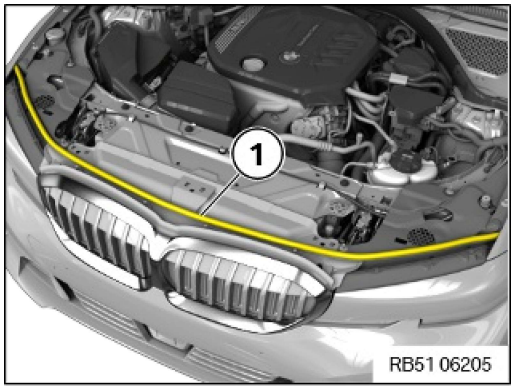
- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

8 – Install the seal for the front bonnet

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- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

9 – Encode/program control unit(s)

- **Replacement**.
- **This task is not included in this flat rate unit item.**

▶ **Encode/program control unit(s)**

Prerequisite

Replacement of component.

TECHNICAL INFORMATION

Use the most recent software version to prevent faults during programming/encoding.
The battery voltage must not fall below 13.0 V during programming.
Use only chargers for a low volt-vehicle electrical system that are recommended by BMW.

TECHNICAL INFORMATION

No high-voltage switch off is required in electric vehicles or hybrid vehicles for programming/encoding.
The high-voltage system will be automatically switched off by the programming system.

- Connect the battery charger to the vehicle.
- Connect the programming system with the vehicle.
- Determine the action plan.
- Accept and fully process the measures plan.
- If applicable, connect the workshop system to the vehicle, depending on the reworking list.
- Carry out vehicle test.
- Delete the fault memory.
- The information about programming the workshop system and the corresponding notes in the user documentation must be observed.
- Wait until programming/encoding has been completed.
- Disconnect the programming system from the vehicle.
- Disconnect the battery charger from the vehicle.

Additional Information

Overview of Tightening Torques

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Centre of front ornamental grille to top air flap control Used in step 6

Oval-head screwM6		Tightening torque	4,6 Nm

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66 53 582 Replacing left or right top view camera

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Removing the mirror glass

CAUTION

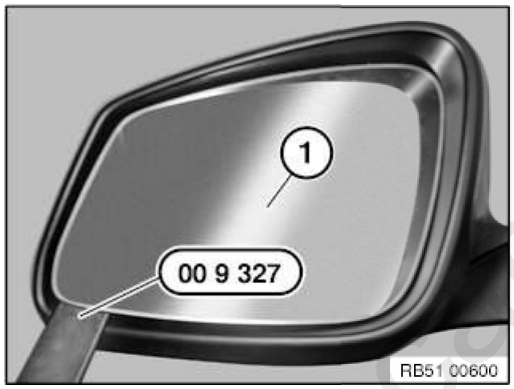
Glass splinters.

Danger of injury!

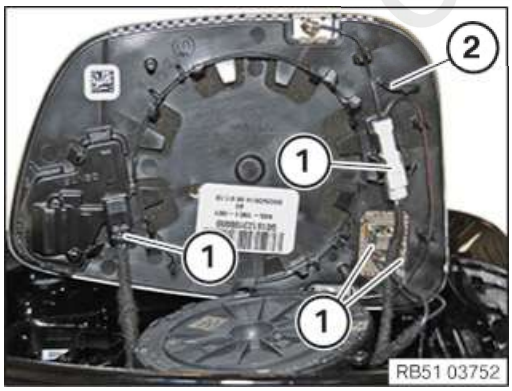
- If the mirror glass is damaged, wear safety goggles and protective gloves.

TECHNICAL INFORMATION

Carry out the work at temperatures between 18 °C and 23 °C only.



- Manually press the mirror glass (1) on the side of vehicle up to the end stop.
- Unclip the mirror glass (1) using special tool 0 496 571 (00 9 327) all the way around, starting with the outer side.



- Disconnect plug connection (1).
- Remove mirror glass (2).

2 – Removing the protective cap of the exterior mirror

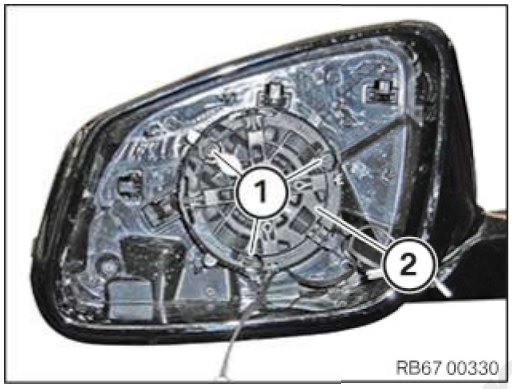


- Spread and release the latch mechanisms (1) of the protective cap on the exterior mirror.



- Remove the protective cap (1) in the direction of the arrow.
- Disconnect associated plug connection.

3 – Removing the drive for exterior mirror adjustment



- **Version A**
- Release the screws (1) and pull out the drive for exterior mirror adjustment (2) a little.

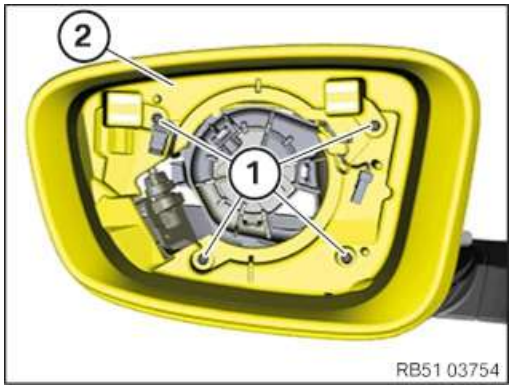


- **Version B**
- Loosen screw (1).
- Pull off the drive for exterior mirror adjustment (2).



- Unlock plug connection (1) and disconnect and remove the drive for exterior mirror adjustment (2) .

4 – Removing retaining ring from exterior rearview mirror



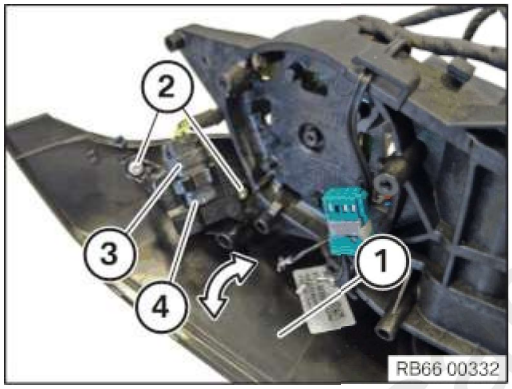
- Loosen screws (1).
- If necessary, feed out cable.
- Guide out retaining ring of exterior rearview mirror (2) in forward direction.

