16 00 005 Draining and filling fuel tank

1 – Drawing off the fuel tank

WARNING

Contact with hazardous fluids.

Hazardous to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

WARNING

Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.



- Open fuel filler cap.
- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and for diesel fuel.
- Slide suction hose (1) of the extractor unit through special tool and into the fuel filler pipe. If necessary, slightly turn the suction hose.

  For the extractor unit: refer to BMW Service workshop equipment.

  The insertion length of the suction hose is 125 cm.
- Start engine and allow to run, so that the electric fuel pump is running.

  This will ensure that the fuel is pumped by the suction jet pump from the left-hand side of the fuel tank to the right hand-side.
- Draw off fuel with the extractor unit as far as possible. In the process, track the drawing off of the fuel on the fuel gauge in the instrument cluster.

2 – Topping up the fuel tank



- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and diesel fuel.
- Slide the suction hose (1) of the extractor unit approximately 40 cm into the fuel filler pipe. If necessary, slightly turn the suction hose.
- Fill fuel from suction extractor unit.
- After completing the work and before starting the engine for the first time: fill the fuel tank via the fuel filler pipe with a minimum of 5 l of fuel.

Additional Information

Overview of Special Tools

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16 11 030 Removing and installing fuel tank

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

PRELIMINARY WORK

1 – Drawing off the fuel tank

WARNING

Contact with hazardous fluids.

Hazardous to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

WARNING

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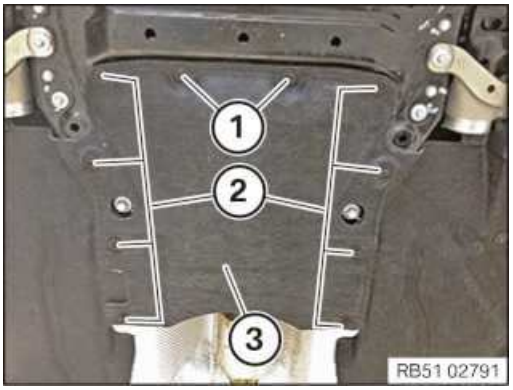
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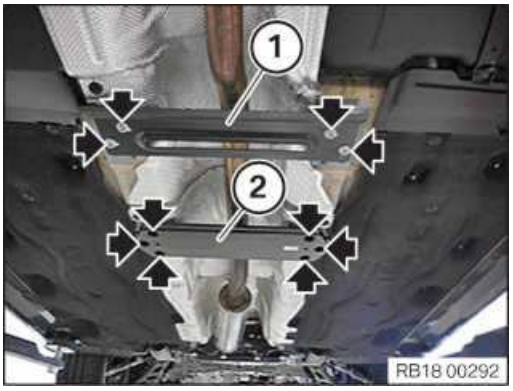
  This will ensure that the fuel is pumped by the suction jet pump from the left-hand side of the fuel tank to the right hand-side.
- Draw off fuel with the extractor unit as far as possible. In the process, track the drawing off of the fuel on the fuel gauge in the instrument cluster.

2 – If installed: Removing rear underbody protection



- Loosen screws (1) and (2).
- Remove underbody protection (3).

3 – Removing the connecting support from the tunnel in front and back



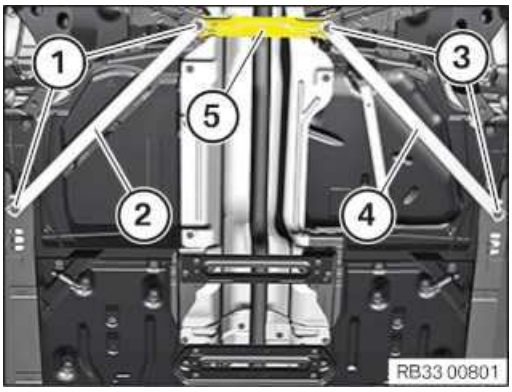
- Unscrew the bolts (arrows) from the connecting support (1).
- Feed out and remove the crossbeam (1).
- Unscrew the bolts (arrows) from the connecting support (2).
- Feed out and remove the crossbeam (2).

4 – Remove the cross strut with the torsion strut

TECHNICAL INFORMATION

Driving without a torsion strut is not permitted.

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- Loosen screws (1).
- Thread out torsion strut (2) at left and remove.
- Loosen screws (3).
- Thread out torsion strut (4) at right and remove.
- Feed out and remove the cross-member (5).

5 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

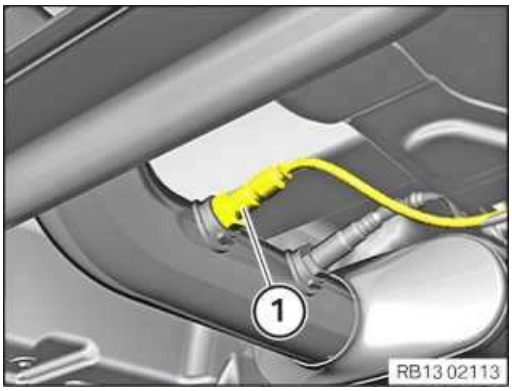
- Perform all work only on components that have cooled down.

CAUTION

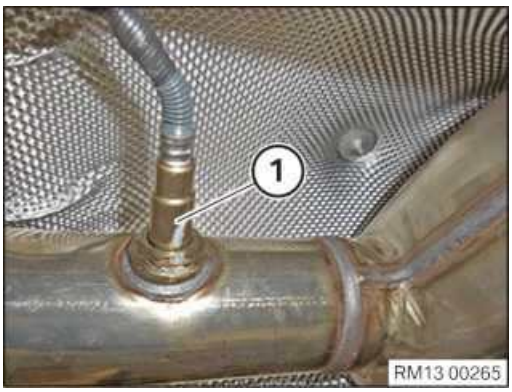
Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

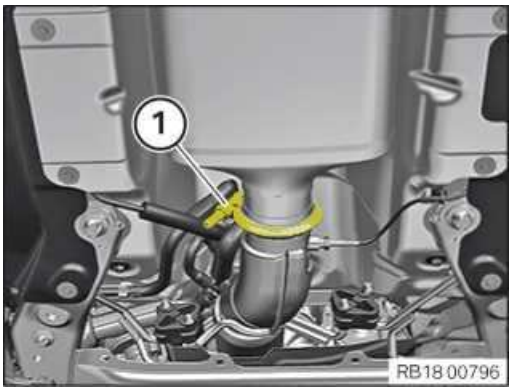


- Release the nitrogen oxide sensor (1) downstream of the SCR catalytic converter, guide it out and set it aside.

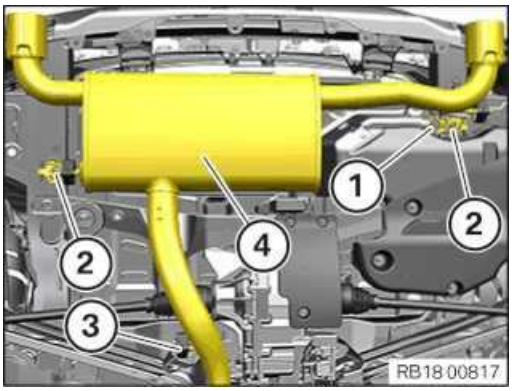


- Release the diesel particulate sensor (1), guide it out and set it aside.

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- Loosen V-band clamp (1).



- Loosen screw (1).
- Loosen nuts (2).
- Release the rubber mount (3) of the exhaust system (4).
- Lower and guide out the exhaust system (4) with assistance of a second person and remove it.

6 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

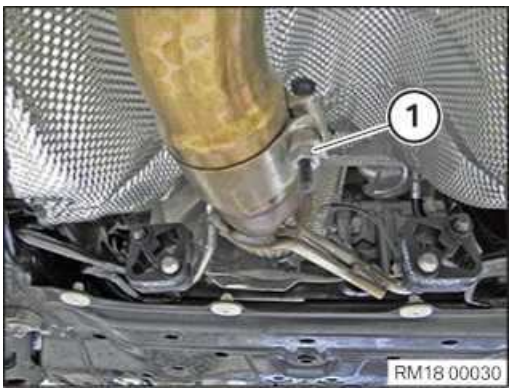
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CAUTION

Heavy component.

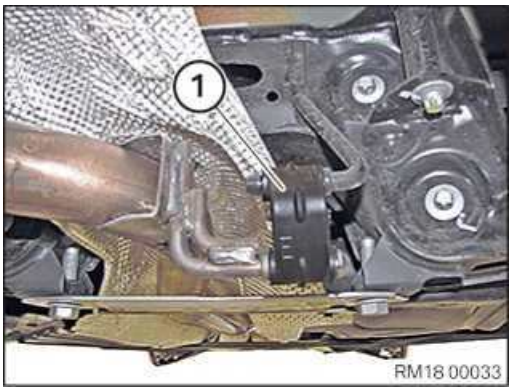
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- Remove and install heavy components with the aid of another person/other persons.

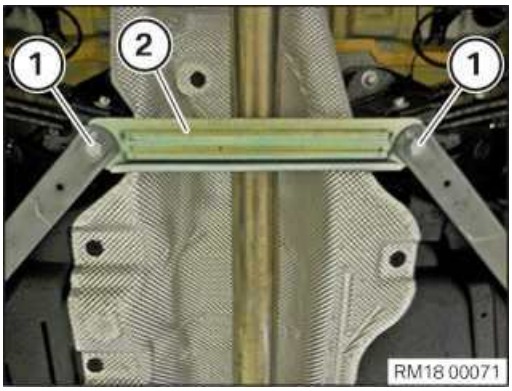


- Unfasten clamp (1).

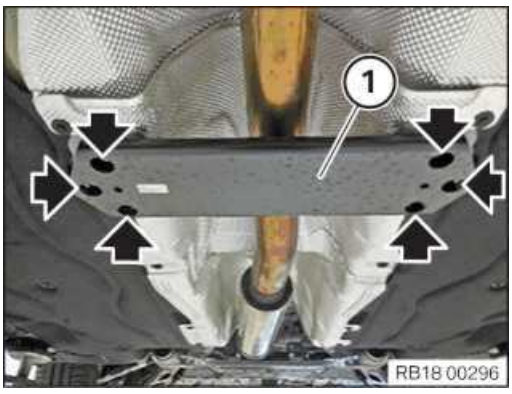
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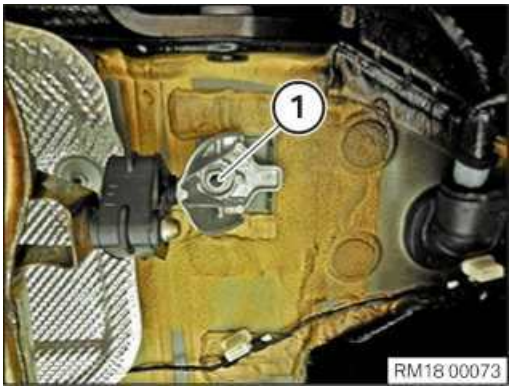
- Spray rubber mount (1) with lubricant and pull off the exhaust system.



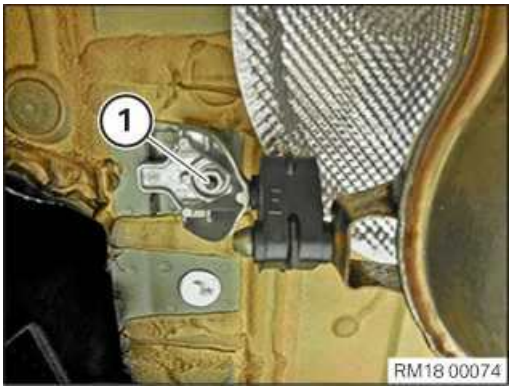
- Loosen screws (1).
- Feed out and remove the cross-member (2).



- Remove screws (arrows).
- Remove the connecting support (1).



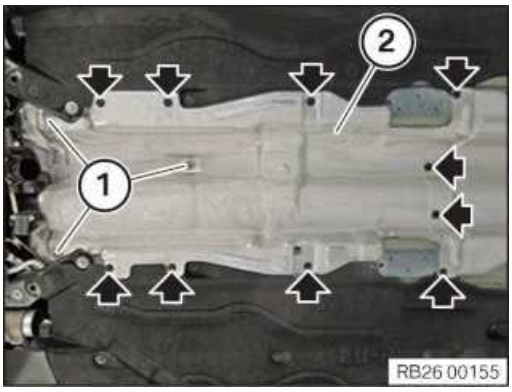
- Release the left-hand nut (1).



- Release the right-hand nut (1).
- Lower and remove exhaust system with assistance of a second person.

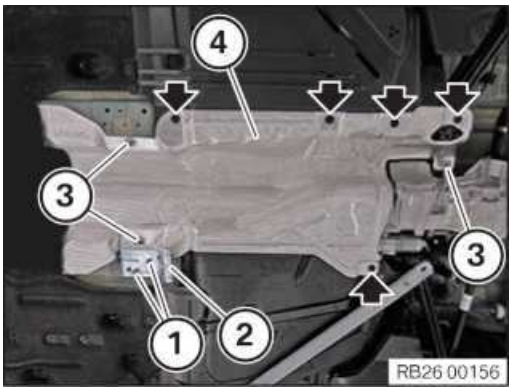
7 – Remove front heat shield

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- Remove screws (arrows).
- Loosen nuts (1).
- Guide the heat shield (2) out and remove it.

8 – Remove heat shield at rear.



- Loosen screws (1).
- Guide out and remove holder (2).
- Remove screws (arrows).
- Loosen nuts (3).
- Guide the heat shield (4) out and remove it.

9 – Remove propeller shaft

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

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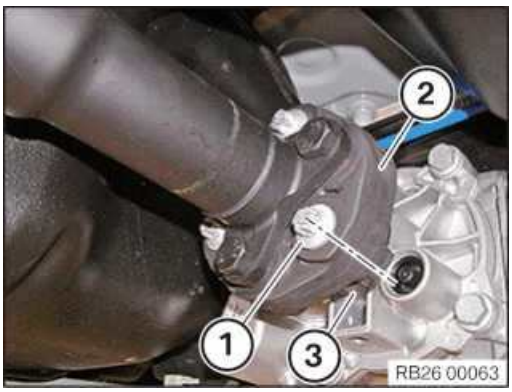
- Install the special too l between the front and rear propeller shaft.
- Make sure that the arrows on the special tool point forward in the direction of travel.



- Always support the propeller shaft (1) with a conventional jack.



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



TECHNICAL INFORMATION

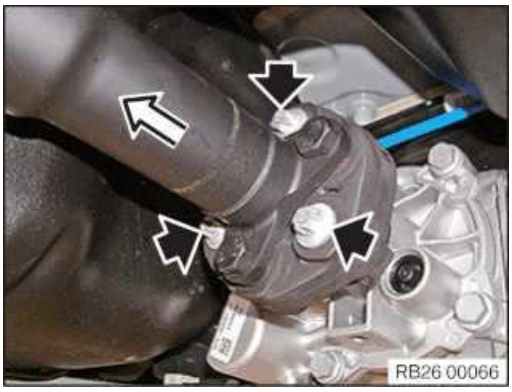
Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Mark the installation position of the screw connection (1), the flexible disc (2) and the three-hole flange (3) on the same level.
- Loosen the screw connection (1).

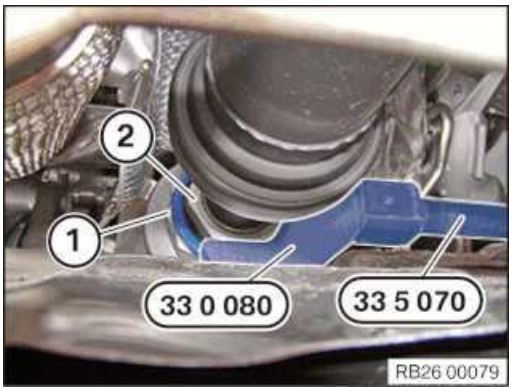


- Loosen screws (1).

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- Remove screws (arrows).
- Guide the propeller shaft out in the direction of the arrow and set it aside.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.

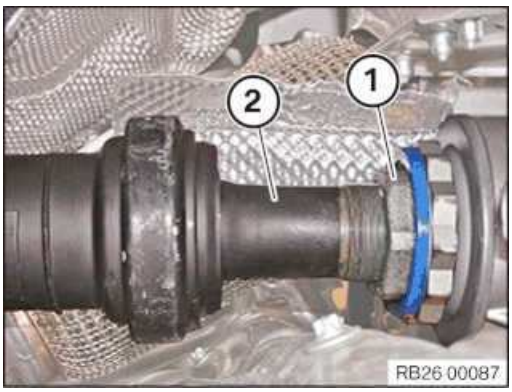
- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to detach the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

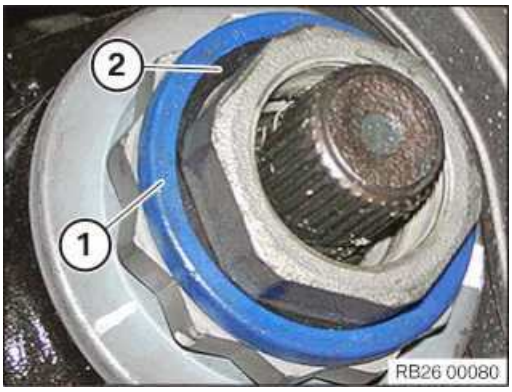


- Release the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

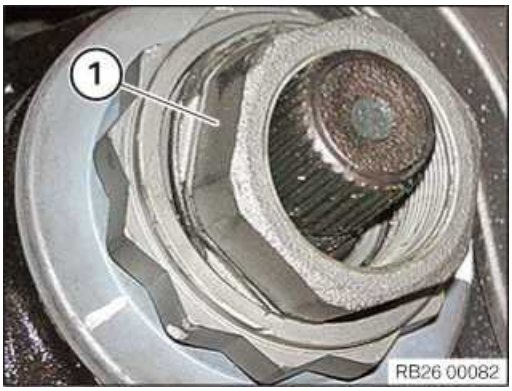


- Thread the propeller shaft (2) out of the recessed nut (1) and remove.

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- Thread the retaining clip (1) and the seal (2) out and remove.



- Thread out and remove the recessed nut (1).

10 – Removing the tank covers on the left and right

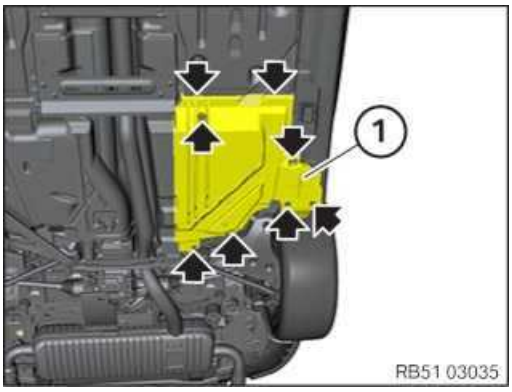
NOTICE

Perform the operations on the left and right side.

NOTICE

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

▸ **Removing the tank cover**



- Remove screws (arrows).
- Remove the tank cover (1).

11 – Remove right rear wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

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NOTICE

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

▶ **Removing the rear right wheel**

▷ **Removing the wheel**



- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

◁

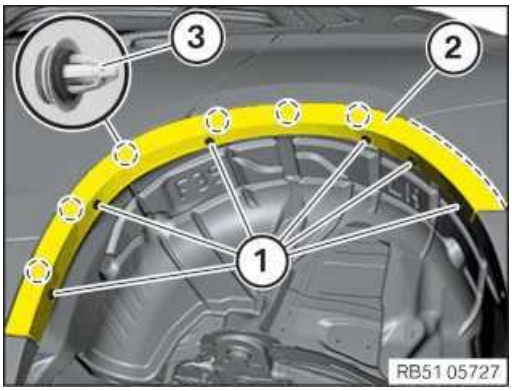
▶ **Removing rear wheel arch trim**

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

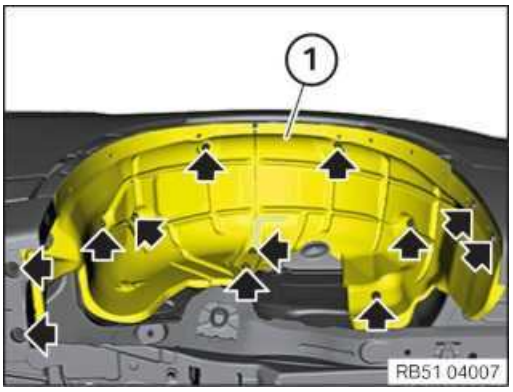
NOTICE

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



- Remove the blind rivets (1).
- Disengage the wheel arch trim (2) from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

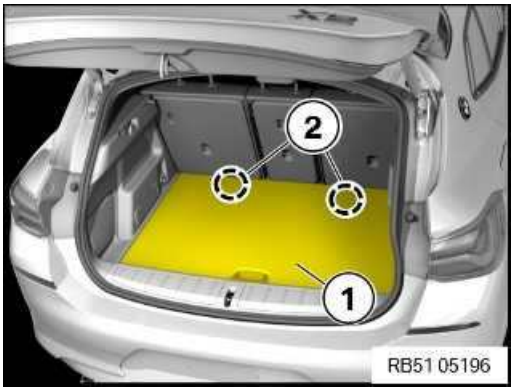
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- Unscrew all bolts and nuts (arrows).
- Carefully feed out and remove the wheel arch cover (2).

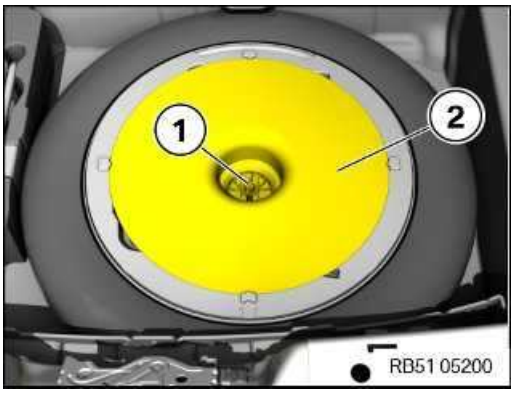
12 – Removing seat bench

▸ **Removing the luggage compartment removable panel**

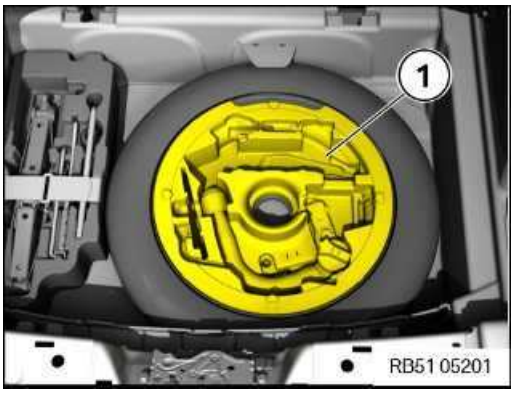


- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

▸ **Removing the compact spare wheel**



- Loosen screw (1).
- Remove the cover (2).



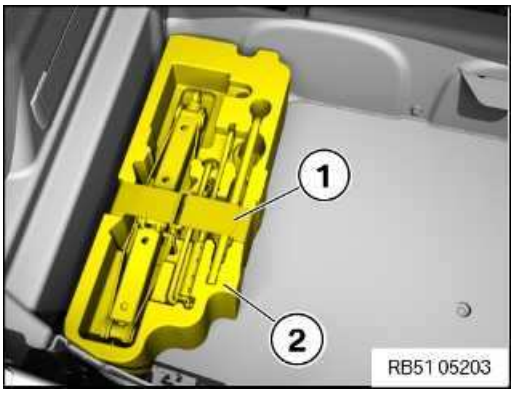
- Remove the oddments tray from the emergency wheel (1).

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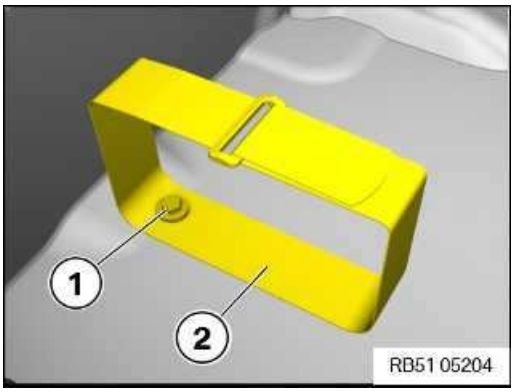
- Remove the emergency wheel (1).

▸ **Remove the tool kit**



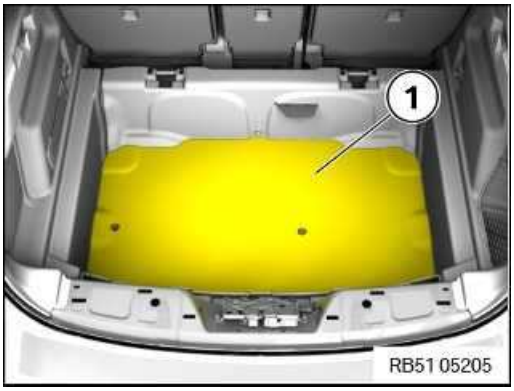
- Open the hook and loop tape (1).
- Remove the tool kit (2).

▸ **Remove the hook and loop tape for the tool kit**



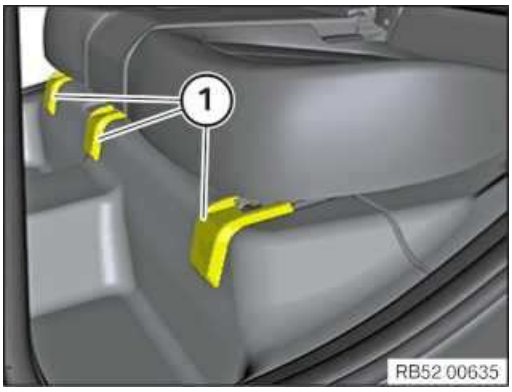
- Loosen screw (1).
- Remove the hook and loop tape (2).

▸ **Removing the luggage compartment floor trim panel**

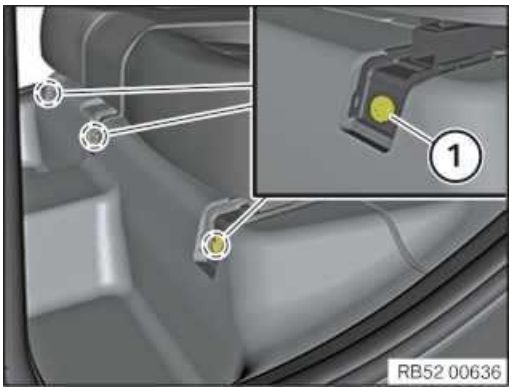


- Remove the luggage compartment floor trim panel (1) upwards.

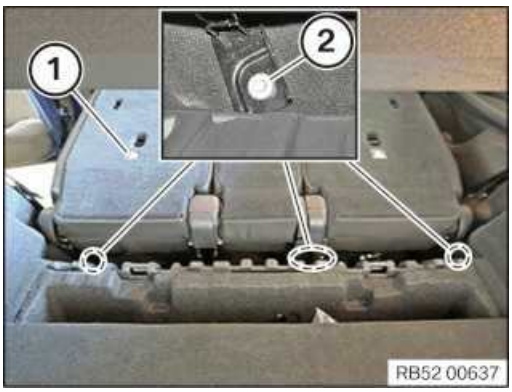
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- Unclip the covers (1) forwards.



- Loosen screws (1).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.
- Fold down rear seat backrest (1) on left and right.
- Loosen screws (2).
- Disconnect existing plug connections where required.

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Lift out rear seat bench with the assistance of a second person.

13 – Disconnect delivery unit

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WARNING

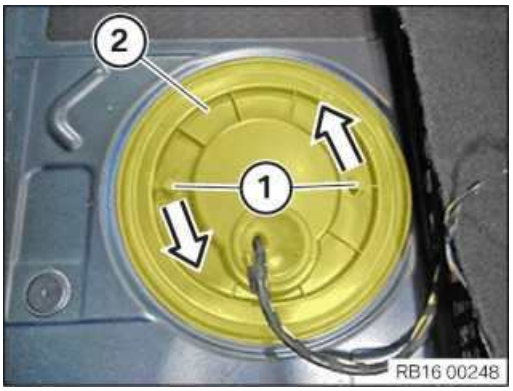
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

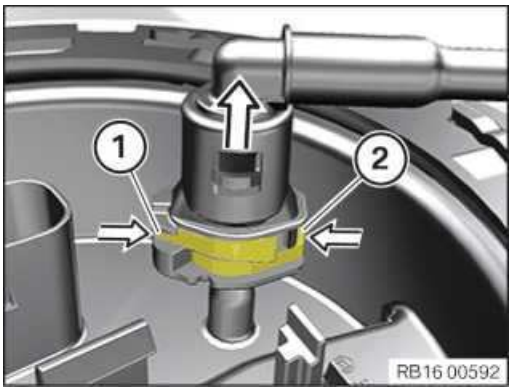
Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Turn the sealing cap for the floor panel (2) at the plastic tabs (1) in the direction of arrow.
- If turning is not possible: Destroy sealing cap of the floor panel (2).
- Remove sealing cap of the floor panel (2).



- Disconnect plug connection (1).

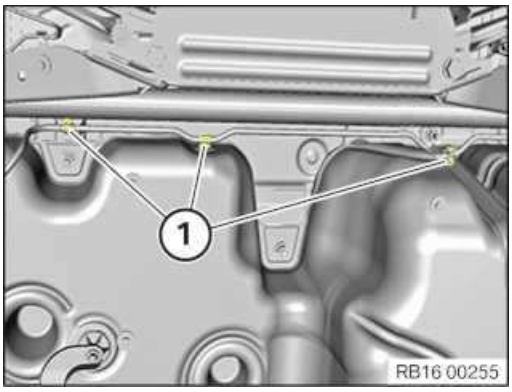


- Push the snap fastener toward the delivery unit.
- Press retaining lugs (1) and (2) pull off the snap fastener in the direction of arrow.

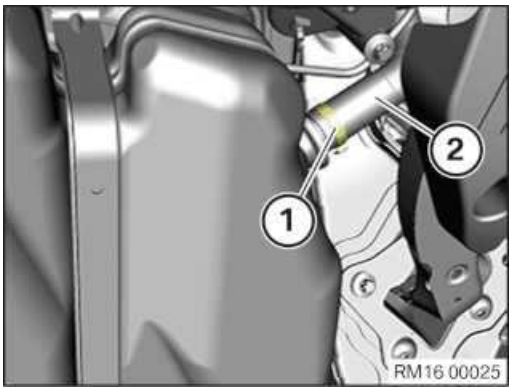
MAIN WORK

14 – Removing the fuel tank (fuel tank capacity 51 l)

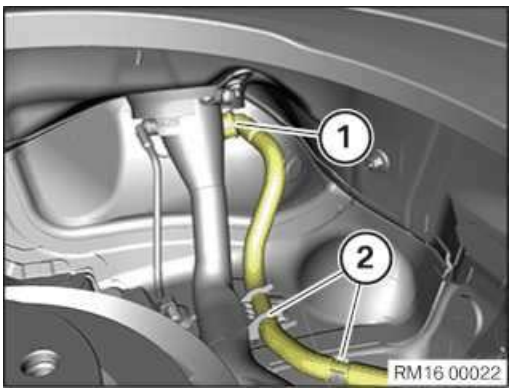
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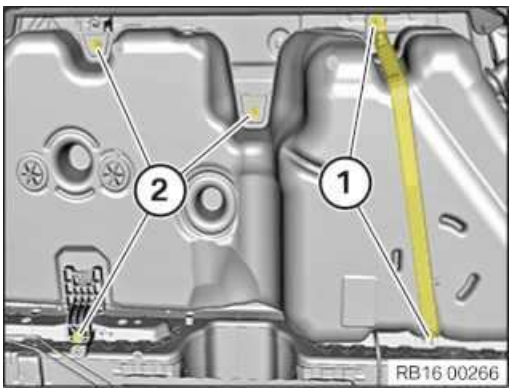
- Detach the tank ventilation line from the bracket (1).



- Loosen hose clamp (1).
- Pull off the rubber hose (2) from the fuel tank in the direction of the arrow.



- Unlock and pull off snap fastener (1).
- Detach fuel filler neck breather pipe from brackets (2).

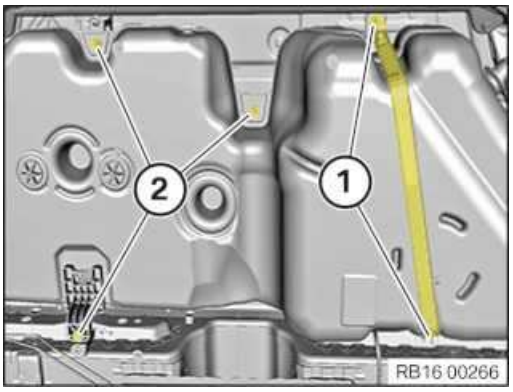


- **Heavily support the fuel tank.**
- Release the screws (1) and remove the retaining strap.
- Release the nuts (2) and lower the fuel tank (3).

  While the fuel tank is being lowered, the fuel filler neck breather pipe must be guided from the wheel arch through the body aperture!

15 – Installing fuel tank (fuel tank capacity 51 l)

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- **Raise fuel tank.**

  While the fuel tank is being raised, the fuel filler neck breather pipe must be guided through the body aperture into the wheel arch.
- Lift fuel tank up to installation position. When doing this, observe the installation position of the fuel filler neck breather pipe.
- Renew nut (2).

  Parts: Nut
- Fit nut (2) and tighten.

Fuel tank to body

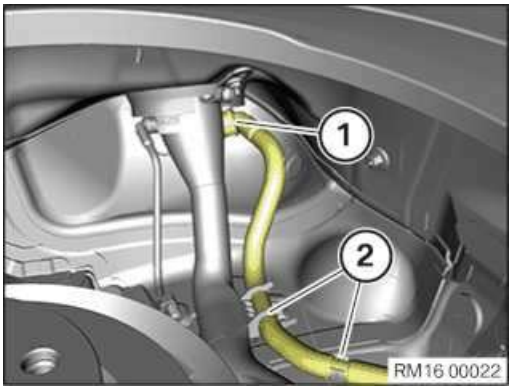
Nut M8	Renew nut.	Tightening torque	19 Nm

- Renew screws (1).

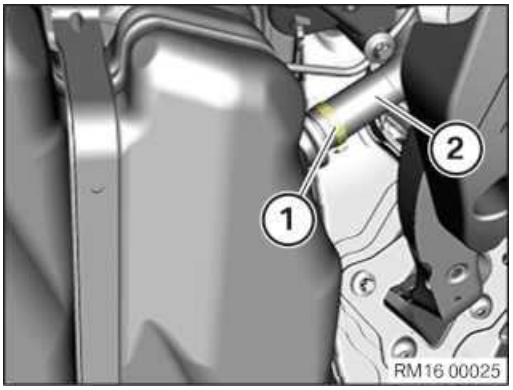
  Parts: Bolts
- Mount the retaining strap and position and tighten the screws (1).

Fuel tank retaining strap to body

M8 screw	Renew screws.	Tightening torque	19 Nm



- Attach the fuel filler neck breather pipe in the brackets (2).
- Position snap fastener (1) and lock.

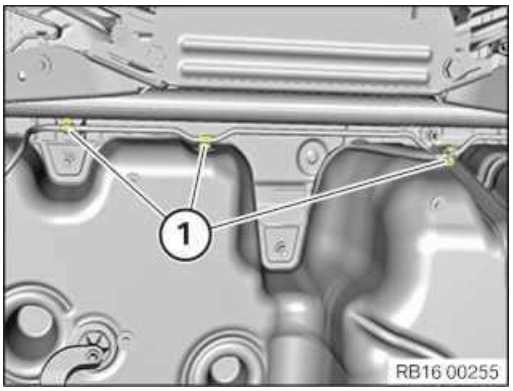


- Mount fuel filling hose (2) on fuel tank in direction of arrow.
- Renew the hose clamp (1).

  Parts: Hose clamp
- Position hose clamp (1) and tighten.

Filling hose on fuel tank

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm



- Attach the tank ventilation line in the brackets (1).

POSTPROCESSES

16 – Connect delivery unit

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WARNING

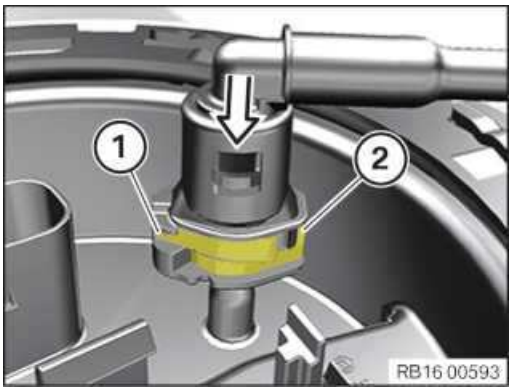
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Check locks of snap fastener for damage, and replace if required.

  The retaining lugs (1) and (2) must be locked.
- Mount the snap fastener and lock.

  The snap fastener must engage audibly and noticeably.
- Ensure correct locking of snap fastener with a tensile test.



- Connect connector (1).



- Renew sealing cap of the floor panel (1).

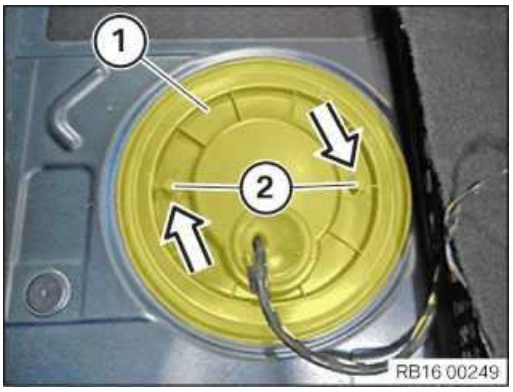
  Parts: Sealing cap of the floor panel

  The sealing cap of the floor panel must not be reused, as there is the risk of leak during reuse.
- Lubricate seal in the area (1) with lubricant.

Expendable materials

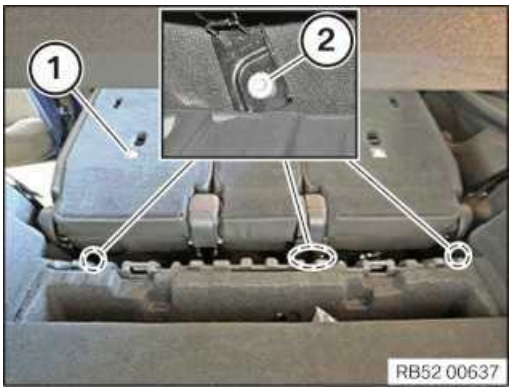
Lubricants PF1	50 g, Pin	83230309627

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- Install sealing cap of the floor panel (1).
- Turn sealing cap of the floor panel (1) on the plastic tabs (2) in the direction of arrow till the limit position and engage.

17 – Install rear seat bench



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.

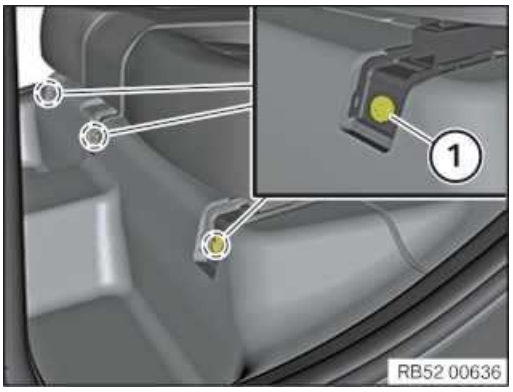
RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

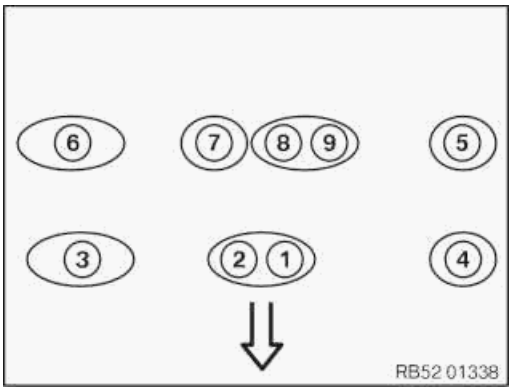
- Remove and install heavy components with the aid of another person/other persons.

- Hoist the rear seat bench into the vehicle and position it with the assistance of an auxiliary person.
- If required, connect the available connectors.
- Screw the bolts (2) in a few turns.



- Screw the bolts (1) in a few turns.

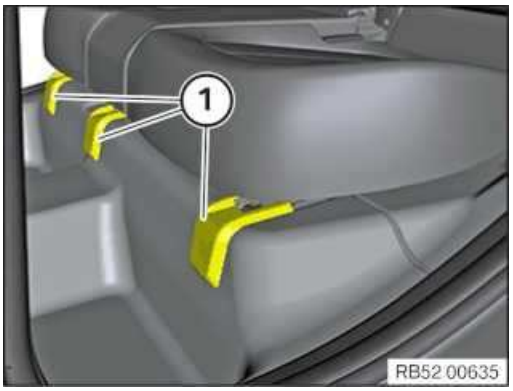
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- Tighten screws in the order (1) to (9).

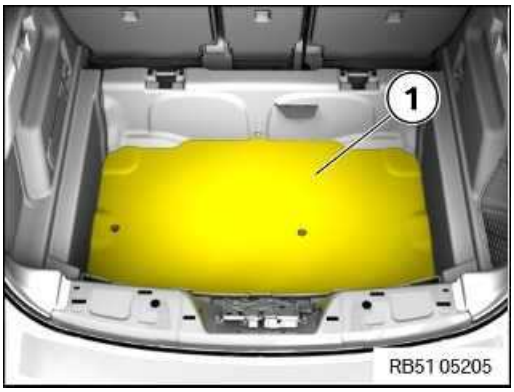
Seat bench to body

Oval-head screw		42 Nm



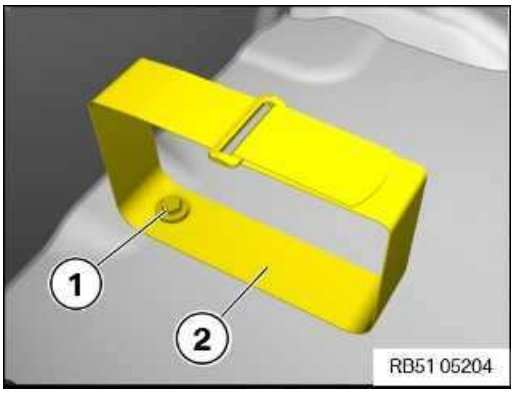
- Clip in the covers (1).

▸ **Installing the luggage compartment floor trim panel**



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

▸ **Inserting the Velcro fastener for the toolkit**



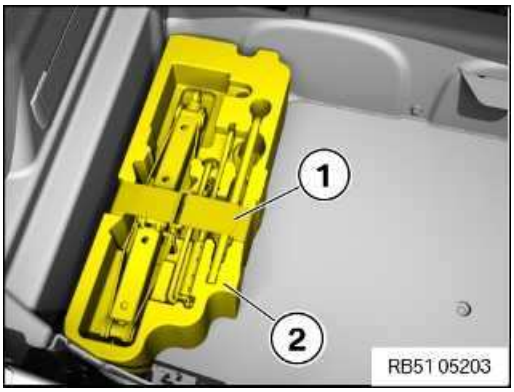
- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

▸ **Install the tool kit**

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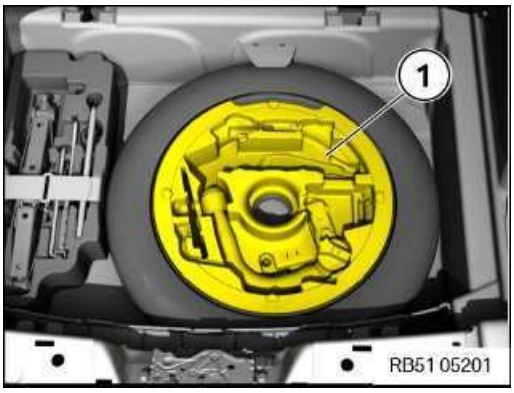


- Install the tool kit (2).
- Close the hook and loop tape (1).

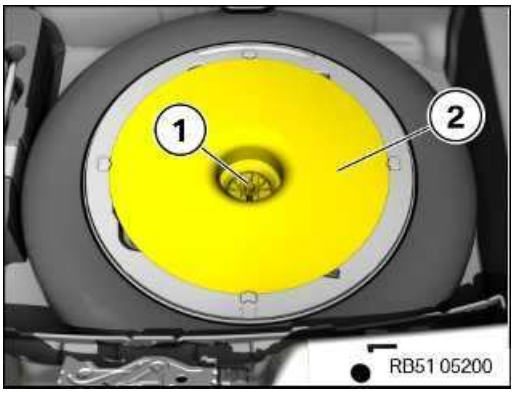
▸ **Install the emergency wheel**



- Insert compact spare wheel(1).



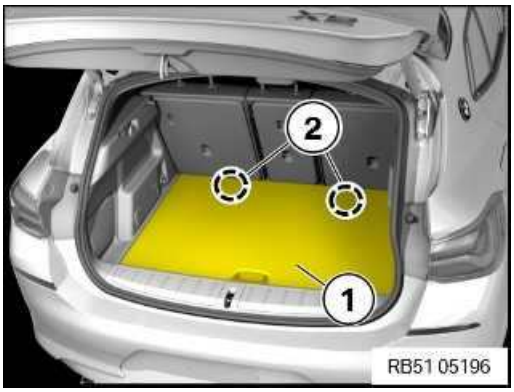
- Insert oddments tray into the compact spare wheel (1).



- Insert the lid (2).
- Hand-tighten the bolt (1).

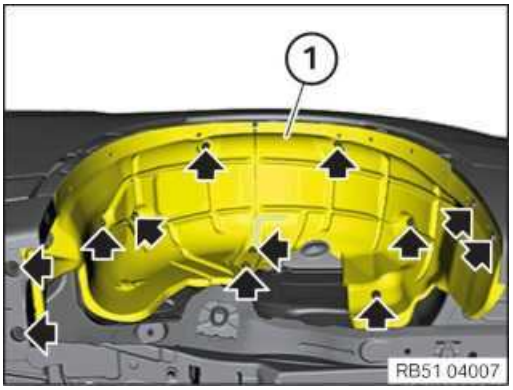
▸ **Installing the luggage compartment removable panel**

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- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

18 – Installing the rear wheel arch cover on the right



- Feed in wheel arch cover (1) and correctly position it.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

▸ **Installing the rear wheel arch trim**

TECHNICAL INFORMATION

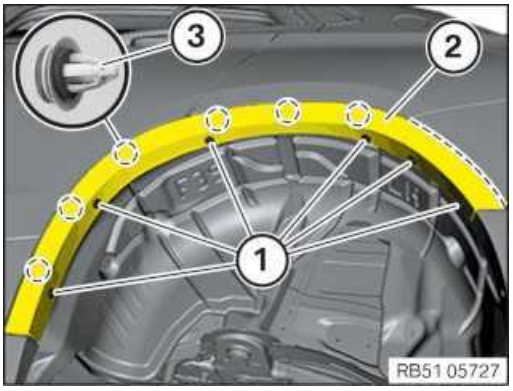
Latch mechanisms, guides and mounting elements must not be damaged or missing.

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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



- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage the wheel arch trim (2) with the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

19 – Installing rear right wheel

▸ **Mounting the wheel**

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▷ **Clean the contact surfaces between the brake disc and the wheel rim**



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

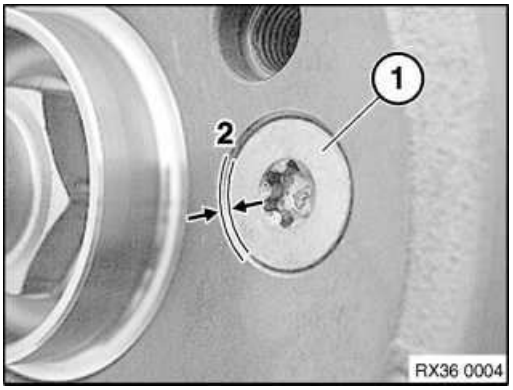
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).



- Renew mounting bolt (1).

  Parts: Mounting bolt
- Check that the mounting bolt (1) for the brake disc is securely seated.

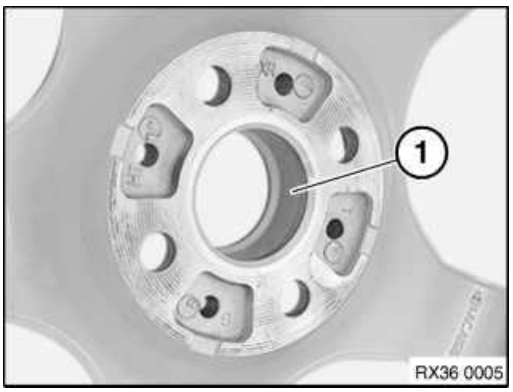
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

20 – Installing the tank covers on the left and right

NOTICE

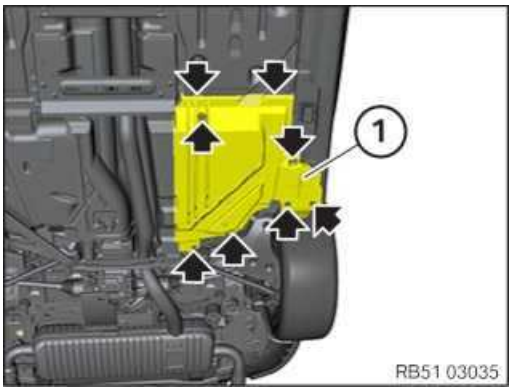
Perform the operations on the left and right side.

NOTICE

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

▸ **Installing tank cover**

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- Install tank cover (1).
- Tighten screws (arrows).

21 – Install propeller shaft.

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to the propeller shaft during installation.

Non-observance of the installation guidelines for the propeller shaft on the rear axle differential may cause severe damage.

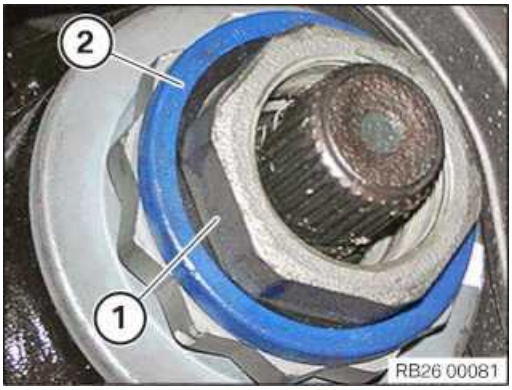
- Always renew the recessed nut on the rear axle differential. Screw locking must be available.
- Strictly observe a minimum hardening time of two hours after having screwed in the recessed nut. The hardening time may be longer at lower temperatures.

RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.



- Renew recessed nut (1).

  Parts: Insert nut
- Renew the retaining clip (2) and the seal.

  Parts: Retaining clip, seal
- Insert the seal with the recessed nut (1) and install.
- Insert the retaining clip (2) and install.
- Make sure that recessed nut (1) is screwed in within 5 min.
- Make sure that the hardening time of **minimum** 2 h for the recessed nut is observed.

  The hardening time must be extended at lower temperatures.

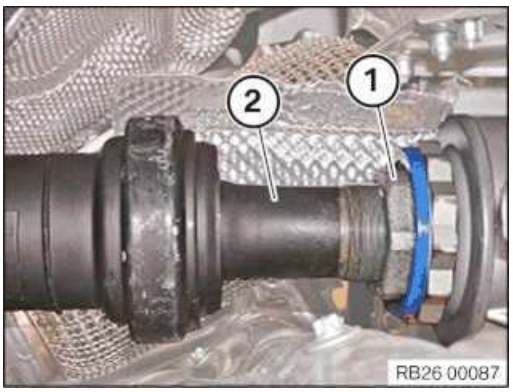
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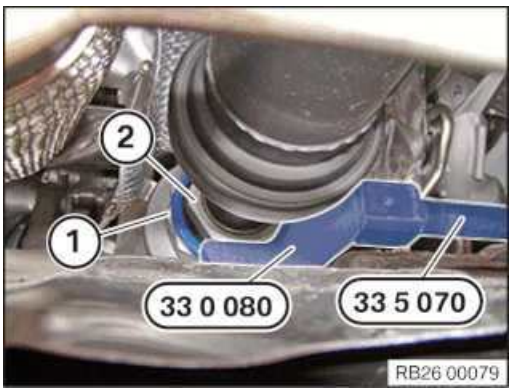
- Insert the propeller shaft (1) and install.
- Always support the propeller shaft (1) with a conventional jack.



- Hand-tighten the bolts (1).



- Push the propeller shaft (2) against the recessed nut (1) up to the limit position.
- Screw the propeller shaft (2) at least 2 thread starts onto the recessed nut (1) by hand.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

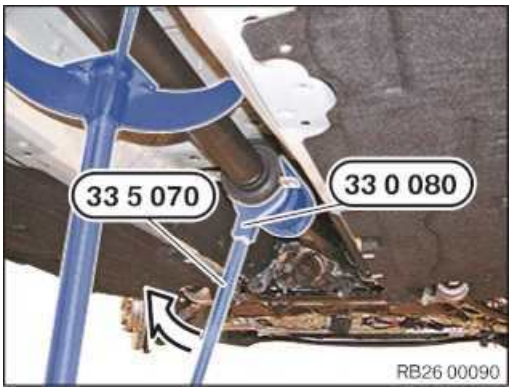
- Do not use the double hexagon head flange nut as counter support.

- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to tighten the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

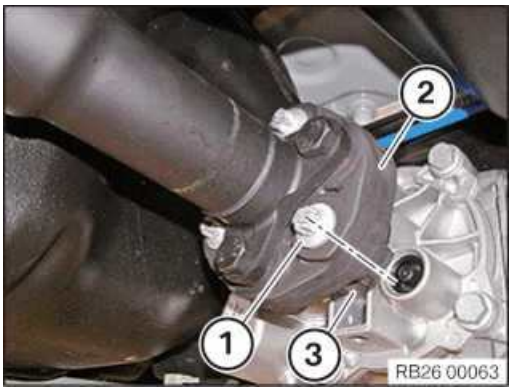
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- Tighten the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

Propeller shaft to transfer box

		Tightening torque	80 Nm



TECHNICAL INFORMATION

Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Assemble the screw connection (1) of the flexible disc (2) and the three-hole flange (3) according to the mark.
- Renew screws (1).

  Parts: Bolts
- Hand-tighten the bolts (1).



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



- Tighten the bolts with the special tools **0 490 504 (00 9 120)** and .

Flexible disc to rear axle final drive

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °



- Tighten the screws (1).

Centre mount to body

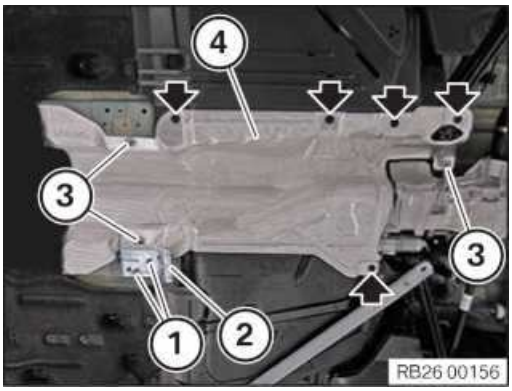
M8		Tightening torque	19 Nm

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- Guide the special too l out between the front and rear propeller shaft and remove.

22 – Installing the rear heat shield



- Insert and install the heat shield (4).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (3).

Heat shield to body

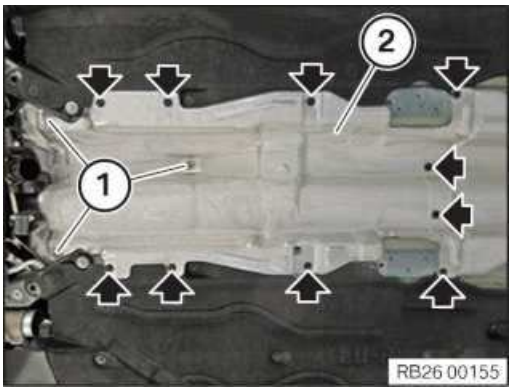
Bolts/nut		Tightening torque	3 Nm

- Insert and install the holder (2).
- Tighten the screws (1).

Bracket to body

M8		Tightening torque	21 Nm

23 – Install the front heat shield



- Insert and install the heat shield (2).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (1).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

24 – Install exhaust system

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

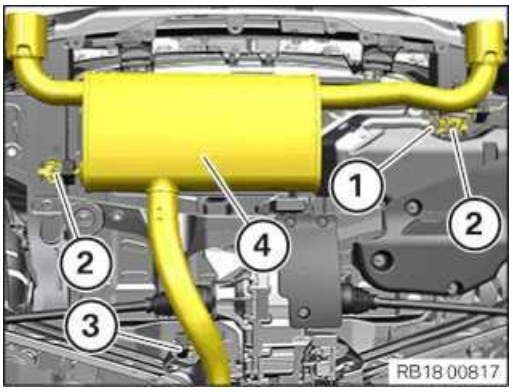
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CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.



- Feed in and install the exhaust system (4) with a second person.
- Renew nuts (2).

  Parts: Nuts
- Tighten nuts (2).

Exhaust system to body

M8	Replace nuts.	Tightening torque	19 Nm

- Tighten down screw (1).

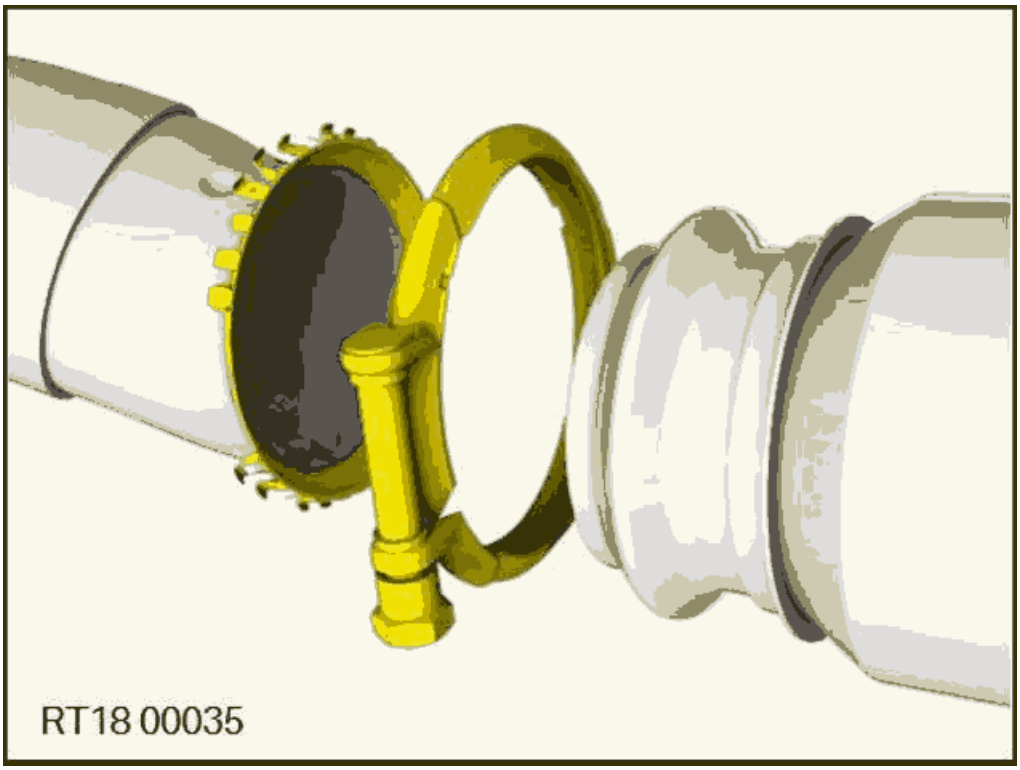
Exhaust bracket on body

Hexagon screw M8x30		Tightening torque	19 Nm

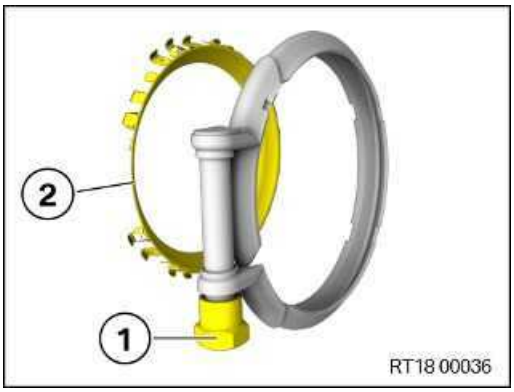
- Check the rubber mount (3) for damage and renew as needed.
- Mount rubber mount (3) on the exhaust system (4).

▸ **Install the V-clip**

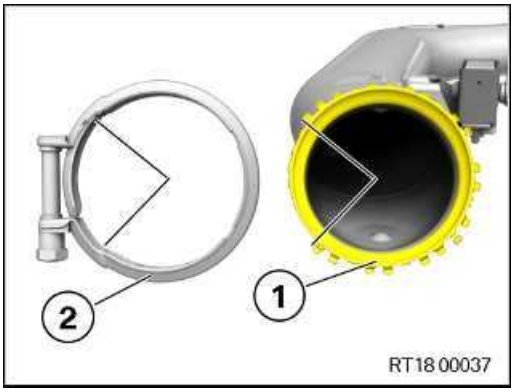
V-band clamp



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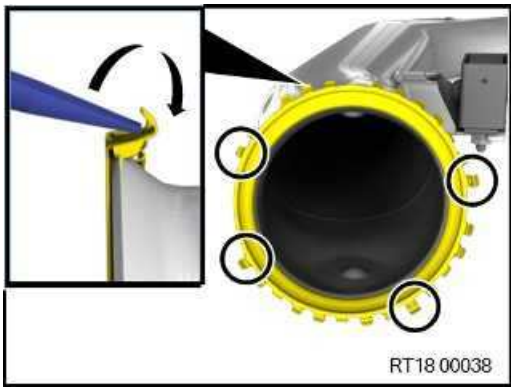


- Unscrew the nut (1) and remove the sealing ring (2).

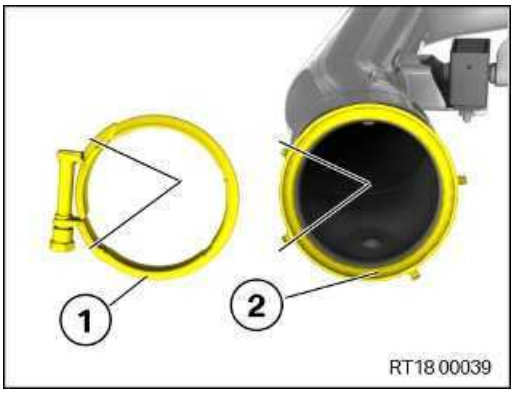


- Renew the V-clip (2).

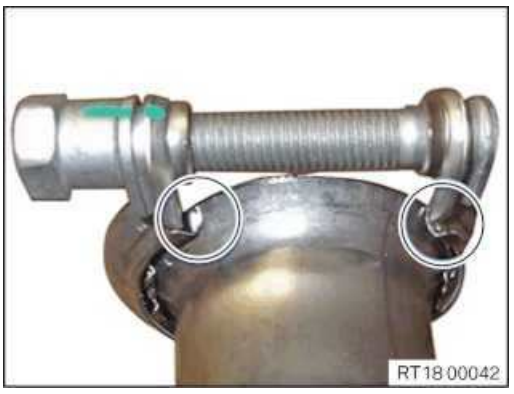
  Parts: V-band clamp
- Mount the sealing ring (1) on the exhaust system.
- Ensure that the sealing ring (1) for the V-clip (2) is positioned correctly.



- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.

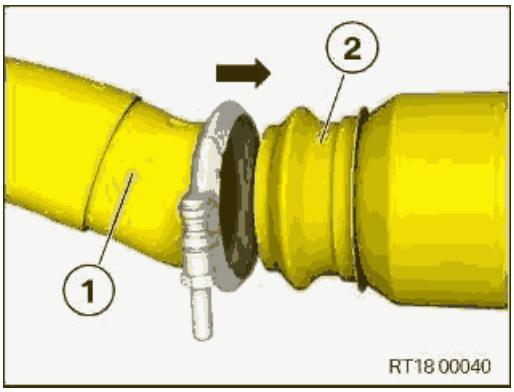


- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).

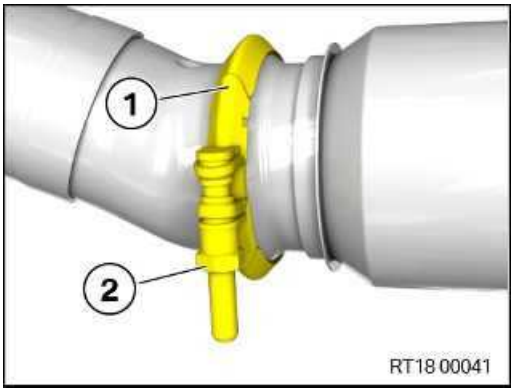


- Make sure that the V-clip rests against the sheet metal tabs after mounting (marks).

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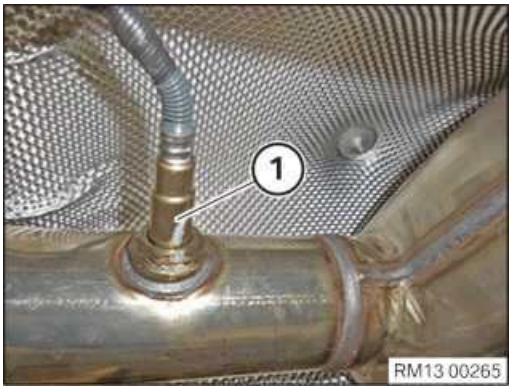
- Connect the exhaust system (1) with the catalytic converter (2) and position correctly.



- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

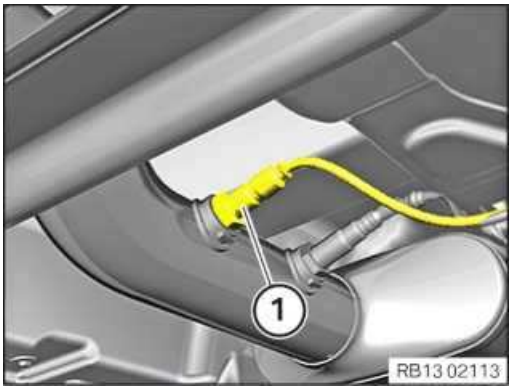
V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm



- Feed in, install and tighten diesel particulate sensor (1).

Diesel particulate sensor to exhaust system

Sensor		Tightening torque	50 Nm



- Feed in, install and tighten nitrogen oxide sensor (1).

Nitrogen oxide sensor downstream of SCR catalytic converter

Sensor		Tightening torque	50 Nm

25 – Install exhaust system

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

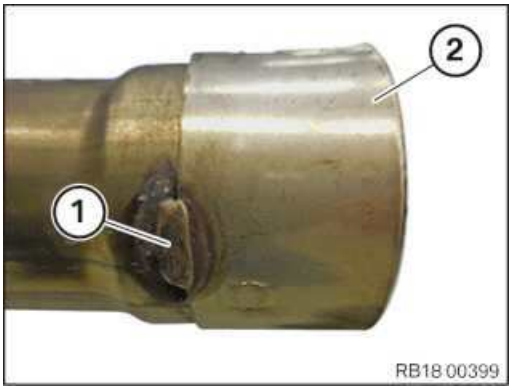
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CAUTION

Swarf resulting from sawing or grinding components.

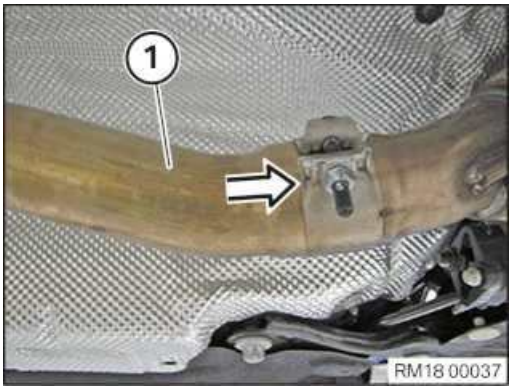
Danger of injury!

- Conduct all work in appropriate personal protective equipment only.
- Wear safety goggles and protective gloves.



- Open the weld seam (1) with a conventional tool.
- Remove the clamp (2).
- If necessary, renew clamp (2).

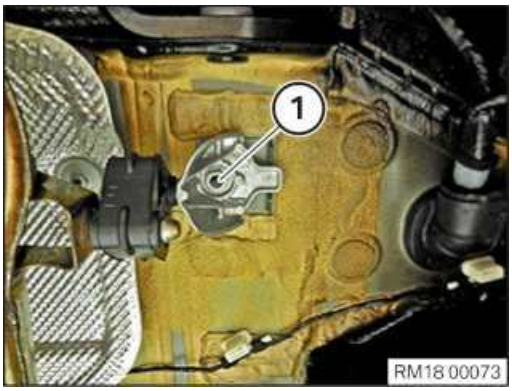
  Parts: Clamp



- Install the exhaust system with the assistance of a second person and connect to the diesel particulate filter.
- Tighten clamp (1).

Exhaust system to diesel particle filter

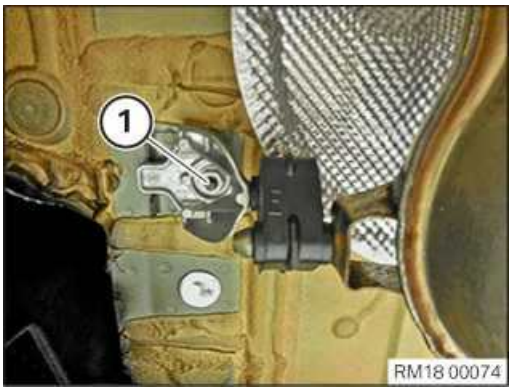
Ribbon cable clamp	Replace clamp		26 Nm



- Tighten the nut (1), left.

Exhaust system suspension to body

Nut M8		19 Nm

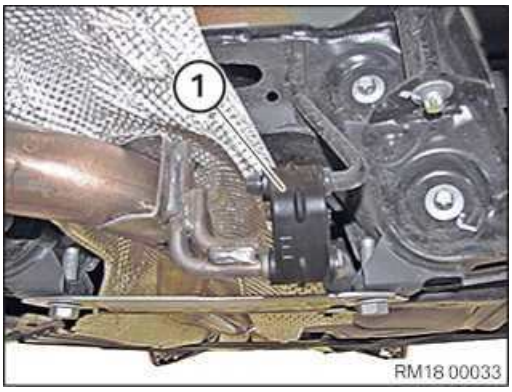


- Tighten the nut (1), right.

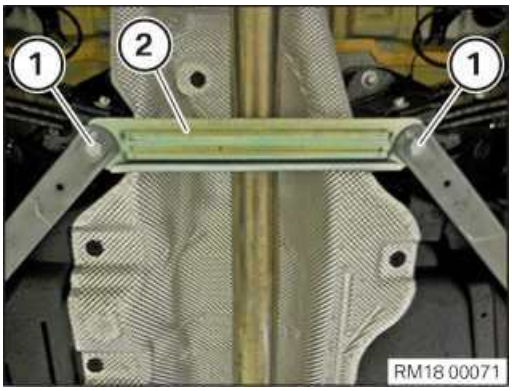
Exhaust system suspension to body

Nut M8		19 Nm

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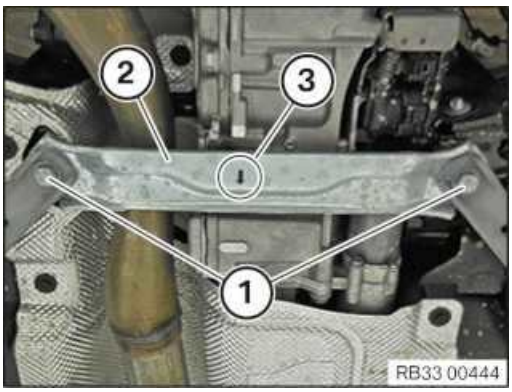
- Check the rubber mounts (1) for damage and renew, if necessary.
- Fasten exhaust system on the rubber mount (1).



- Install the cross-member (2).
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °

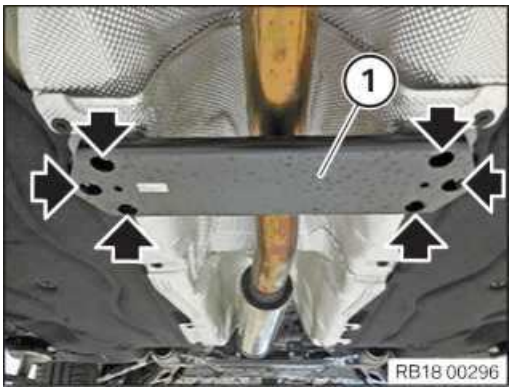


- In **all-wheel drive vehicles:** Ensure that the arrow (3) on the cross-member points in the direction of travel when installing it.
- Position cross-member (2) on the rear axle support.
- Renew screws (1).

  Parts: Bolts(1)
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °



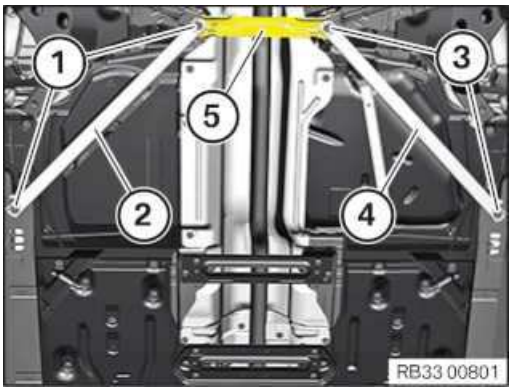
- Insert and install connecting supports (1).
- Tighten screws (arrows).

Front connection carrier to body

M10x18		Tightening torque	56 Nm

26 – Install the cross-member with torsion struts

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- Insert and install the cross-member (5).
- Thread in torsion strut (4) at right and install.
- Renew screws (3).

  Parts: Bolts
- Tighten down screws (3).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

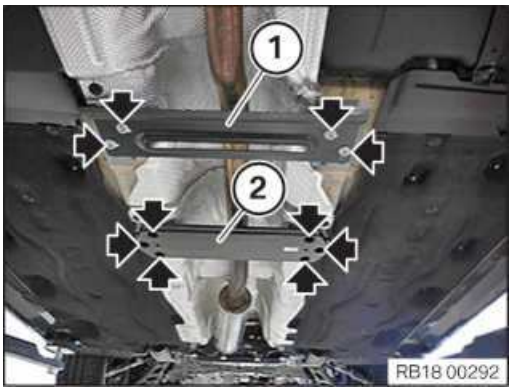
- Guide in and install the left torsion strut (2).
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

27 – Install the connecting support on the tunnel in front and back



- Insert and install connecting supports (2).
- Tighten the screws (arrows) from the connecting support (2).

Front connection carrier to body

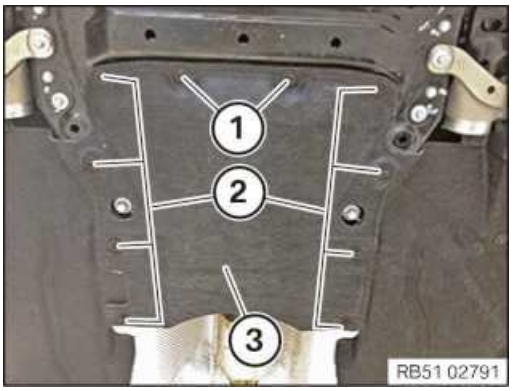
M10x18		Tightening torque	56 Nm

- Insert and install connecting supports (1).
- Tighten the screws (arrows) from the connecting support (1).

Rear connection carrier to body

M8x18		Tightening torque	28 Nm

28 – If installed: Installing underbody protection at rear



- Install the underbody protection (3).
- Tighten down screws (1) and (2).

Underbody protection to body

Screw		Tightening torque	3 Nm

29 – Topping up the fuel tank

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- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and diesel fuel.
- Slide the suction hose (1) of the extractor unit approximately 40 cm into the fuel filler pipe. If necessary, slightly turn the suction hose.
- Fill fuel from suction extractor unit.
- After completing the work and before starting the engine for the first time: fill the fuel tank via the fuel filler pipe with a minimum of 5 l of fuel.

Additional Information

Overview of Tightening Torques

Fuel tank to body — Used in step 15

Nut M8	Renew nut.	Tightening torque	19 Nm

Fuel tank retaining strap to body — Used in step 15

M8 screw	Renew screws.	Tightening torque	19 Nm

Filling hose on fuel tank — Used in step 15

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

Seat bench to body — Used in step 17

Oval-head screw			42 Nm

Toolkit hook and loop tape to body — Used in step 17

Bolt M6 x 20		Tightening torque	4 Nm

Wheel arch cover to body — Used in step 18

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Brake disc to rear wheel hub — Used in step 19

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub — Used in step 19

M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts — Used in step 19

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim.	Tightening torque	140 Nm
	Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence.	Check	140 Nm
	Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.		

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Propeller shaft to transfer box — Used in step 21

		Tightening torque	80 Nm

Flexible disc to rear axle final drive — Used in step 21

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °

Centre mount to body — Used in step 21

M8		Tightening torque	19 Nm

Heat shield to body — Used in step 22 23

Bolts/nut		Tightening torque	3 Nm

Bracket to body — Used in step 22

M8		Tightening torque	21 Nm

Exhaust system to body — Used in step 24

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust bracket on body — Used in step 24

Hexagon screw M8x30		Tightening torque	19 Nm

V-clip to catalytic converter — Used in step 24

V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm

Diesel particulate sensor to exhaust system — Used in step 24

Sensor		Tightening torque	50 Nm

Nitrogen oxide sensor downstream of SCR catalytic converter — Used in step 24

Sensor		Tightening torque	50 Nm

Exhaust system to diesel particle filter — Used in step 25

Ribbon cable clamp	Replace clamp		26 Nm

Exhaust system suspension to body — Used in step 25

Nut M8			19 Nm

Cross-member to rear axle support — Used in step 25

M12	Renew screws.	Tightening torque	100 Nm 90 °

Front connection carrier to body — Used in step 25

M10x18		Tightening torque	56 Nm

Cross-member/torsion strut to axle support and mounting — Used in step 26

M12x48	Renew screws.	Jointing torque Angle of rotation	100 Nm 90 °

Front connection carrier to body — Used in step 27

M10x18		Tightening torque	56 Nm

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Rear connection carrier to body — Used in step 27

M8x18		Tightening torque	28 Nm

Underbody protection to body — Used in step 28

Screw		Tightening torque	3 Nm

Overview of Special Tools

0 495 554 (33 5 070) Extension



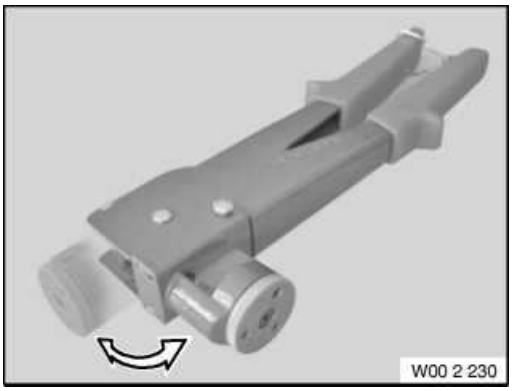
Common — Used in step 9 21

Usage	Pull-out extension for 33 5 040, 33 5 050, 33 5 060.
Included in the tool or work	
Storage location	A18
Replaced by	
In connection with	
SI-Number	01 21 06 (300)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 495 592 (33 5 071)		**Extension** (Extension (1 item)) discontinued, can only be ordered using complete tool	

0 496 521 (00 2 230) Pliers



Common — Used in step 18

Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

2 344 011 Tool

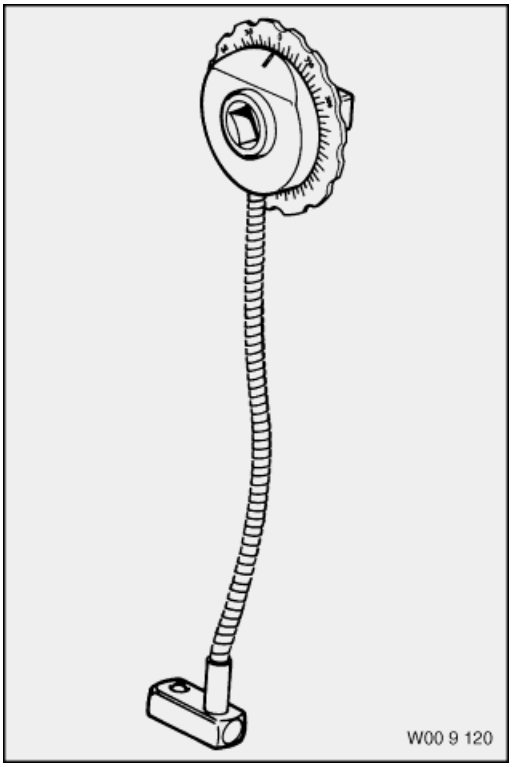


Common — Used in step 19

Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

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0 490 504 (00 9 120) Torque angle measuring dial



Common	Used in step 21
Usage	For torsion angle adjustment of cylinder head bolts (all engines) And reinforcement plate front axle support E46
Included in the tool or work	
Storage location	A4
Replaced by	
In connection with	
SI-Number	

Replacement tools:

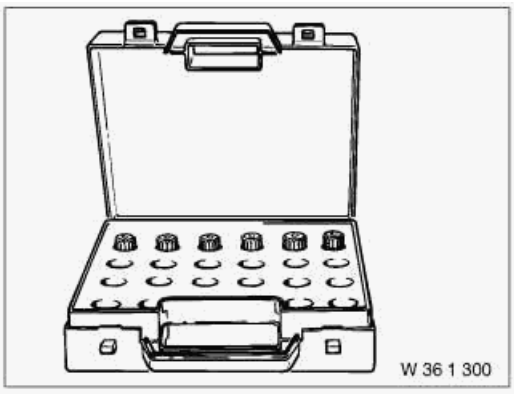
0 495 221 (36 1 323) Wheel stud



Common	Used in step 11
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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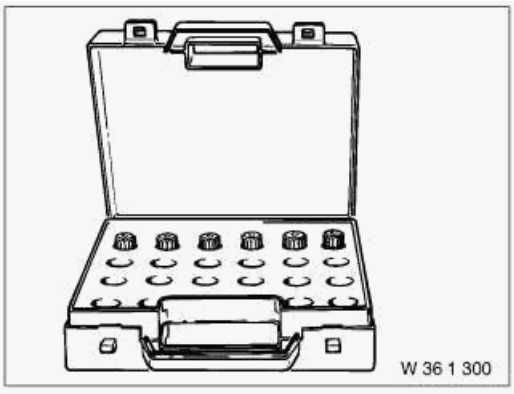
0 495 224 (36 1 326) Wheel stud



Common Used in step 11

Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 225 (36 1 327) Wheel stud

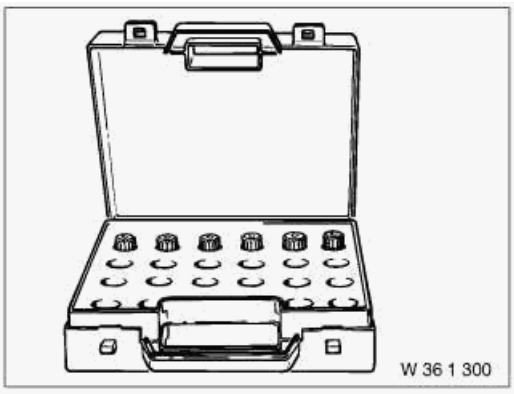


Common Used in step 11

Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 226 (36 1 328) Wheel stud



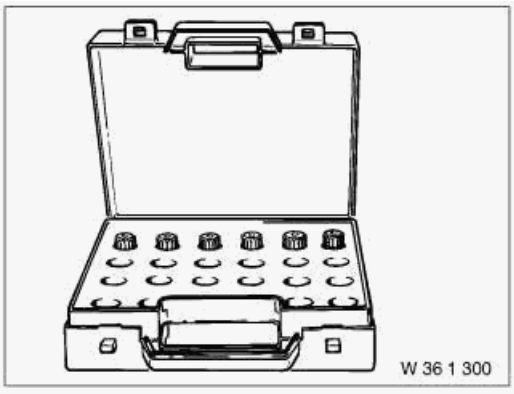
Common	Used in step 11
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 227 (36 1 329) Wheel stud



Common	Used in step 11
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

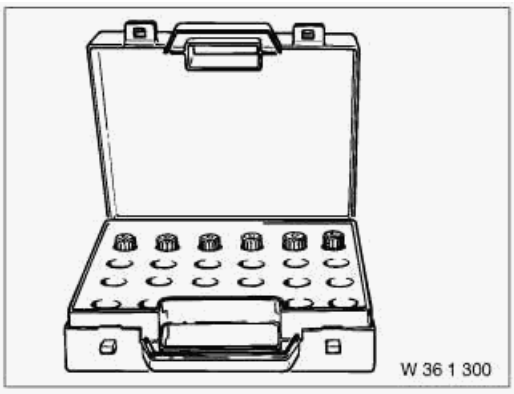
0 495 228 (36 1 331) Wheel stud



Common	Used in step 11
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

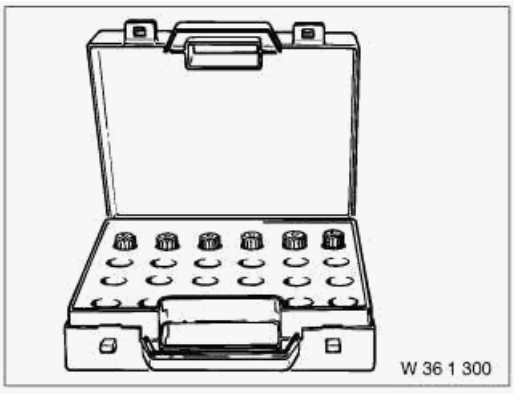
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0 495 229 (36 1 332) Wheel stud



Common	Used in step 11
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 11
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Links

Operating materials	Used in step
2.0 Grease for wheel centring	19

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16 11 030 Removing and installing fuel tank

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

PRELIMINARY WORK

1 – Drawing off the fuel tank

WARNING

Contact with hazardous fluids.

Hazardous to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

WARNING

Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

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- Open fuel filler cap.
- Insert special tool into fuel filler neck.

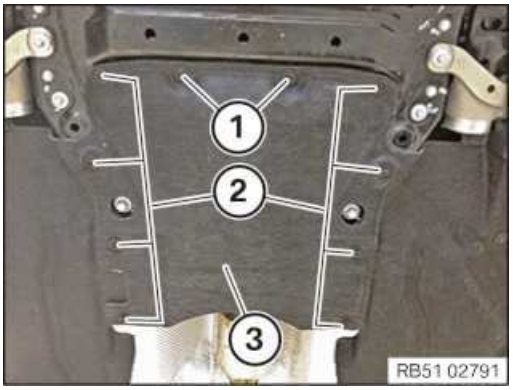
  Special tool has two different diameters: for petrol and for diesel fuel.
- Slide suction hose (1) of the extractor unit through special tool and into the fuel filler pipe. If necessary, slightly turn the suction hose.

  For the extractor unit: refer to BMW Service workshop equipment.

  The insertion length of the suction hose is 125 cm.
- Start engine and allow to run, so that the electric fuel pump is running.

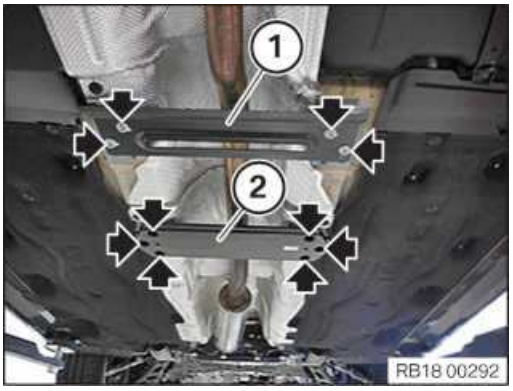
  This will ensure that the fuel is pumped by the suction jet pump from the left-hand side of the fuel tank to the right hand-side.
- Draw off fuel with the extractor unit as far as possible. In the process, track the drawing off of the fuel on the fuel gauge in the instrument cluster.

2 – If installed: Removing rear underbody protection



- Loosen screws (1) and (2).
- Remove underbody protection (3).

3 – Removing the connecting support from the tunnel in front and back



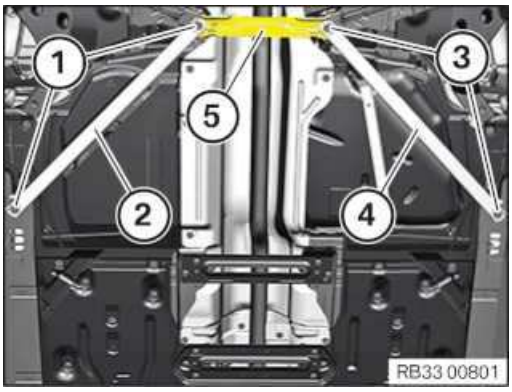
- Unscrew the bolts (arrows) from the connecting support (1).
- Feed out and remove the crossbeam (1).
- Unscrew the bolts (arrows) from the connecting support (2).
- Feed out and remove the crossbeam (2).

4 – Remove the cross strut with the torsion strut

TECHNICAL INFORMATION

Driving without a torsion strut is not permitted.

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- Loosen screws (1).
- Thread out torsion strut (2) at left and remove.
- Loosen screws (3).
- Thread out torsion strut (4) at right and remove.
- Feed out and remove the cross-member (5).

5 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

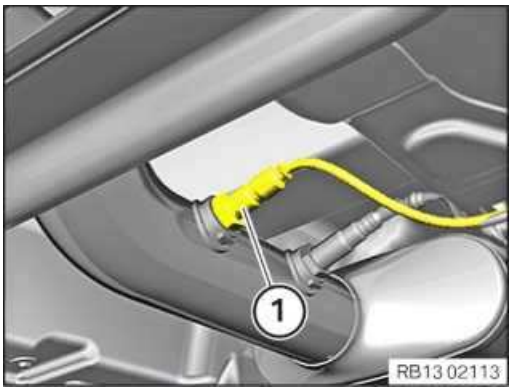
- Perform all work only on components that have cooled down.

CAUTION

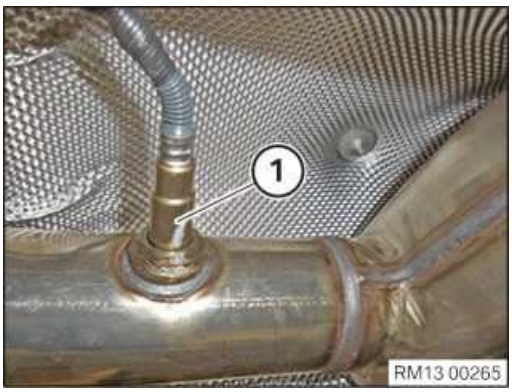
Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

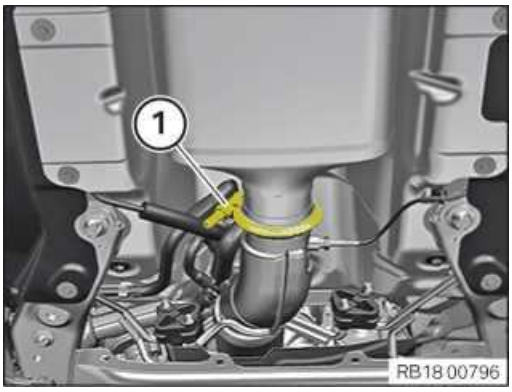


- Release the nitrogen oxide sensor (1) downstream of the SCR catalytic converter, guide it out and set it aside.

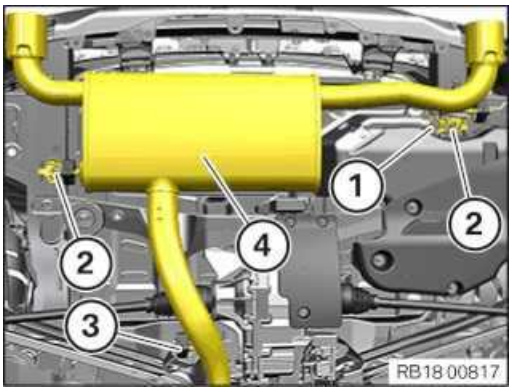


- Release the diesel particulate sensor (1), guide it out and set it aside.

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- Loosen V-band clamp (1).



- Loosen screw (1).
- Loosen nuts (2).
- Release the rubber mount (3) of the exhaust system (4).
- Lower and guide out the exhaust system (4) with assistance of a second person and remove it.

6 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

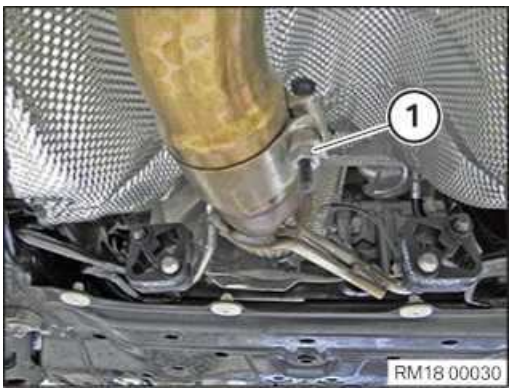
- Perform all work only on components that have cooled down.

CAUTION

Heavy component.

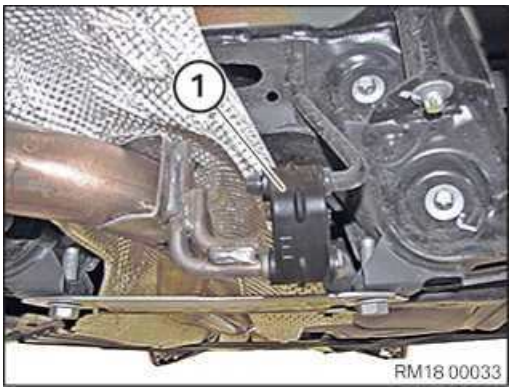
Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

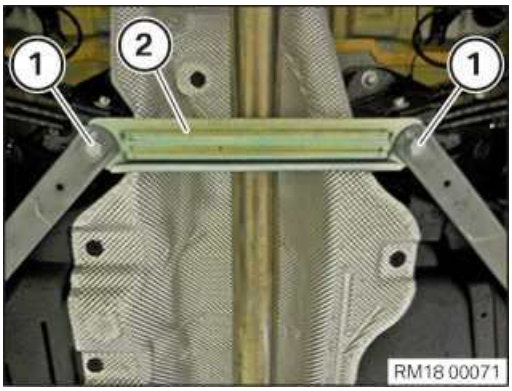


- Unfasten clamp (1).

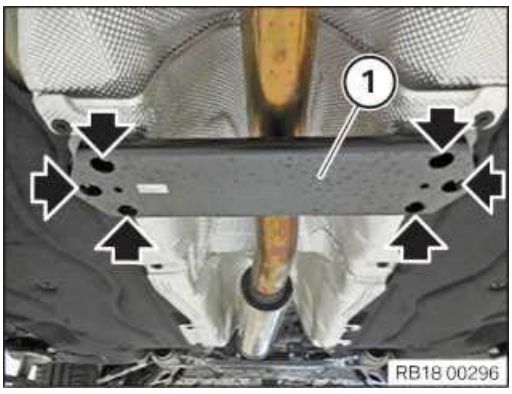
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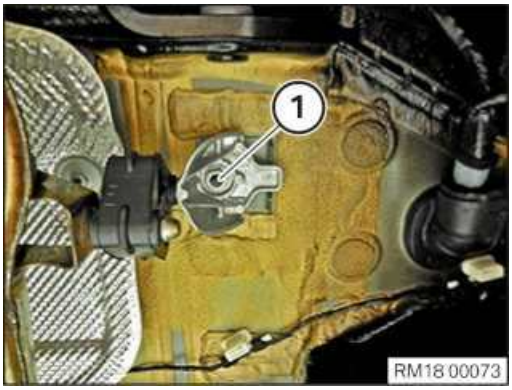
- Spray rubber mount (1) with lubricant and pull off the exhaust system.



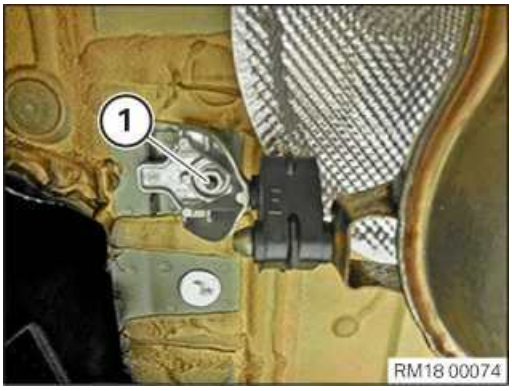
- Loosen screws (1).
- Feed out and remove the cross-member (2).



- Remove screws (arrows).
- Remove the connecting support (1).



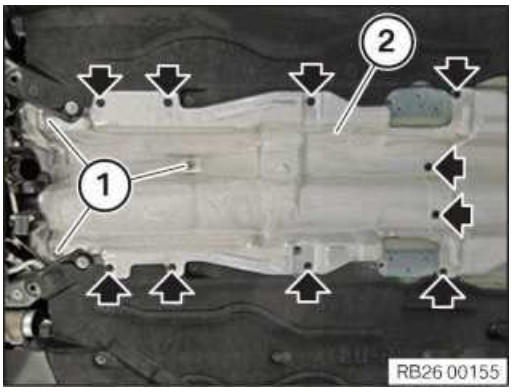
- Release the left-hand nut (1).



- Release the right-hand nut (1).
- Lower and remove exhaust system with assistance of a second person.

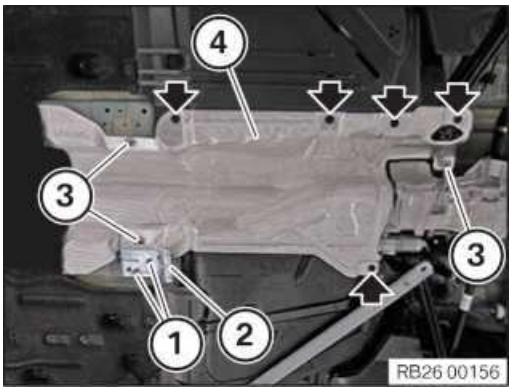
7 – Remove front heat shield

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- Remove screws (arrows).
- Loosen nuts (1).
- Guide the heat shield (2) out and remove it.

8 – Remove heat shield at rear.



- Loosen screws (1).
- Guide out and remove holder (2).
- Remove screws (arrows).
- Loosen nuts (3).
- Guide the heat shield (4) out and remove it.

9 – Remove propeller shaft

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

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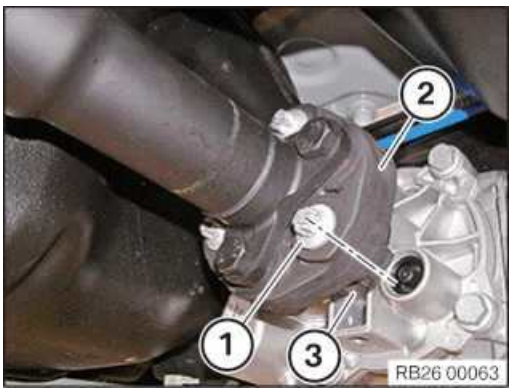
- Install the special too l between the front and rear propeller shaft.
- Make sure that the arrows on the special tool point forward in the direction of travel.



- Always support the propeller shaft (1) with a conventional jack.



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



TECHNICAL INFORMATION

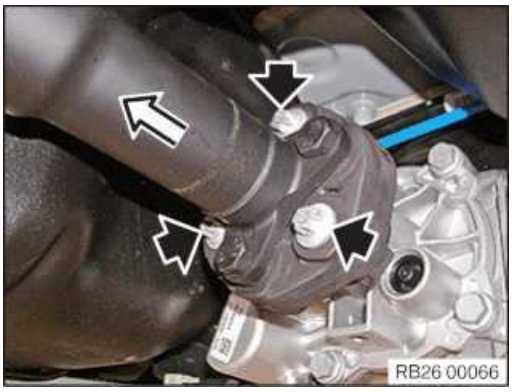
Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Mark the installation position of the screw connection (1), the flexible disc (2) and the three-hole flange (3) on the same level.
- Loosen the screw connection (1).

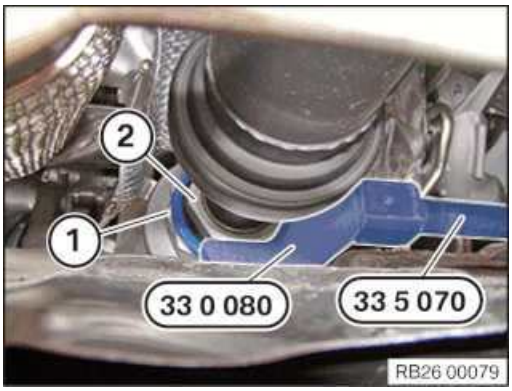


- Loosen screws (1).

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- Remove screws (arrows).
- Guide the propeller shaft out in the direction of the arrow and set it aside.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.

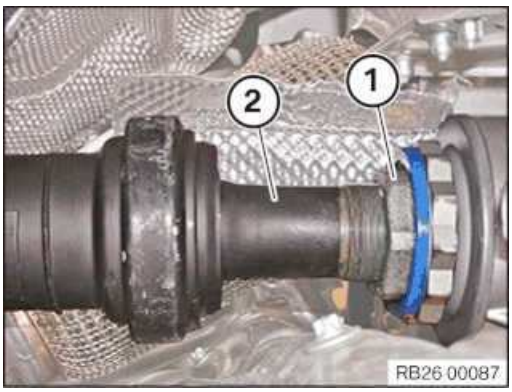
- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to detach the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

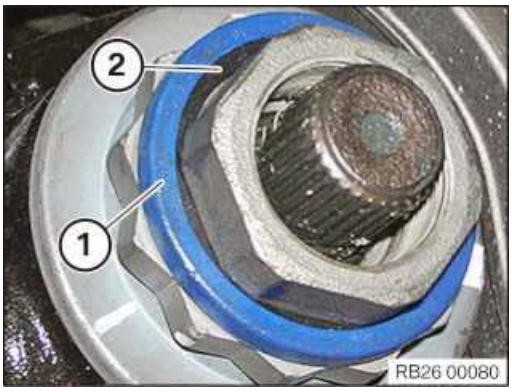


- Release the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

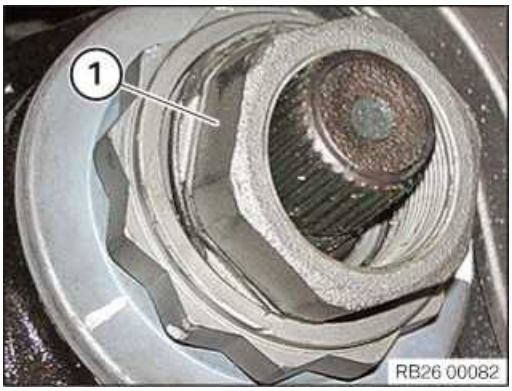


- Thread the propeller shaft (2) out of the recessed nut (1) and remove.

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- Thread the retaining clip (1) and the seal (2) out and remove.



- Thread out and remove the recessed nut (1).

10 – Removing the tank covers on the left and right

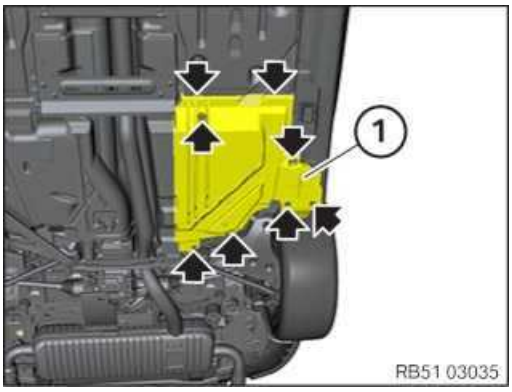
NOTICE

Perform the operations on the left and right side.

NOTICE

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

▸ **Removing the tank cover**



- Remove screws (arrows).
- Remove the tank cover (1).

11 – Remove right rear wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

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NOTICE

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

▶ **Removing the rear right wheel**

▷ **Removing the wheel**



- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

◁

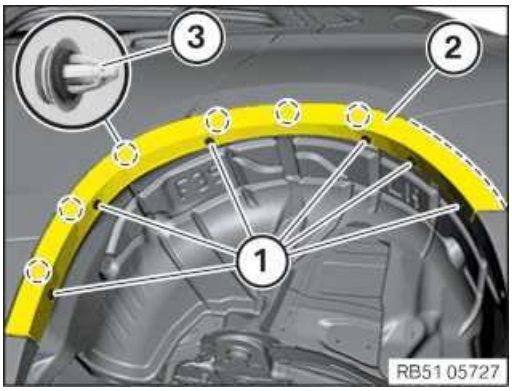
▶ **Removing rear wheel arch trim**

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

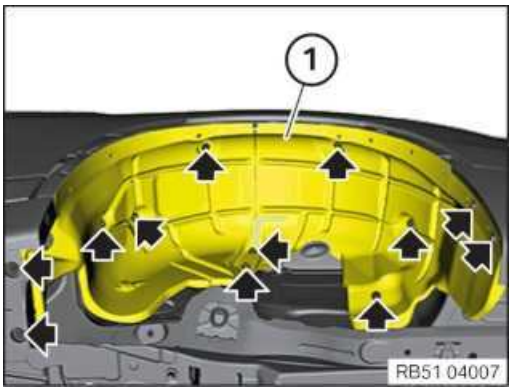
NOTICE

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



- Remove the blind rivets (1).
- Disengage the wheel arch trim (2) from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

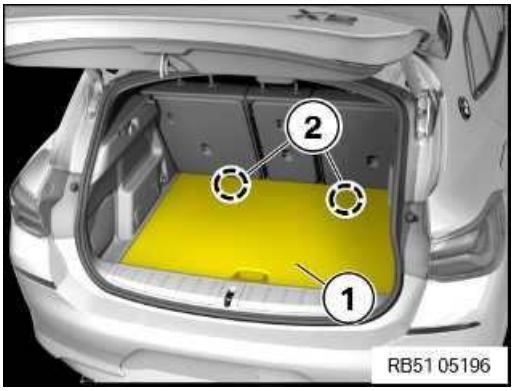
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- Unscrew all bolts and nuts (arrows).
- Carefully feed out and remove the wheel arch cover (2).

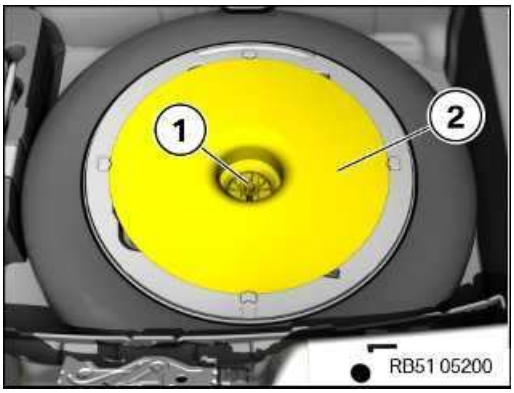
12 – Removing seat bench

▸ **Removing the luggage compartment removable panel**

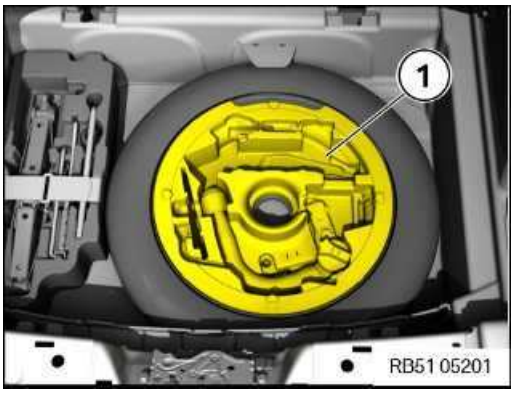


- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

▸ **Removing the compact spare wheel**



- Loosen screw (1).
- Remove the cover (2).



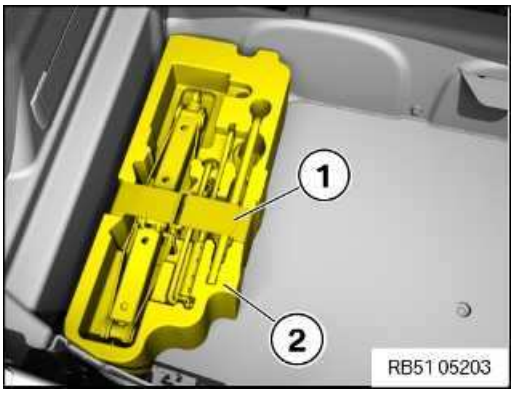
- Remove the oddments tray from the emergency wheel (1).

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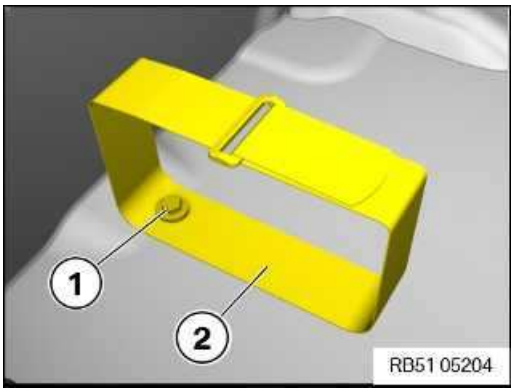
- Remove the emergency wheel (1).

▸ **Remove the tool kit**



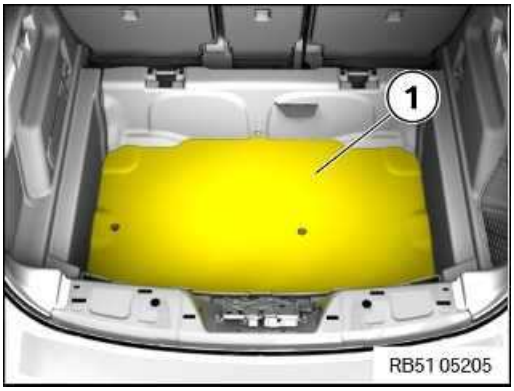
- Open the hook and loop tape (1).
- Remove the tool kit (2).

▸ **Remove the hook and loop tape for the tool kit**



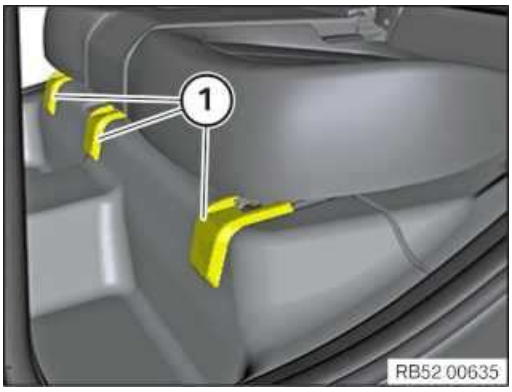
- Loosen screw (1).
- Remove the hook and loop tape (2).

▸ **Removing the luggage compartment floor trim panel**

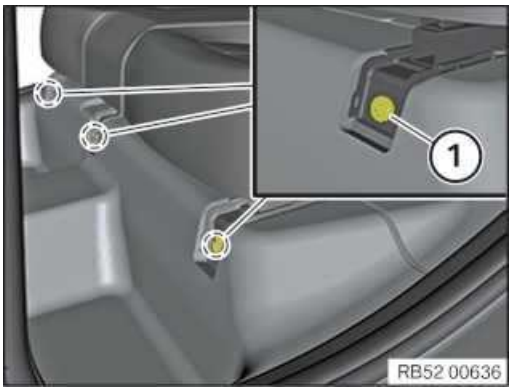


- Remove the luggage compartment floor trim panel (1) upwards.

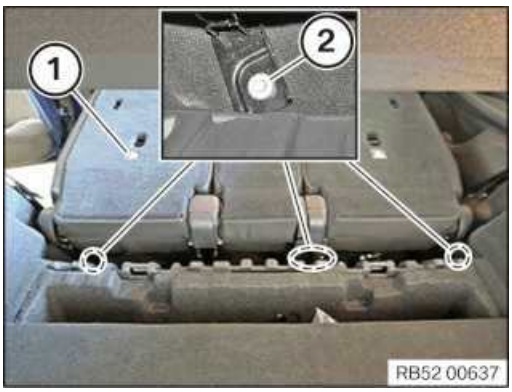
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- Unclip the covers (1) forwards.



- Loosen screws (1).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.
- Fold down rear seat backrest (1) on left and right.
- Loosen screws (2).
- Disconnect existing plug connections where required.

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Lift out rear seat bench with the assistance of a second person.

13 – Disconnect delivery unit

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WARNING

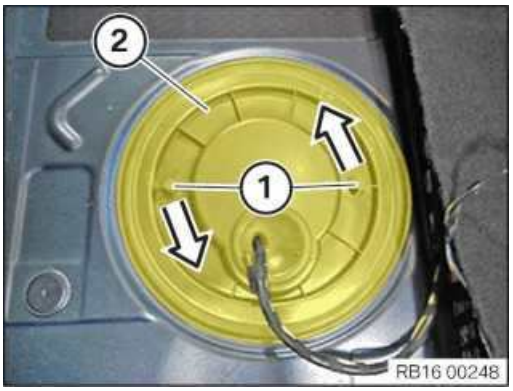
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

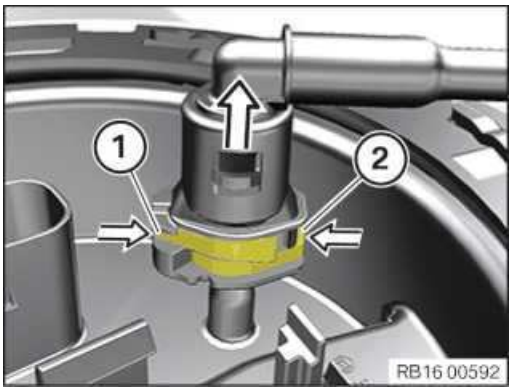
Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Turn the sealing cap for the floor panel (2) at the plastic tabs (1) in the direction of arrow.
- If turning is not possible: Destroy sealing cap of the floor panel (2).
- Remove sealing cap of the floor panel (2).



- Disconnect plug connection (1).

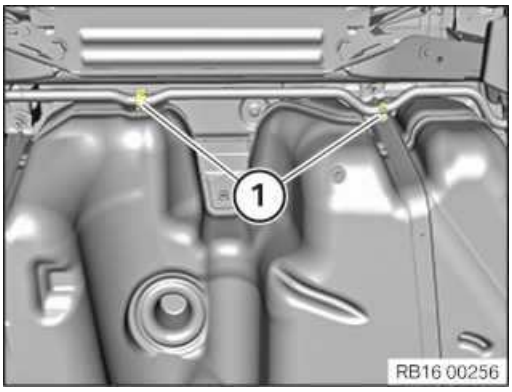


- Push the snap fastener toward the delivery unit.
- Press retaining lugs (1) and (2) pull off the snap fastener in the direction of arrow.

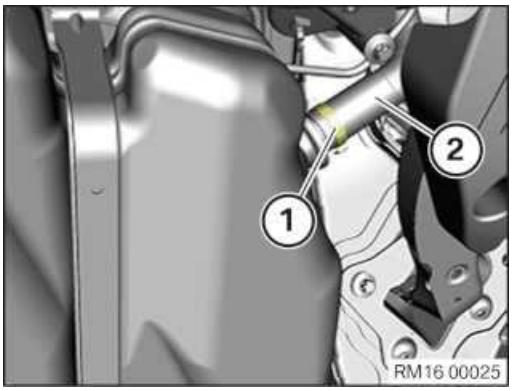
MAIN WORK

14 – Removing the fuel tank (fuel tank capacity 61 l)

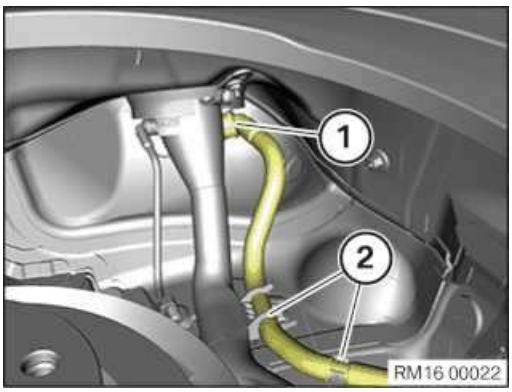
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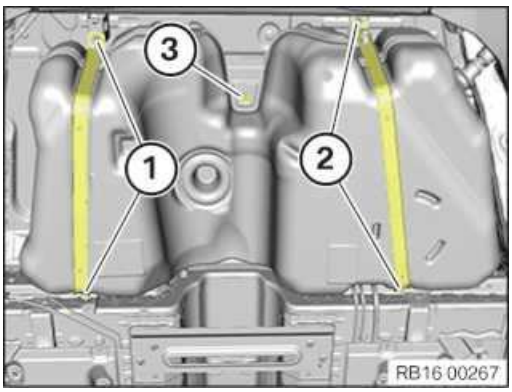
- Detach the tank ventilation line from the bracket (1).



- Loosen hose clamp (1).
- Pull off the rubber hose (2) from the fuel tank in the direction of the arrow.



- Unlock and pull off snap fastener (1).
- Detach fuel filler neck breather pipe from brackets (2).

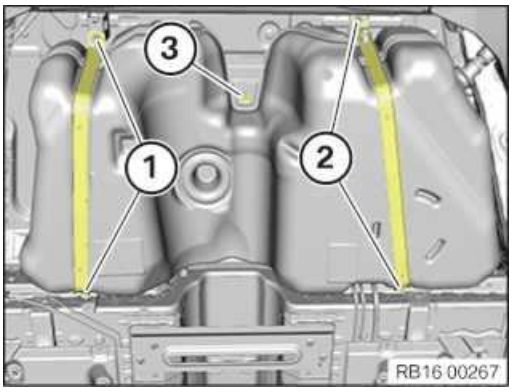


- **Heavily support the fuel tank.**
- Release the screws (1) and (2) and remove the retaining straps.
- Unscrew the nut (3) and lower the fuel tank (3).

  While the fuel tank is being lowered, the fuel filler neck breather pipe must be guided from the wheel arch through the body aperture!

15 – Install fuel tank (fuel tank capacity 61 l)

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- **Raise fuel tank.**

  While the fuel tank is being raised, the fuel filler neck breather pipe must be guided through the body aperture into the wheel arch!
- Lift fuel tank up to installation position. When doing this, observe the installation position of the fuel filler neck breather pipe.
- Renew nut (3).

  Parts: Nut
- Fit nut (2) and tighten.

Fuel tank to body

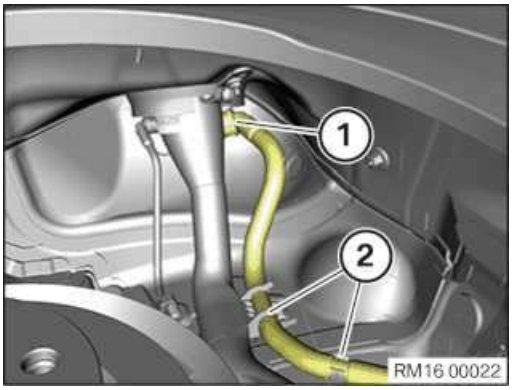
Nut M8	Renew nut.	Tightening torque	19 Nm

- Renew screws (1) and (2).

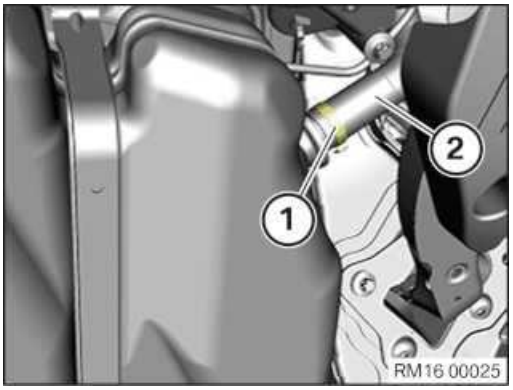
  Parts: Bolts
- Mount the retaining straps and position and tighten the screws (1) and (2).

Fuel tank retaining strap to body

M8 screw	Renew screws.	Tightening torque	19 Nm



- Attach the fuel filler neck breather pipe in the brackets (2).
- Position snap fastener (1) and lock.

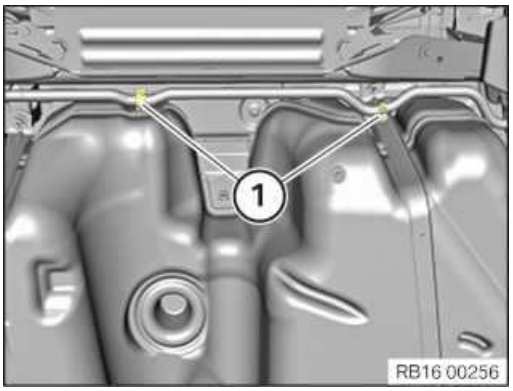


- Mount fuel filling hose (2) on fuel tank in direction of arrow.
- Renew the hose clamp (1).

  Parts: Hose clamp
- Position hose clamp (1) and tighten.

Filling hose on fuel tank

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm



- Attach the tank ventilation line in the brackets (1).

POSTPROCESSES

16 – Connect delivery unit

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WARNING

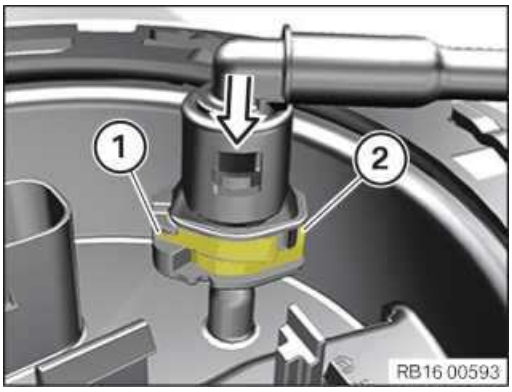
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Check locks of snap fastener for damage, and replace if required.

  The retaining lugs (1) and (2) must be locked.
- Mount the snap fastener and lock.

  The snap fastener must engage audibly and noticeably.
- Ensure correct locking of snap fastener with a tensile test.



- Connect connector (1).



- Renew sealing cap of the floor panel (1).

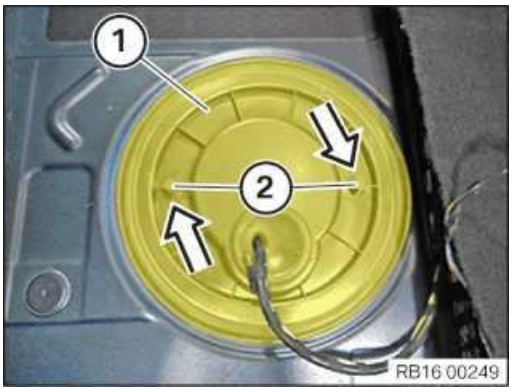
  Parts: Sealing cap of the floor panel

  The sealing cap of the floor panel must not be reused, as there is the risk of leak during reuse.
- Lubricate seal in the area (1) with lubricant.

Expendable materials

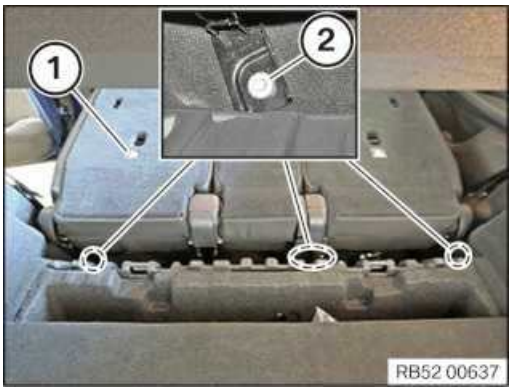
Lubricants PF1	50 g, Pin	83230309627

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- Install sealing cap of the floor panel (1).
- Turn sealing cap of the floor panel (1) on the plastic tabs (2) in the direction of arrow till the limit position and engage.

17 – Install rear seat bench



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.

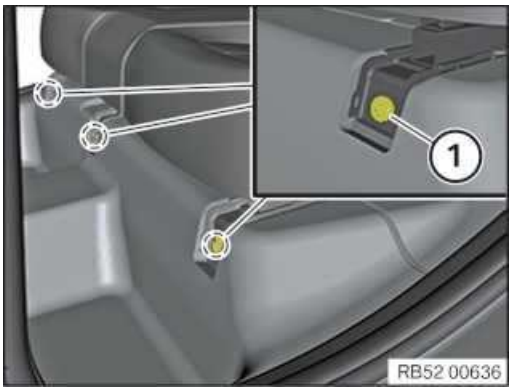
RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

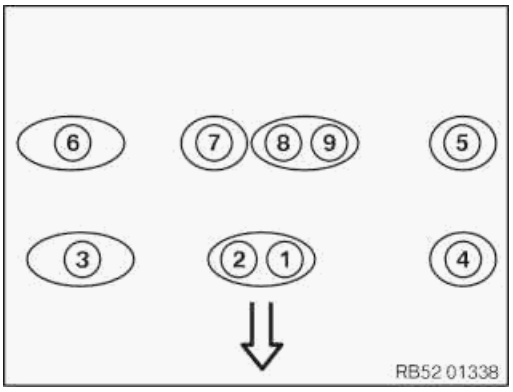
- Remove and install heavy components with the aid of another person/other persons.

- Hoist the rear seat bench into the vehicle and position it with the assistance of an auxiliary person.
- If required, connect the available connectors.
- Screw the bolts (2) in a few turns.



- Screw the bolts (1) in a few turns.

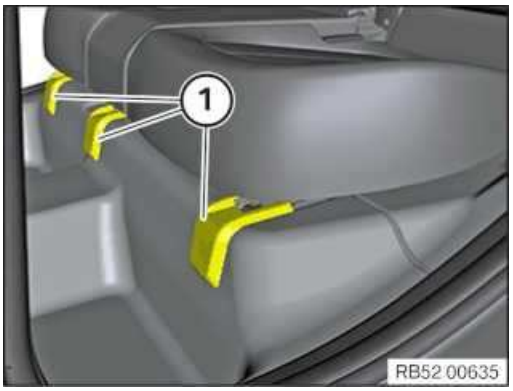
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- Tighten screws in the order (1) to (9).

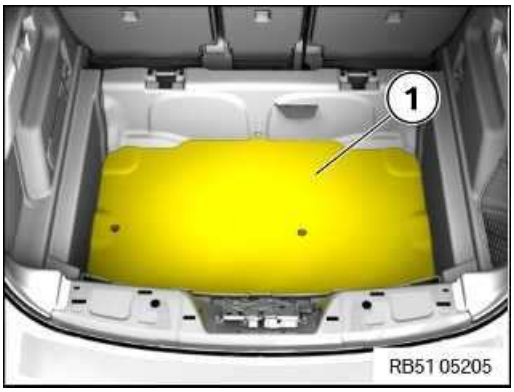
Seat bench to body

Oval-head screw		42 Nm



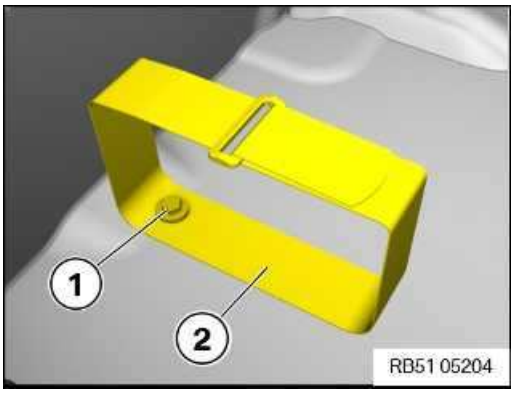
- Clip in the covers (1).

▸ **Installing the luggage compartment floor trim panel**



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

▸ **Inserting the Velcro fastener for the toolkit**



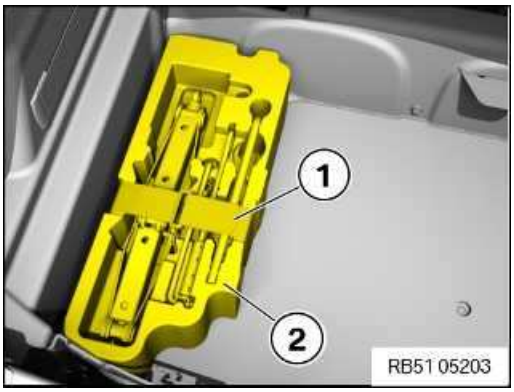
- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

▸ **Install the tool kit**

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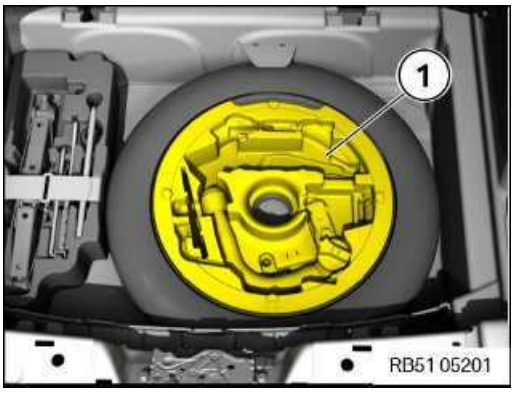


- Install the tool kit (2).
- Close the hook and loop tape (1).

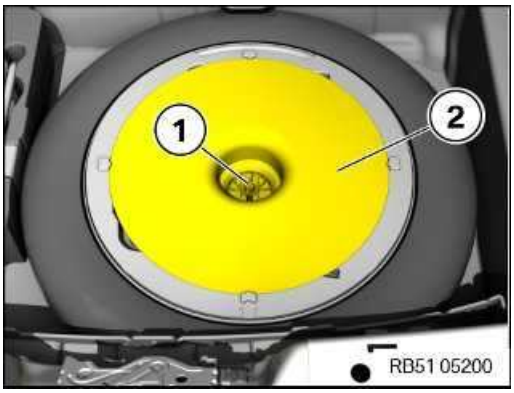
▸ **Install the emergency wheel**



- Insert compact spare wheel(1).



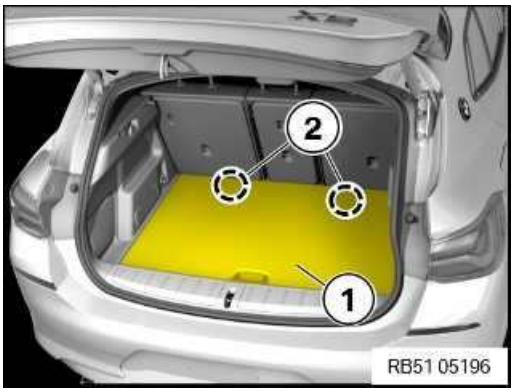
- Insert oddments tray into the compact spare wheel (1).



- Insert the lid (2).
- Hand-tighten the bolt (1).

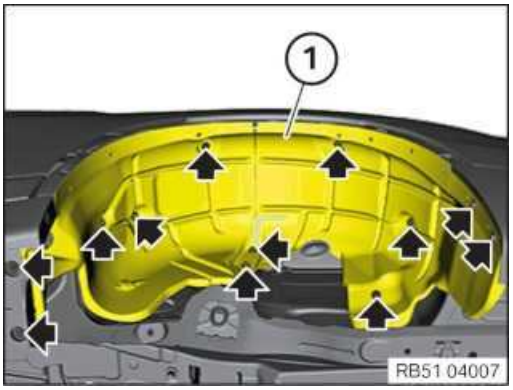
▸ **Installing the luggage compartment removable panel**

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- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

18 – Installing the rear wheel arch cover on the right



- Feed in wheel arch cover (1) and correctly position it.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

▸ **Installing the rear wheel arch trim**

TECHNICAL INFORMATION

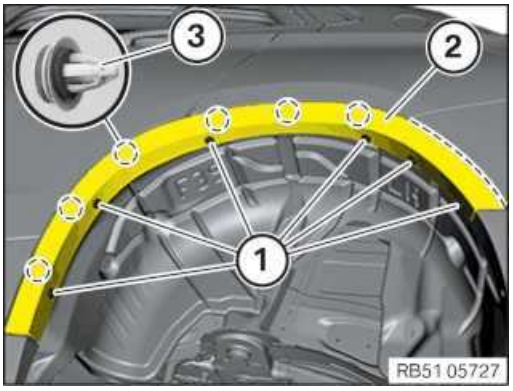
Latch mechanisms, guides and mounting elements must not be damaged or missing.

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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



- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage the wheel arch trim (2) with the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

19 – Installing rear right wheel

▸ **Mounting the wheel**

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▷ **Clean the contact surfaces between the brake disc and the wheel rim**



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

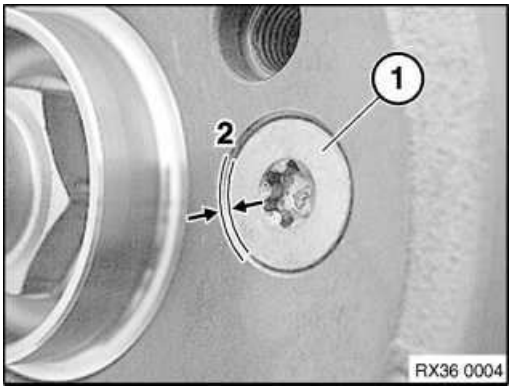
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).



- Renew mounting bolt (1).

  Parts: Mounting bolt
- Check that the mounting bolt (1) for the brake disc is securely seated.

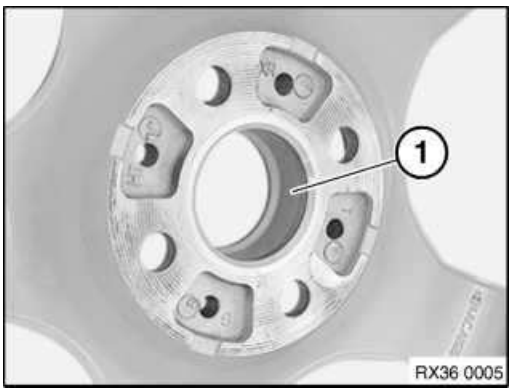
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

20 – Installing the tank covers on the left and right

NOTICE

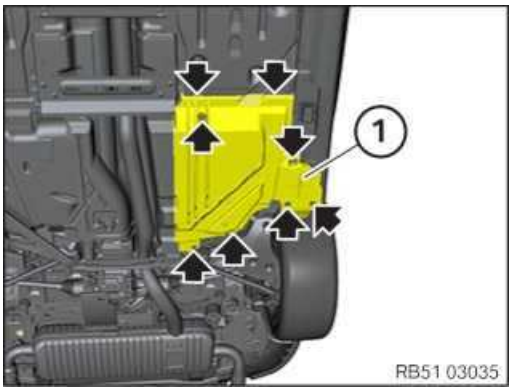
Perform the operations on the left and right side.

NOTICE

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

▸ **Installing tank cover**

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- Install tank cover (1).
- Tighten screws (arrows).

21 – Install propeller shaft.

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to the propeller shaft during installation.

Non-observance of the installation guidelines for the propeller shaft on the rear axle differential may cause severe damage.

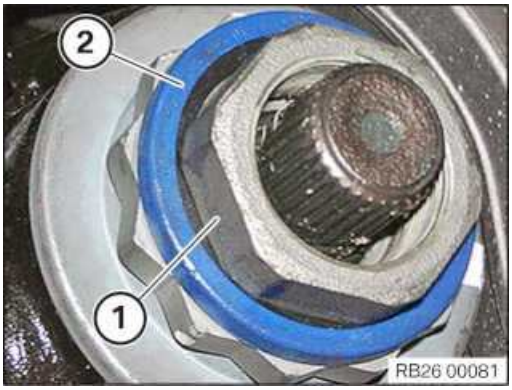
- Always renew the recessed nut on the rear axle differential. Screw locking must be available.
- Strictly observe a minimum hardening time of two hours after having screwed in the recessed nut. The hardening time may be longer at lower temperatures.

RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.



- Renew recessed nut (1).

  Parts: Insert nut
- Renew the retaining clip (2) and the seal.

  Parts: Retaining clip, seal
- Insert the seal with the recessed nut (1) and install.
- Insert the retaining clip (2) and install.
- Make sure that recessed nut (1) is screwed in within 5 min.
- Make sure that the hardening time of **minimum** 2 h for the recessed nut is observed.

  The hardening time must be extended at lower temperatures.

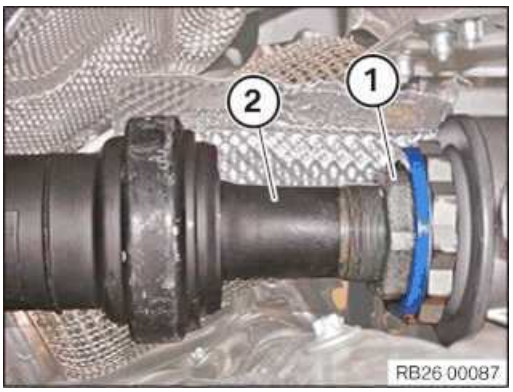
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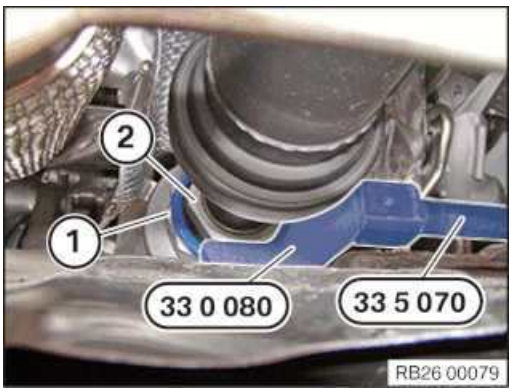
- Insert the propeller shaft (1) and install.
- Always support the propeller shaft (1) with a conventional jack.



- Hand-tighten the bolts (1).



- Push the propeller shaft (2) against the recessed nut (1) up to the limit position.
- Screw the propeller shaft (2) at least 2 thread starts onto the recessed nut (1) by hand.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

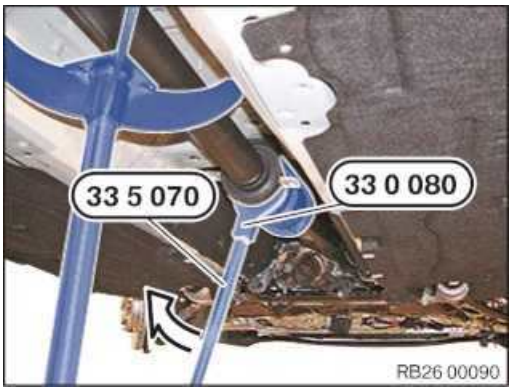
- Do not use the double hexagon head flange nut as counter support.

- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to tighten the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

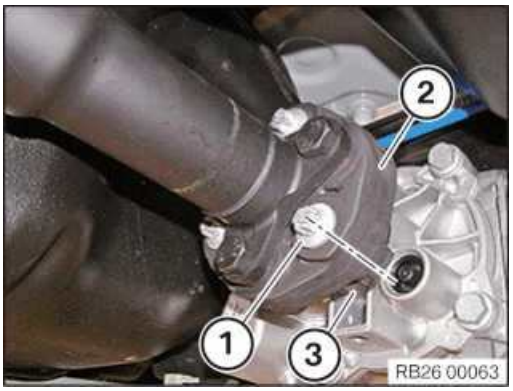
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- Tighten the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

Propeller shaft to transfer box

		Tightening torque	80 Nm



TECHNICAL INFORMATION

Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Assemble the screw connection (1) of the flexible disc (2) and the three-hole flange (3) according to the mark.
- Renew screws (1).

  Parts: Bolts
- Hand-tighten the bolts (1).



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



- Tighten the bolts with the special tools **0 490 504 (00 9 120)** and .

Flexible disc to rear axle final drive

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °



- Tighten the screws (1).

Centre mount to body

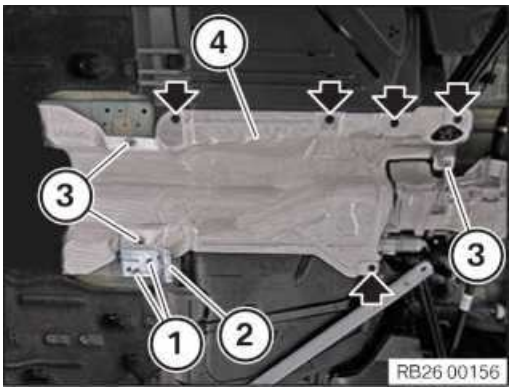
M8		Tightening torque	19 Nm

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- Guide the special too l out between the front and rear propeller shaft and remove.

22 – Installing the rear heat shield



- Insert and install the heat shield (4).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (3).

Heat shield to body

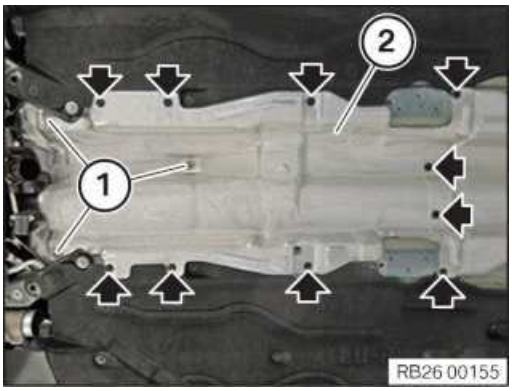
Bolts/nut		Tightening torque	3 Nm

- Insert and install the holder (2).
- Tighten the screws (1).

Bracket to body

M8		Tightening torque	21 Nm

23 – Install the front heat shield



- Insert and install the heat shield (2).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (1).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

24 – Install exhaust system

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

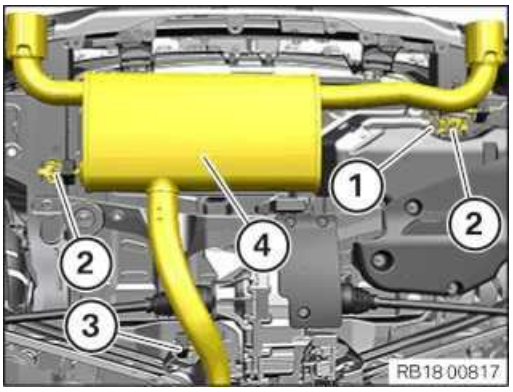
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CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.



- Feed in and install the exhaust system (4) with a second person.
- Renew nuts (2).

  Parts: Nuts
- Tighten nuts (2).

Exhaust system to body

M8	Replace nuts.	Tightening torque	19 Nm

- Tighten down screw (1).

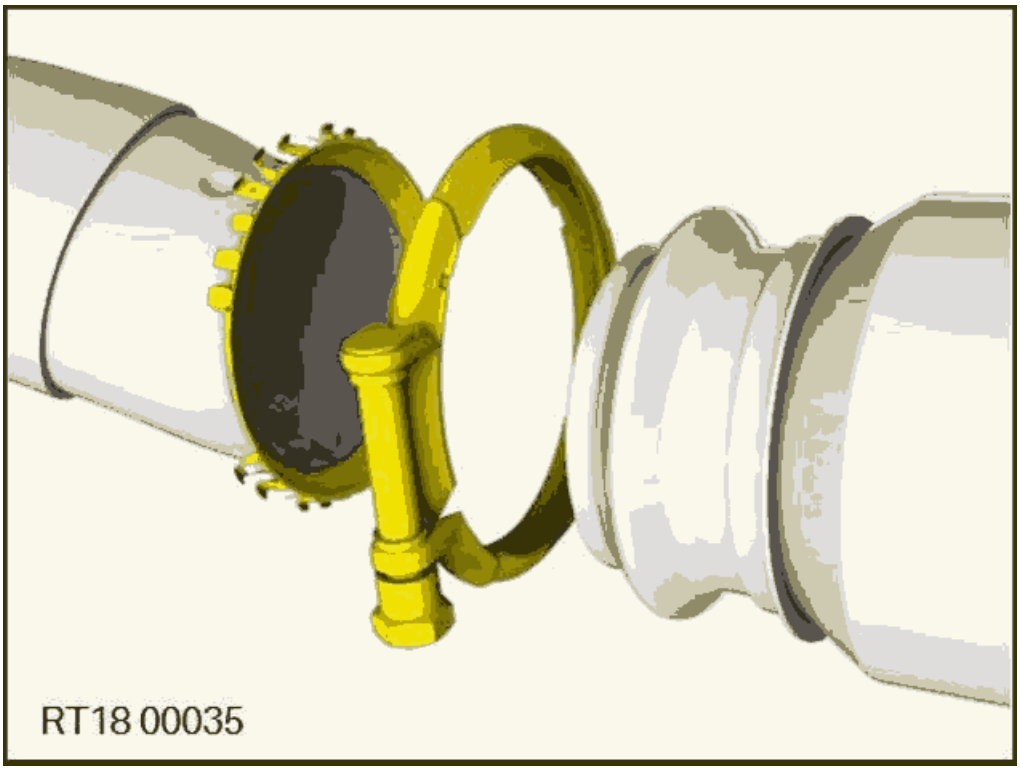
Exhaust bracket on body

Hexagon screw M8x30		Tightening torque	19 Nm

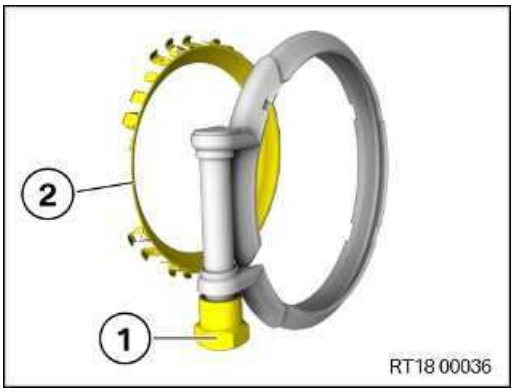
- Check the rubber mount (3) for damage and renew as needed.
- Mount rubber mount (3) on the exhaust system (4).

▸ **Install the V-clip**

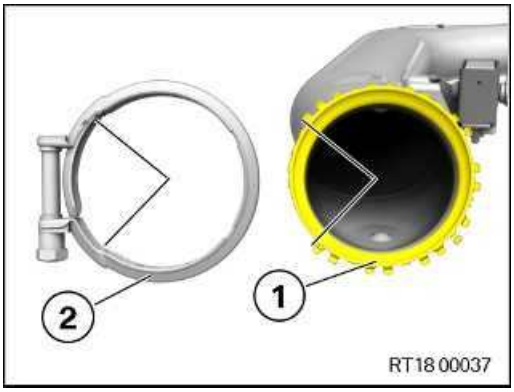
V-band clamp



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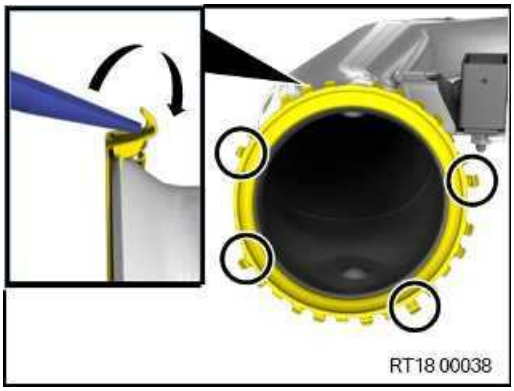


- Unscrew the nut (1) and remove the sealing ring (2).

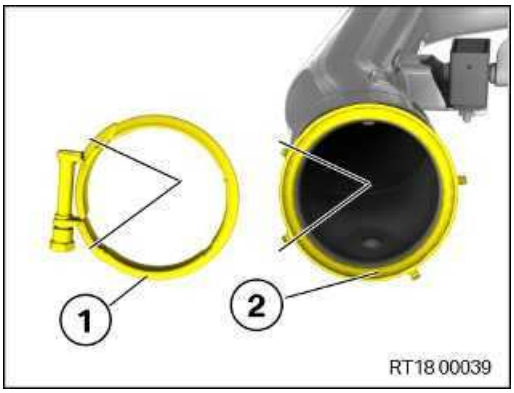


- Renew the V-clip (2).

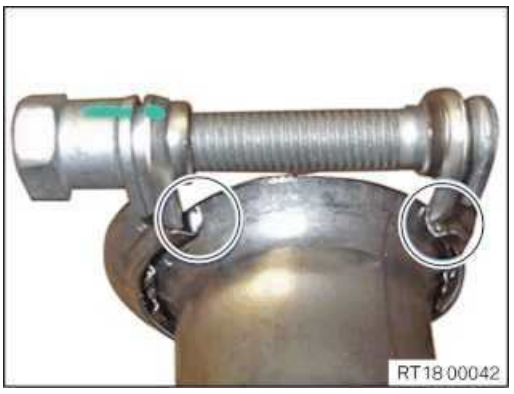
  Parts: V-band clamp
- Mount the sealing ring (1) on the exhaust system.
- Ensure that the sealing ring (1) for the V-clip (2) is positioned correctly.



- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.

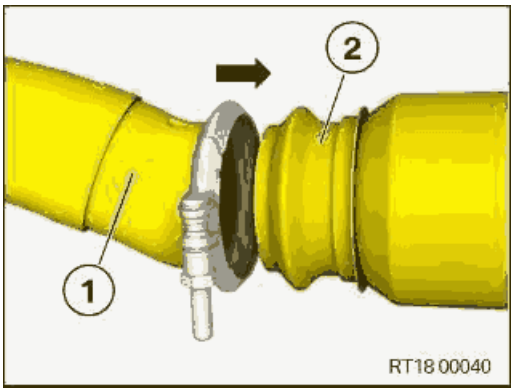


- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).

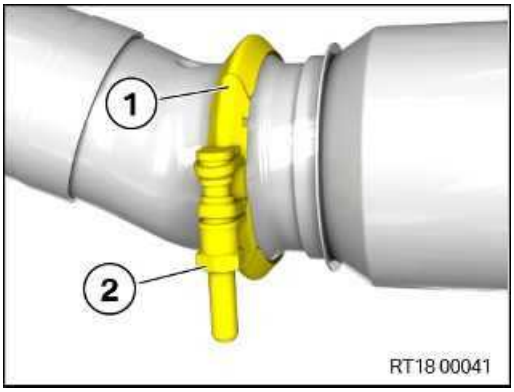


- Make sure that the V-clip rests against the sheet metal tabs after mounting (marks).

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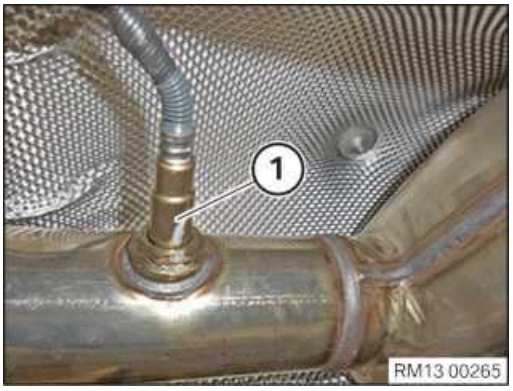
- Connect the exhaust system (1) with the catalytic converter (2) and position correctly.



- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

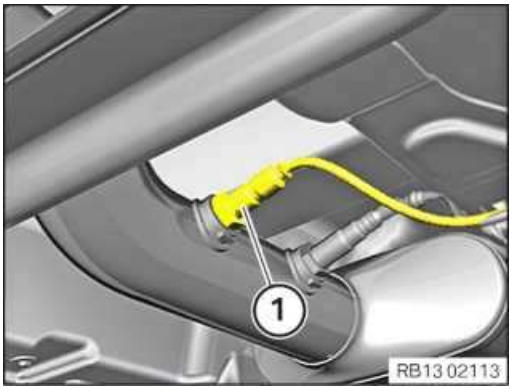
V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm



- Feed in, install and tighten diesel particulate sensor (1).

Diesel particulate sensor to exhaust system

Sensor		Tightening torque	50 Nm



- Feed in, install and tighten nitrogen oxide sensor (1).

Nitrogen oxide sensor downstream of SCR catalytic converter

Sensor		Tightening torque	50 Nm

25 – Install exhaust system

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

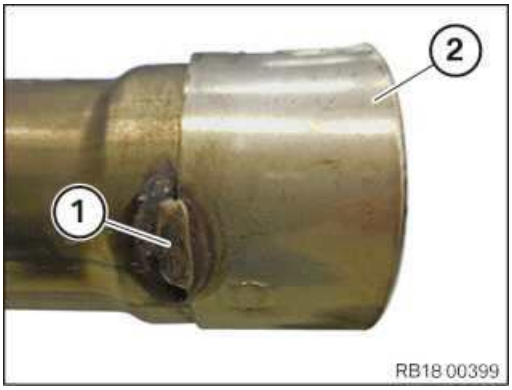
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CAUTION

Swarf resulting from sawing or grinding components.

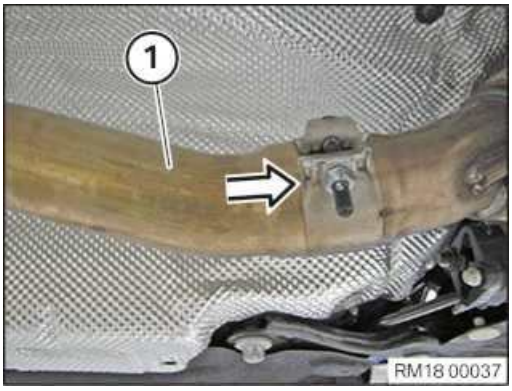
Danger of injury!

- Conduct all work in appropriate personal protective equipment only.
- Wear safety goggles and protective gloves.



- Open the weld seam (1) with a conventional tool.
- Remove the clamp (2).
- If necessary, renew clamp (2).

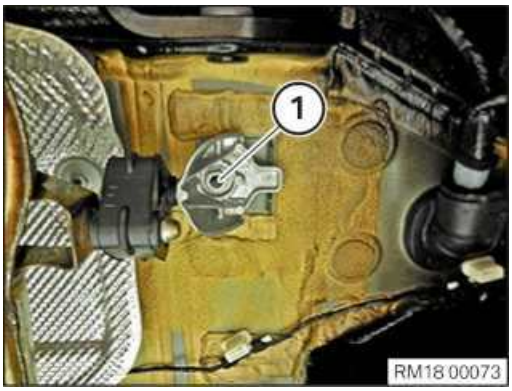
  Parts: Clamp



- Install the exhaust system with the assistance of a second person and connect to the diesel particulate filter.
- Tighten clamp (1).

Exhaust system to diesel particle filter

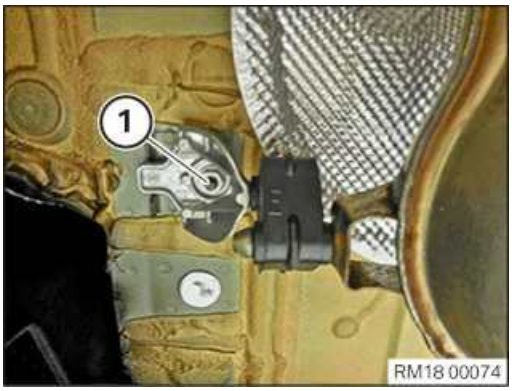
Ribbon cable clamp	Replace clamp		26 Nm



- Tighten the nut (1), left.

Exhaust system suspension to body

Nut M8		19 Nm

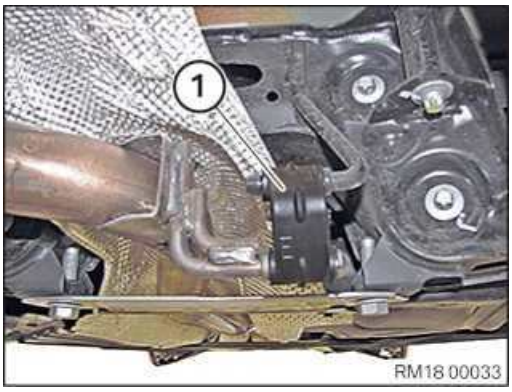


- Tighten the nut (1), right.

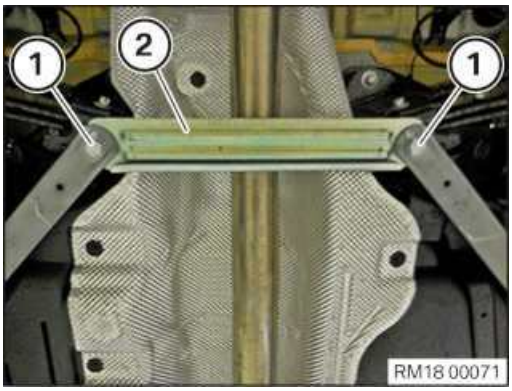
Exhaust system suspension to body

Nut M8		19 Nm

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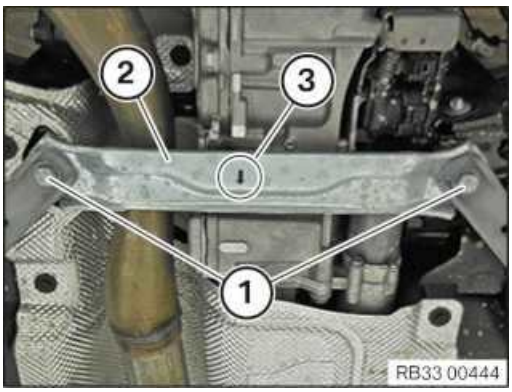
- Check the rubber mounts (1) for damage and renew, if necessary.
- Fasten exhaust system on the rubber mount (1).



- Install the cross-member (2).
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °

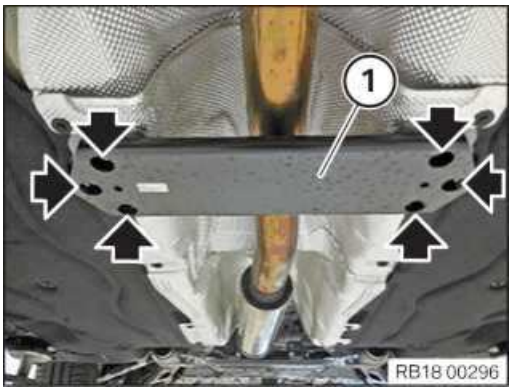


- In **all-wheel drive vehicles:** Ensure that the arrow (3) on the cross-member points in the direction of travel when installing it.
- Position cross-member (2) on the rear axle support.
- Renew screws (1).

  Parts: Bolts(1)
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °



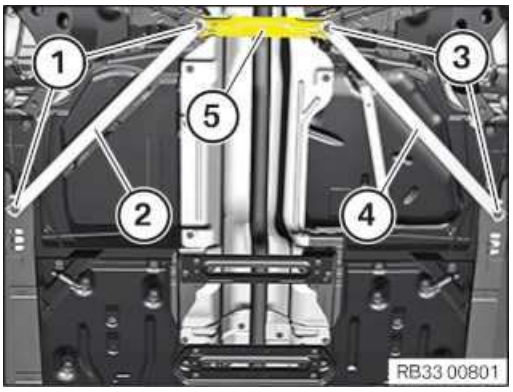
- Insert and install connecting supports (1).
- Tighten screws (arrows).

Front connection carrier to body

M10x18		Tightening torque	56 Nm

26 – Install the cross-member with torsion struts

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- Insert and install the cross-member (5).
- Thread in torsion strut (4) at right and install.
- Renew screws (3).

  Parts: Bolts
- Tighten down screws (3).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

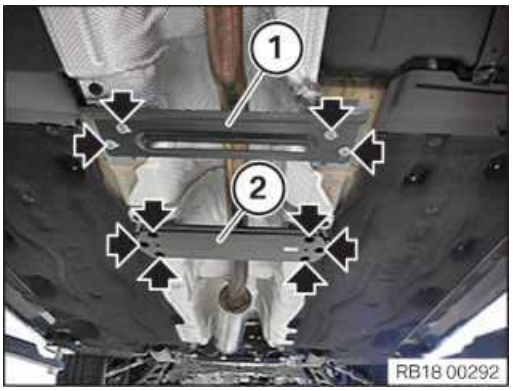
- Guide in and install the left torsion strut (2).
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

27 – Install the connecting support on the tunnel in front and back



- Insert and install connecting supports (2).
- Tighten the screws (arrows) from the connecting support (2).

Front connection carrier to body

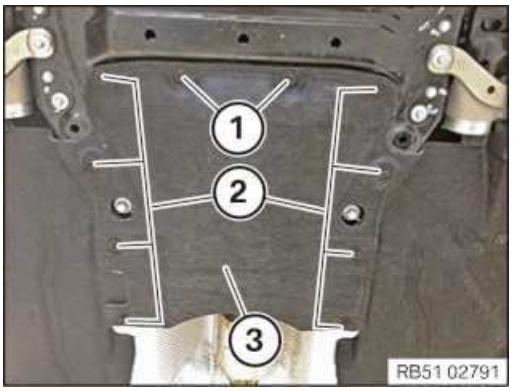
M10x18		Tightening torque	56 Nm

- Insert and install connecting supports (1).
- Tighten the screws (arrows) from the connecting support (1).

Rear connection carrier to body

M8x18		Tightening torque	28 Nm

28 – If installed: Installing underbody protection at rear



- Install the underbody protection (3).
- Tighten down screws (1) and (2).

Underbody protection to body

Screw		Tightening torque	3 Nm

29 – Topping up the fuel tank

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- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and diesel fuel.
- Slide the suction hose (1) of the extractor unit approximately 40 cm into the fuel filler pipe. If necessary, slightly turn the suction hose.
- Fill fuel from suction extractor unit.
- After completing the work and before starting the engine for the first time: fill the fuel tank via the fuel filler pipe with a minimum of 5 l of fuel.

Additional Information

Overview of Tightening Torques

Fuel tank to body — Used in step 15

Nut M8	Renew nut.	Tightening torque	19 Nm

Fuel tank retaining strap to body — Used in step 15

M8 screw	Renew screws.	Tightening torque	19 Nm

Filling hose on fuel tank — Used in step 15

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

Seat bench to body — Used in step 17

Oval-head screw			42 Nm

Toolkit hook and loop tape to body — Used in step 17

Bolt M6 x 20		Tightening torque	4 Nm

Wheel arch cover to body — Used in step 18

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Brake disc to rear wheel hub — Used in step 19

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub — Used in step 19

M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts — Used in step 19

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim.	Tightening torque	140 Nm
	Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence.	Check	140 Nm
	Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.		

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Propeller shaft to transfer box — Used in step 21

		Tightening torque	80 Nm

Flexible disc to rear axle final drive — Used in step 21

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °

Centre mount to body — Used in step 21

M8		Tightening torque	19 Nm

Heat shield to body — Used in step 22 23

Bolts/nut		Tightening torque	3 Nm

Bracket to body — Used in step 22

M8		Tightening torque	21 Nm

Exhaust system to body — Used in step 24

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust bracket on body — Used in step 24

Hexagon screw M8x30		Tightening torque	19 Nm

V-clip to catalytic converter — Used in step 24

V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm

Diesel particulate sensor to exhaust system — Used in step 24

Sensor		Tightening torque	50 Nm

Nitrogen oxide sensor downstream of SCR catalytic converter — Used in step 24

Sensor		Tightening torque	50 Nm

Exhaust system to diesel particle filter — Used in step 25

Ribbon cable clamp	Replace clamp		26 Nm

Exhaust system suspension to body — Used in step 25

Nut M8			19 Nm

Cross-member to rear axle support — Used in step 25

M12	Renew screws.	Tightening torque	100 Nm 90 °

Front connection carrier to body — Used in step 25

M10x18		Tightening torque	56 Nm

Cross-member/torsion strut to axle support and mounting — Used in step 26

M12x48	Renew screws.	Jointing torque Angle of rotation	100 Nm 90 °

Front connection carrier to body — Used in step 27

M10x18		Tightening torque	56 Nm

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Rear connection carrier to body — Used in step 27

M8x18		Tightening torque	28 Nm

Underbody protection to body — Used in step 28

Screw		Tightening torque	3 Nm

Overview of Special Tools

0 495 554 (33 5 070) Extension



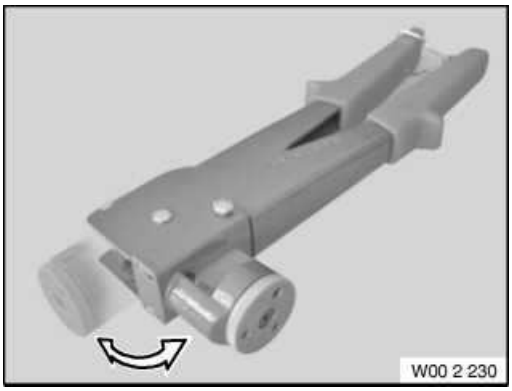
Common — Used in step 9 21

Usage	Pull-out extension for 33 5 040, 33 5 050, 33 5 060.
Included in the tool or work	
Storage location	A18
Replaced by	
In connection with	
SI-Number	01 21 06 (300)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 495 592 (33 5 071)		**Extension** (Extension (1 item)) discontinued, can only be ordered using complete tool	

0 496 521 (00 2 230) Pliers



Common — Used in step 18

Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

2 344 011 Tool

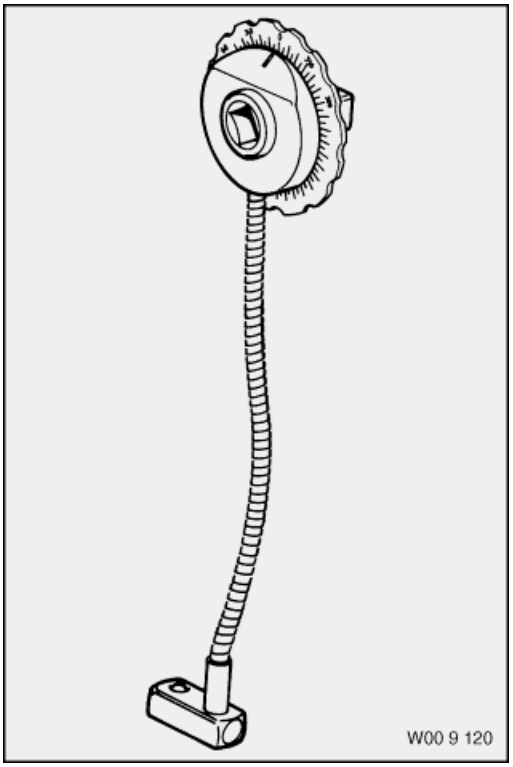


Common — Used in step 19

Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

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0 490 504 (00 9 120) Torque angle measuring dial



Common	Used in step 21
Usage	For torsion angle adjustment of cylinder head bolts (all engines) And reinforcement plate front axle support E46
Included in the tool or work	
Storage location	A4
Replaced by	
In connection with	
SI-Number	

Replacement tools:

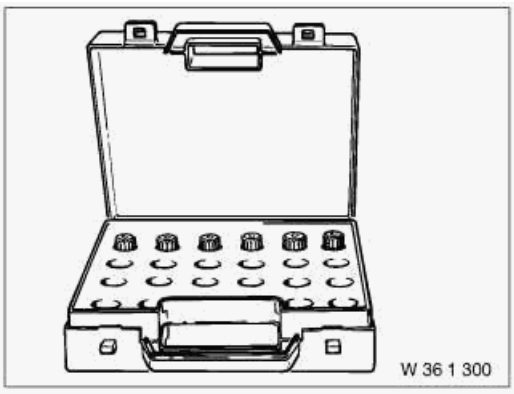
0 495 221 (36 1 323) Wheel stud



Common	Used in step 11
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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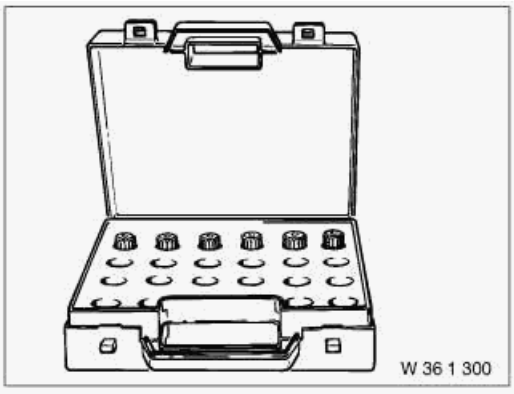
0 495 224 (36 1 326) Wheel stud



Common Used in step 11

Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 225 (36 1 327) Wheel stud

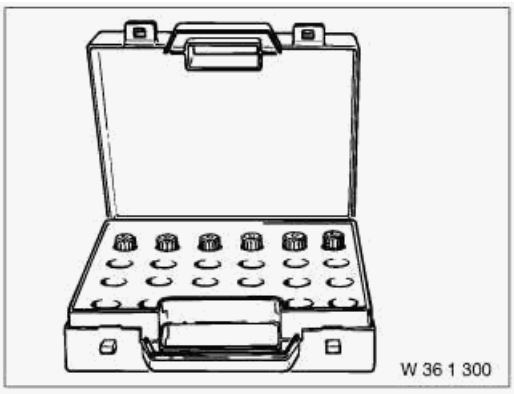


Common Used in step 11

Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 226 (36 1 328) Wheel stud



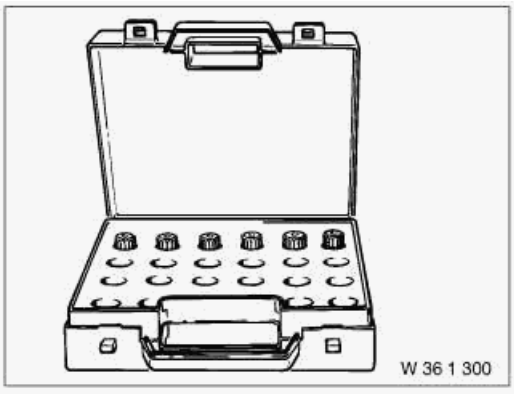
Common	Used in step 11
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 227 (36 1 329) Wheel stud



Common	Used in step 11
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

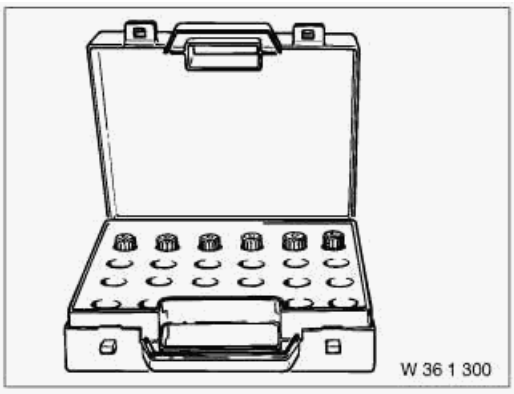
0 495 228 (36 1 331) Wheel stud



Common	Used in step 11
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

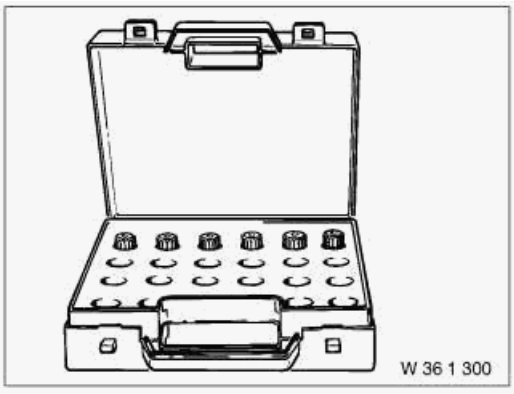
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0 495 229 (36 1 332) Wheel stud



Common	Used in step 11
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 11
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Links

Operating materials	Used in step
2.0 Grease for wheel centring	19

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16 11 060 Removing and installing/replacing fuel filler pipe

PRELIMINARY WORK

1 – Drawing off the fuel tank

WARNING

Contact with hazardous fluids.

Hazardous to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

WARNING

Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.



- Open fuel filler cap.
- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and for diesel fuel.
- Slide suction hose (1) of the extractor unit through special tool and into the fuel filler pipe. If necessary, slightly turn the suction hose.

  For the extractor unit: refer to BMW Service workshop equipment.

  The insertion length of the suction hose is 125 cm.
- Start engine and allow to run, so that the electric fuel pump is running.

  This will ensure that the fuel is pumped by the suction jet pump from the left-hand side of the fuel tank to the right hand-side.
- Draw off fuel with the extractor unit as far as possible. In the process, track the drawing off of the fuel on the fuel gauge in the instrument cluster.

2 – Remove right rear wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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

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▶ **Removing the rear right wheel**

▷ **Removing the wheel**



- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

◁

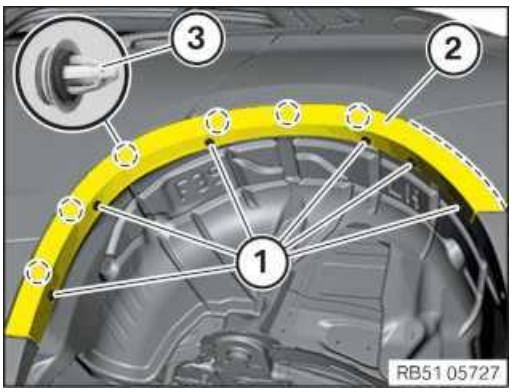
▶ **Removing rear wheel arch trim**

NOTICE

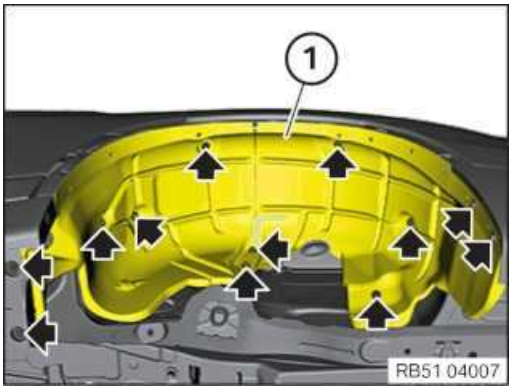
To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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



- Remove the blind rivets (1).
- Disengage the wheel arch trim (2) from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.



- Unscrew all bolts and nuts (arrows).
- Carefully feed out and remove the wheel arch cover (2).

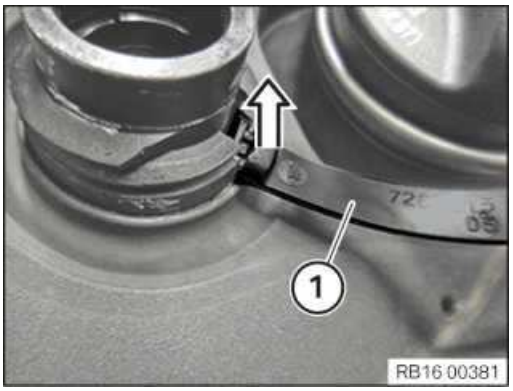
MAIN WORK

3 – Remove fuel filler pipe

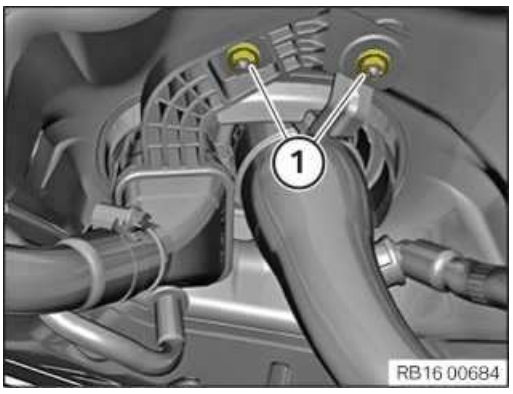
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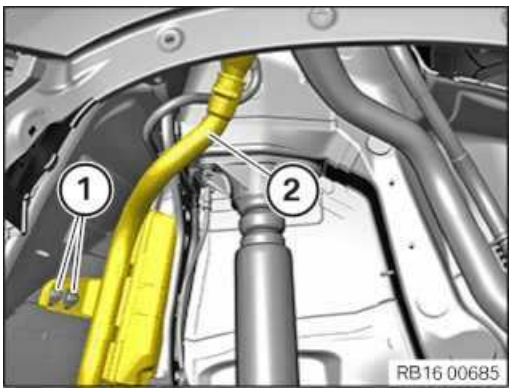
- Open sealing cap (1).
- Open the sealing cap for the fuel filler pipe.



- Unclip retaining strap (1) in direction of arrow and remove the sealing cap.

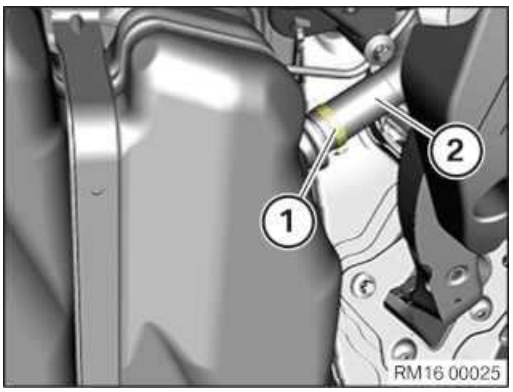


- Loosen nuts (1).



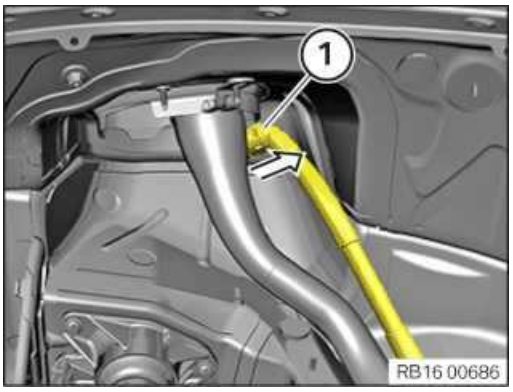
- Release the plastic nuts (1) and filler pipe (2) at top on the cover housing.

  Do not fully remove the filler pipe!

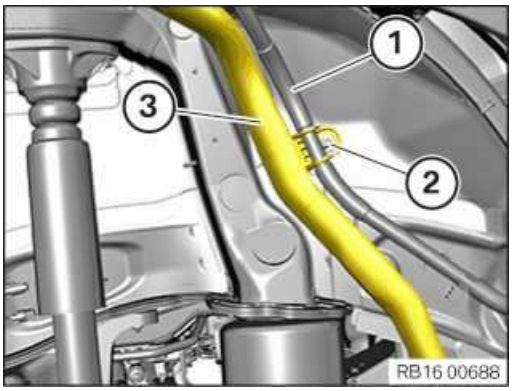


- Loosen hose clamp (1).
- Pull off the rubber hose (2) from the fuel tank in the direction of the arrow.

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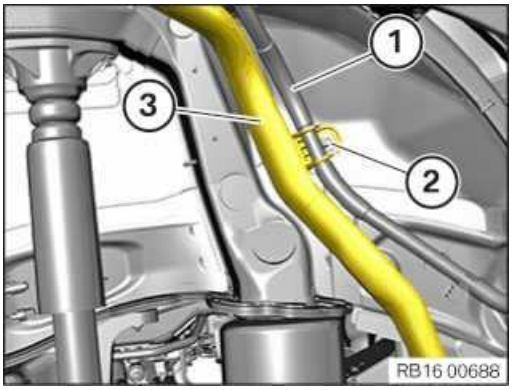


- Unlock and pull off snap fastener (1).



- Detach fuel filler neck breather pipe (1) from brackets.
- Release nut (2) and remove the fuel filler pipe (3).

4 – Install the fuel filler pipe

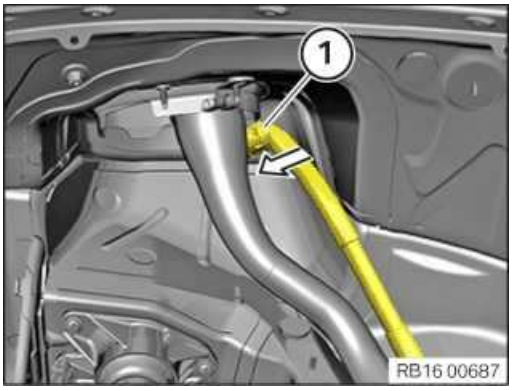


- Position the fuel filler pipe (3).
- Renew the plastic nut (2).

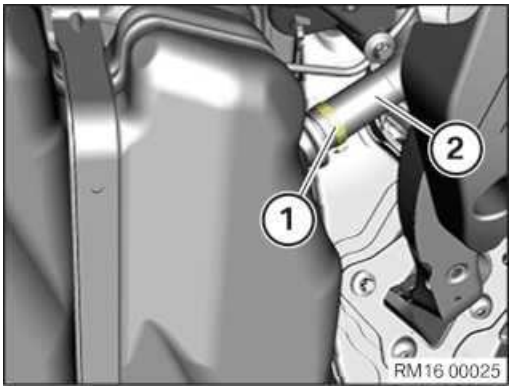
  Parts: Plastic nut
- Position plastic nut (2) and tighten.

Fuel filler pipe to body

Plastic nut	Renew plastic nut.	Tightening torque	4 Nm



- Attach fuel filler neck breather pipe (1) in the brackets.
- Position snap fastener (1) and lock.



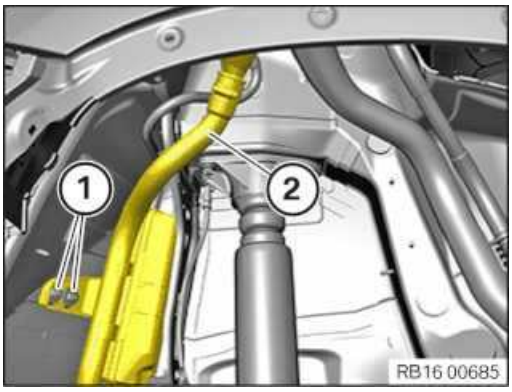
- Mount fuel filling hose (2) on fuel tank in direction of arrow.
- Renew the hose clamp (1).

  Parts: Hose clamp
- Position hose clamp (1) and tighten.

Filling hose on fuel tank

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

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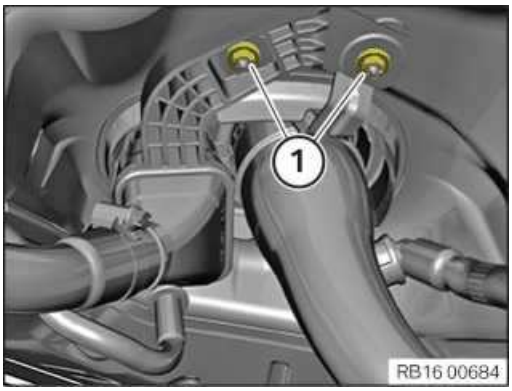


- Position the fuel filler pipe(2).
- Renew the plastic nuts (1).

  Parts: Plastic nuts
- Insert plastic nuts (1) and tighten.

SCR filler pipe on wheel arch

Plastic nut	Renew plastic nut.	Tightening torque	4 Nm

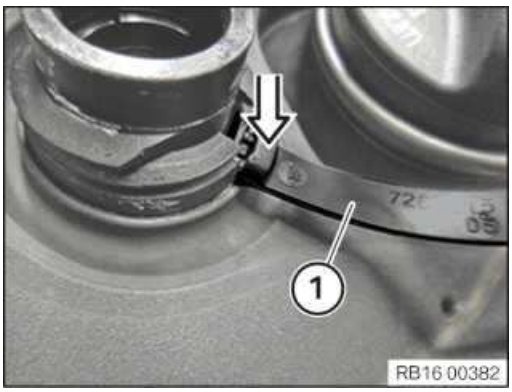


- Renew nuts (1).

  Parts: Nuts
- Install the nuts (1) and tighten.

SCR filler pipe to body

Nut M6	Replace nuts.	Tightening torque	8 Nm



- Lock retaining strap (1) in direction of arrow.

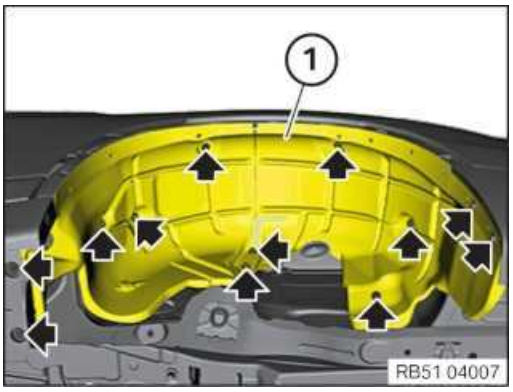


- Close sealing cap (1).
- Close the sealing cap of the fuel filler pipe.

POSTPROCESSES

5 – Installing the rear wheel arch cover on the right

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- Feed in wheel arch cover (1) and correctly position it.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

▶ **Installing the rear wheel arch trim**

TECHNICAL INFORMATION

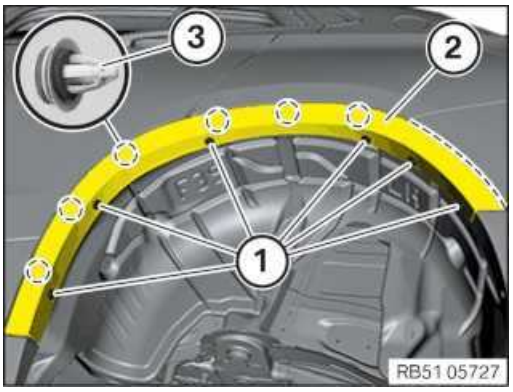
Latch mechanisms, guides and mounting elements must not be damaged or missing.

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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



- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage the wheel arch trim (2) with the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

6 – Installing rear right wheel

▶ **Mounting the wheel**

▷ **Clean the contact surfaces between the brake disc and the wheel rim**

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TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

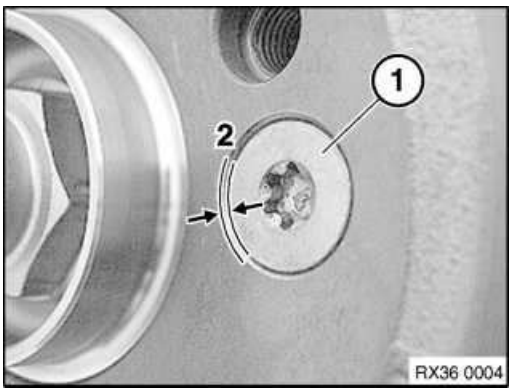
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).



- Renew mounting bolt (1).

  Parts: Mounting bolt
- Check that the mounting bolt (1) for the brake disc is securely seated.

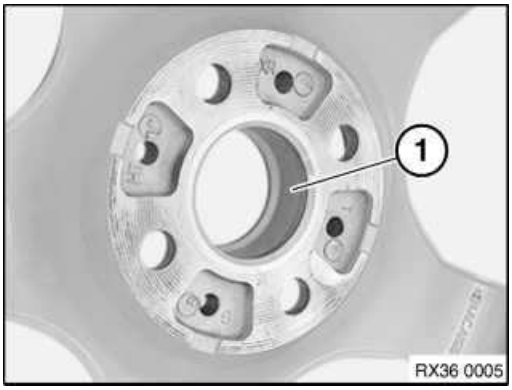
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

7 – Topping up the fuel tank



- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and diesel fuel.
- Slide the suction hose (1) of the extractor unit approximately 40 cm into the fuel filler pipe. If necessary, slightly turn the suction hose.
- Fill fuel from suction extractor unit.
- After completing the work and before starting the engine for the first time: fill the fuel tank via the fuel filler pipe with a minimum of 5 l of fuel.

Additional Information

Overview of Tightening Torques

Fuel filler pipe to body Used in step 4

Plastic nut	Renew plastic nut.	Tightening torque	4 Nm

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Filling hose on fuel tank — Used in step 4

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

SCR filler pipe on wheel arch — Used in step 4

Plastic nut	Renew plastic nut.	Tightening torque	4 Nm

SCR filler pipe to body — Used in step 4

Nut M6	Replace nuts.	Tightening torque	8 Nm

Wheel arch cover to body — Used in step 5

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Brake disc to rear wheel hub — Used in step 6

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub — Used in step 6

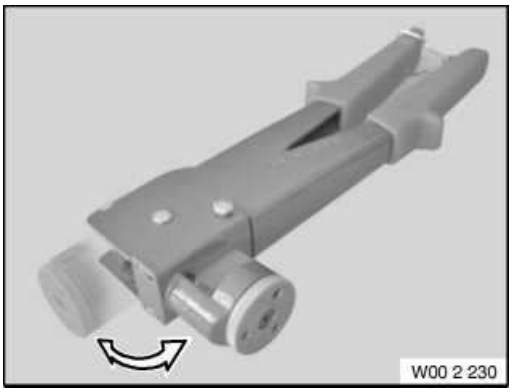
M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts — Used in step 6

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Overview of Special Tools

0 496 521 (00 2 230) Pliers



Common — Used in step 5

Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

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2 344 011 Tool



Common	Used in step 6
Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

Replacement tools:

0 495 221 (36 1 323) Wheel stud



Common	Used in step 2
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

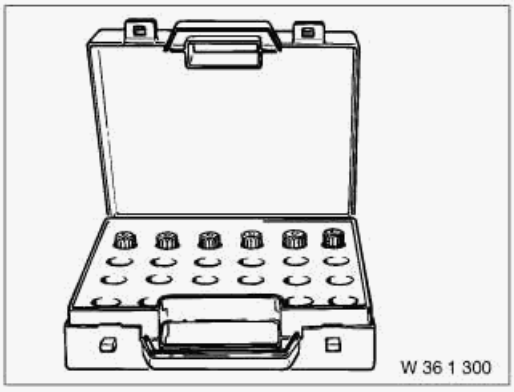
0 495 224 (36 1 326) Wheel stud



Common	Used in step 2
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

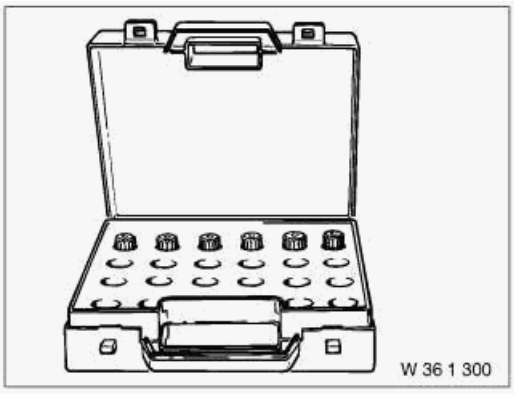
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0 495 225 (36 1 327) Wheel stud



Common	Used in step 2
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



Common	Used in step 2
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 227 (36 1 329) Wheel stud



Common	Used in step 2
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

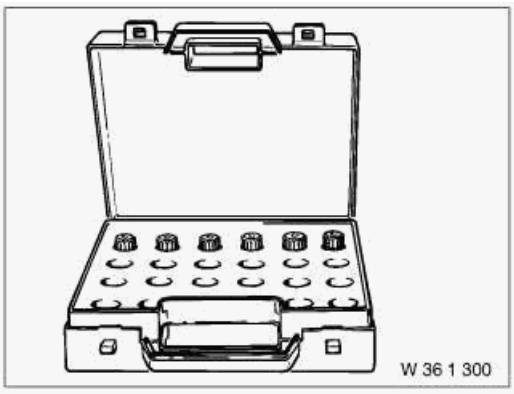
0 495 228 (36 1 331) Wheel stud



Common	Used in step 2
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

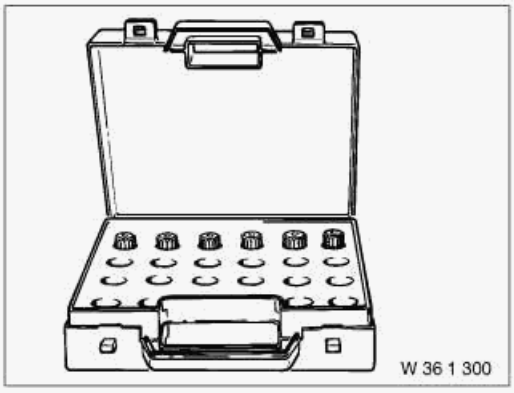
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0 495 229 (36 1 332) Wheel stud



Common	Used in step 2
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 2
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Links

Operating materials	Used in step
2.0 Grease for wheel centring	6

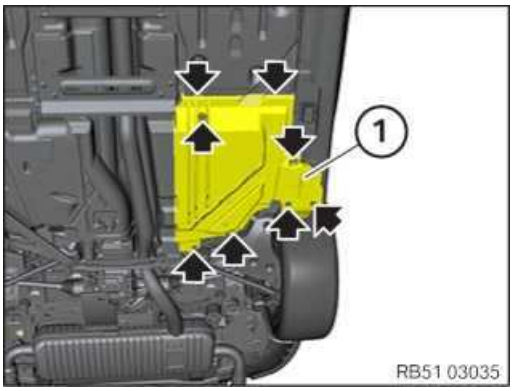
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51 75 ... Removing and installing/replacing tank cover on left or right

Necessary preliminary work:

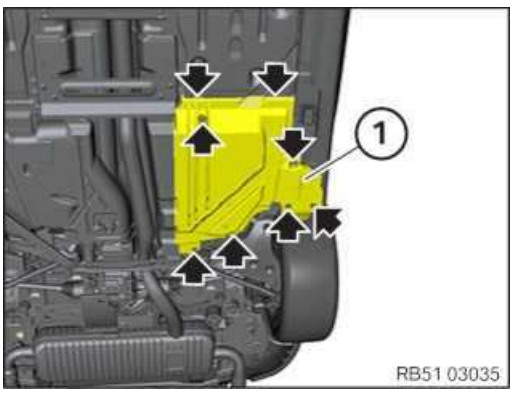
- Remove torsion strut

Removal:



Unscrew all bolts.
Remove tank cover (1).

Installation:



Install tank cover (1).
Tighten down all screws.
Tightening torque 51 75 1AZ.

Required follow-up work:

- Install torsion strut

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16 12 059 Replacing fuel feed line, rear

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

PRELIMINARY WORK

1 – Drawing off the fuel tank

WARNING

Contact with hazardous fluids.

Hazardous to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

WARNING

Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

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- Open fuel filler cap.
- Insert special tool into fuel filler neck.

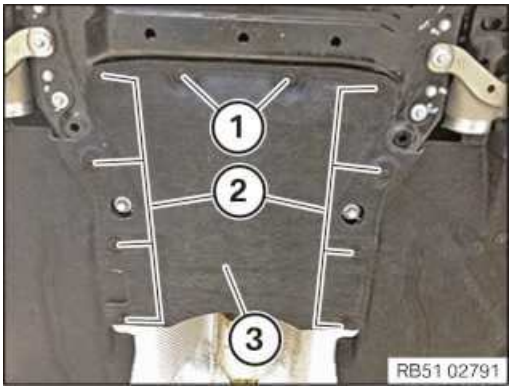
  Special tool has two different diameters: for petrol and for diesel fuel.
- Slide suction hose (1) of the extractor unit through special tool and into the fuel filler pipe. If necessary, slightly turn the suction hose.

  For the extractor unit: refer to BMW Service workshop equipment.

  The insertion length of the suction hose is 125 cm.
- Start engine and allow to run, so that the electric fuel pump is running.

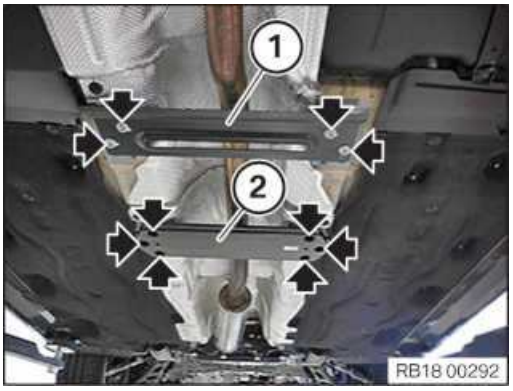
  This will ensure that the fuel is pumped by the suction jet pump from the left-hand side of the fuel tank to the right hand-side.
- Draw off fuel with the extractor unit as far as possible. In the process, track the drawing off of the fuel on the fuel gauge in the instrument cluster.

2 – If installed: Removing rear underbody protection



- Loosen screws (1) and (2).
- Remove underbody protection (3).

3 – Removing the connecting support from the tunnel in front and back



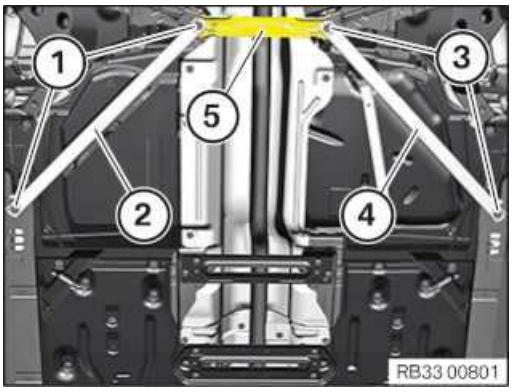
- Unscrew the bolts (arrows) from the connecting support (1).
- Feed out and remove the crossbeam (1).
- Unscrew the bolts (arrows) from the connecting support (2).
- Feed out and remove the crossbeam (2).

4 – Remove the cross strut with the torsion strut

TECHNICAL INFORMATION

Driving without a torsion strut is not permitted.

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- Loosen screws (1).
- Thread out torsion strut (2) at left and remove.
- Loosen screws (3).
- Thread out torsion strut (4) at right and remove.
- Feed out and remove the cross-member (5).

5 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

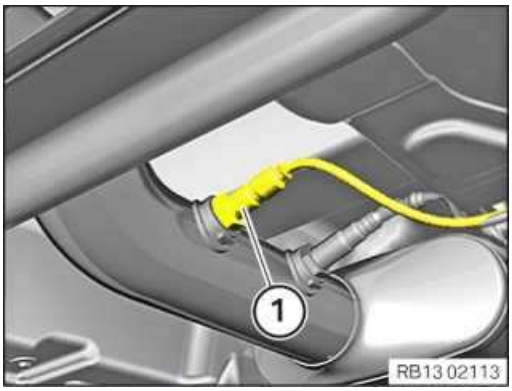
- Perform all work only on components that have cooled down.

CAUTION

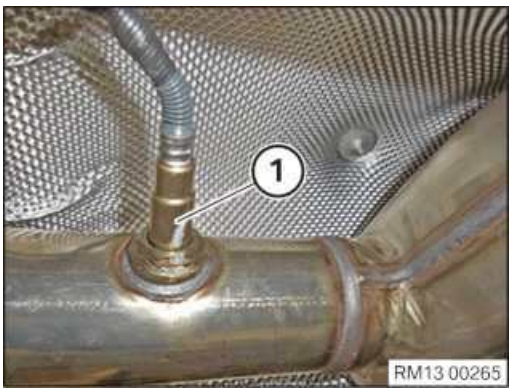
Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

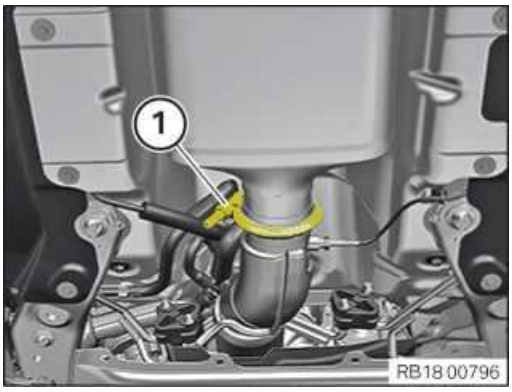


- Release the nitrogen oxide sensor (1) downstream of the SCR catalytic converter, guide it out and set it aside.

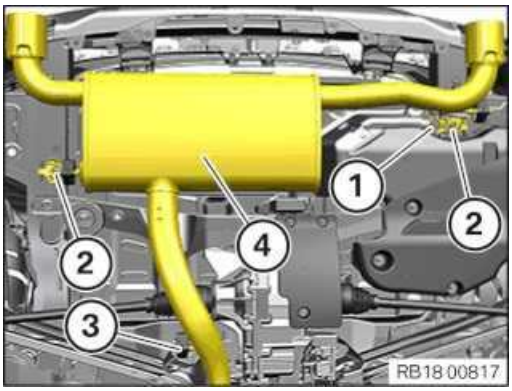


- Release the diesel particulate sensor (1), guide it out and set it aside.

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- Loosen V-band clamp (1).



- Loosen screw (1).
- Loosen nuts (2).
- Release the rubber mount (3) of the exhaust system (4).
- Lower and guide out the exhaust system (4) with assistance of a second person and remove it.

6 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

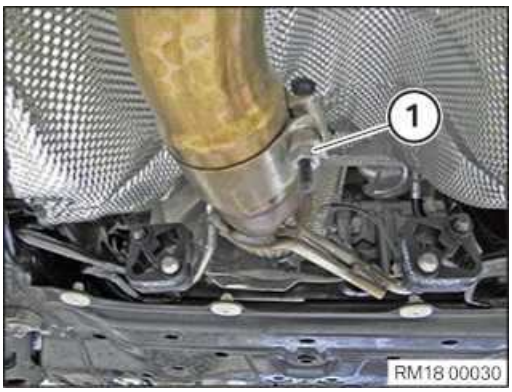
- Perform all work only on components that have cooled down.

CAUTION

Heavy component.

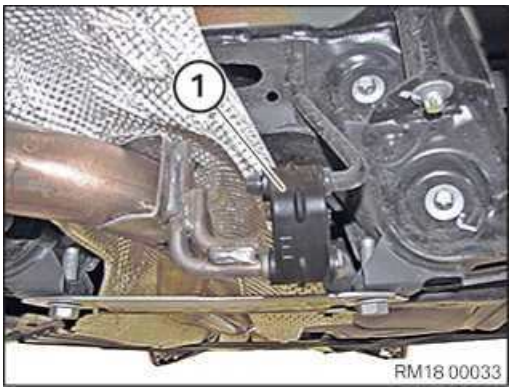
Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

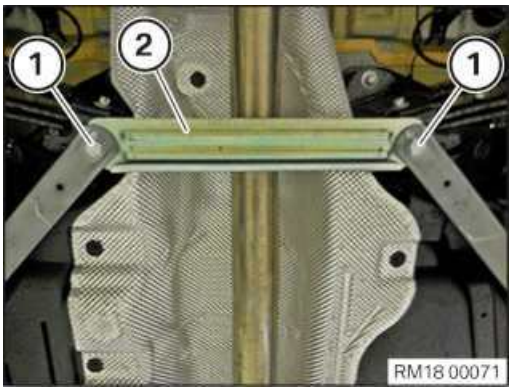


- Unfasten clamp (1).

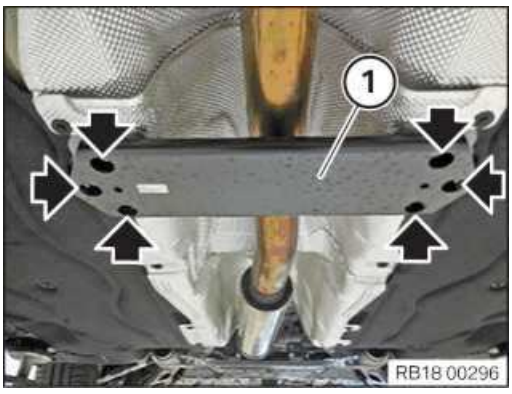
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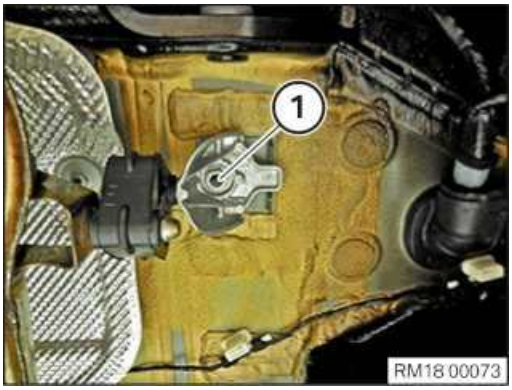
- Spray rubber mount (1) with lubricant and pull off the exhaust system.



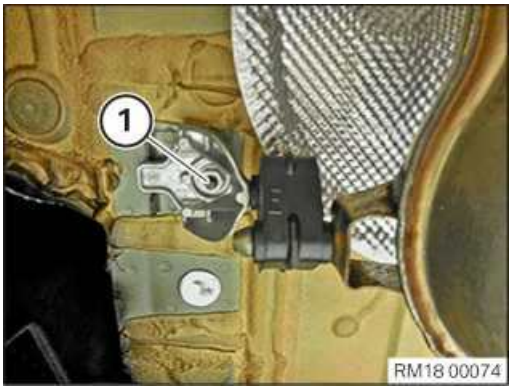
- Loosen screws (1).
- Feed out and remove the cross-member (2).



- Remove screws (arrows).
- Remove the connecting support (1).



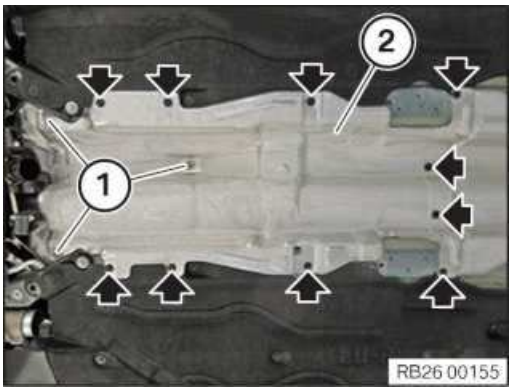
- Release the left-hand nut (1).



- Release the right-hand nut (1).
- Lower and remove exhaust system with assistance of a second person.

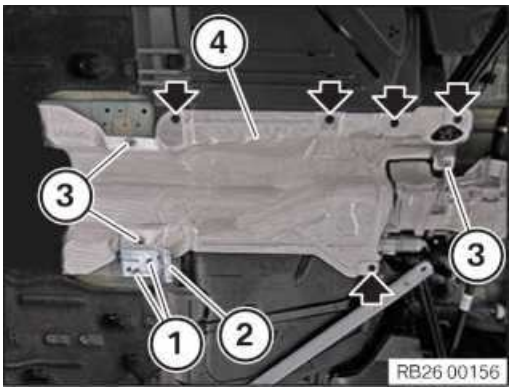
7 – Remove front heat shield

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- Remove screws (arrows).
- Loosen nuts (1).
- Guide the heat shield (2) out and remove it.

8 – Remove heat shield at rear.



- Loosen screws (1).
- Guide out and remove holder (2).
- Remove screws (arrows).
- Loosen nuts (3).
- Guide the heat shield (4) out and remove it.

9 – Remove propeller shaft

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

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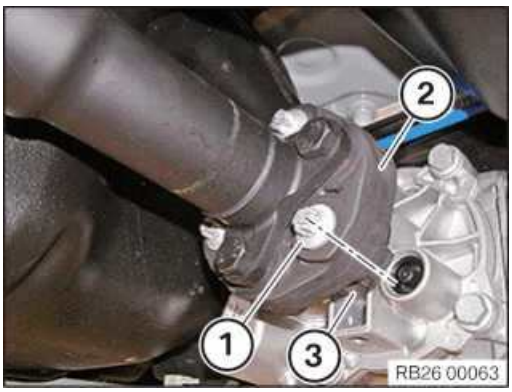
- Install the special too l between the front and rear propeller shaft.
- Make sure that the arrows on the special tool point forward in the direction of travel.



- Always support the propeller shaft (1) with a conventional jack.



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



TECHNICAL INFORMATION

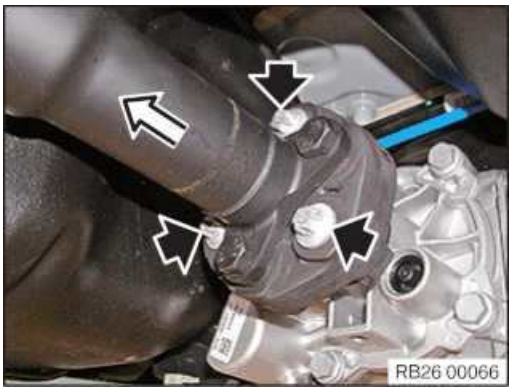
Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Mark the installation position of the screw connection (1), the flexible disc (2) and the three-hole flange (3) on the same level.
- Loosen the screw connection (1).