MAIN WORK

5 – Removing the top view camera

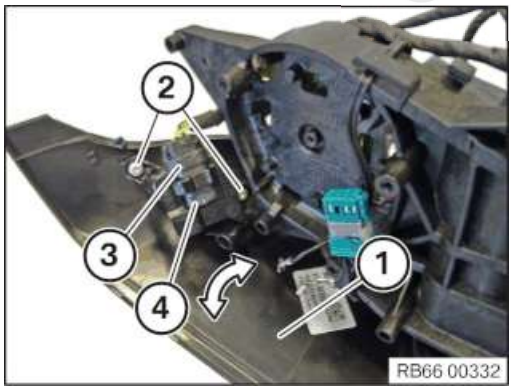


- Loosen the screw (1) on the lower part of the mirror housing (2).



- Carefully pull the lower part of the mirror housing (1) back in the direction of the arrow until the screws (2) are accessible.
- Loosen screws (2).
- Unlock plug connection (3) and disconnect.
- Removing the Top View Camera (4).

6 – Installing the top view camera



- Install and correctly position the top view camera (4).
- Connect connectors (3) and lock.
- Tighten the screws (2).

Top view camera to exterior mirror

Screw		Tightening torque	0,85 Nm

- Push lower section of the mirror housing (1) in the direction of arrow to the front and position it correctly.

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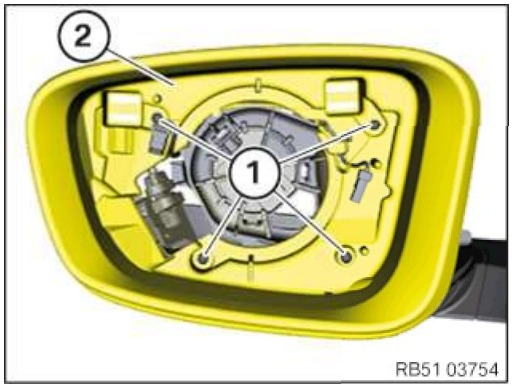
- Tighten screw (1) on the lower section of the mirror housing (2).

Housing to exterior mirror

		Tightening torque	0,85 Nm

POSTPROCESSES

7 – Installing the retaining ring on the exterior rearview mirror



- Feed in the retaining ring on the exterior rearview mirror (2).
- If necessary, feed in cable.
- Tighten the screws (1).

8 – Installing the drive for exterior mirror adjustment



- Position drive for exterior mirror adjustment (2).
- Connect connectors (1) and lock.



- **Version A**
- Position drive for exterior mirror adjustment (2) correctly.
- Tighten the screws (1).

Drive for exterior mirror adjustment

		Tightening torque	1,2 Nm



- **Version B**
- Correctly position the drive for exterior mirror adjustment (2) and press it in.
- Tighten down screw (1).

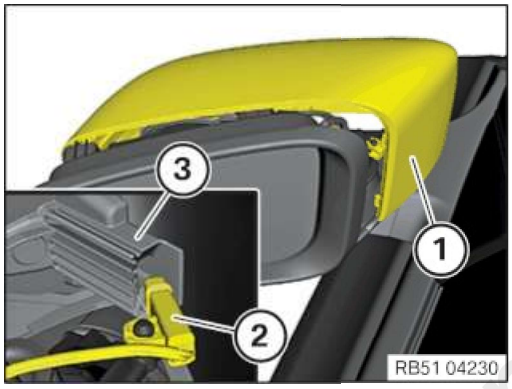
Drive for exterior mirror adjustment

	Tightening torque	1,2 Nm

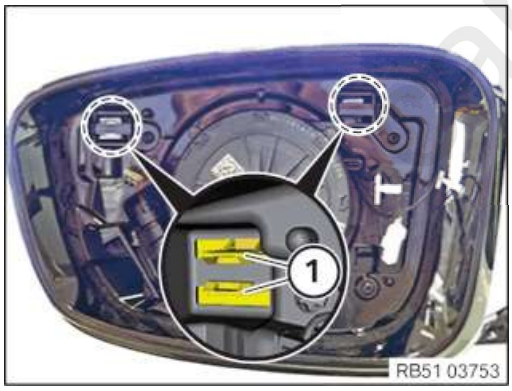
9 – Installing the protective cap of the exterior mirror



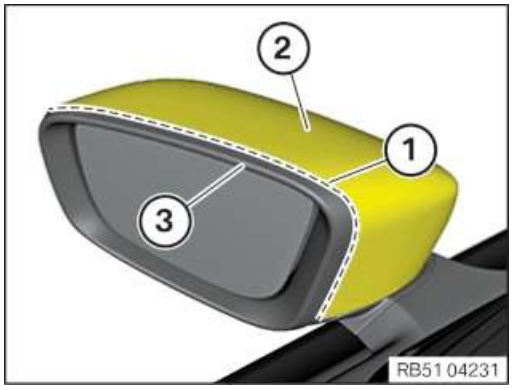
- Position the connector (1) on the mounting (2).
- Position connector (1) as shown.



- Position the protective cap (1) on the exterior mirror.
- Feed in the connector (2) for the side repeater (3).
- Push protective cap (1) on exterior mirror and lock.

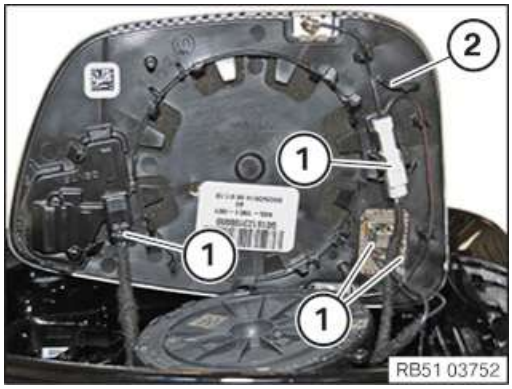


- Make sure that the latch mechanisms (1) are correctly fitted.