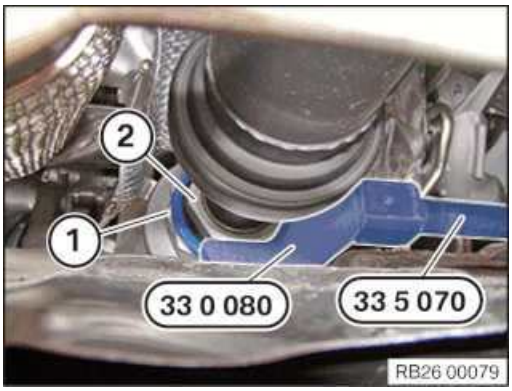


- Loosen screws (1).

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- Remove screws (arrows).
- Guide the propeller shaft out in the direction of the arrow and set it aside.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.

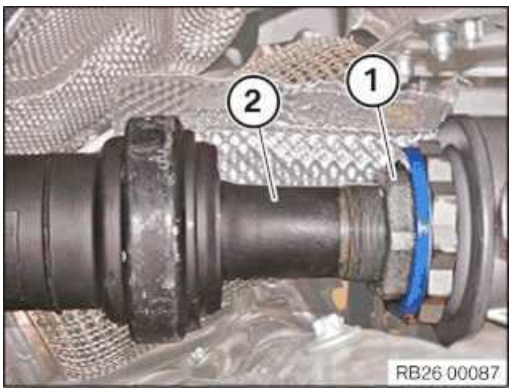
- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to detach the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

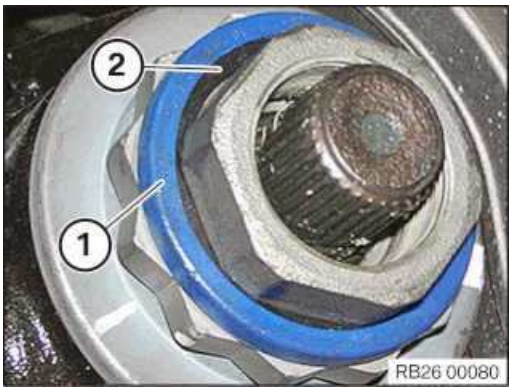


- Release the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

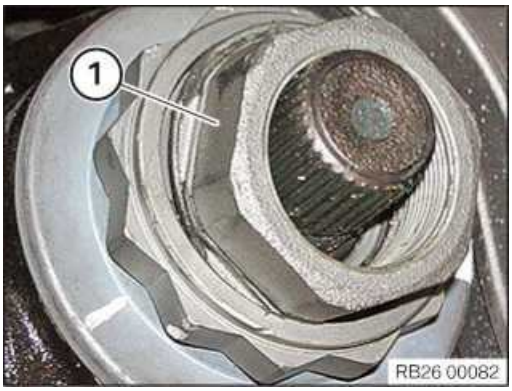


- Thread the propeller shaft (2) out of the recessed nut (1) and remove.

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- Thread the retaining clip (1) and the seal (2) out and remove.



- Thread out and remove the recessed nut (1).

10 – Removing the tank covers on the left and right

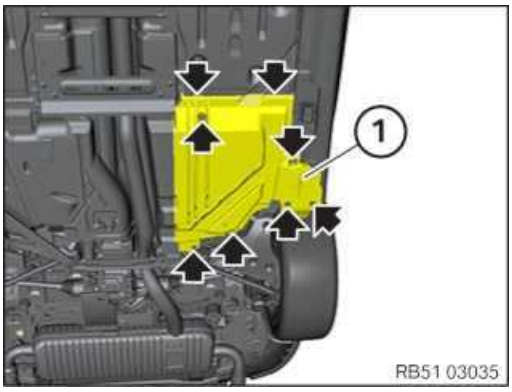
NOTICE

Perform the operations on the left and right side.

NOTICE

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

▸ **Removing the tank cover**



- Remove screws (arrows).
- Remove the tank cover (1).

11 – Remove right rear wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

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NOTICE

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

▶ **Removing the rear right wheel**

▷ **Removing the wheel**



- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

◁

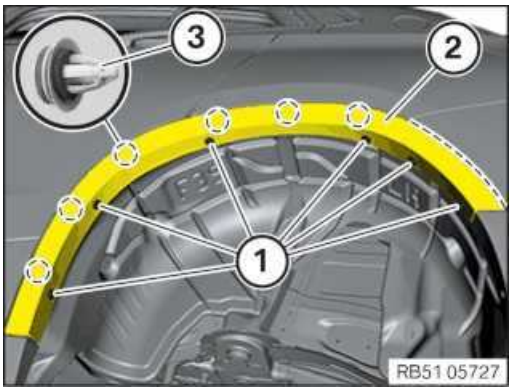
▶ **Removing rear wheel arch trim**

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

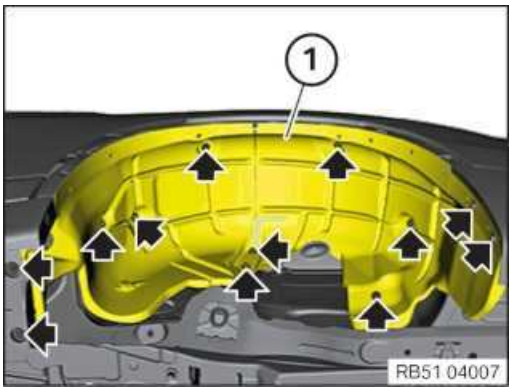
NOTICE

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



- Remove the blind rivets (1).
- Disengage the wheel arch trim (2) from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

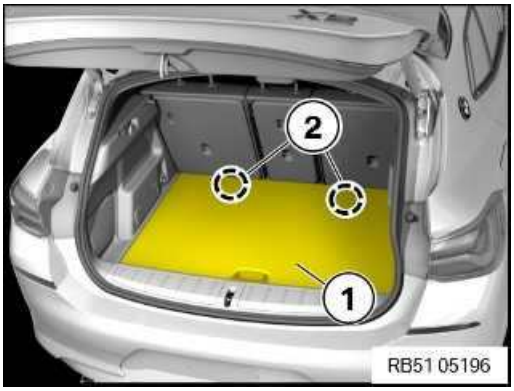
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- Unscrew all bolts and nuts (arrows).
- Carefully feed out and remove the wheel arch cover (2).

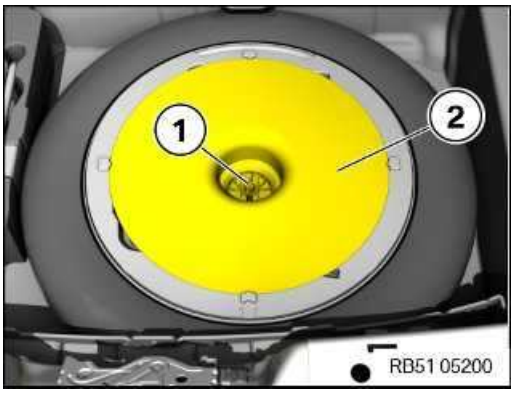
12 – Removing seat bench

▸ **Removing the luggage compartment removable panel**

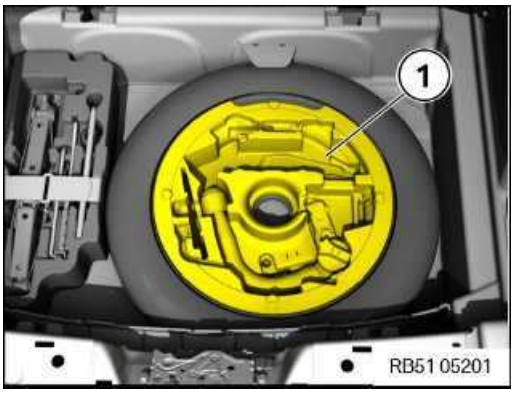


- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

▸ **Removing the compact spare wheel**



- Loosen screw (1).
- Remove the cover (2).



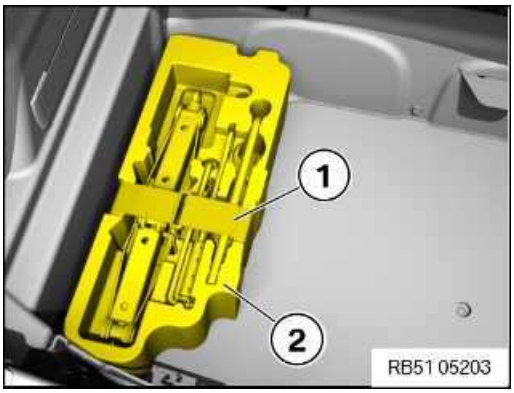
- Remove the oddments tray from the emergency wheel (1).

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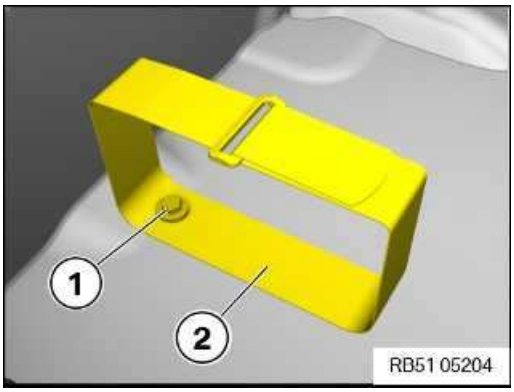
- Remove the emergency wheel (1).

▸ **Remove the tool kit**



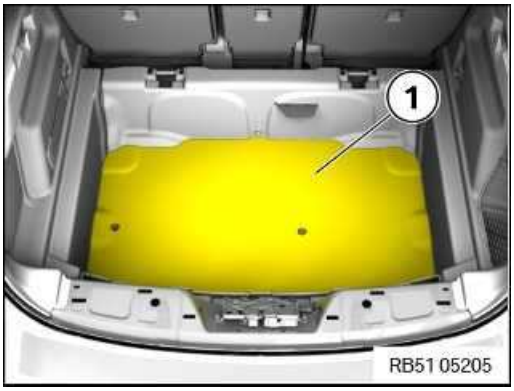
- Open the hook and loop tape (1).
- Remove the tool kit (2).

▸ **Remove the hook and loop tape for the tool kit**



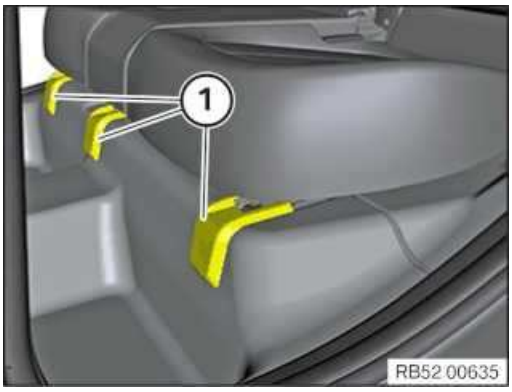
- Loosen screw (1).
- Remove the hook and loop tape (2).

▸ **Removing the luggage compartment floor trim panel**

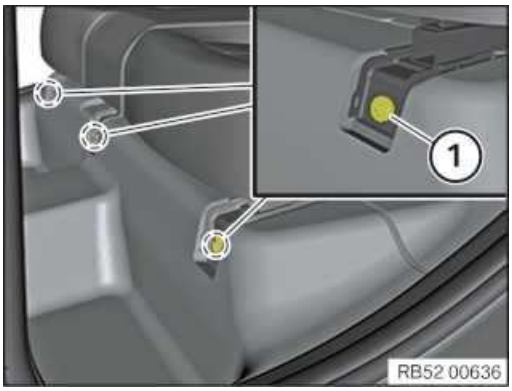


- Remove the luggage compartment floor trim panel (1) upwards.

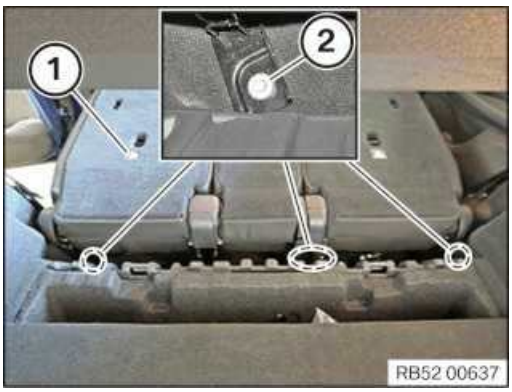
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- Unclip the covers (1) forwards.



- Loosen screws (1).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.
- Fold down rear seat backrest (1) on left and right.
- Loosen screws (2).
- Disconnect existing plug connections where required.

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Lift out rear seat bench with the assistance of a second person.

13 – Disconnect delivery unit

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WARNING

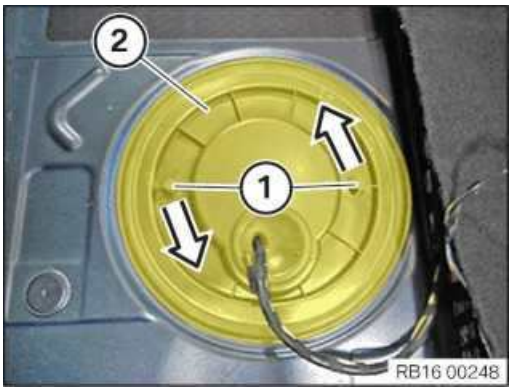
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

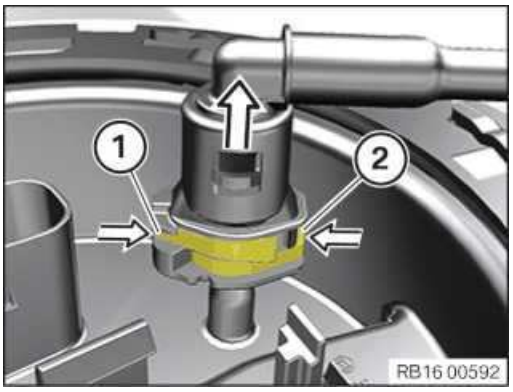
Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Turn the sealing cap for the floor panel (2) at the plastic tabs (1) in the direction of arrow.
- If turning is not possible: Destroy sealing cap of the floor panel (2).
- Remove sealing cap of the floor panel (2).



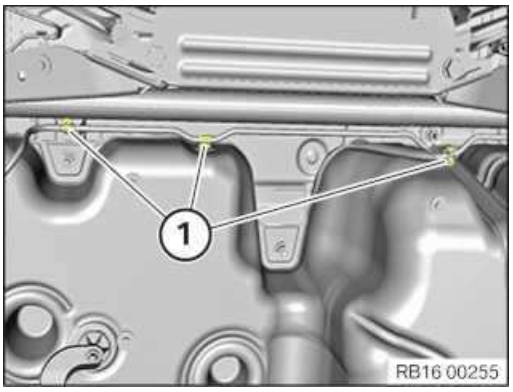
- Disconnect plug connection (1).



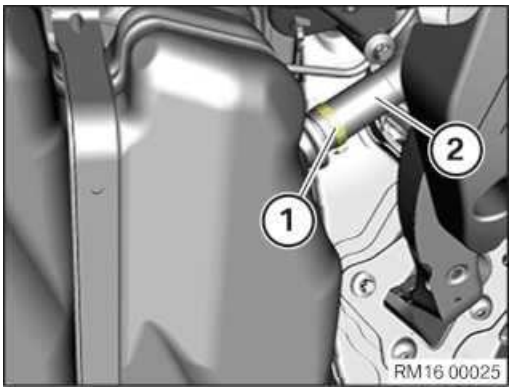
- Push the snap fastener toward the delivery unit.
- Press retaining lugs (1) and (2) pull off the snap fastener in the direction of arrow.

14 – Removing the fuel tank (fuel tank capacity 51 l)

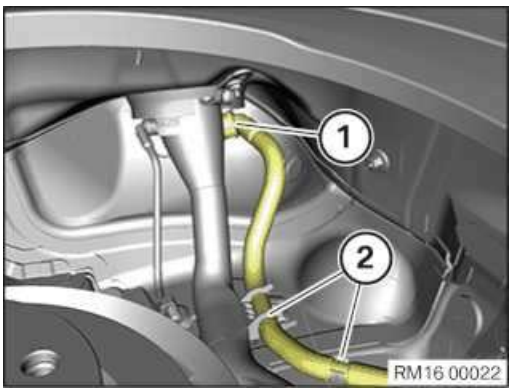
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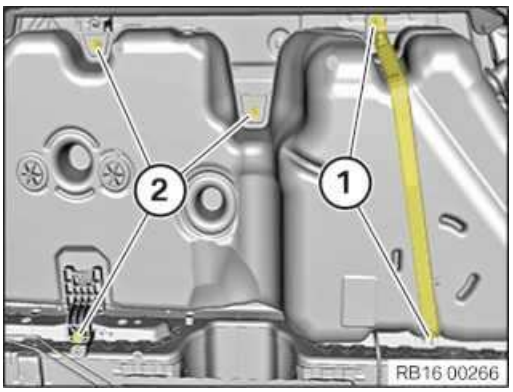
- Detach the tank ventilation line from the bracket (1).



- Loosen hose clamp (1).
- Pull off the rubber hose (2) from the fuel tank in the direction of the arrow.



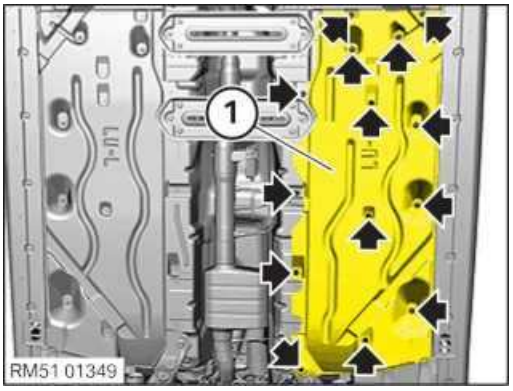
- Unlock and pull off snap fastener (1).
- Detach fuel filler neck breather pipe from brackets (2).



- **Heavily support the fuel tank.**
- Release the screws (1) and remove the retaining strap.
- Release the nuts (2) and lower the fuel tank (3).

  While the fuel tank is being lowered, the fuel filler neck breather pipe must be guided from the wheel arch through the body aperture!

15 – Removing right underbody panelling

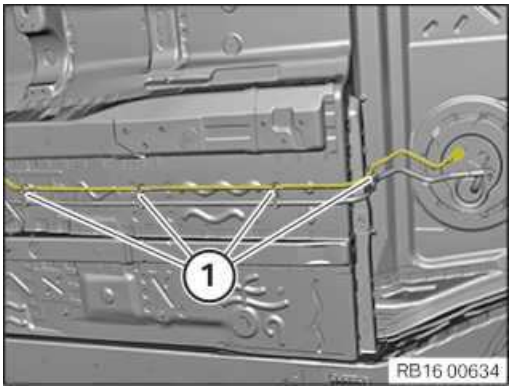


- Unscrew all bolts and nuts (arrows).
- Remove the underbody panelling (1).

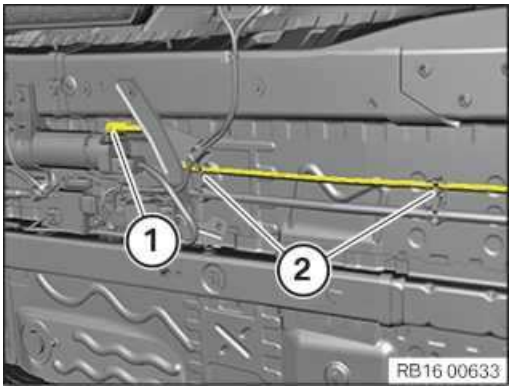
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MAIN WORK

16 – Remove the rear fuel feed line

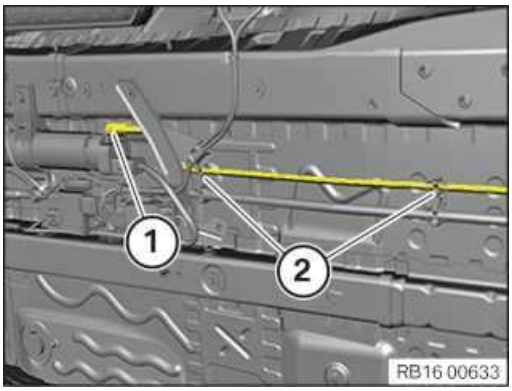


- Unclip the fuel feed line from the brackets (1).

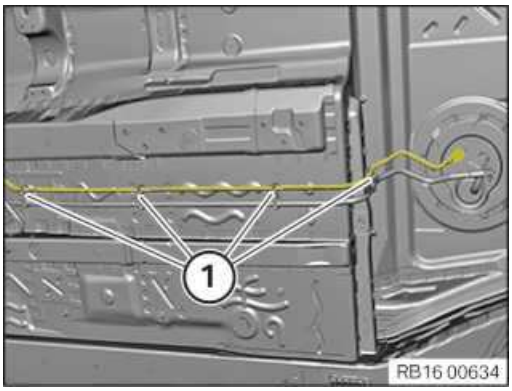


- Unlock and disconnect snap fastener (1).
- Unclip fuel feed lines from the brackets (2).

17 – Installing the rear fuel feed line



- Position the fuel delivery line .
- Position and connect the snap fastener (1).
- Clip the fuel feed line into the brackets (2).

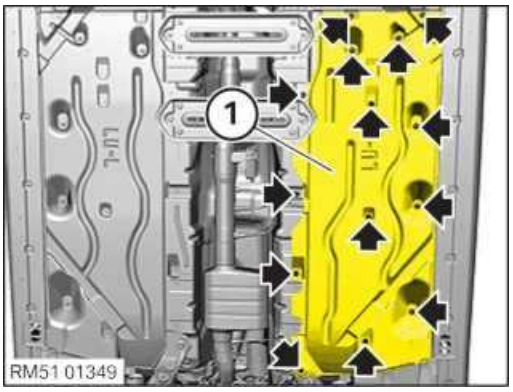


- Clip the fuel feed line into the brackets (1).

POSTPROCESSES

18 – Installing underbody panelling , right

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- Correctly position the underbody panelling (1).
- Tighten all bolts and nuts (arrows).

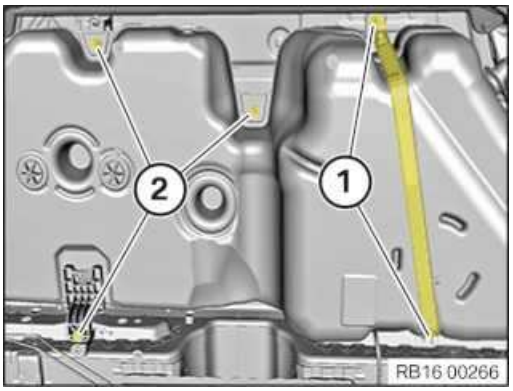
Underbody panelling, side

Hexagon screw		Tightening torque	2,6 Nm

Underbody panelling, side

Plastic nut		Tightening torque	2,6 Nm

19 – Installing fuel tank (fuel tank capacity 51 l)



- **Raise fuel tank.**

  While the fuel tank is being raised, the fuel filler neck breather pipe must be guided through the body aperture into the wheel arch.
- Lift fuel tank up to installation position. When doing this, observe the installation position of the fuel filler neck breather pipe.
- Renew nut (2).

  Parts: Nut
- Fit nut (2) and tighten.

Fuel tank to body

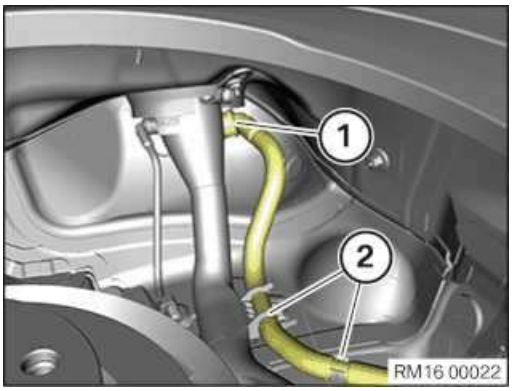
Nut M8	Renew nut.	Tightening torque	19 Nm

- Renew screws (1).

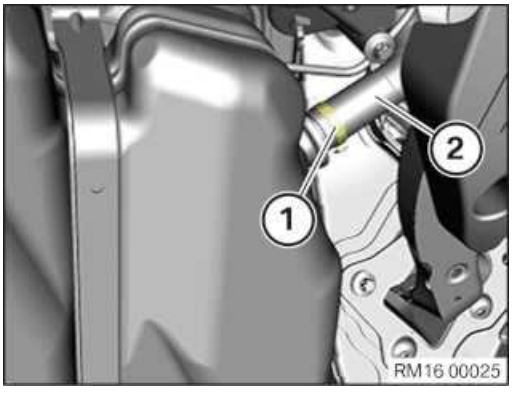
  Parts: Bolts
- Mount the retaining strap and position and tighten the screws (1).

Fuel tank retaining strap to body

M8 screw	Renew screws.	Tightening torque	19 Nm



- Attach the fuel filler neck breather pipe in the brackets (2).
- Position snap fastener (1) and lock.



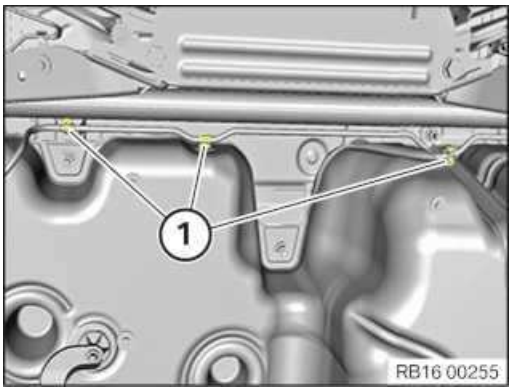
- Mount fuel filling hose (2) on fuel tank in direction of arrow.
- Renew the hose clamp (1).

  Parts: Hose clamp
- Position hose clamp (1) and tighten.

Filling hose on fuel tank

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

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- Attach the tank ventilation line in the brackets (1).

20 – Connect delivery unit

WARNING

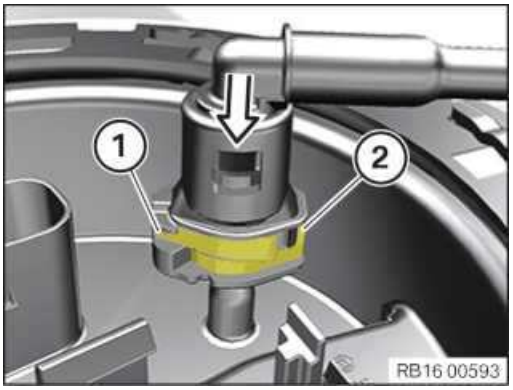
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Check locks of snap fastener for damage, and replace if required.
  The retaining lugs (1) and (2) must be locked.
- Mount the snap fastener and lock.
  The snap fastener must engage audibly and noticeably.
- Ensure correct locking of snap fastener with a tensile test.



- Connect connector (1).

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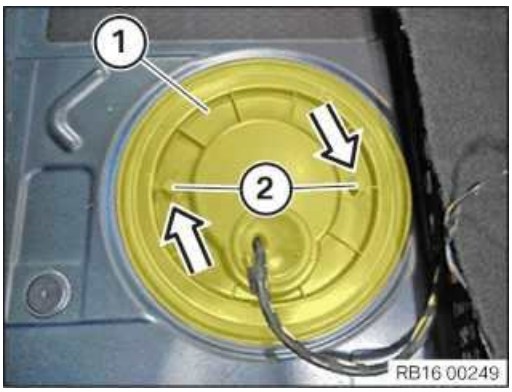
- Renew sealing cap of the floor panel (1).

  Parts: Sealing cap of the floor panel

  The sealing cap of the floor panel must not be reused, as there is the risk of leak during reuse.
- Lubricate seal in the area (1) with lubricant.

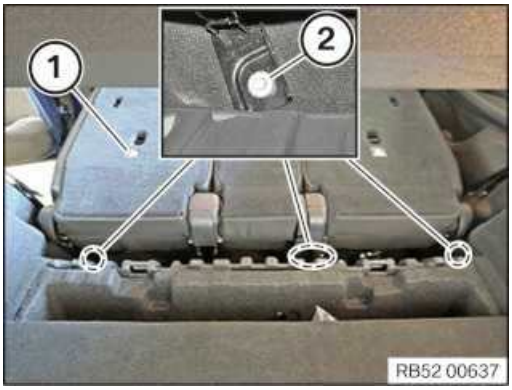
Expendable materials

Lubricants PF1	50 g, Pin	83230309627



- Install sealing cap of the floor panel (1).
- Turn sealing cap of the floor panel (1) on the plastic tabs (2) in the direction of arrow till the limit position and engage.

21 – Install rear seat bench



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.

RISK OF DAMAGE

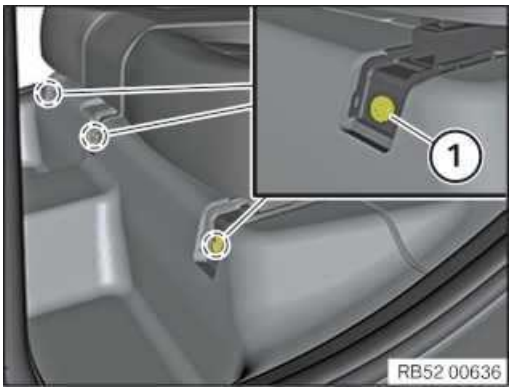
Heavy component.

Heavy components can lead to injury or damage.

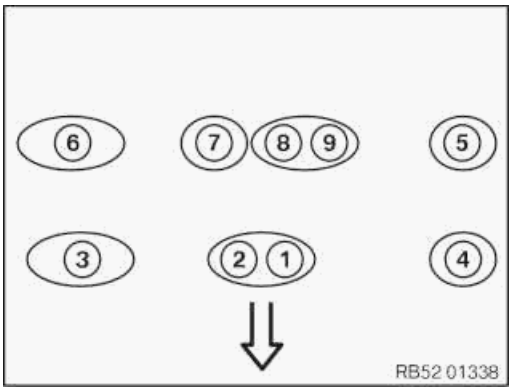
- Remove and install heavy components with the aid of another person/other persons.

- Hoist the rear seat bench into the vehicle and position it with the assistance of an auxiliary person.
- If required, connect the available connectors.
- Screw the bolts (2) in a few turns.

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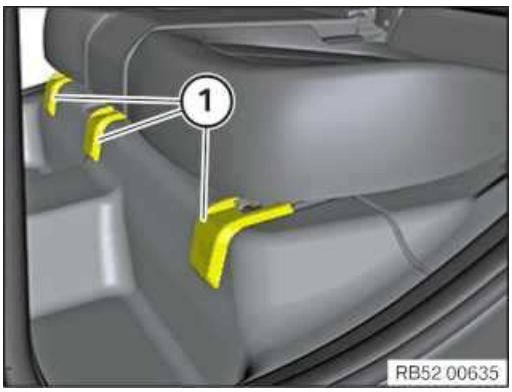
- Screw the bolts (1) in a few turns.



- Tighten screws in the order (1) to (9).

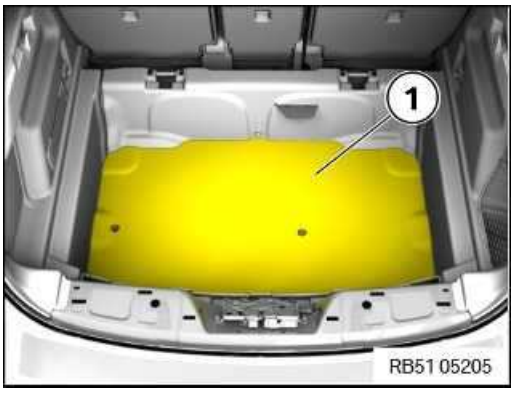
Seat bench to body

Oval-head screw		42 Nm



- Clip in the covers (1).

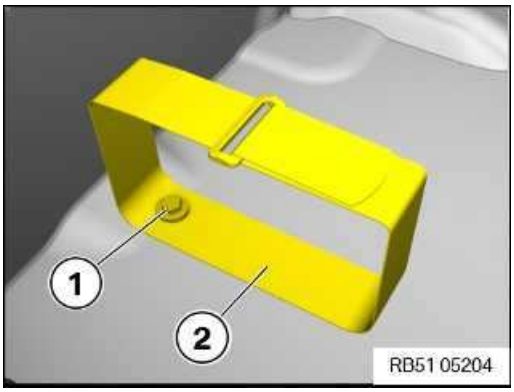
▸ **Installing the luggage compartment floor trim panel**



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

▸ **Inserting the Velcro fastener for the toolkit**

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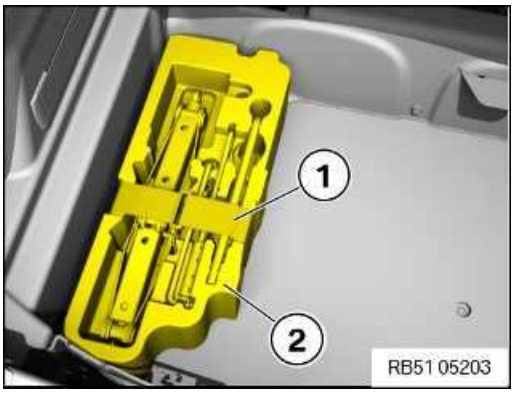


- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

▸ **Install the tool kit**

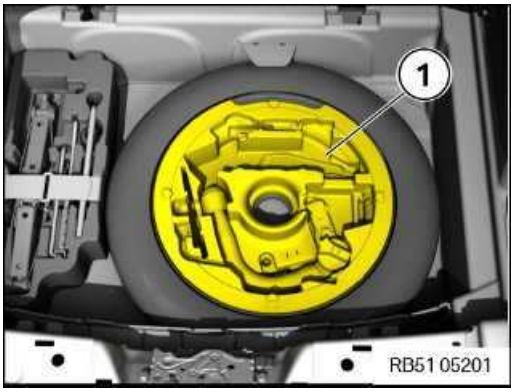


- Install the tool kit (2).
- Close the hook and loop tape (1).

▸ **Install the emergency wheel**

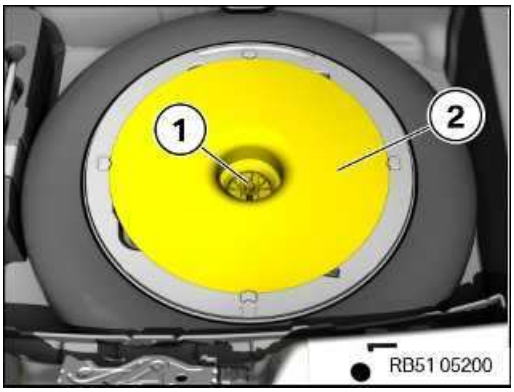


- Insert compact spare wheel(1).



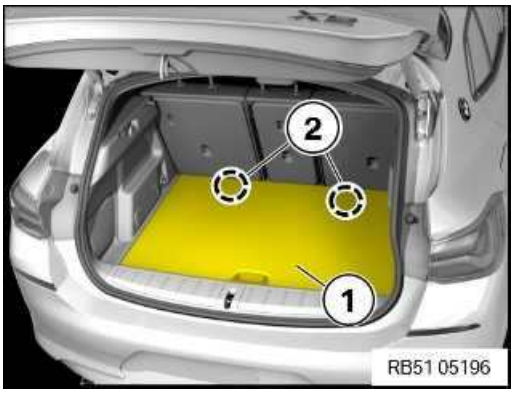
- Insert oddments tray into the compact spare wheel (1).

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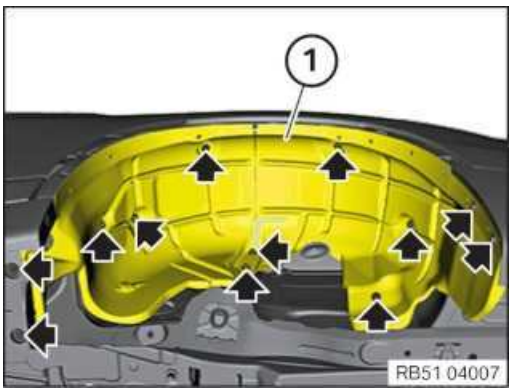
- Insert the lid (2).
- Hand-tighten the bolt (1).

▸ **Installing the luggage compartment removable panel**



- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

22 – Installing the rear wheel arch cover on the right



- Feed in wheel arch cover (1) and correctly position it.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

▸ **Installing the rear wheel arch trim**

TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.

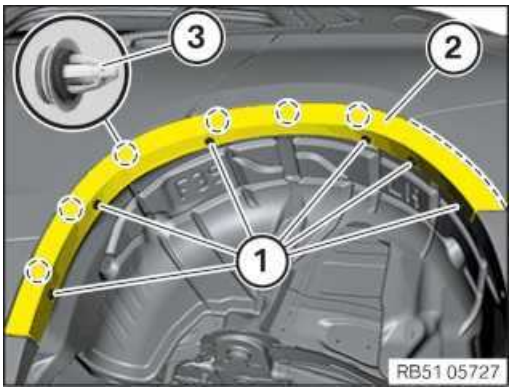
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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

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- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage the wheel arch trim (2) with the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

23 – Installing rear right wheel

▶ **Mounting the wheel**

▷ **Clean the contact surfaces between the brake disc and the wheel rim**



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

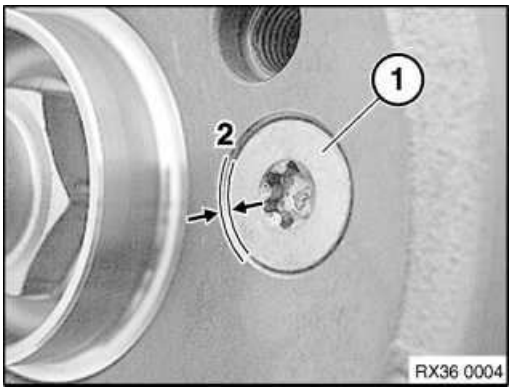
  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).

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- Renew mounting bolt (1).

  Parts: Mounting bolt

- Check that the mounting bolt (1) for the brake disc is securely seated.

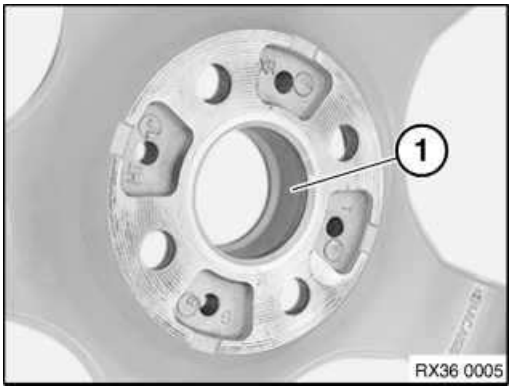
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

24 – Installing the tank covers on the left and right

NOTICE

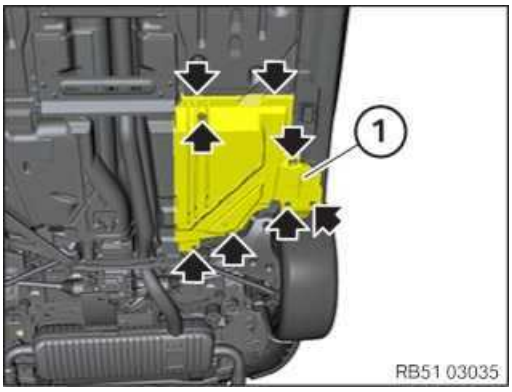
Perform the operations on the left and right side.

NOTICE

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

▸ **Installing tank cover**

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- Install tank cover (1).
- Tighten screws (arrows).

25 – Install propeller shaft.

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to the propeller shaft during installation.

Non-observance of the installation guidelines for the propeller shaft on the rear axle differential may cause severe damage.

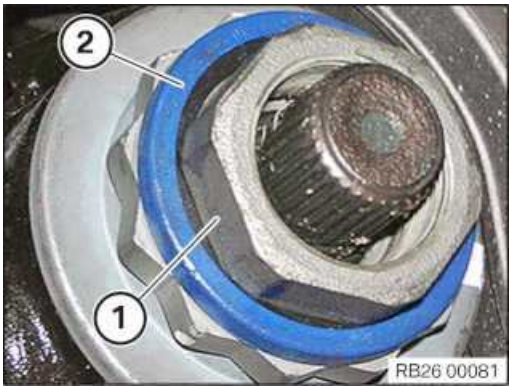
- Always renew the recessed nut on the rear axle differential. Screw locking must be available.
- Strictly observe a minimum hardening time of two hours after having screwed in the recessed nut. The hardening time may be longer at lower temperatures.

RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.



- Renew recessed nut (1).

  Parts: Insert nut
- Renew the retaining clip (2) and the seal.

  Parts: Retaining clip, seal
- Insert the seal with the recessed nut (1) and install.
- Insert the retaining clip (2) and install.
- Make sure that recessed nut (1) is screwed in within 5 min.
- Make sure that the hardening time of **minimum** 2 h for the recessed nut is observed.

  The hardening time must be extended at lower temperatures.

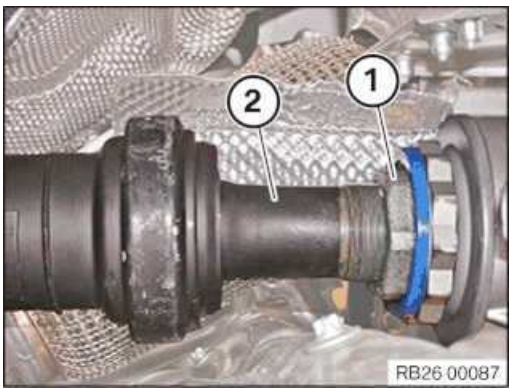
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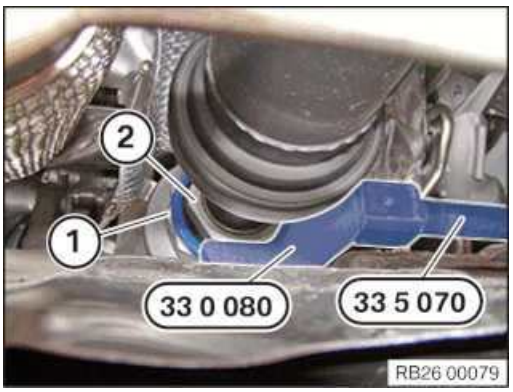
- Insert the propeller shaft (1) and install.
- Always support the propeller shaft (1) with a conventional jack.



- Hand-tighten the bolts (1).



- Push the propeller shaft (2) against the recessed nut (1) up to the limit position.
- Screw the propeller shaft (2) at least 2 thread starts onto the recessed nut (1) by hand.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

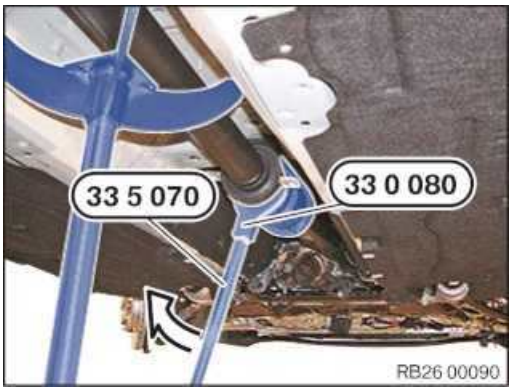
- Do not use the double hexagon head flange nut as counter support.

- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to tighten the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

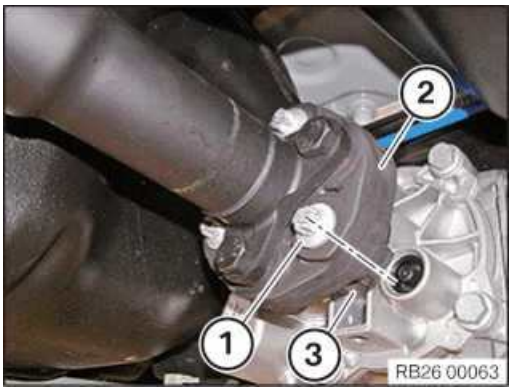
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- Tighten the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

Propeller shaft to transfer box

		Tightening torque	80 Nm



TECHNICAL INFORMATION

Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Assemble the screw connection (1) of the flexible disc (2) and the three-hole flange (3) according to the mark.
- Renew screws (1).

  Parts: Bolts
- Hand-tighten the bolts (1).



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



- Tighten the bolts with the special tools **0 490 504 (00 9 120)** and .

Flexible disc to rear axle final drive

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °



- Tighten the screws (1).

Centre mount to body

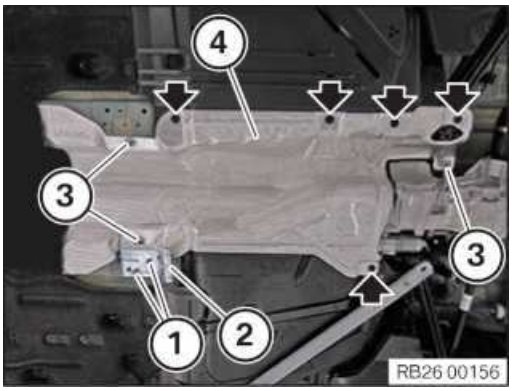
M8		Tightening torque	19 Nm

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- Guide the special too l out between the front and rear propeller shaft and remove.

26 – Installing the rear heat shield



- Insert and install the heat shield (4).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (3).

Heat shield to body

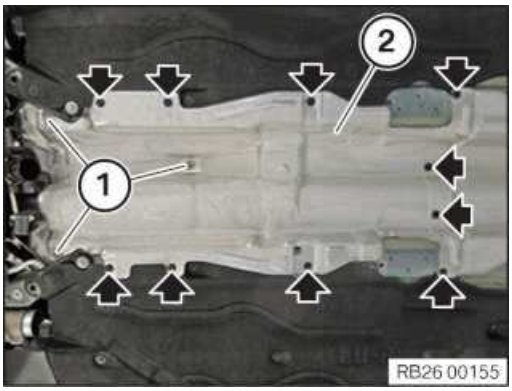
Bolts/nut		Tightening torque	3 Nm

- Insert and install the holder (2).
- Tighten the screws (1).

Bracket to body

M8		Tightening torque	21 Nm

27 – Install the front heat shield



- Insert and install the heat shield (2).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (1).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

28 – Install exhaust system

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

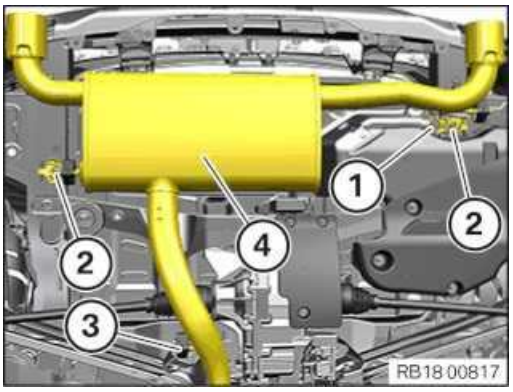
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CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.



- Feed in and install the exhaust system (4) with a second person.
- Renew nuts (2).

  Parts: Nuts
- Tighten nuts (2).

Exhaust system to body

M8	Replace nuts.	Tightening torque	19 Nm

- Tighten down screw (1).

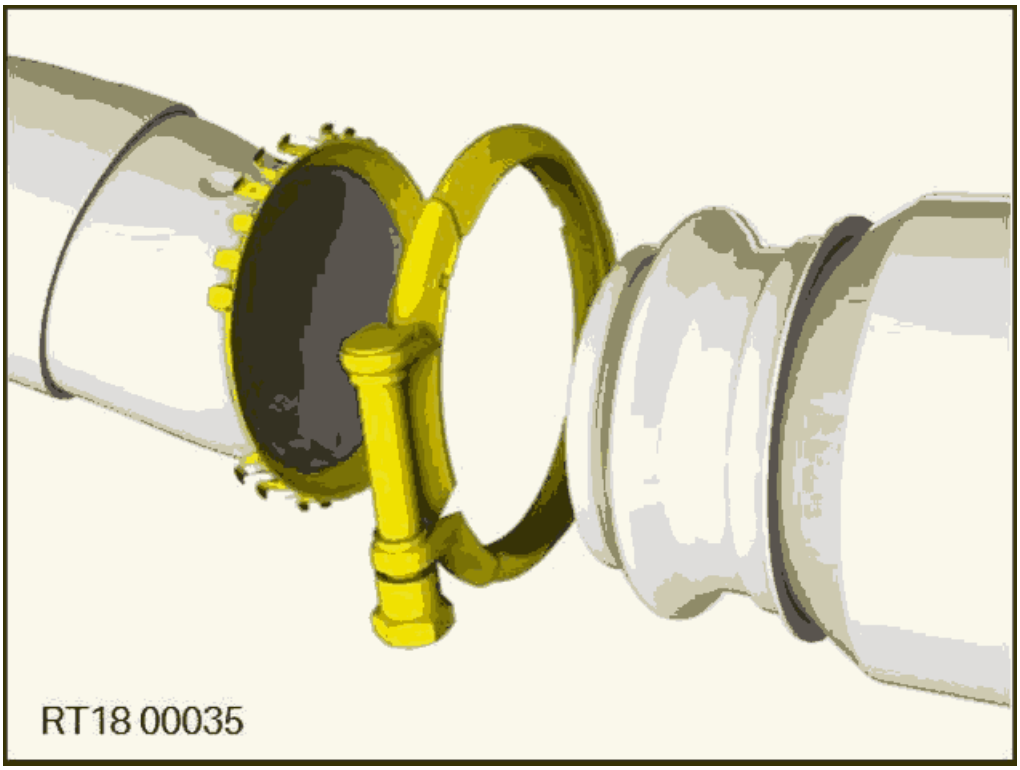
Exhaust bracket on body

Hexagon screw M8x30		Tightening torque	19 Nm

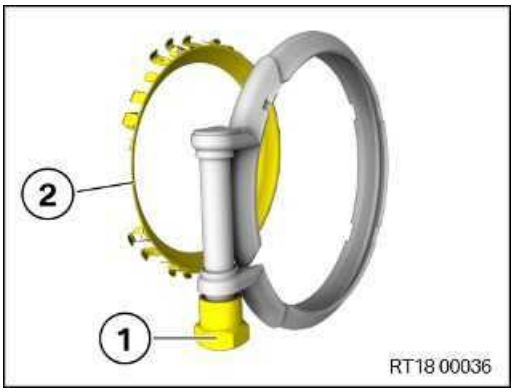
- Check the rubber mount (3) for damage and renew as needed.
- Mount rubber mount (3) on the exhaust system (4).

▸ **Install the V-clip**

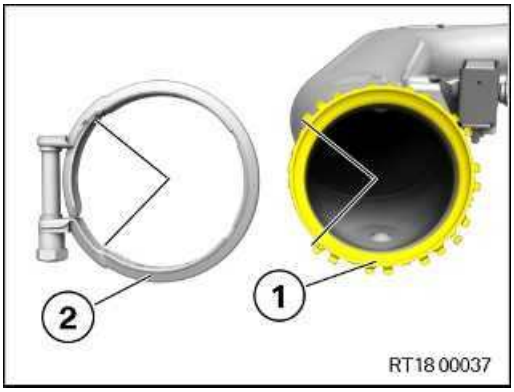
V-band clamp



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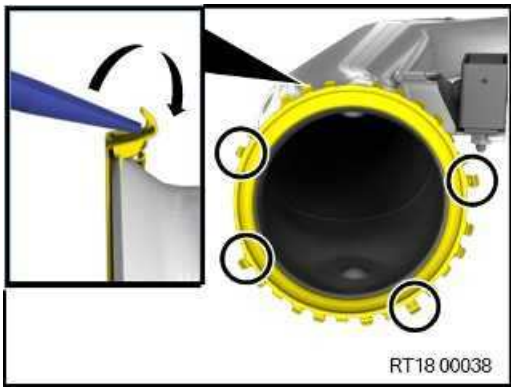


- Unscrew the nut (1) and remove the sealing ring (2).

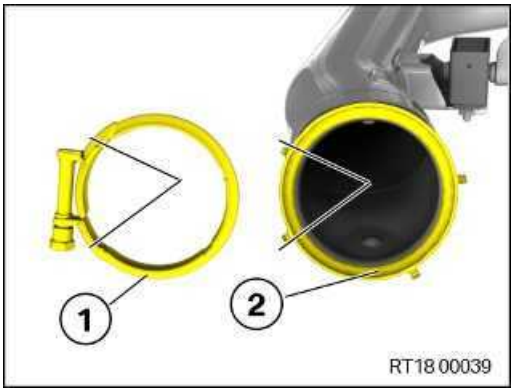


- Renew the V-clip (2).

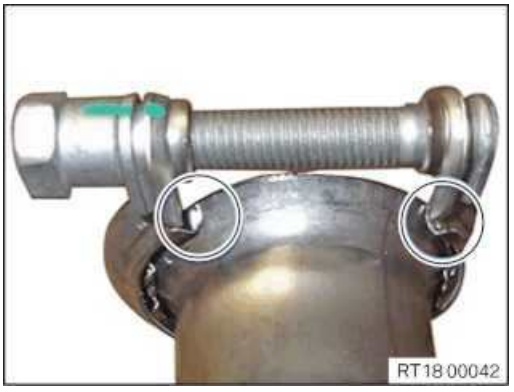
  Parts: V-band clamp
- Mount the sealing ring (1) on the exhaust system.
- Ensure that the sealing ring (1) for the V-clip (2) is positioned correctly.



- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.

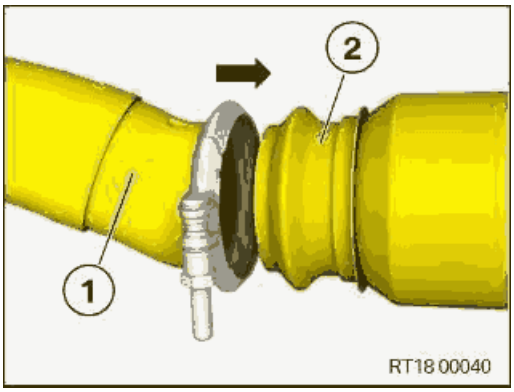


- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).

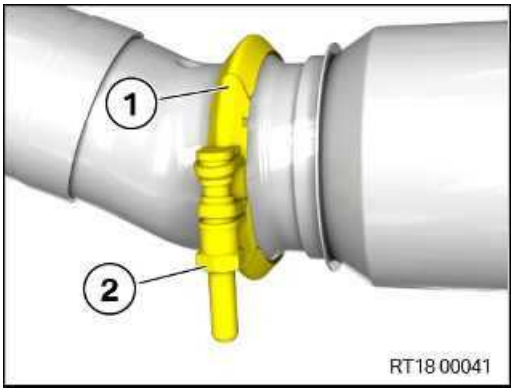


- Make sure that the V-clip rests against the sheet metal tabs after mounting (marks).

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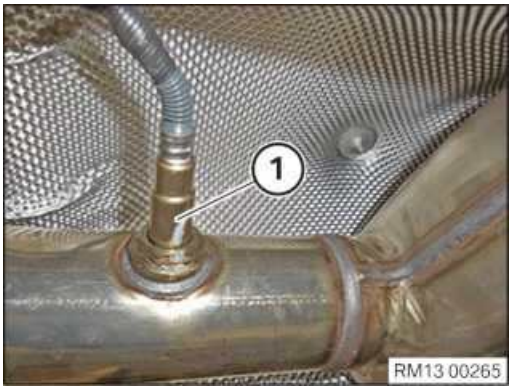
- Connect the exhaust system (1) with the catalytic converter (2) and position correctly.



- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

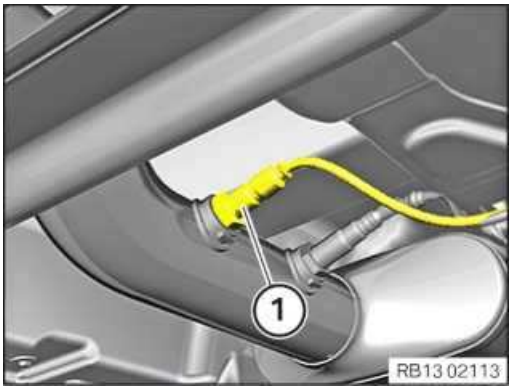
V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm



- Feed in, install and tighten diesel particulate sensor (1).

Diesel particulate sensor to exhaust system

Sensor		Tightening torque	50 Nm



- Feed in, install and tighten nitrogen oxide sensor (1).

Nitrogen oxide sensor downstream of SCR catalytic converter

Sensor		Tightening torque	50 Nm

29 – Install exhaust system

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

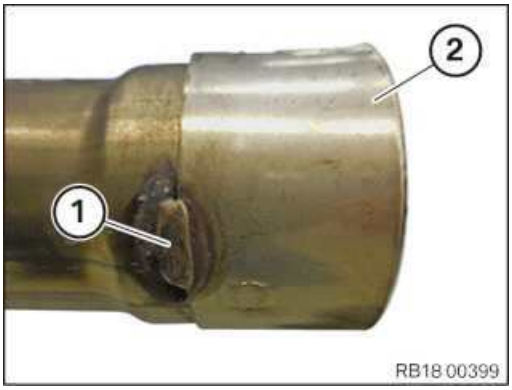
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CAUTION

Swarf resulting from sawing or grinding components.

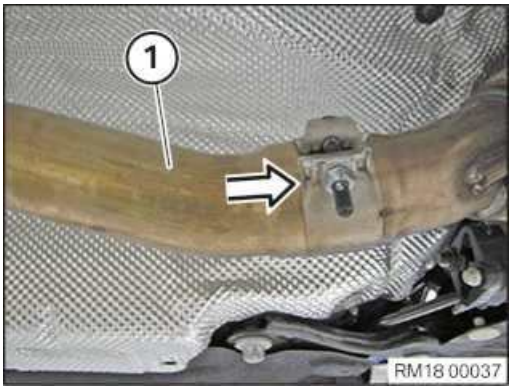
Danger of injury!

- Conduct all work in appropriate personal protective equipment only.
- Wear safety goggles and protective gloves.



- Open the weld seam (1) with a conventional tool.
- Remove the clamp (2).
- If necessary, renew clamp (2).

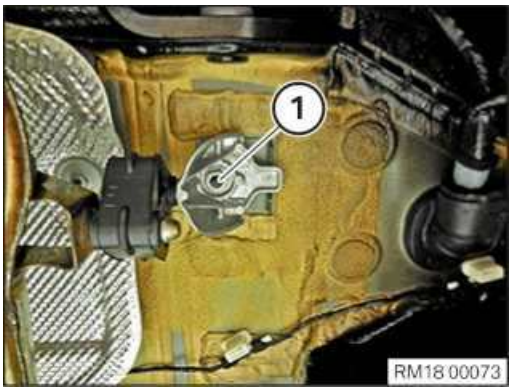
  Parts: Clamp



- Install the exhaust system with the assistance of a second person and connect to the diesel particulate filter.
- Tighten clamp (1).

Exhaust system to diesel particle filter

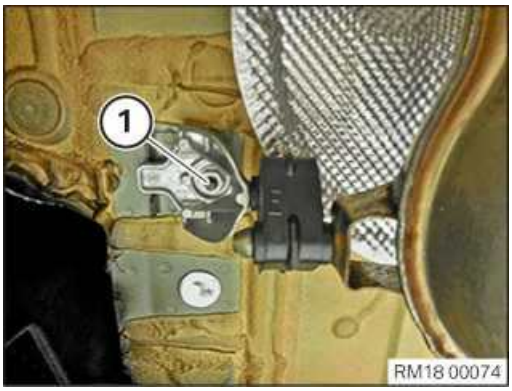
Ribbon cable clamp	Replace clamp		26 Nm



- Tighten the nut (1), left.

Exhaust system suspension to body

Nut M8		19 Nm

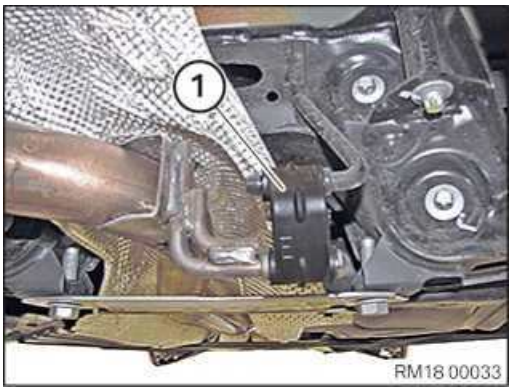


- Tighten the nut (1), right.

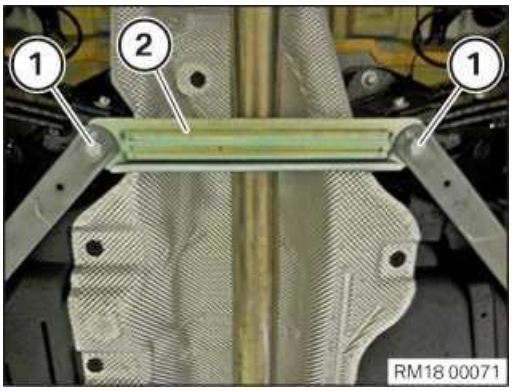
Exhaust system suspension to body

Nut M8		19 Nm

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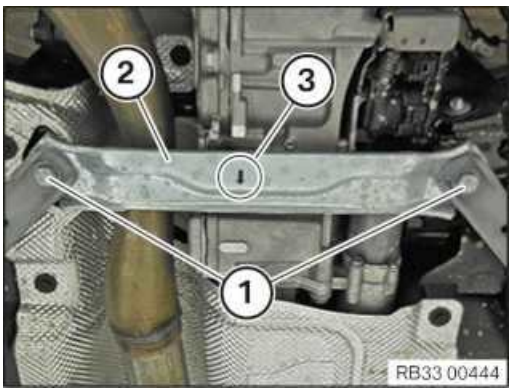
- Check the rubber mounts (1) for damage and renew, if necessary.
- Fasten exhaust system on the rubber mount (1).



- Install the cross-member (2).
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °

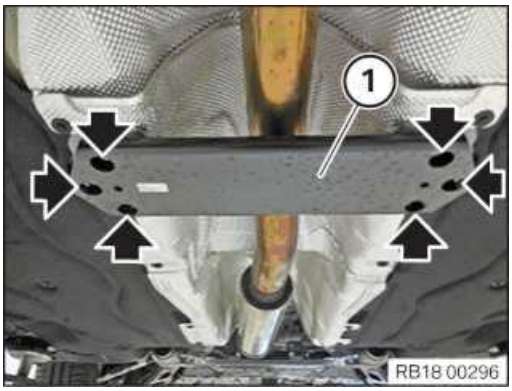


- In **all-wheel drive vehicles:** Ensure that the arrow (3) on the cross-member points in the direction of travel when installing it.
- Position cross-member (2) on the rear axle support.
- Renew screws (1).

  Parts: Bolts(1)
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °



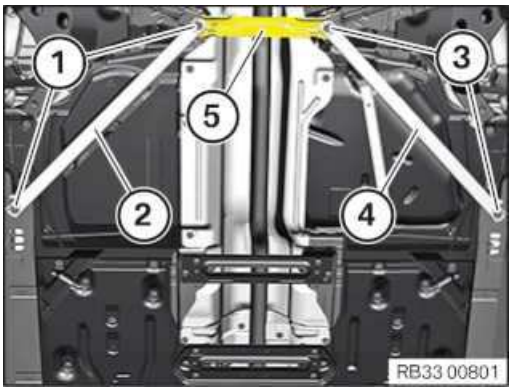
- Insert and install connecting supports (1).
- Tighten screws (arrows).

Front connection carrier to body

M10x18		Tightening torque	56 Nm

30 – Install the cross-member with torsion struts

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- Insert and install the cross-member (5).
- Thread in torsion strut (4) at right and install.
- Renew screws (3).

  Parts: Bolts
- Tighten down screws (3).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

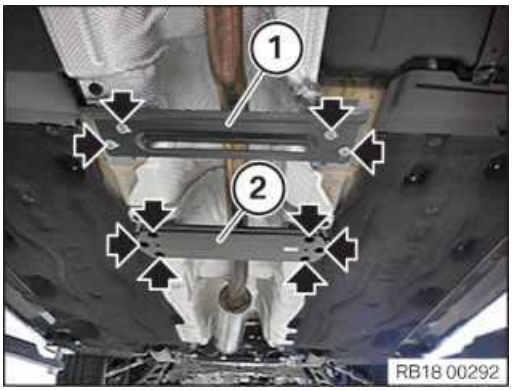
- Guide in and install the left torsion strut (2).
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

31 – Install the connecting support on the tunnel in front and back



- Insert and install connecting supports (2).
- Tighten the screws (arrows) from the connecting support (2).

Front connection carrier to body

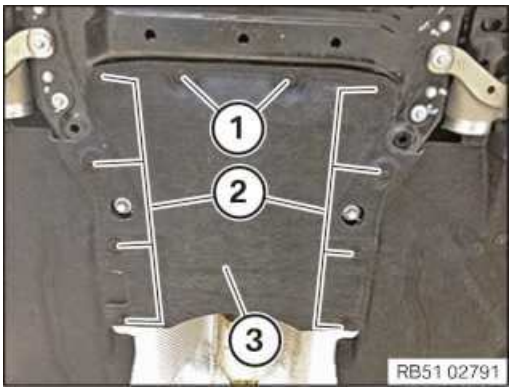
M10x18		Tightening torque	56 Nm

- Insert and install connecting supports (1).
- Tighten the screws (arrows) from the connecting support (1).

Rear connection carrier to body

M8x18		Tightening torque	28 Nm

32 – If installed: Installing underbody protection at rear



- Install the underbody protection (3).
- Tighten down screws (1) and (2).

Underbody protection to body

Screw		Tightening torque	3 Nm

33 – Topping up the fuel tank

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- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and diesel fuel.
- Slide the suction hose (1) of the extractor unit approximately 40 cm into the fuel filler pipe. If necessary, slightly turn the suction hose.
- Fill fuel from suction extractor unit.
- After completing the work and before starting the engine for the first time: fill the fuel tank via the fuel filler pipe with a minimum of 5 l of fuel.

Additional Information

Overview of Tightening Torques

Underbody panelling, side — Used in step 18

Hexagon screw		Tightening torque	2,6 Nm

Underbody panelling, side — Used in step 18

Plastic nut		Tightening torque	2,6 Nm

Fuel tank to body — Used in step 19

Nut M8	Renew nut.	Tightening torque	19 Nm

Fuel tank retaining strap to body — Used in step 19

M8 screw	Renew screws.	Tightening torque	19 Nm

Filling hose on fuel tank — Used in step 19

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

Seat bench to body — Used in step 21

Oval-head screw			42 Nm

Toolkit hook and loop tape to body — Used in step 21

Bolt M6 x 20		Tightening torque	4 Nm

Wheel arch cover to body — Used in step 22

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Brake disc to rear wheel hub — Used in step 23

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub — Used in step 23

M8	Renew screw.	Tightening torque	16 Nm

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Wheel bolts — Used in step 23

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Propeller shaft to transfer box — Used in step 25

		Tightening torque	80 Nm

Flexible disc to rear axle final drive — Used in step 25

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °

Centre mount to body — Used in step 25

M8		Tightening torque	19 Nm

Heat shield to body — Used in step 26 27

Bolts/nut		Tightening torque	3 Nm

Bracket to body — Used in step 26

M8		Tightening torque	21 Nm

Exhaust system to body — Used in step 28

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust bracket on body — Used in step 28

Hexagon screw M8x30		Tightening torque	19 Nm

V-clip to catalytic converter — Used in step 28

V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm

Diesel particulate sensor to exhaust system — Used in step 28

Sensor		Tightening torque	50 Nm

Nitrogen oxide sensor downstream of SCR catalytic converter — Used in step 28

Sensor		Tightening torque	50 Nm

Exhaust system to diesel particle filter — Used in step 29

Ribbon cable clamp	Replace clamp		26 Nm

Exhaust system suspension to body — Used in step 29

Nut M8			19 Nm

Cross-member to rear axle support — Used in step 29

M12	Renew screws.	Tightening torque	100 Nm 90 °

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Front connection carrier to body — Used in step 29

M10x18		Tightening torque	56 Nm

Cross-member/torsion strut to axle support and mounting — Used in step 30

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

Front connection carrier to body — Used in step 31

M10x18		Tightening torque	56 Nm

Rear connection carrier to body — Used in step 31

M8x18		Tightening torque	28 Nm

Underbody protection to body — Used in step 32

Screw		Tightening torque	3 Nm

Overview of Special Tools

0 495 554 (33 5 070) Extension



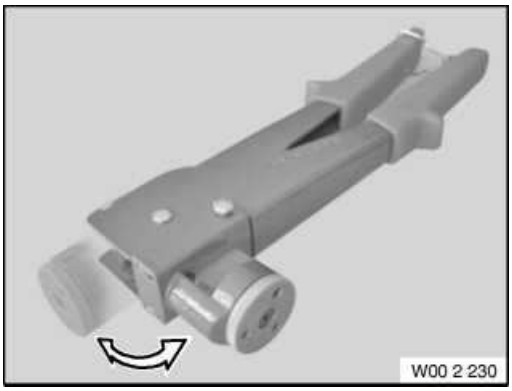
Common — Used in step 9 25

Usage	Pull-out extension for 33 5 040, 33 5 050, 33 5 060.
Included in the tool or work	
Storage location	A18
Replaced by	
In connection with	
SI-Number	01 21 06 (300)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 495 592 (33 5 071)		**Extension** (Extension (1 item)) discontinued, can only be ordered using complete tool	

0 496 521 (00 2 230) Pliers



Common — Used in step 22

Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

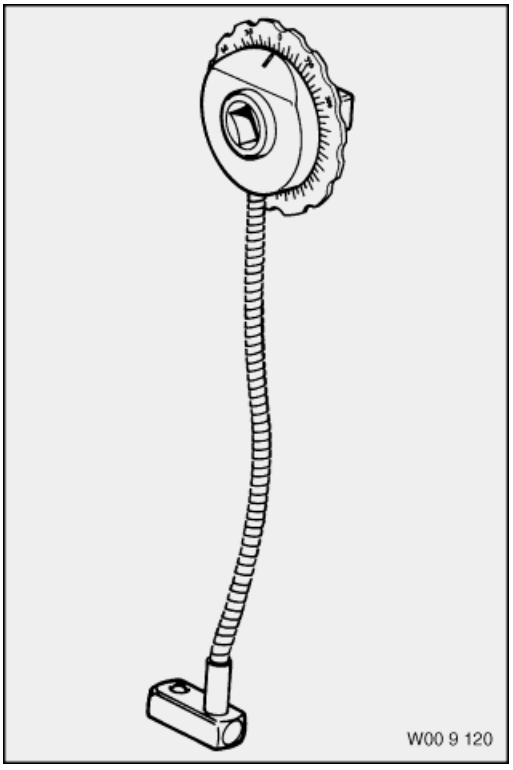
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2 344 011 Tool



Common	Used in step 23
Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

0 490 504 (00 9 120) Torque angle measuring dial



Common	Used in step 25
Usage	For torsion angle adjustment of cylinder head bolts (all engines) And reinforcement plate front axle support E46
Included in the tool or work	
Storage location	A4
Replaced by	
In connection with	
SI-Number	

Replacement tools:

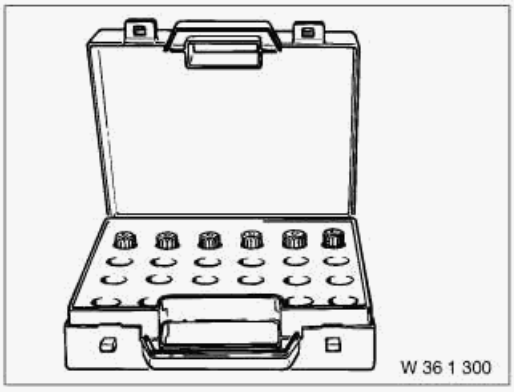
0 495 221 (36 1 323) Wheel stud



Common	Used in step 11
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

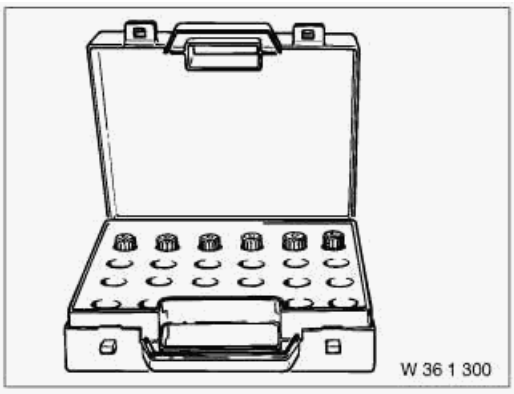
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0 495 224 (36 1 326) Wheel stud



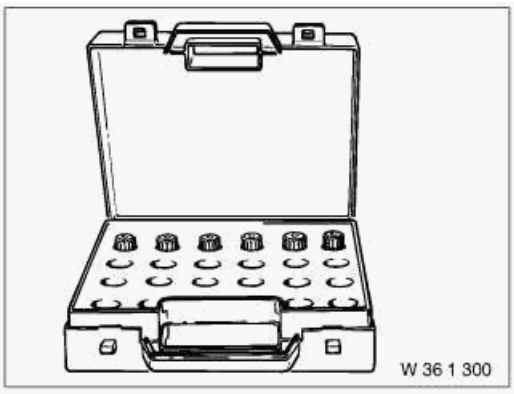
Common	Used in step 11
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 225 (36 1 327) Wheel stud



Common	Used in step 11
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



Common	Used in step 11
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

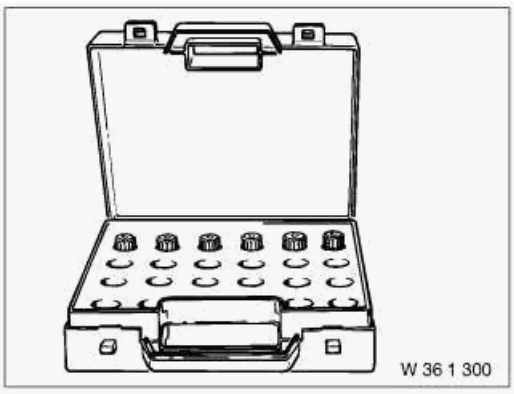
0 495 227 (36 1 329) Wheel stud



Common	Used in step 11
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 228 (36 1 331) Wheel stud



Common	Used in step 11
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 229 (36 1 332) Wheel stud



Common	Used in step 11
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 11
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Links

Operating materials	Used in step
2.0 Grease for wheel centring	23

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16 12 059 Replacing fuel feed line, rear

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

PRELIMINARY WORK

1 – Drawing off the fuel tank

WARNING

Contact with hazardous fluids.

Hazardous to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

WARNING

Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

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- Open fuel filler cap.
- Insert special tool into fuel filler neck.

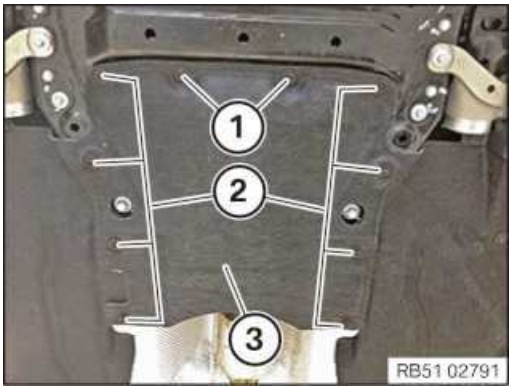
  Special tool has two different diameters: for petrol and for diesel fuel.
- Slide suction hose (1) of the extractor unit through special tool and into the fuel filler pipe. If necessary, slightly turn the suction hose.

  For the extractor unit: refer to BMW Service workshop equipment.

  The insertion length of the suction hose is 125 cm.
- Start engine and allow to run, so that the electric fuel pump is running.

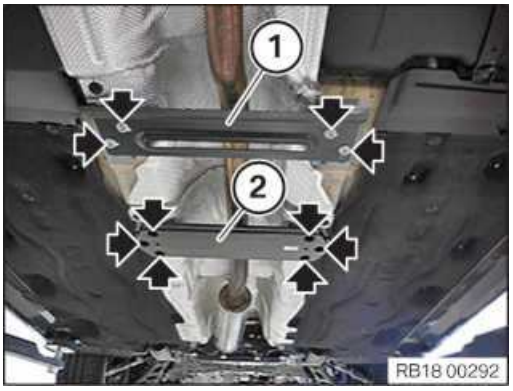
  This will ensure that the fuel is pumped by the suction jet pump from the left-hand side of the fuel tank to the right hand-side.
- Draw off fuel with the extractor unit as far as possible. In the process, track the drawing off of the fuel on the fuel gauge in the instrument cluster.

2 – If installed: Removing rear underbody protection



- Loosen screws (1) and (2).
- Remove underbody protection (3).

3 – Removing the connecting support from the tunnel in front and back



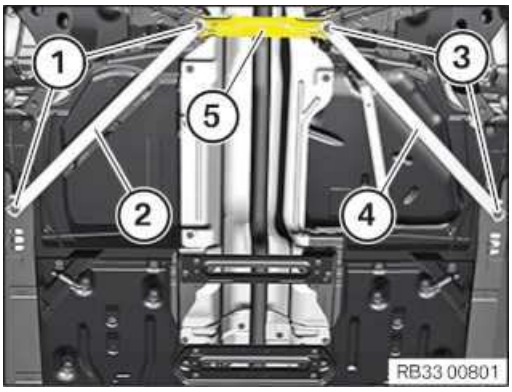
- Unscrew the bolts (arrows) from the connecting support (1).
- Feed out and remove the crossbeam (1).
- Unscrew the bolts (arrows) from the connecting support (2).
- Feed out and remove the crossbeam (2).

4 – Remove the cross strut with the torsion strut

TECHNICAL INFORMATION

Driving without a torsion strut is not permitted.

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- Loosen screws (1).
- Thread out torsion strut (2) at left and remove.
- Loosen screws (3).
- Thread out torsion strut (4) at right and remove.
- Feed out and remove the cross-member (5).

5 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

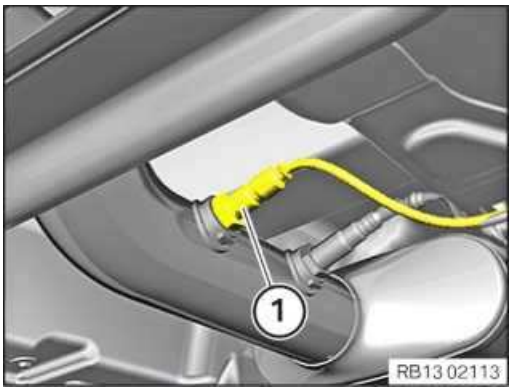
- Perform all work only on components that have cooled down.

CAUTION

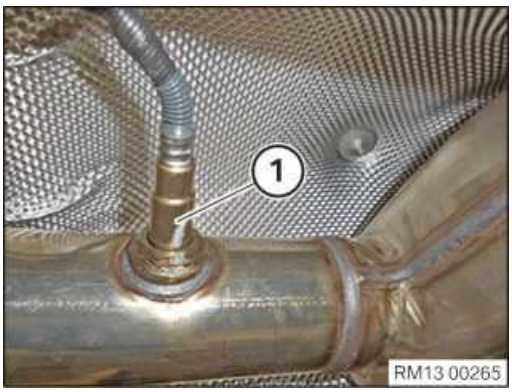
Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

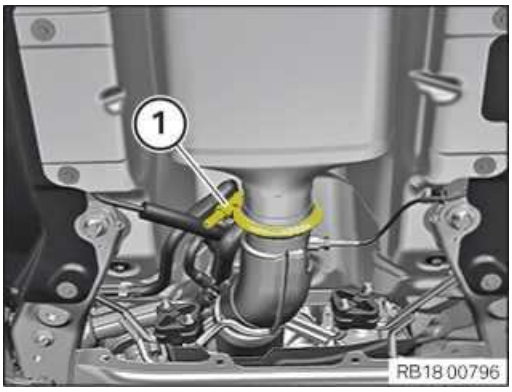


- Release the nitrogen oxide sensor (1) downstream of the SCR catalytic converter, guide it out and set it aside.

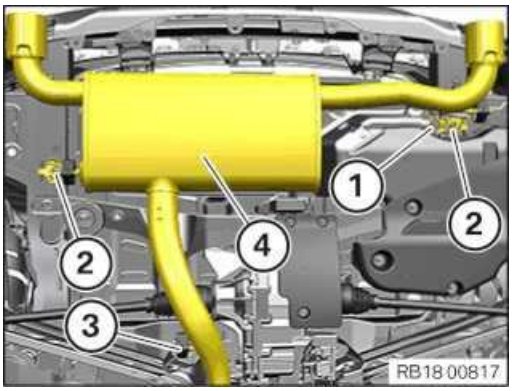


- Release the diesel particulate sensor (1), guide it out and set it aside.

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- Loosen V-band clamp (1).



- Loosen screw (1).
- Loosen nuts (2).
- Release the rubber mount (3) of the exhaust system (4).
- Lower and guide out the exhaust system (4) with assistance of a second person and remove it.

6 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

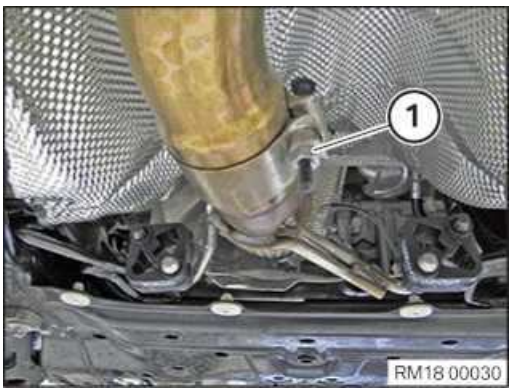
- Perform all work only on components that have cooled down.

CAUTION

Heavy component.

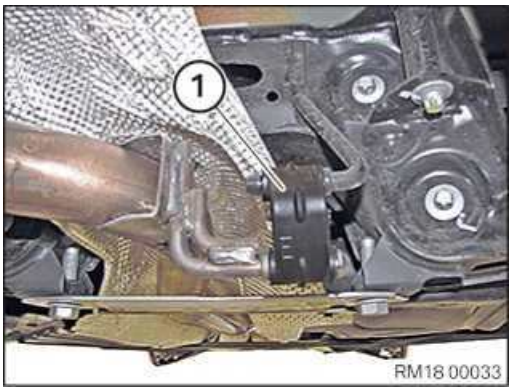
Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

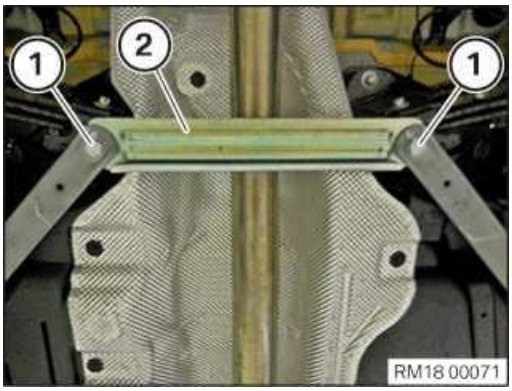


- Unfasten clamp (1).

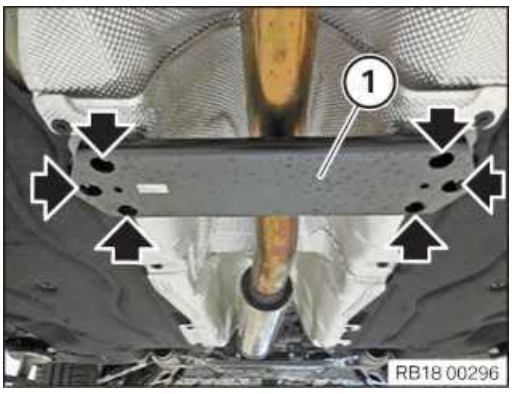
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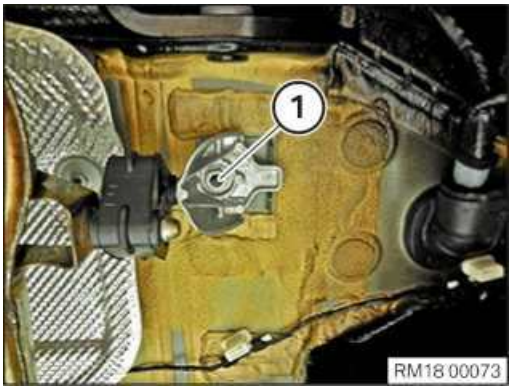
- Spray rubber mount (1) with lubricant and pull off the exhaust system.



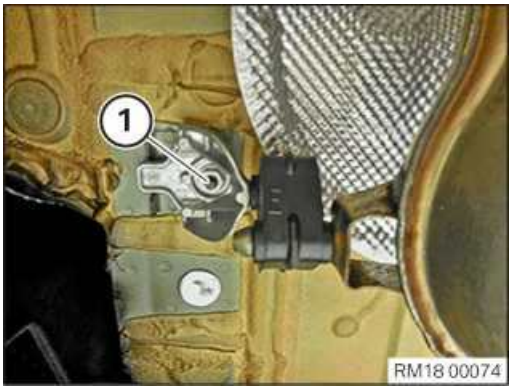
- Loosen screws (1).
- Feed out and remove the cross-member (2).



- Remove screws (arrows).
- Remove the connecting support (1).



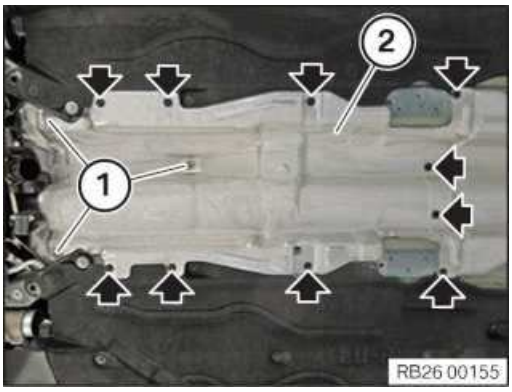
- Release the left-hand nut (1).



- Release the right-hand nut (1).
- Lower and remove exhaust system with assistance of a second person.

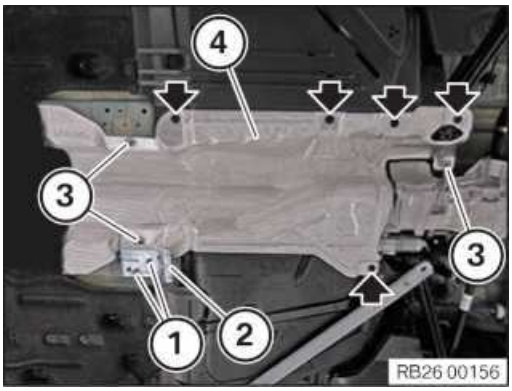
7 – Remove front heat shield

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- Remove screws (arrows).
- Loosen nuts (1).
- Guide the heat shield (2) out and remove it.

8 – Remove heat shield at rear.



- Loosen screws (1).
- Guide out and remove holder (2).
- Remove screws (arrows).
- Loosen nuts (3).
- Guide the heat shield (4) out and remove it.

9 – Remove propeller shaft

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

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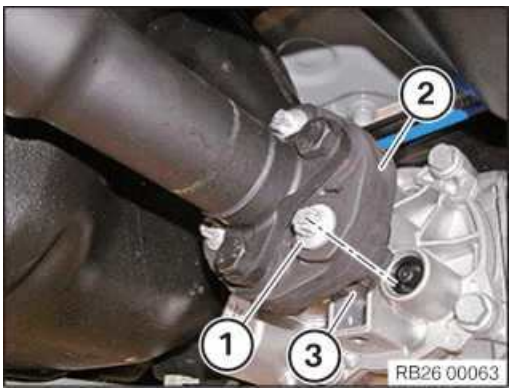
- Install the special too l between the front and rear propeller shaft.
- Make sure that the arrows on the special tool point forward in the direction of travel.



- Always support the propeller shaft (1) with a conventional jack.



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



TECHNICAL INFORMATION

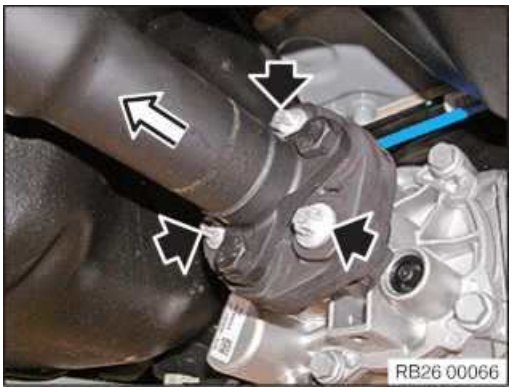
Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Mark the installation position of the screw connection (1), the flexible disc (2) and the three-hole flange (3) on the same level.
- Loosen the screw connection (1).

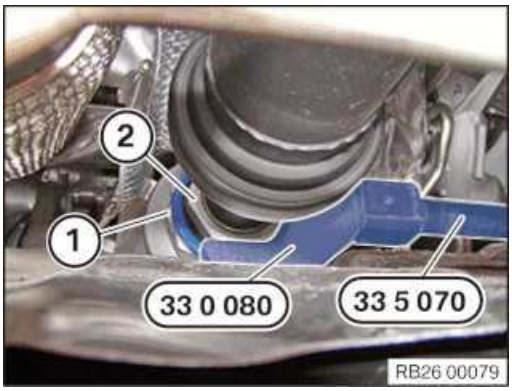


- Loosen screws (1).

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- Remove screws (arrows).
- Guide the propeller shaft out in the direction of the arrow and set it aside.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.

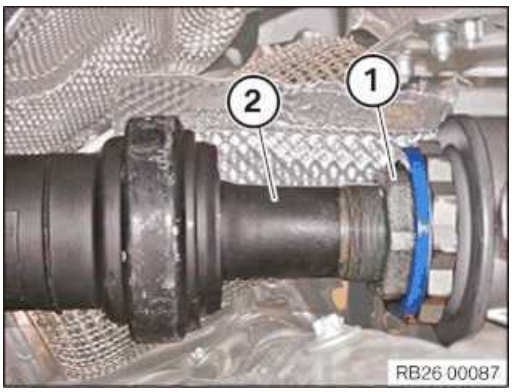
- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to detach the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

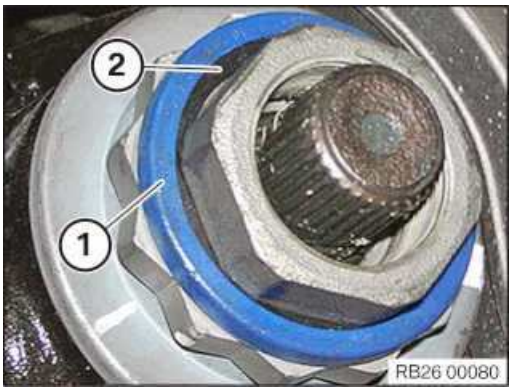


- Release the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

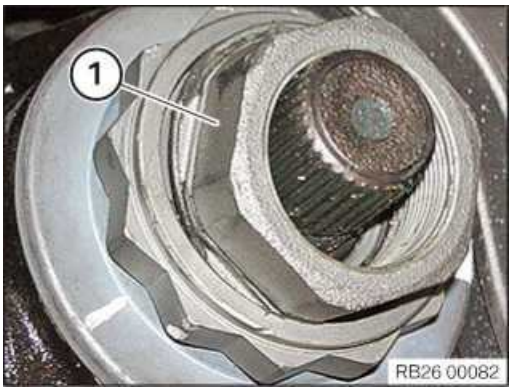


- Thread the propeller shaft (2) out of the recessed nut (1) and remove.

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- Thread the retaining clip (1) and the seal (2) out and remove.



- Thread out and remove the recessed nut (1).

10 – Removing the tank covers on the left and right

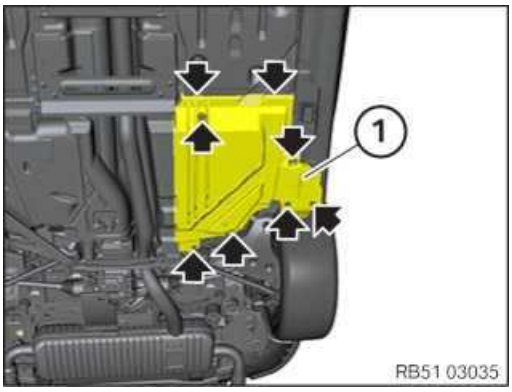
NOTICE

Perform the operations on the left and right side.

NOTICE

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

▸ **Removing the tank cover**



- Remove screws (arrows).
- Remove the tank cover (1).

11 – Remove right rear wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

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NOTICE

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

▶ **Removing the rear right wheel**

▷ **Removing the wheel**



- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

◁

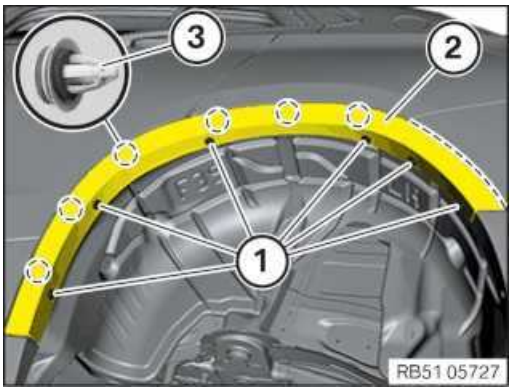
▶ **Removing rear wheel arch trim**

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

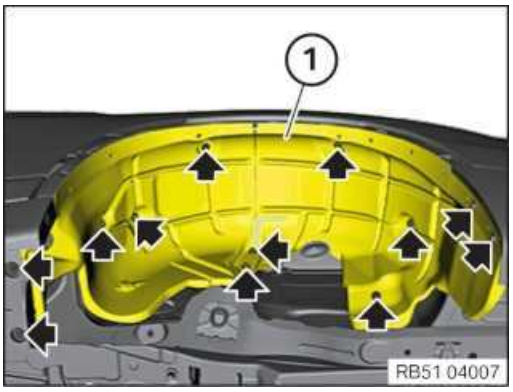
NOTICE

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



- Remove the blind rivets (1).
- Disengage the wheel arch trim (2) from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

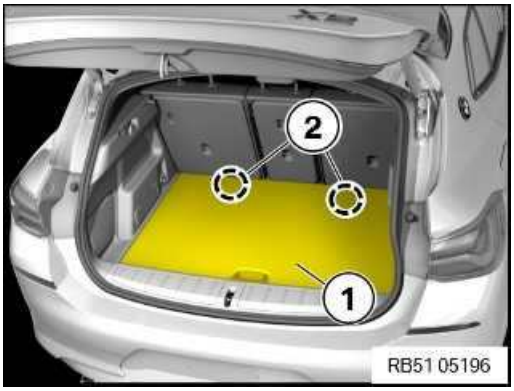
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- Unscrew all bolts and nuts (arrows).
- Carefully feed out and remove the wheel arch cover (2).

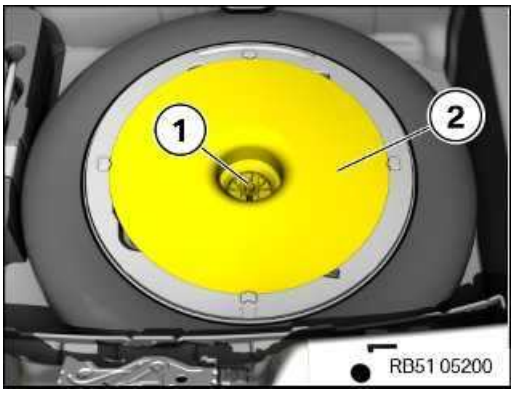
12 – Removing seat bench

▸ **Removing the luggage compartment removable panel**

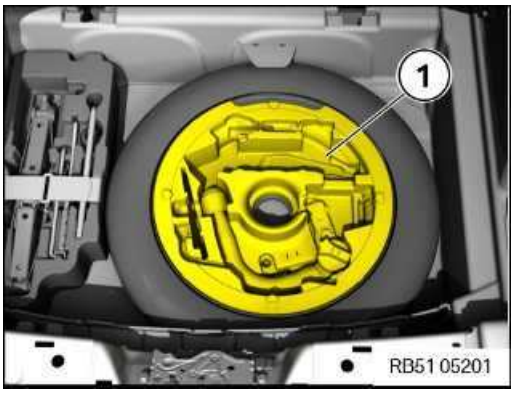


- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

▸ **Removing the compact spare wheel**



- Loosen screw (1).
- Remove the cover (2).



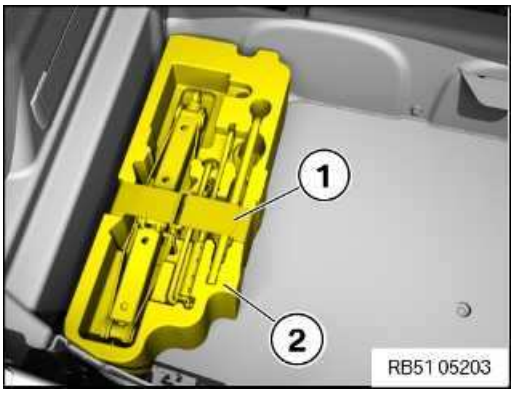
- Remove the oddments tray from the emergency wheel (1).

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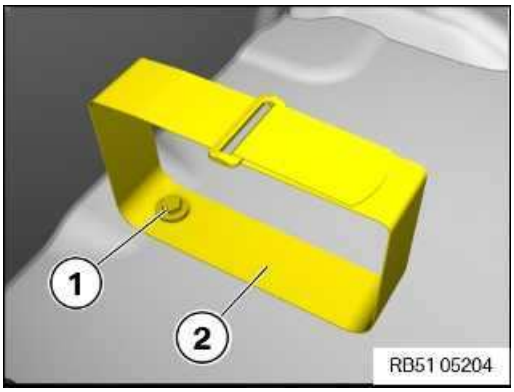
- Remove the emergency wheel (1).

▸ **Remove the tool kit**



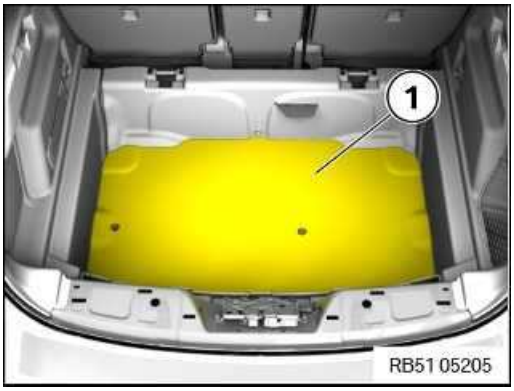
- Open the hook and loop tape (1).
- Remove the tool kit (2).

▸ **Remove the hook and loop tape for the tool kit**



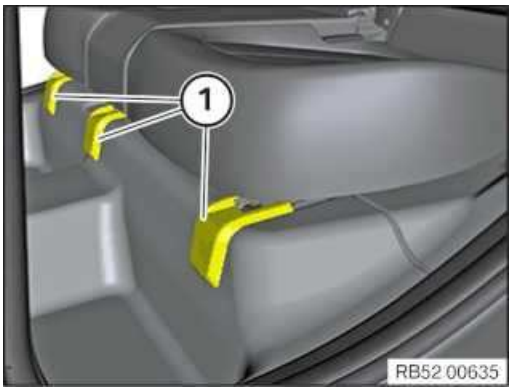
- Loosen screw (1).
- Remove the hook and loop tape (2).

▸ **Removing the luggage compartment floor trim panel**

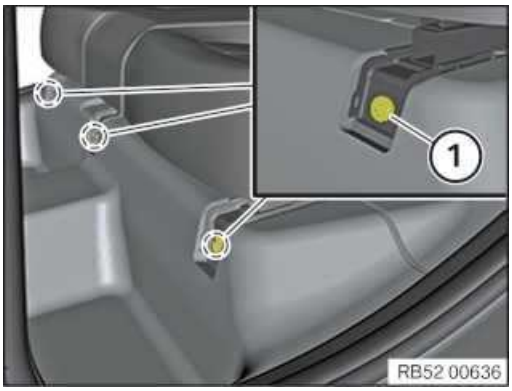


- Remove the luggage compartment floor trim panel (1) upwards.

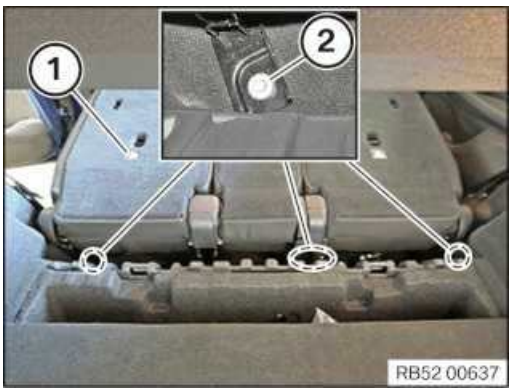
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- Unclip the covers (1) forwards.



- Loosen screws (1).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.
- Fold down rear seat backrest (1) on left and right.
- Loosen screws (2).
- Disconnect existing plug connections where required.

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Lift out rear seat bench with the assistance of a second person.

13 – Disconnect delivery unit

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WARNING

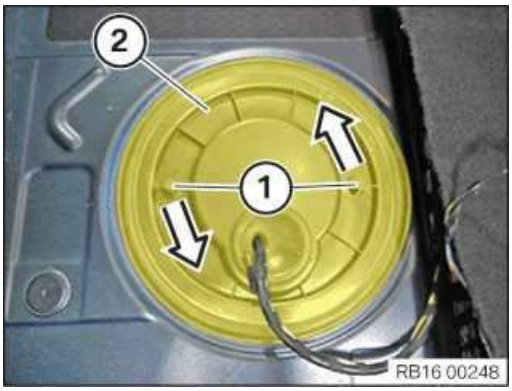
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

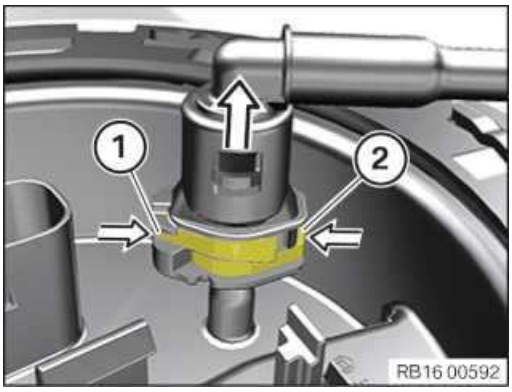
Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Turn the sealing cap for the floor panel (2) at the plastic tabs (1) in the direction of arrow.
- If turning is not possible: Destroy sealing cap of the floor panel (2).
- Remove sealing cap of the floor panel (2).



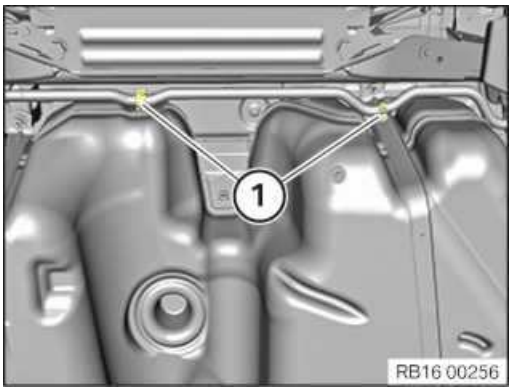
- Disconnect plug connection (1).



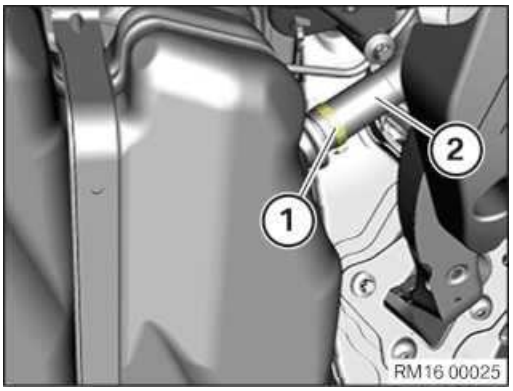
- Push the snap fastener toward the delivery unit.
- Press retaining lugs (1) and (2) pull off the snap fastener in the direction of arrow.

14 – Removing the fuel tank (fuel tank capacity 61 l)

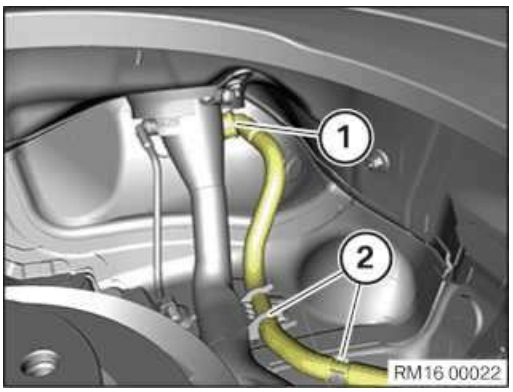
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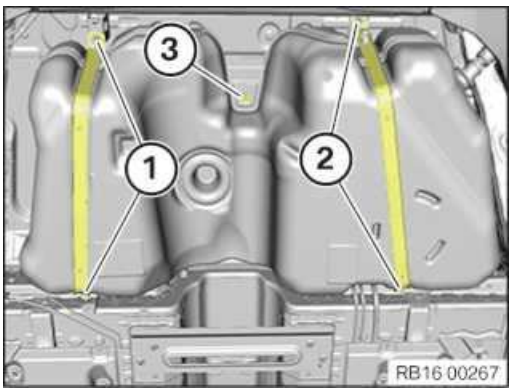
- Detach the tank ventilation line from the bracket (1).



- Loosen hose clamp (1).
- Pull off the rubber hose (2) from the fuel tank in the direction of the arrow.



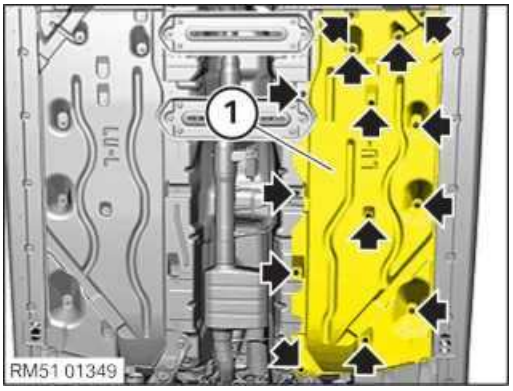
- Unlock and pull off snap fastener (1).
- Detach fuel filler neck breather pipe from brackets (2).



- **Heavily support the fuel tank.**
- Release the screws (1) and (2) and remove the retaining straps.
- Unscrew the nut (3) and lower the fuel tank (3).

  While the fuel tank is being lowered, the fuel filler neck breather pipe must be guided from the wheel arch through the body aperture!

15 – Removing right underbody panelling

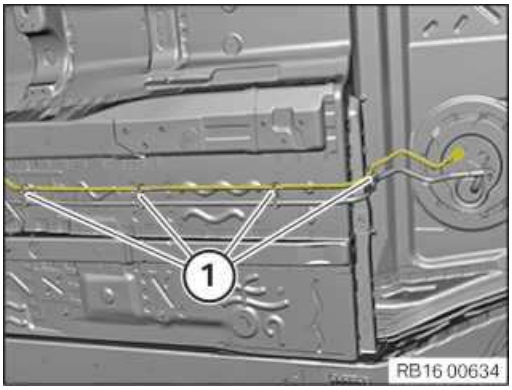


- Unscrew all bolts and nuts (arrows).
- Remove the underbody panelling (1).

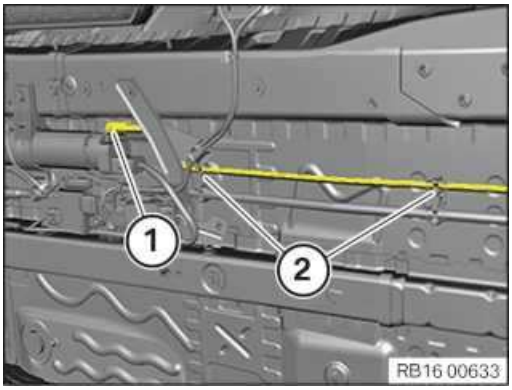
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MAIN WORK

16 – Remove the rear fuel feed line

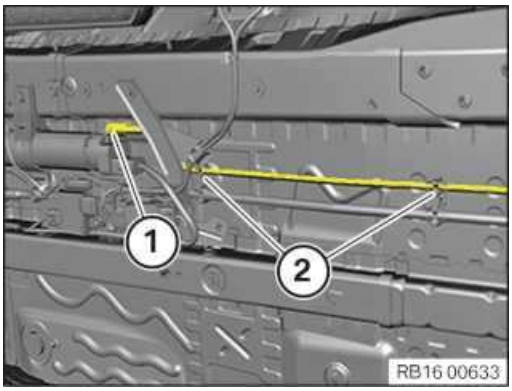


- Unclip the fuel feed line from the brackets (1).

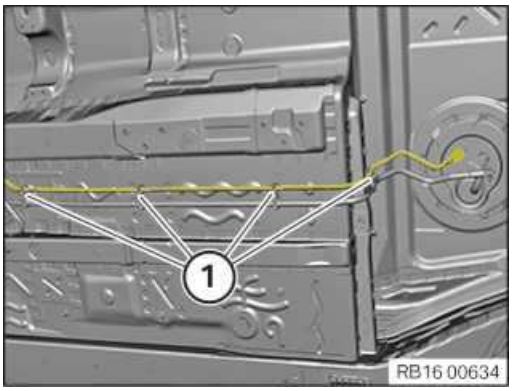


- Unlock and disconnect snap fastener (1).
- Unclip fuel feed lines from the brackets (2).

17 – Installing the rear fuel feed line



- Position the fuel delivery line .
- Position and connect the snap fastener (1).
- Clip the fuel feed line into the brackets (2).

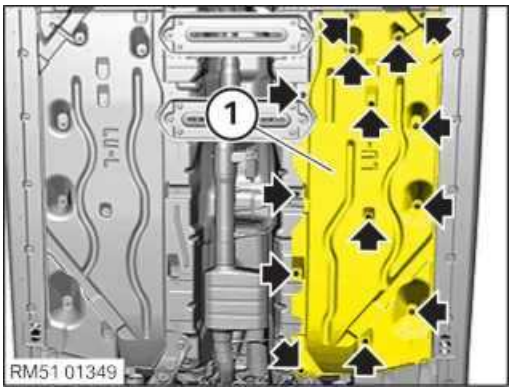


- Clip the fuel feed line into the brackets (1).

POSTPROCESSES

18 – Installing underbody panelling , right

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- Correctly position the underbody panelling (1).
- Tighten all bolts and nuts (arrows).

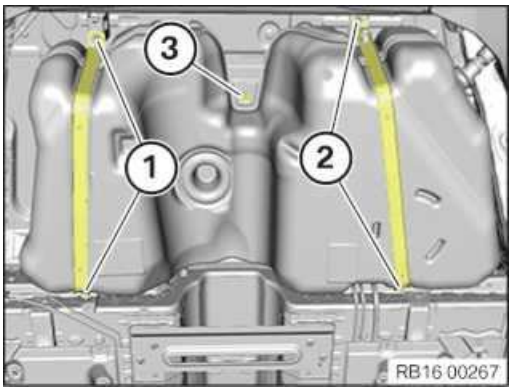
Underbody panelling, side

Hexagon screw		Tightening torque	2,6 Nm

Underbody panelling, side

Plastic nut		Tightening torque	2,6 Nm

19 – Install fuel tank (fuel tank capacity 61 l)



- **Raise fuel tank.**

  While the fuel tank is being raised, the fuel filler neck breather pipe must be guided through the body aperture into the wheel arch!
- Lift fuel tank up to installation position. When doing this, observe the installation position of the fuel filler neck breather pipe.
- Renew nut (3).

  Parts: Nut
- Fit nut (2) and tighten.

Fuel tank to body

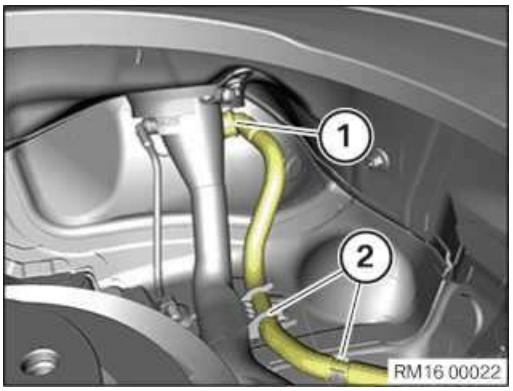
Nut M8	Renew nut.	Tightening torque	19 Nm

- Renew screws (1) and (2).

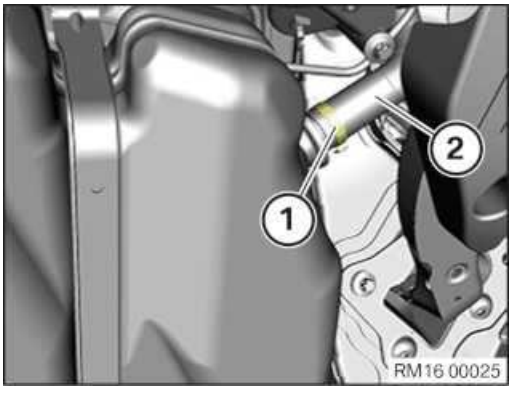
  Parts: Bolts
- Mount the retaining straps and position and tighten the screws (1) and (2).

Fuel tank retaining strap to body

M8 screw	Renew screws.	Tightening torque	19 Nm



- Attach the fuel filler neck breather pipe in the brackets (2).
- Position snap fastener (1) and lock.



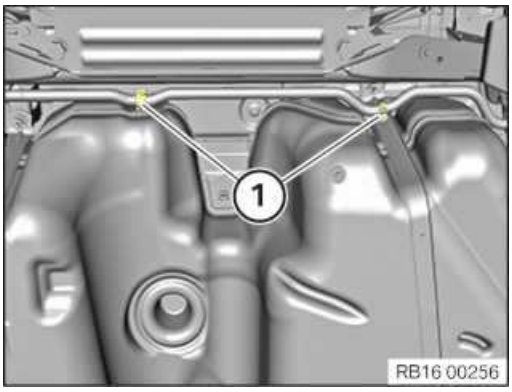
- Mount fuel filling hose (2) on fuel tank in direction of arrow.
- Renew the hose clamp (1).

  Parts: Hose clamp
- Position hose clamp (1) and tighten.

Filling hose on fuel tank

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

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- Attach the tank ventilation line in the brackets (1).

20 – Connect delivery unit

WARNING

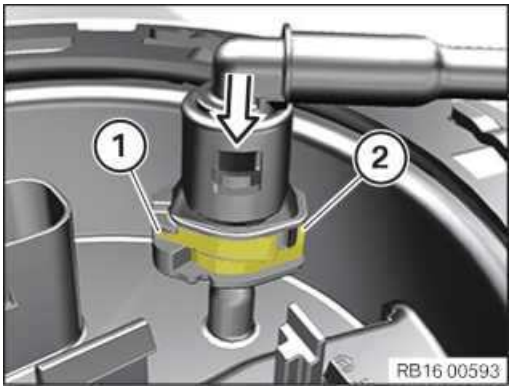
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Check locks of snap fastener for damage, and replace if required.
  The retaining lugs (1) and (2) must be locked.
- Mount the snap fastener and lock.
  The snap fastener must engage audibly and noticeably.
- Ensure correct locking of snap fastener with a tensile test.



- Connect connector (1).

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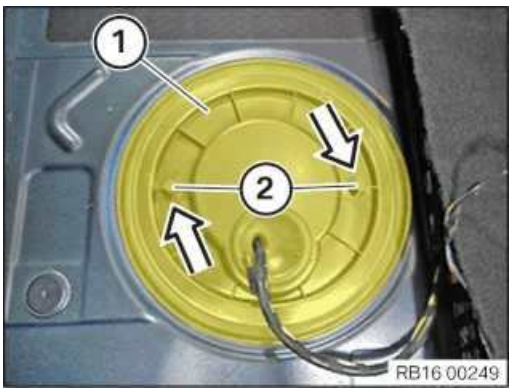
- Renew sealing cap of the floor panel (1).

  Parts: Sealing cap of the floor panel

  The sealing cap of the floor panel must not be reused, as there is the risk of leak during reuse.
- Lubricate seal in the area (1) with lubricant.

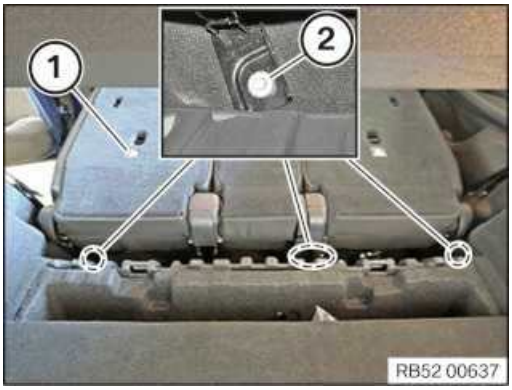
Expendable materials

Lubricants PF1	50 g, Pin	83230309627



- Install sealing cap of the floor panel (1).
- Turn sealing cap of the floor panel (1) on the plastic tabs (2) in the direction of arrow till the limit position and engage.

21 – Install rear seat bench



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.

RISK OF DAMAGE

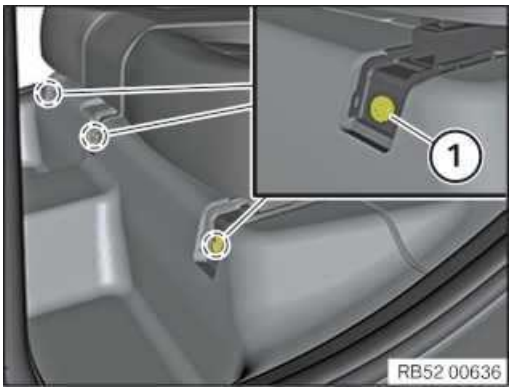
Heavy component.

Heavy components can lead to injury or damage.

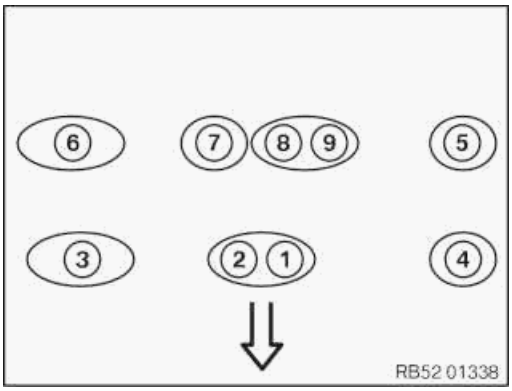
- Remove and install heavy components with the aid of another person/other persons.

- Hoist the rear seat bench into the vehicle and position it with the assistance of an auxiliary person.
- If required, connect the available connectors.
- Screw the bolts (2) in a few turns.

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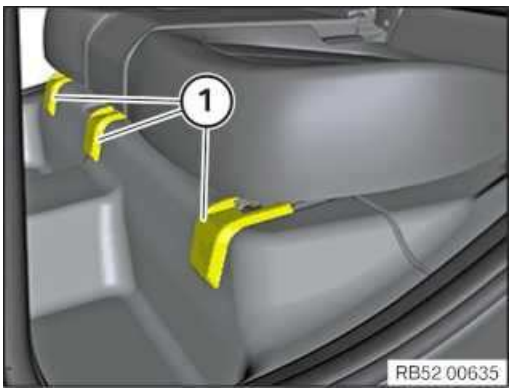
- Screw the bolts (1) in a few turns.



- Tighten screws in the order (1) to (9).

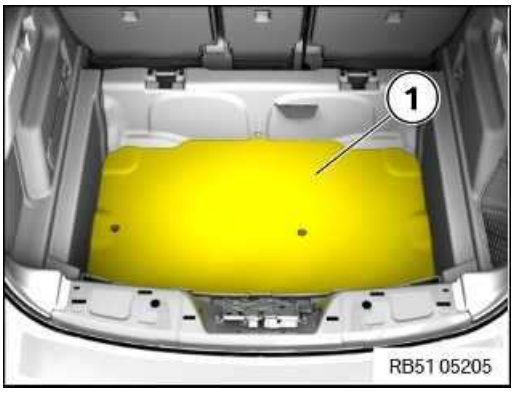
Seat bench to body

Oval-head screw		42 Nm



- Clip in the covers (1).

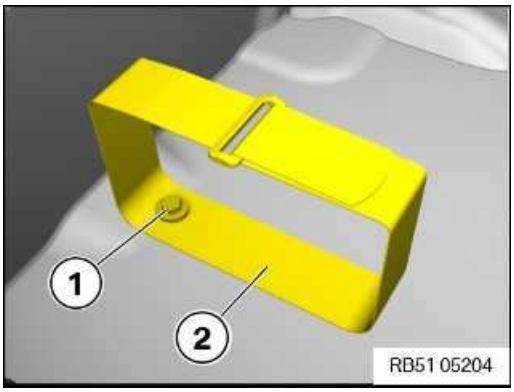
▸ **Installing the luggage compartment floor trim panel**



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

▸ **Inserting the Velcro fastener for the toolkit**

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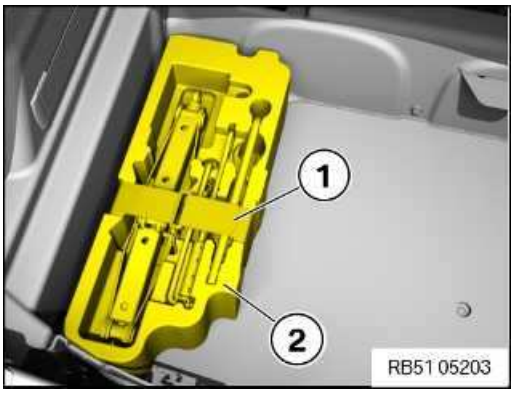


- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

▸ **Install the tool kit**

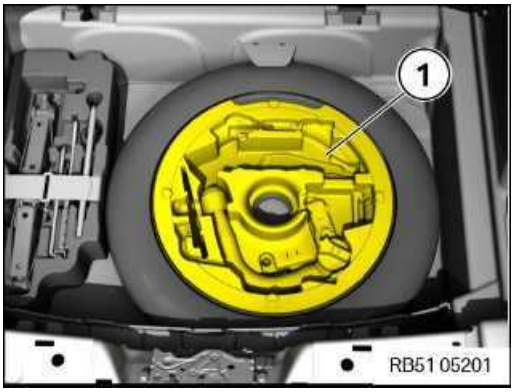


- Install the tool kit (2).
- Close the hook and loop tape (1).

▸ **Install the emergency wheel**

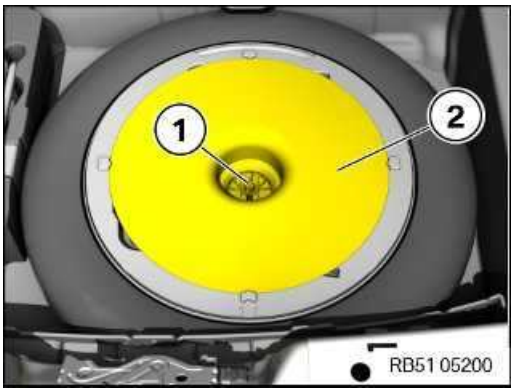


- Insert compact spare wheel(1).



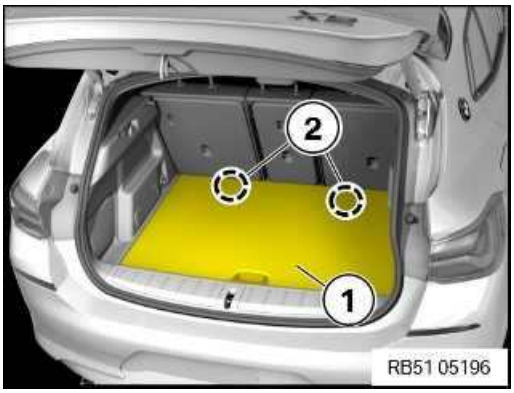
- Insert oddments tray into the compact spare wheel (1).

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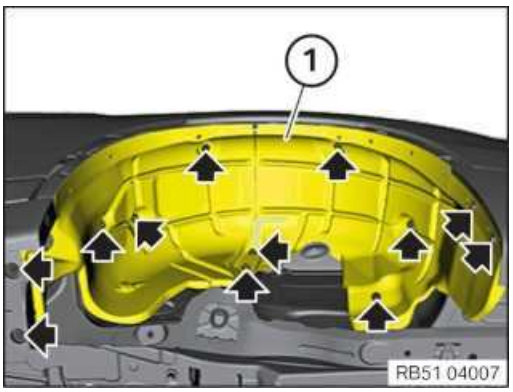
- Insert the lid (2).
- Hand-tighten the bolt (1).

▸ **Installing the luggage compartment removable panel**



- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

22 – Installing the rear wheel arch cover on the right



- Feed in wheel arch cover (1) and correctly position it.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

▸ **Installing the rear wheel arch trim**

TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.

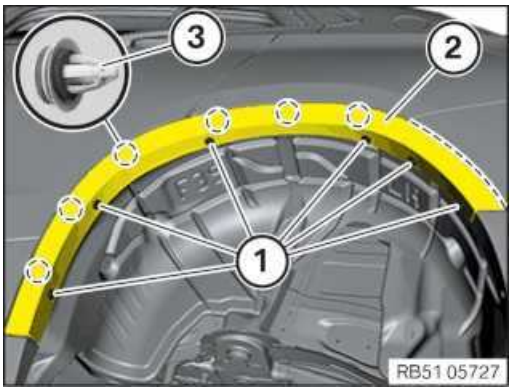
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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

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- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage the wheel arch trim (2) with the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

23 – Installing rear right wheel

▶ **Mounting the wheel**

▷ **Clean the contact surfaces between the brake disc and the wheel rim**



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

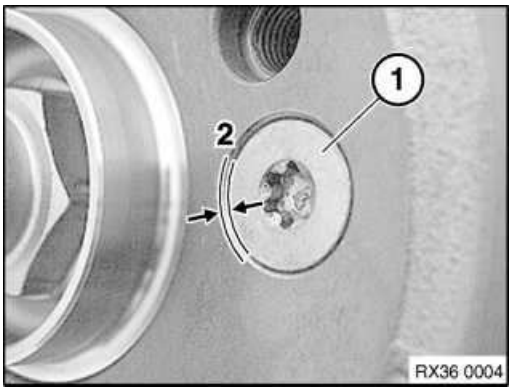
  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).

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- Renew mounting bolt (1).

  Parts: Mounting bolt

- Check that the mounting bolt (1) for the brake disc is securely seated.

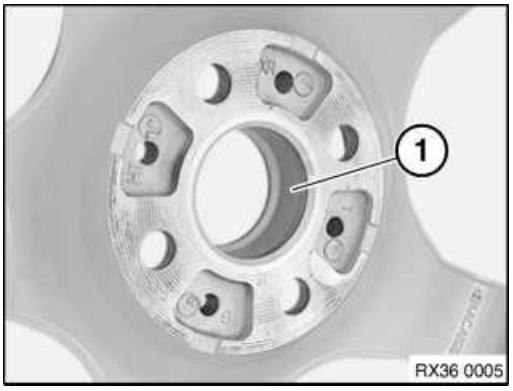
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

24 – Installing the tank covers on the left and right

NOTICE

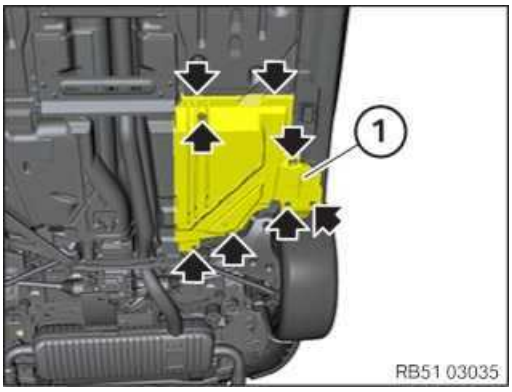
Perform the operations on the left and right side.

NOTICE

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

▸ **Installing tank cover**

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- Install tank cover (1).
- Tighten screws (arrows).

25 – Install propeller shaft.

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to the propeller shaft during installation.

Non-observance of the installation guidelines for the propeller shaft on the rear axle differential may cause severe damage.

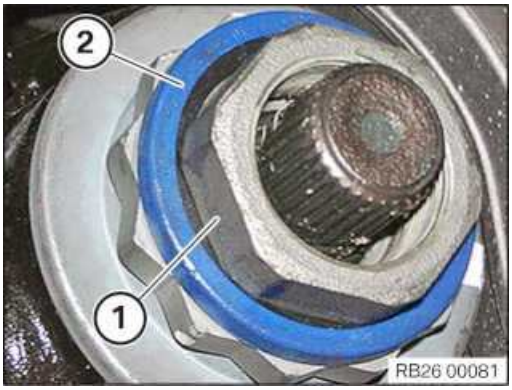
- Always renew the recessed nut on the rear axle differential. Screw locking must be available.
- Strictly observe a minimum hardening time of two hours after having screwed in the recessed nut. The hardening time may be longer at lower temperatures.

RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.



- Renew recessed nut (1).

  Parts: Insert nut
- Renew the retaining clip (2) and the seal.

  Parts: Retaining clip, seal
- Insert the seal with the recessed nut (1) and install.
- Insert the retaining clip (2) and install.
- Make sure that recessed nut (1) is screwed in within 5 min.
- Make sure that the hardening time of **minimum** 2 h for the recessed nut is observed.

  The hardening time must be extended at lower temperatures.

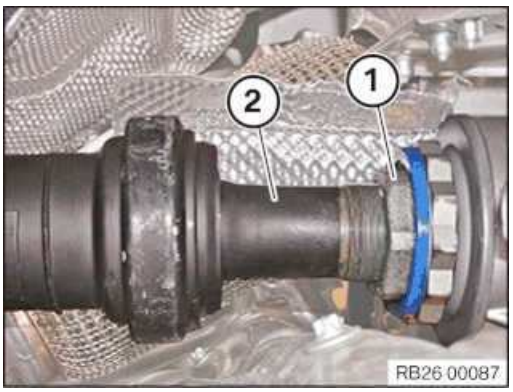
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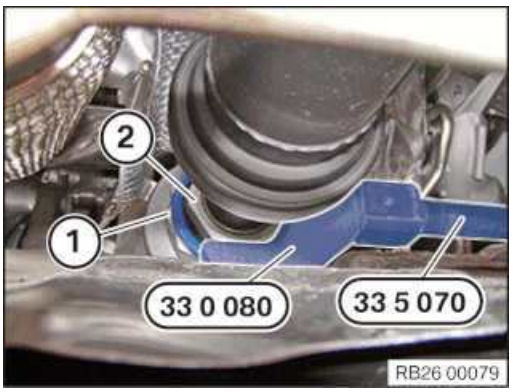
- Insert the propeller shaft (1) and install.
- Always support the propeller shaft (1) with a conventional jack.



- Hand-tighten the bolts (1).



- Push the propeller shaft (2) against the recessed nut (1) up to the limit position.
- Screw the propeller shaft (2) at least 2 thread starts onto the recessed nut (1) by hand.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

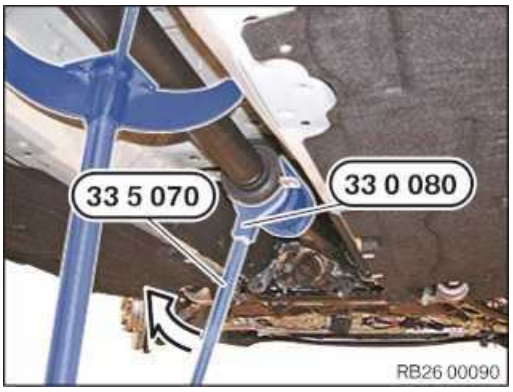
- Do not use the double hexagon head flange nut as counter support.

- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to tighten the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

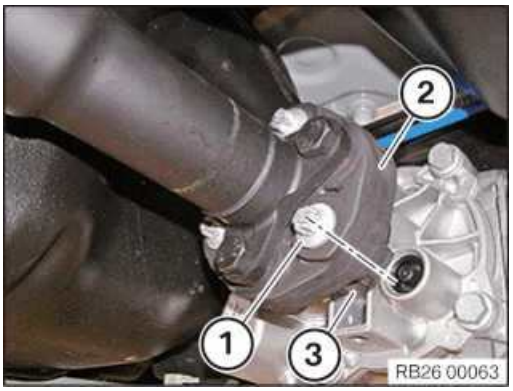
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- Tighten the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

Propeller shaft to transfer box

		Tightening torque	80 Nm



TECHNICAL INFORMATION

Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Assemble the screw connection (1) of the flexible disc (2) and the three-hole flange (3) according to the mark.
- Renew screws (1).

  Parts: Bolts
- Hand-tighten the bolts (1).



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



- Tighten the bolts with the special tools **0 490 504 (00 9 120)** and .

Flexible disc to rear axle final drive

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °



- Tighten the screws (1).

Centre mount to body

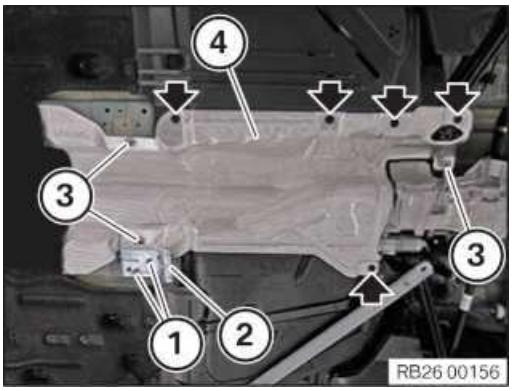
M8		Tightening torque	19 Nm

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- Guide the special too l out between the front and rear propeller shaft and remove.

26 – Installing the rear heat shield



- Insert and install the heat shield (4).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (3).

Heat shield to body

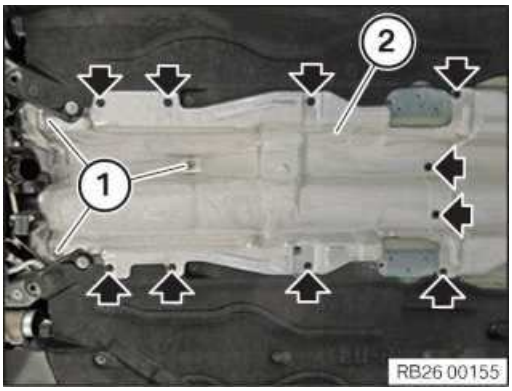
Bolts/nut		Tightening torque	3 Nm

- Insert and install the holder (2).
- Tighten the screws (1).

Bracket to body

M8		Tightening torque	21 Nm

27 – Install the front heat shield



- Insert and install the heat shield (2).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (1).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

28 – Install exhaust system

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

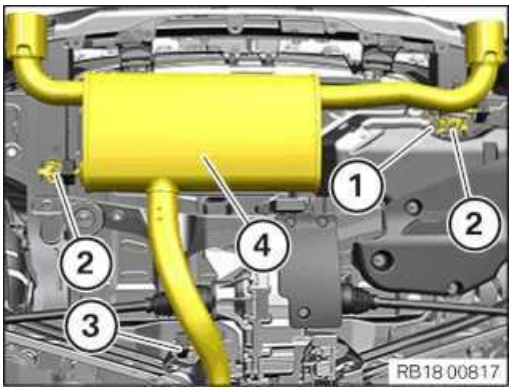
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CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.



- Feed in and install the exhaust system (4) with a second person.
- Renew nuts (2).

  Parts: Nuts
- Tighten nuts (2).

Exhaust system to body

M8	Replace nuts.	Tightening torque	19 Nm

- Tighten down screw (1).

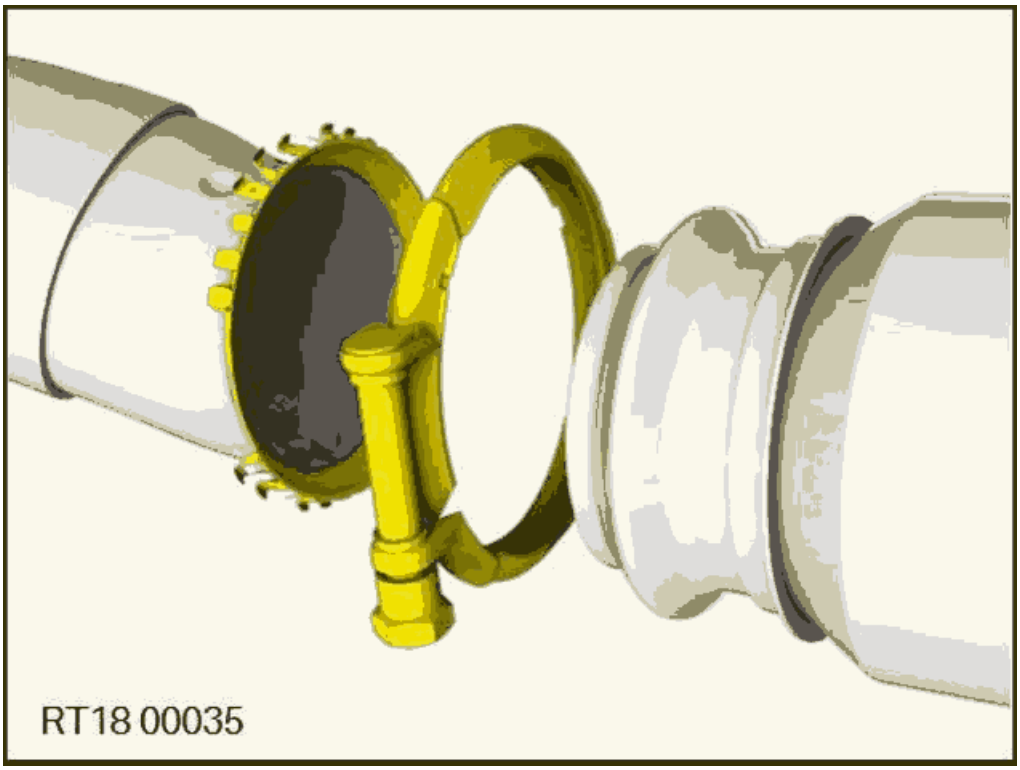
Exhaust bracket on body

Hexagon screw M8x30		Tightening torque	19 Nm

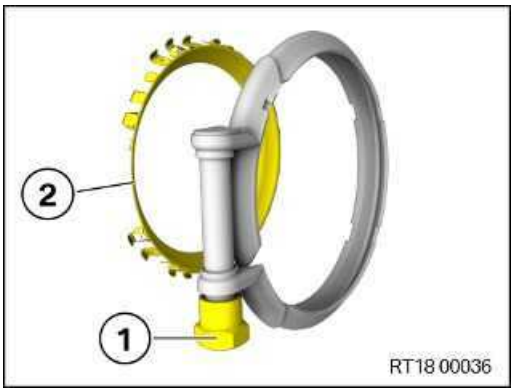
- Check the rubber mount (3) for damage and renew as needed.
- Mount rubber mount (3) on the exhaust system (4).

▸ **Install the V-clip**

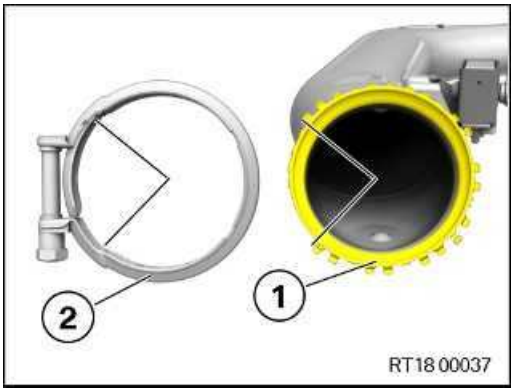
V-band clamp



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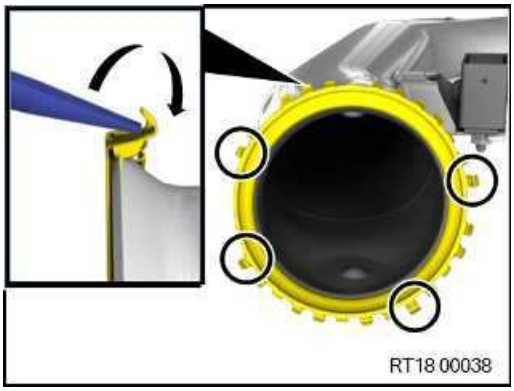


- Unscrew the nut (1) and remove the sealing ring (2).

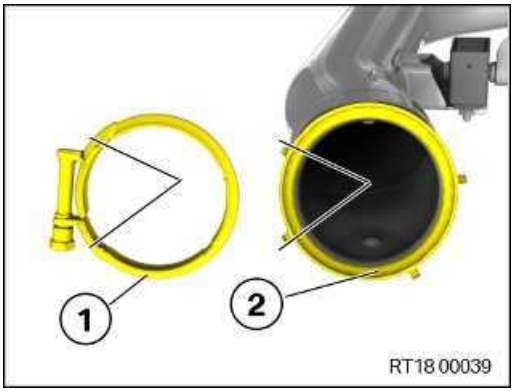


- Renew the V-clip (2).

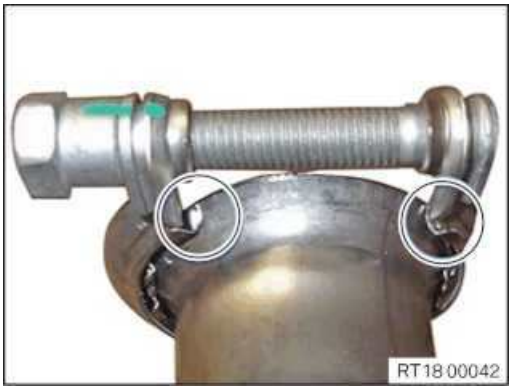
  Parts: V-band clamp
- Mount the sealing ring (1) on the exhaust system.
- Ensure that the sealing ring (1) for the V-clip (2) is positioned correctly.



- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.

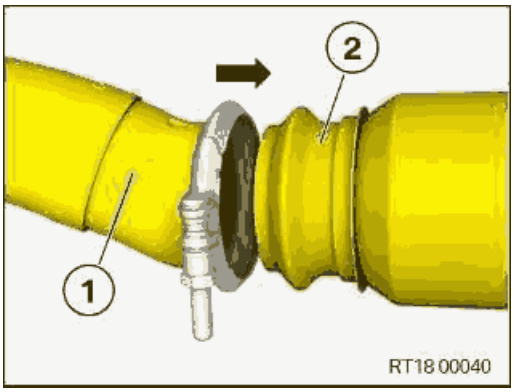


- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).

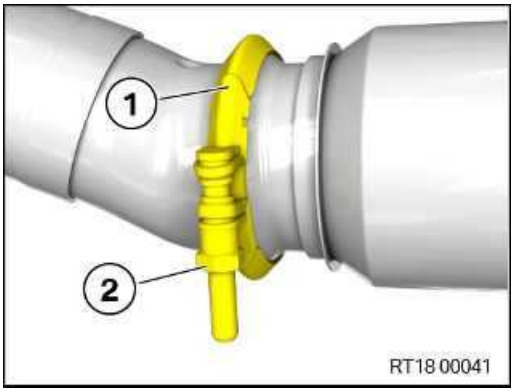


- Make sure that the V-clip rests against the sheet metal tabs after mounting (marks).

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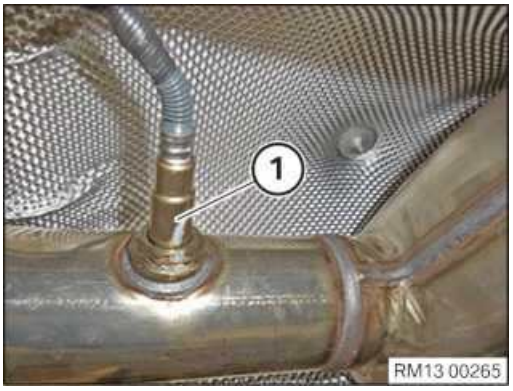
- Connect the exhaust system (1) with the catalytic converter (2) and position correctly.



- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

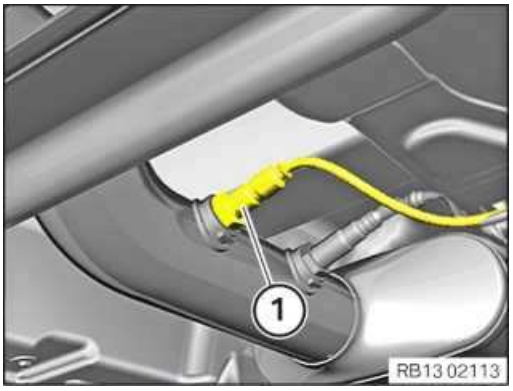
V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm



- Feed in, install and tighten diesel particulate sensor (1).

Diesel particulate sensor to exhaust system

Sensor		Tightening torque	50 Nm



- Feed in, install and tighten nitrogen oxide sensor (1).

Nitrogen oxide sensor downstream of SCR catalytic converter

Sensor		Tightening torque	50 Nm

29 – Install exhaust system

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

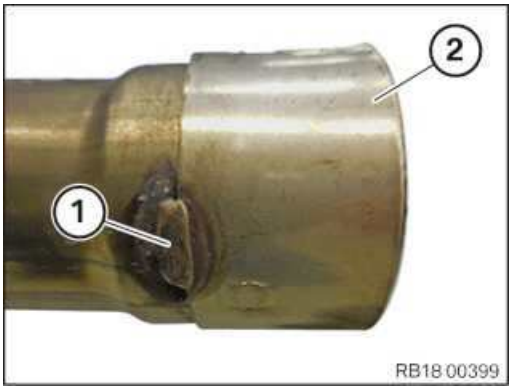
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CAUTION

Swarf resulting from sawing or grinding components.

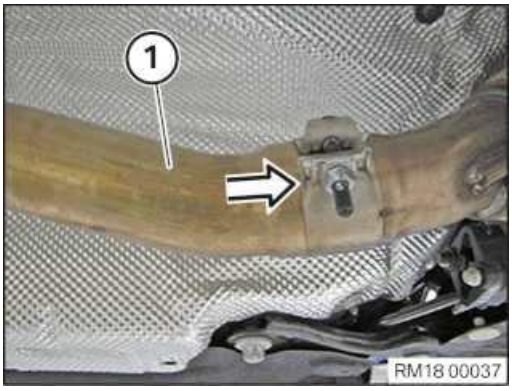
Danger of injury!

- Conduct all work in appropriate personal protective equipment only.
- Wear safety goggles and protective gloves.



- Open the weld seam (1) with a conventional tool.
- Remove the clamp (2).
- If necessary, renew clamp (2).

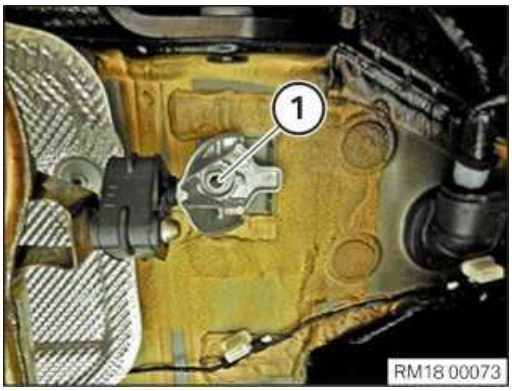
  Parts: Clamp



- Install the exhaust system with the assistance of a second person and connect to the diesel particulate filter.
- Tighten clamp (1).

Exhaust system to diesel particle filter

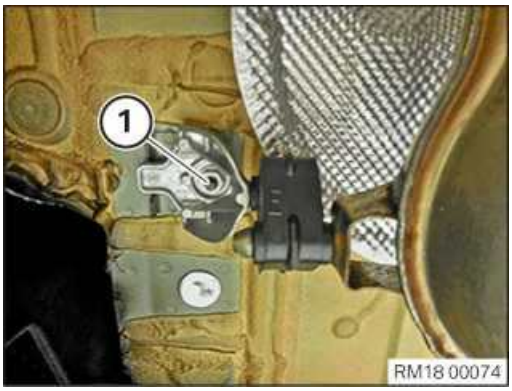
Ribbon cable clamp	Replace clamp		26 Nm



- Tighten the nut (1), left.

Exhaust system suspension to body

Nut M8		19 Nm

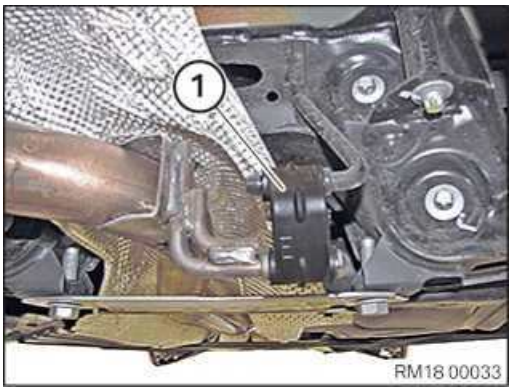


- Tighten the nut (1), right.

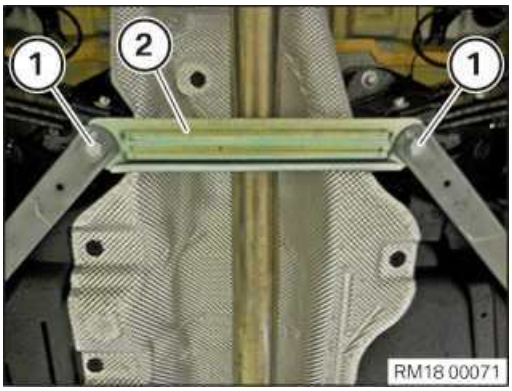
Exhaust system suspension to body

Nut M8		19 Nm

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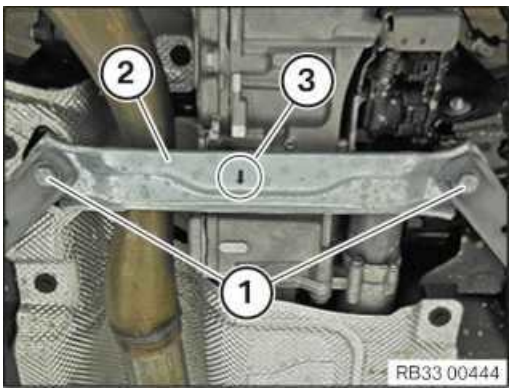
- Check the rubber mounts (1) for damage and renew, if necessary.
- Fasten exhaust system on the rubber mount (1).



- Install the cross-member (2).
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °

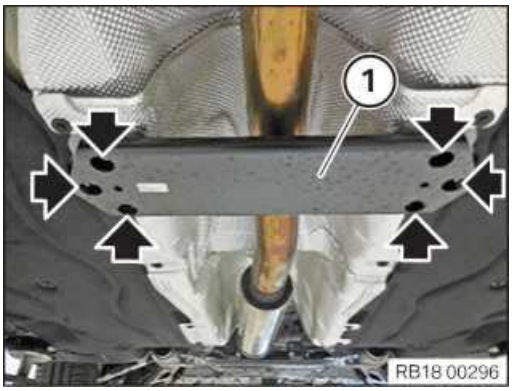


- In **all-wheel drive vehicles:** Ensure that the arrow (3) on the cross-member points in the direction of travel when installing it.
- Position cross-member (2) on the rear axle support.
- Renew screws (1).

  Parts: Bolts(1)
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °



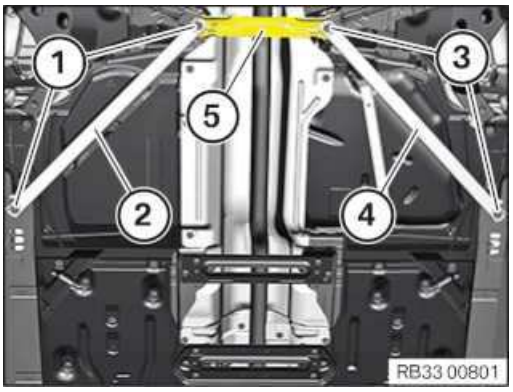
- Insert and install connecting supports (1).
- Tighten screws (arrows).

Front connection carrier to body

M10x18		Tightening torque	56 Nm

30 – Install the cross-member with torsion struts

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- Insert and install the cross-member (5).
- Thread in torsion strut (4) at right and install.
- Renew screws (3).

  Parts: Bolts
- Tighten down screws (3).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

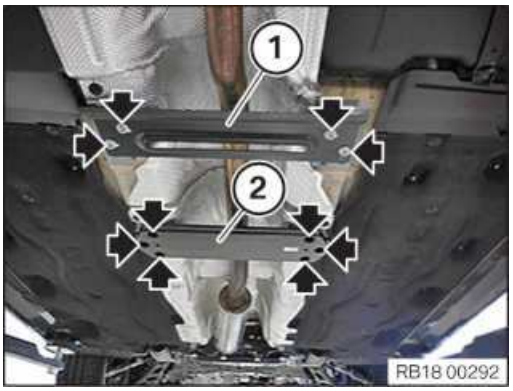
- Guide in and install the left torsion strut (2).
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

31 – Install the connecting support on the tunnel in front and back



- Insert and install connecting supports (2).
- Tighten the screws (arrows) from the connecting support (2).

Front connection carrier to body

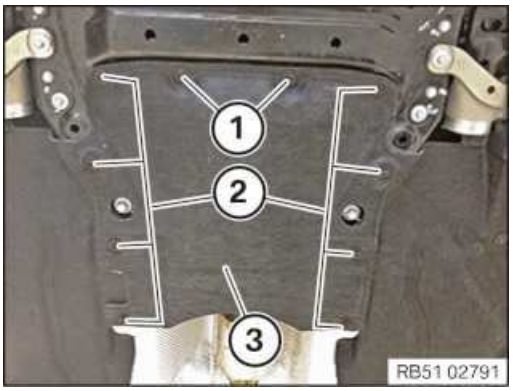
M10x18		Tightening torque	56 Nm

- Insert and install connecting supports (1).
- Tighten the screws (arrows) from the connecting support (1).

Rear connection carrier to body

M8x18		Tightening torque	28 Nm

32 – If installed: Installing underbody protection at rear



- Install the underbody protection (3).
- Tighten down screws (1) and (2).

Underbody protection to body

Screw		Tightening torque	3 Nm

33 – Topping up the fuel tank

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- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and diesel fuel.
- Slide the suction hose (1) of the extractor unit approximately 40 cm into the fuel filler pipe. If necessary, slightly turn the suction hose.
- Fill fuel from suction extractor unit.
- After completing the work and before starting the engine for the first time: fill the fuel tank via the fuel filler pipe with a minimum of 5 l of fuel.

Additional Information

Overview of Tightening Torques

Underbody panelling, side — Used in step 18

Hexagon screw		Tightening torque	2,6 Nm

Underbody panelling, side — Used in step 18

Plastic nut		Tightening torque	2,6 Nm

Fuel tank to body — Used in step 19

Nut M8	Renew nut.	Tightening torque	19 Nm

Fuel tank retaining strap to body — Used in step 19

M8 screw	Renew screws.	Tightening torque	19 Nm

Filling hose on fuel tank — Used in step 19

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

Seat bench to body — Used in step 21

Oval-head screw			42 Nm

Toolkit hook and loop tape to body — Used in step 21

Bolt M6 x 20		Tightening torque	4 Nm

Wheel arch cover to body — Used in step 22

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Brake disc to rear wheel hub — Used in step 23

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub — Used in step 23

M8	Renew screw.	Tightening torque	16 Nm

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Wheel bolts — Used in step 23

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Propeller shaft to transfer box — Used in step 25

		Tightening torque	80 Nm

Flexible disc to rear axle final drive — Used in step 25

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °

Centre mount to body — Used in step 25

M8		Tightening torque	19 Nm

Heat shield to body — Used in step 26 27

Bolts/nut		Tightening torque	3 Nm

Bracket to body — Used in step 26

M8		Tightening torque	21 Nm

Exhaust system to body — Used in step 28

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust bracket on body — Used in step 28

Hexagon screw M8x30		Tightening torque	19 Nm

V-clip to catalytic converter — Used in step 28

V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm

Diesel particulate sensor to exhaust system — Used in step 28

Sensor		Tightening torque	50 Nm

Nitrogen oxide sensor downstream of SCR catalytic converter — Used in step 28

Sensor		Tightening torque	50 Nm

Exhaust system to diesel particle filter — Used in step 29

Ribbon cable clamp	Replace clamp		26 Nm

Exhaust system suspension to body — Used in step 29

Nut M8			19 Nm

Cross-member to rear axle support — Used in step 29

M12	Renew screws.	Tightening torque	100 Nm 90 °

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Front connection carrier to body — Used in step 29

M10x18		Tightening torque	56 Nm

Cross-member/torsion strut to axle support and mounting — Used in step 30

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

Front connection carrier to body — Used in step 31

M10x18		Tightening torque	56 Nm

Rear connection carrier to body — Used in step 31

M8x18		Tightening torque	28 Nm

Underbody protection to body — Used in step 32

Screw		Tightening torque	3 Nm

Overview of Special Tools

0 495 554 (33 5 070) Extension



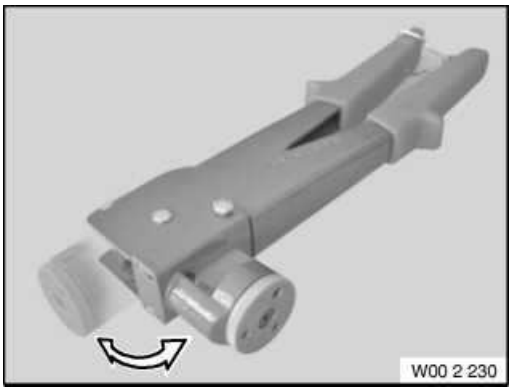
Common — Used in step 9 25

Usage	Pull-out extension for 33 5 040, 33 5 050, 33 5 060.
Included in the tool or work	
Storage location	A18
Replaced by	
In connection with	
SI-Number	01 21 06 (300)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 495 592 (33 5 071)		**Extension** (Extension (1 item)) discontinued, can only be ordered using complete tool	

0 496 521 (00 2 230) Pliers



Common — Used in step 22

Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

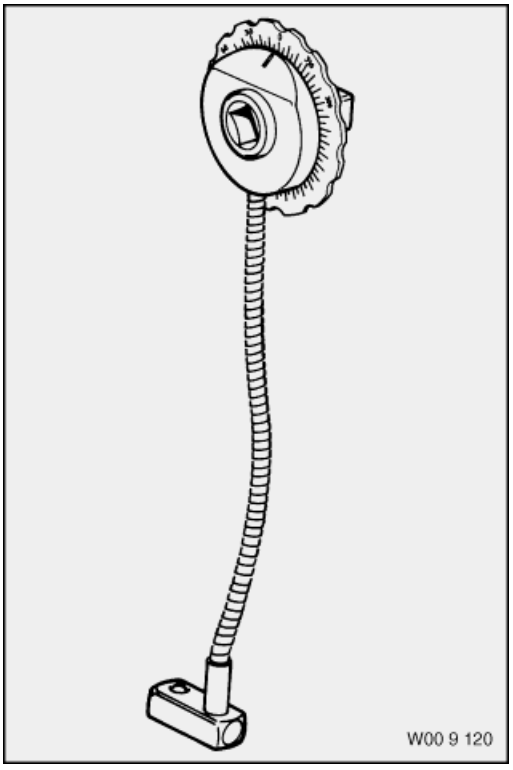
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2 344 011 Tool



Common	Used in step 23
Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

0 490 504 (00 9 120) Torque angle measuring dial



Common	Used in step 25
Usage	For torsion angle adjustment of cylinder head bolts (all engines) And reinforcement plate front axle support E46
Included in the tool or work	
Storage location	A4
Replaced by	
In connection with	
SI-Number	

Replacement tools:

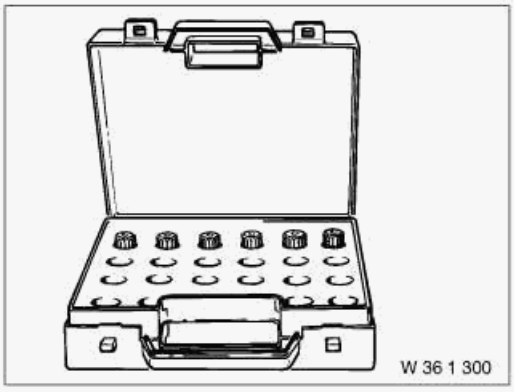
0 495 221 (36 1 323) Wheel stud



Common	Used in step 11
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

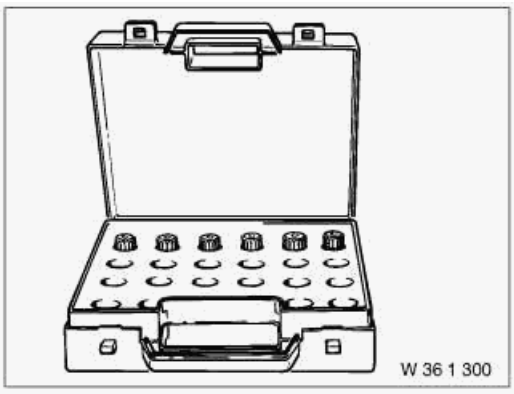
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0 495 224 (36 1 326) Wheel stud



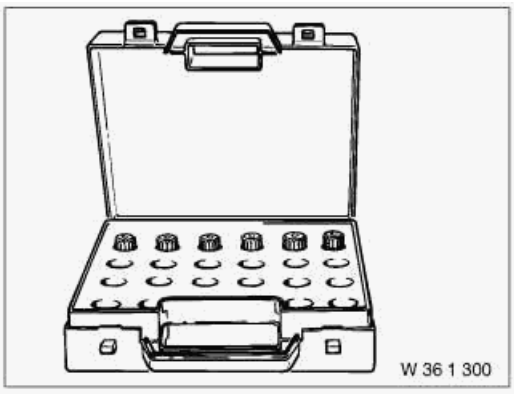
Common	Used in step 11
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 225 (36 1 327) Wheel stud



Common	Used in step 11
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



Common	Used in step 11
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

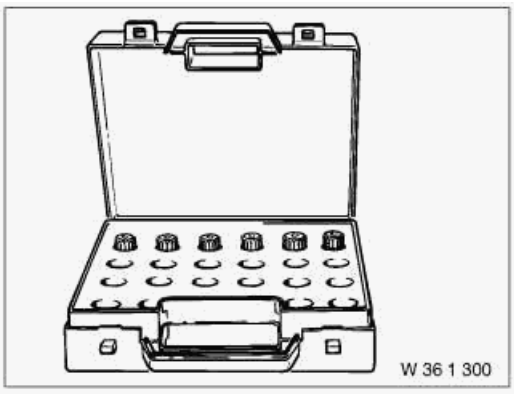
0 495 227 (36 1 329) Wheel stud



Common	Used in step 11
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 228 (36 1 331) Wheel stud



Common	Used in step 11
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 229 (36 1 332) Wheel stud



Common	Used in step 11
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 11
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Links

Operating materials	Used in step
2.0 Grease for wheel centring	23

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16 12 050 Replacing fuel return line, rear

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

PRELIMINARY WORK

1 – Drawing off the fuel tank

WARNING

Contact with hazardous fluids.

Hazardous to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

WARNING

Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

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- Open fuel filler cap.
- Insert special tool into fuel filler neck.

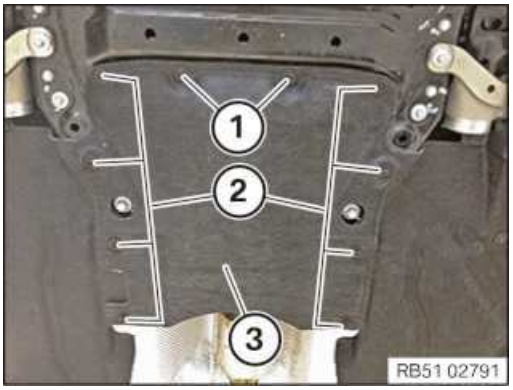
  Special tool has two different diameters: for petrol and for diesel fuel.
- Slide suction hose (1) of the extractor unit through special tool and into the fuel filler pipe. If necessary, slightly turn the suction hose.

  For the extractor unit: refer to BMW Service workshop equipment.

  The insertion length of the suction hose is 125 cm.
- Start engine and allow to run, so that the electric fuel pump is running.

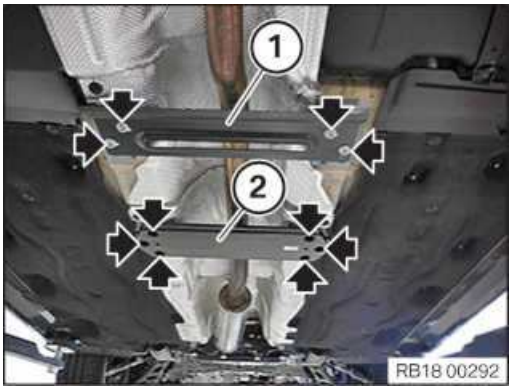
  This will ensure that the fuel is pumped by the suction jet pump from the left-hand side of the fuel tank to the right hand-side.
- Draw off fuel with the extractor unit as far as possible. In the process, track the drawing off of the fuel on the fuel gauge in the instrument cluster.

2 – If installed: Removing rear underbody protection



- Loosen screws (1) and (2).
- Remove underbody protection (3).

3 – Removing the connecting support from the tunnel in front and back



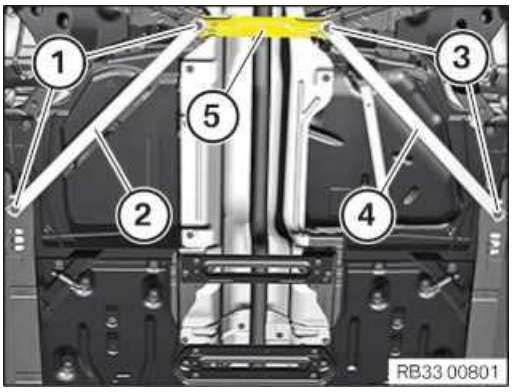
- Unscrew the bolts (arrows) from the connecting support (1).
- Feed out and remove the crossbeam (1).
- Unscrew the bolts (arrows) from the connecting support (2).
- Feed out and remove the crossbeam (2).

4 – Remove the cross strut with the torsion strut

TECHNICAL INFORMATION

Driving without a torsion strut is not permitted.

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- Loosen screws (1).
- Thread out torsion strut (2) at left and remove.
- Loosen screws (3).
- Thread out torsion strut (4) at right and remove.
- Feed out and remove the cross-member (5).

5 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

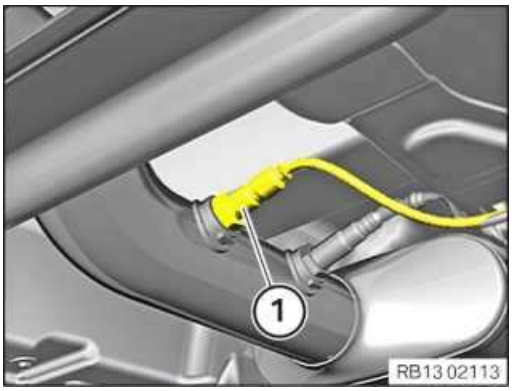
- Perform all work only on components that have cooled down.

CAUTION

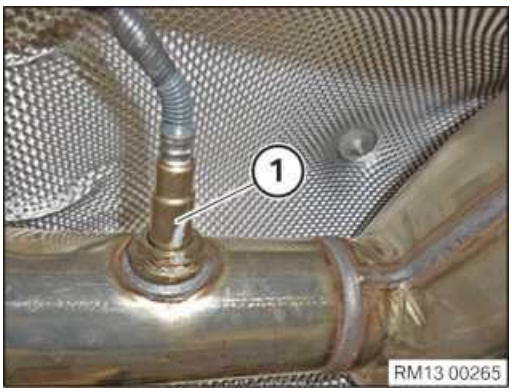
Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

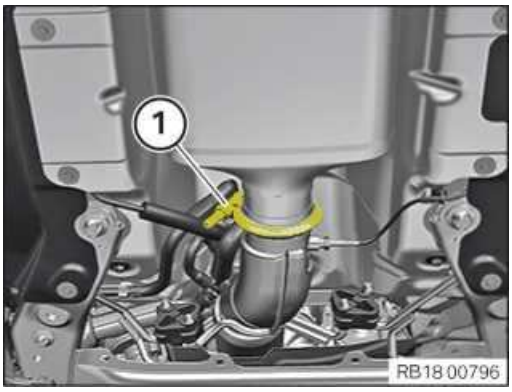


- Release the nitrogen oxide sensor (1) downstream of the SCR catalytic converter, guide it out and set it aside.

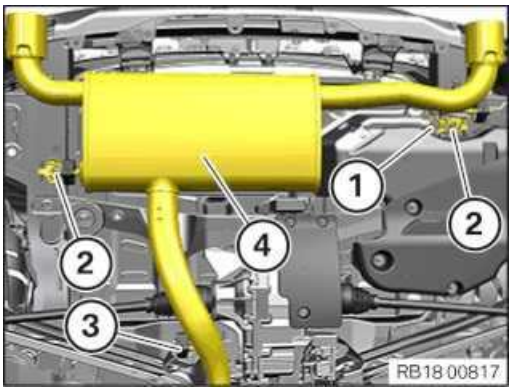


- Release the diesel particulate sensor (1), guide it out and set it aside.

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- Loosen V-band clamp (1).



- Loosen screw (1).
- Loosen nuts (2).
- Release the rubber mount (3) of the exhaust system (4).
- Lower and guide out the exhaust system (4) with assistance of a second person and remove it.

6 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

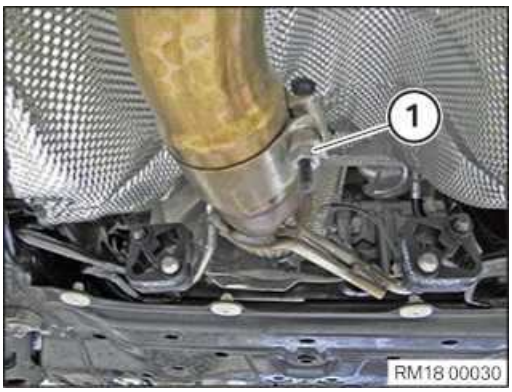
- Perform all work only on components that have cooled down.

CAUTION

Heavy component.

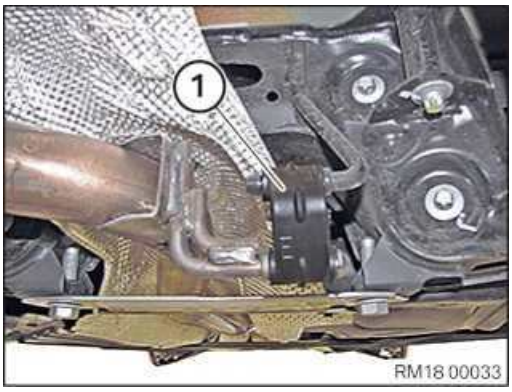
Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

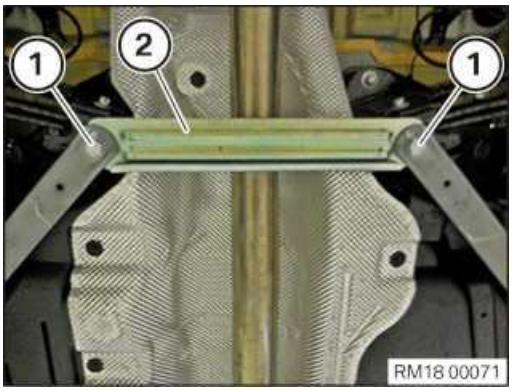


- Unfasten clamp (1).

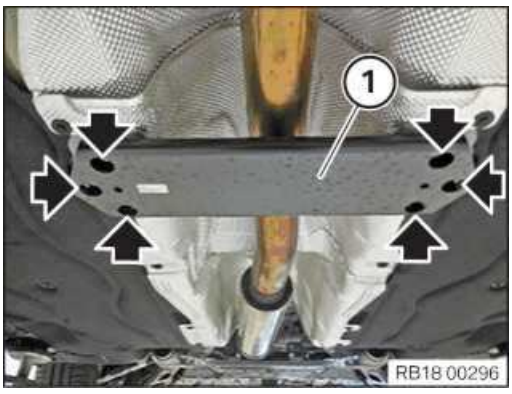
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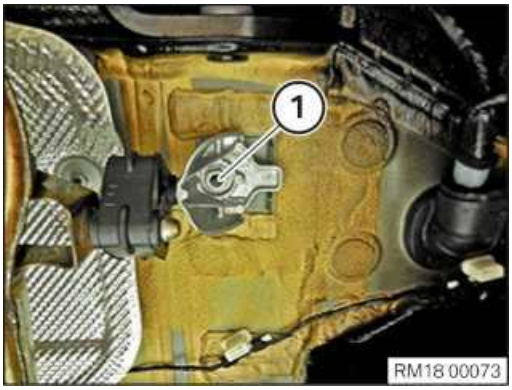
- Spray rubber mount (1) with lubricant and pull off the exhaust system.



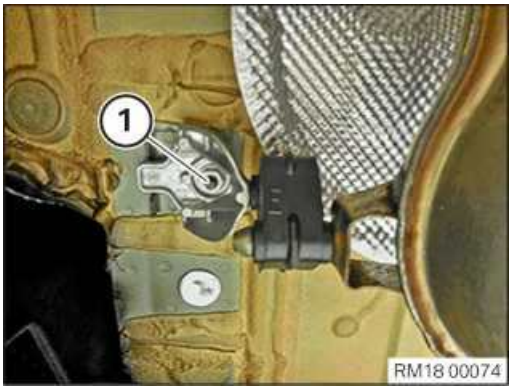
- Loosen screws (1).
- Feed out and remove the cross-member (2).



- Remove screws (arrows).
- Remove the connecting support (1).



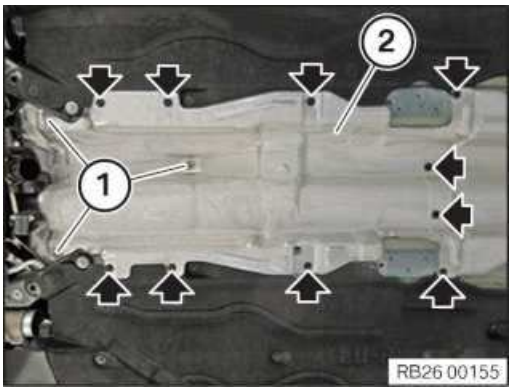
- Release the left-hand nut (1).



- Release the right-hand nut (1).
- Lower and remove exhaust system with assistance of a second person.

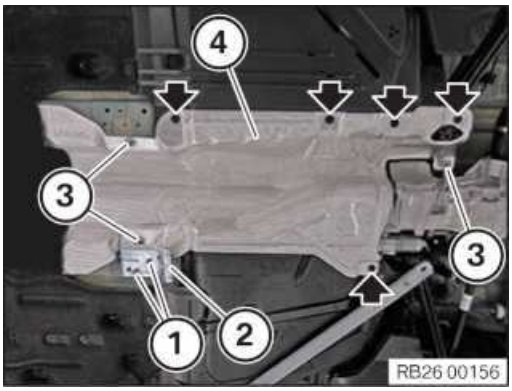
7 – Remove front heat shield

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- Remove screws (arrows).
- Loosen nuts (1).
- Guide the heat shield (2) out and remove it.

8 – Remove heat shield at rear.



- Loosen screws (1).
- Guide out and remove holder (2).
- Remove screws (arrows).
- Loosen nuts (3).
- Guide the heat shield (4) out and remove it.

9 – Remove propeller shaft

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

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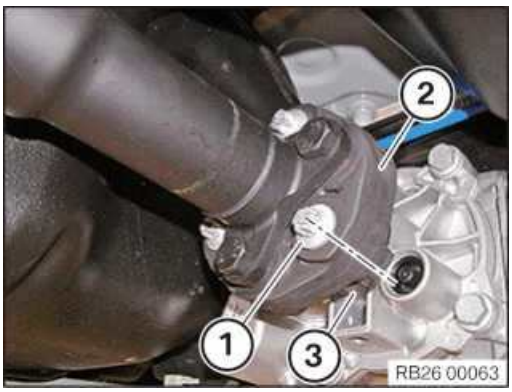
- Install the special too l between the front and rear propeller shaft.
- Make sure that the arrows on the special tool point forward in the direction of travel.



- Always support the propeller shaft (1) with a conventional jack.



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



TECHNICAL INFORMATION

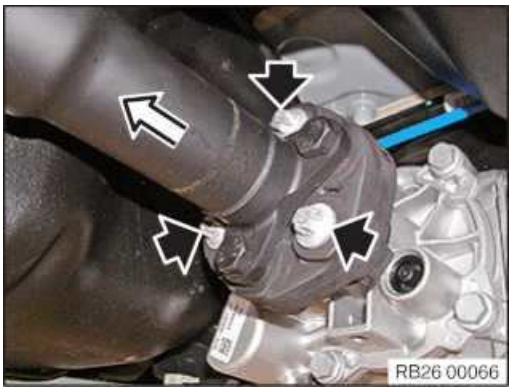
Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Mark the installation position of the screw connection (1), the flexible disc (2) and the three-hole flange (3) on the same level.
- Loosen the screw connection (1).

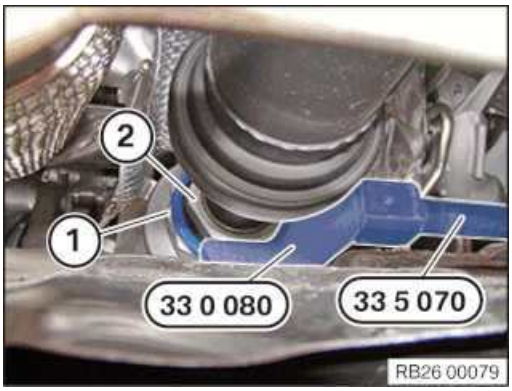


- Loosen screws (1).

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- Remove screws (arrows).
- Guide the propeller shaft out in the direction of the arrow and set it aside.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.

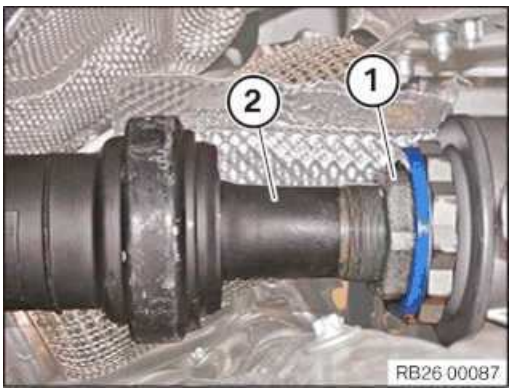
- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to detach the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

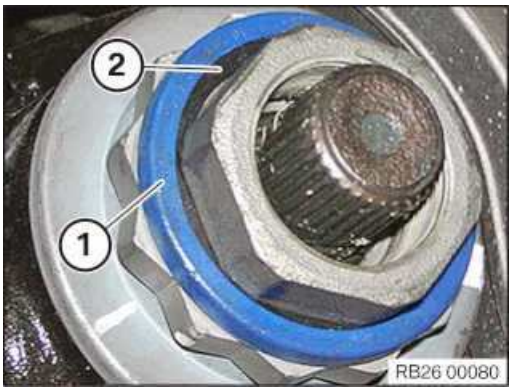


- Release the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

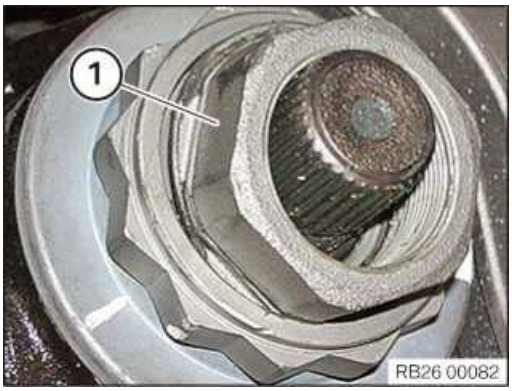


- Thread the propeller shaft (2) out of the recessed nut (1) and remove.

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- Thread the retaining clip (1) and the seal (2) out and remove.



- Thread out and remove the recessed nut (1).

10 – Removing the tank covers on the left and right

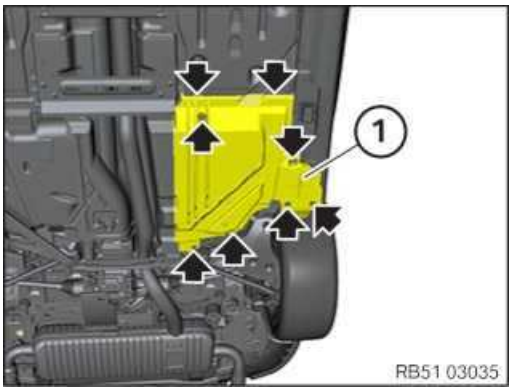
NOTICE

Perform the operations on the left and right side.

NOTICE

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

▸ **Removing the tank cover**



- Remove screws (arrows).
- Remove the tank cover (1).

11 – Remove right rear wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

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NOTICE

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

▶ **Removing the rear right wheel**

▷ **Removing the wheel**



- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

◁

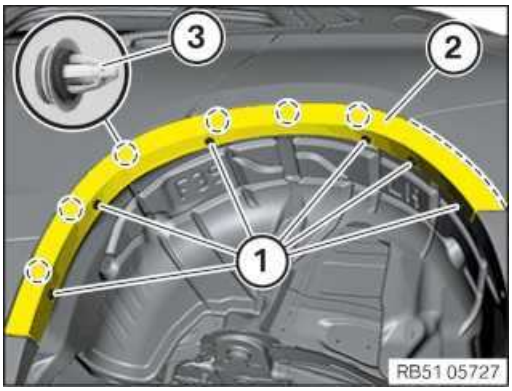
▶ **Removing rear wheel arch trim**

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

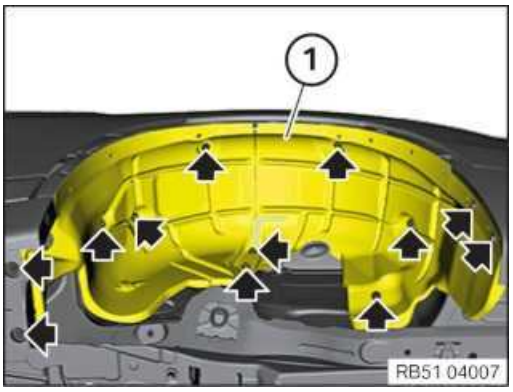
NOTICE

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



- Remove the blind rivets (1).
- Disengage the wheel arch trim (2) from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

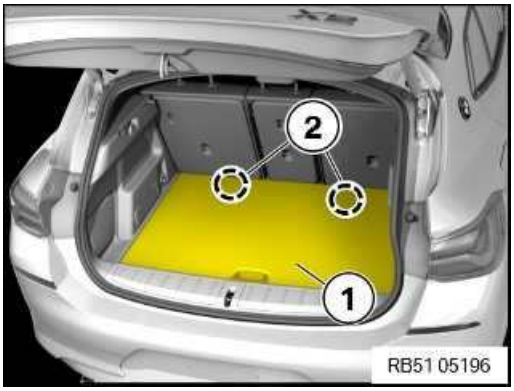
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- Unscrew all bolts and nuts (arrows).
- Carefully feed out and remove the wheel arch cover (2).

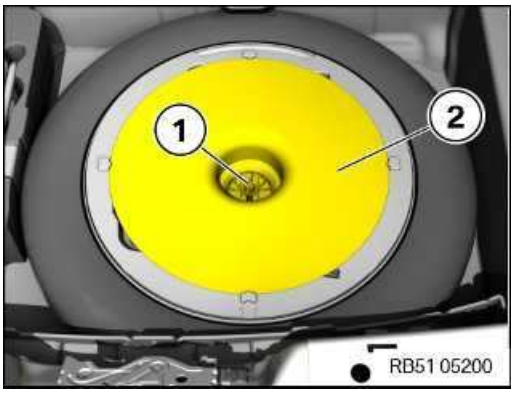
12 – Removing seat bench

▸ **Removing the luggage compartment removable panel**

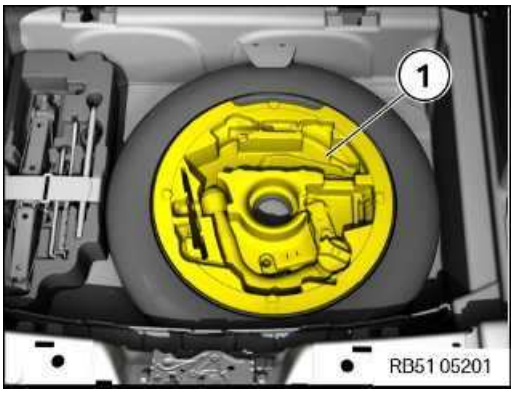


- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

▸ **Removing the compact spare wheel**



- Loosen screw (1).
- Remove the cover (2).



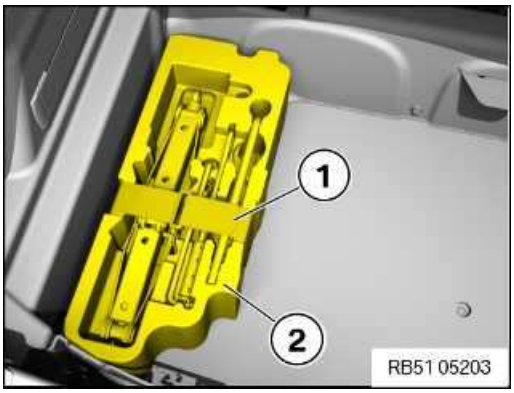
- Remove the oddments tray from the emergency wheel (1).

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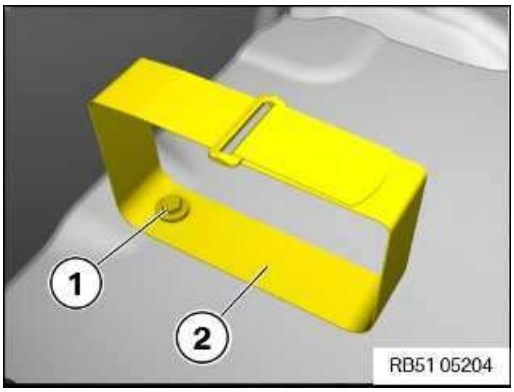
- Remove the emergency wheel (1).

▸ **Remove the tool kit**



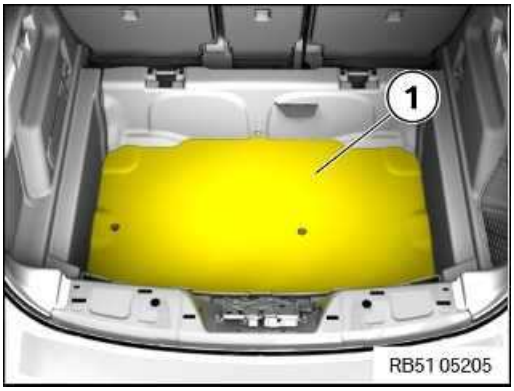
- Open the hook and loop tape (1).
- Remove the tool kit (2).

▸ **Remove the hook and loop tape for the tool kit**



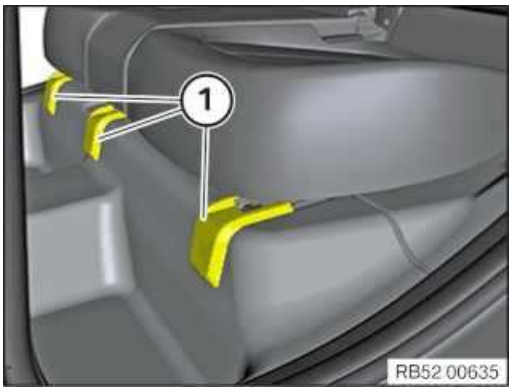
- Loosen screw (1).
- Remove the hook and loop tape (2).

▸ **Removing the luggage compartment floor trim panel**

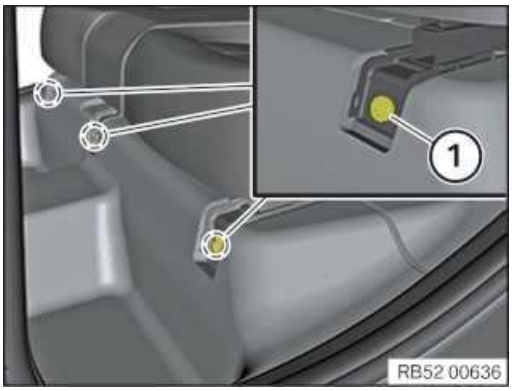


- Remove the luggage compartment floor trim panel (1) upwards.

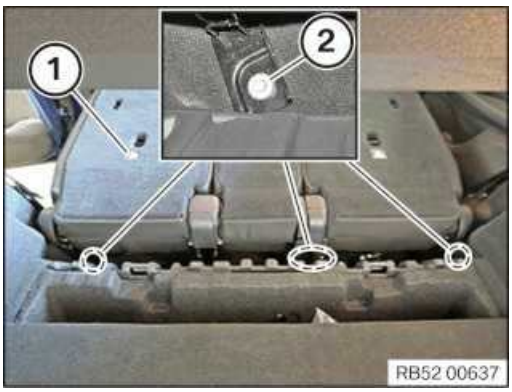
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- Unclip the covers (1) forwards.



- Loosen screws (1).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.
- Fold down rear seat backrest (1) on left and right.
- Loosen screws (2).
- Disconnect existing plug connections where required.

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Lift out rear seat bench with the assistance of a second person.

13 – Disconnect delivery unit

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WARNING

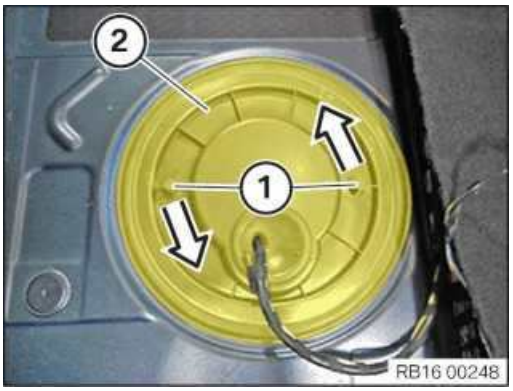
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

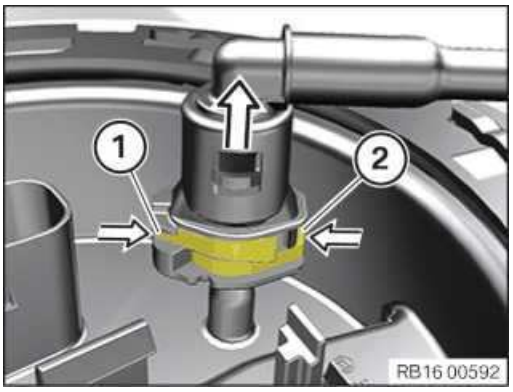
Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Turn the sealing cap for the floor panel (2) at the plastic tabs (1) in the direction of arrow.
- If turning is not possible: Destroy sealing cap of the floor panel (2).
- Remove sealing cap of the floor panel (2).



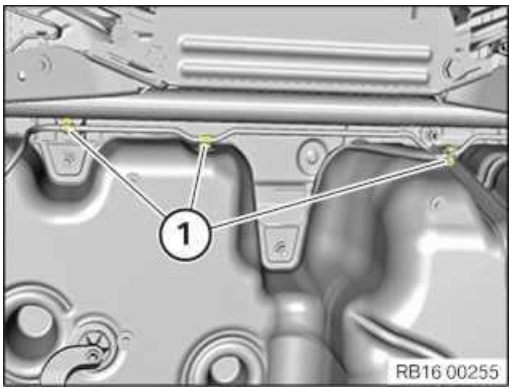
- Disconnect plug connection (1).



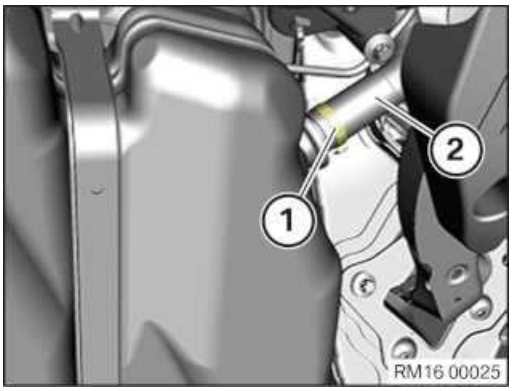
- Push the snap fastener toward the delivery unit.
- Press retaining lugs (1) and (2) pull off the snap fastener in the direction of arrow.

14 – Removing the fuel tank (fuel tank capacity 51 l)

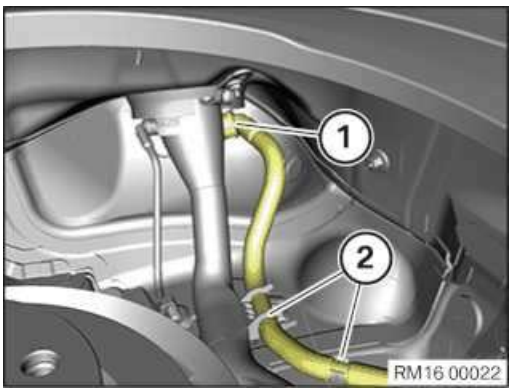
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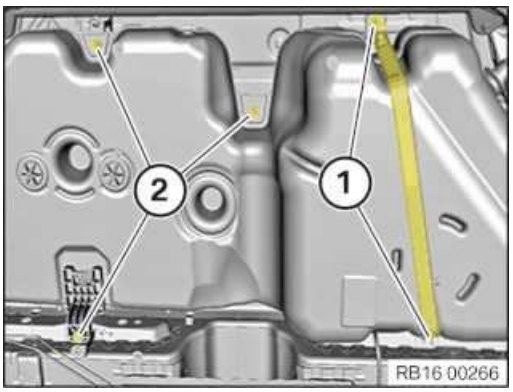
- Detach the tank ventilation line from the bracket (1).



- Loosen hose clamp (1).
- Pull off the rubber hose (2) from the fuel tank in the direction of the arrow.



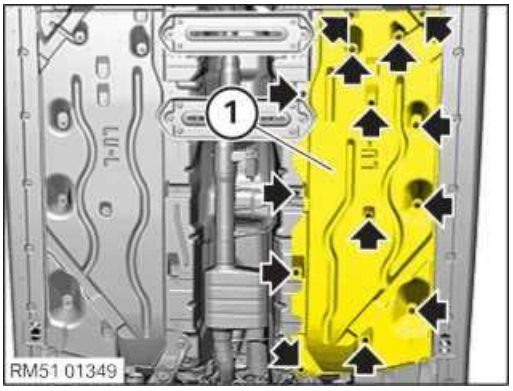
- Unlock and pull off snap fastener (1).
- Detach fuel filler neck breather pipe from brackets (2).



- **Heavily support the fuel tank.**
- Release the screws (1) and remove the retaining strap.
- Release the nuts (2) and lower the fuel tank (3).

  While the fuel tank is being lowered, the fuel filler neck breather pipe must be guided from the wheel arch through the body aperture!

15 – Removing right underbody panelling

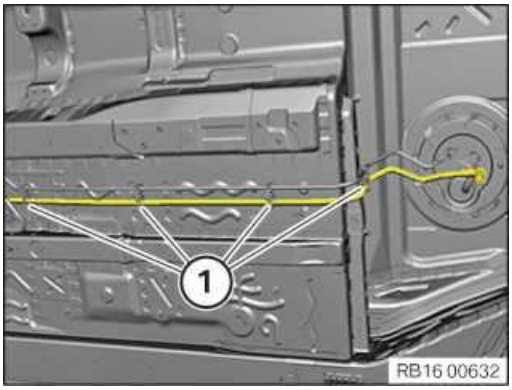


- Unscrew all bolts and nuts (arrows).
- Remove the underbody panelling (1).

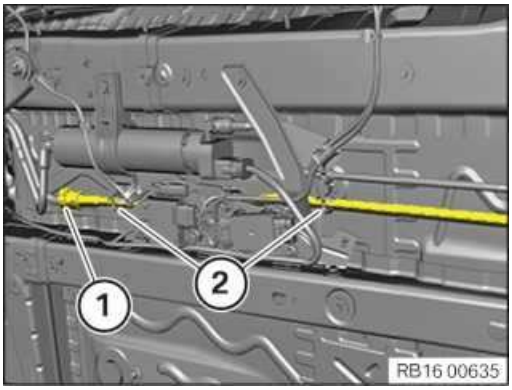
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MAIN WORK

16 – Remove the rear fuel return line

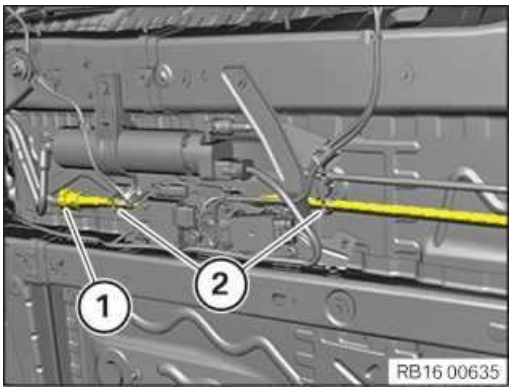


- Unclip the fuel feed line from the brackets (1).

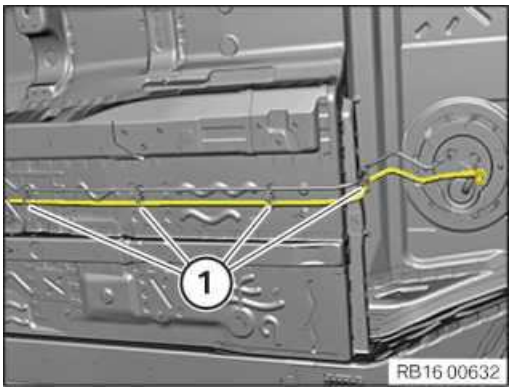


- Unlock and disconnect snap fastener (1).
- Unclip fuel feed lines from the brackets (2).

17 – Install the rear fuel return line



- Position the fuel delivery line .
- Position and connect the snap fastener (1).
- Clip the fuel feed line into the brackets (2).

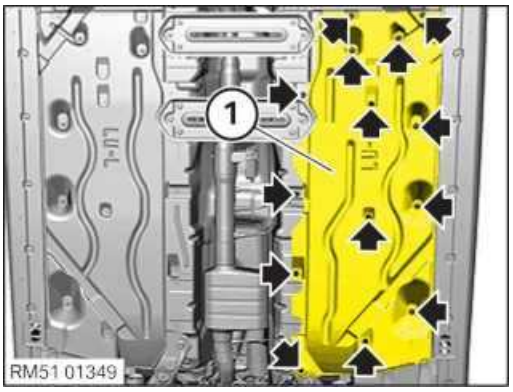


- Clip the fuel feed line into the brackets (1).

POSTPROCESSES

18 – Installing underbody panelling , right

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- Correctly position the underbody panelling (1).
- Tighten all bolts and nuts (arrows).

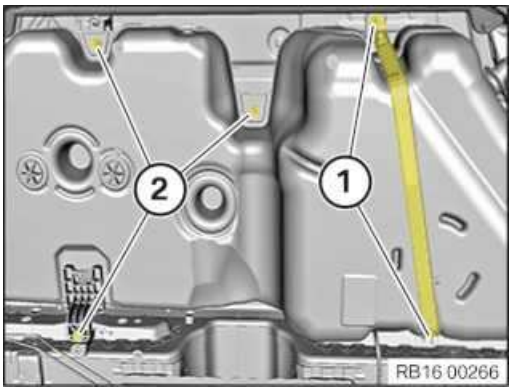
Underbody panelling, side

Hexagon screw		Tightening torque	2,6 Nm

Underbody panelling, side

Plastic nut		Tightening torque	2,6 Nm

19 – Installing fuel tank (fuel tank capacity 51 l)



- **Raise fuel tank.**

  While the fuel tank is being raised, the fuel filler neck breather pipe must be guided through the body aperture into the wheel arch.
- Lift fuel tank up to installation position. When doing this, observe the installation position of the fuel filler neck breather pipe.
- Renew nut (2).

  Parts: Nut
- Fit nut (2) and tighten.

Fuel tank to body

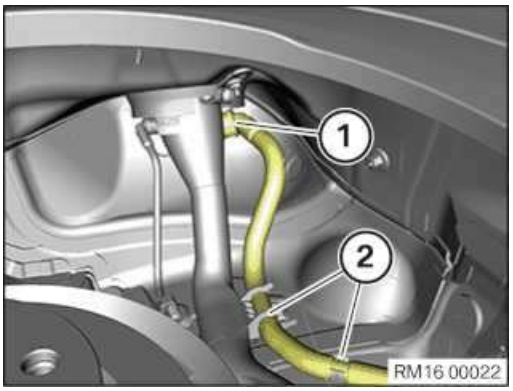
Nut M8	Renew nut.	Tightening torque	19 Nm

- Renew screws (1).

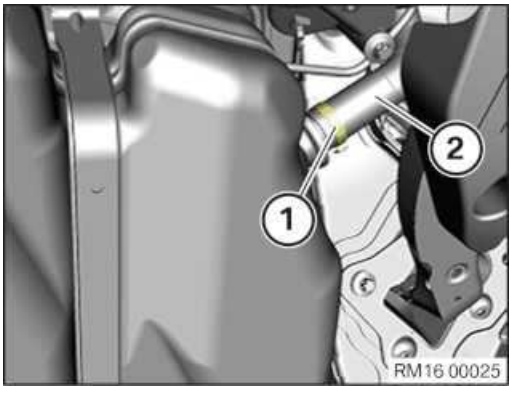
  Parts: Bolts
- Mount the retaining strap and position and tighten the screws (1).

Fuel tank retaining strap to body

M8 screw	Renew screws.	Tightening torque	19 Nm



- Attach the fuel filler neck breather pipe in the brackets (2).
- Position snap fastener (1) and lock.



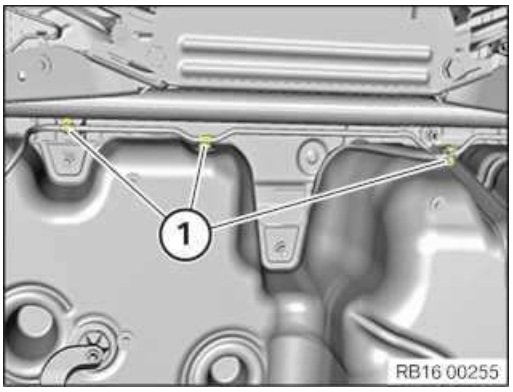
- Mount fuel filling hose (2) on fuel tank in direction of arrow.
- Renew the hose clamp (1).

  Parts: Hose clamp
- Position hose clamp (1) and tighten.

Filling hose on fuel tank

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

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- Attach the tank ventilation line in the brackets (1).

20 – Connect delivery unit

WARNING

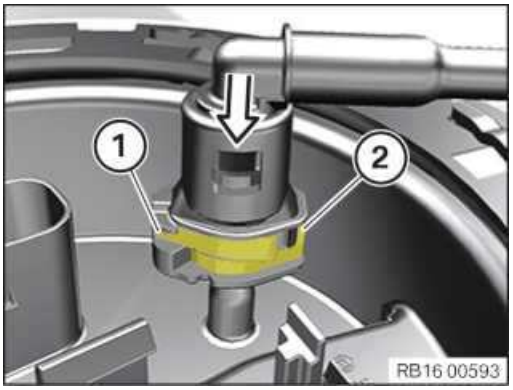
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Check locks of snap fastener for damage, and replace if required.
  The retaining lugs (1) and (2) must be locked.
- Mount the snap fastener and lock.
  The snap fastener must engage audibly and noticeably.
- Ensure correct locking of snap fastener with a tensile test.



- Connect connector (1).

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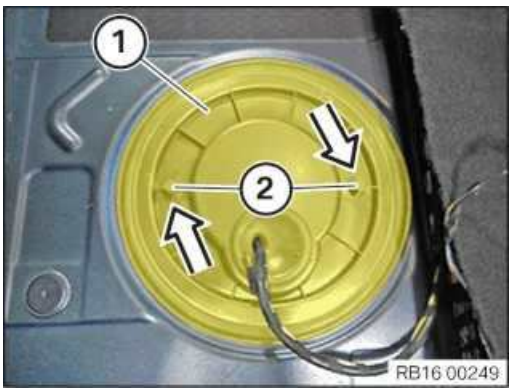
- Renew sealing cap of the floor panel (1).

  Parts: Sealing cap of the floor panel

  The sealing cap of the floor panel must not be reused, as there is the risk of leak during reuse.
- Lubricate seal in the area (1) with lubricant.

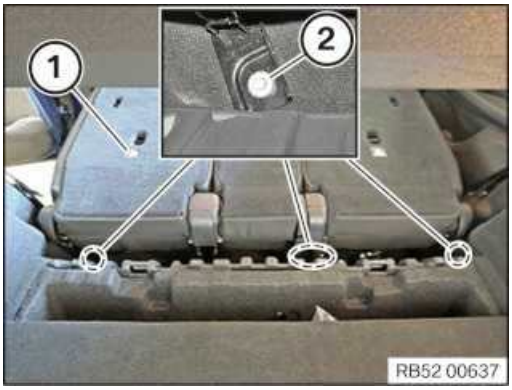
Expendable materials

Lubricants PF1	50 g, Pin	83230309627



- Install sealing cap of the floor panel (1).
- Turn sealing cap of the floor panel (1) on the plastic tabs (2) in the direction of arrow till the limit position and engage.

21 – Install rear seat bench



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.

RISK OF DAMAGE

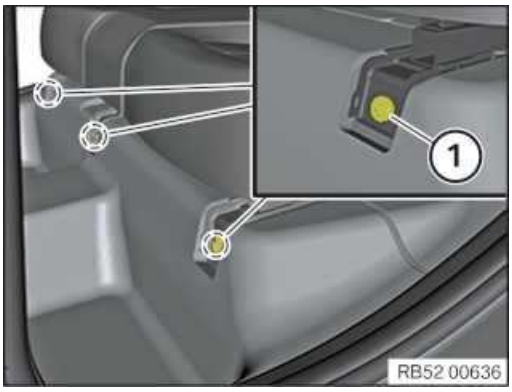
Heavy component.

Heavy components can lead to injury or damage.

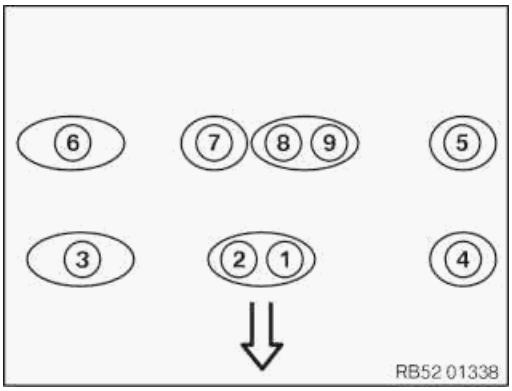
- Remove and install heavy components with the aid of another person/other persons.

- Hoist the rear seat bench into the vehicle and position it with the assistance of an auxiliary person.
- If required, connect the available connectors.
- Screw the bolts (2) in a few turns.