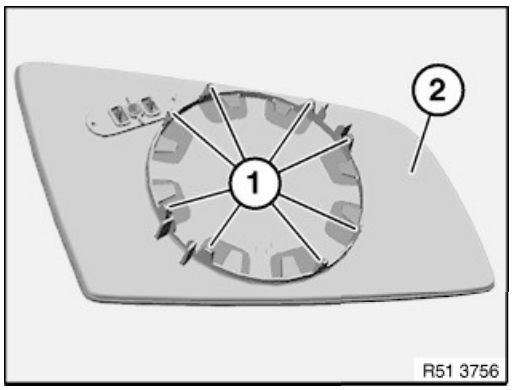


- Check the correct seating of the protective cap (2) on retaining ring (3) around (1).

10 – Installing the mirror glass



- Position mirror glass (2).
- Connect plug connections (1).



- Check whether retaining lugs (1) are missing or damaged and, if required, renew the mirror glass.
- Position the mirror glass (2) with the retaining lugs (1) flush with the drive for exterior mirror adjustment and clip in.
- Ensure correct locking.
- Check if the drive for exterior mirror adjustment is functioning correctly.

11 – Calibrating the top view camera



- Calibration is performed via BMW diagnosis system:
  - Service functions
  - Body
  - All-round vision camera
  - Calibrate the 360 degree view functions

Additional Information

Overview of Tightening Torques

Top view camera to exterior mirror			Used in step 6
Screw		Tightening torque	0,85 Nm

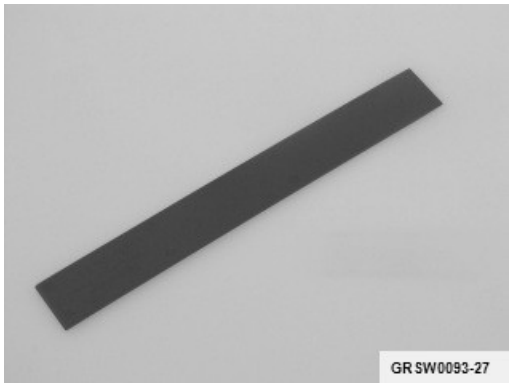
Housing to exterior mirror			Used in step 6
		Tightening torque	0,85 Nm

Drive for exterior mirror adjustment			Used in step 8
		Tightening torque	1,2 Nm

Overview of Special Tools

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0 496 571 (00 9 327) Wedge



Common	Used in step 1
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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66 53 671 Replacing the control unit for the Top Rear Side View Camera (TRSVC) (after vehicle diagnosis) (flat rate specification without programming/encoding, see 61 00 ...)

RISK OF DAMAGE

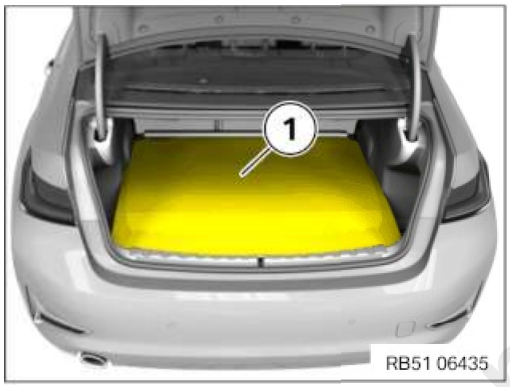
Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

PRELIMINARY WORK

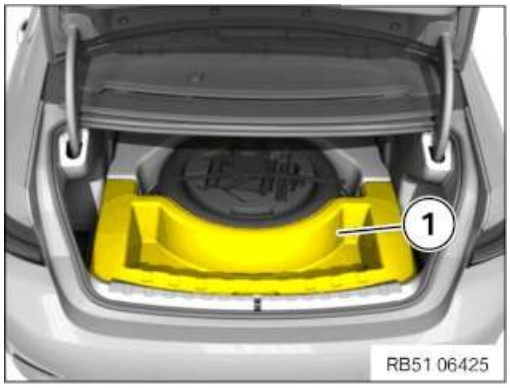
1 – Removing the luggage compartment floor trim panel



- Remove luggage compartment floor trim panel (1).

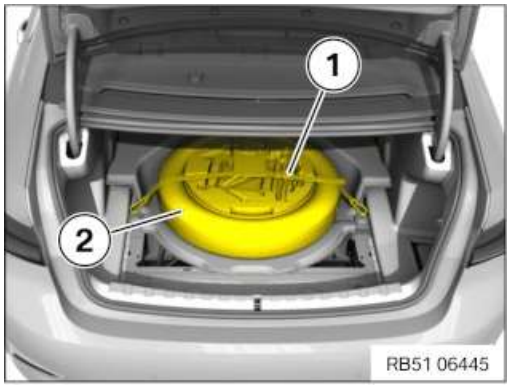
2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**



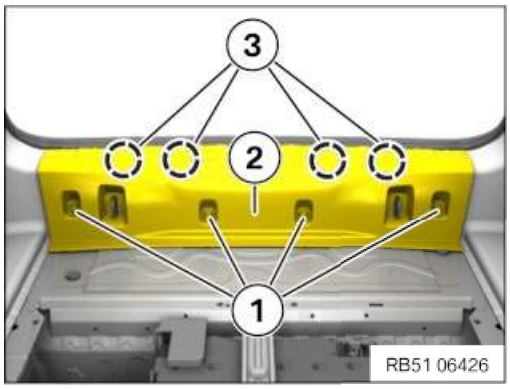
- Remove rear luggage compartment well (1).

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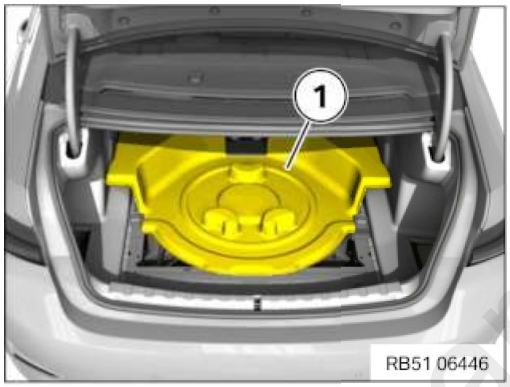
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



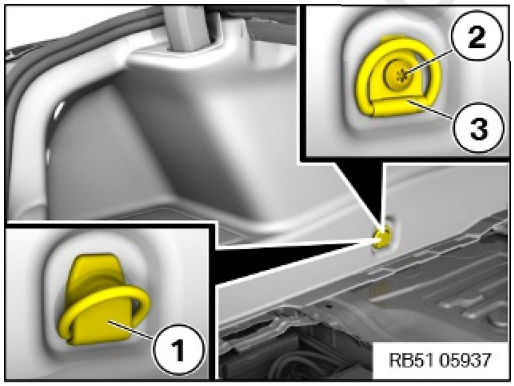
- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