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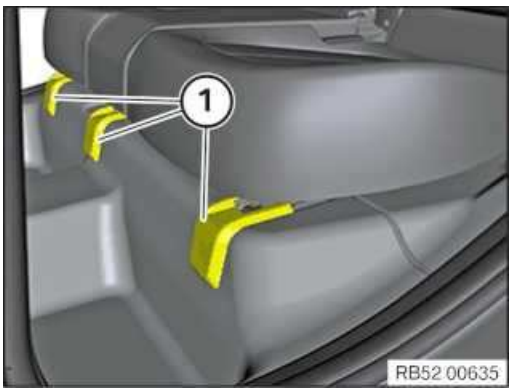
- Screw the bolts (1) in a few turns.



- Tighten screws in the order (1) to (9).

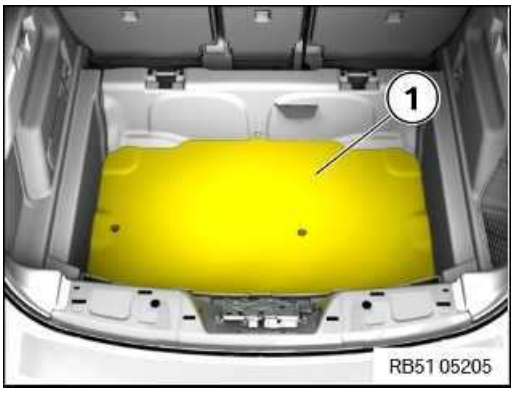
Seat bench to body

Oval-head screw		42 Nm



- Clip in the covers (1).

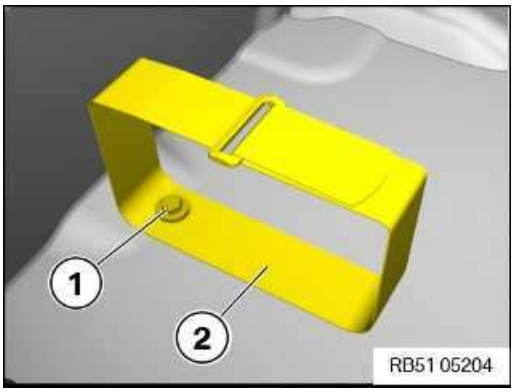
▸ **Installing the luggage compartment floor trim panel**



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

▸ **Inserting the Velcro fastener for the toolkit**

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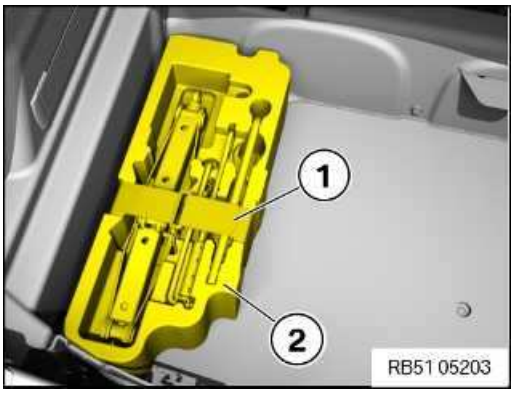


- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

▸ **Install the tool kit**

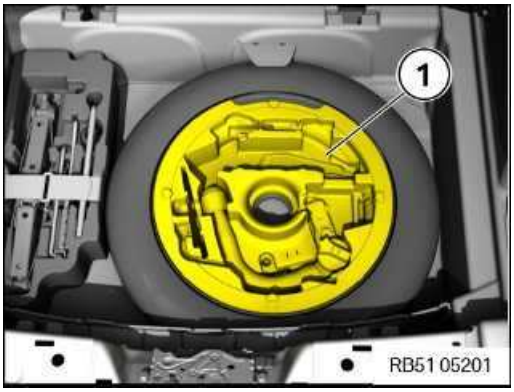


- Install the tool kit (2).
- Close the hook and loop tape (1).

▸ **Install the emergency wheel**

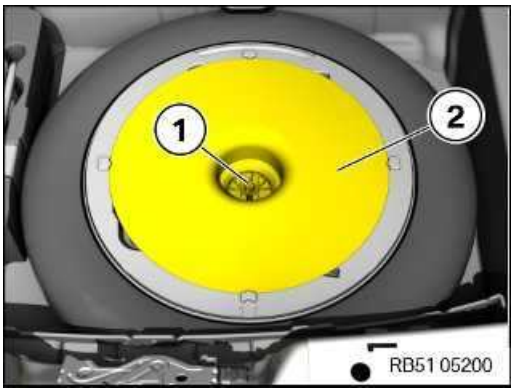


- Insert compact spare wheel(1).



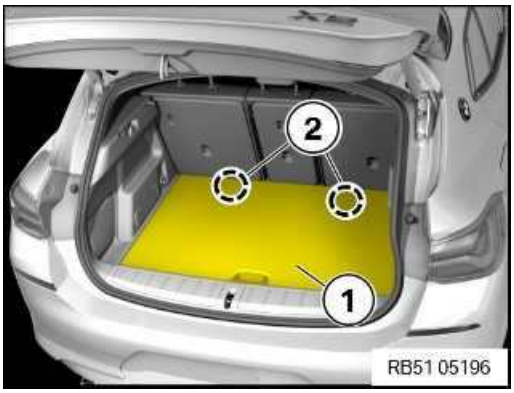
- Insert oddments tray into the compact spare wheel (1).

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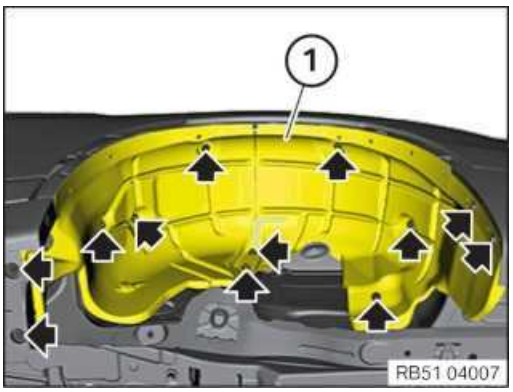
- Insert the lid (2).
- Hand-tighten the bolt (1).

▸ **Installing the luggage compartment removable panel**



- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

22 – Installing the rear wheel arch cover on the right



- Feed in wheel arch cover (1) and correctly position it.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

▸ **Installing the rear wheel arch trim**

TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.

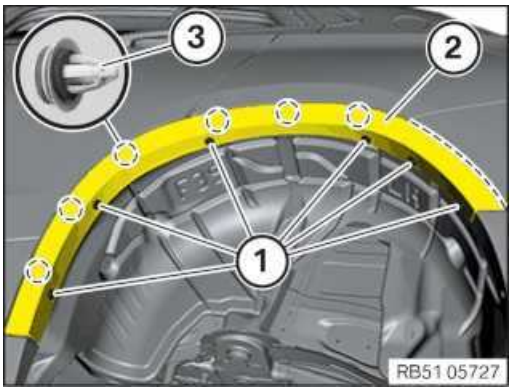
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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

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- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage the wheel arch trim (2) with the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

23 – Installing rear right wheel

▶ **Mounting the wheel**

▷ **Clean the contact surfaces between the brake disc and the wheel rim**



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

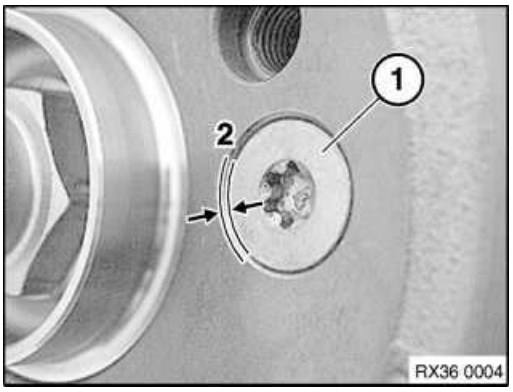
  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).

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- Renew mounting bolt (1).

  Parts: Mounting bolt

- Check that the mounting bolt (1) for the brake disc is securely seated.

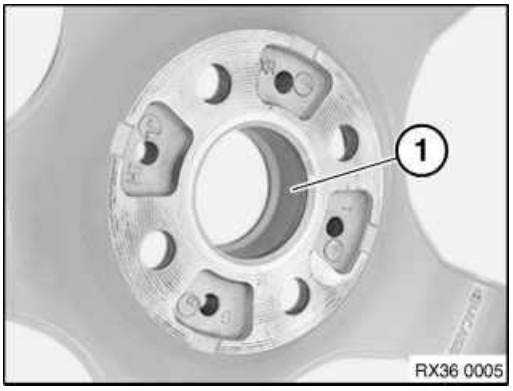
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

24 – Installing the tank covers on the left and right

NOTICE

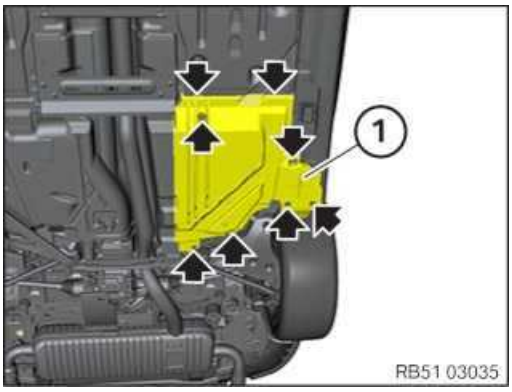
Perform the operations on the left and right side.

NOTICE

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

▸ **Installing tank cover**

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- Install tank cover (1).
- Tighten screws (arrows).

25 – Install propeller shaft.

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to the propeller shaft during installation.

Non-observance of the installation guidelines for the propeller shaft on the rear axle differential may cause severe damage.

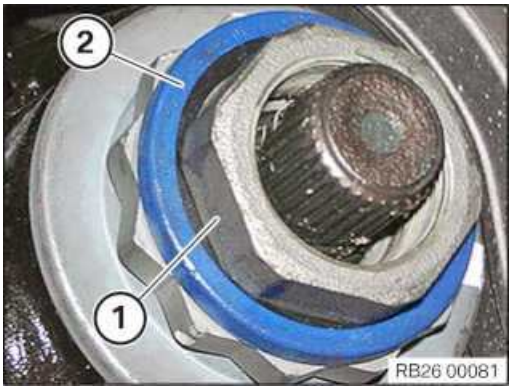
- Always renew the recessed nut on the rear axle differential. Screw locking must be available.
- Strictly observe a minimum hardening time of two hours after having screwed in the recessed nut. The hardening time may be longer at lower temperatures.

RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.



- Renew recessed nut (1).

  Parts: Insert nut
- Renew the retaining clip (2) and the seal.

  Parts: Retaining clip, seal
- Insert the seal with the recessed nut (1) and install.
- Insert the retaining clip (2) and install.
- Make sure that recessed nut (1) is screwed in within 5 min.
- Make sure that the hardening time of **minimum** 2 h for the recessed nut is observed.

  The hardening time must be extended at lower temperatures.

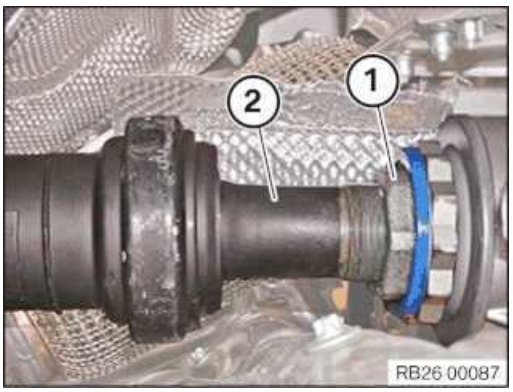
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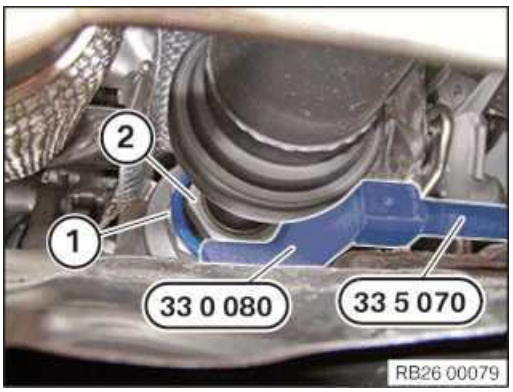
- Insert the propeller shaft (1) and install.
- Always support the propeller shaft (1) with a conventional jack.



- Hand-tighten the bolts (1).



- Push the propeller shaft (2) against the recessed nut (1) up to the limit position.
- Screw the propeller shaft (2) at least 2 thread starts onto the recessed nut (1) by hand.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

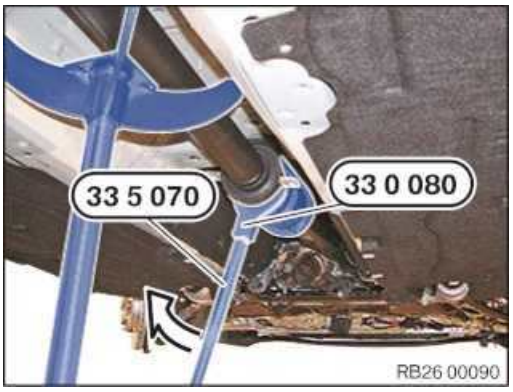
- Do not use the double hexagon head flange nut as counter support.

- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to tighten the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

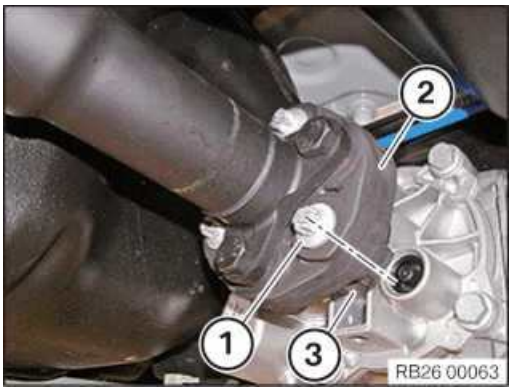
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- Tighten the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

Propeller shaft to transfer box

		Tightening torque	80 Nm



TECHNICAL INFORMATION

Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Assemble the screw connection (1) of the flexible disc (2) and the three-hole flange (3) according to the mark.
- Renew screws (1).

  Parts: Bolts
- Hand-tighten the bolts (1).



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



- Tighten the bolts with the special tools **0 490 504 (00 9 120)** and .

Flexible disc to rear axle final drive

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °



- Tighten the screws (1).

Centre mount to body

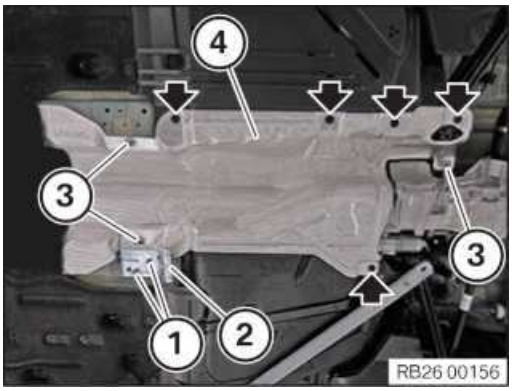
M8		Tightening torque	19 Nm

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- Guide the special too l out between the front and rear propeller shaft and remove.

26 – Installing the rear heat shield



- Insert and install the heat shield (4).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (3).

Heat shield to body

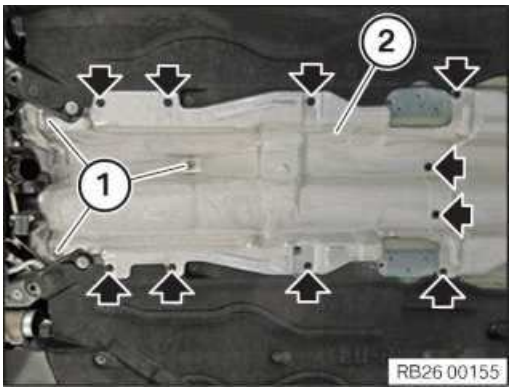
Bolts/nut		Tightening torque	3 Nm

- Insert and install the holder (2).
- Tighten the screws (1).

Bracket to body

M8		Tightening torque	21 Nm

27 – Install the front heat shield



- Insert and install the heat shield (2).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (1).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

28 – Install exhaust system

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

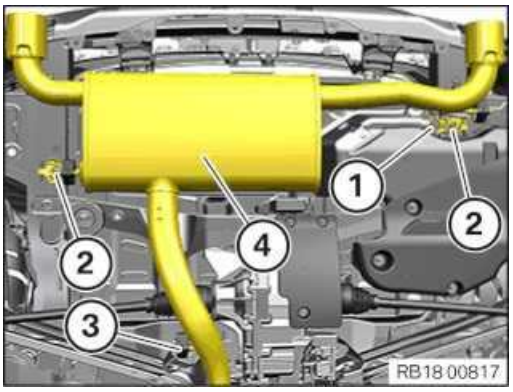
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CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.



- Feed in and install the exhaust system (4) with a second person.
- Renew nuts (2).

  Parts: Nuts
- Tighten nuts (2).

Exhaust system to body

M8	Replace nuts.	Tightening torque	19 Nm

- Tighten down screw (1).

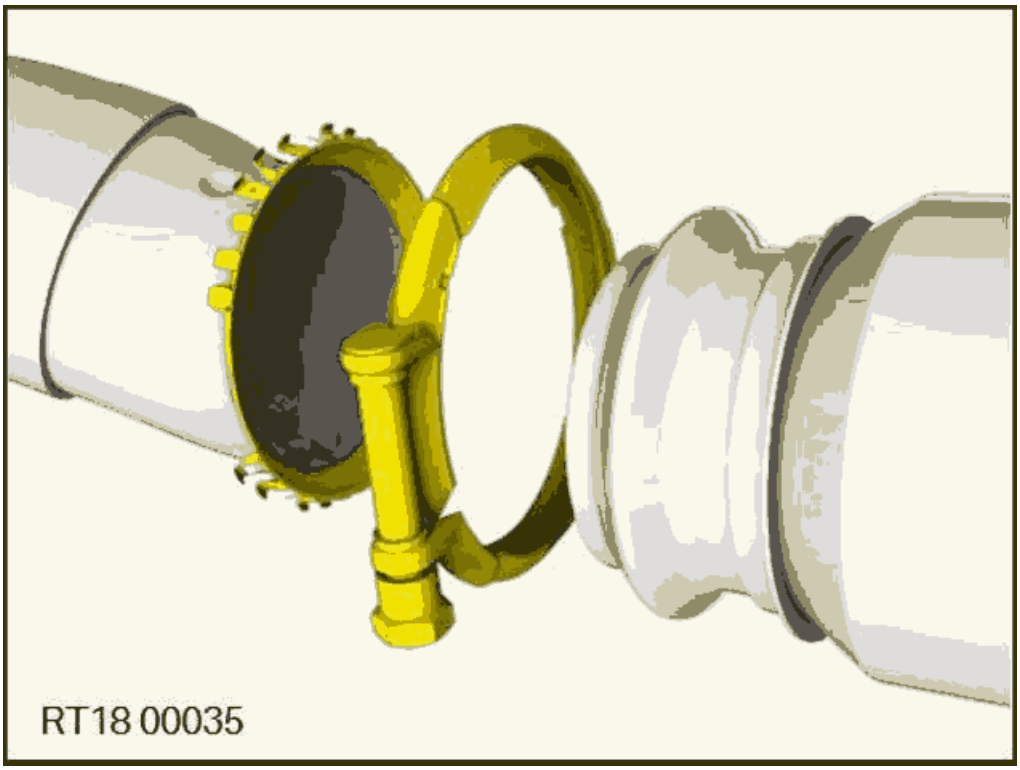
Exhaust bracket on body

Hexagon screw M8x30		Tightening torque	19 Nm

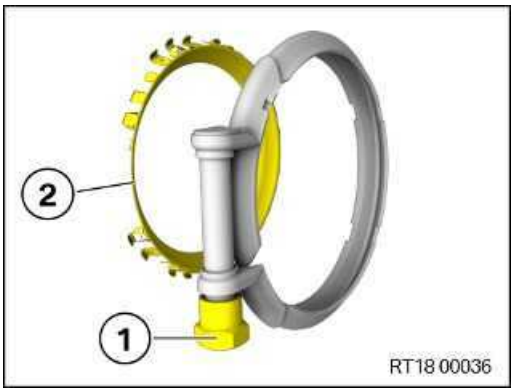
- Check the rubber mount (3) for damage and renew as needed.
- Mount rubber mount (3) on the exhaust system (4).

▸ **Install the V-clip**

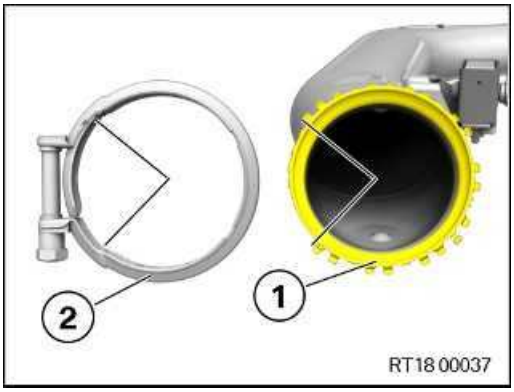
V-band clamp



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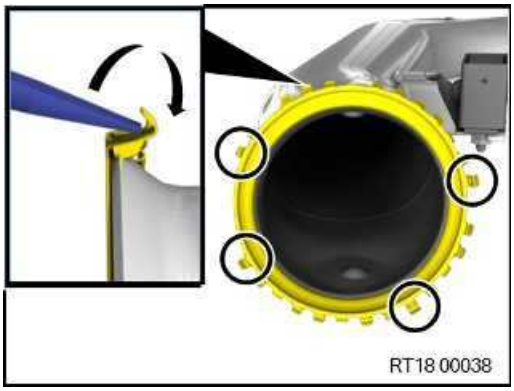


- Unscrew the nut (1) and remove the sealing ring (2).

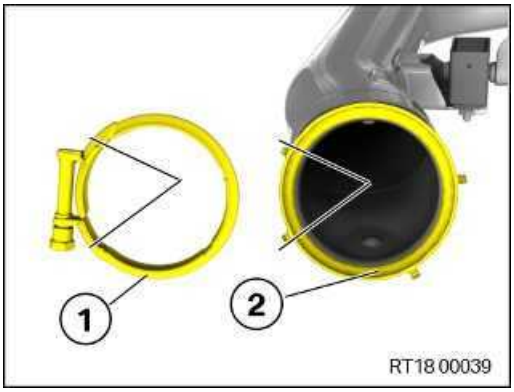


- Renew the V-clip (2).

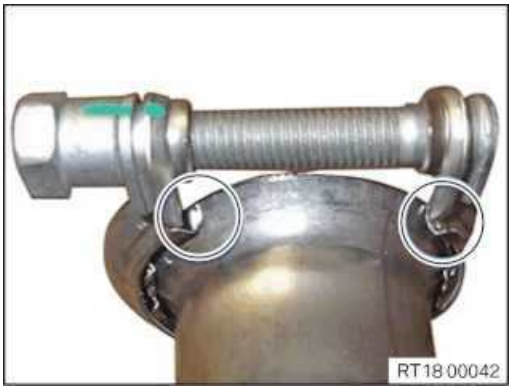
  Parts: V-band clamp
- Mount the sealing ring (1) on the exhaust system.
- Ensure that the sealing ring (1) for the V-clip (2) is positioned correctly.



- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.

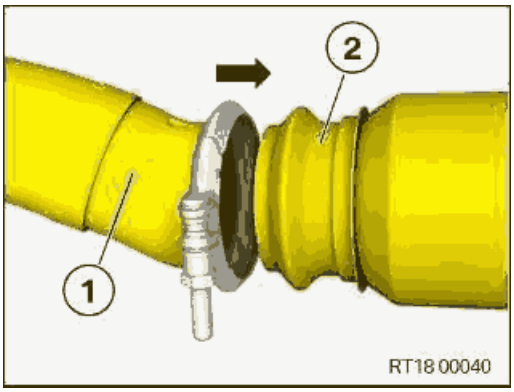


- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).

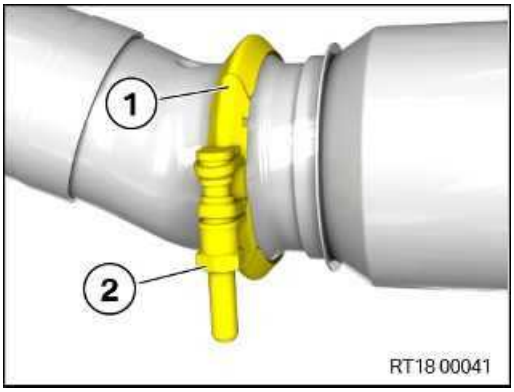


- Make sure that the V-clip rests against the sheet metal tabs after mounting (marks).

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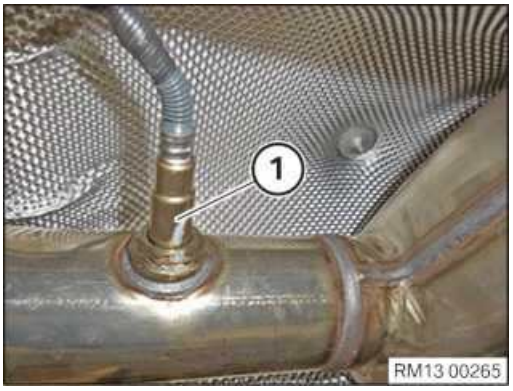
- Connect the exhaust system (1) with the catalytic converter (2) and position correctly.



- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

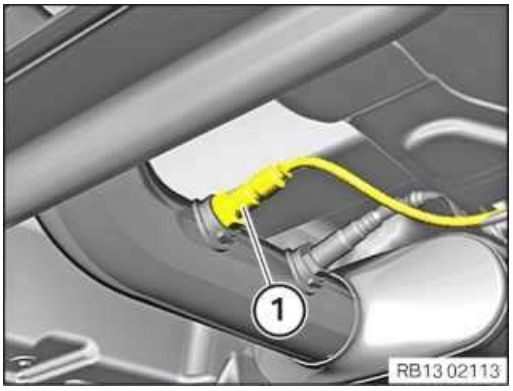
V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm



- Feed in, install and tighten diesel particulate sensor (1).

Diesel particulate sensor to exhaust system

Sensor		Tightening torque	50 Nm



- Feed in, install and tighten nitrogen oxide sensor (1).

Nitrogen oxide sensor downstream of SCR catalytic converter

Sensor		Tightening torque	50 Nm

29 – Install exhaust system

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

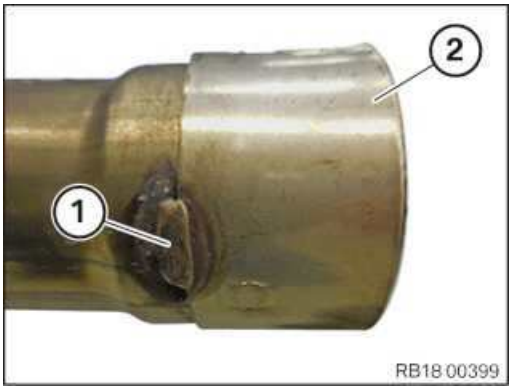
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CAUTION

Swarf resulting from sawing or grinding components.

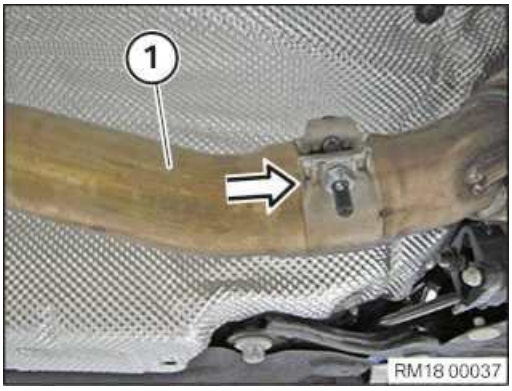
Danger of injury!

- Conduct all work in appropriate personal protective equipment only.
- Wear safety goggles and protective gloves.



- Open the weld seam (1) with a conventional tool.
- Remove the clamp (2).
- If necessary, renew clamp (2).

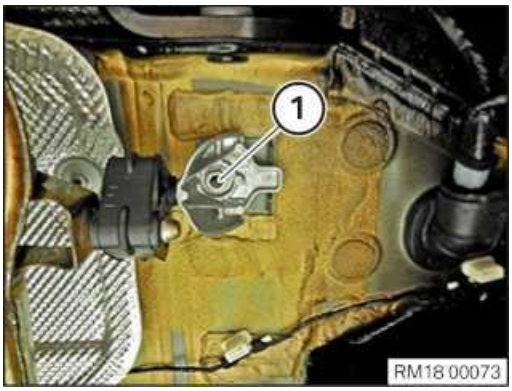
  Parts: Clamp



- Install the exhaust system with the assistance of a second person and connect to the diesel particulate filter.
- Tighten clamp (1).

Exhaust system to diesel particle filter

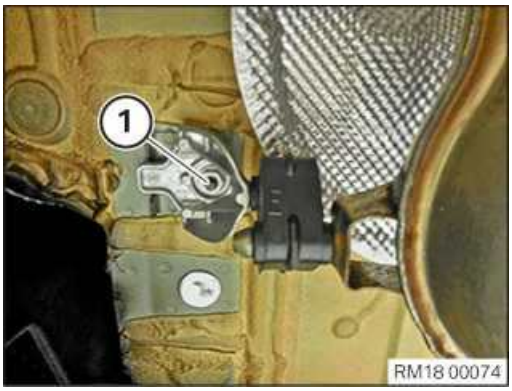
Ribbon cable clamp	Replace clamp		26 Nm



- Tighten the nut (1), left.

Exhaust system suspension to body

Nut M8		19 Nm

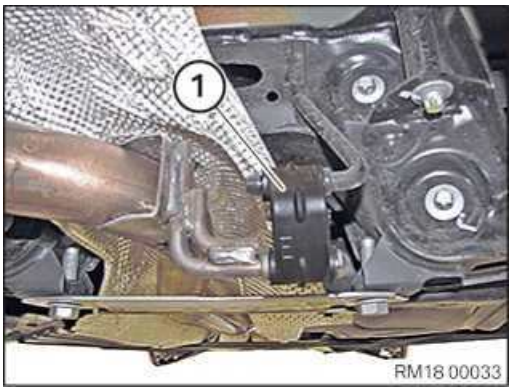


- Tighten the nut (1), right.

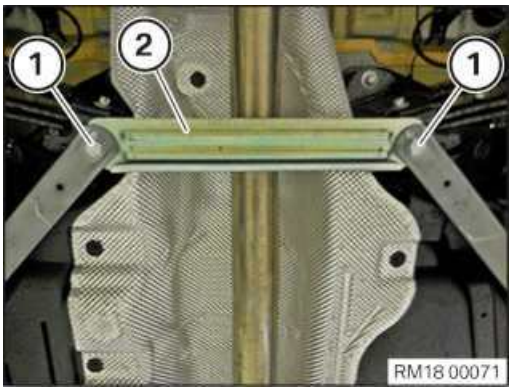
Exhaust system suspension to body

Nut M8		19 Nm

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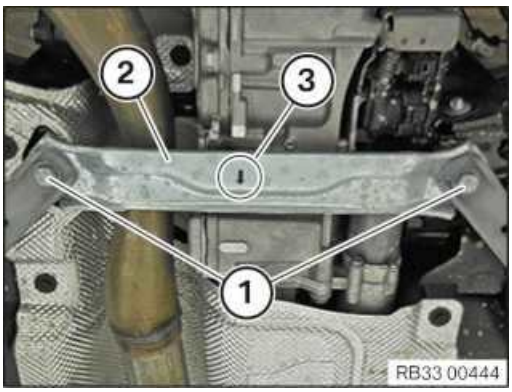
- Check the rubber mounts (1) for damage and renew, if necessary.
- Fasten exhaust system on the rubber mount (1).



- Install the cross-member (2).
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °

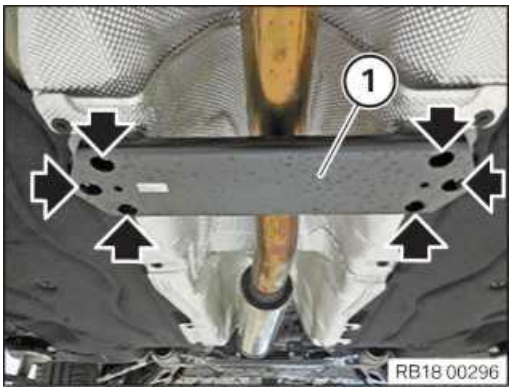


- In **all-wheel drive vehicles:** Ensure that the arrow (3) on the cross-member points in the direction of travel when installing it.
- Position cross-member (2) on the rear axle support.
- Renew screws (1).

  Parts: Bolts(1)
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °



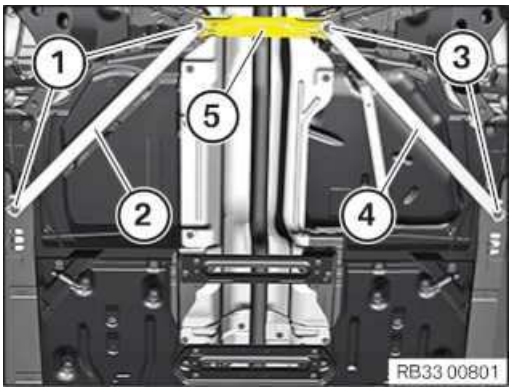
- Insert and install connecting supports (1).
- Tighten screws (arrows).

Front connection carrier to body

M10x18		Tightening torque	56 Nm

30 – Install the cross-member with torsion struts

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- Insert and install the cross-member (5).
- Thread in torsion strut (4) at right and install.
- Renew screws (3).

  Parts: Bolts
- Tighten down screws (3).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

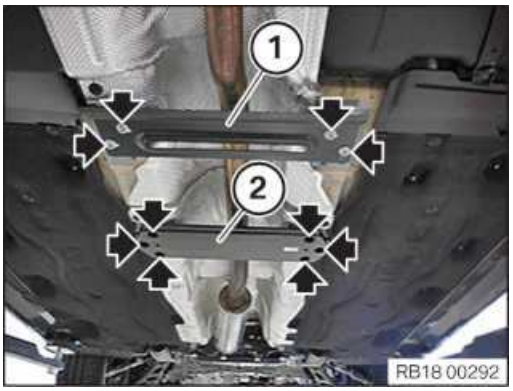
- Guide in and install the left torsion strut (2).
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

31 – Install the connecting support on the tunnel in front and back



- Insert and install connecting supports (2).
- Tighten the screws (arrows) from the connecting support (2).

Front connection carrier to body

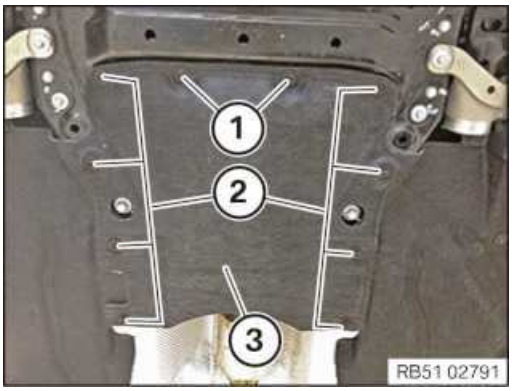
M10x18		Tightening torque	56 Nm

- Insert and install connecting supports (1).
- Tighten the screws (arrows) from the connecting support (1).

Rear connection carrier to body

M8x18		Tightening torque	28 Nm

32 – If installed: Installing underbody protection at rear



- Install the underbody protection (3).
- Tighten down screws (1) and (2).

Underbody protection to body

Screw		Tightening torque	3 Nm

33 – Topping up the fuel tank

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- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and diesel fuel.
- Slide the suction hose (1) of the extractor unit approximately 40 cm into the fuel filler pipe. If necessary, slightly turn the suction hose.
- Fill fuel from suction extractor unit.
- After completing the work and before starting the engine for the first time: fill the fuel tank via the fuel filler pipe with a minimum of 5 l of fuel.

Additional Information

Overview of Tightening Torques

Underbody panelling, side — Used in step 18

Hexagon screw		Tightening torque	2,6 Nm

Underbody panelling, side — Used in step 18

Plastic nut		Tightening torque	2,6 Nm

Fuel tank to body — Used in step 19

Nut M8	Renew nut.	Tightening torque	19 Nm

Fuel tank retaining strap to body — Used in step 19

M8 screw	Renew screws.	Tightening torque	19 Nm

Filling hose on fuel tank — Used in step 19

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

Seat bench to body — Used in step 21

Oval-head screw			42 Nm

Toolkit hook and loop tape to body — Used in step 21

Bolt M6 x 20		Tightening torque	4 Nm

Wheel arch cover to body — Used in step 22

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Brake disc to rear wheel hub — Used in step 23

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub — Used in step 23

M8	Renew screw.	Tightening torque	16 Nm

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Wheel bolts — Used in step 23

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Propeller shaft to transfer box — Used in step 25

		Tightening torque	80 Nm

Flexible disc to rear axle final drive — Used in step 25

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °

Centre mount to body — Used in step 25

M8		Tightening torque	19 Nm

Heat shield to body — Used in step 26 27

Bolts/nut		Tightening torque	3 Nm

Bracket to body — Used in step 26

M8		Tightening torque	21 Nm

Exhaust system to body — Used in step 28

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust bracket on body — Used in step 28

Hexagon screw M8x30		Tightening torque	19 Nm

V-clip to catalytic converter — Used in step 28

V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm

Diesel particulate sensor to exhaust system — Used in step 28

Sensor		Tightening torque	50 Nm

Nitrogen oxide sensor downstream of SCR catalytic converter — Used in step 28

Sensor		Tightening torque	50 Nm

Exhaust system to diesel particle filter — Used in step 29

Ribbon cable clamp	Replace clamp		26 Nm

Exhaust system suspension to body — Used in step 29

Nut M8			19 Nm

Cross-member to rear axle support — Used in step 29

M12	Renew screws.	Tightening torque	100 Nm 90 °

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Front connection carrier to body — Used in step 29

M10x18		Tightening torque	56 Nm

Cross-member/torsion strut to axle support and mounting — Used in step 30

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

Front connection carrier to body — Used in step 31

M10x18		Tightening torque	56 Nm

Rear connection carrier to body — Used in step 31

M8x18		Tightening torque	28 Nm

Underbody protection to body — Used in step 32

Screw		Tightening torque	3 Nm

Overview of Special Tools

0 495 554 (33 5 070) Extension



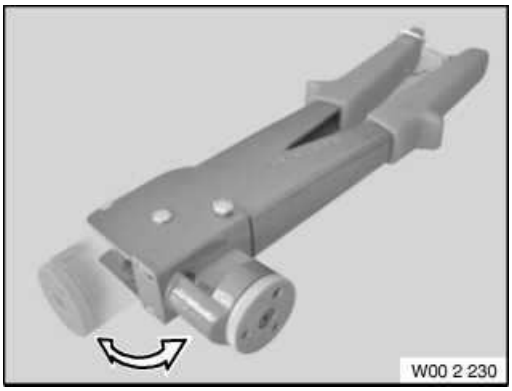
Common — Used in step 9 25

Usage	Pull-out extension for 33 5 040, 33 5 050, 33 5 060.
Included in the tool or work	
Storage location	A18
Replaced by	
In connection with	
SI-Number	01 21 06 (300)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 495 592 (33 5 071)		**Extension** (Extension (1 item)) discontinued, can only be ordered using complete tool	

0 496 521 (00 2 230) Pliers



Common — Used in step 22

Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

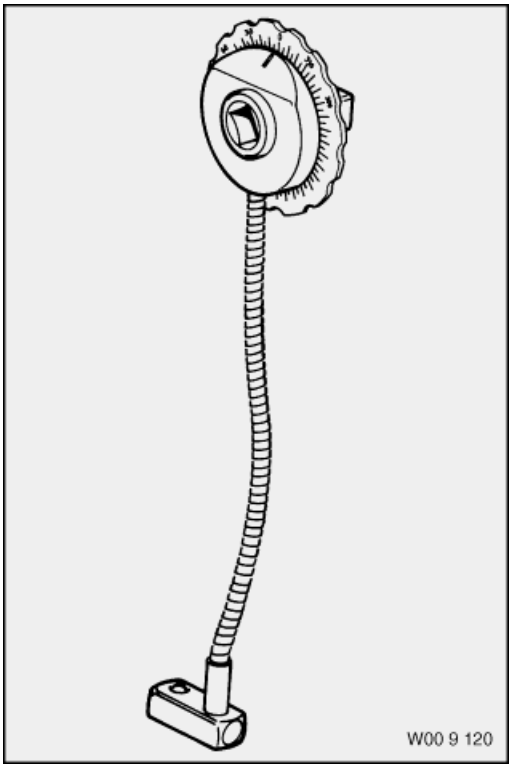
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2 344 011 Tool



Common	Used in step 23
Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

0 490 504 (00 9 120) Torque angle measuring dial



Common	Used in step 25
Usage	For torsion angle adjustment of cylinder head bolts (all engines) And reinforcement plate front axle support E46
Included in the tool or work	
Storage location	A4
Replaced by	
In connection with	
SI-Number	

Replacement tools:

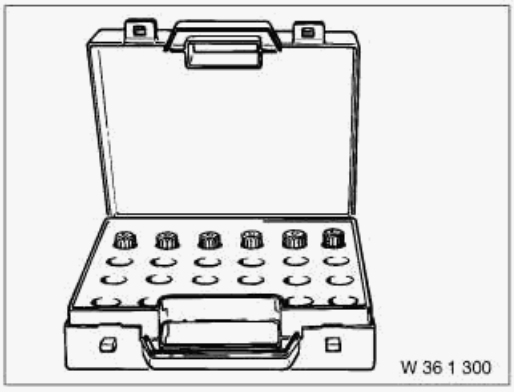
0 495 221 (36 1 323) Wheel stud



Common	Used in step 11
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

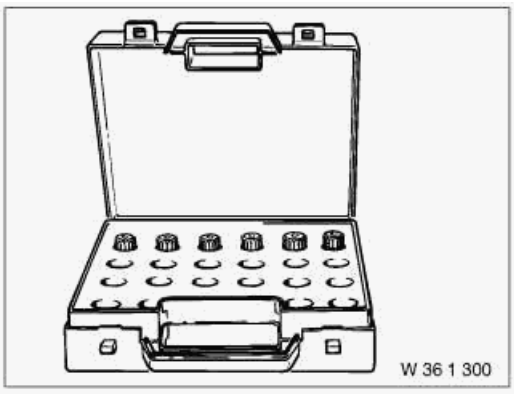
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0 495 224 (36 1 326) Wheel stud



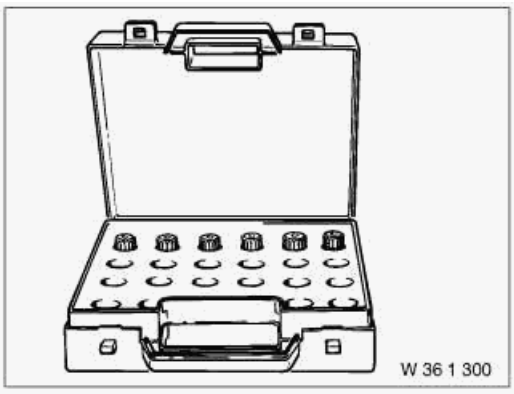
Common	Used in step 11
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 225 (36 1 327) Wheel stud



Common	Used in step 11
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



Common	Used in step 11
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

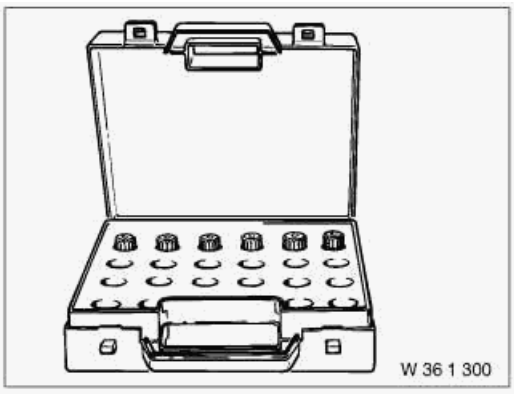
0 495 227 (36 1 329) Wheel stud



Common	Used in step 11
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 228 (36 1 331) Wheel stud



Common	Used in step 11
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 229 (36 1 332) Wheel stud



Common	Used in step 11
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 11
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Links

Operating materials	Used in step
2.0 Grease for wheel centring	23

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16 12 050 Replacing fuel return line, rear

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

PRELIMINARY WORK

1 – Drawing off the fuel tank

WARNING

Contact with hazardous fluids.

Hazardous to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

WARNING

Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

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- Open fuel filler cap.
- Insert special tool into fuel filler neck.

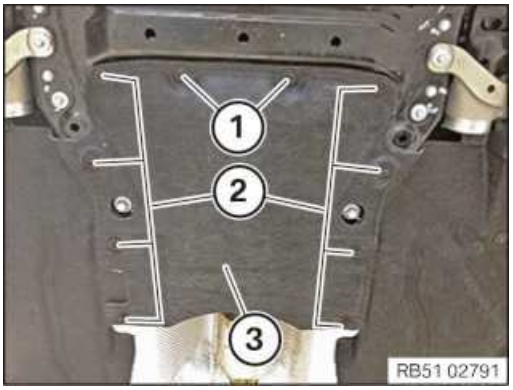
  Special tool has two different diameters: for petrol and for diesel fuel.
- Slide suction hose (1) of the extractor unit through special tool and into the fuel filler pipe. If necessary, slightly turn the suction hose.

  For the extractor unit: refer to BMW Service workshop equipment.

  The insertion length of the suction hose is 125 cm.
- Start engine and allow to run, so that the electric fuel pump is running.

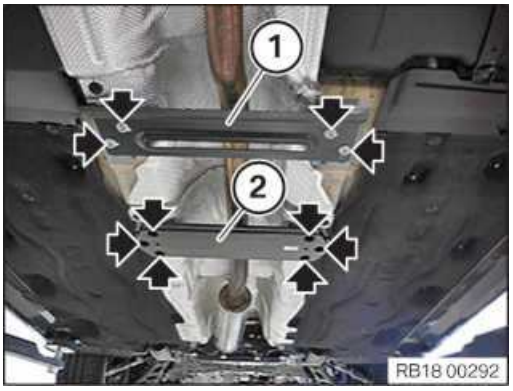
  This will ensure that the fuel is pumped by the suction jet pump from the left-hand side of the fuel tank to the right hand-side.
- Draw off fuel with the extractor unit as far as possible. In the process, track the drawing off of the fuel on the fuel gauge in the instrument cluster.

2 – If installed: Removing rear underbody protection



- Loosen screws (1) and (2).
- Remove underbody protection (3).

3 – Removing the connecting support from the tunnel in front and back



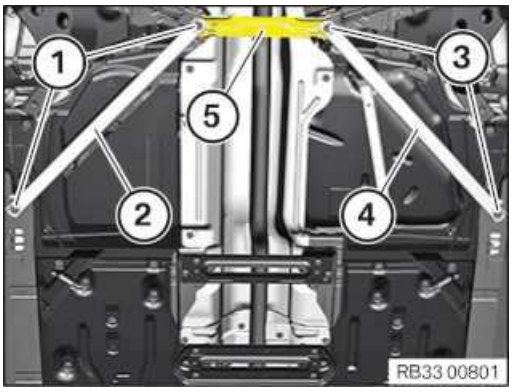
- Unscrew the bolts (arrows) from the connecting support (1).
- Feed out and remove the crossbeam (1).
- Unscrew the bolts (arrows) from the connecting support (2).
- Feed out and remove the crossbeam (2).

4 – Remove the cross strut with the torsion strut

TECHNICAL INFORMATION

Driving without a torsion strut is not permitted.

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- Loosen screws (1).
- Thread out torsion strut (2) at left and remove.
- Loosen screws (3).
- Thread out torsion strut (4) at right and remove.
- Feed out and remove the cross-member (5).

5 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

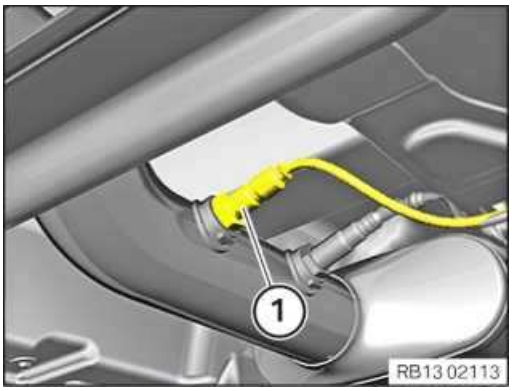
- Perform all work only on components that have cooled down.

CAUTION

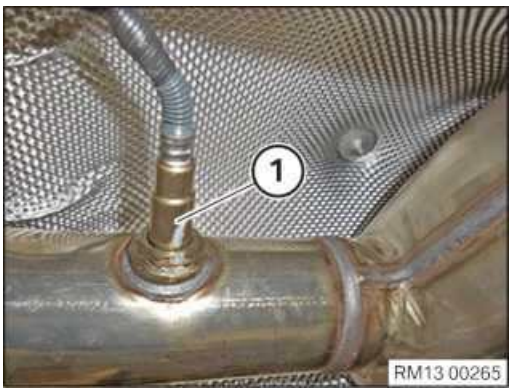
Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

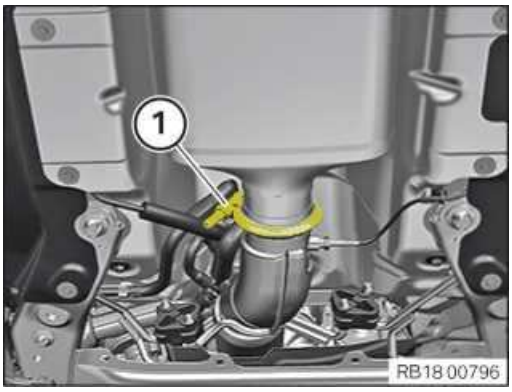


- Release the nitrogen oxide sensor (1) downstream of the SCR catalytic converter, guide it out and set it aside.

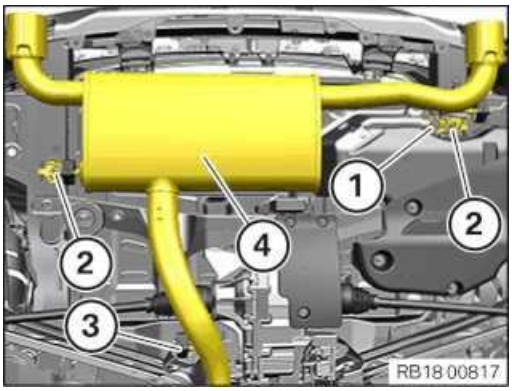


- Release the diesel particulate sensor (1), guide it out and set it aside.

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- Loosen V-band clamp (1).



- Loosen screw (1).
- Loosen nuts (2).
- Release the rubber mount (3) of the exhaust system (4).
- Lower and guide out the exhaust system (4) with assistance of a second person and remove it.

6 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

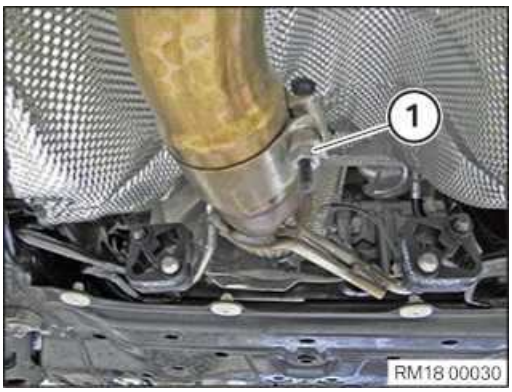
- Perform all work only on components that have cooled down.

CAUTION

Heavy component.

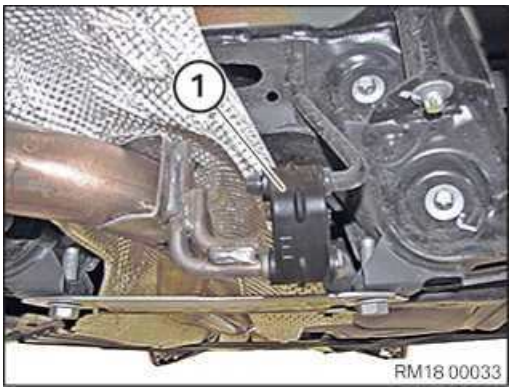
Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

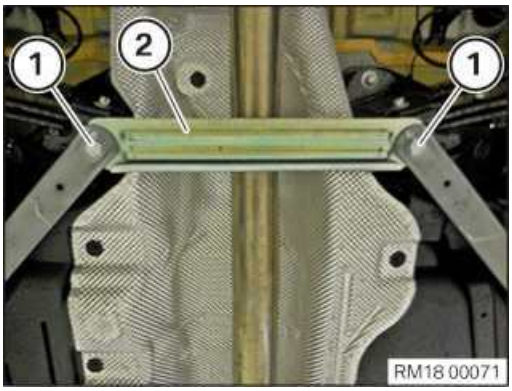


- Unfasten clamp (1).

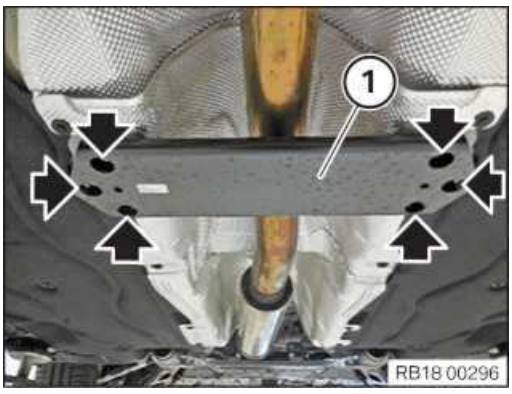
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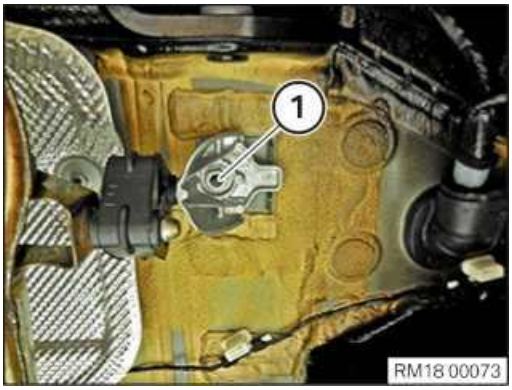
- Spray rubber mount (1) with lubricant and pull off the exhaust system.



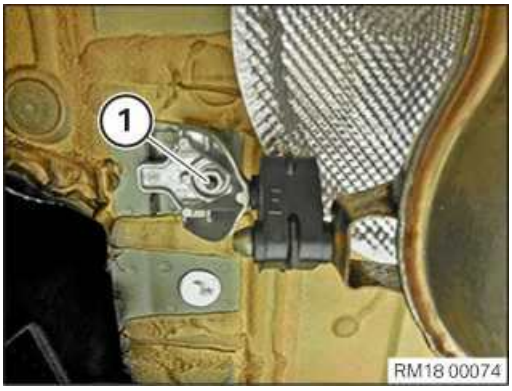
- Loosen screws (1).
- Feed out and remove the cross-member (2).



- Remove screws (arrows).
- Remove the connecting support (1).



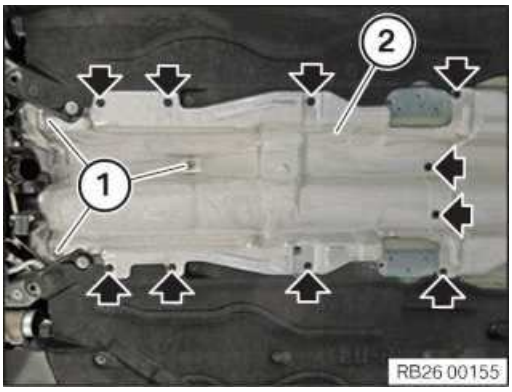
- Release the left-hand nut (1).



- Release the right-hand nut (1).
- Lower and remove exhaust system with assistance of a second person.

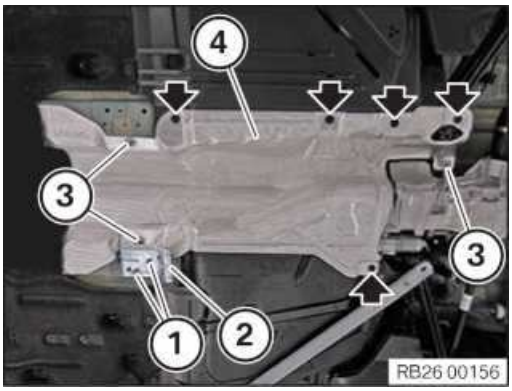
7 – Remove front heat shield

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- Remove screws (arrows).
- Loosen nuts (1).
- Guide the heat shield (2) out and remove it.

8 – Remove heat shield at rear.



- Loosen screws (1).
- Guide out and remove holder (2).
- Remove screws (arrows).
- Loosen nuts (3).
- Guide the heat shield (4) out and remove it.

9 – Remove propeller shaft

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

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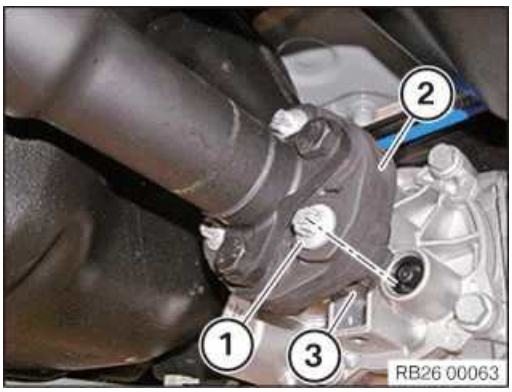
- Install the special too l between the front and rear propeller shaft.
- Make sure that the arrows on the special tool point forward in the direction of travel.



- Always support the propeller shaft (1) with a conventional jack.



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



TECHNICAL INFORMATION

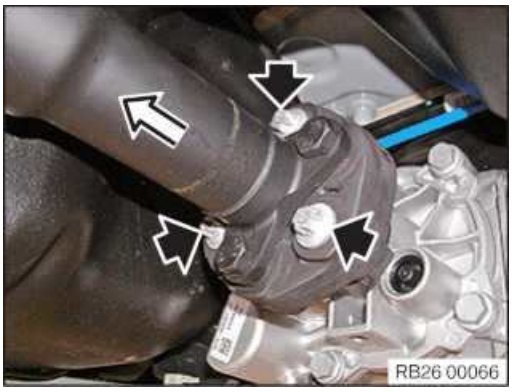
Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Mark the installation position of the screw connection (1), the flexible disc (2) and the three-hole flange (3) on the same level.
- Loosen the screw connection (1).

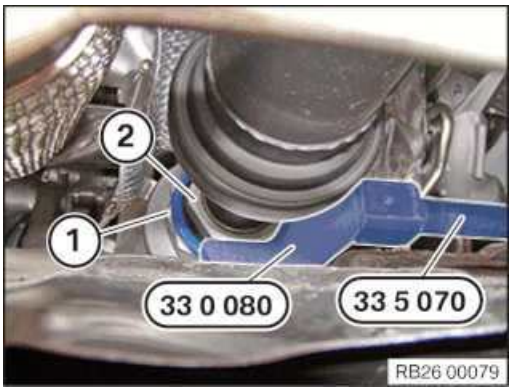


- Loosen screws (1).

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- Remove screws (arrows).
- Guide the propeller shaft out in the direction of the arrow and set it aside.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.

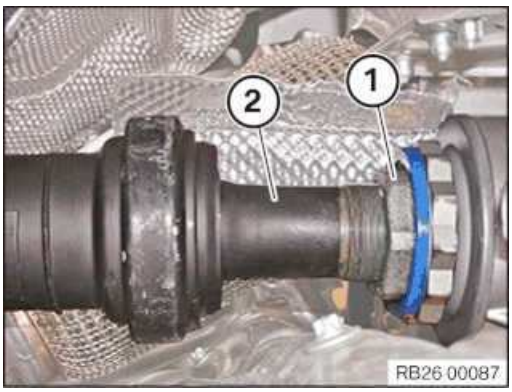
- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to detach the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

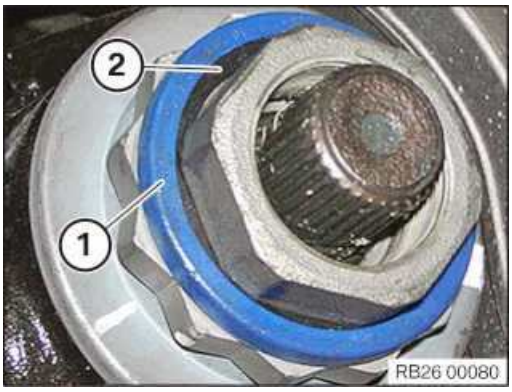


- Release the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

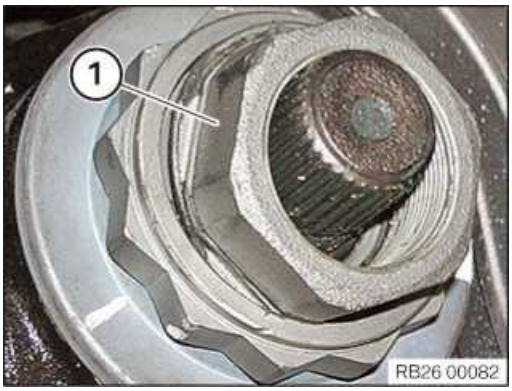


- Thread the propeller shaft (2) out of the recessed nut (1) and remove.

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- Thread the retaining clip (1) and the seal (2) out and remove.



- Thread out and remove the recessed nut (1).

10 – Removing the tank covers on the left and right

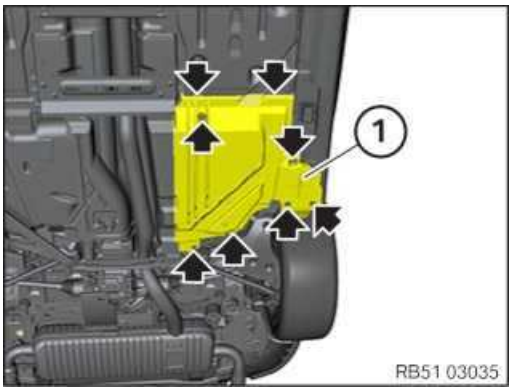
NOTICE

Perform the operations on the left and right side.

NOTICE

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

▸ **Removing the tank cover**



- Remove screws (arrows).
- Remove the tank cover (1).

11 – Remove right rear wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

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NOTICE

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

▶ **Removing the rear right wheel**

▷ **Removing the wheel**



- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

◁

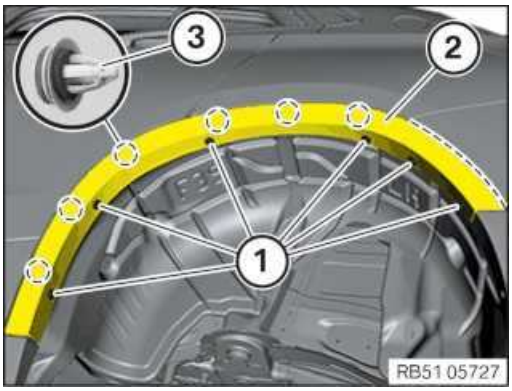
▶ **Removing rear wheel arch trim**

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

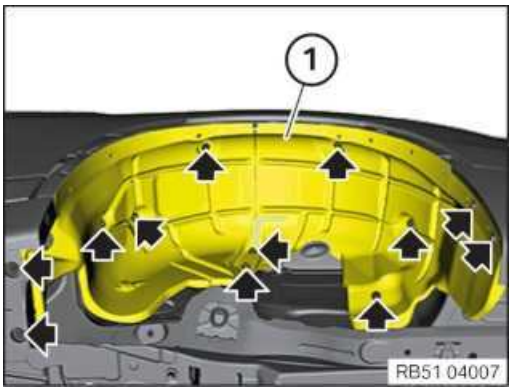
NOTICE

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



- Remove the blind rivets (1).
- Disengage the wheel arch trim (2) from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

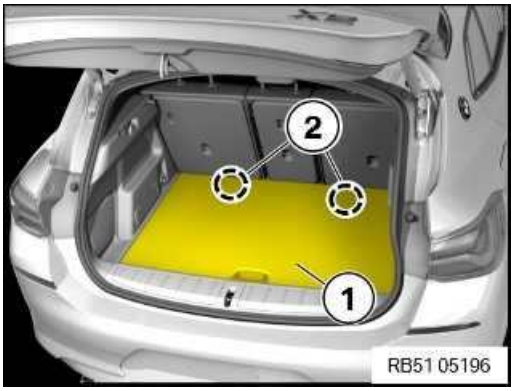
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- Unscrew all bolts and nuts (arrows).
- Carefully feed out and remove the wheel arch cover (2).

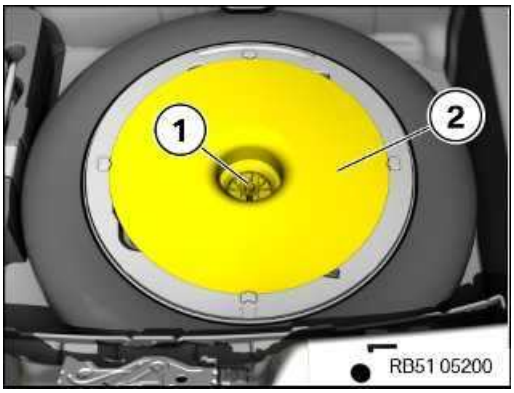
12 – Removing seat bench

▸ **Removing the luggage compartment removable panel**

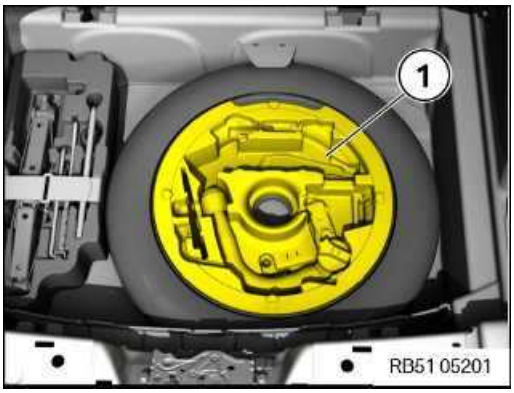


- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

▸ **Removing the compact spare wheel**



- Loosen screw (1).
- Remove the cover (2).



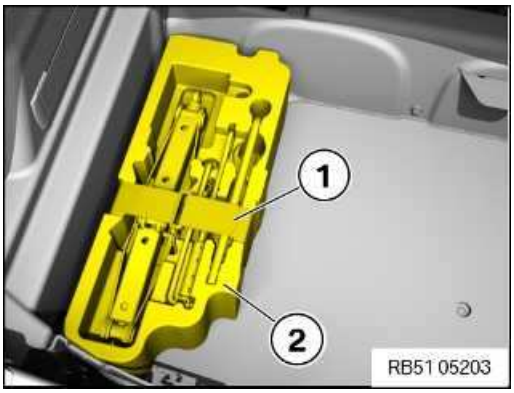
- Remove the oddments tray from the emergency wheel (1).

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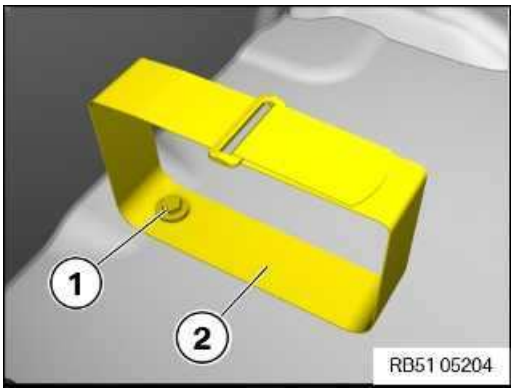
- Remove the emergency wheel (1).

▸ **Remove the tool kit**



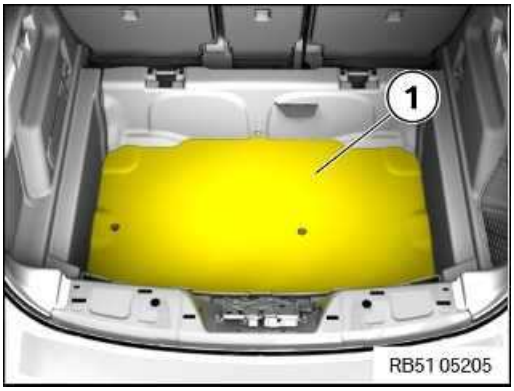
- Open the hook and loop tape (1).
- Remove the tool kit (2).

▸ **Remove the hook and loop tape for the tool kit**



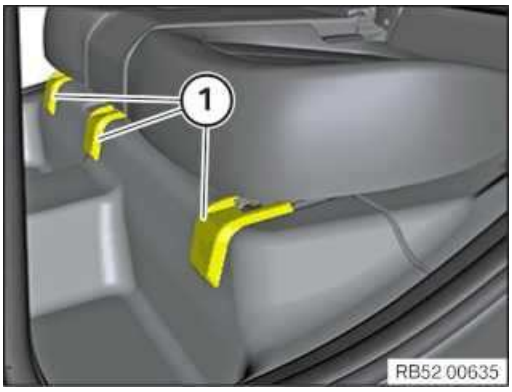
- Loosen screw (1).
- Remove the hook and loop tape (2).

▸ **Removing the luggage compartment floor trim panel**

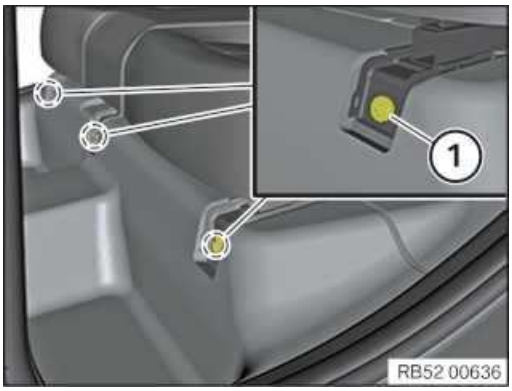


- Remove the luggage compartment floor trim panel (1) upwards.

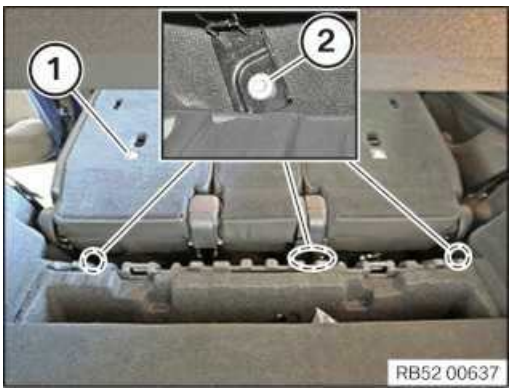
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- Unclip the covers (1) forwards.



- Loosen screws (1).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.
- Fold down rear seat backrest (1) on left and right.
- Loosen screws (2).
- Disconnect existing plug connections where required.

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Lift out rear seat bench with the assistance of a second person.

13 – Disconnect delivery unit

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WARNING

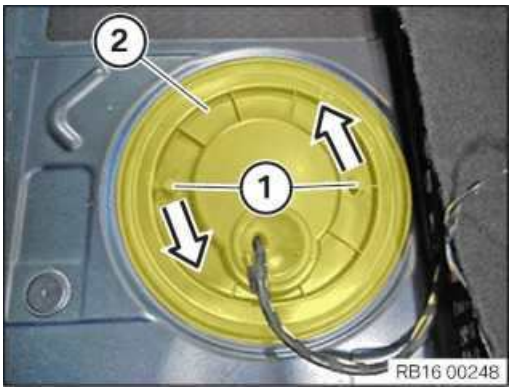
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

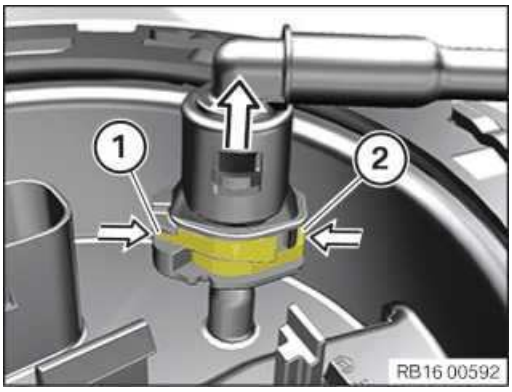
Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Turn the sealing cap for the floor panel (2) at the plastic tabs (1) in the direction of arrow.
- If turning is not possible: Destroy sealing cap of the floor panel (2).
- Remove sealing cap of the floor panel (2).



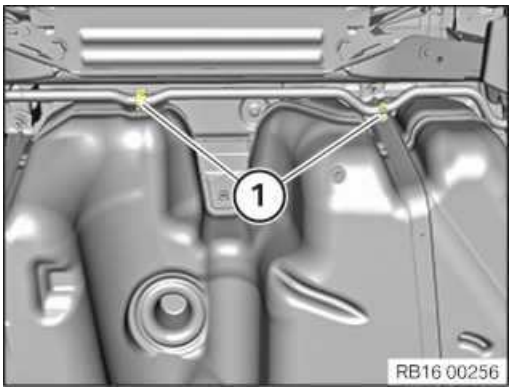
- Disconnect plug connection (1).



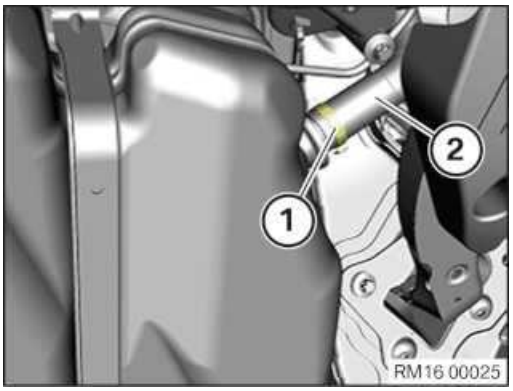
- Push the snap fastener toward the delivery unit.
- Press retaining lugs (1) and (2) pull off the snap fastener in the direction of arrow.

14 – Removing the fuel tank (fuel tank capacity 61 l)

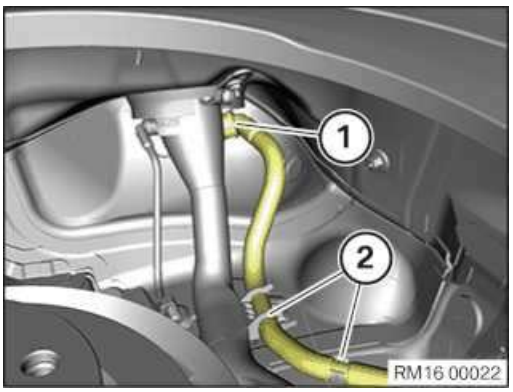
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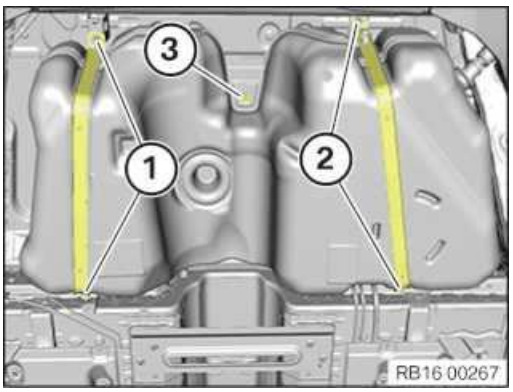
- Detach the tank ventilation line from the bracket (1).



- Loosen hose clamp (1).
- Pull off the rubber hose (2) from the fuel tank in the direction of the arrow.



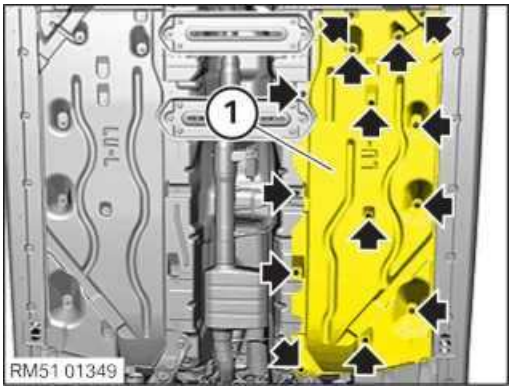
- Unlock and pull off snap fastener (1).
- Detach fuel filler neck breather pipe from brackets (2).



- **Heavily support the fuel tank.**
- Release the screws (1) and (2) and remove the retaining straps.
- Unscrew the nut (3) and lower the fuel tank (3).

  While the fuel tank is being lowered, the fuel filler neck breather pipe must be guided from the wheel arch through the body aperture!

15 – Removing right underbody panelling

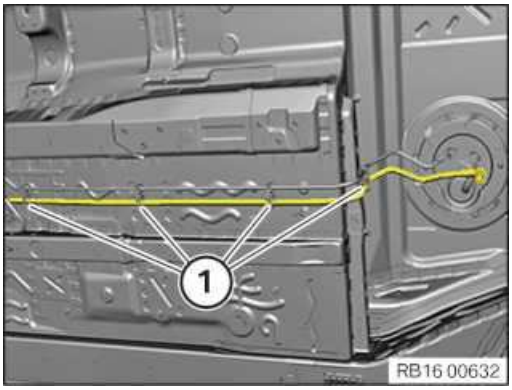


- Unscrew all bolts and nuts (arrows).
- Remove the underbody panelling (1).

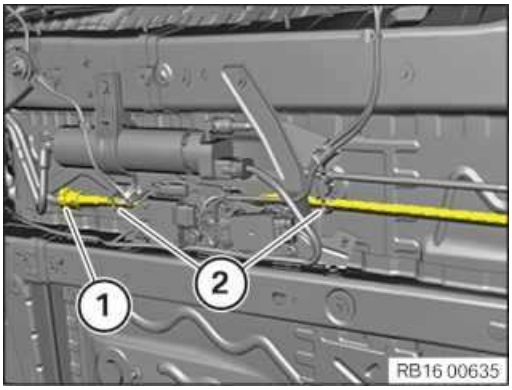
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MAIN WORK

16 – Remove the rear fuel return line

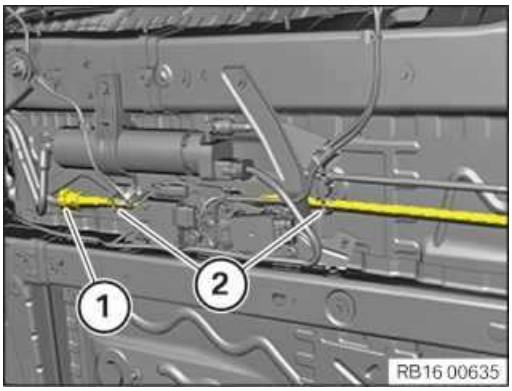


- Unclip the fuel feed line from the brackets (1).

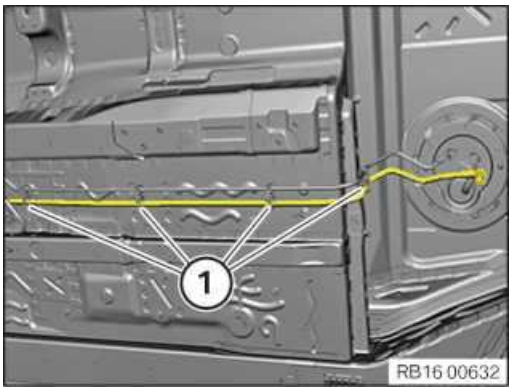


- Unlock and disconnect snap fastener (1).
- Unclip fuel feed lines from the brackets (2).

17 – Install the rear fuel return line



- Position the fuel delivery line .
- Position and connect the snap fastener (1).
- Clip the fuel feed line into the brackets (2).

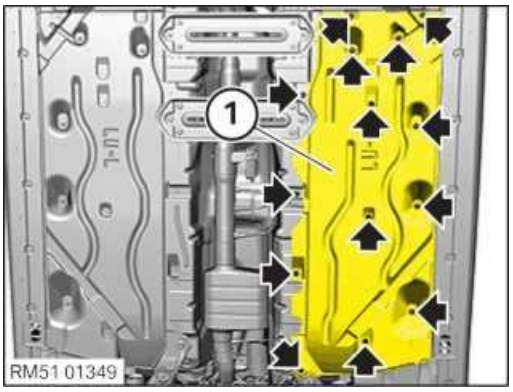


- Clip the fuel feed line into the brackets (1).

POSTPROCESSES

18 – Installing underbody panelling , right

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- Correctly position the underbody panelling (1).
- Tighten all bolts and nuts (arrows).

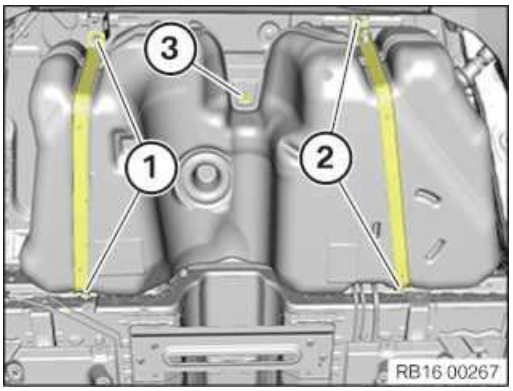
Underbody panelling, side

Hexagon screw		Tightening torque	2,6 Nm

Underbody panelling, side

Plastic nut		Tightening torque	2,6 Nm

19 – Install fuel tank (fuel tank capacity 61 l)



- **Raise fuel tank.**

  While the fuel tank is being raised, the fuel filler neck breather pipe must be guided through the body aperture into the wheel arch!
- Lift fuel tank up to installation position. When doing this, observe the installation position of the fuel filler neck breather pipe.
- Renew nut (3).

  Parts: Nut
- Fit nut (2) and tighten.

Fuel tank to body

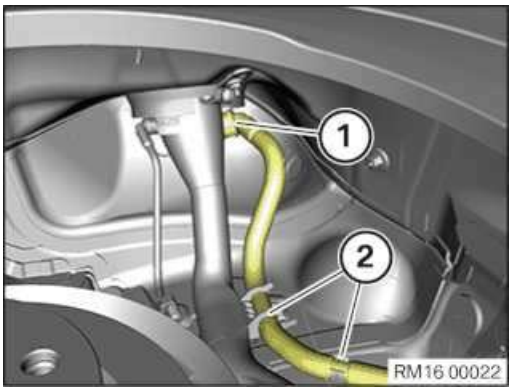
Nut M8	Renew nut.	Tightening torque	19 Nm

- Renew screws (1) and (2).

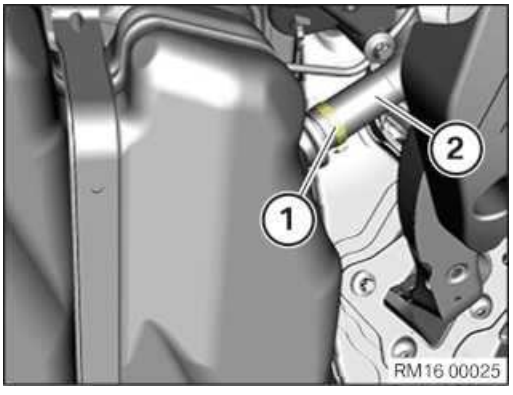
  Parts: Bolts
- Mount the retaining straps and position and tighten the screws (1) and (2).

Fuel tank retaining strap to body

M8 screw	Renew screws.	Tightening torque	19 Nm



- Attach the fuel filler neck breather pipe in the brackets (2).
- Position snap fastener (1) and lock.



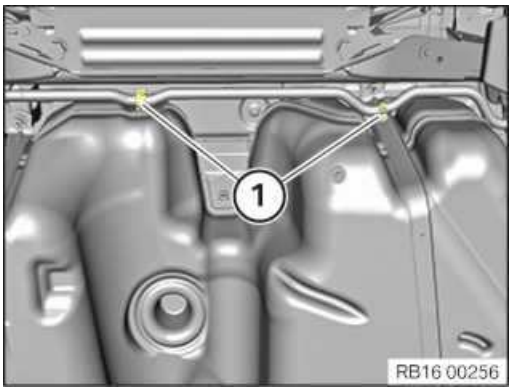
- Mount fuel filling hose (2) on fuel tank in direction of arrow.
- Renew the hose clamp (1).

  Parts: Hose clamp
- Position hose clamp (1) and tighten.

Filling hose on fuel tank

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

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- Attach the tank ventilation line in the brackets (1).

20 – Connect delivery unit

WARNING

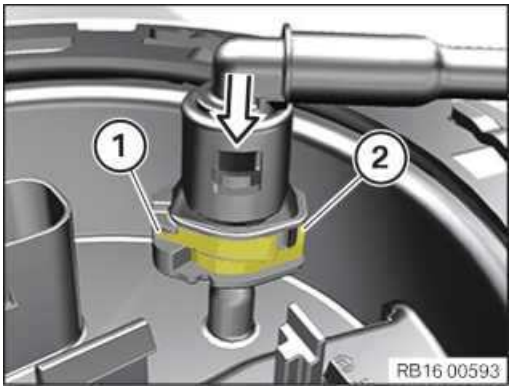
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Check locks of snap fastener for damage, and replace if required.
  The retaining lugs (1) and (2) must be locked.
- Mount the snap fastener and lock.
  The snap fastener must engage audibly and noticeably.
- Ensure correct locking of snap fastener with a tensile test.



- Connect connector (1).

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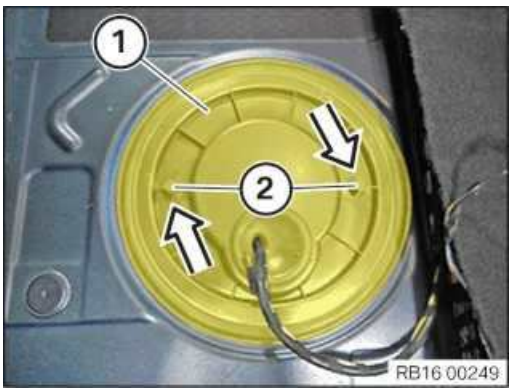
- Renew sealing cap of the floor panel (1).

  Parts: Sealing cap of the floor panel

  The sealing cap of the floor panel must not be reused, as there is the risk of leak during reuse.
- Lubricate seal in the area (1) with lubricant.

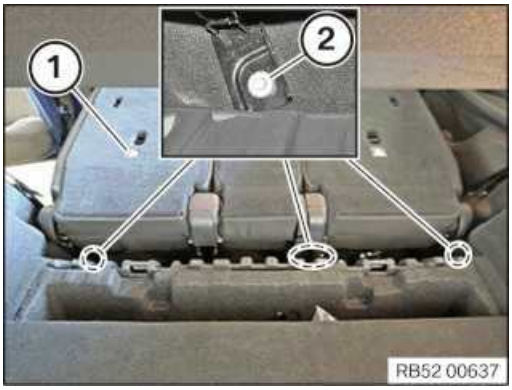
Expendable materials

Lubricants PF1	50 g, Pin	83230309627



- Install sealing cap of the floor panel (1).
- Turn sealing cap of the floor panel (1) on the plastic tabs (2) in the direction of arrow till the limit position and engage.

21 – Install rear seat bench



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.

RISK OF DAMAGE

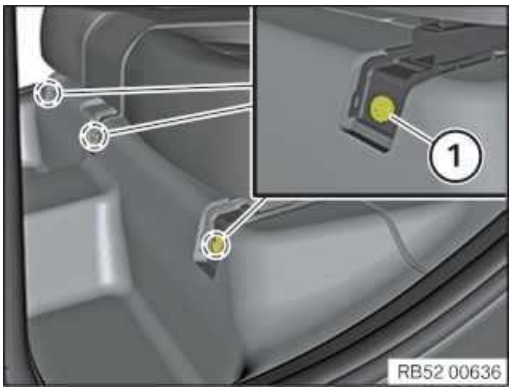
Heavy component.

Heavy components can lead to injury or damage.

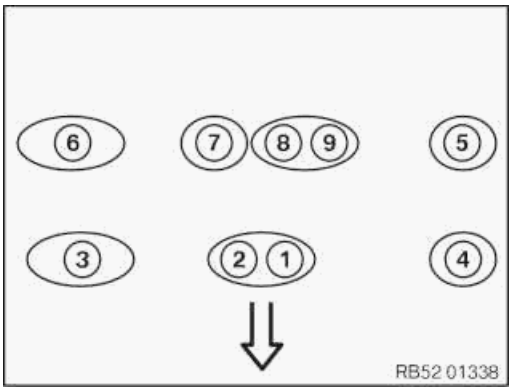
- Remove and install heavy components with the aid of another person/other persons.

- Hoist the rear seat bench into the vehicle and position it with the assistance of an auxiliary person.
- If required, connect the available connectors.
- Screw the bolts (2) in a few turns.

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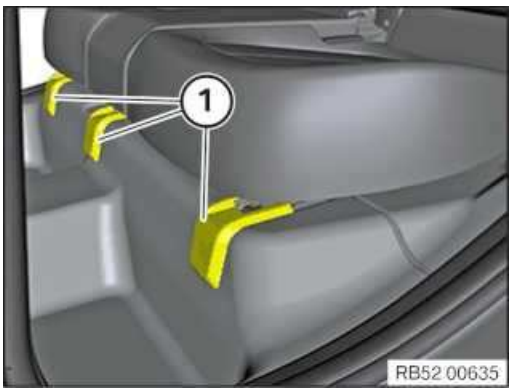
- Screw the bolts (1) in a few turns.



- Tighten screws in the order (1) to (9).

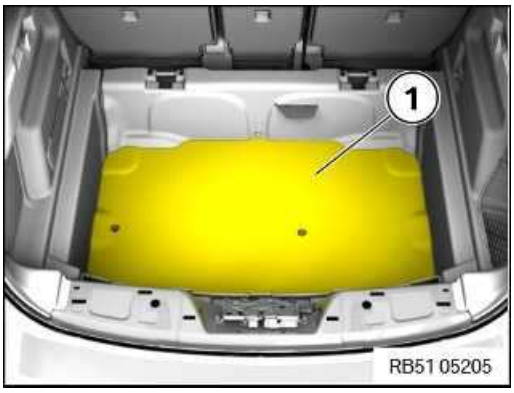
Seat bench to body

Oval-head screw		42 Nm



- Clip in the covers (1).

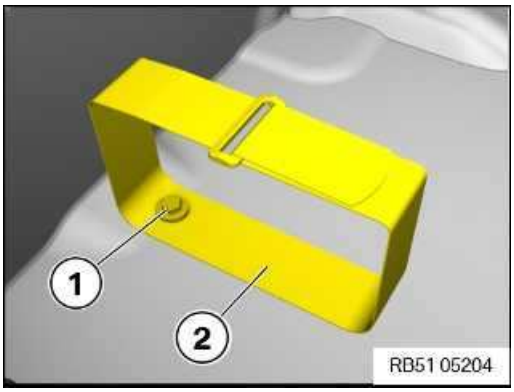
▸ **Installing the luggage compartment floor trim panel**



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

▸ **Inserting the Velcro fastener for the toolkit**

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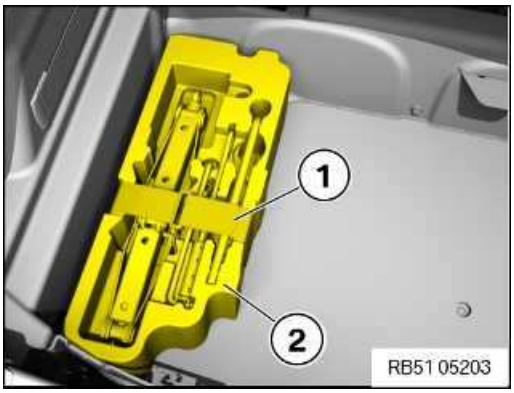


- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

▸ **Install the tool kit**

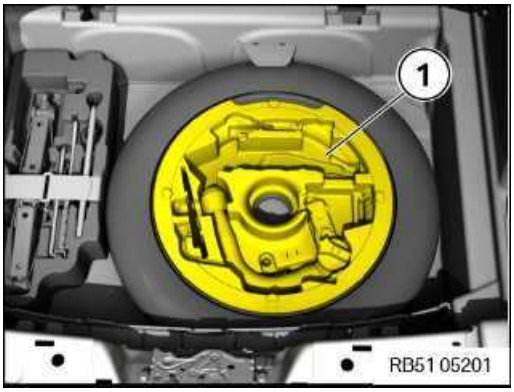


- Install the tool kit (2).
- Close the hook and loop tape (1).

▸ **Install the emergency wheel**

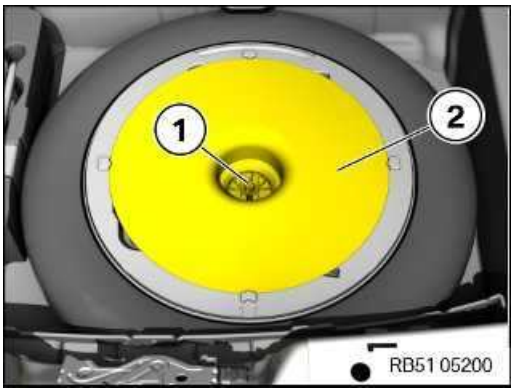


- Insert compact spare wheel(1).



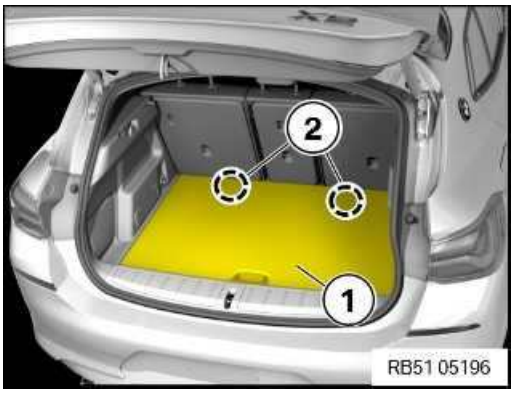
- Insert oddments tray into the compact spare wheel (1).

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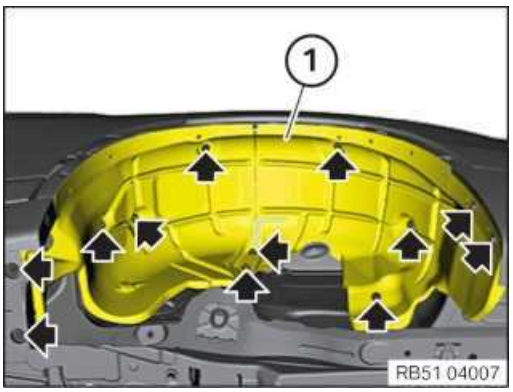
- Insert the lid (2).
- Hand-tighten the bolt (1).

▸ **Installing the luggage compartment removable panel**



- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

22 – Installing the rear wheel arch cover on the right



- Feed in wheel arch cover (1) and correctly position it.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

▸ **Installing the rear wheel arch trim**

TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.

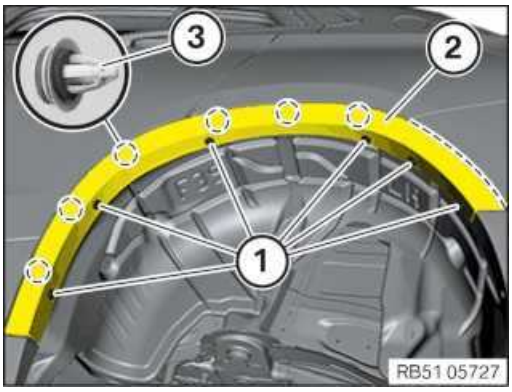
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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

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- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage the wheel arch trim (2) with the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

23 – Installing rear right wheel

▶ **Mounting the wheel**

▷ **Clean the contact surfaces between the brake disc and the wheel rim**



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

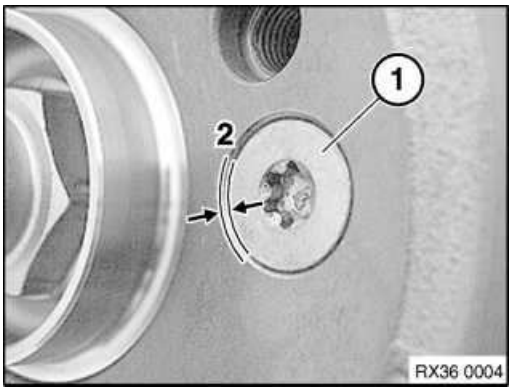
  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).

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- Renew mounting bolt (1).

  Parts: Mounting bolt

- Check that the mounting bolt (1) for the brake disc is securely seated.

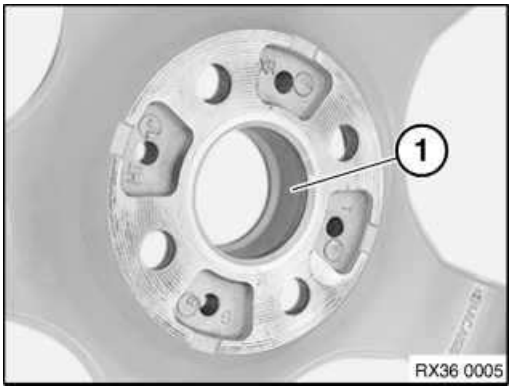
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

24 – Installing the tank covers on the left and right

NOTICE

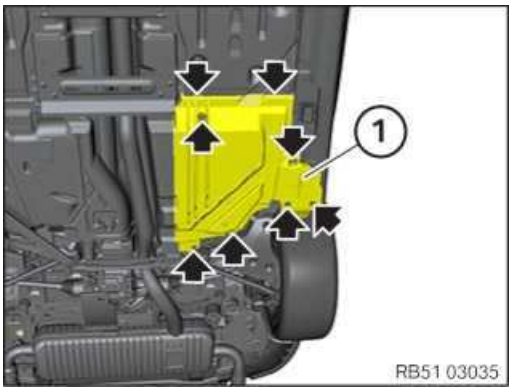
Perform the operations on the left and right side.

NOTICE

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

▸ **Installing tank cover**

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- Install tank cover (1).
- Tighten screws (arrows).

25 – Install propeller shaft.

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to the propeller shaft during installation.

Non-observance of the installation guidelines for the propeller shaft on the rear axle differential may cause severe damage.

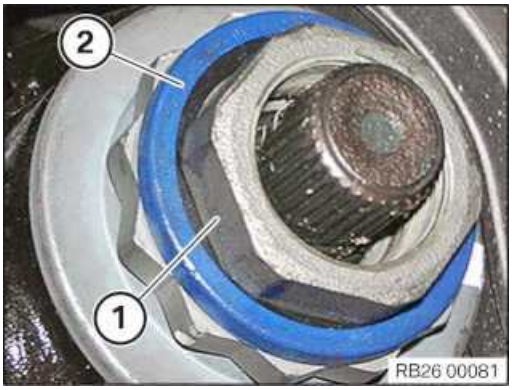
- Always renew the recessed nut on the rear axle differential. Screw locking must be available.
- Strictly observe a minimum hardening time of two hours after having screwed in the recessed nut. The hardening time may be longer at lower temperatures.

RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.



- Renew recessed nut (1).

  Parts: Insert nut
- Renew the retaining clip (2) and the seal.

  Parts: Retaining clip, seal
- Insert the seal with the recessed nut (1) and install.
- Insert the retaining clip (2) and install.
- Make sure that recessed nut (1) is screwed in within 5 min.
- Make sure that the hardening time of **minimum** 2 h for the recessed nut is observed.

  The hardening time must be extended at lower temperatures.

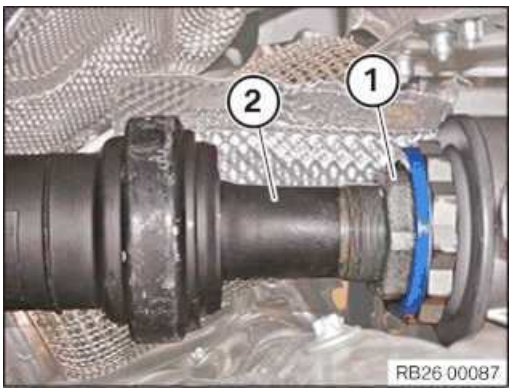
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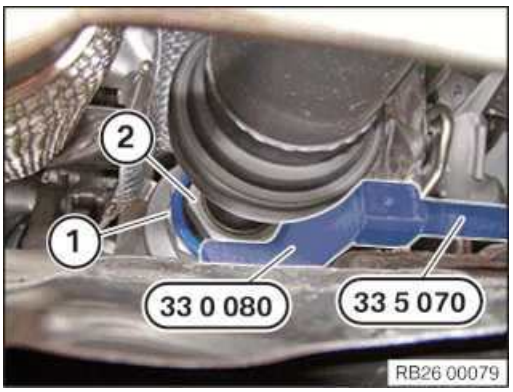
- Insert the propeller shaft (1) and install.
- Always support the propeller shaft (1) with a conventional jack.



- Hand-tighten the bolts (1).



- Push the propeller shaft (2) against the recessed nut (1) up to the limit position.
- Screw the propeller shaft (2) at least 2 thread starts onto the recessed nut (1) by hand.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

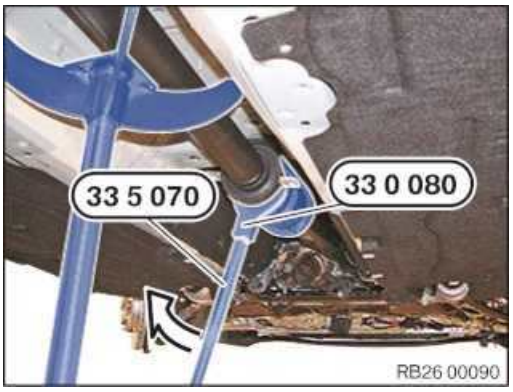
- Do not use the double hexagon head flange nut as counter support.

- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to tighten the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

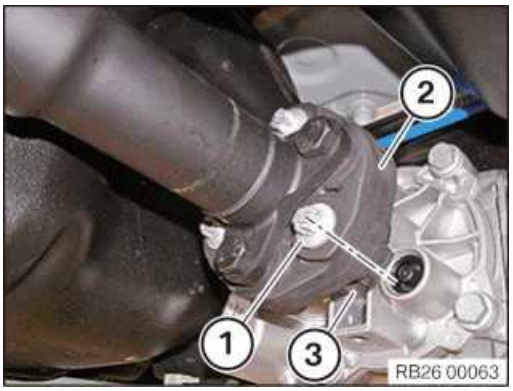
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- Tighten the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

Propeller shaft to transfer box

		Tightening torque	80 Nm



TECHNICAL INFORMATION

Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Assemble the screw connection (1) of the flexible disc (2) and the three-hole flange (3) according to the mark.
- Renew screws (1).

  Parts: Bolts
- Hand-tighten the bolts (1).



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



- Tighten the bolts with the special tools **0 490 504 (00 9 120)** and .

Flexible disc to rear axle final drive

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °



- Tighten the screws (1).

Centre mount to body

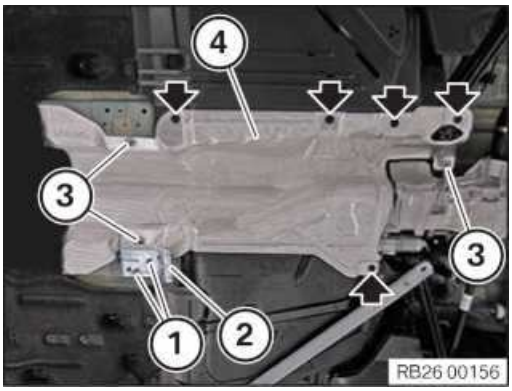
M8		Tightening torque	19 Nm

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- Guide the special too l out between the front and rear propeller shaft and remove.

26 – Installing the rear heat shield



- Insert and install the heat shield (4).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (3).

Heat shield to body

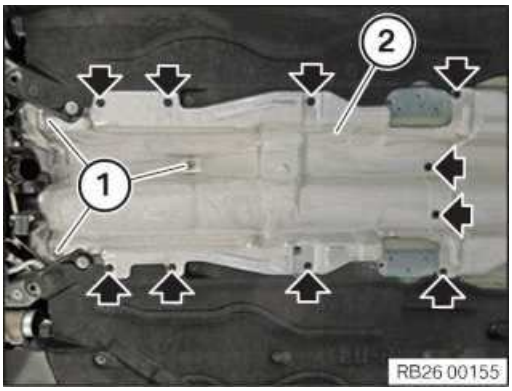
Bolts/nut		Tightening torque	3 Nm

- Insert and install the holder (2).
- Tighten the screws (1).