4 – Removing front luggage compartment well



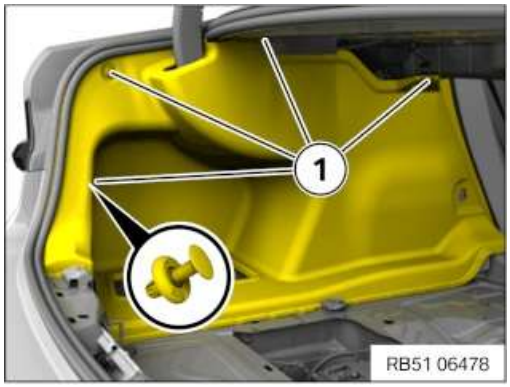
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Remove luggage compartment wheel arch trim panel on left.

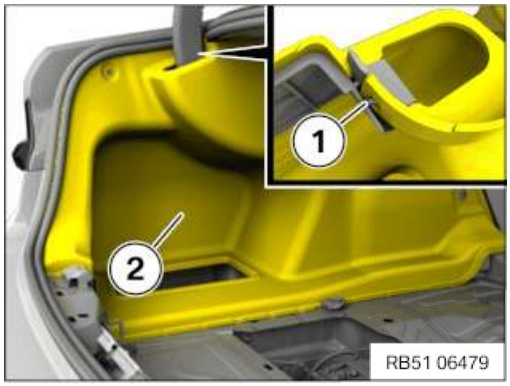


- Remove the cover (1).
- Loosen screw (2).
- Remove lashing eye (3).

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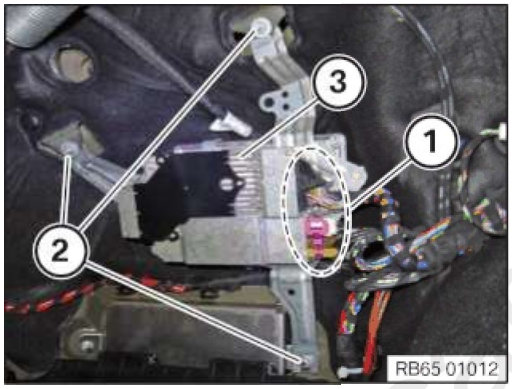
- Reposition left rear seat backrest.
- Loosen the expanding rivet (1).



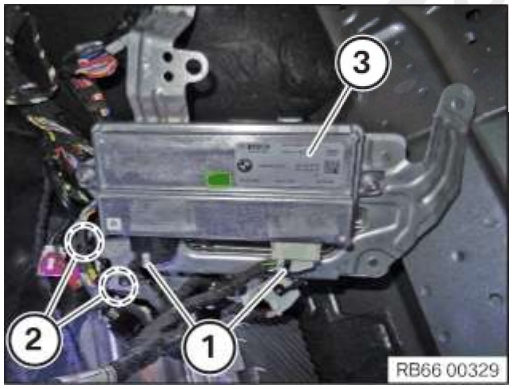
- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip for the tailgate and the side trim panel in the rear passenger compartment.
- Remove luggage compartment wheel arch trim panel (2).

MAIN WORK

6 – Remove the TRSVC control unit

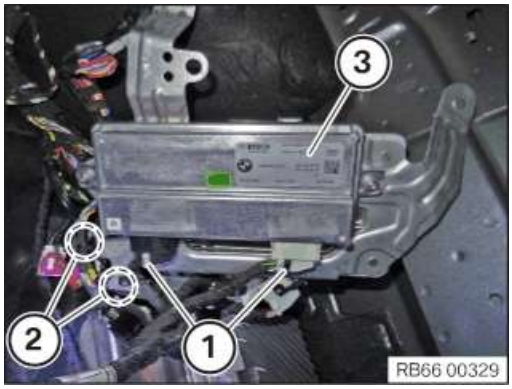


- Unlock and disconnect all connectors in area (1).
- Loosen nuts (2).
- Feed out Receiver audio module (RAM) (3) with the holder and turn.

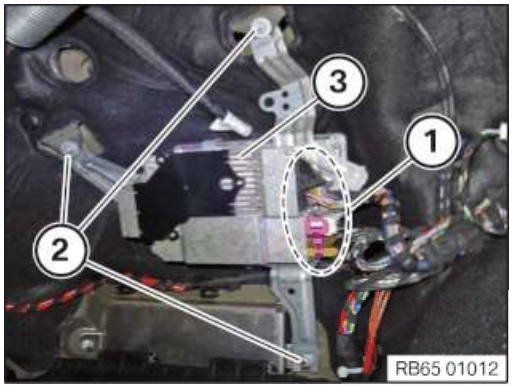


- Unlock and disconnect connector (1).
- Release cable latch mechanisms (2).
- Feed out the TRSVC control unit (3) with the holder and remove it.

7 – Install the TRSVC control unit



- Feed in the TRSVC control unit (3) with the holder and position it.
- Engage the cable latch mechanisms (2).
- Connect connectors (1) and lock.
- Turn the TRSVC-control unit (3) with the holder.



- Feed in the Receiver audio module (RAM) (3) with the holder and position it correctly.
- Tighten nuts (2).

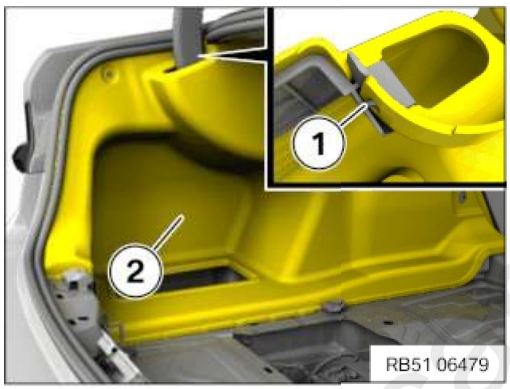
Bracket to body

Nut		Tightening torque	6 Nm
Screw		Tightening torque	6 Nm

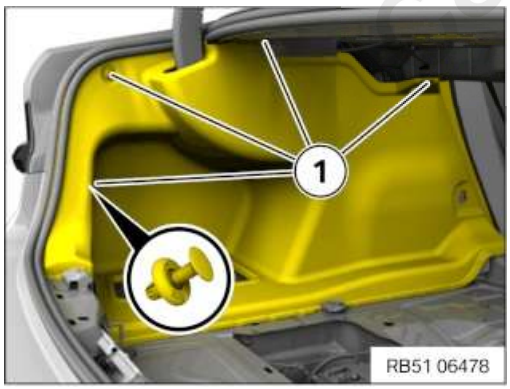
- Connect and lock all connectors in the area (1).

POSTPROCESSES

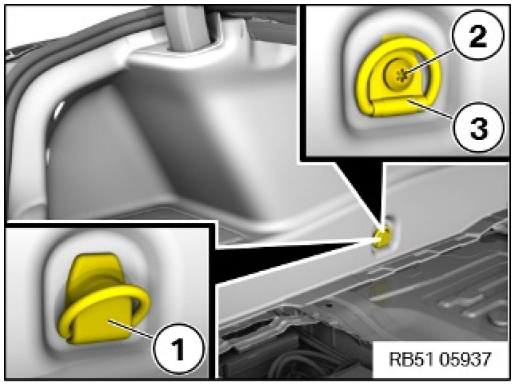
8 – Install luggage compartment wheel arch trim panel at left



- Feed luggage compartment wheel arch trim panel (2) under the side trim panel in the rear passenger compartment and the sealing lip for the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



- Secure expanding rivet (1).
- Raise the link rear seat backrest.



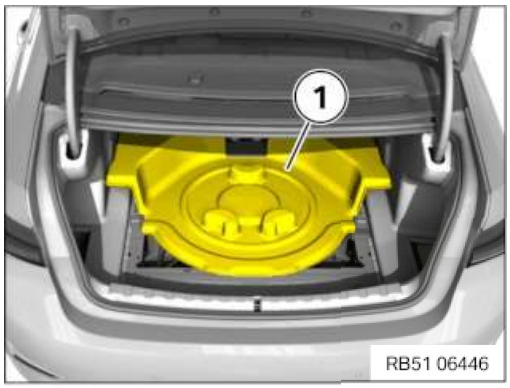
- Position the lashing eye (3).
- Tighten down screw (2).

Lashing eye to body

	Tightening torque	19 Nm

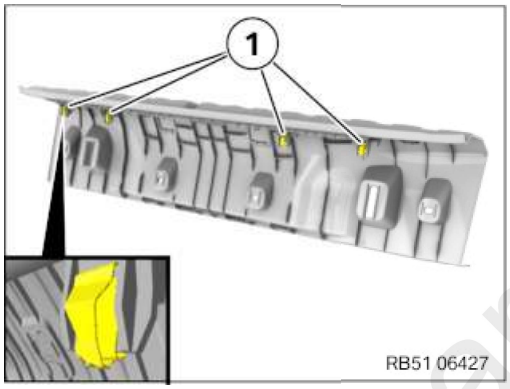
- Install the cover (1).

9 – Install the luggage compartment well in front

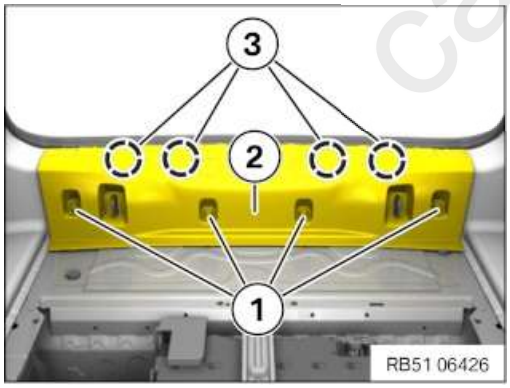


- Feed in and insert front luggage compartment well (1) on the seat belt strap.

10 – Installing loading edge trim



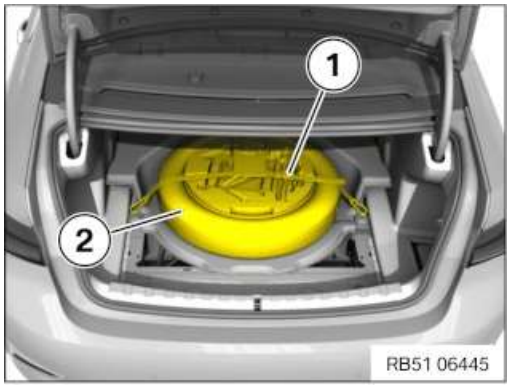
- Check the clamps (1) for damage and renew if necessary.



- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

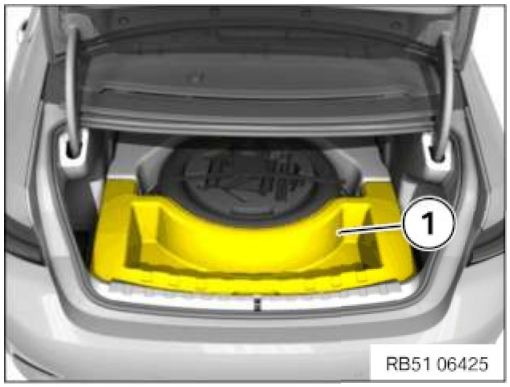
11 – If installed: Install the emergency wheel

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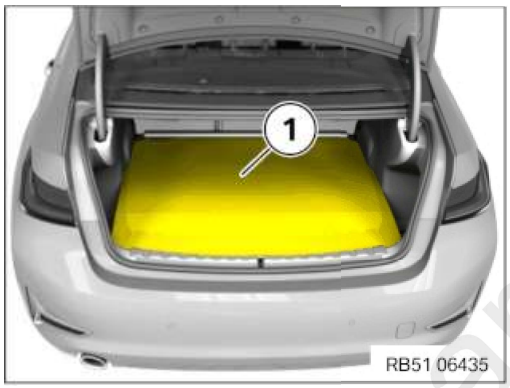
- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

12 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

13 – Encode/program control unit(s)

- **Replacement.**
- **This task is not included in this flat rate unit item.**

▶ **Encode/program control unit(s)**

Prerequisite

Replacement of component.

TECHNICAL INFORMATION

Use the most recent software version to prevent faults during programming/encoding.
The battery voltage must not fall below 13.0 V during programming.
Use only chargers for a low volt-vehicle electrical system that are recommended by BMW.