Bracket to body

M8		Tightening torque	21 Nm

27 – Install the front heat shield



- Insert and install the heat shield (2).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (1).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

28 – Install exhaust system

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

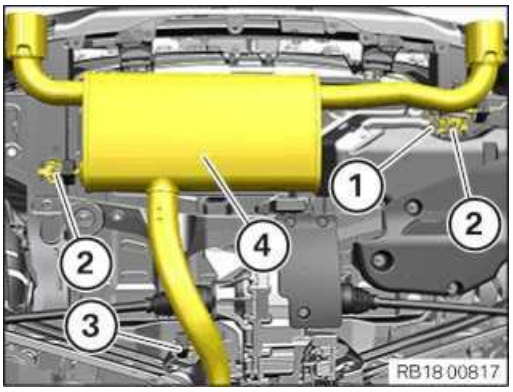
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CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.



- Feed in and install the exhaust system (4) with a second person.
- Renew nuts (2).

  Parts: Nuts
- Tighten nuts (2).

Exhaust system to body

M8	Replace nuts.	Tightening torque	19 Nm

- Tighten down screw (1).

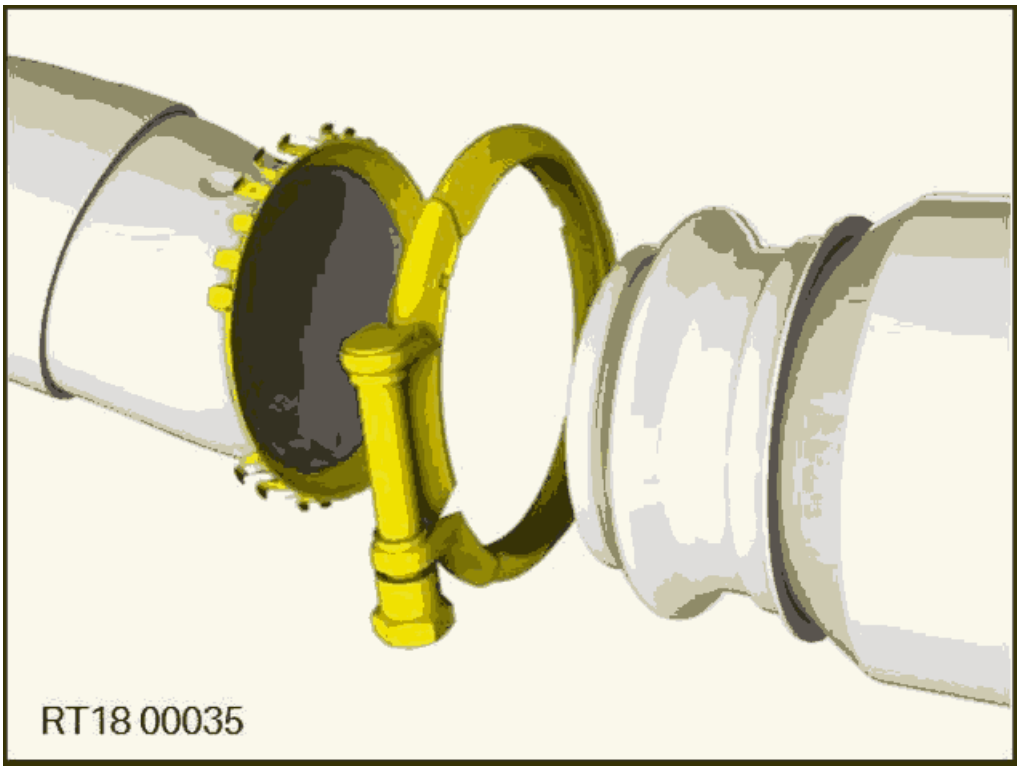
Exhaust bracket on body

Hexagon screw M8x30		Tightening torque	19 Nm

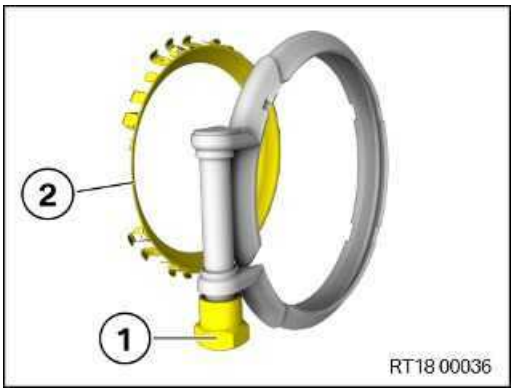
- Check the rubber mount (3) for damage and renew as needed.
- Mount rubber mount (3) on the exhaust system (4).

▸ **Install the V-clip**

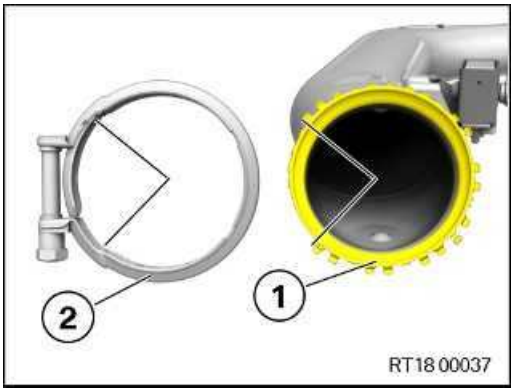
V-band clamp



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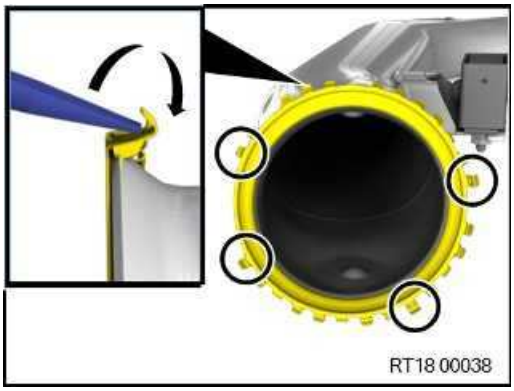


- Unscrew the nut (1) and remove the sealing ring (2).

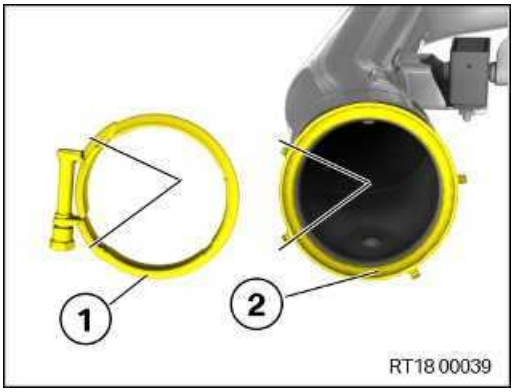


- Renew the V-clip (2).

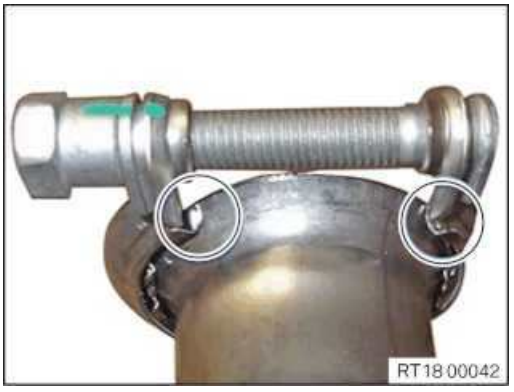
  Parts: V-band clamp
- Mount the sealing ring (1) on the exhaust system.
- Ensure that the sealing ring (1) for the V-clip (2) is positioned correctly.



- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.

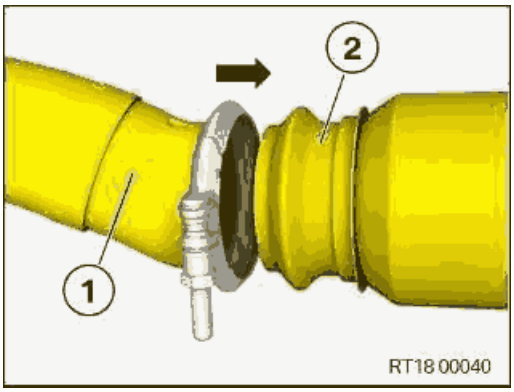


- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).

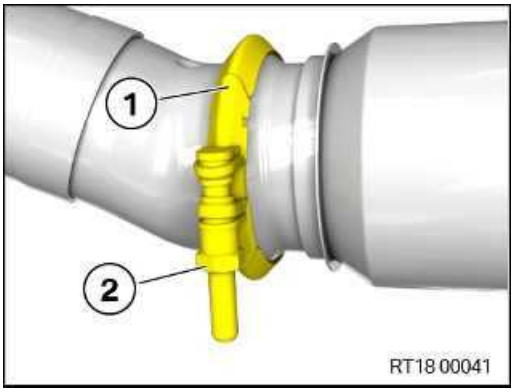


- Make sure that the V-clip rests against the sheet metal tabs after mounting (marks).

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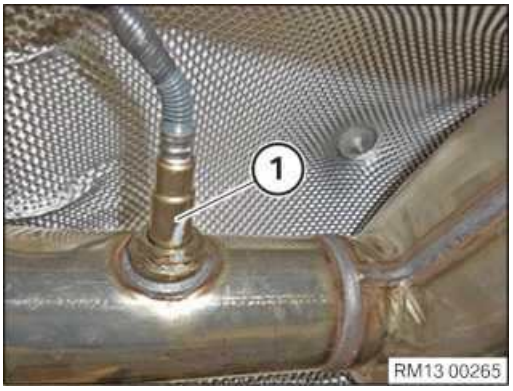
- Connect the exhaust system (1) with the catalytic converter (2) and position correctly.



- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

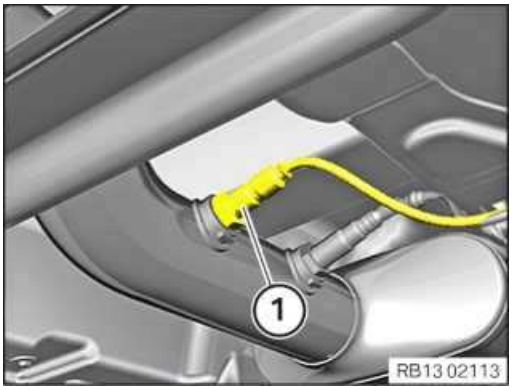
V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm



- Feed in, install and tighten diesel particulate sensor (1).

Diesel particulate sensor to exhaust system

Sensor		Tightening torque	50 Nm



- Feed in, install and tighten nitrogen oxide sensor (1).

Nitrogen oxide sensor downstream of SCR catalytic converter

Sensor		Tightening torque	50 Nm

29 – Install exhaust system

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

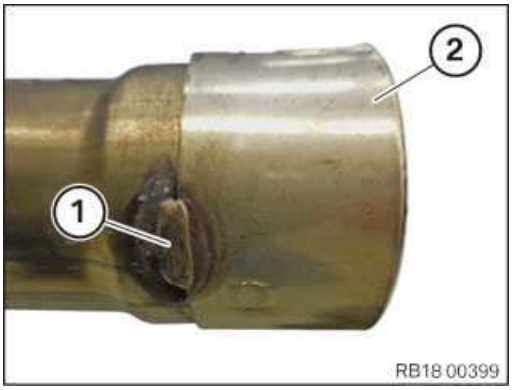
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CAUTION

Swarf resulting from sawing or grinding components.

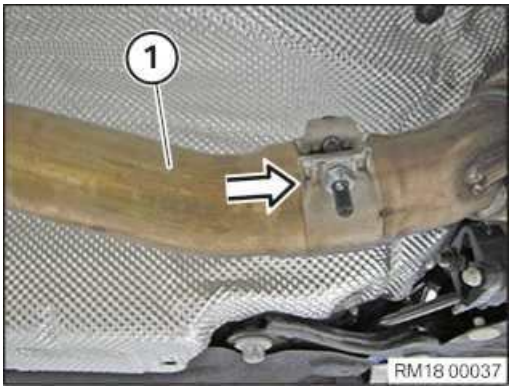
Danger of injury!

- Conduct all work in appropriate personal protective equipment only.
- Wear safety goggles and protective gloves.



- Open the weld seam (1) with a conventional tool.
- Remove the clamp (2).
- If necessary, renew clamp (2).

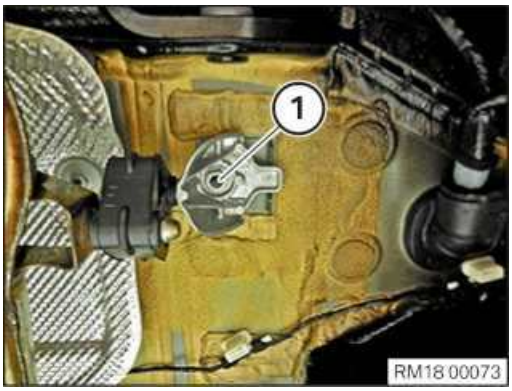
  Parts: Clamp



- Install the exhaust system with the assistance of a second person and connect to the diesel particulate filter.
- Tighten clamp (1).

Exhaust system to diesel particle filter

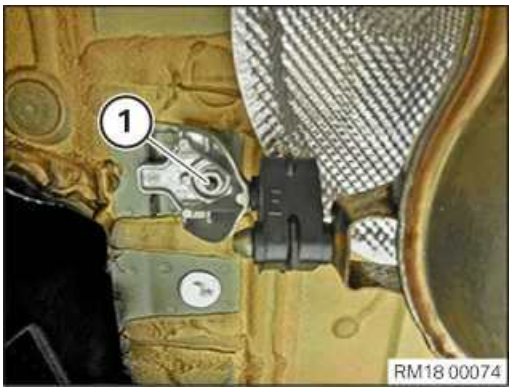
Ribbon cable clamp	Replace clamp		26 Nm



- Tighten the nut (1), left.

Exhaust system suspension to body

Nut M8		19 Nm

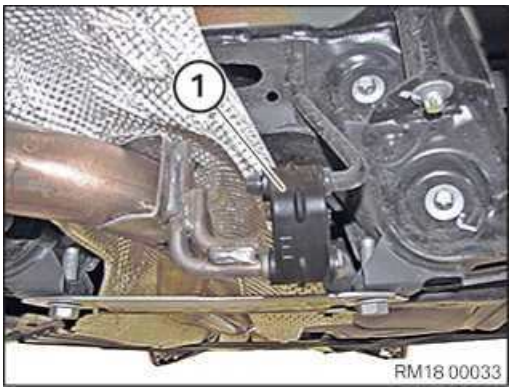


- Tighten the nut (1), right.

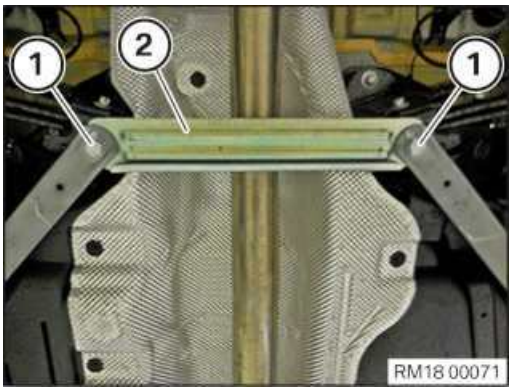
Exhaust system suspension to body

Nut M8		19 Nm

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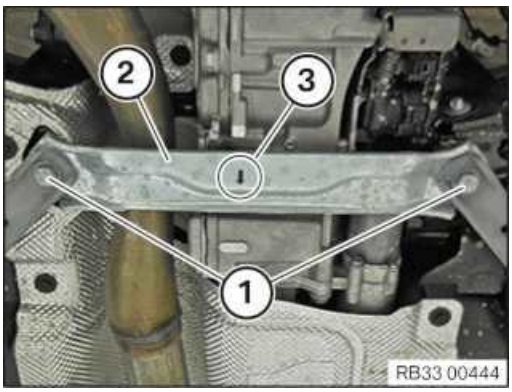
- Check the rubber mounts (1) for damage and renew, if necessary.
- Fasten exhaust system on the rubber mount (1).



- Install the cross-member (2).
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °

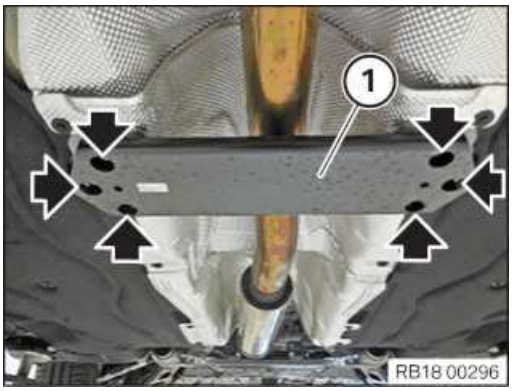


- In **all-wheel drive vehicles:** Ensure that the arrow (3) on the cross-member points in the direction of travel when installing it.
- Position cross-member (2) on the rear axle support.
- Renew screws (1).

  Parts: Bolts(1)
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °



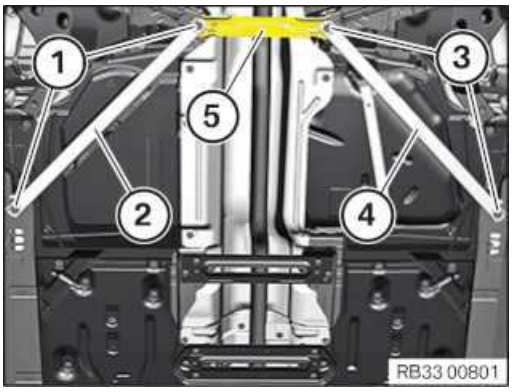
- Insert and install connecting supports (1).
- Tighten screws (arrows).

Front connection carrier to body

M10x18		Tightening torque	56 Nm

30 – Install the cross-member with torsion struts

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- Insert and install the cross-member (5).
- Thread in torsion strut (4) at right and install.
- Renew screws (3).

  Parts: Bolts
- Tighten down screws (3).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

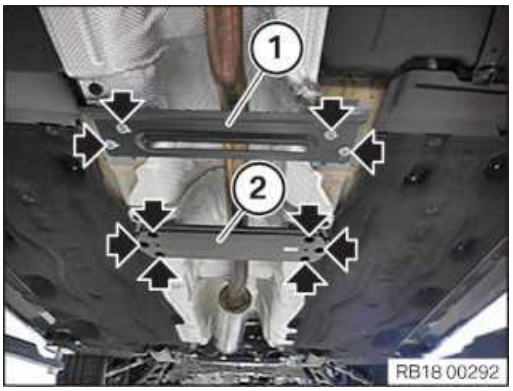
- Guide in and install the left torsion strut (2).
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

31 – Install the connecting support on the tunnel in front and back



- Insert and install connecting supports (2).
- Tighten the screws (arrows) from the connecting support (2).

Front connection carrier to body

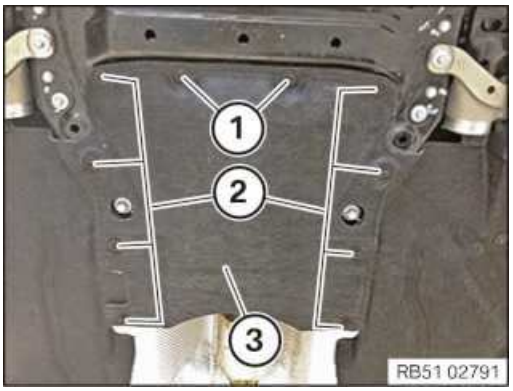
M10x18		Tightening torque	56 Nm

- Insert and install connecting supports (1).
- Tighten the screws (arrows) from the connecting support (1).

Rear connection carrier to body

M8x18		Tightening torque	28 Nm

32 – If installed: Installing underbody protection at rear



- Install the underbody protection (3).
- Tighten down screws (1) and (2).

Underbody protection to body

Screw		Tightening torque	3 Nm

33 – Topping up the fuel tank

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- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and diesel fuel.
- Slide the suction hose (1) of the extractor unit approximately 40 cm into the fuel filler pipe. If necessary, slightly turn the suction hose.
- Fill fuel from suction extractor unit.
- After completing the work and before starting the engine for the first time: fill the fuel tank via the fuel filler pipe with a minimum of 5 l of fuel.

Additional Information

Overview of Tightening Torques

Underbody panelling, side — Used in step 18

Hexagon screw		Tightening torque	2,6 Nm

Underbody panelling, side — Used in step 18

Plastic nut		Tightening torque	2,6 Nm

Fuel tank to body — Used in step 19

Nut M8	Renew nut.	Tightening torque	19 Nm

Fuel tank retaining strap to body — Used in step 19

M8 screw	Renew screws.	Tightening torque	19 Nm

Filling hose on fuel tank — Used in step 19

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

Seat bench to body — Used in step 21

Oval-head screw			42 Nm

Toolkit hook and loop tape to body — Used in step 21

Bolt M6 x 20		Tightening torque	4 Nm

Wheel arch cover to body — Used in step 22

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Brake disc to rear wheel hub — Used in step 23

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub — Used in step 23

M8	Renew screw.	Tightening torque	16 Nm

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Wheel bolts — Used in step 23

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Propeller shaft to transfer box — Used in step 25

		Tightening torque	80 Nm

Flexible disc to rear axle final drive — Used in step 25

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °

Centre mount to body — Used in step 25

M8		Tightening torque	19 Nm

Heat shield to body — Used in step 26 27

Bolts/nut		Tightening torque	3 Nm

Bracket to body — Used in step 26

M8		Tightening torque	21 Nm

Exhaust system to body — Used in step 28

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust bracket on body — Used in step 28

Hexagon screw M8x30		Tightening torque	19 Nm

V-clip to catalytic converter — Used in step 28

V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm

Diesel particulate sensor to exhaust system — Used in step 28

Sensor		Tightening torque	50 Nm

Nitrogen oxide sensor downstream of SCR catalytic converter — Used in step 28

Sensor		Tightening torque	50 Nm

Exhaust system to diesel particle filter — Used in step 29

Ribbon cable clamp	Replace clamp		26 Nm

Exhaust system suspension to body — Used in step 29

Nut M8			19 Nm

Cross-member to rear axle support — Used in step 29

M12	Renew screws.	Tightening torque	100 Nm 90 °

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Front connection carrier to body — Used in step 29

M10x18		Tightening torque	56 Nm

Cross-member/torsion strut to axle support and mounting — Used in step 30

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

Front connection carrier to body — Used in step 31

M10x18		Tightening torque	56 Nm

Rear connection carrier to body — Used in step 31

M8x18		Tightening torque	28 Nm

Underbody protection to body — Used in step 32

Screw		Tightening torque	3 Nm

Overview of Special Tools

0 495 554 (33 5 070) Extension



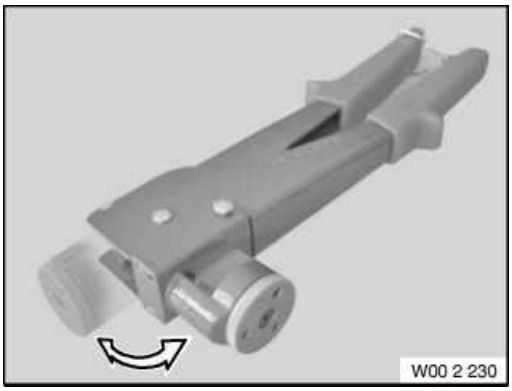
Common — Used in step 9 25

Usage	Pull-out extension for 33 5 040, 33 5 050, 33 5 060.
Included in the tool or work	
Storage location	A18
Replaced by	
In connection with	
SI-Number	01 21 06 (300)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 495 592 (33 5 071)		**Extension** (Extension (1 item)) discontinued, can only be ordered using complete tool	

0 496 521 (00 2 230) Pliers



Common — Used in step 22

Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

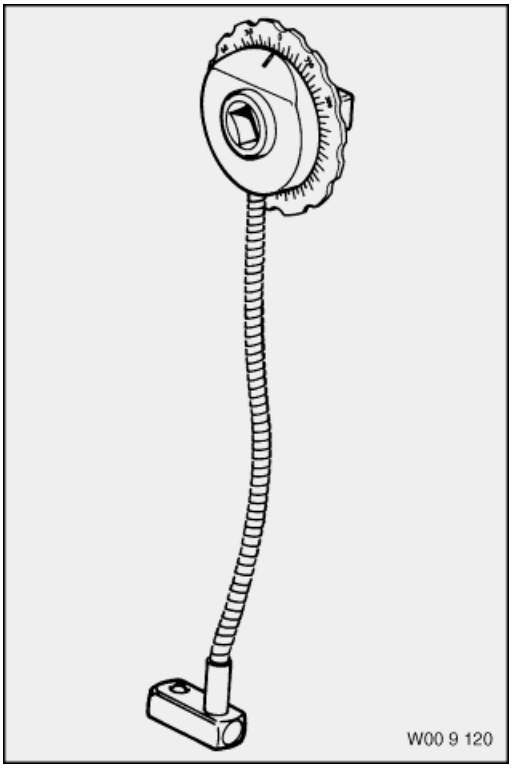
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2 344 011 Tool



Common	Used in step 23
Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

0 490 504 (00 9 120) Torque angle measuring dial



Common	Used in step 25
Usage	For torsion angle adjustment of cylinder head bolts (all engines) And reinforcement plate front axle support E46
Included in the tool or work	
Storage location	A4
Replaced by	
In connection with	
SI-Number	

Replacement tools:

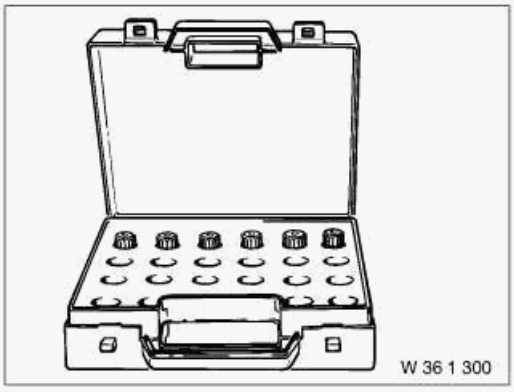
0 495 221 (36 1 323) Wheel stud



Common	Used in step 11
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

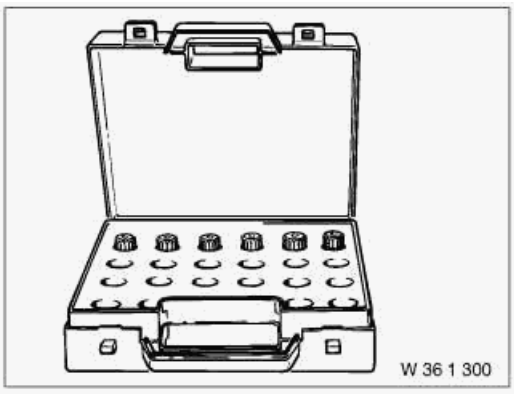
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0 495 224 (36 1 326) Wheel stud



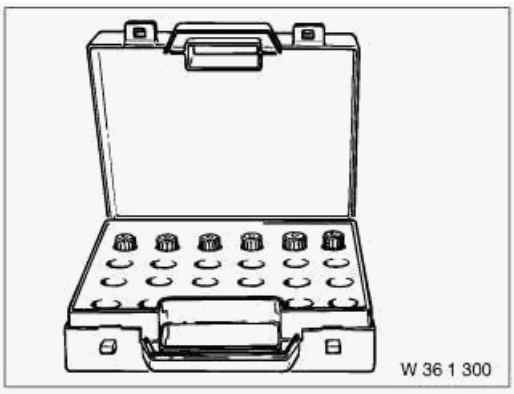
Common	Used in step 11
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 225 (36 1 327) Wheel stud



Common	Used in step 11
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



Common	Used in step 11
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

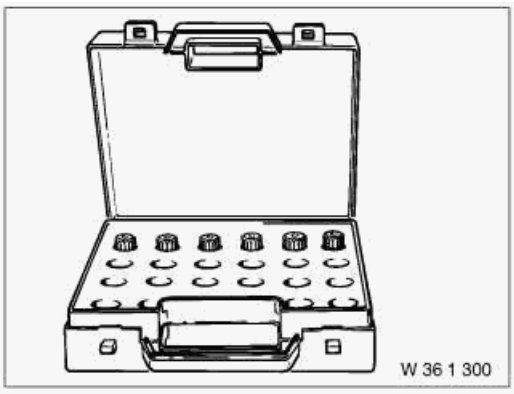
0 495 227 (36 1 329) Wheel stud



Common	Used in step 11
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 228 (36 1 331) Wheel stud



Common	Used in step 11
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 229 (36 1 332) Wheel stud



Common	Used in step 11
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 11
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Links

Operating materials	Used in step
2.0 Grease for wheel centring	23

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16 14 500 Removing and installing or replacing control unit for electric fuel pump

RISK OF DAMAGE

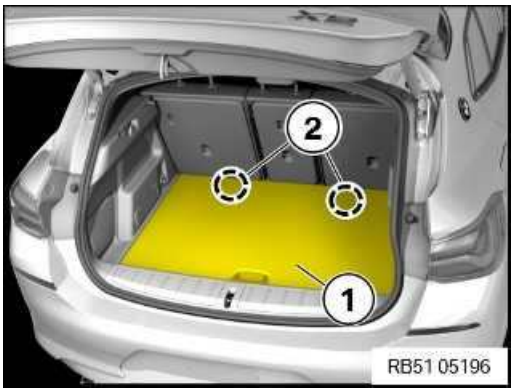
Electrostatic discharge.

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.

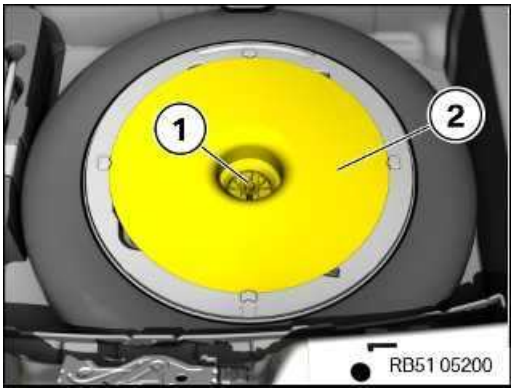
PRELIMINARY WORK

1 – Removing the luggage compartment removable panel

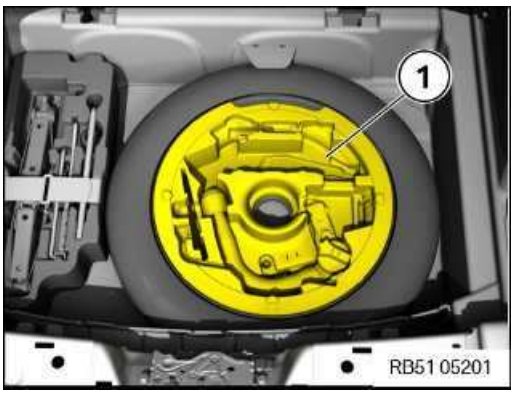


- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

2 – Removing the compact spare wheel



- Loosen screw (1).
- Remove the cover (2).



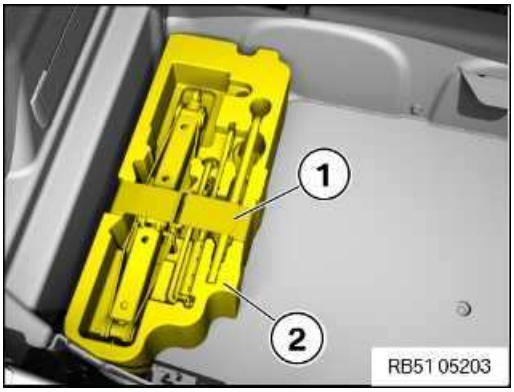
- Remove the oddments tray from the emergency wheel (1).

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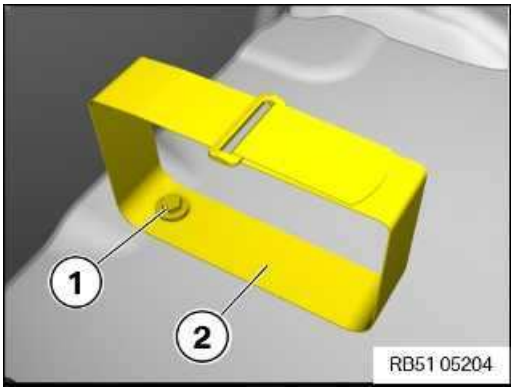
- Remove the emergency wheel (1).

3 – Remove the tool kit



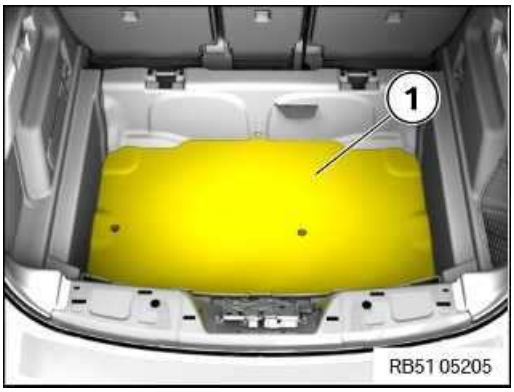
- Open the hook and loop tape (1).
- Remove the tool kit (2).

4 – Remove the hook and loop tape for the tool kit



- Loosen screw (1).
- Remove the hook and loop tape (2).

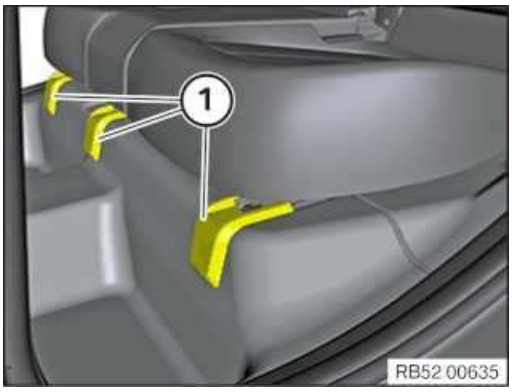
5 – Removing the luggage compartment floor trim panel



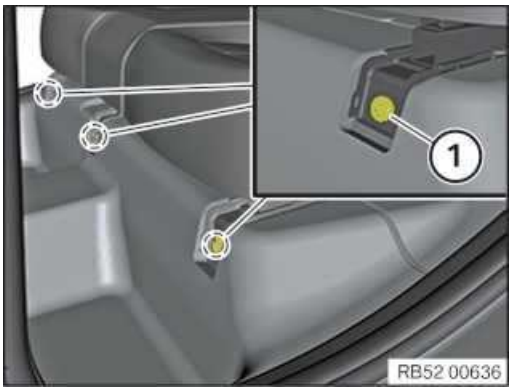
- Remove the luggage compartment floor trim panel (1) upwards.

6 – Remove seat bench

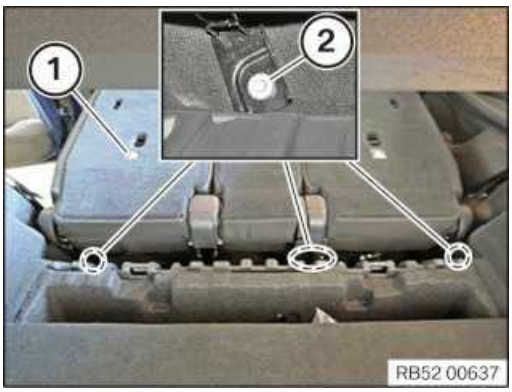
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- Unclip the cover (1) forwards.



- Loosen screws (1).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.
- Fold down rear seat backrest (1) on left and right.
- Loosen screws (2).
- Disconnect existing plug connections where required.

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

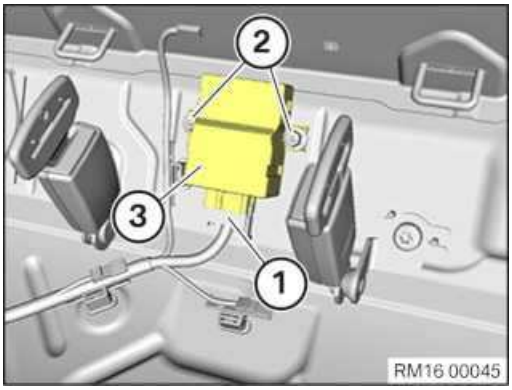
- Remove and install heavy components with the aid of another person/other persons.

- Lift out rear seat bench with the assistance of a second person.

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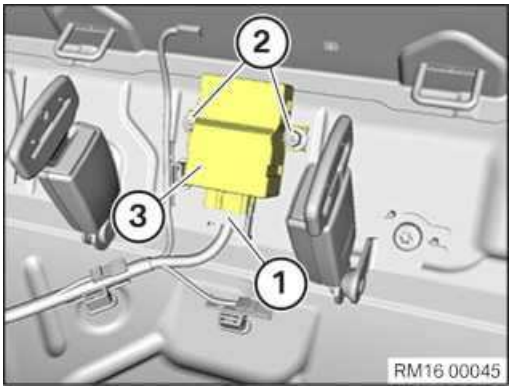
MAIN WORK

7 – Remove the control unit for the fuel pump control electronics



- Disconnect plug connection (1).
- Loosen plastic nuts (2).
- Remove the control unit for the fuel pump control electronics (3).

8 – Install the control unit for the fuel pump control electronics



- Install the control unit for the fuel pump control electronics (3).
- Renew the plastic nuts (2).

  Parts: Plastic nuts.

  Position and tighten the plastic nuts (2).

Control unit for electrical fuel pump control on body

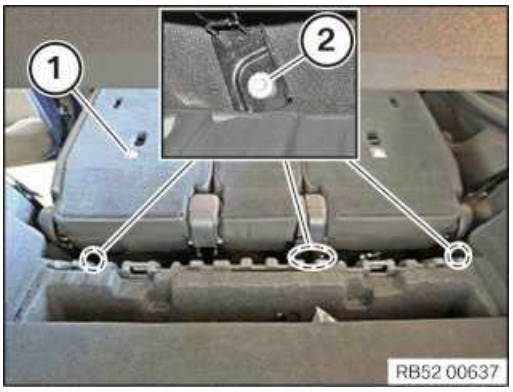
	Renew plastic nut.	Tightening torque	4 Nm

- Connect connector (1).

POSTPROCESSES

9 – Install rear seat bench

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RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.

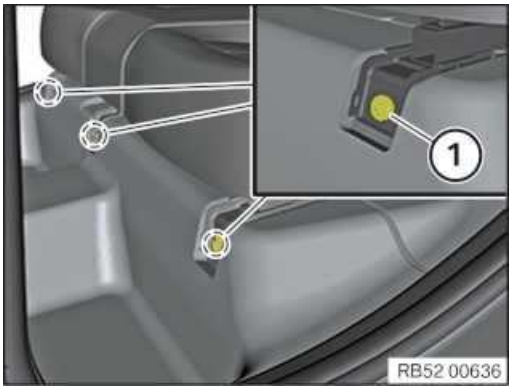
RISK OF DAMAGE

Heavy component.

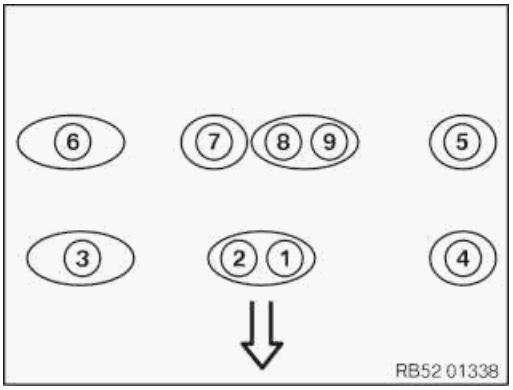
Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Insert the rear seat bench into the vehicle and position it with the assistance of a second person.
- If necessary, connect any available plug connections.
- Screw the bolts (2) in a few turns.



- Screw the bolts (1) in a few turns.

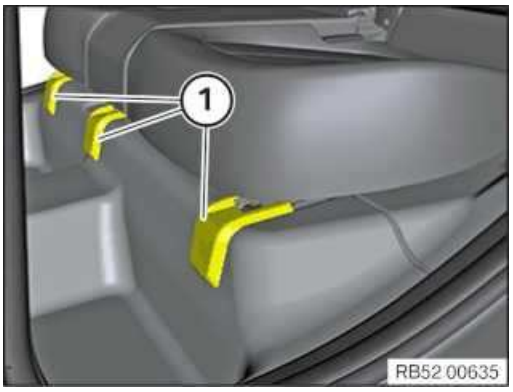


- Tighten the screws in a sequence from 1-9.

Seat bench to body

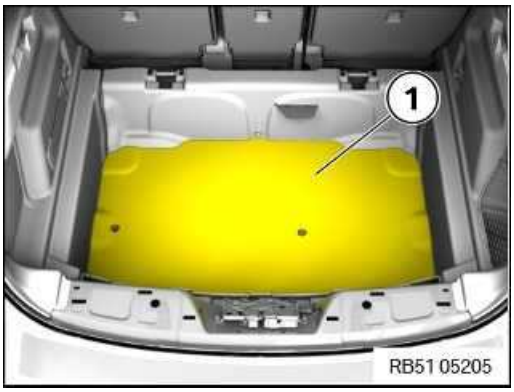
Oval-head screw		42 Nm

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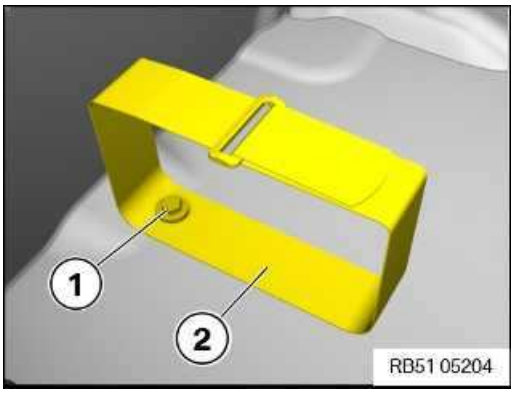
- Clip in the covers (1).

10 – Installing the luggage compartment floor trim panel



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

11 – Inserting the Velcro fastener for the toolkit

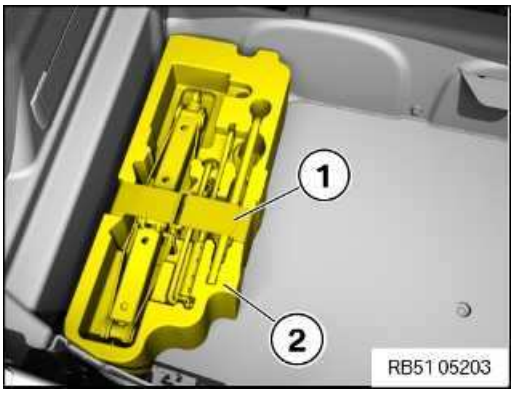


- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

12 – Install the tool kit



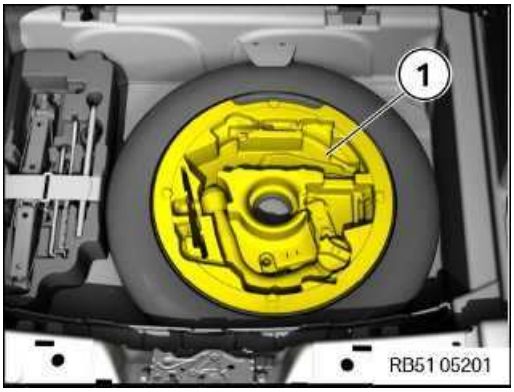
- Install the tool kit (2).
- Close the hook and loop tape (1).

13 – Install the emergency wheel

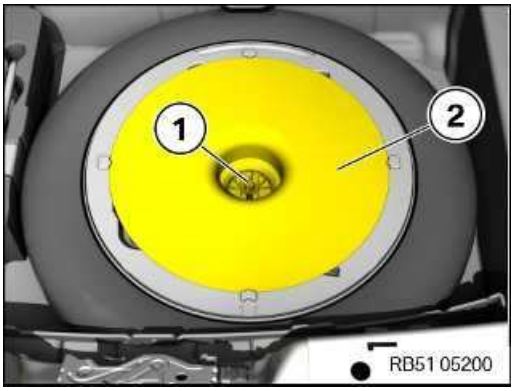
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- Insert compact spare wheel(1).

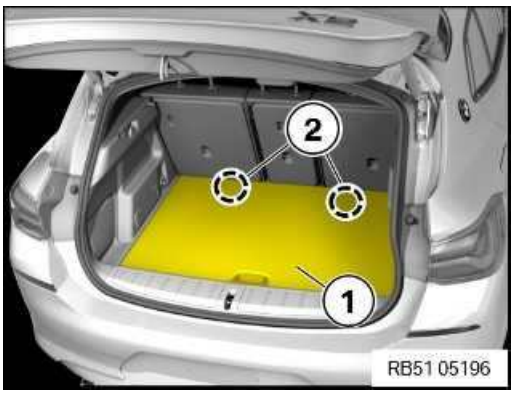


- Insert oddments tray into the compact spare wheel (1).



- Insert the lid (2).
- Hand-tighten the bolt (1).

14 – Installing the luggage compartment removable panel



- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

15 – Putting fuel pump control electronics into operation



- Connect diagnosis and information system.
- Perform fuel pump control electronics start-up.

Additional Information

Overview of Tightening Torques

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Control unit for electrical fuel pump control on body

Used in step 8

	Renew plastic nut.	Tightening torque	4 Nm

Seat bench to body

Used in step 9

Oval-head screw			42 Nm

Toolkit hook and loop tape to body

Used in step 11

Bolt M6 x 20		Tightening torque	4 Nm

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16 14 090 Removing and installing/replacing the delivery unit (51 l diesel fuel)

PRELIMINARY WORK

1 – Drawing off the fuel tank

WARNING

Contact with hazardous fluids.

Hazardous to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

WARNING

Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.



- Open fuel filler cap.
- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and for diesel fuel.
- Slide suction hose (1) of the extractor unit through special tool and into the fuel filler pipe. If necessary, slightly turn the suction hose.

  For the extractor unit: refer to BMW Service workshop equipment.

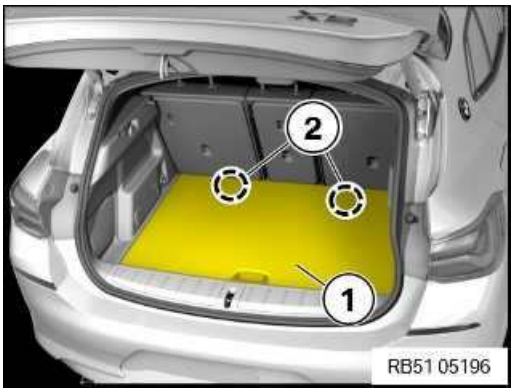
  The insertion length of the suction hose is 125 cm.
- Start engine and allow to run, so that the electric fuel pump is running.

  This will ensure that the fuel is pumped by the suction jet pump from the left-hand side of the fuel tank to the right hand-side.
- Draw off fuel with the extractor unit as far as possible. In the process, track the drawing off of the fuel on the fuel gauge in the instrument cluster.

2 – Removing seat bench

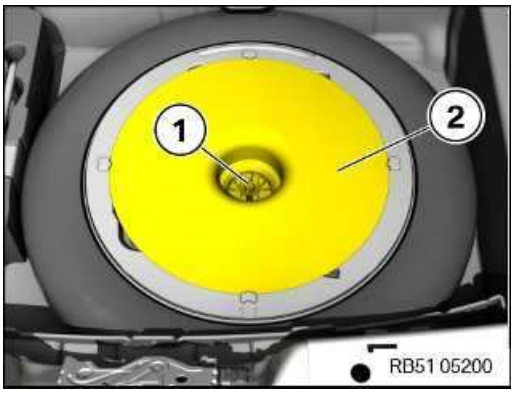
▸ **Removing the luggage compartment removable panel**

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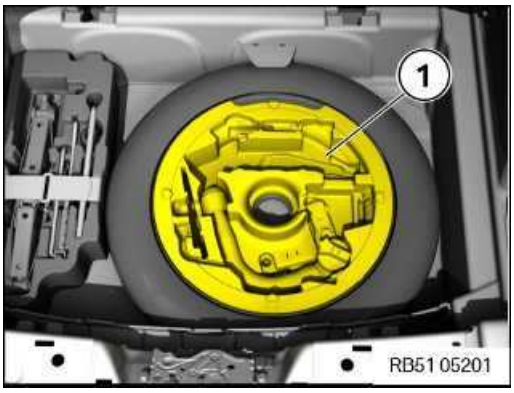


- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

▸ **Removing the compact spare wheel**



- Loosen screw (1).
- Remove the cover (2).



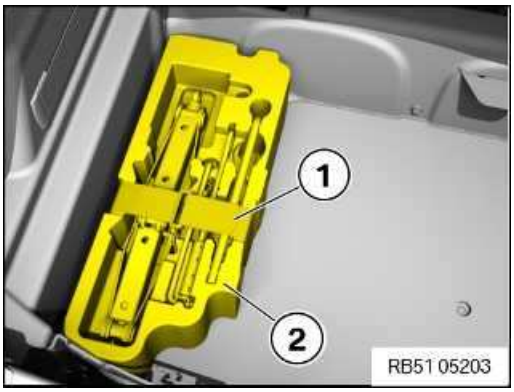
- Remove the oddments tray from the emergency wheel (1).



- Remove the emergency wheel (1).

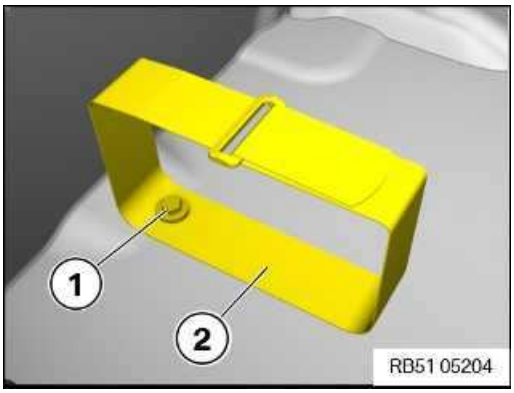
▸ **Remove the tool kit**

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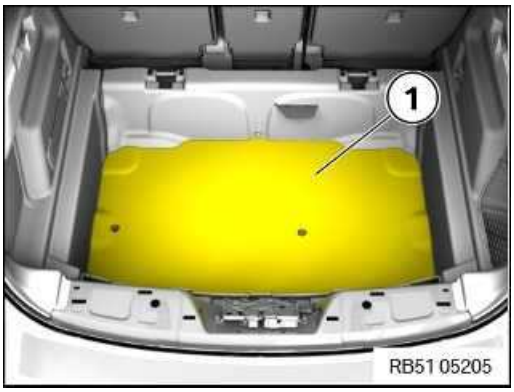
- Open the hook and loop tape (1).
- Remove the tool kit (2).

▶ **Remove the hook and loop tape for the tool kit**

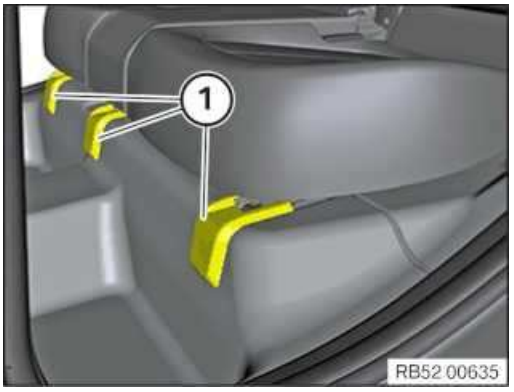


- Loosen screw (1).
- Remove the hook and loop tape (2).

▶ **Removing the luggage compartment floor trim panel**

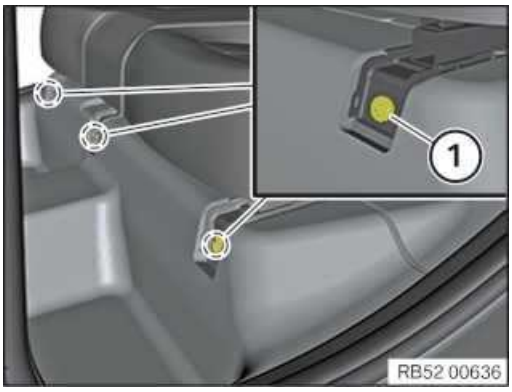


- Remove the luggage compartment floor trim panel (1) upwards.

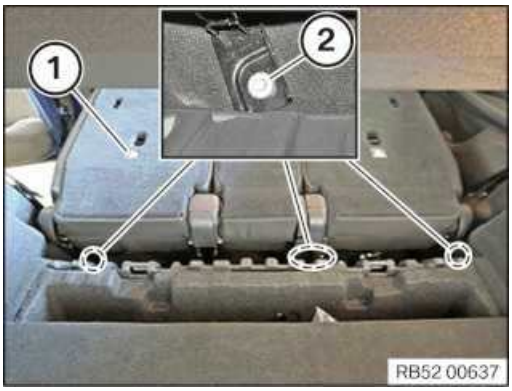


- Unclip the covers (1) forwards.

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- Loosen screws (1).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.
- Fold down rear seat backrest (1) on left and right.
- Loosen screws (2).
- Disconnect existing plug connections where required.

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

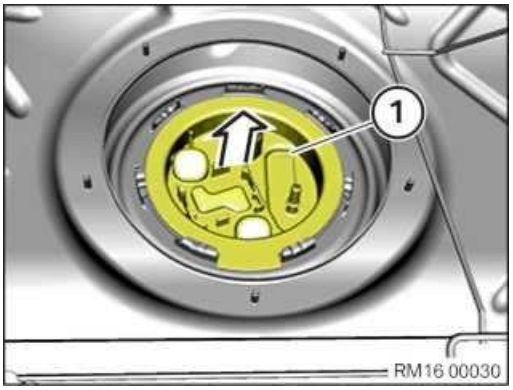
- Remove and install heavy components with the aid of another person/other persons.

- Lift out rear seat bench with the assistance of a second person.

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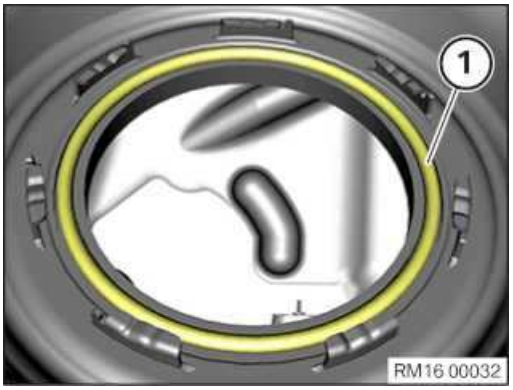
MAIN WORK

3 – Remove delivery unit (Fuel tank 51 l)



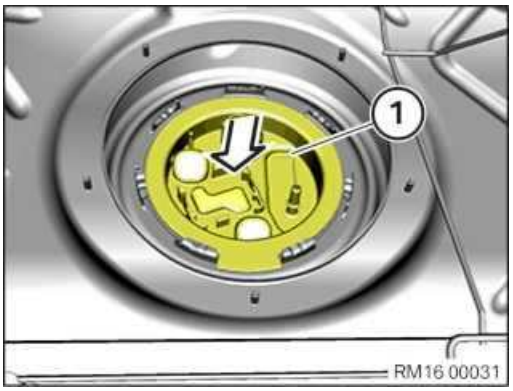
- Lift the delivery unit (1) in the direction of the arrow and remove it from the fuel tank.

4 – Install delivery unit (51 l fuel tank)



- Renew sealing ring (1).

  Parts: Sealing ring

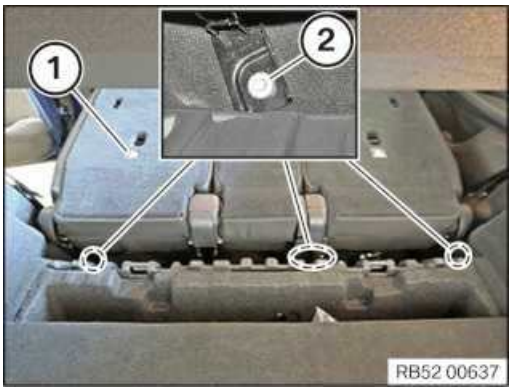


- Install the delivery unit (1) in the direction of the arrow.

POSTPROCESSES

5 – Install rear seat bench

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RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.

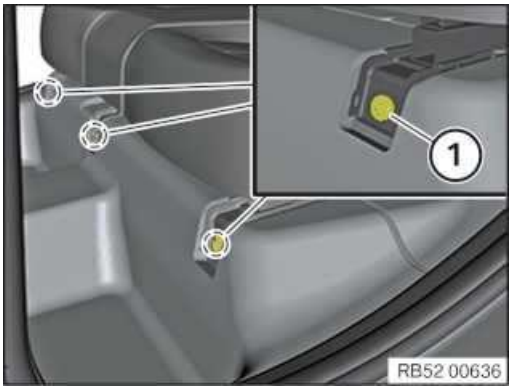
RISK OF DAMAGE

Heavy component.

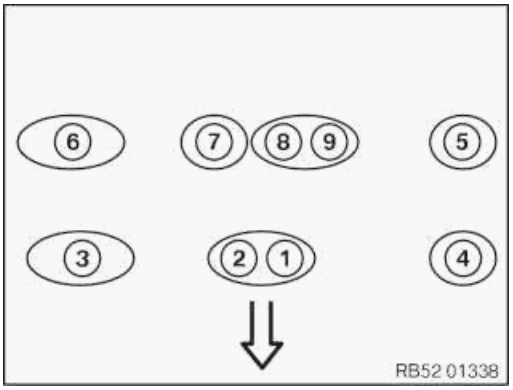
Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Hoist the rear seat bench into the vehicle and position it with the assistance of an auxiliary person.
- If required, connect the available connectors.
- Screw the bolts (2) in a few turns.



- Screw the bolts (1) in a few turns.

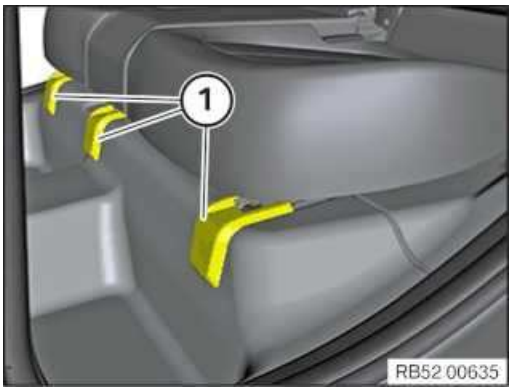


- Tighten screws in the order (1) to (9).

Seat bench to body

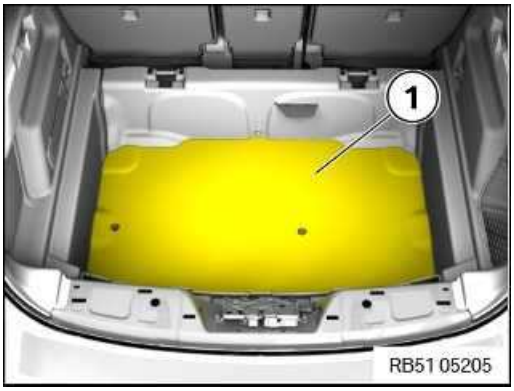
Oval-head screw		42 Nm

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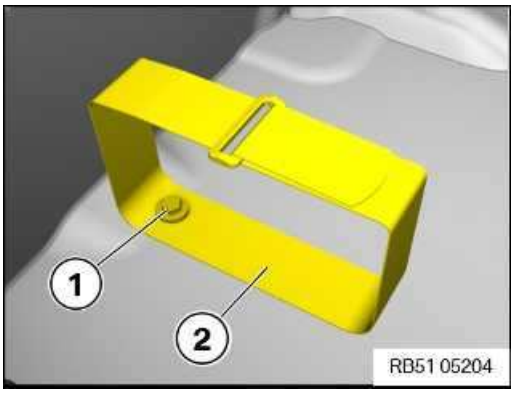
- Clip in the covers (1).

▸ **Installing the luggage compartment floor trim panel**



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

▸ **Inserting the Velcro fastener for the toolkit**

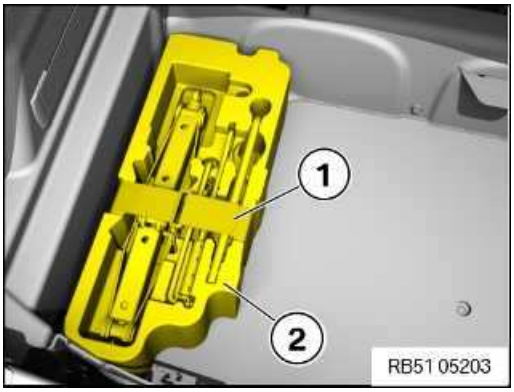


- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

▸ **Install the tool kit**



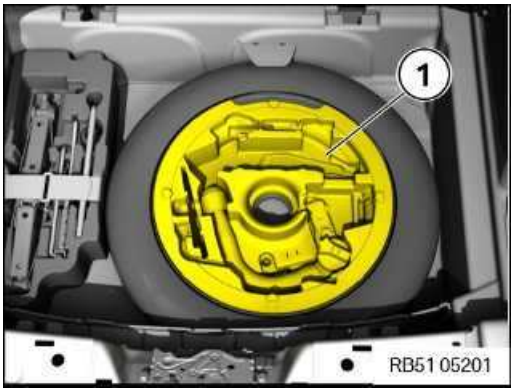
- Install the tool kit (2).
- Close the hook and loop tape (1).

▸ **Install the emergency wheel**

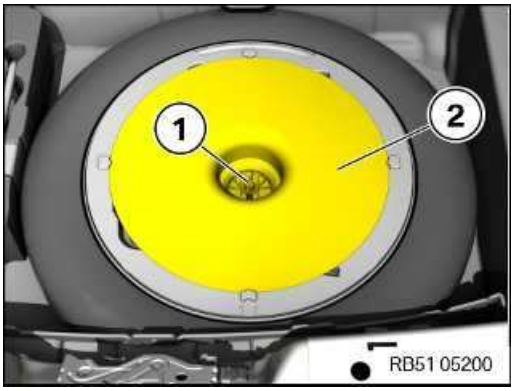
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- Insert compact spare wheel(1).

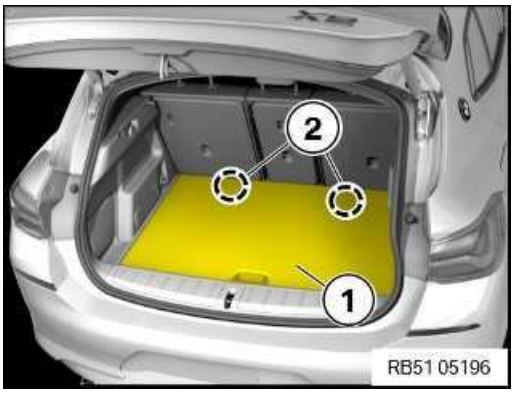


- Insert oddments tray into the compact spare wheel (1).



- Insert the lid (2).
- Hand-tighten the bolt (1).

▶ **Installing the luggage compartment removable panel**



- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

6 – Topping up the fuel tank

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- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and diesel fuel.
- Slide the suction hose (1) of the extractor unit approximately 40 cm into the fuel filler pipe. If necessary, slightly turn the suction hose.
- Fill fuel from suction extractor unit.
- After completing the work and before starting the engine for the first time: fill the fuel tank via the fuel filler pipe with a minimum of 5 l of fuel.

Additional Information

Overview of Tightening Torques

Seat bench to body — Used in step 5

Oval-head screw		42 Nm

Toolkit hook and loop tape to body — Used in step 5

Bolt M6 x 20		Tightening torque	4 Nm

Overview of Special Tools

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16 14 090 Removing and installing/replacing the delivery unit (61 l diesel fuel)

PRELIMINARY WORK

1 – Drawing off the fuel tank

WARNING

Contact with hazardous fluids.

Hazardous to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

WARNING

Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.



- Open fuel filler cap.
- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and for diesel fuel.
- Slide suction hose (1) of the extractor unit through special tool and into the fuel filler pipe. If necessary, slightly turn the suction hose.

  For the extractor unit: refer to BMW Service workshop equipment.

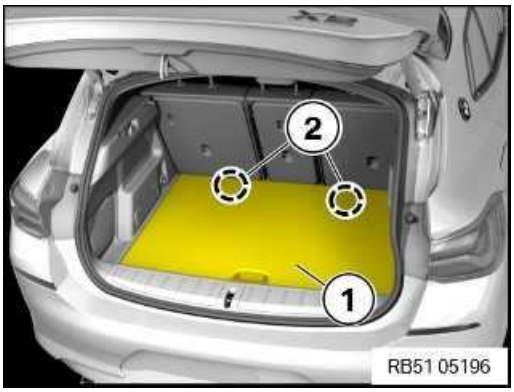
  The insertion length of the suction hose is 125 cm.
- Start engine and allow to run, so that the electric fuel pump is running.

  This will ensure that the fuel is pumped by the suction jet pump from the left-hand side of the fuel tank to the right hand-side.
- Draw off fuel with the extractor unit as far as possible. In the process, track the drawing off of the fuel on the fuel gauge in the instrument cluster.

2 – Removing seat bench

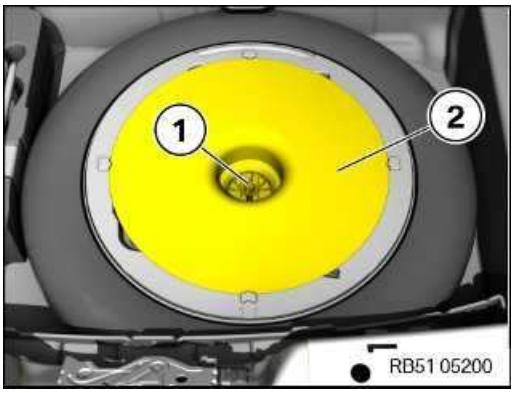
▸ **Removing the luggage compartment removable panel**

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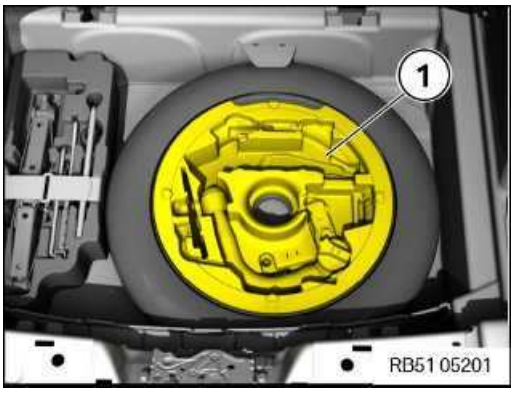


- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

▸ **Removing the compact spare wheel**



- Loosen screw (1).
- Remove the cover (2).



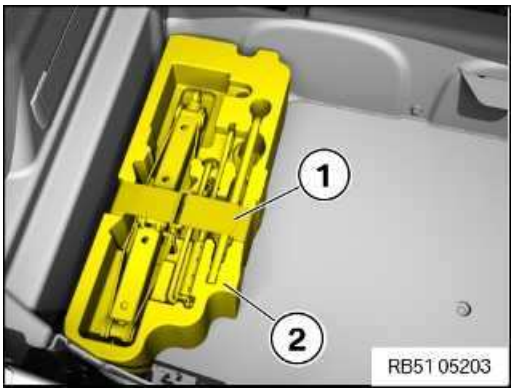
- Remove the oddments tray from the emergency wheel (1).



- Remove the emergency wheel (1).

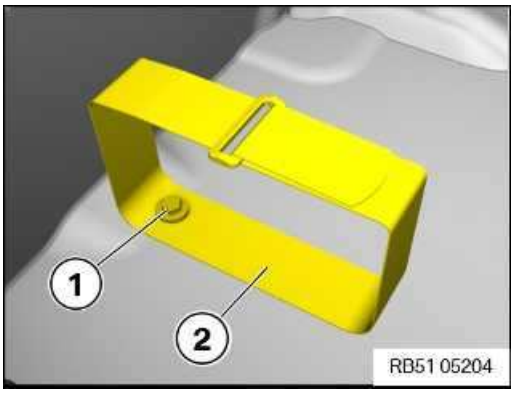
▸ **Remove the tool kit**

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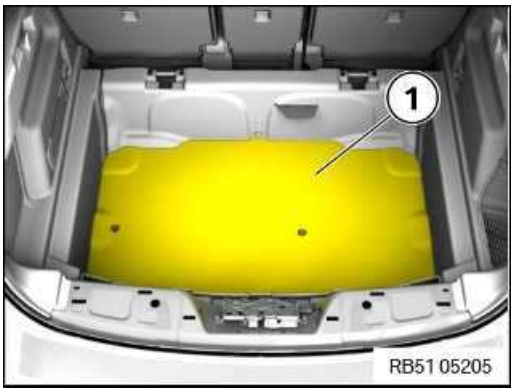
- Open the hook and loop tape (1).
- Remove the tool kit (2).

▶ **Remove the hook and loop tape for the tool kit**

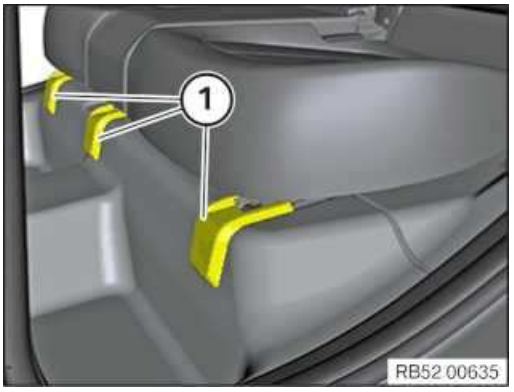


- Loosen screw (1).
- Remove the hook and loop tape (2).

▶ **Removing the luggage compartment floor trim panel**

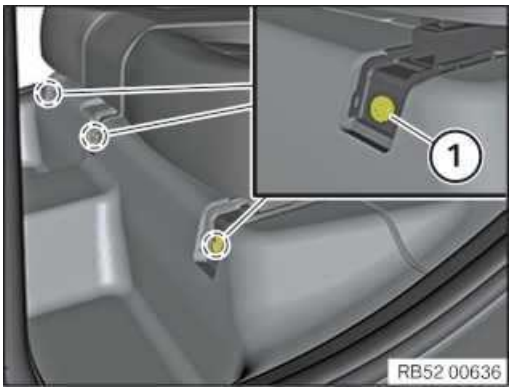


- Remove the luggage compartment floor trim panel (1) upwards.

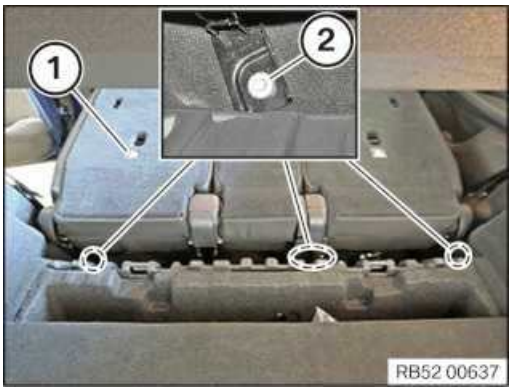


- Unclip the covers (1) forwards.

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- Loosen screws (1).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.
- Fold down rear seat backrest (1) on left and right.
- Loosen screws (2).
- Disconnect existing plug connections where required.

RISK OF DAMAGE

Heavy component.

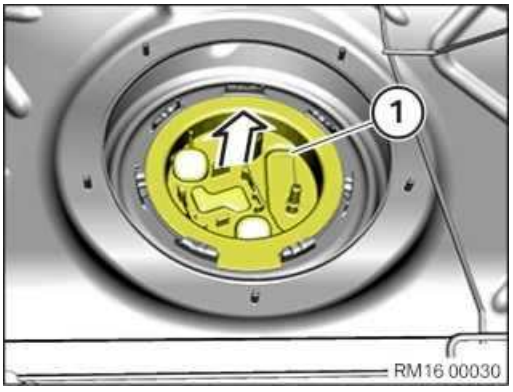
Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Lift out rear seat bench with the assistance of a second person.

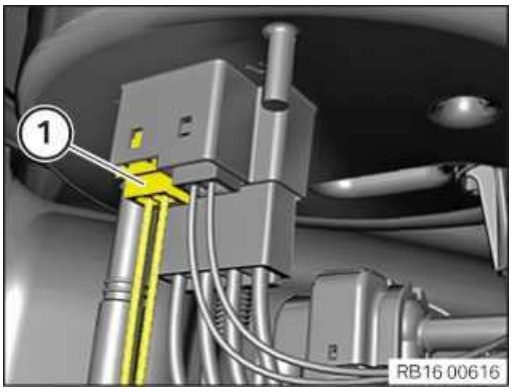
MAIN WORK

3 – Remove delivery unit (Fuel tank 61 l)

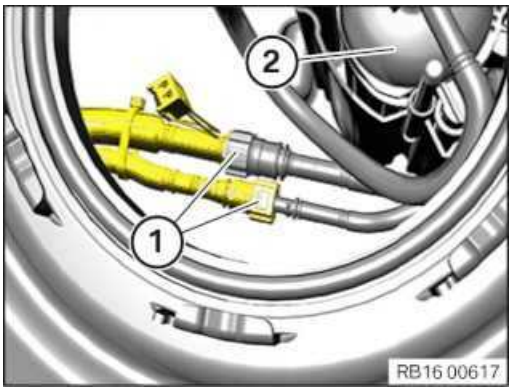


- Raise the delivery unit (1) in the direction of the arrow.

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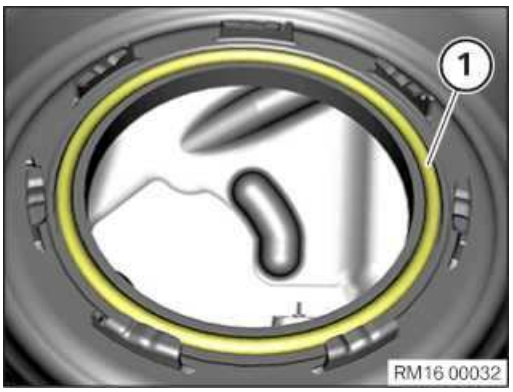


- Disconnect plug connection (1).



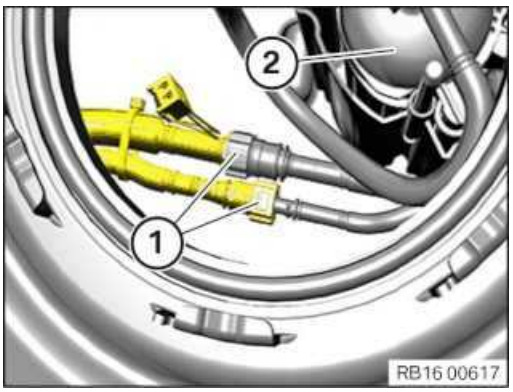
- Unlock and disconnect the snap fasteners (1).
- Remove the delivery unit (2) .

4 – Installing delivery unit (61-l fuel tank)

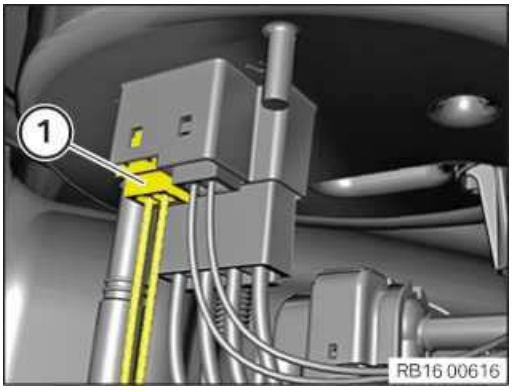


- Renew sealing ring (1).

  Parts: Sealing ring

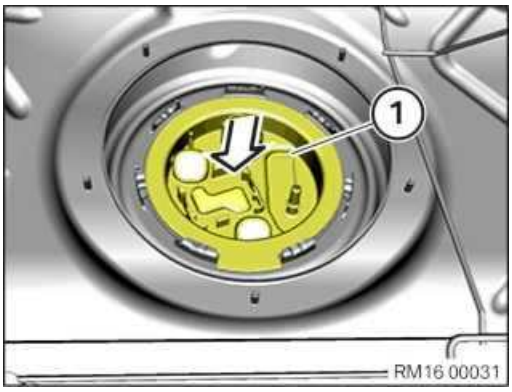


- Position the delivery unit (2) .
- Position and lock snap fasteners (1).



- Connect connector (1).

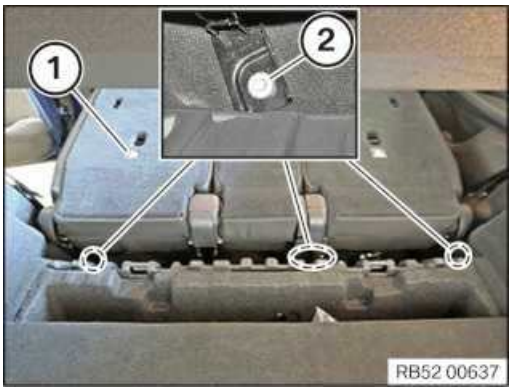
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- Install delivery unit (1) in the direction of the arrow.

POSTPROCESSES

5 – Install rear seat bench



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.

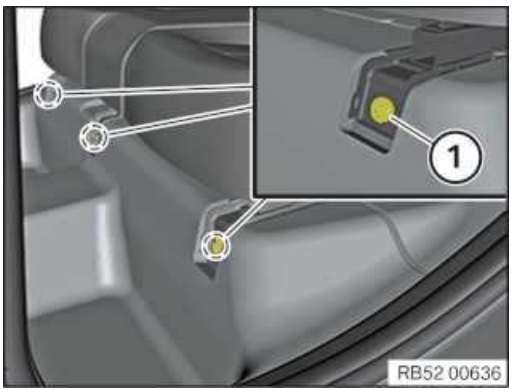
RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

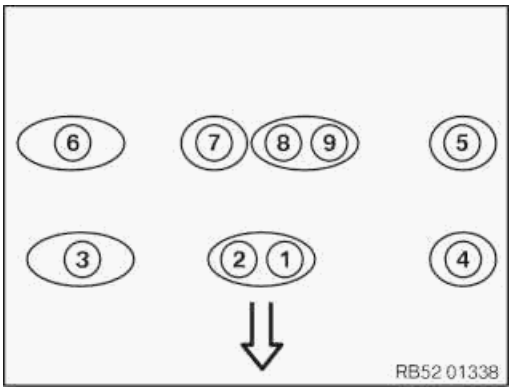
- Remove and install heavy components with the aid of another person/other persons.

- Hoist the rear seat bench into the vehicle and position it with the assistance of an auxiliary person.
- If required, connect the available connectors.
- Screw the bolts (2) in a few turns.



- Screw the bolts (1) in a few turns.

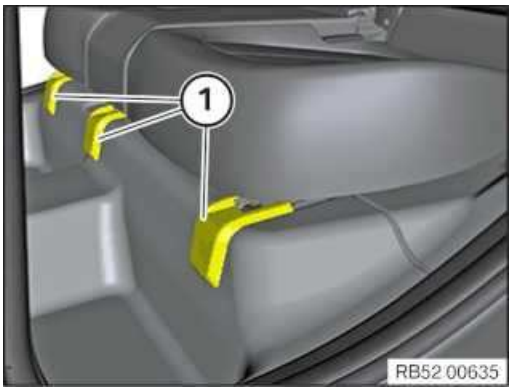
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- Tighten screws in the order (1) to (9).

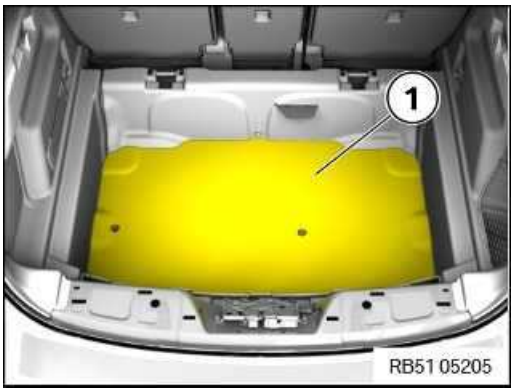
Seat bench to body

Oval-head screw		42 Nm



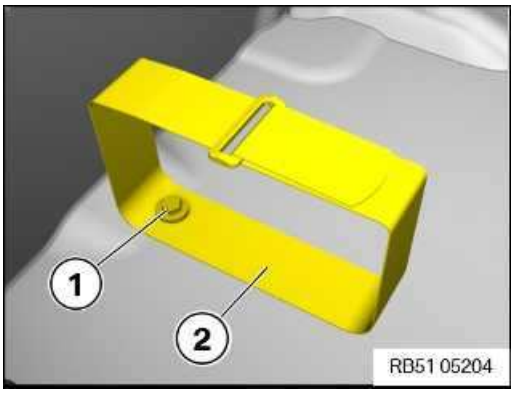
- Clip in the covers (1).

▸ **Installing the luggage compartment floor trim panel**



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

▸ **Inserting the Velcro fastener for the toolkit**



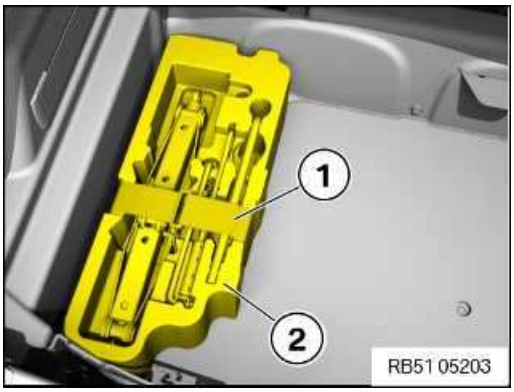
- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

▸ **Install the tool kit**

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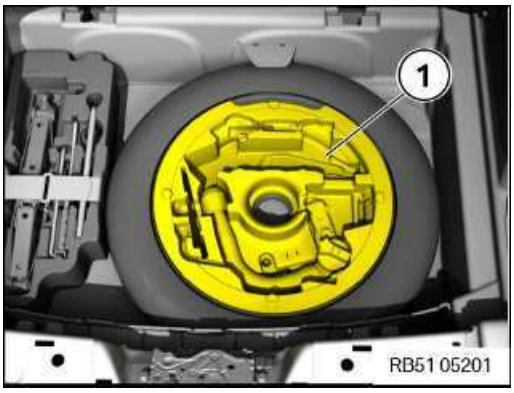


- Install the tool kit (2).
- Close the hook and loop tape (1).

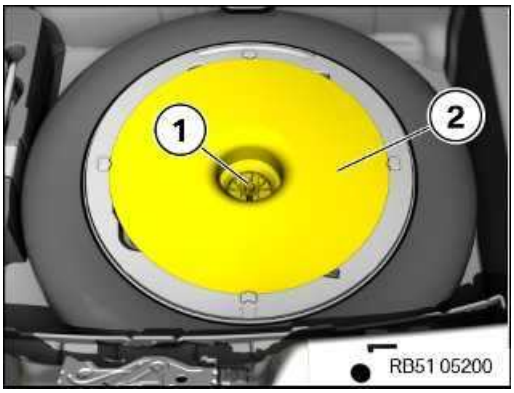
▸ **Install the emergency wheel**



- Insert compact spare wheel(1).



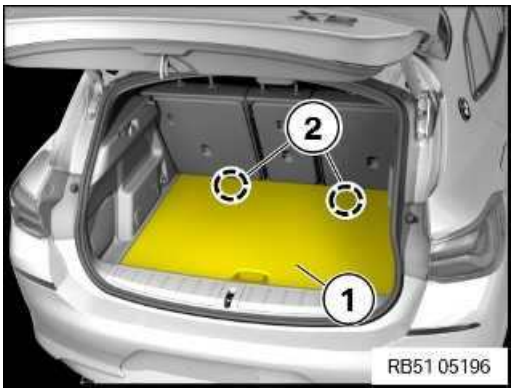
- Insert oddments tray into the compact spare wheel (1).



- Insert the lid (2).
- Hand-tighten the bolt (1).

▸ **Installing the luggage compartment removable panel**

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- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

6 – Topping up the fuel tank



- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and diesel fuel.
- Slide the suction hose (1) of the extractor unit approximately 40 cm into the fuel filler pipe. If necessary, slightly turn the suction hose.
- Fill fuel from suction extractor unit.
- After completing the work and before starting the engine for the first time: fill the fuel tank via the fuel filler pipe with a minimum of 5 l of fuel.

Additional Information

Overview of Tightening Torques

Seat bench to body — Used in step 5

Oval-head screw		42 Nm

Toolkit hook and loop tape to body — Used in step 5

Bolt M6 x 20		Tightening torque	4 Nm

Overview of Special Tools

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16 19 010 Drawing off SCR active reservoir content

1 – Evacuating the SCR reservoir

CAUTION

Materials harmful to health.

Contact with fluids harmful to health!

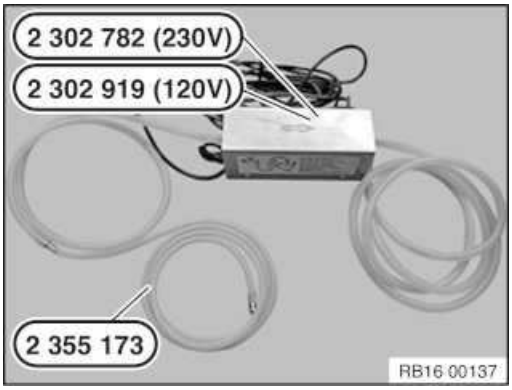
- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

TECHNICAL INFORMATION

Use only lint-free cloths for cleaning the SCR system: WAYPALL cleaning cloths L20 - see BMW Group Parts.

TECHNICAL INFORMATION

After repair work, clean the working area thoroughly with water.
Clean special tools with water after every use.



- Ensure that the right extractor unit is used.

  The extractor unit **2 302 782** (for 230 V) or the extractor unit **2 302 919** (for 120 V) must be used.
- Install the suction hose (adapter hose) **2 355 173** on the intake side of the extractor unit.

TECHNICAL INFORMATION

Before starting up the AdBlue extractor unit: Comply with the manufacturer's operating instructions and safety regulations.

- Observe the extraction direction (see arrow on the extractor unit).



- Insert the suction hose (adapter hose) **2 355 173** of the extractor unit in the filler neck (1).
- If necessary, rotate the suction hose while inserting it.

  The insertion length of the suction hose is 100 cm.

TECHNICAL INFORMATION

Do not reuse the drawn off AdBlue.

- Extract AdBlue.

Additional Information

Overview of Special Tools

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2 302 782 Pump



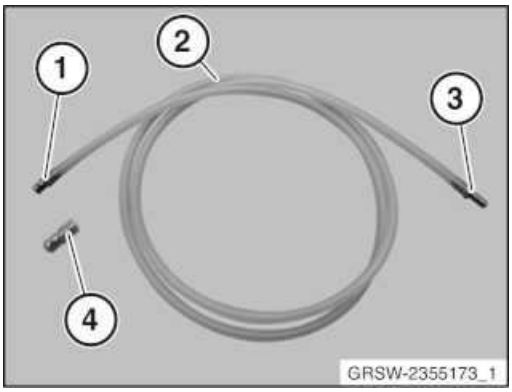
Common	Used in step 1
Usage	AdBlue 230 exhaust pump for the extraction of the urea/water mixture(AdBlue®).
Included in the tool or work	
Storage location	
Replaced by	
In connection with	Special tool 2355173
SI-Number	01 30 11 (767)

2 302 919 Pump



Common	Used in step 1
Usage	AdBlue 110V exhaust pump for the extraction of the urea/water mixture(AdBlue®) from the vehicle-specific expansion tanks.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	Special tool 2355173
SI-Number	01 30 11 (767)

2 355 173 Hose



Common	Used in step 1
Usage	Hose (hose extension) for AdBlue suction pump (81 39 2 302 782 or 81 39 2 302 919). This hose can be used to directly draw off AdBlue® from the “SCR“ active tank on the vehicle.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	WE 2302782
SI-Number	01 12 13 (964)

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16 19 075 Filling SCR reservoir

1 â€“ Filling SCR reservoir

CAUTION

Materials harmful to health.

Contact with fluids harmful to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

TECHNICAL INFORMATION

Use only lint-free cloths for cleaning the SCR system: WAYPALL cleaning cloths L20 - see BMW Group Parts.

TECHNICAL INFORMATION

After repair work, clean the working area thoroughly with water.
Clean special tools with water after every use.



- Screw the filling hose **2 302 783** with the flatter connection on the fluid tank with the AdBlue.
- Connect the other end of the filling hose **2 302 783** to the filler neck of the SCR tank.
- Hang the fluid tank with the AdBlue from a stand.
- Fill the SCR tank.
- If the SCR fluid tank is full before the fluid tank with the AdBlue is empty: Set the fluid tank down and unscrew the filling hose.
- Ensure that the AdBlue does not leak when unscrewing the filling hose.
- If necessary, immediately wash off any leaking AdBlue thoroughly with water.

Additional Information

Overview of Special Tools

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2 302 783 Hose



Common

Used in step 1

Usage	Filler hose (hose)) for drip-free filling of AdBlue in SCR vehicles (for all BMW models except E90 US version). (Disposable hose! Order new part in the case of wear!)
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	01 30 11 (767)

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16 19 250 Remove and install control unit for SCR

RISK OF DAMAGE

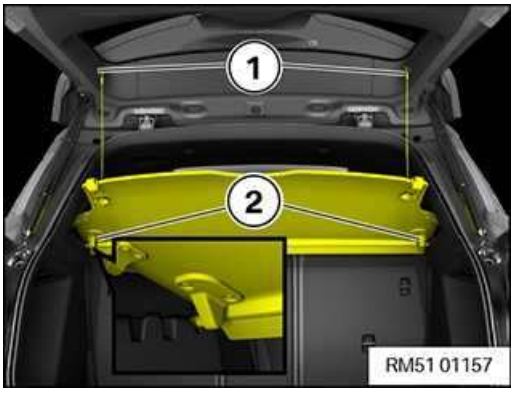
Electrostatic discharge.

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.

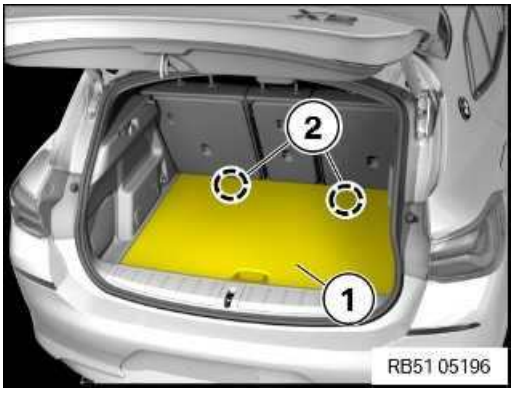
PRELIMINARY WORK

1 – Remove trim panel for storage shelf (parcel shelf)



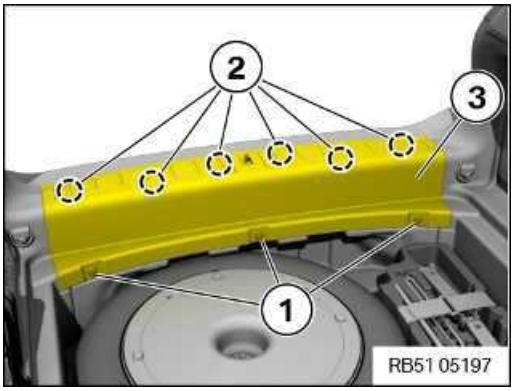
- Release the left and right retaining straps (1).
- Pull out and set aside the trim panel for the storage shelf from the guides (2).

2 – Removing the luggage compartment removable panel



- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

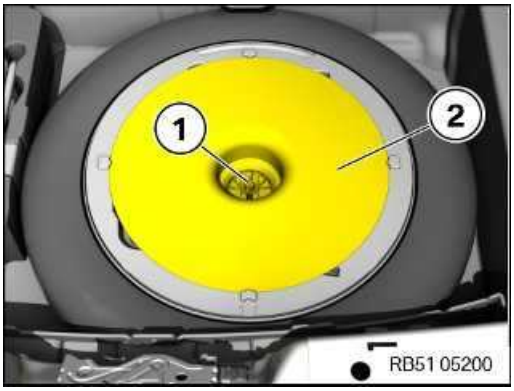
3 – Removing the loading edge trim



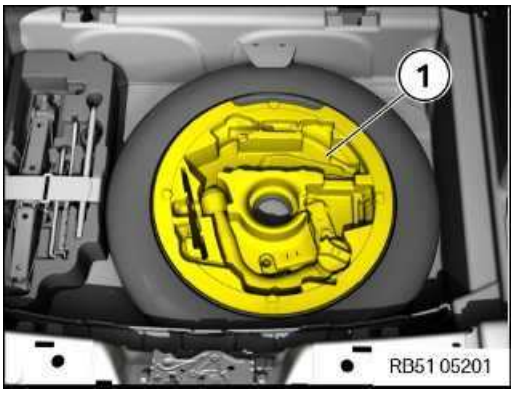
- Loosen the expanding rivet (1).
- Unclip the loading edge trim (3) from the clamps (2) toward the top and remove.

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4 – Removing the compact spare wheel



- Loosen screw (1).
- Remove the cover (2).

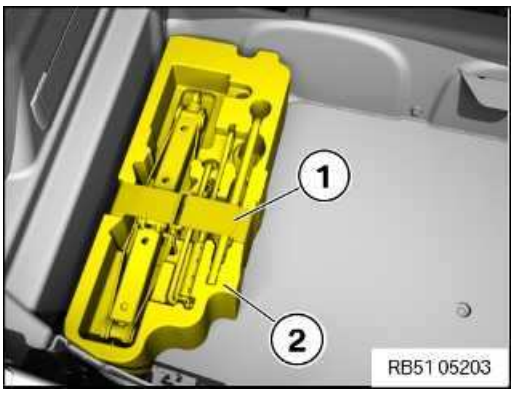


- Remove the oddments tray from the emergency wheel (1).



- Remove the emergency wheel (1).

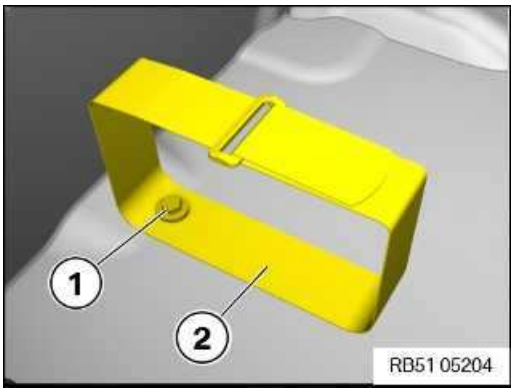
5 – Remove the tool kit



- Open the hook and loop tape (1).
- Remove the tool kit (2).

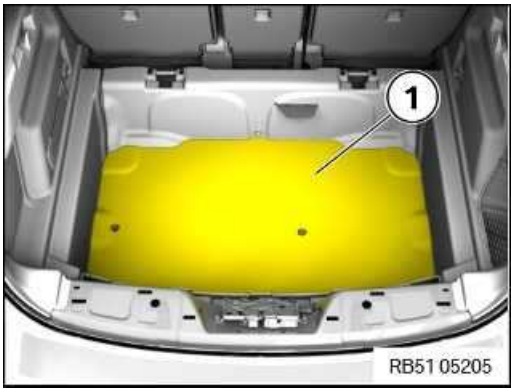
6 – Remove the hook and loop tape for the tool kit

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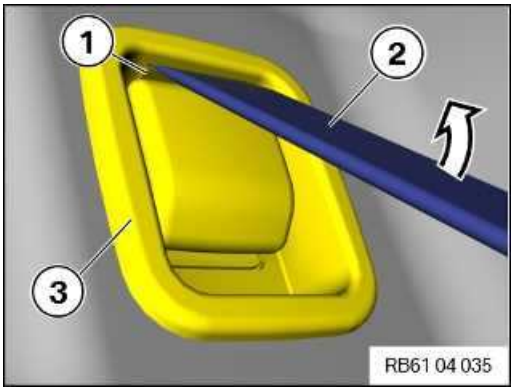
- Loosen screw (1).
- Remove the hook and loop tape (2).

7 – Removing the luggage compartment floor trim panel

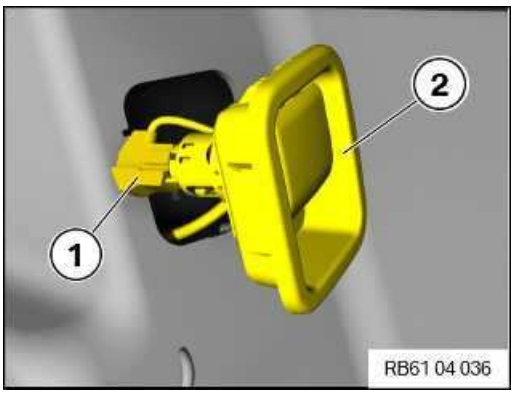


- Remove the luggage compartment floor trim panel (1) upwards.

8 – Remove the fixture of the 12 V power socket



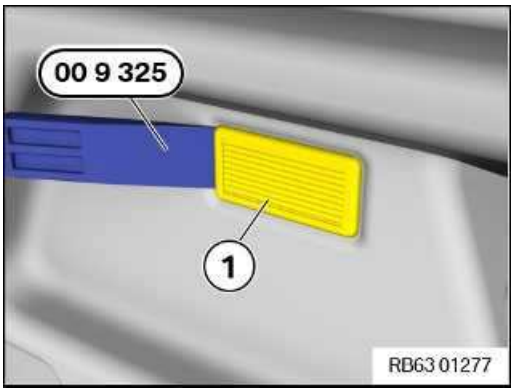
- Push the lock on top (1) with a suitable tool (2) in the direction of the arrow and unlock.
- Remove the fixture (3) of the 12 V power socket in the rear from the luggage compartment wheel arch trim panel.



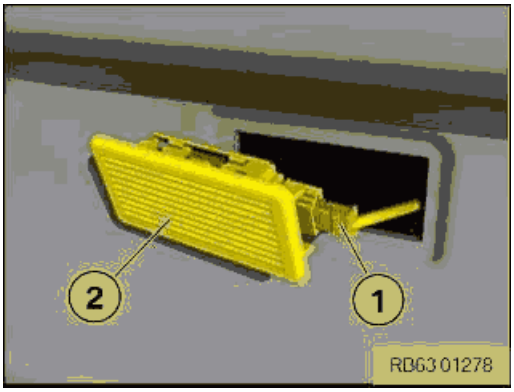
- Unlock the plug connection (1), disconnect it and remove the fixture (2) of the 12 V power socket.

9 – Removing the luggage compartment light

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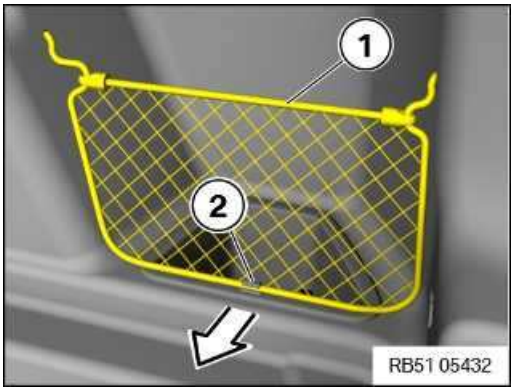


- Lever out the luggage compartment light (1) with the special tool **0 496 569 (00 9 325)**.

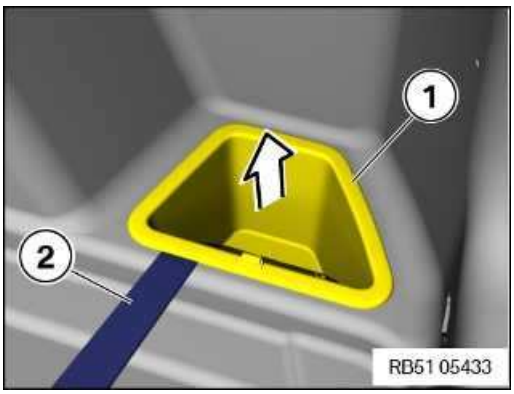


- Disconnect plug connection (1) and remove luggage compartment light (2).

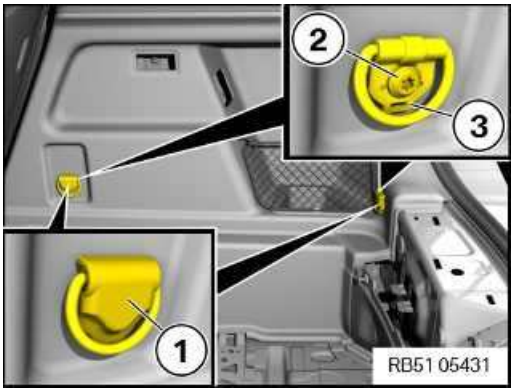
10 – Removing right luggage compartment wheel arch trim panel



- Release the storage net (1) from the latch mechanism (2) in the direction of arrow and fold up.

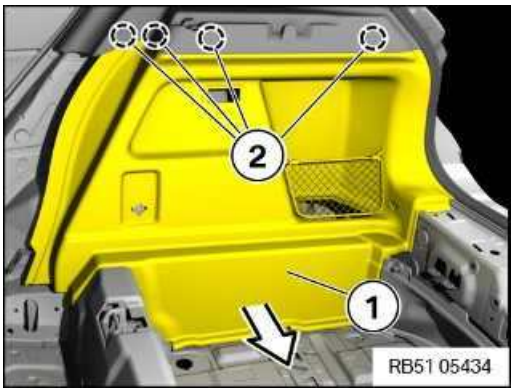


- Remove storage compartment (1) out of the luggage compartment wheel arch trim panel in the direction of arrow using a suitable tool (2).



- Unclip covers (1).
- Unscrew the bolts (2) and remove the lashing points (3).

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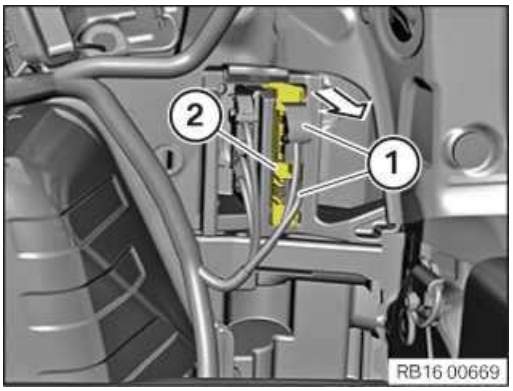
NOTICE

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

- Pull the luggage compartment wheel arch trim panel (1) on the bottom in the direction of the arrow and guide it out of the guides (2) and the C-pillar trim panel and remove.

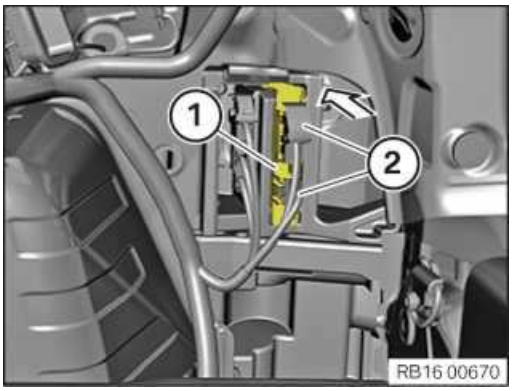
MAIN WORK

11 – Remove the control unit for the SCR exhaust emission system



- Unlock and disconnect plug connections (1).
- Remove the SCR control unit (2).

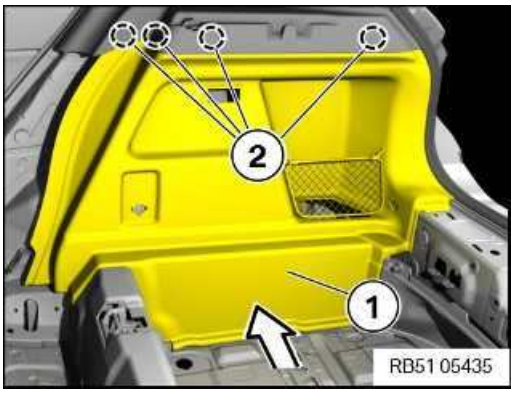
12 – Installing the control unit for the SCR exhaust emission system



- Insert SCR control unit (2).
- Connect plug connection (1) and lock.