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TECHNICAL INFORMATION

No high-voltage switch off is required in electric vehicles or hybrid vehicles for programming/encoding.
The high-voltage system will be automatically switched off by the programming system.

- Connect the battery charger to the vehicle.
- Connect the programming system with the vehicle.
- Determine the action plan.
- Accept and fully process the measures plan.
- If applicable, connect the workshop system to the vehicle, depending on the reworking list.
- Carry out vehicle test.
- Delete the fault memory.
- The information about programming the workshop system and the corresponding notes in the user documentation must be observed.
- Wait until programming/encoding has been completed.
- Disconnect the programming system from the vehicle.
- Disconnect the battery charger from the vehicle.

14 – Checking the depiction of the vehicle in CID

TECHNICAL INFORMATION

A different vehicle model could be shown in the CID after programming/encoding.

Check
- After programming/encoding, check whether the correct vehicle model is displayed in the CID.

Result
» An incorrect vehicle model is display in the CID.

Measure
- Connect diagnosis system and carry out the service function.
  - Driver assistance
  - All-round vision camera
  - Transmit vehicle profile

Additional Information

Overview of Tightening Torques

Bracket to body — Used in step 7

Nut		Tightening torque	6 Nm
Screw		Tightening torque	6 Nm

Lashing eye to body — Used in step 8

		Tightening torque	19 Nm

Links

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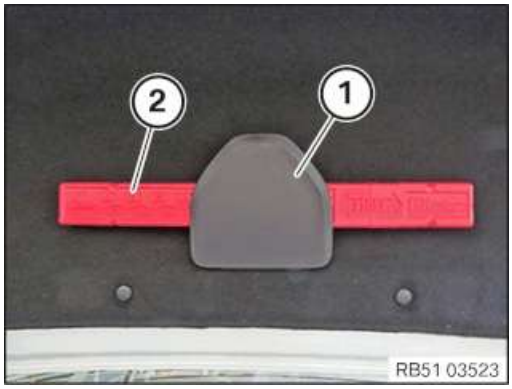
Repair instructions	Used in step
61 35 ... Notes on ESD protection (Electro Static Discharge)	

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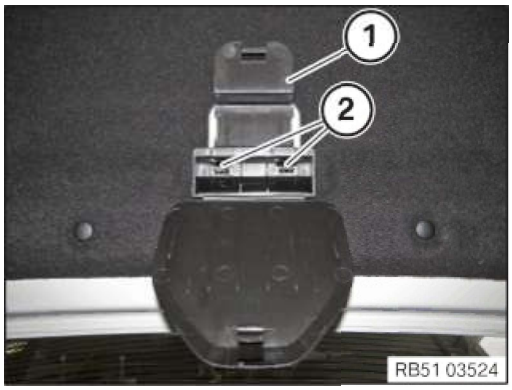
66 53 524 Replacing the rear view camera

PRELIMINARY WORK

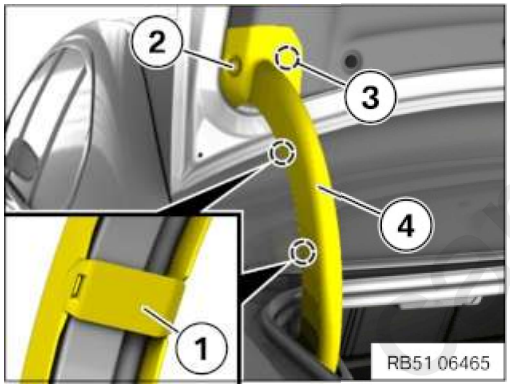
1 – Remove tailgate trim panel



- Fold the cover (1) towards the bottom.
- Remove the warning triangle (2).



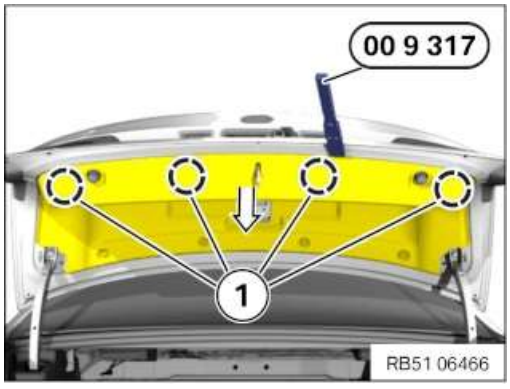
- Detach the warning triangle holder (1) from the latch mechanisms (2) and slide downwards.



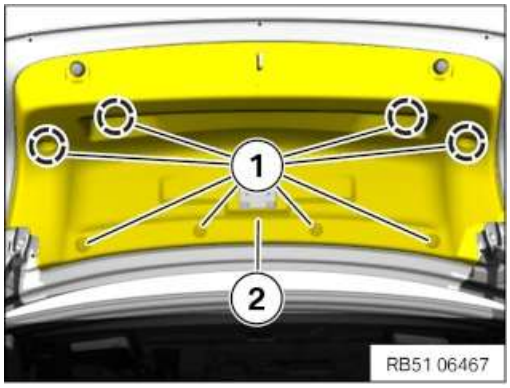
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Unclip the tabs (1).
- Loosen expanding rivet (2).
- To avoid damage, release the trim panel for the hinge of the tailgate (4) without using a tool by jerking it along the hinge bracket and out of the clip fastening (3).



- Unclip clips (1) with special tool 0 490 534 (00 9 317) in the direction of arrow.



- Release expanding rivet (1) on the tailgate trim panel (2).
- Remove tailgate trim panel (2).
- **If installed**: Unlock plug connection of the switch for the tailgate lift and disconnect.

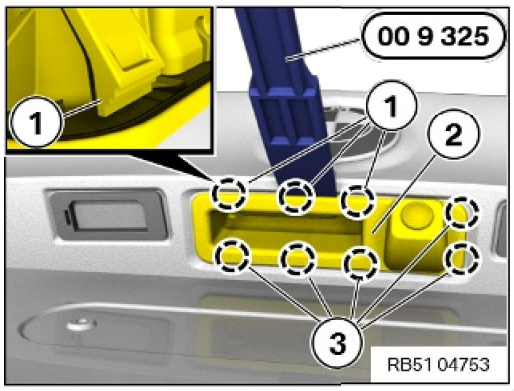
2 – Remove tailgate pushbutton

RISK OF DAMAGE

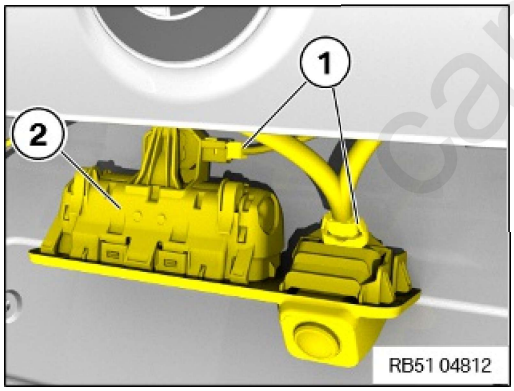
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



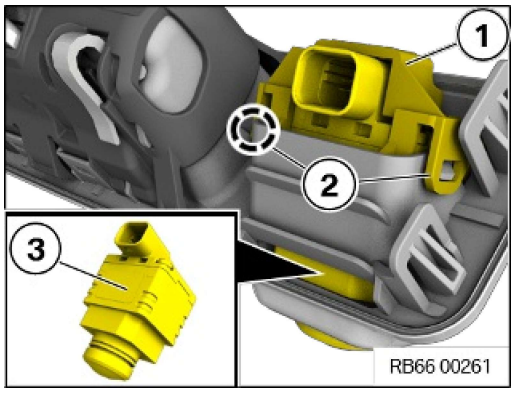
- Mount special tool 0 496 569 (00 9 325) as illustrated.
- Open the latch mechanisms (1) of the tailgate button (2) by carefully knocking onto the special tool 0 496 569 (00 9 325).
- Disengage the latch mechanisms (3) from the inside unclip the tailgate button (2) toward the bottom.



- Disconnect the connector (1) and remove the tailgate button (2).
- If necessary, remove broken off parts of the tailgate button (2) from the tailgate.

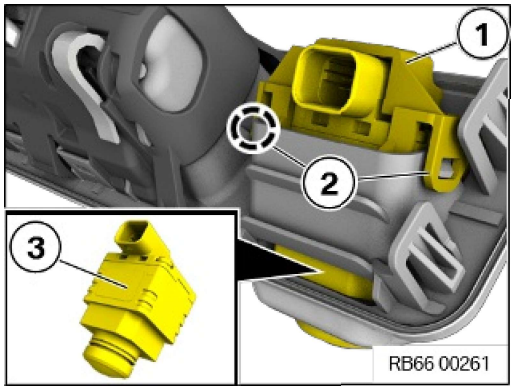
MAIN WORK

3 – Remove rear view camera



- Unclip the holder (1) from the latch mechanisms (2) and remove it.
- Remove the rear view camera (3) from button for tailgate activation.

4 – Installing the rear view camera

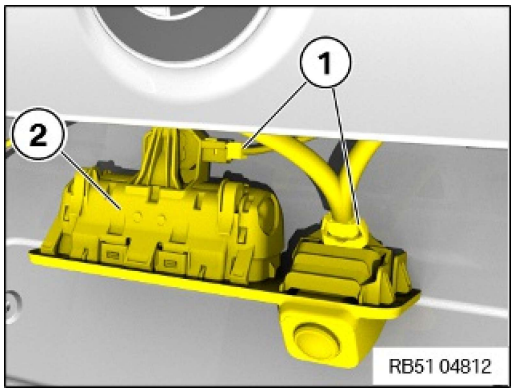


- Insert rear view camera (3) in the button for the tailgate activation.
- Clip the holder (1) into the latch mechanisms (2).

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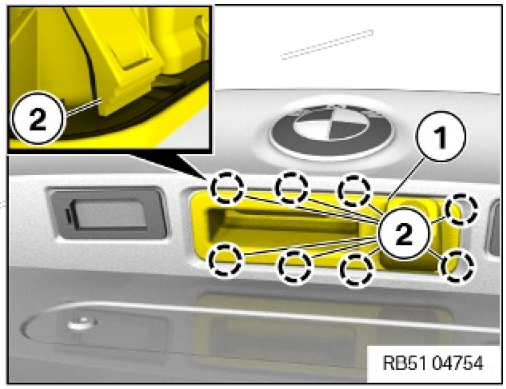
POSTPROCESSES

5 – Install the tailgate button



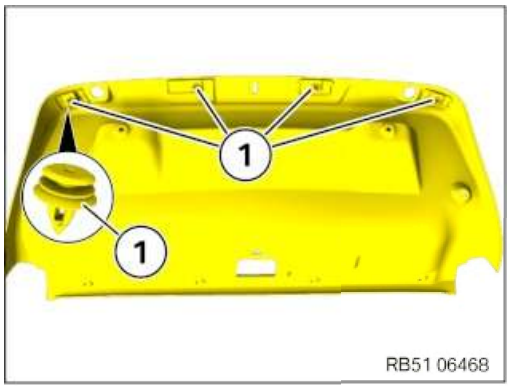
- Renew the tailgate button (2).

  Parts: Tailgate button
- Check the tailgate in the area of the tailgate button (2) for damage and repair where required.
- Connect the connector (1) with the tailgate button (2).

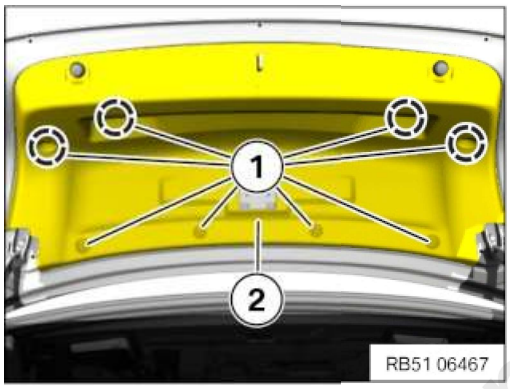


- Insert the tailgate button (1) in the tailgate and clip it into the latch mechanisms (2).