POSTPROCESSES

13 – Installing the luggage compartment wheel arch trim panel on the right

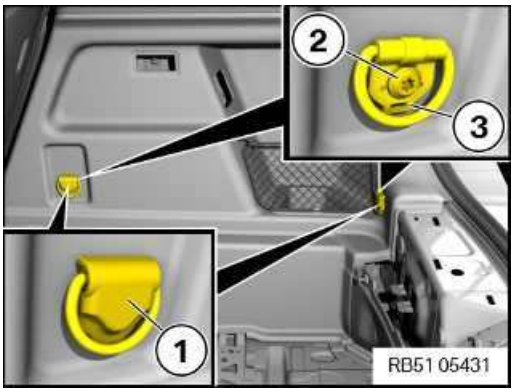


NOTICE

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

- Press luggage compartment wheel arch trim panel (1) down in direction of arrow and feed into the guides (2) and under the bottom C-pillar trim panel.

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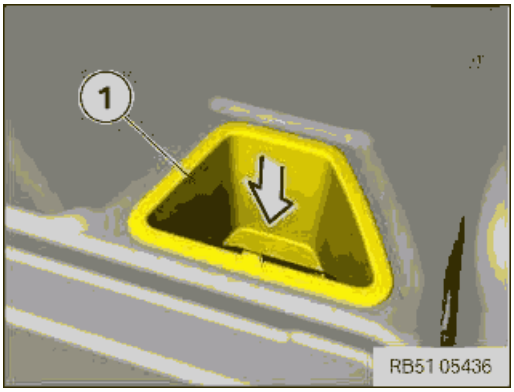


- Position the lashing eyes (3) and tighten the screws (2).

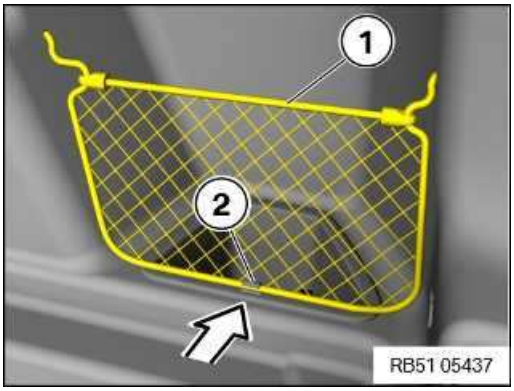
Lashing eye in luggage compartment

Bolt M8 x 22		Tightening torque	21 Nm

- Clip in the covers (1).

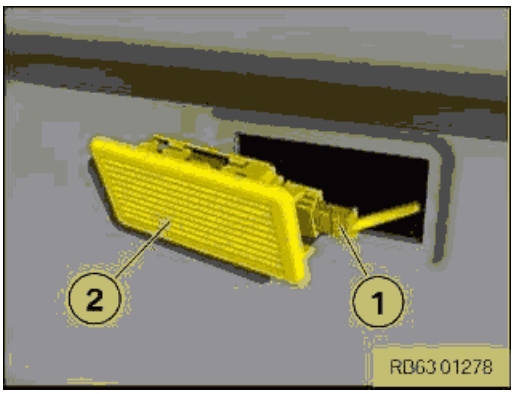


- Install the storage compartment (1) in the luggage compartment wheel arch trim panel in direction of arrow.

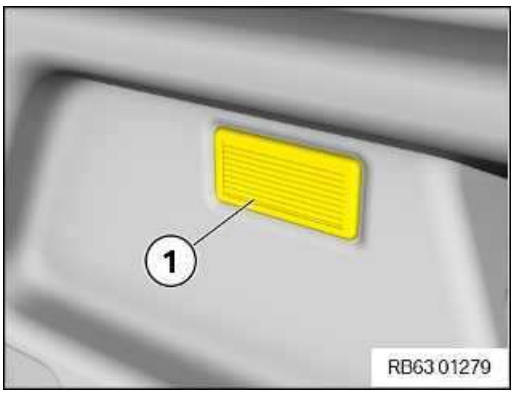


- Clip storage net (1) into latch mechanisms (2) in direction of arrow.

14 – Installing the luggage compartment light



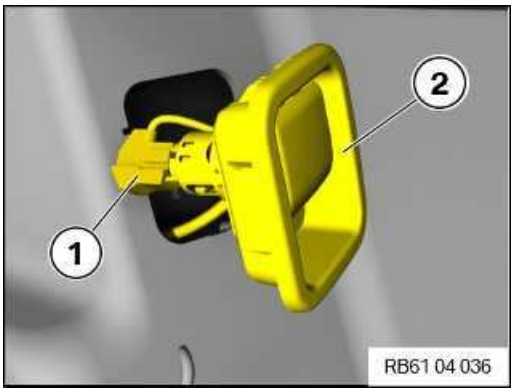
- Connect the connector (1) to the luggage compartment light (2).



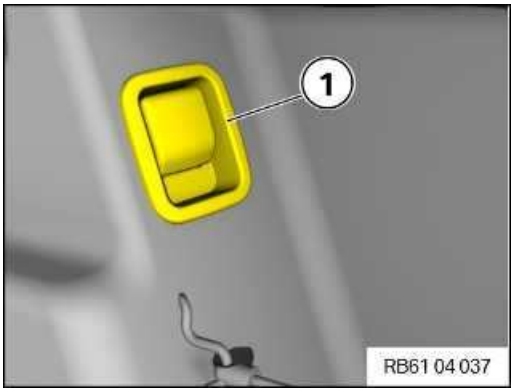
- Install the luggage compartment light (1).

15 – Install the fixture of the 12 V power socket

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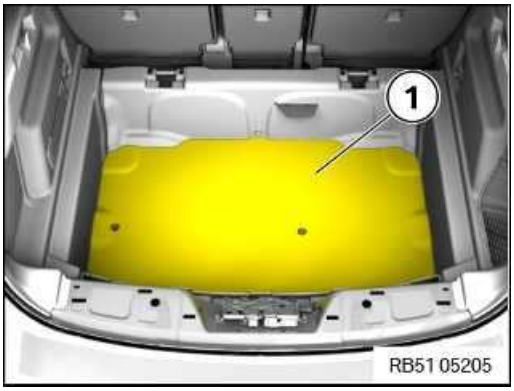


- Connect the connector (1) to the fixture (2) of the 12 V power socket and lock.



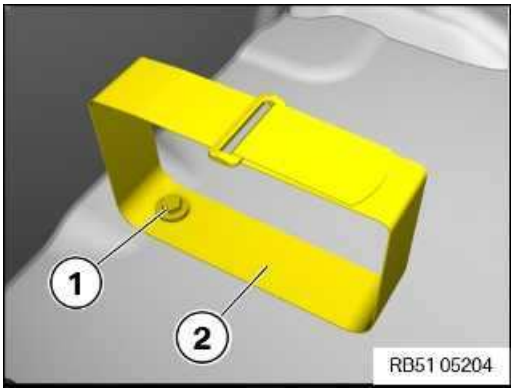
- Insert the fixture (1) of the 12 V power socket in the luggage compartment wheel arch trim panel and engage.

16 – Installing the luggage compartment floor trim panel



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

17 – Inserting the Velcro fastener for the toolkit



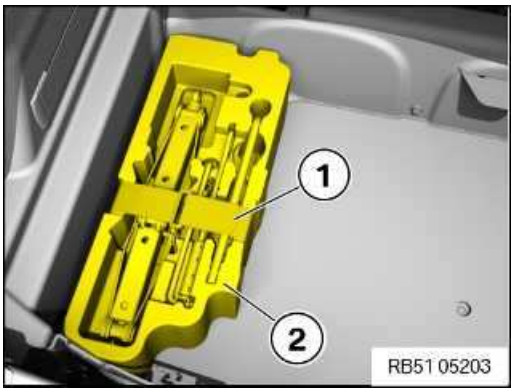
- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

18 – Install the tool kit

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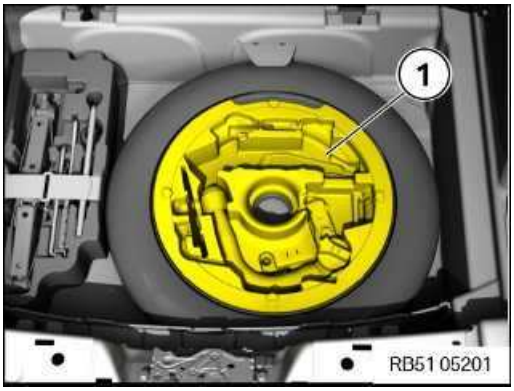


- Install the tool kit (2).
- Close the hook and loop tape (1).

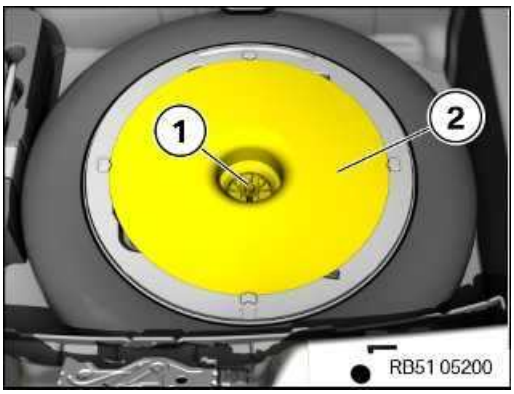
19 – Install the emergency wheel



- Insert compact spare wheel(1).

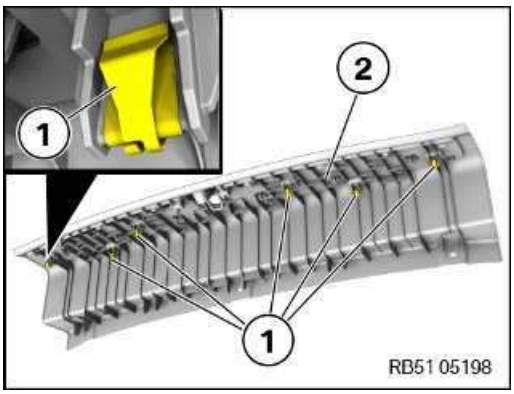


- Insert oddments tray into the compact spare wheel (1).



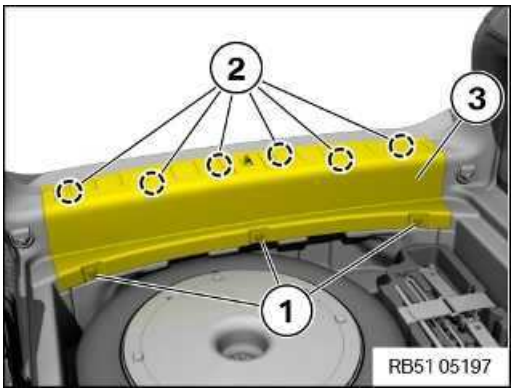
- Insert the lid (2).
- Hand-tighten the bolt (1).

20 – Installing loading edge trim



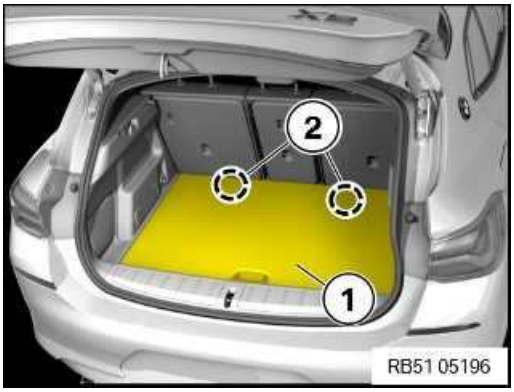
- Check the clamps (1) at the loading edge trim (2) for damage and renew if necessary.

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- Insert the loading edge trim (3) in the area of the expanding rivets (1) into the underlying rear luggage compartment trim panel.
- Guide in the loading edge trim (3) under the sealing lip of the seal for the tailgate and clip it in with the clamps (2).
- Secure expanding rivet (1).

21 – Installing the luggage compartment removable panel



- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

22 – Install trim panel for storage shelf (parcel shelf)



- Insert the trim panel for the storage shelf into the guides (2).
- Attach the left and right retaining straps (1).

Additional Information

Overview of Tightening Torques

Lashing eye in luggage compartment Used in step 13

Bolt M8 x 22		Tightening torque	21 Nm

Toolkit hook and loop tape to body Used in step 17

Bolt M6 x 20		Tightening torque	4 Nm

Overview of Special Tools

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0 496 569 (00 9 325) Wedge



Common

Used in step 9

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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16 19 004 Remove and install/replace filler pipe with filler neck on active tank

PRELIMINARY WORK

1 – Evacuating the SCR reservoir

CAUTION

Materials harmful to health.

Contact with fluids harmful to health!

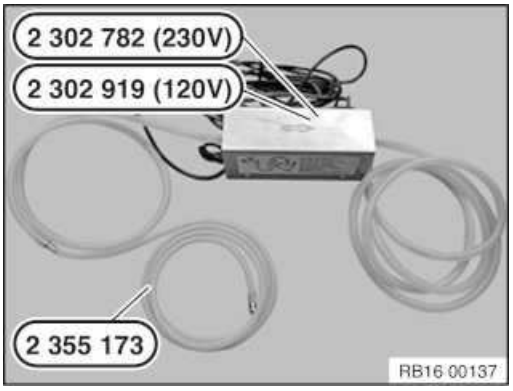
- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

TECHNICAL INFORMATION

Use only lint-free cloths for cleaning the SCR system: WAYPALL cleaning cloths L20 - see BMW Group Parts.

TECHNICAL INFORMATION

After repair work, clean the working area thoroughly with water.
Clean special tools with water after every use.



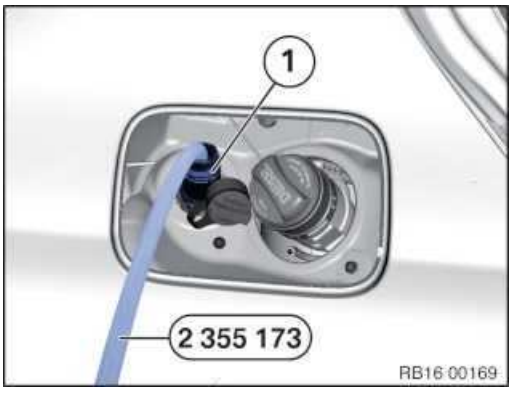
- Ensure that the right extractor unit is used.

  The extractor unit **2 302 782** (for 230 V) or the extractor unit **2 302 919** (for 120 V) must be used.
- Install the suction hose (adapter hose) **2 355 173** on the intake side of the extractor unit.

TECHNICAL INFORMATION

Before starting up the AdBlue extractor unit: Comply with the manufacturer's operating instructions and safety regulations.

- Observe the extraction direction (see arrow on the extractor unit).



- Insert the suction hose (adapter hose) **2 355 173** of the extractor unit in the filler neck (1).
- If necessary, rotate the suction hose while inserting it.

  The insertion length of the suction hose is 100 cm.

TECHNICAL INFORMATION

Do not reuse the drawn off AdBlue.

- Extract AdBlue.

2 – Remove right rear wheel arch cover

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NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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

▶ **Removing the rear right wheel**

▷ **Removing the wheel**



- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

◁

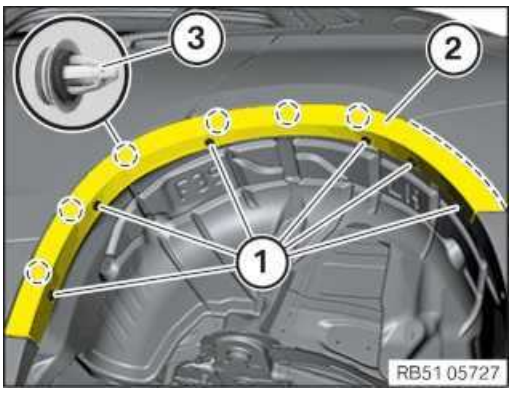
▶ **Removing rear wheel arch trim**

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

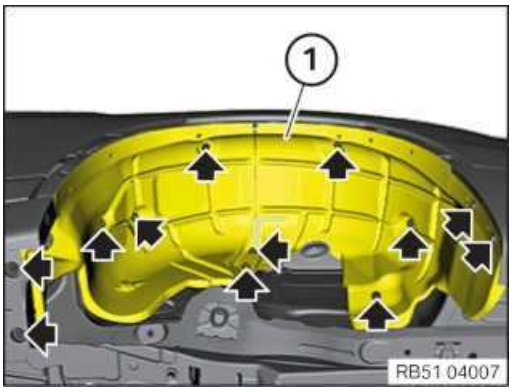
NOTICE

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



- Remove the blind rivets (1).
- Disengage the wheel arch trim (2) from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

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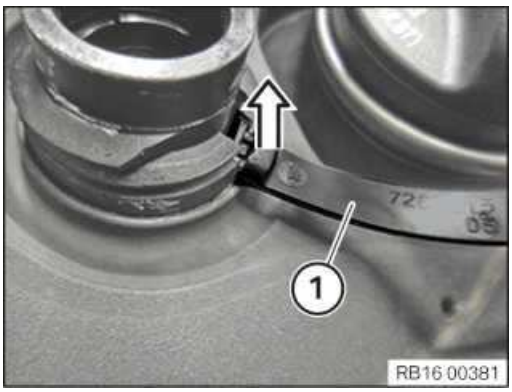
- Unscrew all bolts and nuts (arrows).
- Carefully feed out and remove the wheel arch cover (2).

MAIN WORK

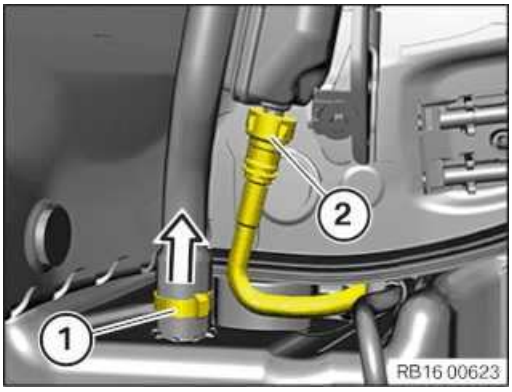
3 – Remove the filler pipe at the active tank



- Open sealing cap (1).

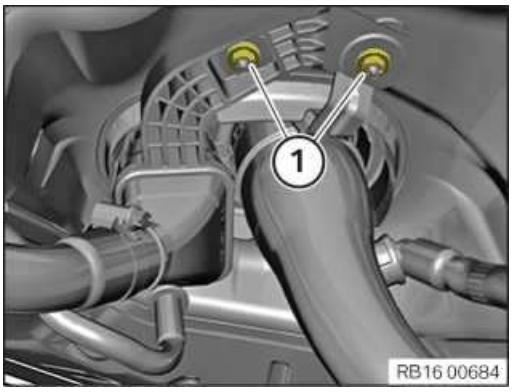


- Unclip retaining strap (1) in direction of arrow and remove the sealing cap.

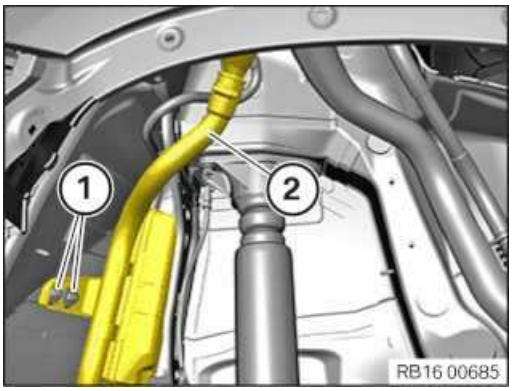


- Loosen the hose clamp (1) and pull off the filling hose in the direction of the arrow.
- Unlock and disconnect snap fastener (2).

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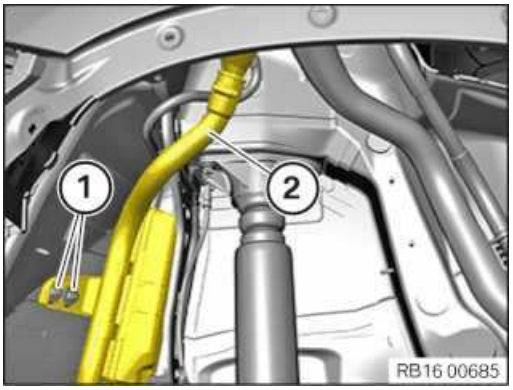


- Loosen nuts (1).



- Release plastic nuts (1) and remove filler pipe (2).

4 – Install the filler pipe on the active tank

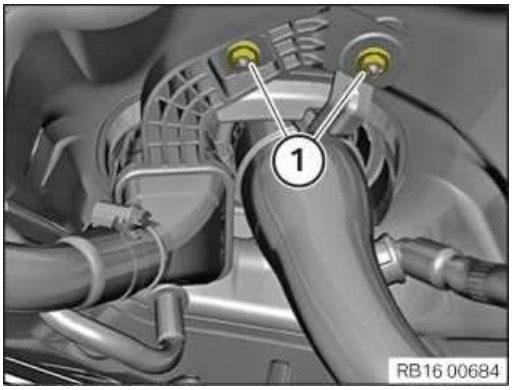


- Position the fuel filler pipe(2).
- Renew the plastic nuts (1).

  Parts: Plastic nuts
- Insert plastic nuts (1) and tighten.

SCR filler pipe on wheel arch

Plastic nut	Renew plastic nut.	Tightening torque	4 Nm

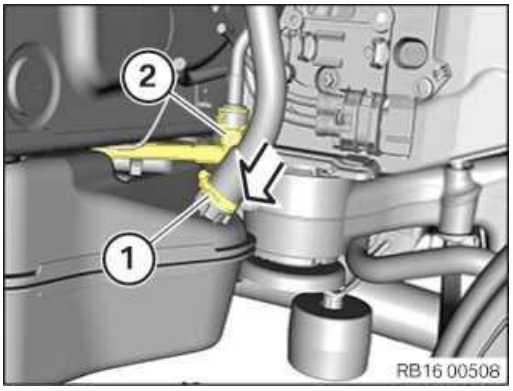


- Renew nuts (1).

  Parts: Nuts
- Install the nuts (1) and tighten.

SCR filler pipe to body

Nut M6	Replace nuts.	Tightening torque	8 Nm



- Mount the filling hose in the direction of the arrow.
- Renew the hose clamp (1).

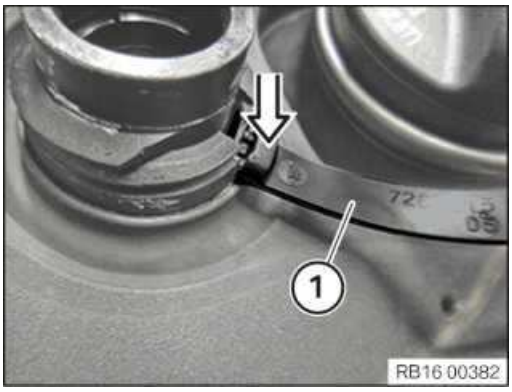
  Parts: Hose clamp
- Position hose clamp (1) and tighten.

Filling hose SCR reservoir

Hose clamp	Replace hose clamp.	Tightening torque	3 Nm

- Position snap fastener (2) and lock.

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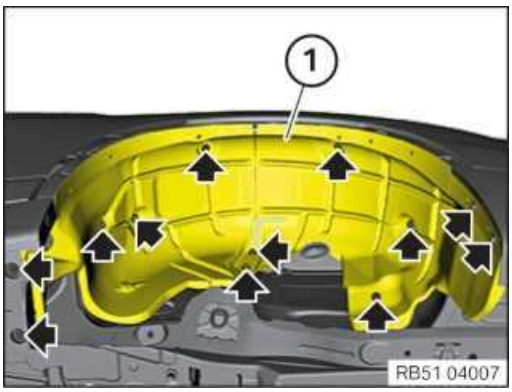
- Lock retaining strap (1) in direction of arrow.



- Close sealing cap (1).

POSTPROCESSES

5 – Installing the rear wheel arch cover on the right



- Feed in wheel arch cover (1) and correctly position it.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

▸ **Installing the rear wheel arch trim**

TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.

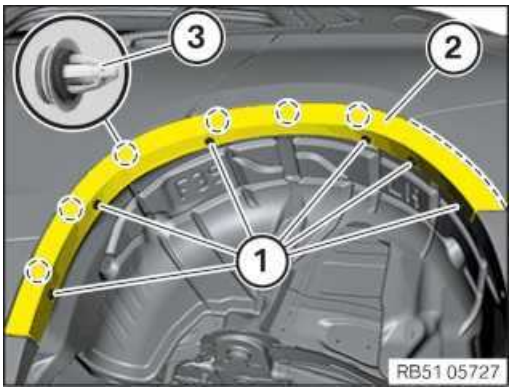
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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

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- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage the wheel arch trim (2) with the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

6 – Installing rear right wheel

▶ **Mounting the wheel**

▷ **Clean the contact surfaces between the brake disc and the wheel rim**



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

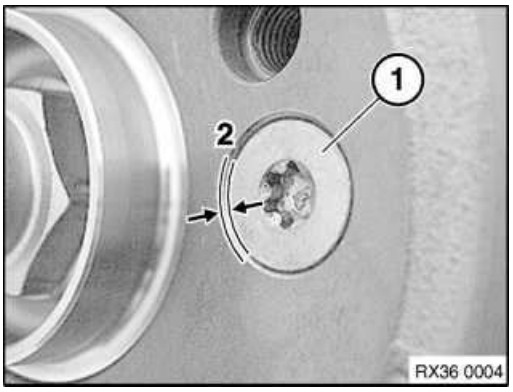
  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).

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- Renew mounting bolt (1).

  Parts: Mounting bolt

- Check that the mounting bolt (1) for the brake disc is securely seated.

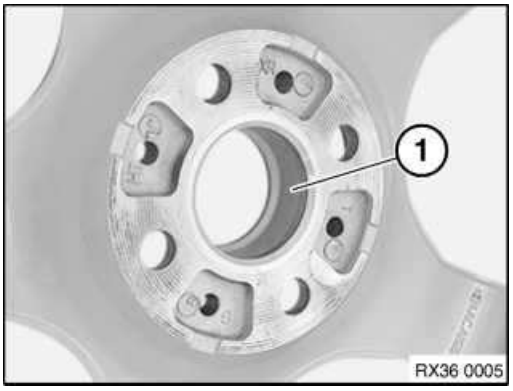
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

7 – Filling SCR reservoir

CAUTION

Materials harmful to health.

Contact with fluids harmful to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

TECHNICAL INFORMATION

Use only lint-free cloths for cleaning the SCR system: WAYPALL cleaning cloths L20 - see BMW Group Parts.

TECHNICAL INFORMATION

After repair work, clean the working area thoroughly with water.

Clean special tools with water after every use.

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- Screw the filling hose **2 302 783** with the flatter connection on the fluid tank with the AdBlue.
- Connect the other end of the filling hose **2 302 783** to the filler neck of the SCR tank.
- Hang the fluid tank with the AdBlue from a stand.
- Fill the SCR tank.
- If the SCR fluid tank is full before the fluid tank with the AdBlue is empty: Set the fluid tank down and unscrew the filling hose.
- Ensure that the AdBlue does not leak when unscrewing the filling hose.
- If necessary, immediately wash off any leaking AdBlue thoroughly with water.

Additional Information

Overview of Tightening Torques

SCR filler pipe on wheel arch — Used in step 4

Plastic nut	Renew plastic nut.	Tightening torque	4 Nm

SCR filler pipe to body — Used in step 4

Nut M6	Replace nuts.	Tightening torque	8 Nm

Filling hose SCR reservoir — Used in step 4

Hose clamp	Replace hose clamp.	Tightening torque	3 Nm

Wheel arch cover to body — Used in step 5

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Brake disc to rear wheel hub — Used in step 6

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub — Used in step 6

M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts — Used in step 6

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Overview of Special Tools

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2 302 782 Pump



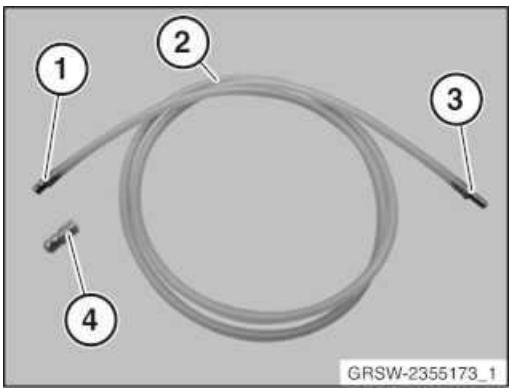
Common	Used in step 1
Usage	AdBlue 230 exhaust pump for the extraction of the urea/water mixture(AdBlue®).
Included in the tool or work	
Storage location	
Replaced by	
In connection with	Special tool 2355173
SI-Number	01 30 11 (767)

2 302 919 Pump



Common	Used in step 1
Usage	AdBlue 110V exhaust pump for the extraction of the urea/water mixture(AdBlue®) from the vehicle-specific expansion tanks.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	Special tool 2355173
SI-Number	01 30 11 (767)

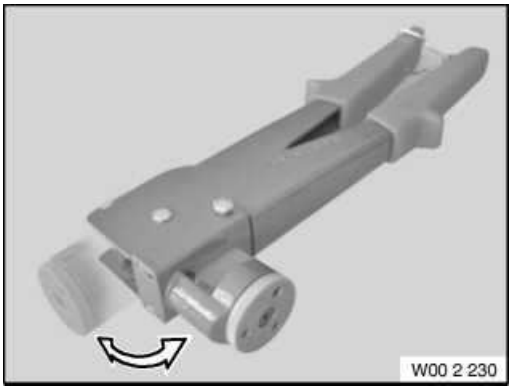
2 355 173 Hose



Common	Used in step 1
Usage	Hose (hose extension) for AdBlue suction pump (81 39 2 302 782 or 81 39 2 302 919). This hose can be used to directly draw off AdBlue® from the “SCR“ active tank on the vehicle.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	WE 2302782
SI-Number	01 12 13 (964)

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0 496 521 (00 2 230) Pliers



Common	Used in step 5
Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

2 344 011 Tool



Common	Used in step 6
Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

2 302 783 Hose



Common	Used in step 7
Usage	Filler hose (hose)) for drip-free filling of AdBlue in SCR vehicles (for all BMW models except E90 US version). (Disposable hose! Order new part in the case of wear!)
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	01 30 11 (767)

Replacement tools:

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0 495 221 (36 1 323) Wheel stud



Common	Used in step 2
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 224 (36 1 326) Wheel stud



Common	Used in step 2
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 225 (36 1 327) Wheel stud



Common	Used in step 2
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



Common	Used in step 2
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 227 (36 1 329) Wheel stud



Common	Used in step 2
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 228 (36 1 331) Wheel stud



Common	Used in step 2
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

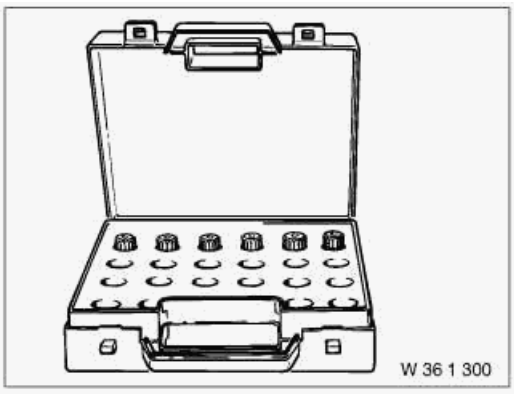
0 495 229 (36 1 332) Wheel stud



Common	Used in step 2
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 230 (36 1 333) Wheel stud



Common	Used in step 2
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Links

Operating materials	Used in step
2.0 Grease for wheel centring	6

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16 19 135 Removing and installing connecting piece for active tank SCR

CAUTION

Materials harmful to health.

Contact with fluids harmful to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

TECHNICAL INFORMATION

Use only lint-free cloths for cleaning the SCR system: WAYPALL cleaning cloths L20 - see BMW Group Parts.

TECHNICAL INFORMATION

After repair work, clean the working area thoroughly with water.

Clean special tools with water after every use.

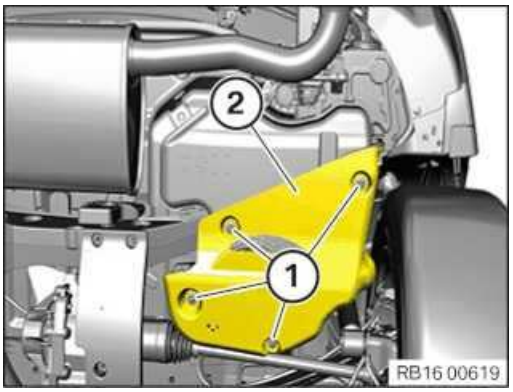
TECHNICAL INFORMATION

After every disassembly and prior to every installation: Always clean connections and covers of lines transporting AdBlue thoroughly with water.

Close connections and AdBlue carrying lines.

PRELIMINARY WORK

1 – Removing the cover of the SCR tank

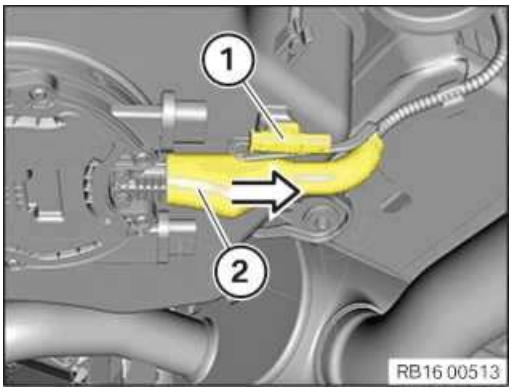


- Loosen plastic nuts (1).
- Remove the cover of the SCR tank (2).

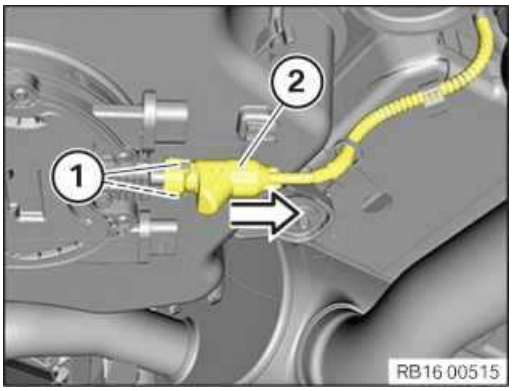
MAIN WORK

2 – Removing the connector of the SCR tank

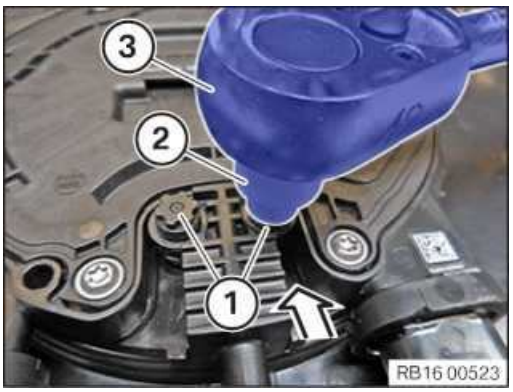
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- Remove the connector (1) from the SCR tank.
- Pull off protective cover (2) in direction of arrow.



- Push the snap fastener (2) toward the delivery unit.
- Press retaining lug (1) and pull off the snap fastener (2) in direction of arrow.



- Release screws (1) with the special insert (2) delivered with the repair kit and a reversible ratchet (3).
- Remove the connector to the bottom.

3 – Installing the connector of the SCR tank.

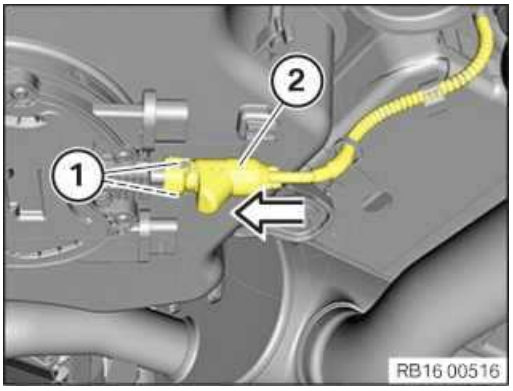


- Renew the screws (1) and the connector.

  Parts: Screws and connector
- Position connector.
- Insert screws (1) and tighten with the special insert (2) delivered with the repair kit and a reversible ratchet (3).

Connector on SCR tank

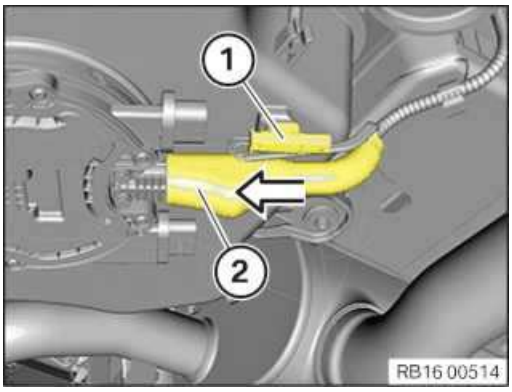
M4 screw	Renew bolts and connector.	Tightening torque	2 Nm



- Position snap fastener (2) and lock.

  Retaining lugs (1) must lock completely.

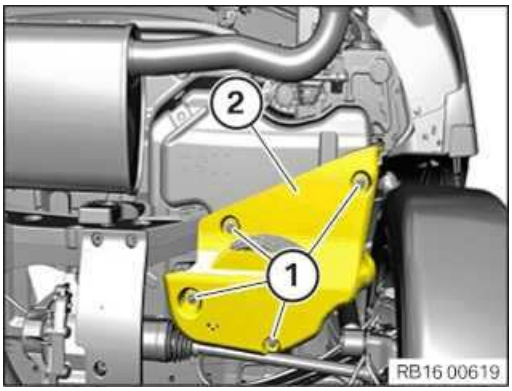
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- Engage the connector (1) at the SCR tank.
- Push the protective cover (2) in the direction of the arrow.

POSTPROCESSES

4 – Install the SCR tank cover



- Install the cover of the SCR tank (2).
- Renew the plastic nuts (1).

  Parts: Plastic nuts
- Insert plastic nuts (1) and tighten.

Cover on the SCR tank

Plastic nut	Renew plastic nut.	Tightening torque	3 Nm

5 – Putting the SCR tank system into operation



- Connect diagnosis and information system.
- Carry out start-up of the SCR tank system.
- Reset adaptations and adjustments in the SCR system.

Additional Information

Overview of Tightening Torques

Connector on SCR tank Used in step 3

M4 screw	Renew bolts and connector.	Tightening torque	2 Nm

Cover on the SCR tank Used in step 4

Plastic nut	Renew plastic nut.	Tightening torque	3 Nm

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16 19 020 Removing and installing the active tank SCR

PRELIMINARY WORK

1 – Evacuating the SCR reservoir

CAUTION

Materials harmful to health.

Contact with fluids harmful to health!

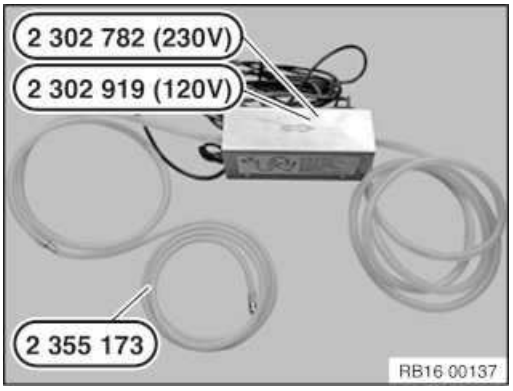
- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

TECHNICAL INFORMATION

Use only lint-free cloths for cleaning the SCR system: WAYPALL cleaning cloths L20 - see BMW Group Parts.

TECHNICAL INFORMATION

After repair work, clean the working area thoroughly with water.
Clean special tools with water after every use.



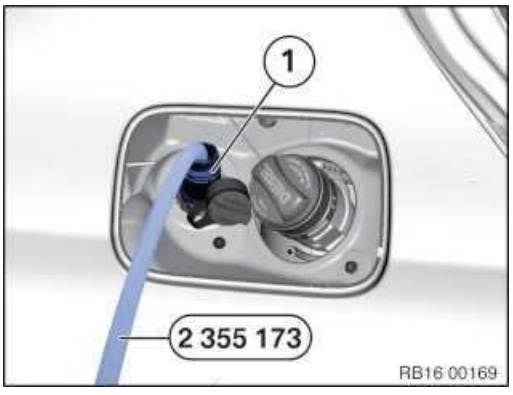
- Ensure that the right extractor unit is used.

  The extractor unit **2 302 782** (for 230 V) or the extractor unit **2 302 919** (for 120 V) must be used.
- Install the suction hose (adapter hose) **2 355 173** on the intake side of the extractor unit.

TECHNICAL INFORMATION

Before starting up the AdBlue extractor unit: Comply with the manufacturer's operating instructions and safety regulations.

- Observe the extraction direction (see arrow on the extractor unit).



- Insert the suction hose (adapter hose) **2 355 173** of the extractor unit in the filler neck (1).
- If necessary, rotate the suction hose while inserting it.

  The insertion length of the suction hose is 100 cm.

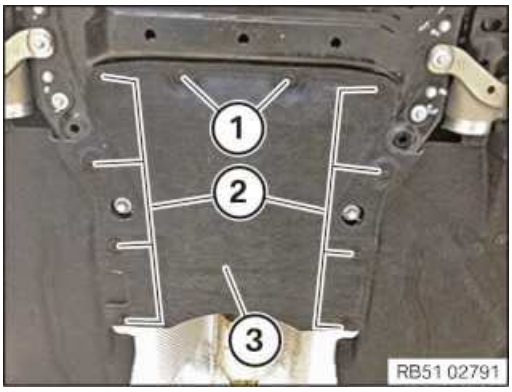
TECHNICAL INFORMATION

Do not reuse the drawn off AdBlue.

- Extract AdBlue.

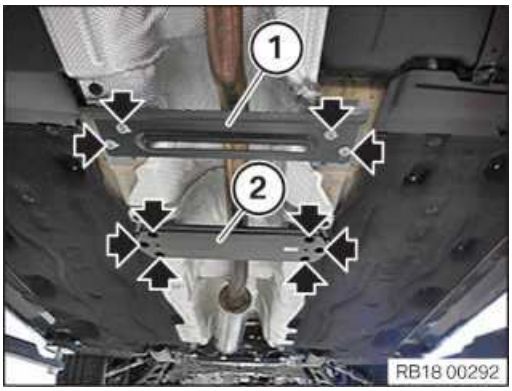
2 – If installed: Removing rear underbody protection

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- Loosen screws (1) and (2).
- Remove underbody protection (3).

3 – Removing the connecting support from the tunnel in front and back

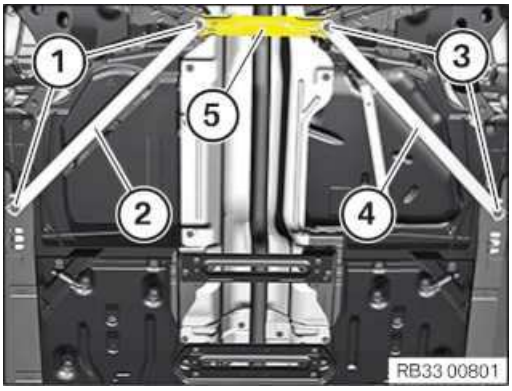


- Unscrew the bolts (arrows) from the connecting support (1).
- Feed out and remove the crossbeam (1).
- Unscrew the bolts (arrows) from the connecting support (2).
- Feed out and remove the crossbeam (2).

4 – Remove the cross strut with the torsion strut

TECHNICAL INFORMATION

Driving without a torsion strut is not permitted.



- Loosen screws (1).
- Thread out torsion strut (2) at left and remove.
- Loosen screws (3).
- Thread out torsion strut (4) at right and remove.
- Feed out and remove the cross-member (5).

5 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

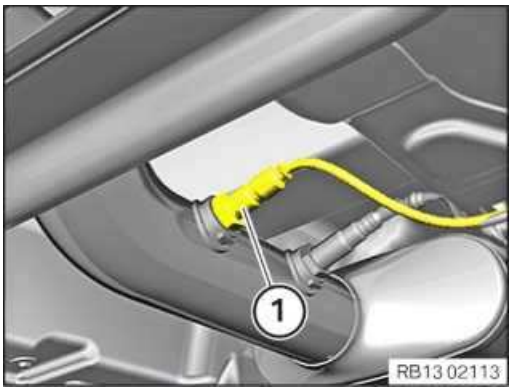
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CAUTION

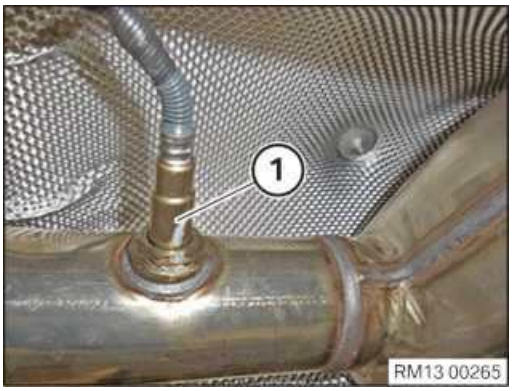
Heavy component.

Heavy components can lead to injury or damage.

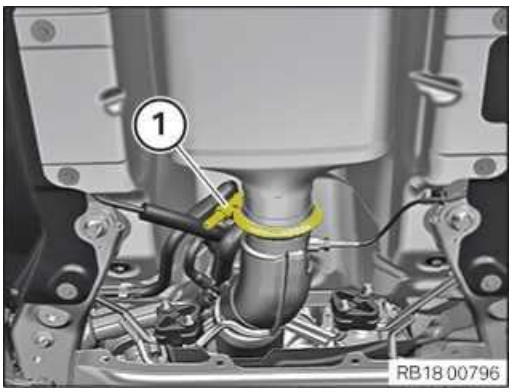
- Remove and install heavy components with the aid of another person/other persons.



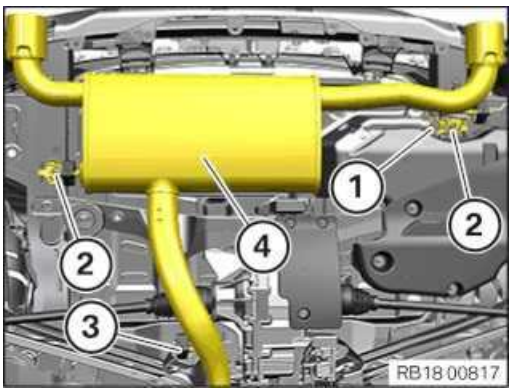
- Release the nitrogen oxide sensor (1) downstream of the SCR catalytic converter, guide it out and set it aside.



- Release the diesel particulate sensor (1), guide it out and set it aside.



- Loosen V-band clamp (1).



- Loosen screw (1).
- Loosen nuts (2).
- Release the rubber mount (3) of the exhaust system (4).
- Lower and guide out the exhaust system (4) with assistance of a second person and remove it.

6 – Remove right rear wheel arch cover

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NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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

▶ **Removing the rear right wheel**

▷ **Removing the wheel**



- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

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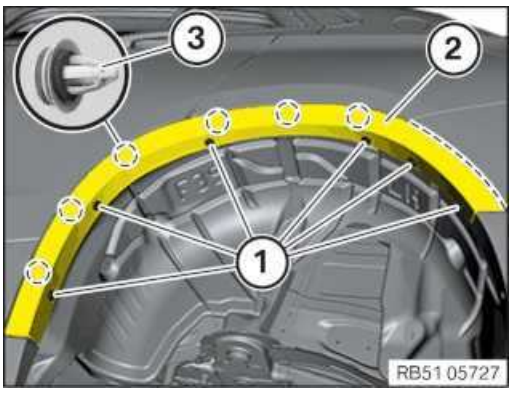
▶ **Removing rear wheel arch trim**

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

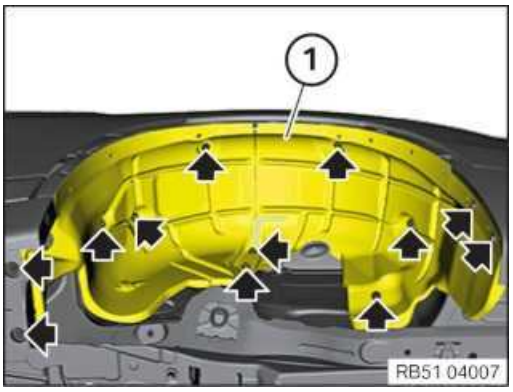
NOTICE

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



- Remove the blind rivets (1).
- Disengage the wheel arch trim (2) from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

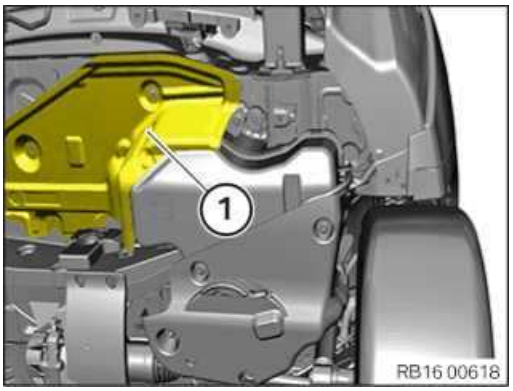
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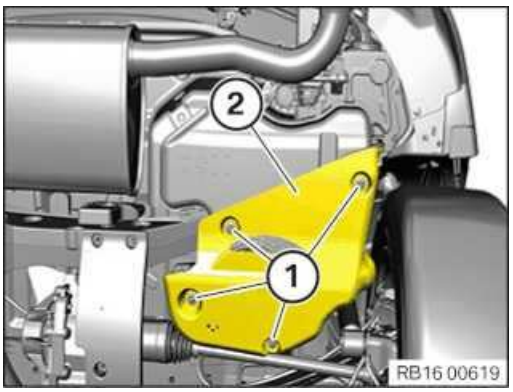
- Unscrew all bolts and nuts (arrows).
- Carefully feed out and remove the wheel arch cover (2).

MAIN WORK

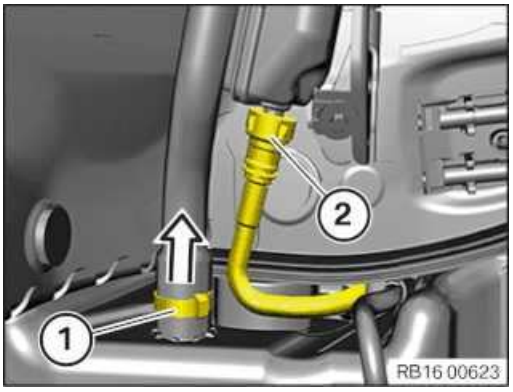
7 – Remove SCR reservoir



- Remove heat shield (1).

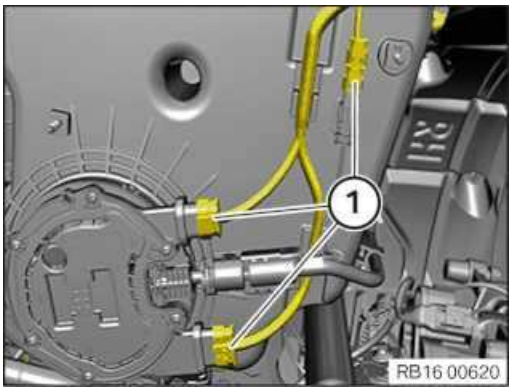


- Loosen plastic nuts (1).
- Remove the cover of the SCR tank (2).

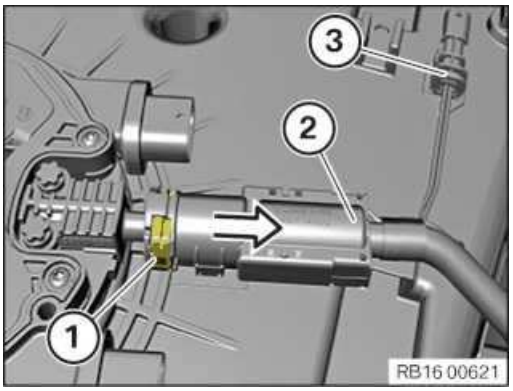


- Loosen hose clamp (1).
- Remove the filling hose in direction of arrow.
- Unlock and disconnect snap fastener (2).

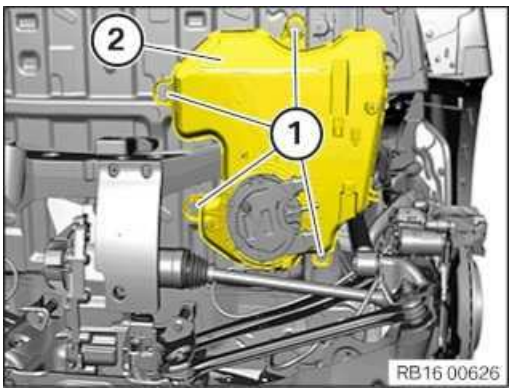
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- Disconnect all plug connections (1).

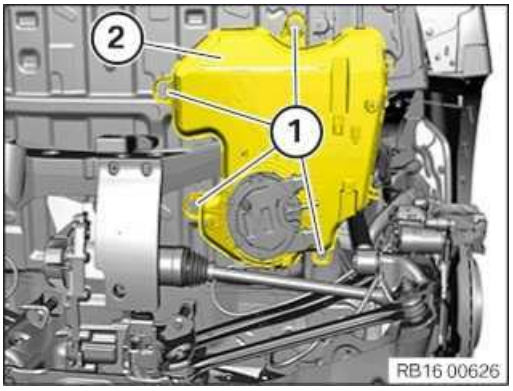


- Push the snap fastener (2) toward the delivery unit.
- Press retaining lug (1) and pull off the snap fastener (2) in direction of arrow.
- Unclip connector (3) from the bracket.



- Support SCR reservoir (2).
- Release the nuts (1), lower the SCR tank (2) and remove it.

8 – Installing SCR reservoir

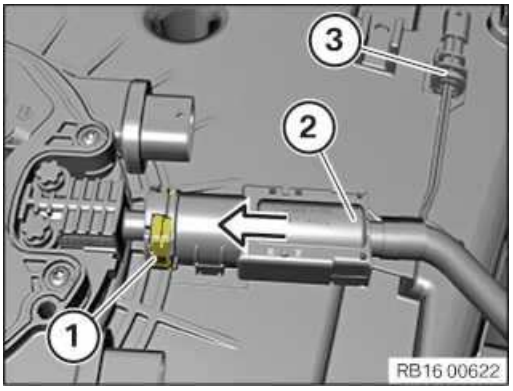


- Position SCR reservoir (2).
- Renew nuts (1).

  Parts: Nuts
- Install the nuts (1) and tighten.

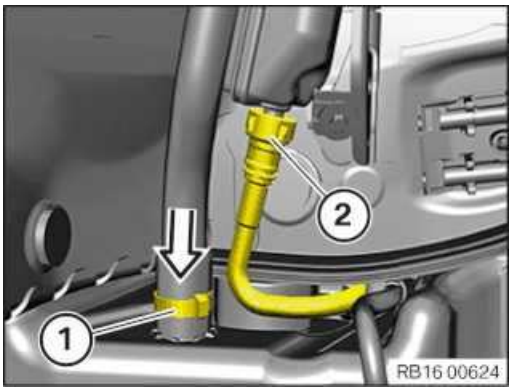
SCR reservoir to body

M8	Renew nuts / bolt	Tightening torque	19 Nm



- Position snap fastener (2) and lock.
- Ensure that the retaining lug (1) is correctly seated.
- Clip in the connector (3) into the bracket.

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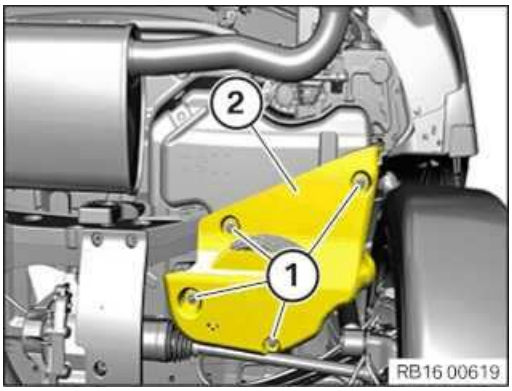
- Renew the hose clamp (1).

  Parts: Hose clamp
- Install filling hose in the direction of the arrow.
- Position hose clamp (1) and tighten.

Filling hose SCR reservoir

Hose clamp	Replace hose clamp.		4 Nm

- Position snap fastener (2) and lock.

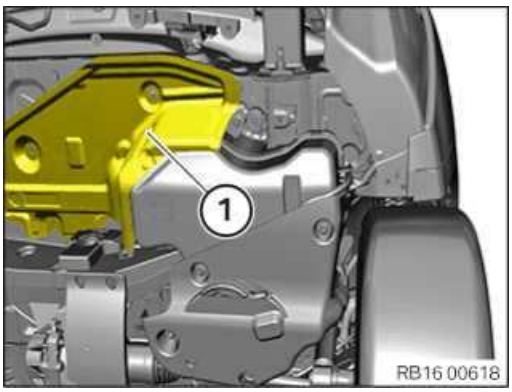


- Install the cover of the SCR tank (2).
- Renew the plastic nuts (1).

  Parts: Plastic nuts
- Insert plastic nuts (1) and tighten.

Cover on the SCR tank

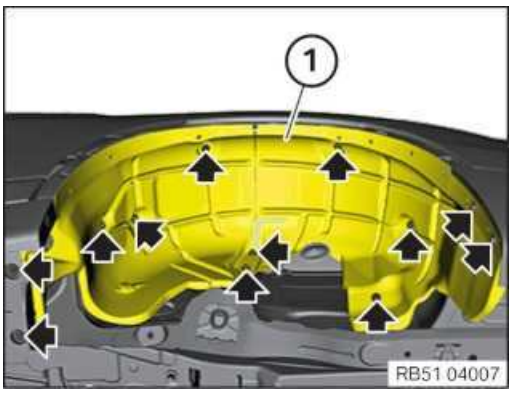
Plastic nut	Renew plastic nut.	Tightening torque	3 Nm



- Install heat shield (1).

POSTPROCESSES

9 – Installing the rear wheel arch cover on the right



- Feed in wheel arch cover (1) and correctly position it.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

▸ **Installing the rear wheel arch trim**

TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.

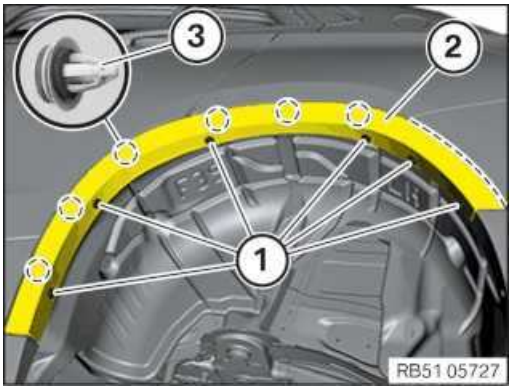
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NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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



- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage the wheel arch trim (2) with the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

10 – Installing rear right wheel

▶ **Mounting the wheel**

▷ **Clean the contact surfaces between the brake disc and the wheel rim**



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

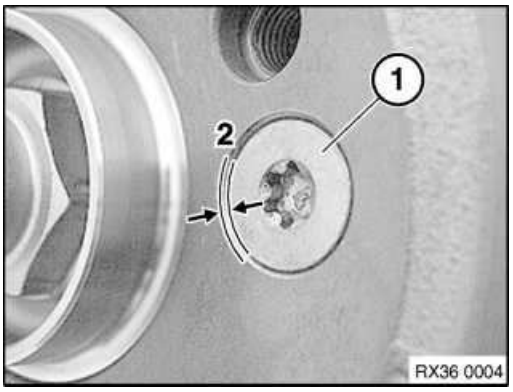
  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).

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- Renew mounting bolt (1).

  Parts: Mounting bolt

- Check that the mounting bolt (1) for the brake disc is securely seated.

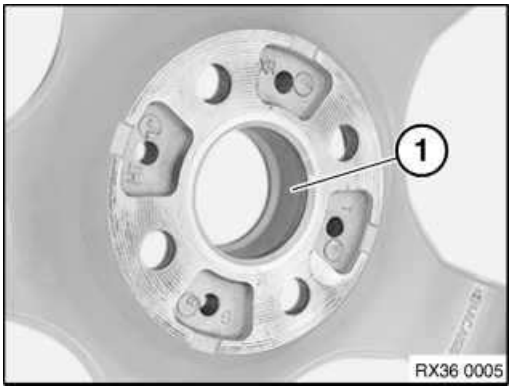
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

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11 – Install exhaust system

CAUTION

Component with heavy weight.

Danger of injury!

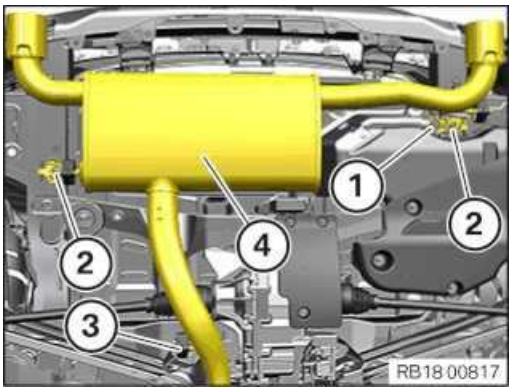
- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.



- Feed in and install the exhaust system (4) with a second person.
- Renew nuts (2).

  Parts: Nuts
- Tighten nuts (2).

Exhaust system to body

M8	Replace nuts.	Tightening torque	19 Nm

- Tighten down screw (1).

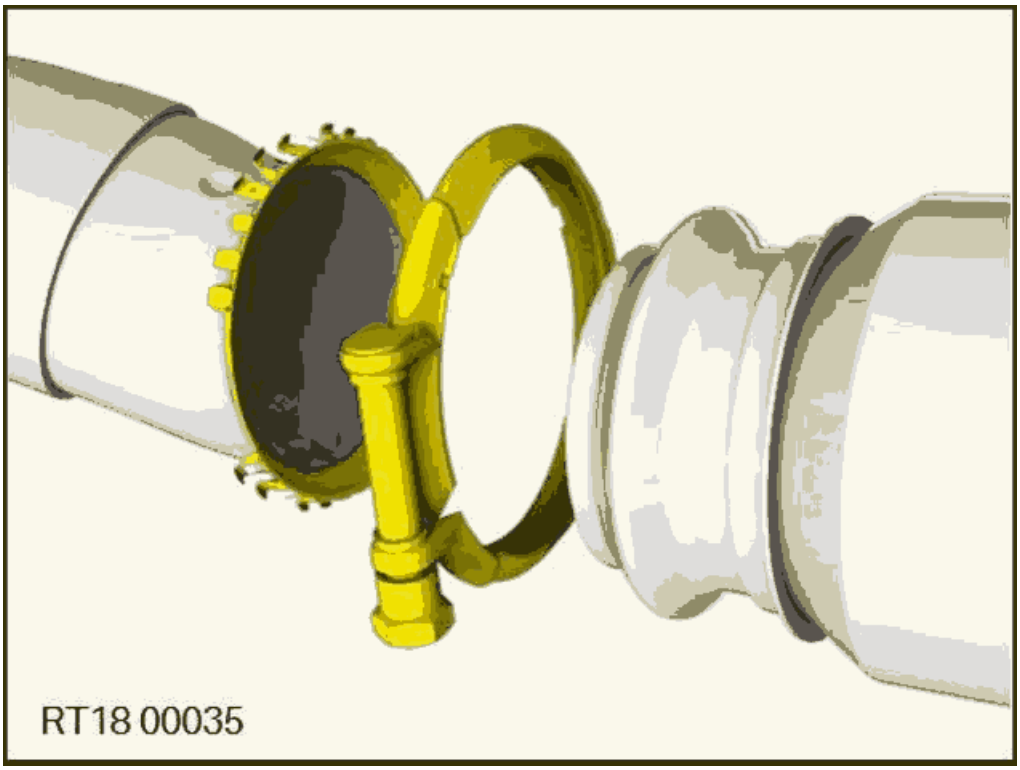
Exhaust bracket on body

Hexagon screw M8x30		Tightening torque	19 Nm

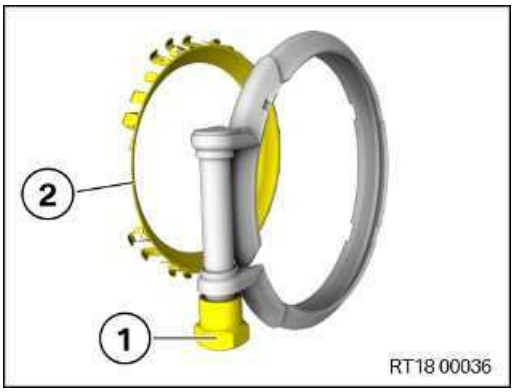
- Check the rubber mount (3) for damage and renew as needed.
- Mount rubber mount (3) on the exhaust system (4).

▸ **Install the V-clip**

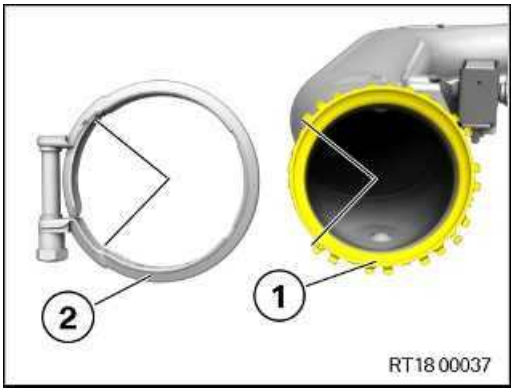
V-band clamp



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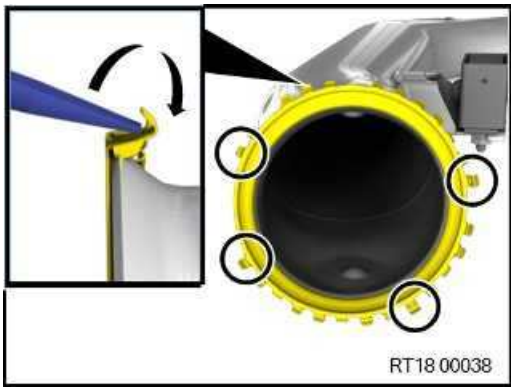


- Unscrew the nut (1) and remove the sealing ring (2).

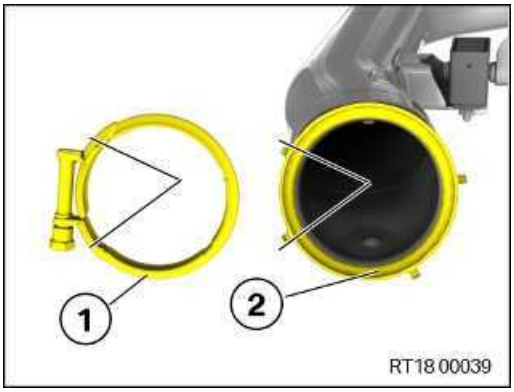


- Renew the V-clip (2).

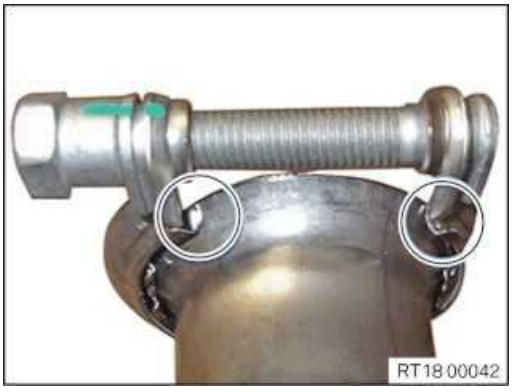
  Parts: V-band clamp
- Mount the sealing ring (1) on the exhaust system.
- Ensure that the sealing ring (1) for the V-clip (2) is positioned correctly.



- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.

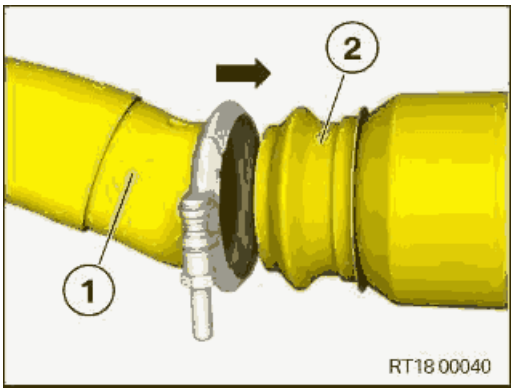


- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).

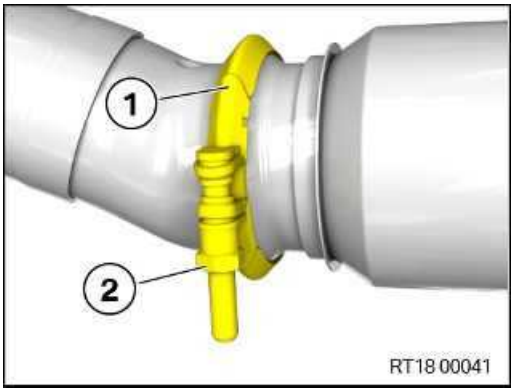


- Make sure that the V-clip rests against the sheet metal tabs after mounting (marks).

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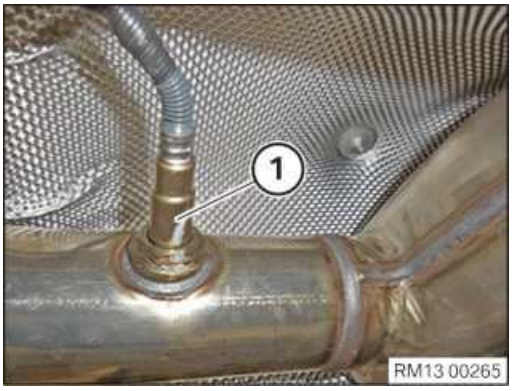
- Connect the exhaust system (1) with the catalytic converter (2) and position correctly.



- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

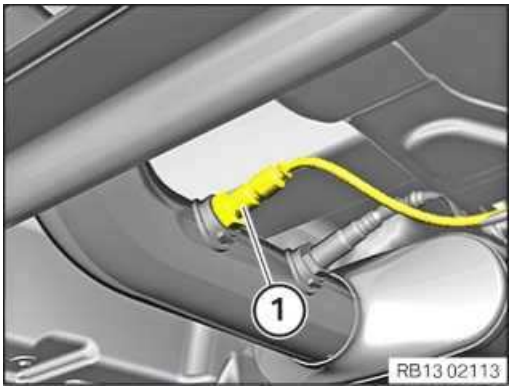
V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm



- Feed in, install and tighten diesel particulate sensor (1).

Diesel particulate sensor to exhaust system

Sensor		Tightening torque	50 Nm



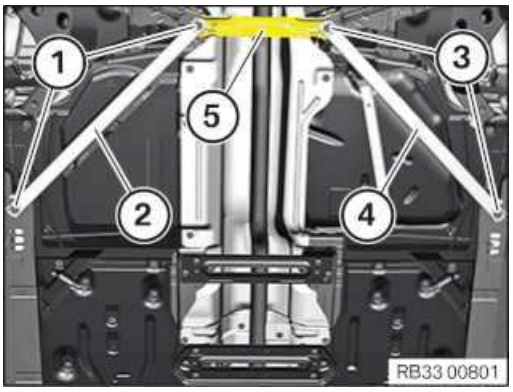
- Feed in, install and tighten nitrogen oxide sensor (1).

Nitrogen oxide sensor downstream of SCR catalytic converter

Sensor		Tightening torque	50 Nm

12 – Install the cross-member with torsion struts

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- Insert and install the cross-member (5).
- Thread in torsion strut (4) at right and install.
- Renew screws (3).

  Parts: Bolts
- Tighten down screws (3).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

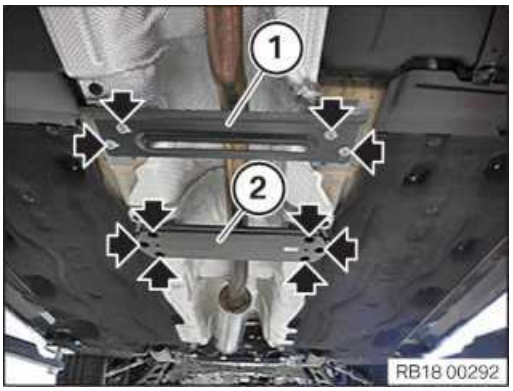
- Guide in and install the left torsion strut (2).
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

13 – Install the connecting support on the tunnel in front and back



- Insert and install connecting supports (2).
- Tighten the screws (arrows) from the connecting support (2).

Front connection carrier to body

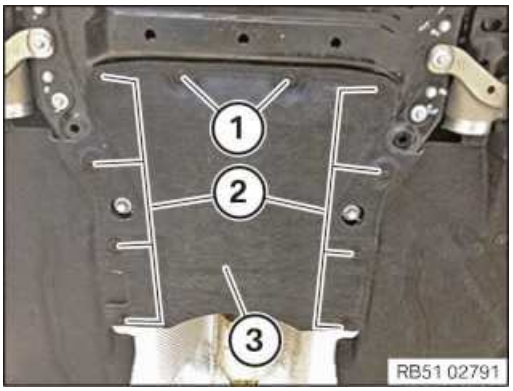
M10x18		Tightening torque	56 Nm

- Insert and install connecting supports (1).
- Tighten the screws (arrows) from the connecting support (1).

Rear connection carrier to body

M8x18		Tightening torque	28 Nm

14 – If installed: Installing underbody protection at rear



- Install the underbody protection (3).
- Tighten down screws (1) and (2).

Underbody protection to body

Screw		Tightening torque	3 Nm

15 – Filling SCR reservoir

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CAUTION

Materials harmful to health.

Contact with fluids harmful to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

TECHNICAL INFORMATION

Use only lint-free cloths for cleaning the SCR system: WAYPALL cleaning cloths L20 - see BMW Group Parts.

TECHNICAL INFORMATION

After repair work, clean the working area thoroughly with water.
Clean special tools with water after every use.



- Screw the filling hose **2 302 783** with the flatter connection on the fluid tank with the AdBlue.
- Connect the other end of the filling hose **2 302 783** to the filler neck of the SCR tank.
- Hang the fluid tank with the AdBlue from a stand.
- Fill the SCR tank.
- If the SCR fluid tank is full before the fluid tank with the AdBlue is empty: Set the fluid tank down and unscrew the filling hose.
- Ensure that the AdBlue does not leak when unscrewing the filling hose.
- If necessary, immediately wash off any leaking AdBlue thoroughly with water.

16 – Putting the SCR tank system into operation



- Connect diagnosis and information system.
- Carry out start-up of the SCR tank system.
- Reset adaptations and adjustments in the SCR system.

Additional Information

Overview of Tightening Torques

SCR reservoir to body — Used in step 8

M8	Renew nuts / bolt	Tightening torque	19 Nm

Filling hose SCR reservoir — Used in step 8

Hose clamp	Replace hose clamp.		4 Nm

Cover on the SCR tank — Used in step 8

Plastic nut	Renew plastic nut.	Tightening torque	3 Nm

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Wheel arch cover to body

Used in step 9

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Brake disc to rear wheel hub

Used in step 10

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

Used in step 10

M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts

Used in step 10

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Exhaust system to body

Used in step 11

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust bracket on body

Used in step 11

Hexagon screw M8x30		Tightening torque	19 Nm

V-clip to catalytic converter

Used in step 11

V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm

Diesel particulate sensor to exhaust system

Used in step 11

Sensor		Tightening torque	50 Nm

Nitrogen oxide sensor downstream of SCR catalytic converter

Used in step 11

Sensor		Tightening torque	50 Nm

Cross-member/torsion strut to axle support and mounting

Used in step 12

M12x48	Renew screws.	Jointing torque Angle of rotation	100 Nm 90 °

Front connection carrier to body

Used in step 13

M10x18		Tightening torque	56 Nm

Rear connection carrier to body

Used in step 13

M8x18		Tightening torque	28 Nm

Underbody protection to body

Used in step 14

Screw		Tightening torque	3 Nm

Overview of Special Tools

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2 302 782 Pump



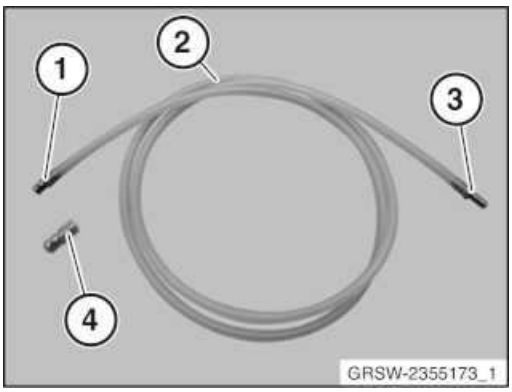
Common	Used in step 1
Usage	AdBlue 230 exhaust pump for the extraction of the urea/water mixture(AdBlue®).
Included in the tool or work	
Storage location	
Replaced by	
In connection with	Special tool 2355173
SI-Number	01 30 11 (767)

2 302 919 Pump



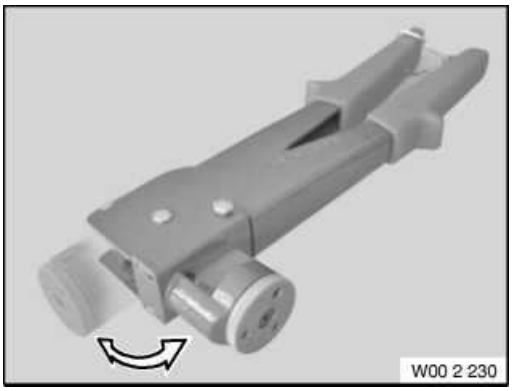
Common	Used in step 1
Usage	AdBlue 110V exhaust pump for the extraction of the urea/water mixture(AdBlue®) from the vehicle-specific expansion tanks.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	Special tool 2355173
SI-Number	01 30 11 (767)

2 355 173 Hose



Common	Used in step 1
Usage	Hose (hose extension) for AdBlue suction pump (81 39 2 302 782 or 81 39 2 302 919). This hose can be used to directly draw off AdBlue® from the “SCR“ active tank on the vehicle.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	WE 2302782
SI-Number	01 12 13 (964)

0 496 521 (00 2 230) Pliers



Common	Used in step 9
Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

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2 344 011 Tool



Common	Used in step 10
Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

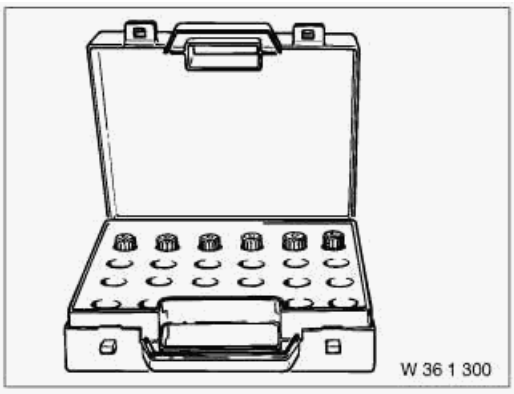
2 302 783 Hose



Common	Used in step 15
Usage	Filler hose (hose)) for drip-free filling of AdBlue in SCR vehicles (for all BMW models except E90 US version). (Disposable hose! Order new part in the case of wear!)
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	01 30 11 (767)

Replacement tools:

0 495 221 (36 1 323) Wheel stud



Common	Used in step 6
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

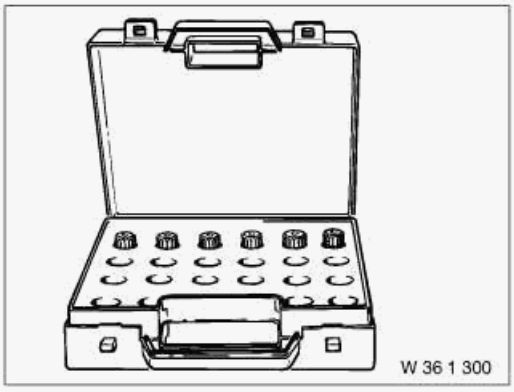
0 495 224 (36 1 326) Wheel stud



Common	Used in step 6
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 225 (36 1 327) Wheel stud



Common	Used in step 6
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



Common	Used in step 6
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 227 (36 1 329) Wheel stud



Common	Used in step 6
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

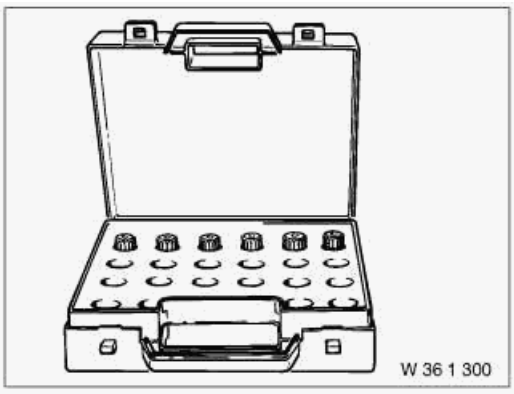
0 495 228 (36 1 331) Wheel stud



Common	Used in step 6
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 229 (36 1 332) Wheel stud



Common	Used in step 6
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 6
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Links

Operating materials	Used in step
2.0 Grease for wheel centring	10

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16 19 005 Removing and installing/replacing metering line for Selective Catalytic Reduction (SCR)

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

PRELIMINARY WORK

1 – Drawing off the fuel tank

WARNING

Contact with hazardous fluids.

Hazardous to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

WARNING

Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

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- Open fuel filler cap.
- Insert special tool into fuel filler neck.

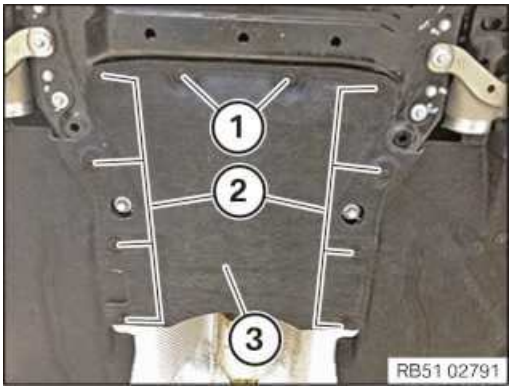
  Special tool has two different diameters: for petrol and for diesel fuel.
- Slide suction hose (1) of the extractor unit through special tool and into the fuel filler pipe. If necessary, slightly turn the suction hose.

  For the extractor unit: refer to BMW Service workshop equipment.

  The insertion length of the suction hose is 125 cm.
- Start engine and allow to run, so that the electric fuel pump is running.

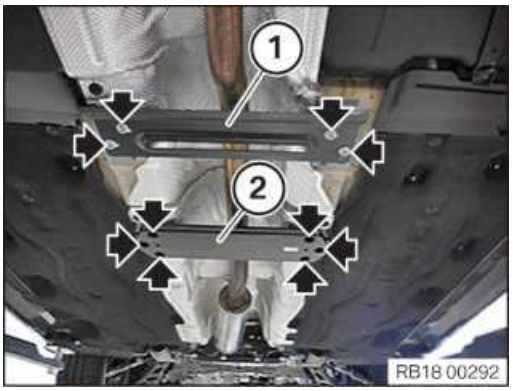
  This will ensure that the fuel is pumped by the suction jet pump from the left-hand side of the fuel tank to the right hand-side.
- Draw off fuel with the extractor unit as far as possible. In the process, track the drawing off of the fuel on the fuel gauge in the instrument cluster.

2 – If installed: Removing rear underbody protection



- Loosen screws (1) and (2).
- Remove underbody protection (3).

3 – Removing the connecting support from the tunnel in front and back



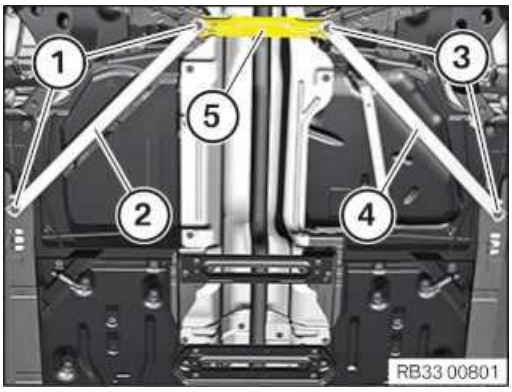
- Unscrew the bolts (arrows) from the connecting support (1).
- Feed out and remove the crossbeam (1).
- Unscrew the bolts (arrows) from the connecting support (2).
- Feed out and remove the crossbeam (2).

4 – Remove the cross strut with the torsion strut

TECHNICAL INFORMATION

Driving without a torsion strut is not permitted.

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- Loosen screws (1).
- Thread out torsion strut (2) at left and remove.
- Loosen screws (3).
- Thread out torsion strut (4) at right and remove.
- Feed out and remove the cross-member (5).

5 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

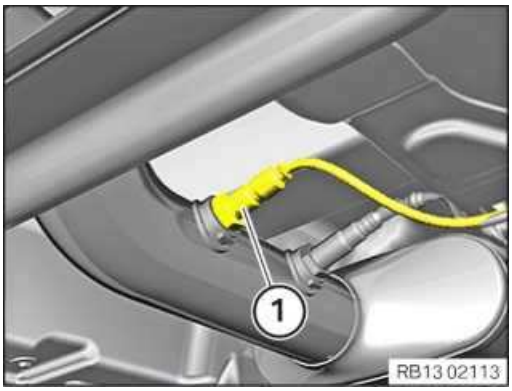
- Perform all work only on components that have cooled down.

CAUTION

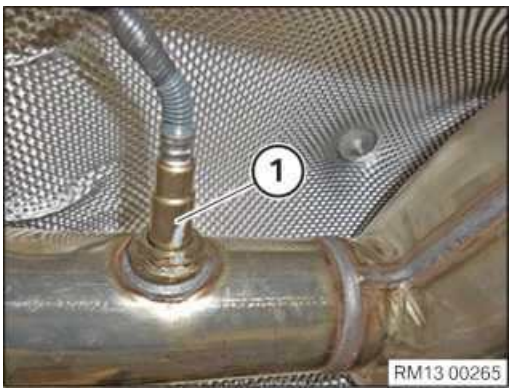
Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

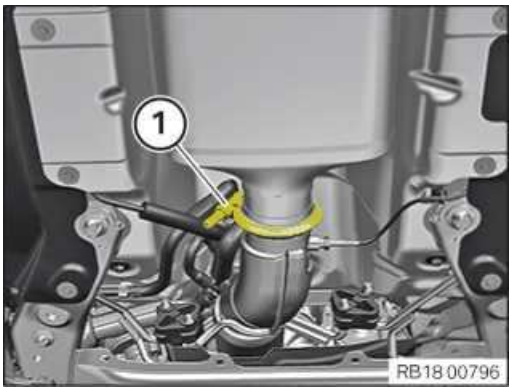


- Release the nitrogen oxide sensor (1) downstream of the SCR catalytic converter, guide it out and set it aside.

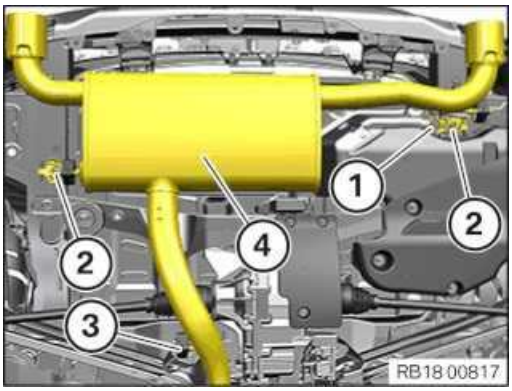


- Release the diesel particulate sensor (1), guide it out and set it aside.

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- Loosen V-band clamp (1).



- Loosen screw (1).
- Loosen nuts (2).
- Release the rubber mount (3) of the exhaust system (4).
- Lower and guide out the exhaust system (4) with assistance of a second person and remove it.

6 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

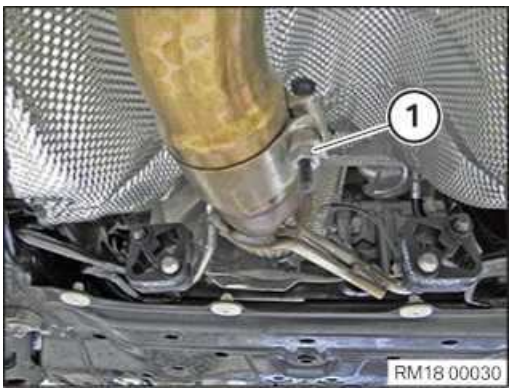
- Perform all work only on components that have cooled down.

CAUTION

Heavy component.

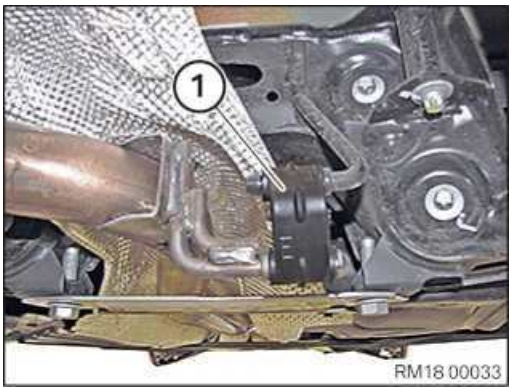
Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

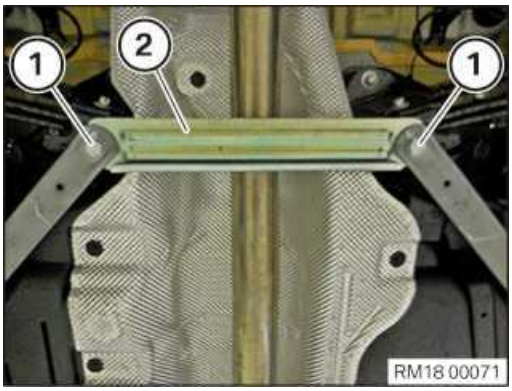


- Unfasten clamp (1).

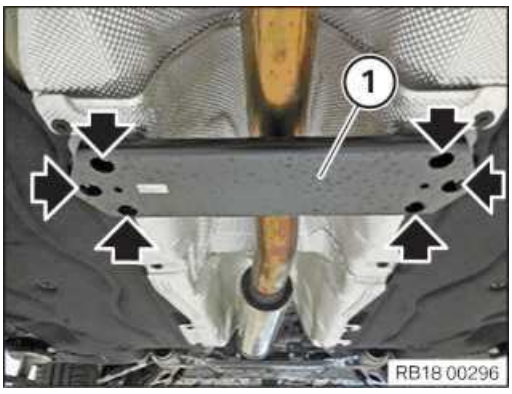
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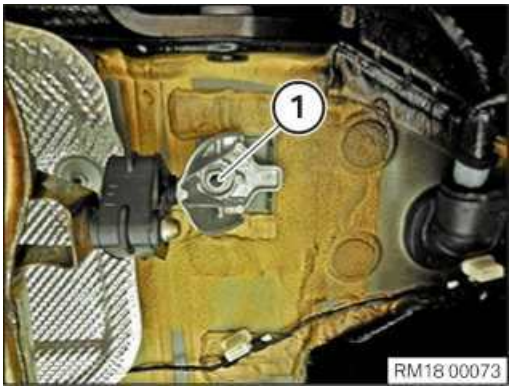
- Spray rubber mount (1) with lubricant and pull off the exhaust system.



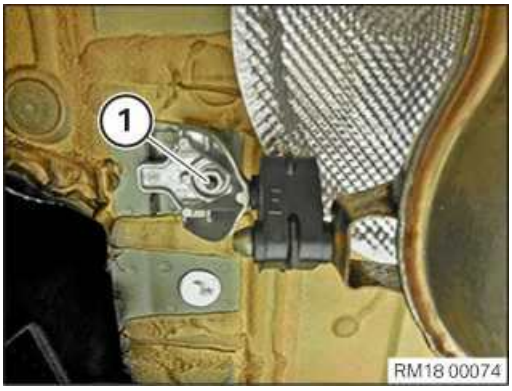
- Loosen screws (1).
- Feed out and remove the cross-member (2).



- Remove screws (arrows).
- Remove the connecting support (1).



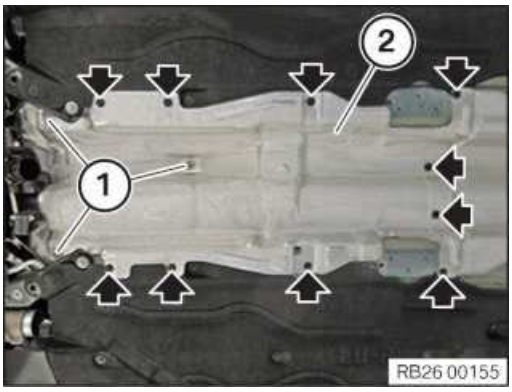
- Release the left-hand nut (1).



- Release the right-hand nut (1).
- Lower and remove exhaust system with assistance of a second person.

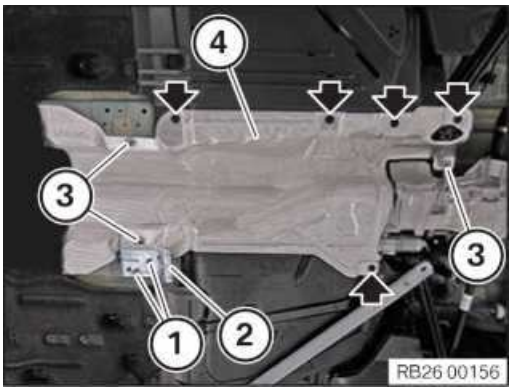
7 – Remove front heat shield

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- Remove screws (arrows).
- Loosen nuts (1).
- Guide the heat shield (2) out and remove it.

8 – Remove heat shield at rear.



- Loosen screws (1).
- Guide out and remove holder (2).
- Remove screws (arrows).
- Loosen nuts (3).
- Guide the heat shield (4) out and remove it.

9 – Remove propeller shaft

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

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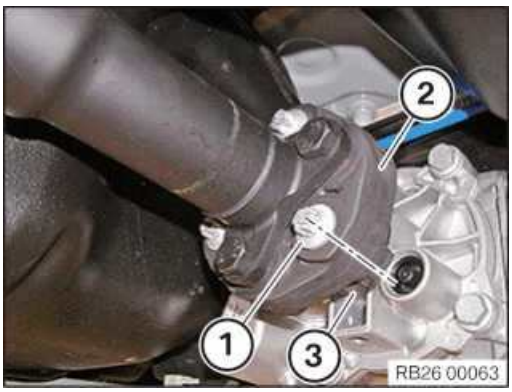
- Install the special too l between the front and rear propeller shaft.
- Make sure that the arrows on the special tool point forward in the direction of travel.



- Always support the propeller shaft (1) with a conventional jack.



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



TECHNICAL INFORMATION

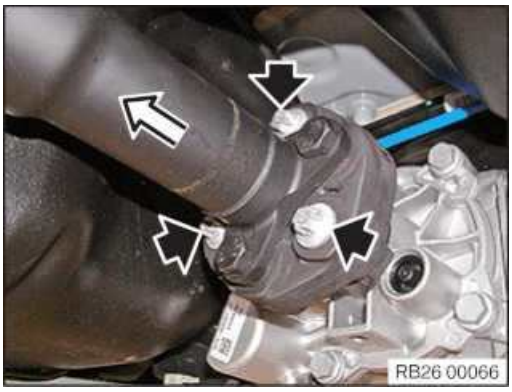
Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Mark the installation position of the screw connection (1), the flexible disc (2) and the three-hole flange (3) on the same level.
- Loosen the screw connection (1).

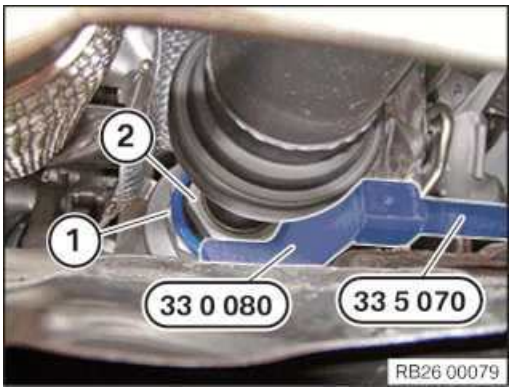


- Loosen screws (1).

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- Remove screws (arrows).
- Guide the propeller shaft out in the direction of the arrow and set it aside.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.

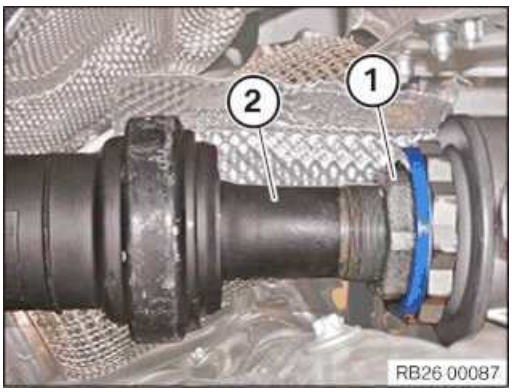
- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to detach the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

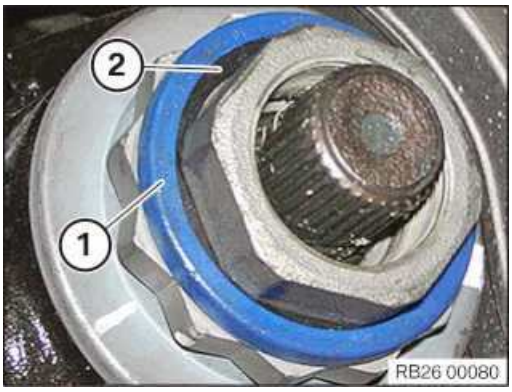


- Release the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

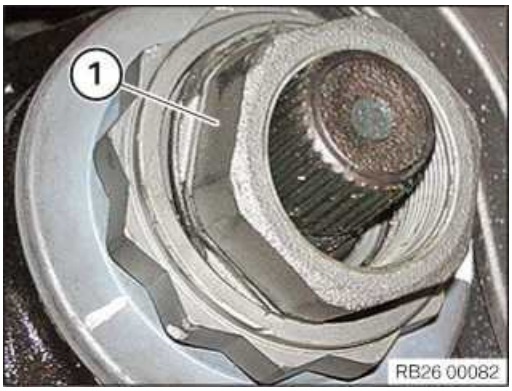


- Thread the propeller shaft (2) out of the recessed nut (1) and remove.

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- Thread the retaining clip (1) and the seal (2) out and remove.



- Thread out and remove the recessed nut (1).

10 – Removing the tank covers on the left and right

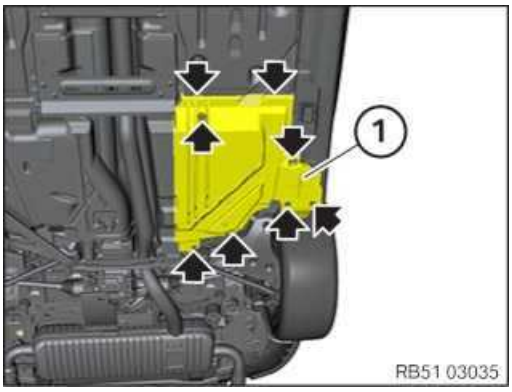
NOTICE

Perform the operations on the left and right side.

NOTICE

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

▸ **Removing the tank cover**



- Remove screws (arrows).
- Remove the tank cover (1).

11 – Remove right rear wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

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NOTICE

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

▶ **Removing the rear right wheel**

▷ **Removing the wheel**



- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

◁

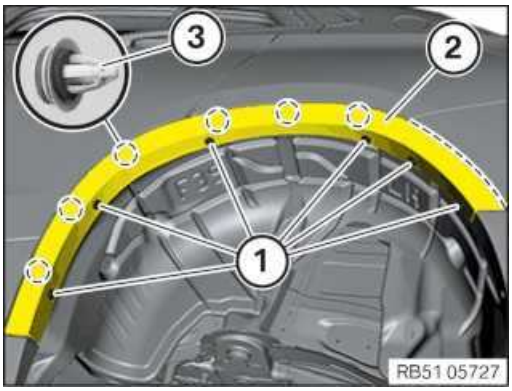
▶ **Removing rear wheel arch trim**

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

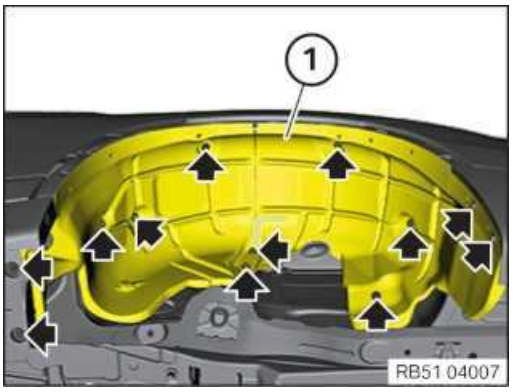
NOTICE

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



- Remove the blind rivets (1).
- Disengage the wheel arch trim (2) from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

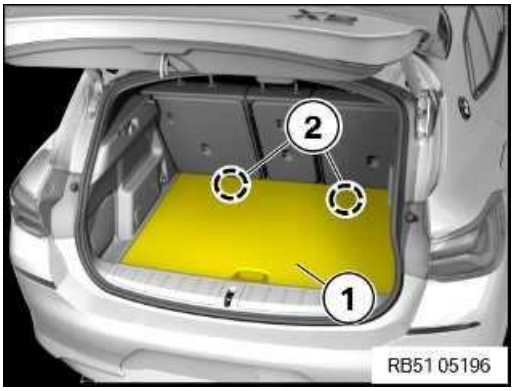
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- Unscrew all bolts and nuts (arrows).
- Carefully feed out and remove the wheel arch cover (2).

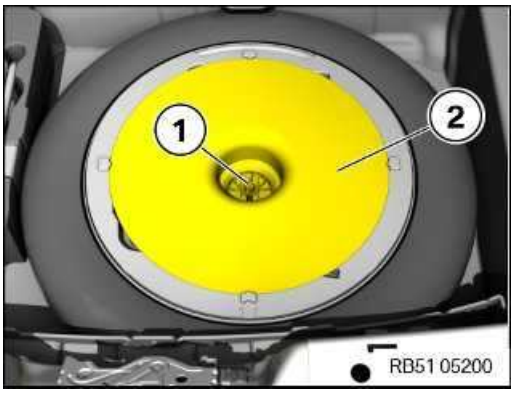
12 – Removing seat bench

▸ **Removing the luggage compartment removable panel**

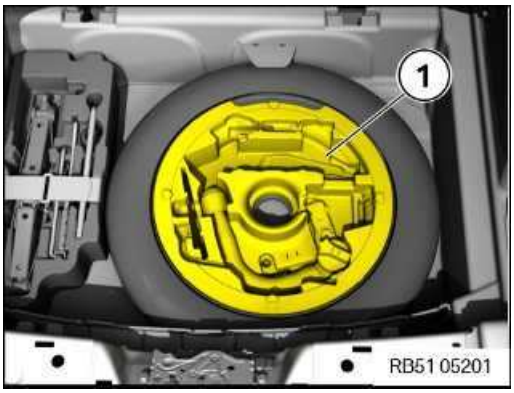


- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

▸ **Removing the compact spare wheel**



- Loosen screw (1).
- Remove the cover (2).



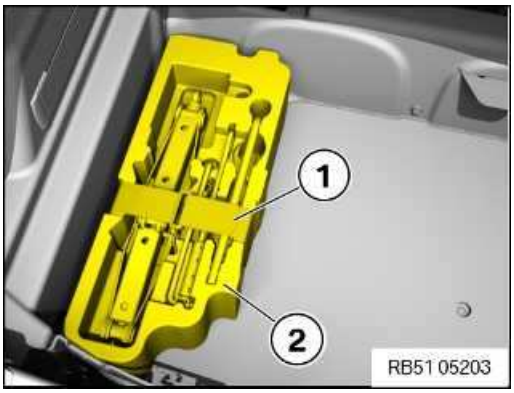
- Remove the oddments tray from the emergency wheel (1).