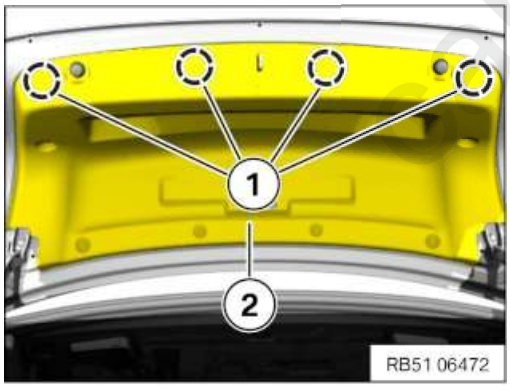
6 – Installing the tailgate trim panel



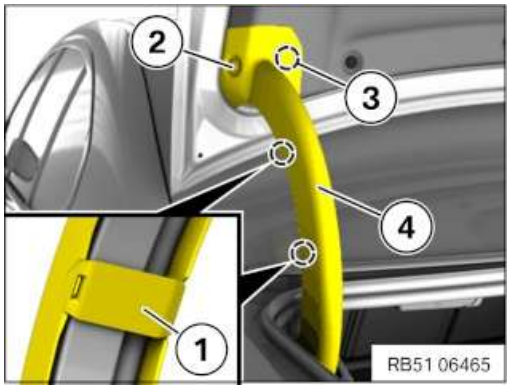
- Check the clips (1) for damage and renew if necessary.



- Fit the tailgate trim panel (2) and fasten in place with the expanding rivets (1).
- **If installed**: Connect and lock plug connection on the switch for the tailgate lift.



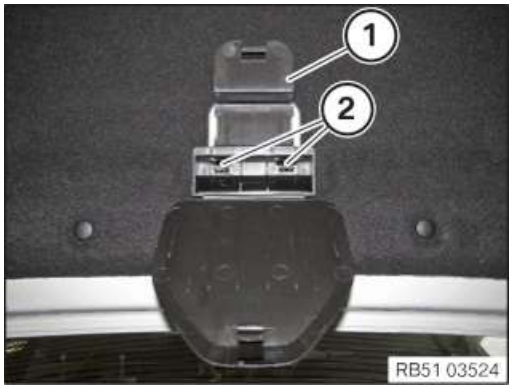
- Clip in the tailgate trim panel (2) with the clips (1).



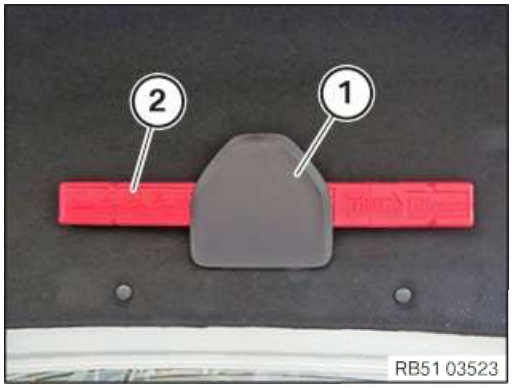
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Clip in the trim panel for the hinge of the tailgate (4) to the clip fastening (3).
- Fasten expanding rivet (2).
- Clip in tabs (1).



- Position the warning triangle holder (1) and snap into the latch mechanisms (2).



- Install the warning triangle (2).
- Clip in the cover (1).

7 – Encode/program control unit(s)

Prerequisite

Replacement of component.

TECHNICAL INFORMATION

Use the most recent software version to prevent faults during programming/encoding.
The battery voltage must not fall below 13.0 V during programming.
Use only chargers for a low volt-vehicle electrical system that are recommended by BMW.

TECHNICAL INFORMATION

No high-voltage switch off is required in electric vehicles or hybrid vehicles for programming/encoding.
The high-voltage system will be automatically switched off by the programming system.

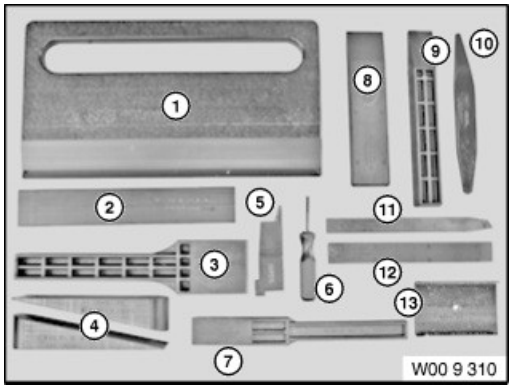
- Connect the battery charger to the vehicle.
- Connect the programming system with the vehicle.
- Determine the action plan.
- Accept and fully process the measures plan.
- If applicable, connect the workshop system to the vehicle, depending on the reworking list.
- Carry out vehicle test.
- Delete the fault memory.
- The information about programming the workshop system and the corresponding notes in the user documentation must be observed.
- Wait until programming/encoding has been completed.
- Disconnect the programming system from the vehicle.
- Disconnect the battery charger from the vehicle.

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Additional Information

Overview of Special Tools

0 490 534 (00 9 317) Wedge



Common	Used in step 1
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

0 496 569 (00 9 325) Wedge



Common	Used in step 2
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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61 00 ... Parking-residing-driving

Vehicles of the G series feature a new type of terminal control:

Functional description of the parking-residing-driving terminal control

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



Warning!

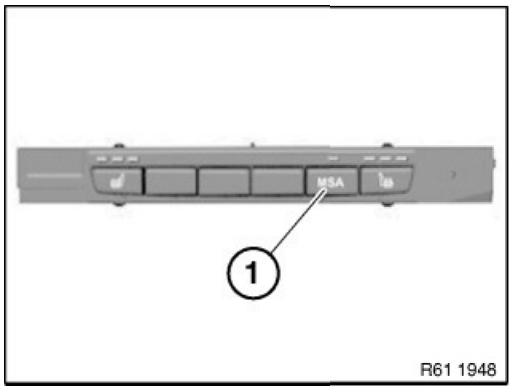
If the engine hood/bonnet contact is pulled upwards (workshop mode), the information "switch closed" is output. The automatic engine start-stop function is active.

An automatic engine start is possible.

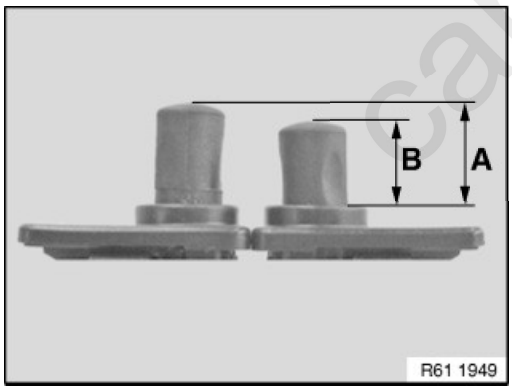
Observe safety precautions when working on MSA vehicles.

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

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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

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