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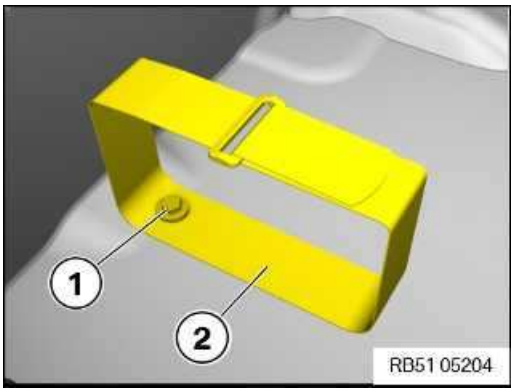
- Remove the emergency wheel (1).

▸ **Remove the tool kit**



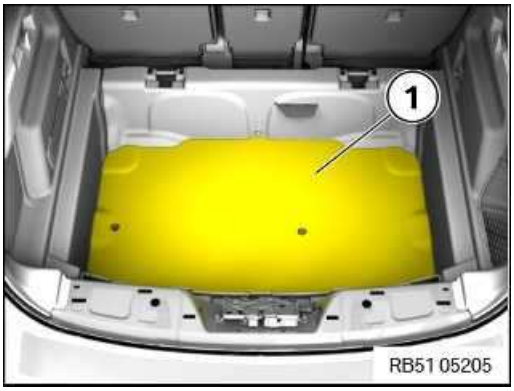
- Open the hook and loop tape (1).
- Remove the tool kit (2).

▸ **Remove the hook and loop tape for the tool kit**



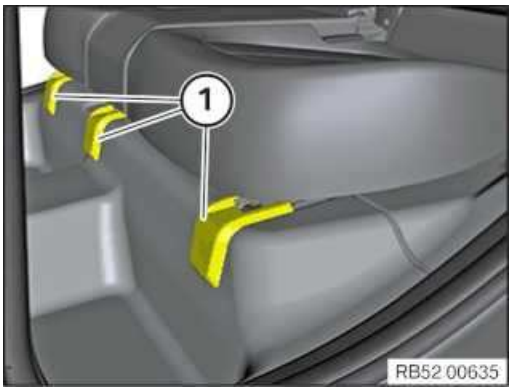
- Loosen screw (1).
- Remove the hook and loop tape (2).

▸ **Removing the luggage compartment floor trim panel**

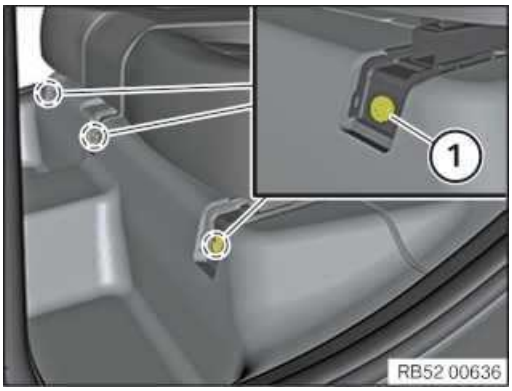


- Remove the luggage compartment floor trim panel (1) upwards.

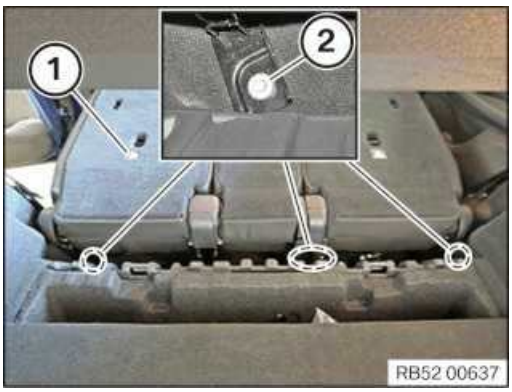
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- Unclip the covers (1) forwards.



- Loosen screws (1).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.
- Fold down rear seat backrest (1) on left and right.
- Loosen screws (2).
- Disconnect existing plug connections where required.

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Lift out rear seat bench with the assistance of a second person.

13 – Disconnect delivery unit

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WARNING

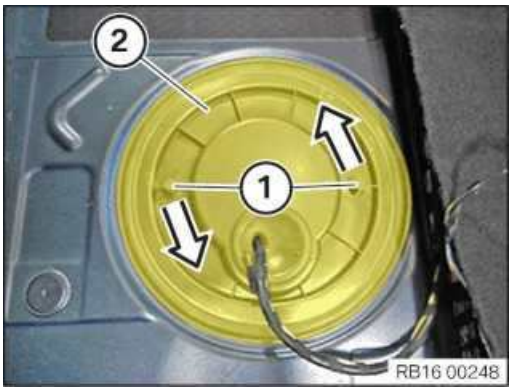
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

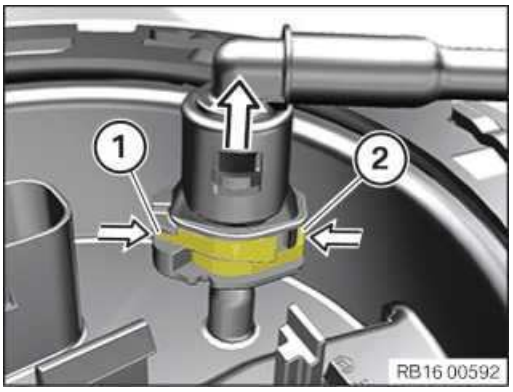
Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Turn the sealing cap for the floor panel (2) at the plastic tabs (1) in the direction of arrow.
- If turning is not possible: Destroy sealing cap of the floor panel (2).
- Remove sealing cap of the floor panel (2).



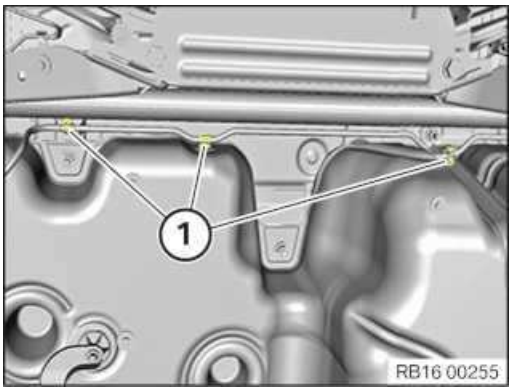
- Disconnect plug connection (1).



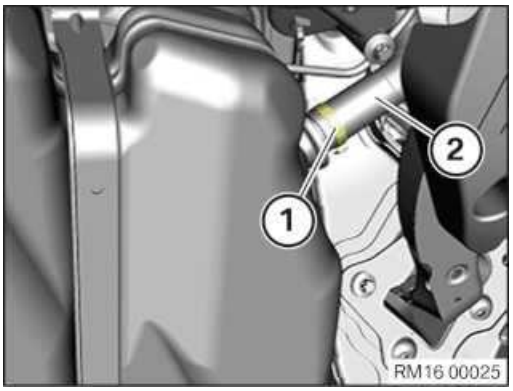
- Push the snap fastener toward the delivery unit.
- Press retaining lugs (1) and (2) pull off the snap fastener in the direction of arrow.

14 – Removing the fuel tank (fuel tank capacity 51 l)

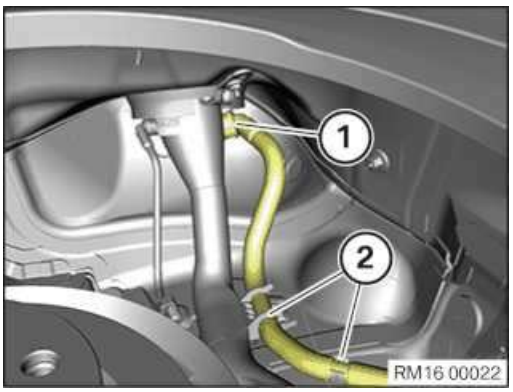
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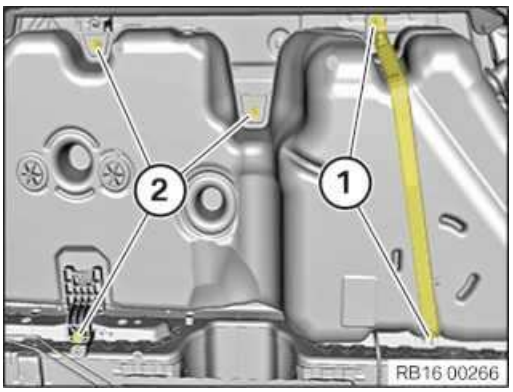
- Detach the tank ventilation line from the bracket (1).



- Loosen hose clamp (1).
- Pull off the rubber hose (2) from the fuel tank in the direction of the arrow.



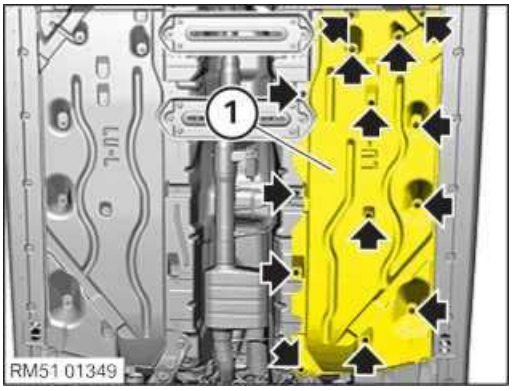
- Unlock and pull off snap fastener (1).
- Detach fuel filler neck breather pipe from brackets (2).



- **Heavily support the fuel tank.**
- Release the screws (1) and remove the retaining strap.
- Release the nuts (2) and lower the fuel tank (3).

  While the fuel tank is being lowered, the fuel filler neck breather pipe must be guided from the wheel arch through the body aperture!

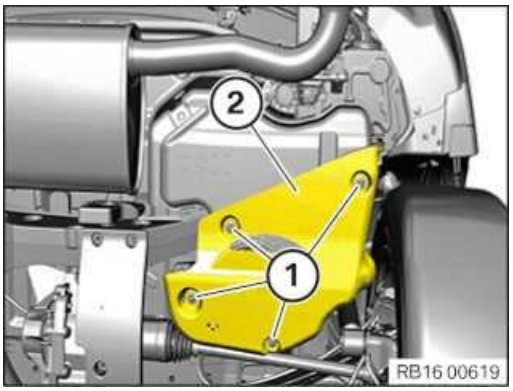
15 – Removing right underbody panelling



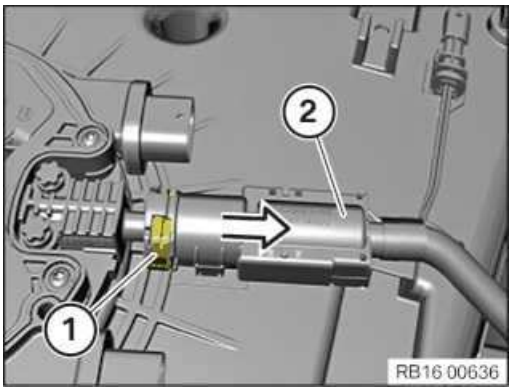
- Unscrew all bolts and nuts (arrows).
- Remove the underbody panelling (1).

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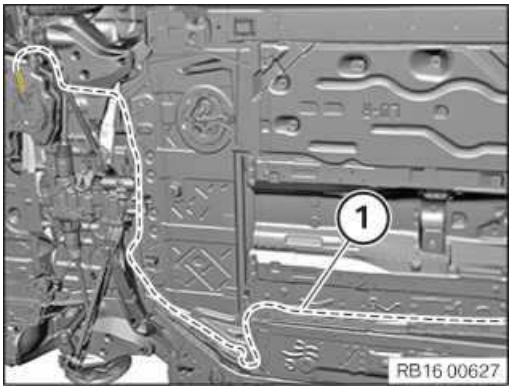
16 – Removing metering line



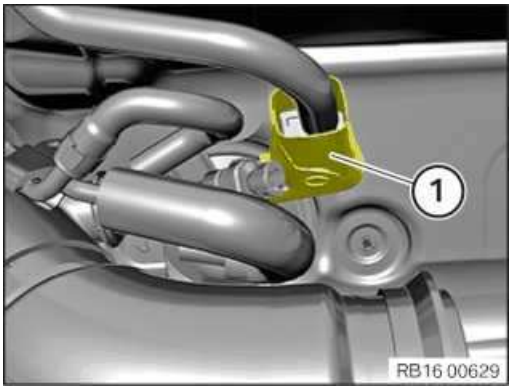
- Loosen plastic nuts (1).
- Remove the cover of the SCR tank (2).



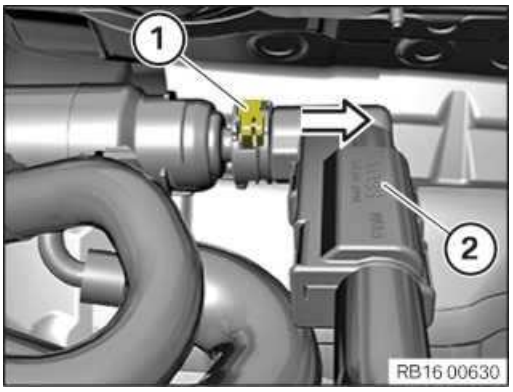
- Push the snap fastener (2) toward the delivery unit.
- Press retaining lug (1) and pull off the snap fastener (2) in direction of arrow.



- Detach metering line over the rear axle along the line (1).

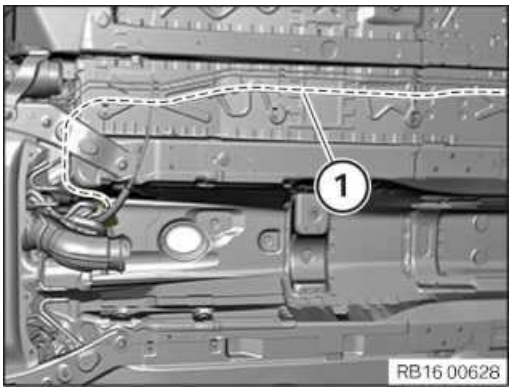


- Remove the heat protection (1).



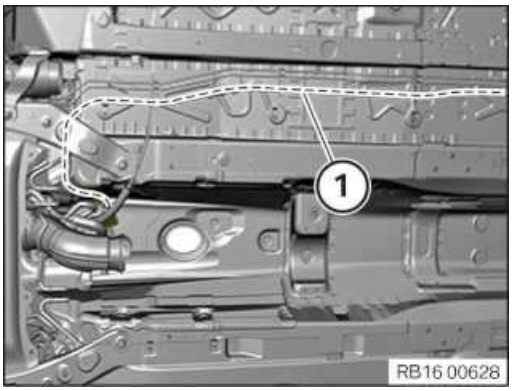
- Push the snap fastener (2) toward the delivery unit.
- Press retaining lug (1) and pull off the snap fastener (2) in direction of arrow.

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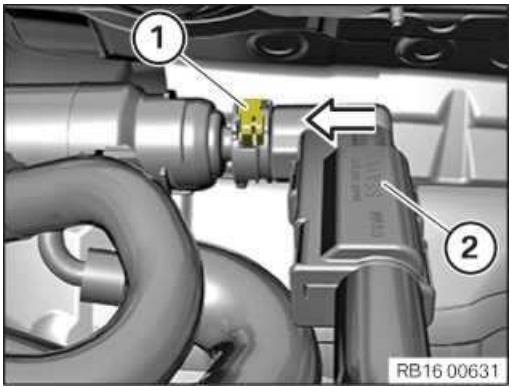


- Unclip metering line out of the brackets (1) along the line and remove.

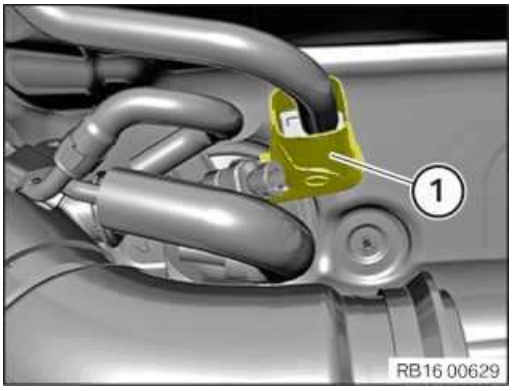
17 – Installing the metering line



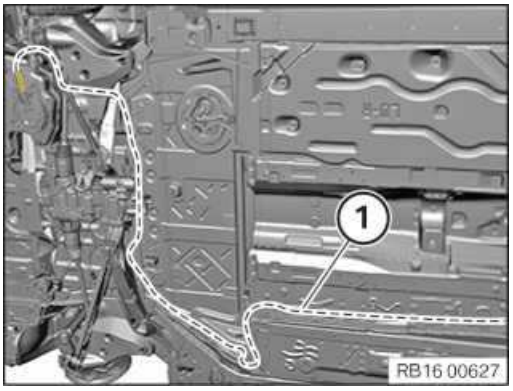
- Position the metering line.
- Clip the metering line along line (1) in the brackets.



- Position snap fastener (2) and lock.
- Ensure that the retaining lug (1) is correctly seated.

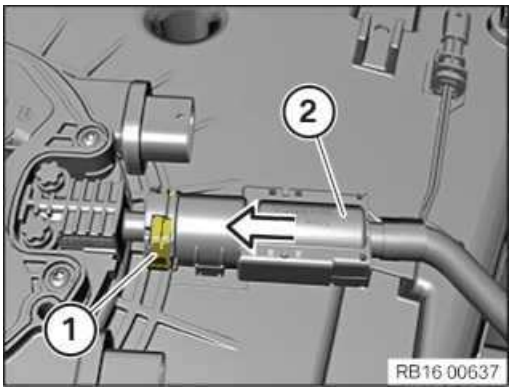


- Install the heat protection (1).

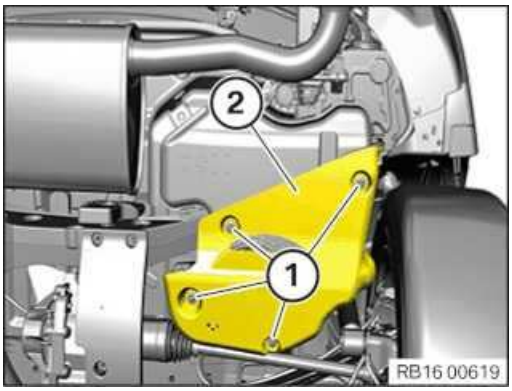


- Feed in the metering line along the line (1) via the rear axle.

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- Position snap fastener (2) and lock.
- Ensure that the retaining lug (1) is correctly seated.



- Install the cover of the SCR tank (2).
- Renew the plastic nuts (1).

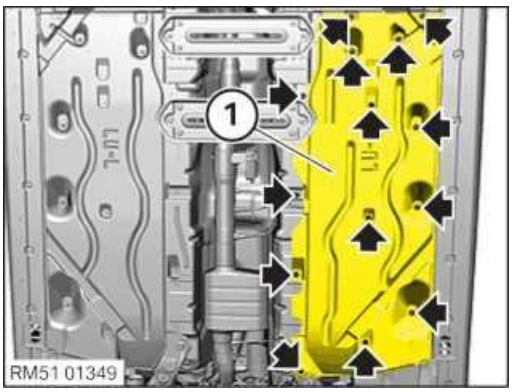
  Parts: Plastic nuts
- Insert plastic nuts (1) and tighten.

Cover on the SCR tank

Plastic nut	Renew plastic nut.	Tightening torque	3 Nm

POSTPROCESSES

18 – Installing underbody panelling , right



- Correctly position the underbody panelling (1).
- Tighten all bolts and nuts (arrows).

Underbody panelling, side

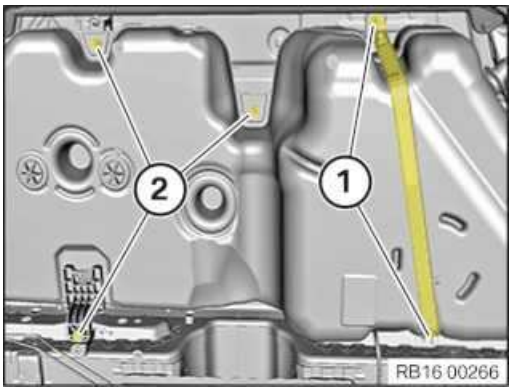
Hexagon screw		Tightening torque	2,6 Nm

Underbody panelling, side

Plastic nut		Tightening torque	2,6 Nm

19 – Installing fuel tank (fuel tank capacity 51 l)

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- **Raise fuel tank.**

  While the fuel tank is being raised, the fuel filler neck breather pipe must be guided through the body aperture into the wheel arch.
- Lift fuel tank up to installation position. When doing this, observe the installation position of the fuel filler neck breather pipe.
- Renew nut (2).

  Parts: Nut
- Fit nut (2) and tighten.

Fuel tank to body

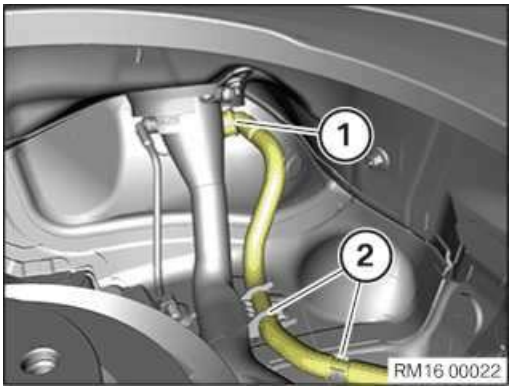
Nut M8	Renew nut.	Tightening torque	19 Nm

- Renew screws (1).

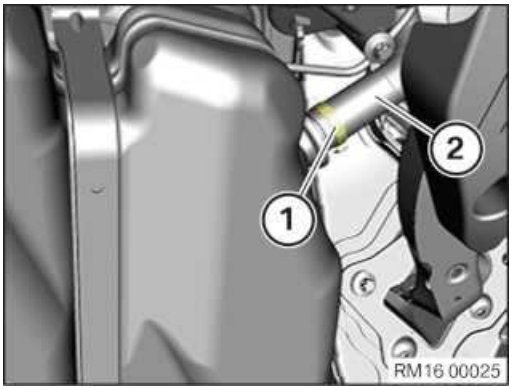
  Parts: Bolts
- Mount the retaining strap and position and tighten the screws (1).

Fuel tank retaining strap to body

M8 screw	Renew screws.	Tightening torque	19 Nm



- Attach the fuel filler neck breather pipe in the brackets (2).
- Position snap fastener (1) and lock.

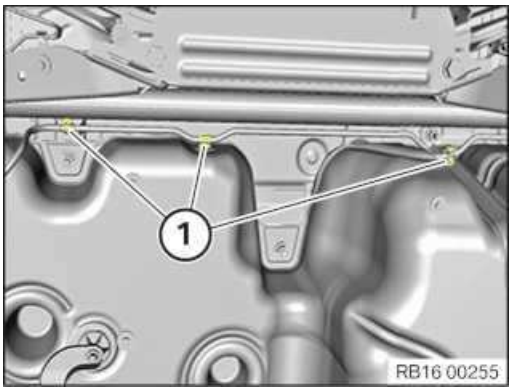


- Mount fuel filling hose (2) on fuel tank in direction of arrow.
- Renew the hose clamp (1).

  Parts: Hose clamp
- Position hose clamp (1) and tighten.

Filling hose on fuel tank

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm



- Attach the tank ventilation line in the brackets (1).

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WARNING

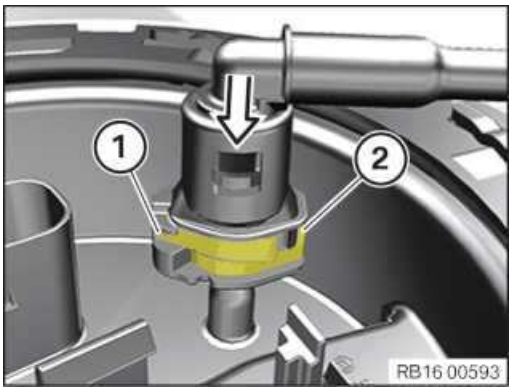
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Check locks of snap fastener for damage, and replace if required.

  The retaining lugs (1) and (2) must be locked.
- Mount the snap fastener and lock.

  The snap fastener must engage audibly and noticeably.
- Ensure correct locking of snap fastener with a tensile test.



- Connect connector (1).



- Renew sealing cap of the floor panel (1).

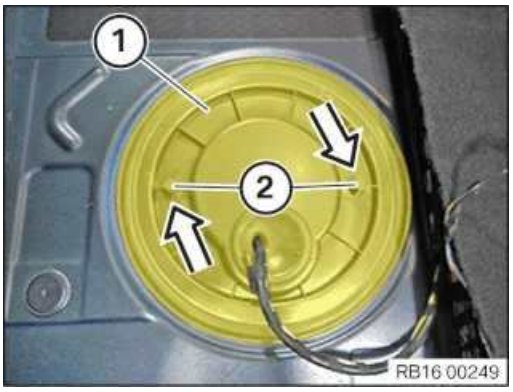
  Parts: Sealing cap of the floor panel

  The sealing cap of the floor panel must not be reused, as there is the risk of leak during reuse.
- Lubricate seal in the area (1) with lubricant.

Expendable materials

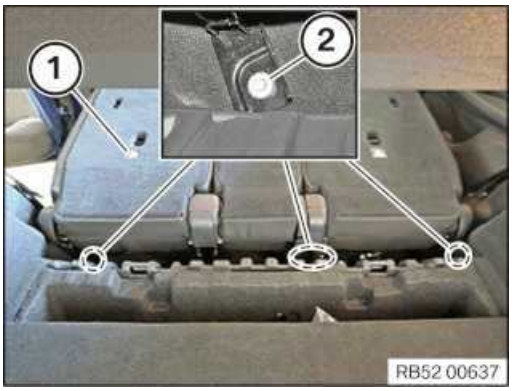
Lubricants PF1	50 g, Pin	83230309627

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- Install sealing cap of the floor panel (1).
- Turn sealing cap of the floor panel (1) on the plastic tabs (2) in the direction of arrow till the limit position and engage.

21 – Install rear seat bench



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.

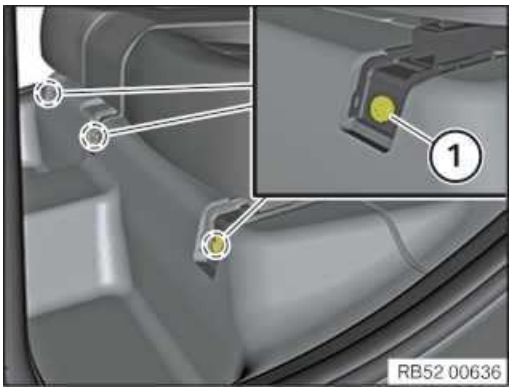
RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

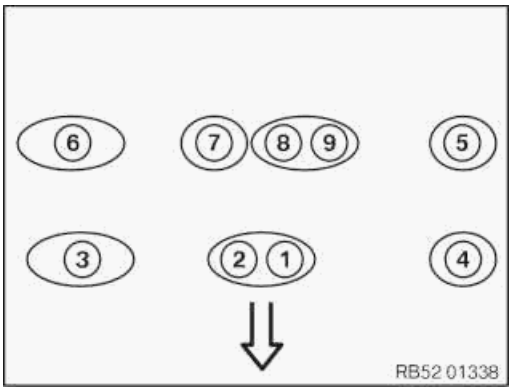
- Remove and install heavy components with the aid of another person/other persons.

- Hoist the rear seat bench into the vehicle and position it with the assistance of an auxiliary person.
- If required, connect the available connectors.
- Screw the bolts (2) in a few turns.



- Screw the bolts (1) in a few turns.

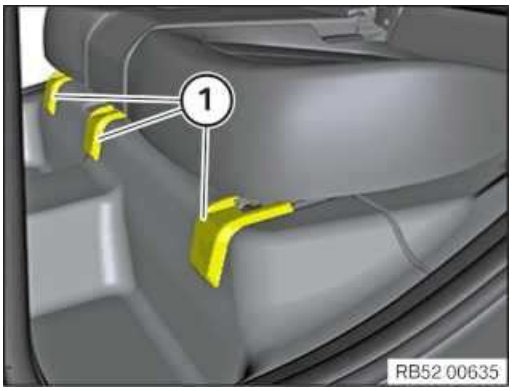
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- Tighten screws in the order (1) to (9).

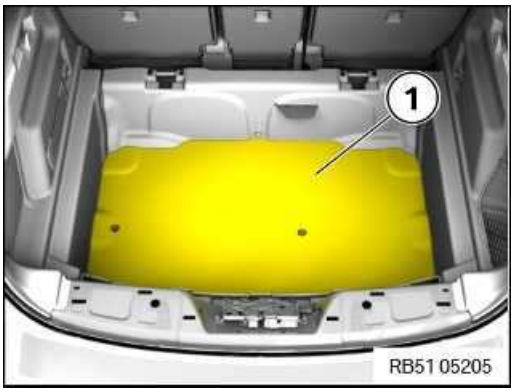
Seat bench to body

Oval-head screw		42 Nm



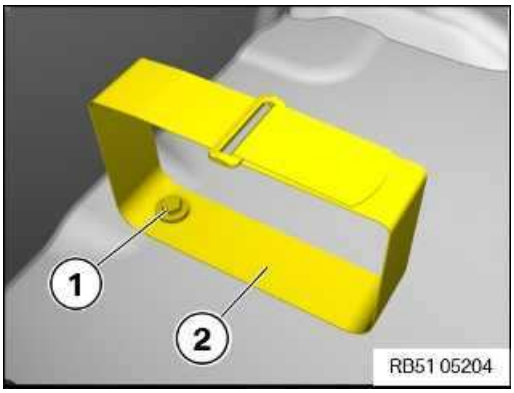
- Clip in the covers (1).

▸ **Installing the luggage compartment floor trim panel**



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

▸ **Inserting the Velcro fastener for the toolkit**



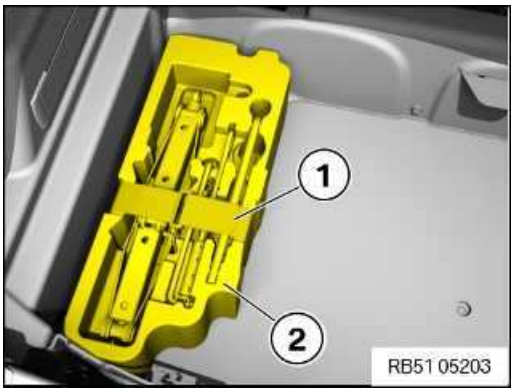
- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

▸ **Install the tool kit**

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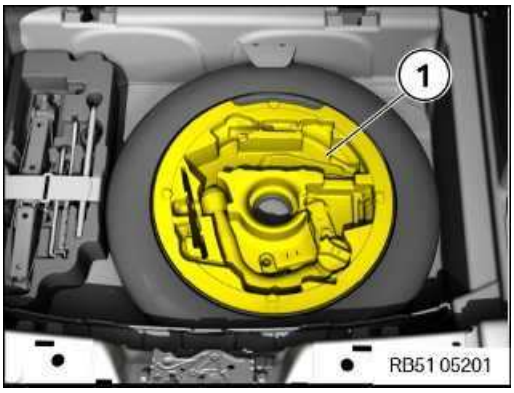


- Install the tool kit (2).
- Close the hook and loop tape (1).

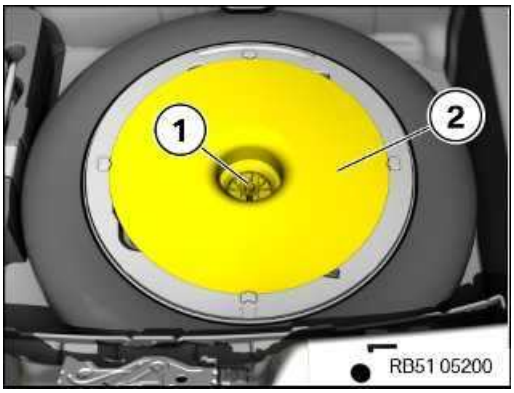
▸ **Install the emergency wheel**



- Insert compact spare wheel(1).



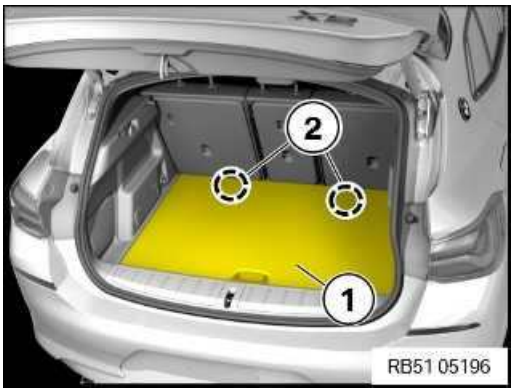
- Insert oddments tray into the compact spare wheel (1).



- Insert the lid (2).
- Hand-tighten the bolt (1).

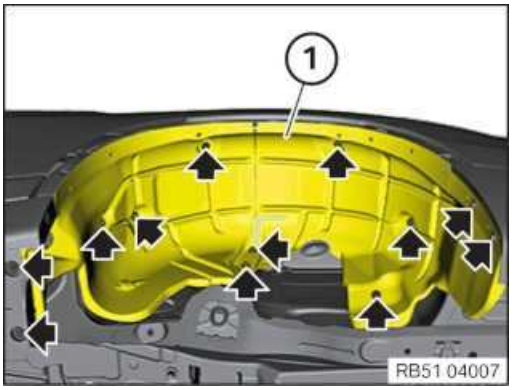
▸ **Installing the luggage compartment removable panel**

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- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

22 – Installing the rear wheel arch cover on the right



- Feed in wheel arch cover (1) and correctly position it.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

▸ **Installing the rear wheel arch trim**

TECHNICAL INFORMATION

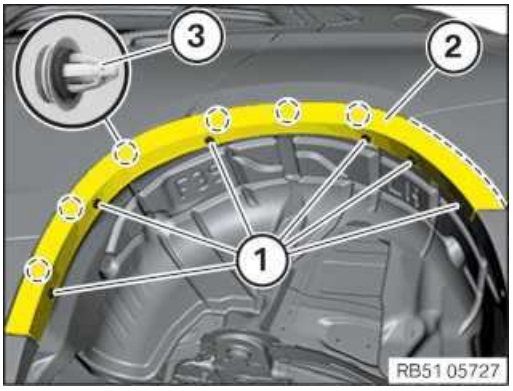
Latch mechanisms, guides and mounting elements must not be damaged or missing.

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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



- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage the wheel arch trim (2) with the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

23 – Installing rear right wheel

▸ **Mounting the wheel**

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▷ **Clean the contact surfaces between the brake disc and the wheel rim**



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

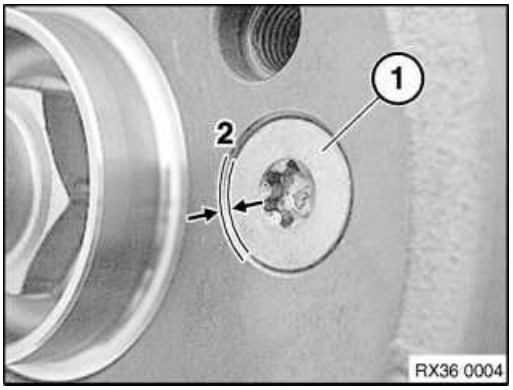
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).



- Renew mounting bolt (1).

  Parts: Mounting bolt
- Check that the mounting bolt (1) for the brake disc is securely seated.

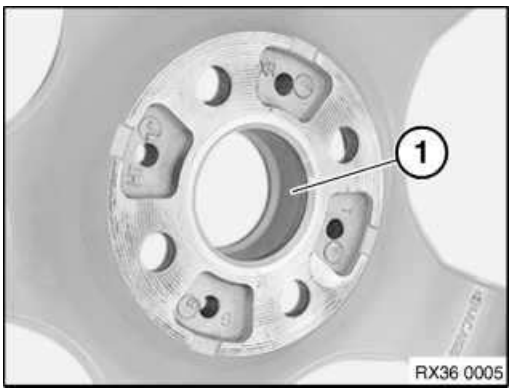
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

24 – Installing the tank covers on the left and right

NOTICE

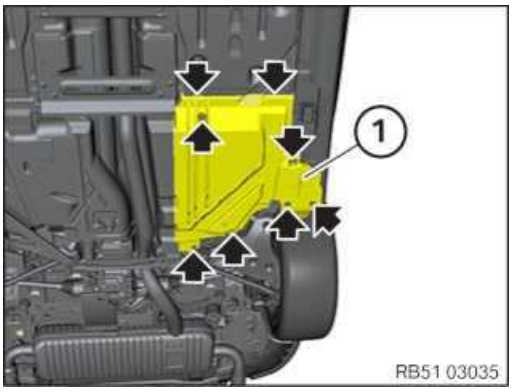
Perform the operations on the left and right side.

NOTICE

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

▸ **Installing tank cover**

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- Install tank cover (1).
- Tighten screws (arrows).

25 – Install propeller shaft.

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to the propeller shaft during installation.

Non-observance of the installation guidelines for the propeller shaft on the rear axle differential may cause severe damage.

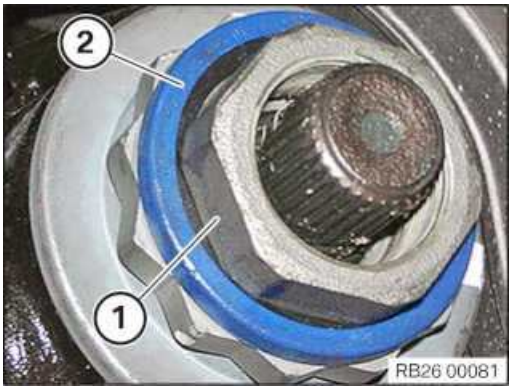
- Always renew the recessed nut on the rear axle differential. Screw locking must be available.
- Strictly observe a minimum hardening time of two hours after having screwed in the recessed nut. The hardening time may be longer at lower temperatures.

RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.



- Renew recessed nut (1).

  Parts: Insert nut
- Renew the retaining clip (2) and the seal.

  Parts: Retaining clip, seal
- Insert the seal with the recessed nut (1) and install.
- Insert the retaining clip (2) and install.
- Make sure that recessed nut (1) is screwed in within 5 min.
- Make sure that the hardening time of **minimum** 2 h for the recessed nut is observed.

  The hardening time must be extended at lower temperatures.

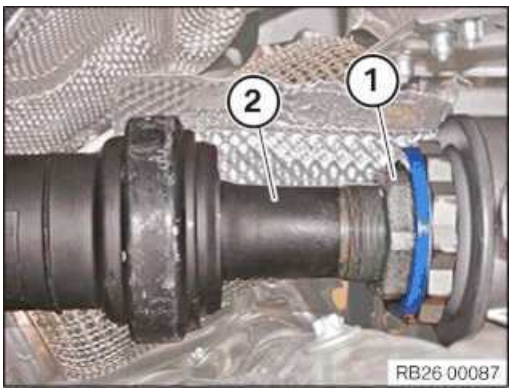
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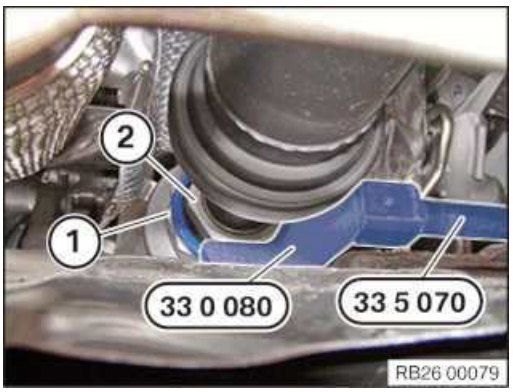
- Insert the propeller shaft (1) and install.
- Always support the propeller shaft (1) with a conventional jack.



- Hand-tighten the bolts (1).



- Push the propeller shaft (2) against the recessed nut (1) up to the limit position.
- Screw the propeller shaft (2) at least 2 thread starts onto the recessed nut (1) by hand.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

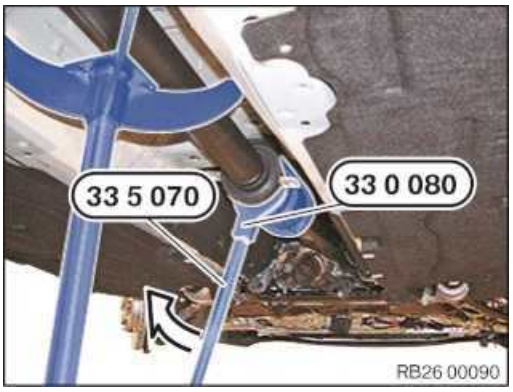
- Do not use the double hexagon head flange nut as counter support.

- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to tighten the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

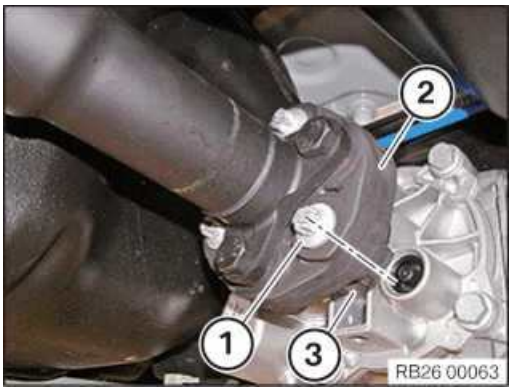
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- Tighten the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

Propeller shaft to transfer box

		Tightening torque	80 Nm



TECHNICAL INFORMATION

Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Assemble the screw connection (1) of the flexible disc (2) and the three-hole flange (3) according to the mark.
- Renew screws (1).

  Parts: Bolts
- Hand-tighten the bolts (1).



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



- Tighten the bolts with the special tools **0 490 504 (00 9 120)** and .

Flexible disc to rear axle final drive

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °



- Tighten the screws (1).

Centre mount to body

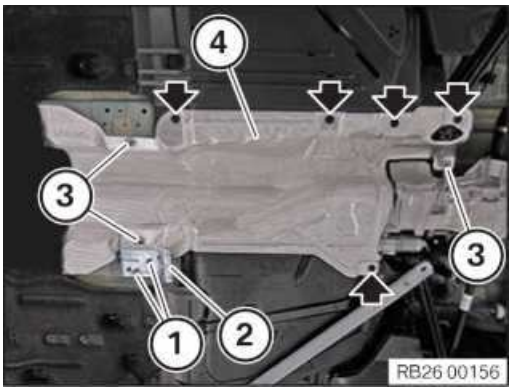
M8		Tightening torque	19 Nm

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- Guide the special too l out between the front and rear propeller shaft and remove.

26 – Installing the rear heat shield



- Insert and install the heat shield (4).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (3).

Heat shield to body

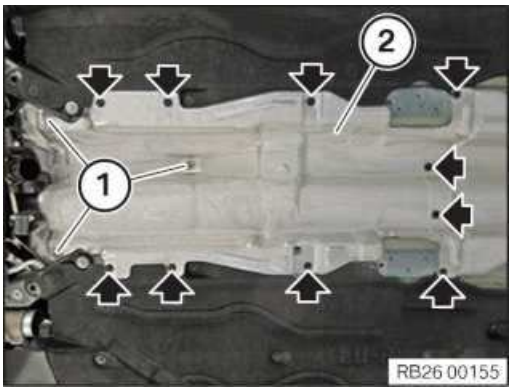
Bolts/nut		Tightening torque	3 Nm

- Insert and install the holder (2).
- Tighten the screws (1).

Bracket to body

M8		Tightening torque	21 Nm

27 – Install the front heat shield



- Insert and install the heat shield (2).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (1).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

28 – Install exhaust system

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

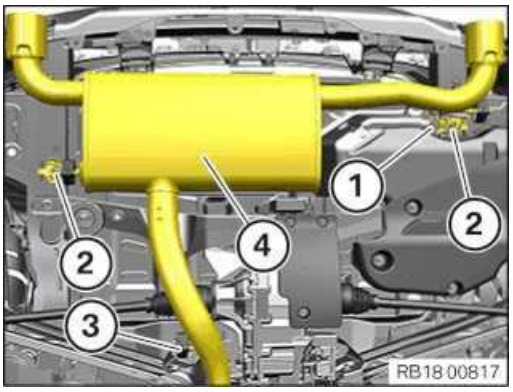
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CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.



- Feed in and install the exhaust system (4) with a second person.
- Renew nuts (2).

  Parts: Nuts
- Tighten nuts (2).

Exhaust system to body

M8	Replace nuts.	Tightening torque	19 Nm

- Tighten down screw (1).

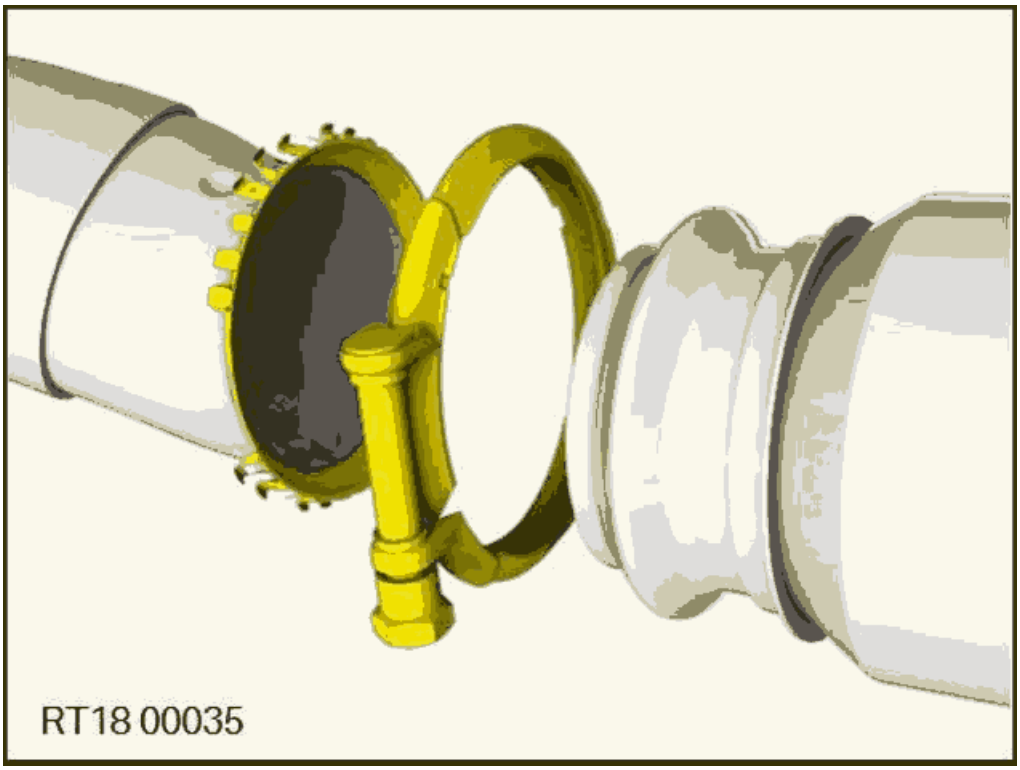
Exhaust bracket on body

Hexagon screw M8x30		Tightening torque	19 Nm

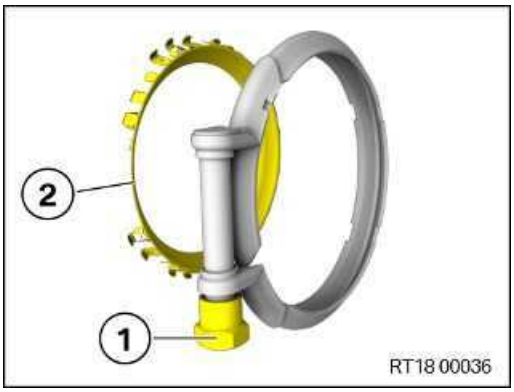
- Check the rubber mount (3) for damage and renew as needed.
- Mount rubber mount (3) on the exhaust system (4).

▸ **Install the V-clip**

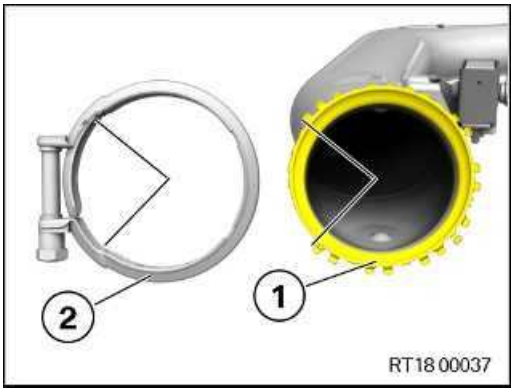
V-band clamp



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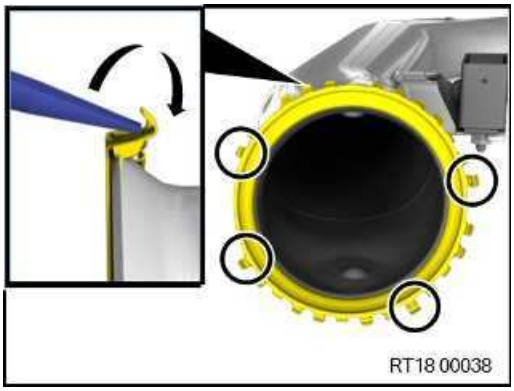


- Unscrew the nut (1) and remove the sealing ring (2).

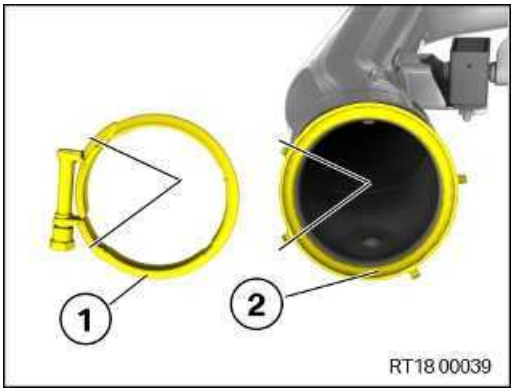


- Renew the V-clip (2).

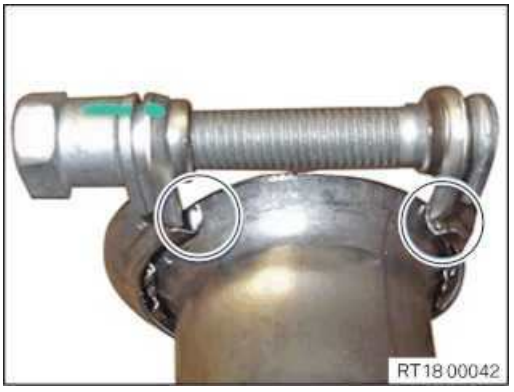
  Parts: V-band clamp
- Mount the sealing ring (1) on the exhaust system.
- Ensure that the sealing ring (1) for the V-clip (2) is positioned correctly.



- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.

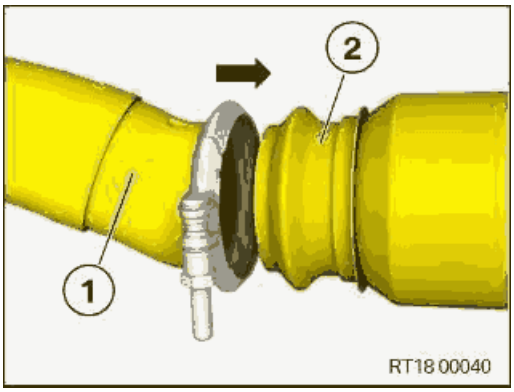


- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).

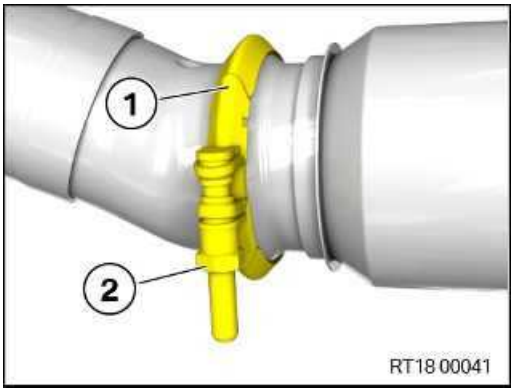


- Make sure that the V-clip rests against the sheet metal tabs after mounting (marks).

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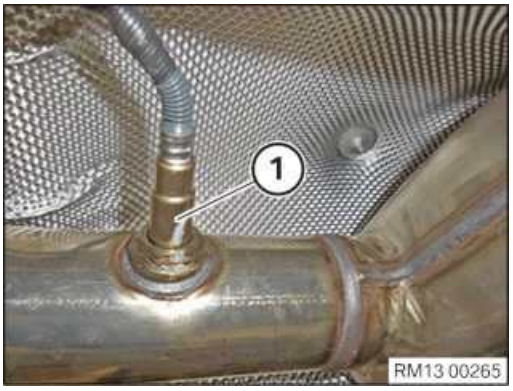
- Connect the exhaust system (1) with the catalytic converter (2) and position correctly.



- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

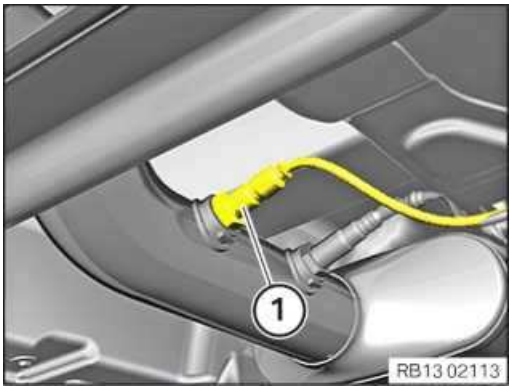
V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm



- Feed in, install and tighten diesel particulate sensor (1).

Diesel particulate sensor to exhaust system

Sensor		Tightening torque	50 Nm



- Feed in, install and tighten nitrogen oxide sensor (1).

Nitrogen oxide sensor downstream of SCR catalytic converter

Sensor		Tightening torque	50 Nm

29 – Install exhaust system

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

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CAUTION

Swarf resulting from sawing or grinding components.

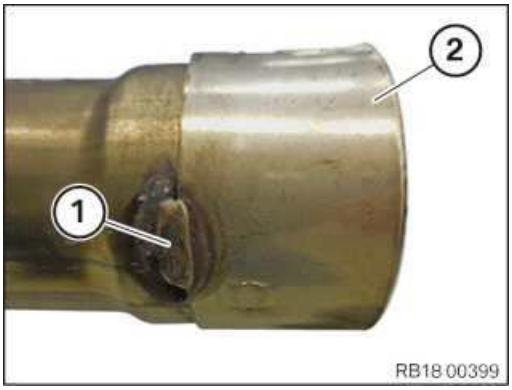
Danger of injury!



- Conduct all work in appropriate personal protective equipment only.

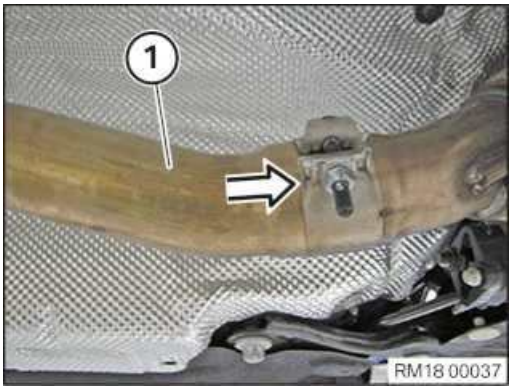


- Wear safety goggles and protective gloves.



- Open the weld seam (1) with a conventional tool.
- Remove the clamp (2).
- If necessary, renew clamp (2).

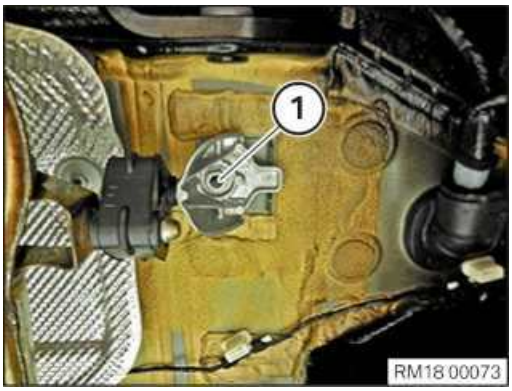
  Parts: Clamp



- Install the exhaust system with the assistance of a second person and connect to the diesel particulate filter.
- Tighten clamp (1).

Exhaust system to diesel particle filter

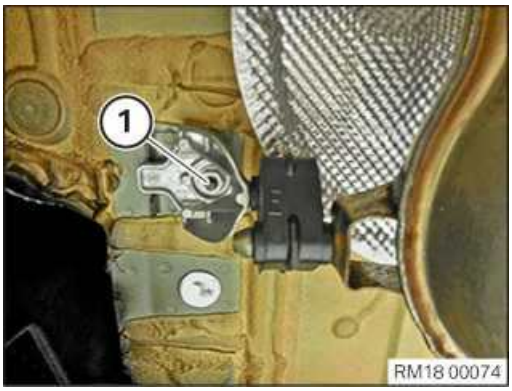
Ribbon cable clamp	Replace clamp		26 Nm



- Tighten the nut (1), left.

Exhaust system suspension to body

Nut M8		19 Nm

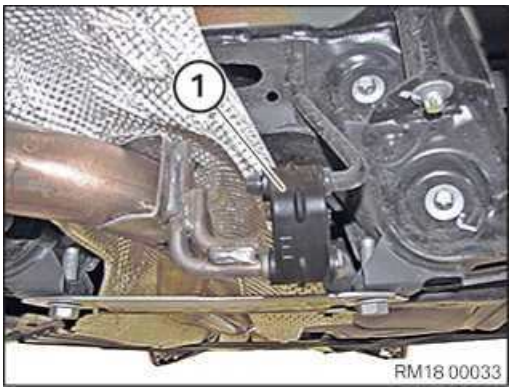


- Tighten the nut (1), right.

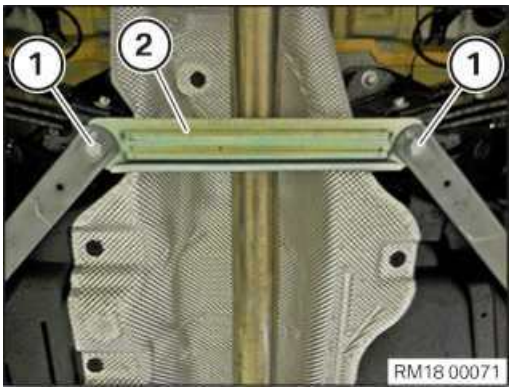
Exhaust system suspension to body

Nut M8		19 Nm

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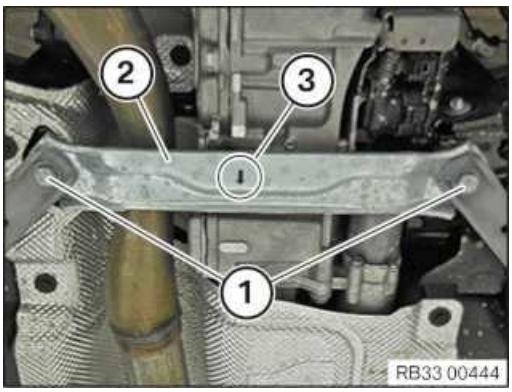
- Check the rubber mounts (1) for damage and renew, if necessary.
- Fasten exhaust system on the rubber mount (1).



- Install the cross-member (2).
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °

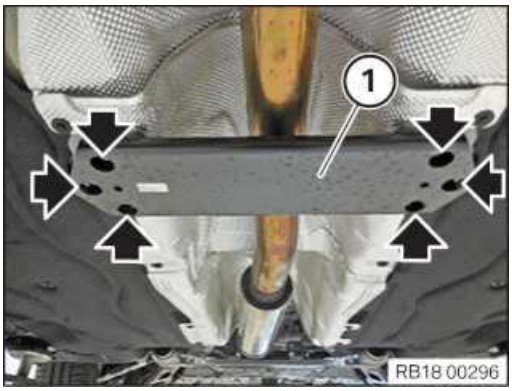


- In **all-wheel drive vehicles:** Ensure that the arrow (3) on the cross-member points in the direction of travel when installing it.
- Position cross-member (2) on the rear axle support.
- Renew screws (1).

  Parts: Bolts(1)
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °



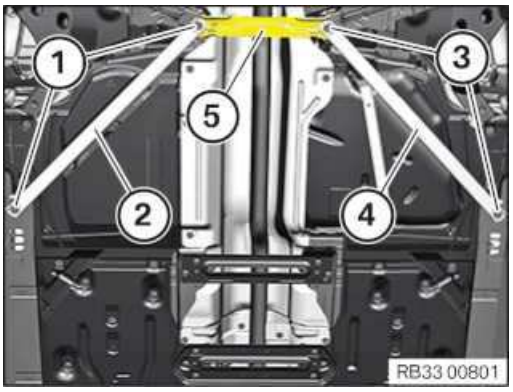
- Insert and install connecting supports (1).
- Tighten screws (arrows).

Front connection carrier to body

M10x18		Tightening torque	56 Nm

30 – Install the cross-member with torsion struts

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- Insert and install the cross-member (5).
- Thread in torsion strut (4) at right and install.
- Renew screws (3).

  Parts: Bolts
- Tighten down screws (3).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

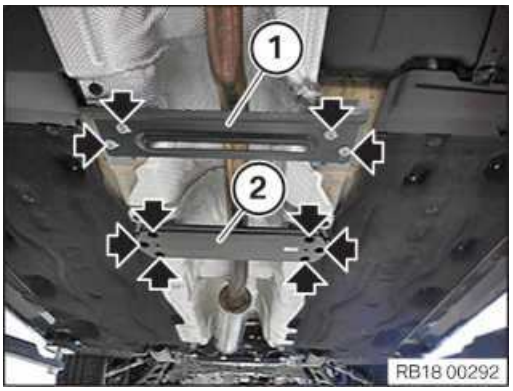
- Guide in and install the left torsion strut (2).
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

31 – Install the connecting support on the tunnel in front and back



- Insert and install connecting supports (2).
- Tighten the screws (arrows) from the connecting support (2).

Front connection carrier to body

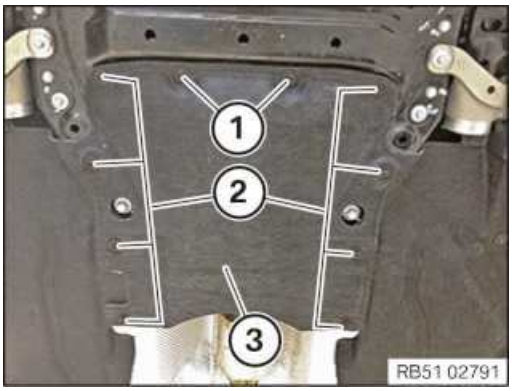
M10x18		Tightening torque	56 Nm

- Insert and install connecting supports (1).
- Tighten the screws (arrows) from the connecting support (1).

Rear connection carrier to body

M8x18		Tightening torque	28 Nm

32 – If installed: Installing underbody protection at rear



- Install the underbody protection (3).
- Tighten down screws (1) and (2).

Underbody protection to body

Screw		Tightening torque	3 Nm

33 – Topping up the fuel tank

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- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and diesel fuel.
- Slide the suction hose (1) of the extractor unit approximately 40 cm into the fuel filler pipe. If necessary, slightly turn the suction hose.
- Fill fuel from suction extractor unit.
- After completing the work and before starting the engine for the first time: fill the fuel tank via the fuel filler pipe with a minimum of 5 l of fuel.

34 – Putting the SCR tank system into operation



- Connect diagnosis and information system.
- Carry out start-up of the SCR tank system.
- Reset adaptations and adjustments in the SCR system.

Additional Information

Overview of Tightening Torques

Cover on the SCR tank — Used in step 17

Plastic nut	Renew plastic nut.	Tightening torque	3 Nm

Underbody panelling, side — Used in step 18

Hexagon screw		Tightening torque	2,6 Nm

Underbody panelling, side — Used in step 18

Plastic nut		Tightening torque	2,6 Nm

Fuel tank to body — Used in step 19

Nut M8	Renew nut.	Tightening torque	19 Nm

Fuel tank retaining strap to body — Used in step 19

M8 screw	Renew screws.	Tightening torque	19 Nm

Filling hose on fuel tank — Used in step 19

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

Seat bench to body — Used in step 21

Oval-head screw			42 Nm

Toolkit hook and loop tape to body — Used in step 21

Bolt M6 x 20		Tightening torque	4 Nm

Wheel arch cover to body — Used in step 22

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Brake disc to rear wheel hub — Used in step 23

M8	Renew screw.	Tightening torque	16 Nm

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Brake disc to front wheel hub

Used in step 23

M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts

Used in step 23

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Propeller shaft to transfer box

Used in step 25

		Tightening torque	80 Nm

Flexible disc to rear axle final drive

Used in step 25

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °

Centre mount to body

Used in step 25

M8		Tightening torque	19 Nm

Heat shield to body

Used in step 26 27

Bolts/nut		Tightening torque	3 Nm

Bracket to body

Used in step 26

M8		Tightening torque	21 Nm

Exhaust system to body

Used in step 28

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust bracket on body

Used in step 28

Hexagon screw M8x30		Tightening torque	19 Nm

V-clip to catalytic converter

Used in step 28

V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm

Diesel particulate sensor to exhaust system

Used in step 28

Sensor		Tightening torque	50 Nm

Nitrogen oxide sensor downstream of SCR catalytic converter

Used in step 28

Sensor		Tightening torque	50 Nm

Exhaust system to diesel particle filter

Used in step 29

Ribbon cable clamp	Replace clamp		26 Nm

Exhaust system suspension to body

Used in step 29

Nut M8			19 Nm

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Cross-member to rear axle support

Used in step 29

M12	Renew screws.	Tightening torque	100 Nm 90 °

Front connection carrier to body

Used in step 29

M10x18		Tightening torque	56 Nm

Cross-member/torsion strut to axle support and mounting

Used in step 30

M12x48	Renew screws.	Jointing torque Angle of rotation	100 Nm 90 °

Front connection carrier to body

Used in step 31

M10x18		Tightening torque	56 Nm

Rear connection carrier to body

Used in step 31

M8x18		Tightening torque	28 Nm

Underbody protection to body

Used in step 32

Screw		Tightening torque	3 Nm

Overview of Special Tools

0 495 554 (33 5 070) Extension



Common

Used in step 9 25

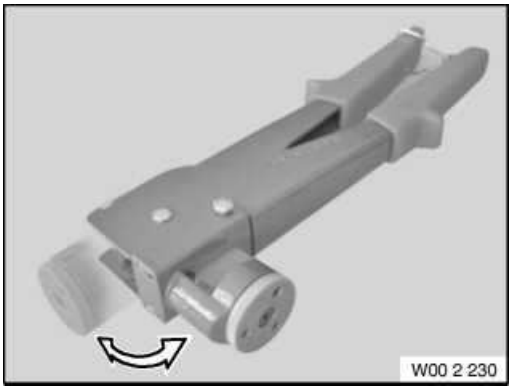
Usage	Pull-out extension for 33 5 040, 33 5 050, 33 5 060.
Included in the tool or work	
Storage location	A18
Replaced by	
In connection with	
SI-Number	01 21 06 (300)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 495 592 (33 5 071)		**Extension** (Extension (1 item)) discontinued, can only be ordered using complete tool	

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0 496 521 (00 2 230) Pliers



Common	Used in step 22
Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

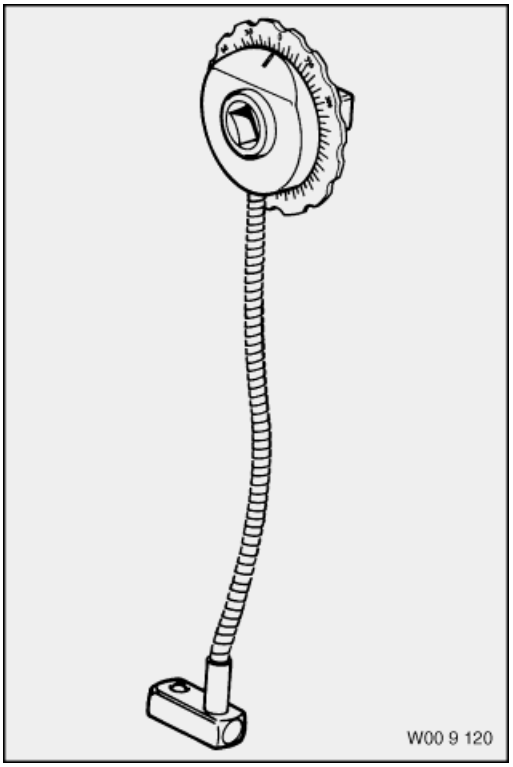
2 344 011 Tool



Common	Used in step 23
Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

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0 490 504 (00 9 120) Torque angle measuring dial



Common	Used in step 25
Usage	For torsion angle adjustment of cylinder head bolts (all engines) And reinforcement plate front axle support E46
Included in the tool or work	
Storage location	A4
Replaced by	
In connection with	
SI-Number	

Replacement tools:

0 495 221 (36 1 323) Wheel stud



Common	Used in step 11
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 224 (36 1 326) Wheel stud



Common	Used in step 11
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 225 (36 1 327) Wheel stud



Common	Used in step 11
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



Common	Used in step 11
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

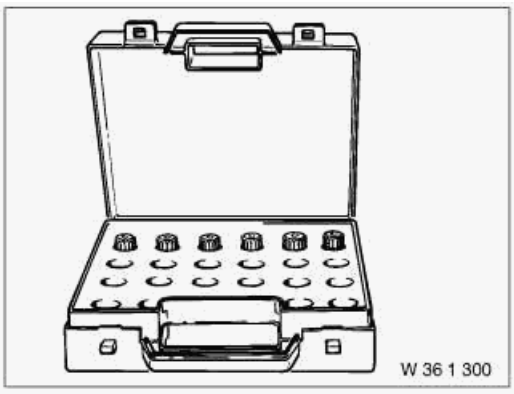
0 495 227 (36 1 329) Wheel stud



Common	Used in step 11
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 228 (36 1 331) Wheel stud



Common	Used in step 11
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 229 (36 1 332) Wheel stud



Common	Used in step 11
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 11
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Links

Operating materials	Used in step
2.0 Grease for wheel centring	23

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16 19 005 Removing and installing/replacing metering line for Selective Catalytic Reduction (SCR)

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

PRELIMINARY WORK

1 – Drawing off the fuel tank

WARNING

Contact with hazardous fluids.

Hazardous to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

WARNING

Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

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- Open fuel filler cap.
- Insert special tool into fuel filler neck.

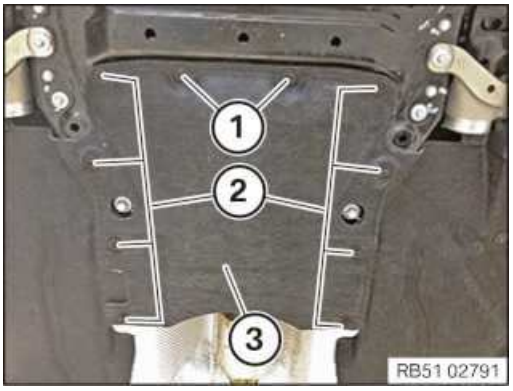
  Special tool has two different diameters: for petrol and for diesel fuel.
- Slide suction hose (1) of the extractor unit through special tool and into the fuel filler pipe. If necessary, slightly turn the suction hose.

  For the extractor unit: refer to BMW Service workshop equipment.

  The insertion length of the suction hose is 125 cm.
- Start engine and allow to run, so that the electric fuel pump is running.

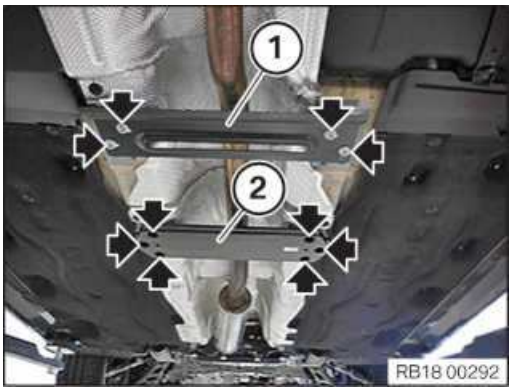
  This will ensure that the fuel is pumped by the suction jet pump from the left-hand side of the fuel tank to the right hand-side.
- Draw off fuel with the extractor unit as far as possible. In the process, track the drawing off of the fuel on the fuel gauge in the instrument cluster.

2 – If installed: Removing rear underbody protection



- Loosen screws (1) and (2).
- Remove underbody protection (3).

3 – Removing the connecting support from the tunnel in front and back



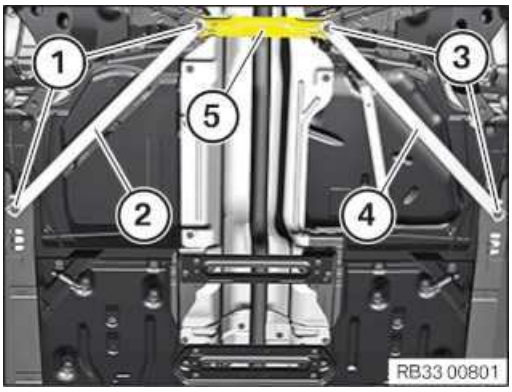
- Unscrew the bolts (arrows) from the connecting support (1).
- Feed out and remove the crossbeam (1).
- Unscrew the bolts (arrows) from the connecting support (2).
- Feed out and remove the crossbeam (2).

4 – Remove the cross strut with the torsion strut

TECHNICAL INFORMATION

Driving without a torsion strut is not permitted.

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- Loosen screws (1).
- Thread out torsion strut (2) at left and remove.
- Loosen screws (3).
- Thread out torsion strut (4) at right and remove.
- Feed out and remove the cross-member (5).

5 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

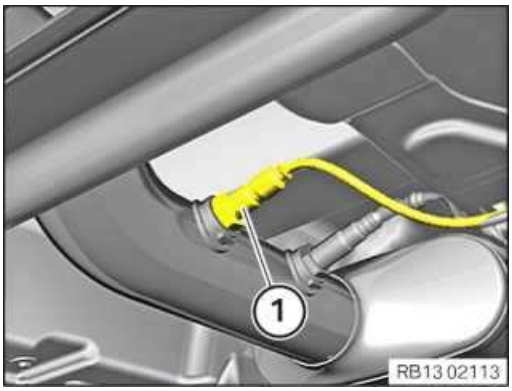
- Perform all work only on components that have cooled down.

CAUTION

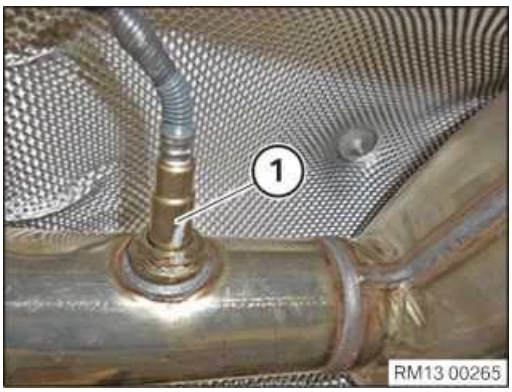
Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

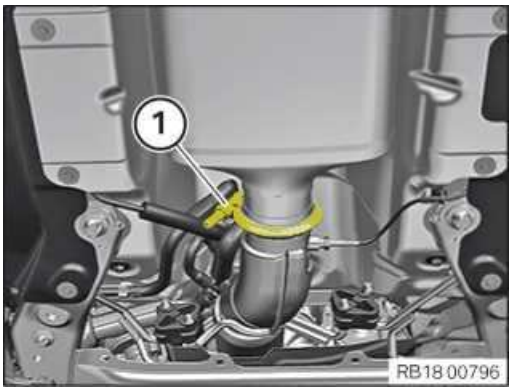


- Release the nitrogen oxide sensor (1) downstream of the SCR catalytic converter, guide it out and set it aside.

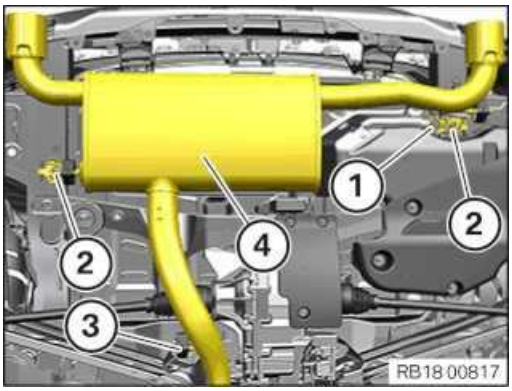


- Release the diesel particulate sensor (1), guide it out and set it aside.

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- Loosen V-band clamp (1).



- Loosen screw (1).
- Loosen nuts (2).
- Release the rubber mount (3) of the exhaust system (4).
- Lower and guide out the exhaust system (4) with assistance of a second person and remove it.

6 – Remove exhaust system

WARNING

Hot surfaces.

Risk of burning!

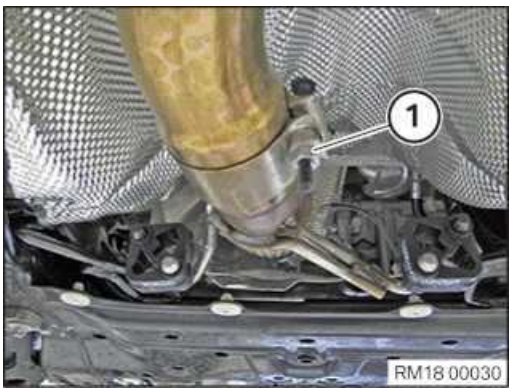
- Perform all work only on components that have cooled down.

CAUTION

Heavy component.

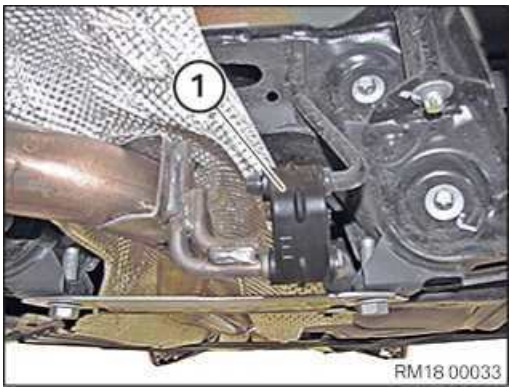
Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

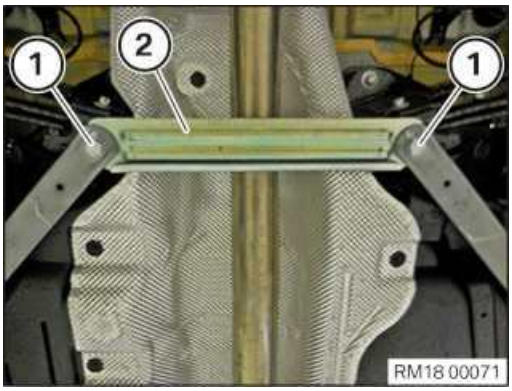


- Unfasten clamp (1).

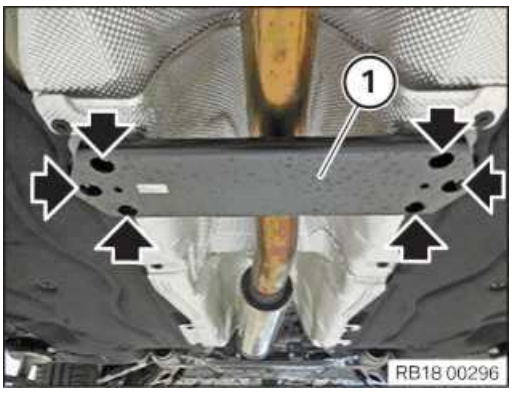
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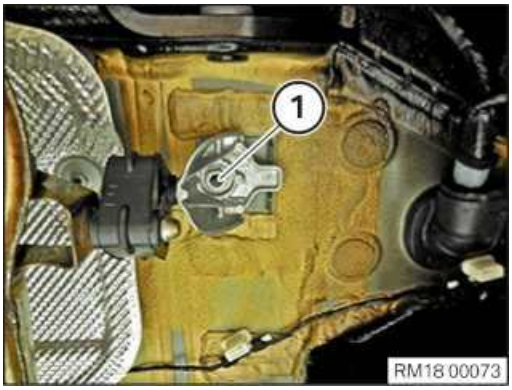
- Spray rubber mount (1) with lubricant and pull off the exhaust system.



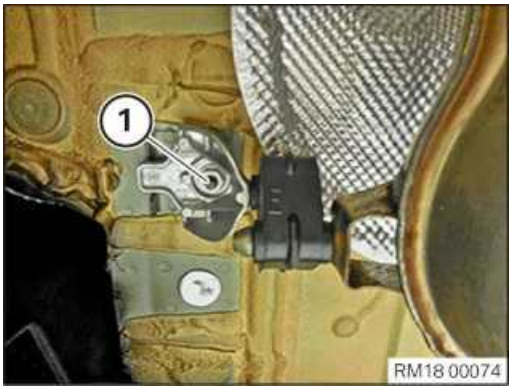
- Loosen screws (1).
- Feed out and remove the cross-member (2).



- Remove screws (arrows).
- Remove the connecting support (1).



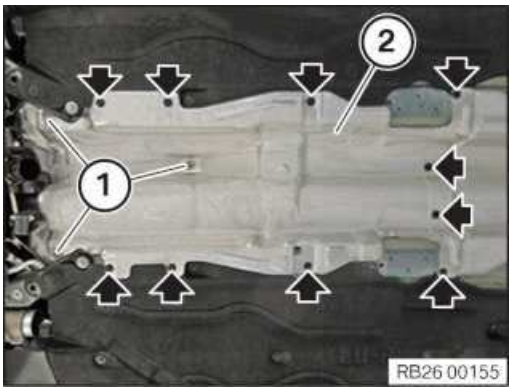
- Release the left-hand nut (1).



- Release the right-hand nut (1).
- Lower and remove exhaust system with assistance of a second person.

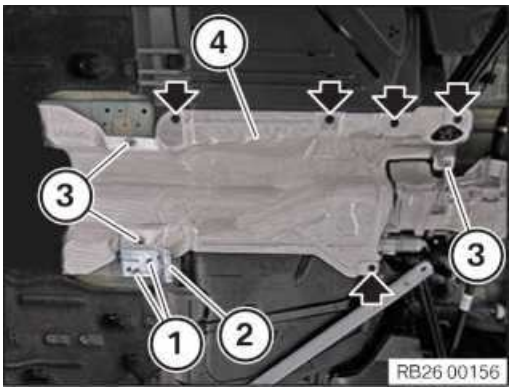
7 – Remove front heat shield

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- Remove screws (arrows).
- Loosen nuts (1).
- Guide the heat shield (2) out and remove it.

8 – Remove heat shield at rear.



- Loosen screws (1).
- Guide out and remove holder (2).
- Remove screws (arrows).
- Loosen nuts (3).
- Guide the heat shield (4) out and remove it.

9 – Remove propeller shaft

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to propeller shaft during removal.

Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- Do not disassemble the three-hole flange, flexible disc and propeller shaft. The three-hole flange to the rear axle differential is balanced with the flexible disc and propeller shaft.
- Loosen the recessed nut against the direction of travel in clockwise direction. The propeller shaft must be loosened on the recessed nut only and exclusively in the direction of rotation otherwise the anti-twist lock of the bi-hexagonal flange nut is damaged.
- In the event of a damaged anti-twist lock on the bi-hexagonal flange nut: Replace the rear axle differential.

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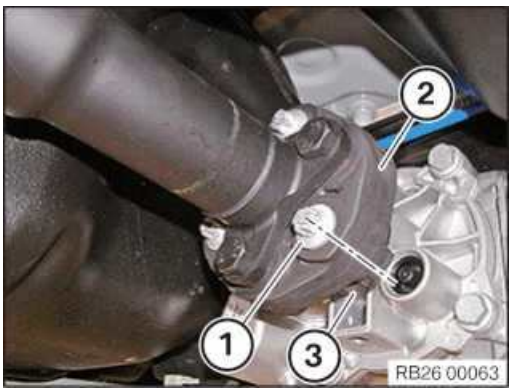
- Install the special too l between the front and rear propeller shaft.
- Make sure that the arrows on the special tool point forward in the direction of travel.



- Always support the propeller shaft (1) with a conventional jack.



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



TECHNICAL INFORMATION

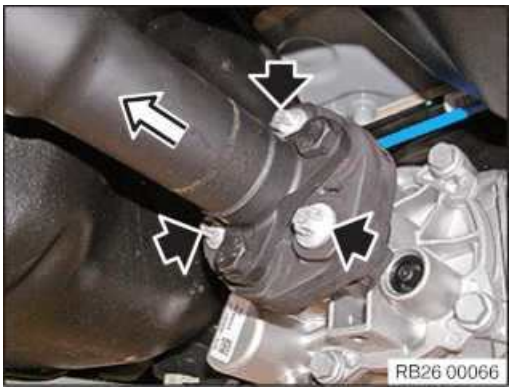
Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Mark the installation position of the screw connection (1), the flexible disc (2) and the three-hole flange (3) on the same level.
- Loosen the screw connection (1).

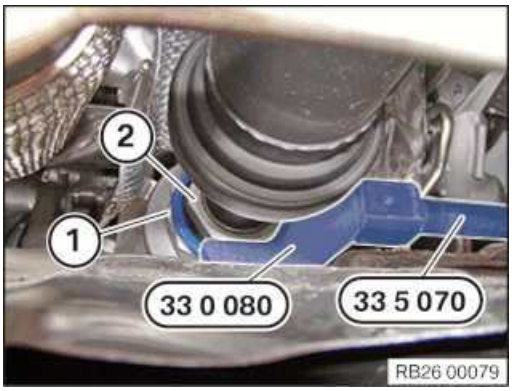


- Loosen screws (1).

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- Remove screws (arrows).
- Guide the propeller shaft out in the direction of the arrow and set it aside.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.

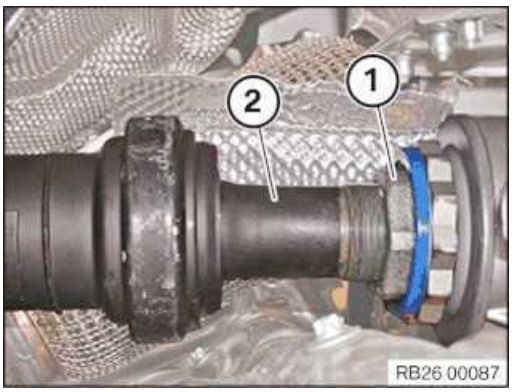
- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to detach the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

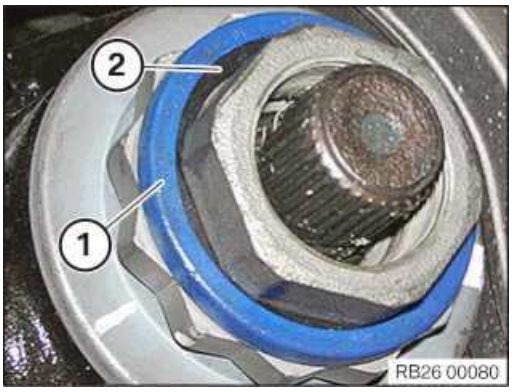


- Release the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

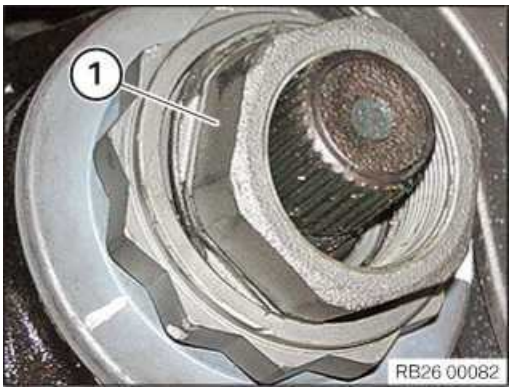


- Thread the propeller shaft (2) out of the recessed nut (1) and remove.

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- Thread the retaining clip (1) and the seal (2) out and remove.



- Thread out and remove the recessed nut (1).

10 – Removing the tank covers on the left and right

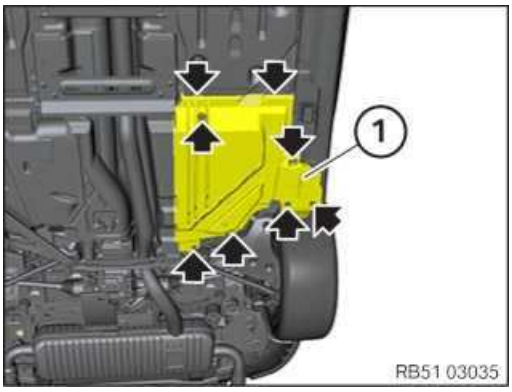
NOTICE

Perform the operations on the left and right side.

NOTICE

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

▸ **Removing the tank cover**



- Remove screws (arrows).
- Remove the tank cover (1).

11 – Remove right rear wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

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NOTICE

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

▶ **Removing the rear right wheel**

▷ **Removing the wheel**



- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

◁

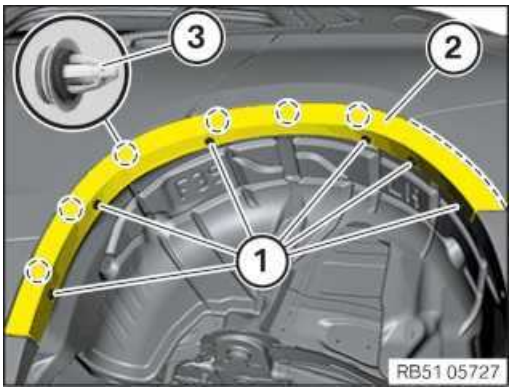
▶ **Removing rear wheel arch trim**

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

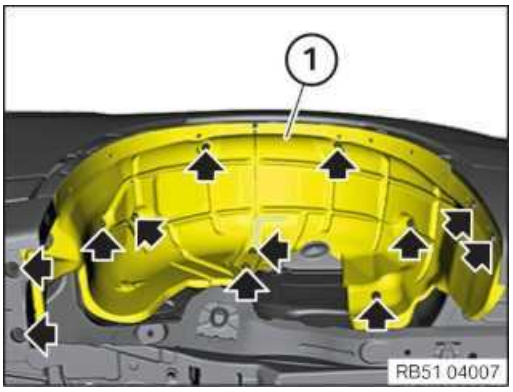
NOTICE

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



- Remove the blind rivets (1).
- Disengage the wheel arch trim (2) from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

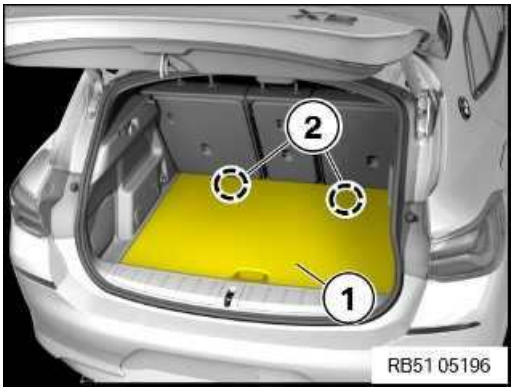
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- Unscrew all bolts and nuts (arrows).
- Carefully feed out and remove the wheel arch cover (2).

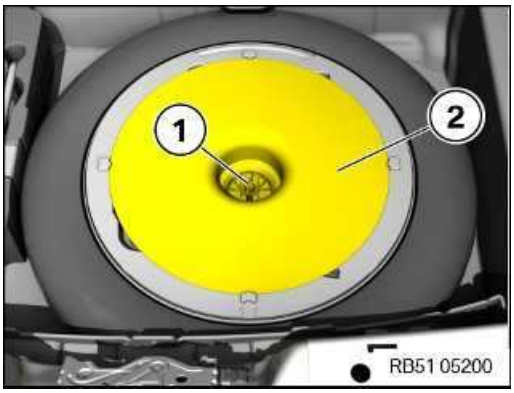
12 – Removing seat bench

▸ **Removing the luggage compartment removable panel**

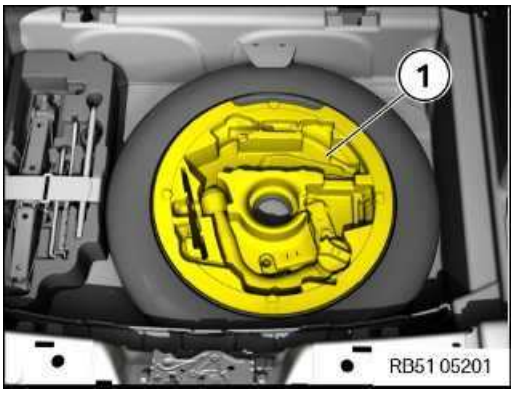


- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

▸ **Removing the compact spare wheel**



- Loosen screw (1).
- Remove the cover (2).



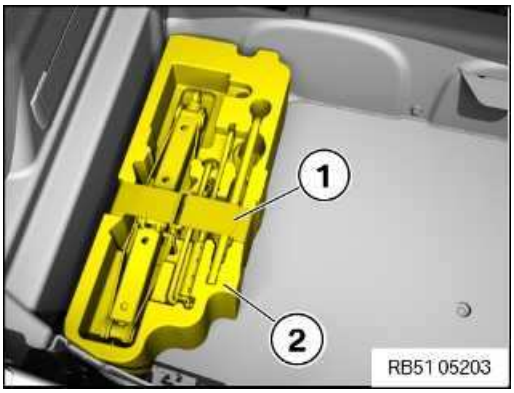
- Remove the oddments tray from the emergency wheel (1).

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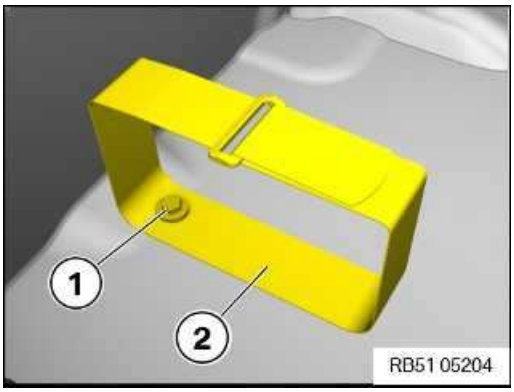
- Remove the emergency wheel (1).

▸ **Remove the tool kit**



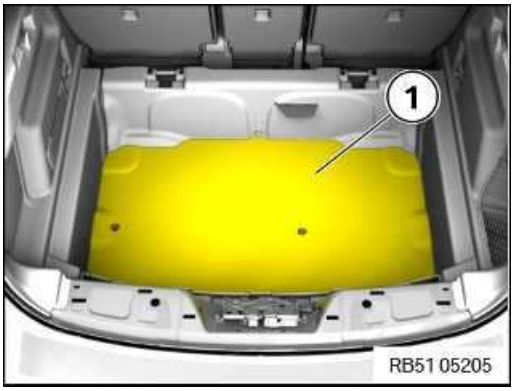
- Open the hook and loop tape (1).
- Remove the tool kit (2).

▸ **Remove the hook and loop tape for the tool kit**



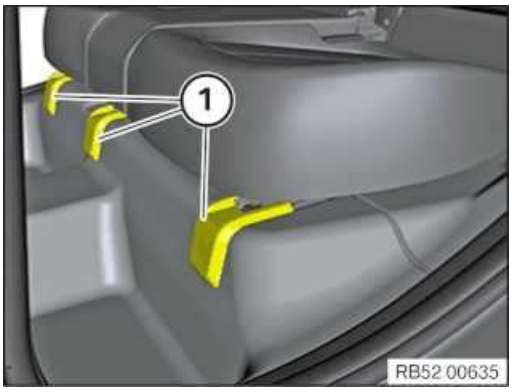
- Loosen screw (1).
- Remove the hook and loop tape (2).

▸ **Removing the luggage compartment floor trim panel**

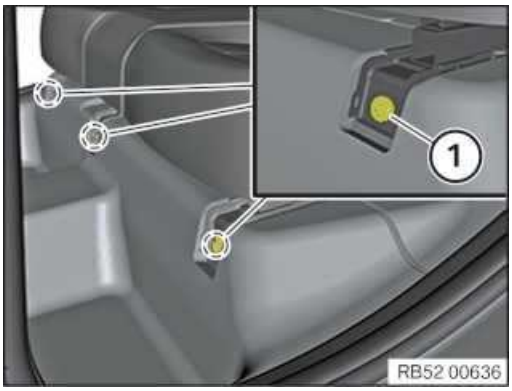


- Remove the luggage compartment floor trim panel (1) upwards.

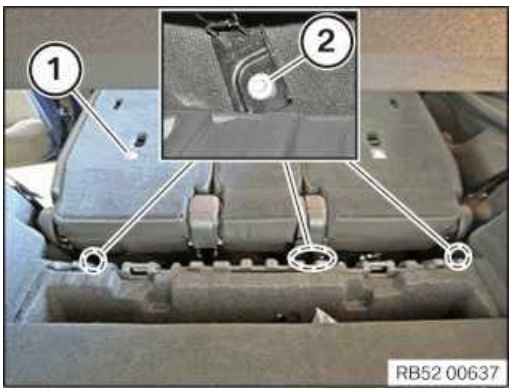
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- Unclip the covers (1) forwards.



- Loosen screws (1).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.
- Fold down rear seat backrest (1) on left and right.
- Loosen screws (2).
- Disconnect existing plug connections where required.

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Lift out rear seat bench with the assistance of a second person.

13 – Disconnect delivery unit

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WARNING

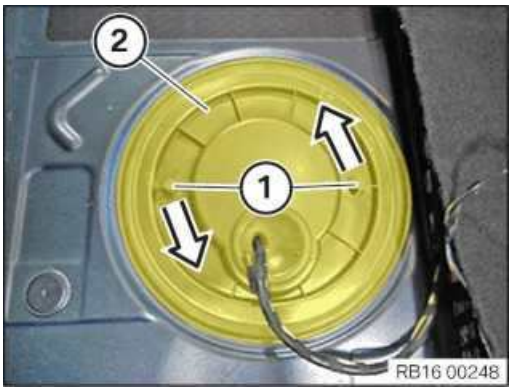
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

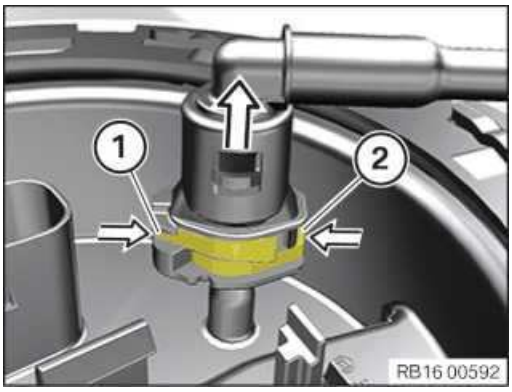
Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Turn the sealing cap for the floor panel (2) at the plastic tabs (1) in the direction of arrow.
- If turning is not possible: Destroy sealing cap of the floor panel (2).
- Remove sealing cap of the floor panel (2).



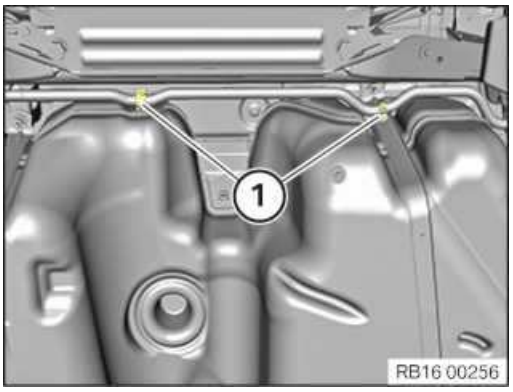
- Disconnect plug connection (1).



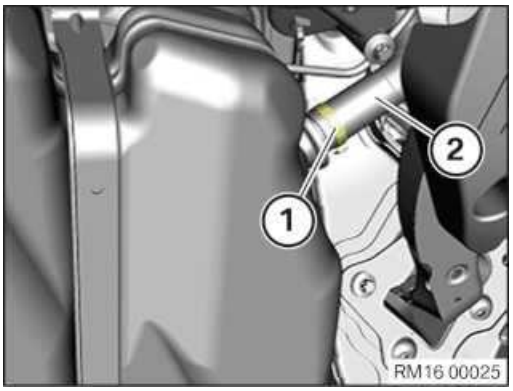
- Push the snap fastener toward the delivery unit.
- Press retaining lugs (1) and (2) pull off the snap fastener in the direction of arrow.

14 – Removing the fuel tank (fuel tank capacity 61 l)

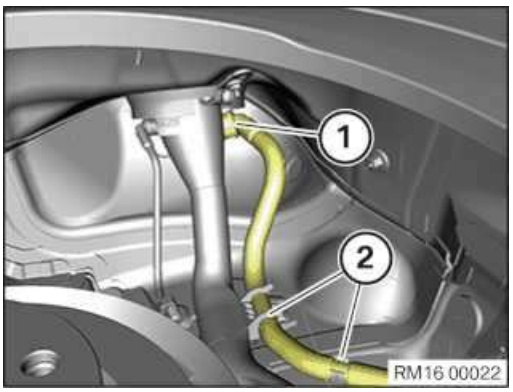
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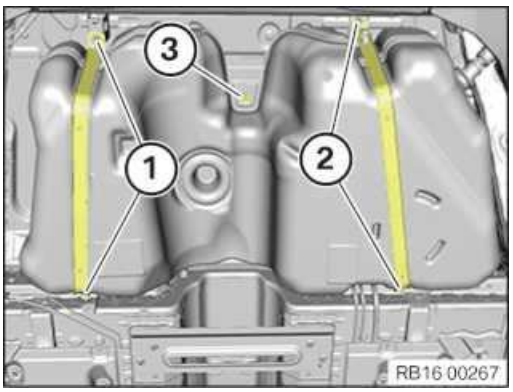
- Detach the tank ventilation line from the bracket (1).



- Loosen hose clamp (1).
- Pull off the rubber hose (2) from the fuel tank in the direction of the arrow.



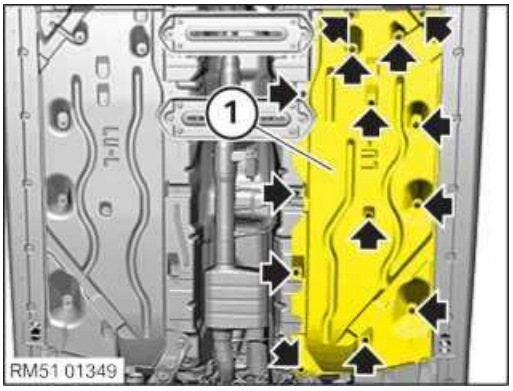
- Unlock and pull off snap fastener (1).
- Detach fuel filler neck breather pipe from brackets (2).



- **Heavily support the fuel tank.**
- Release the screws (1) and (2) and remove the retaining straps.
- Unscrew the nut (3) and lower the fuel tank (3).

  While the fuel tank is being lowered, the fuel filler neck breather pipe must be guided from the wheel arch through the body aperture!

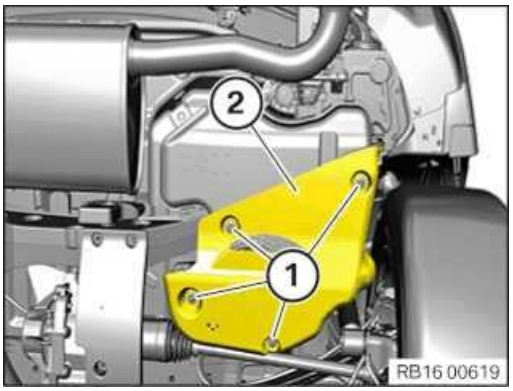
15 – Removing right underbody panelling



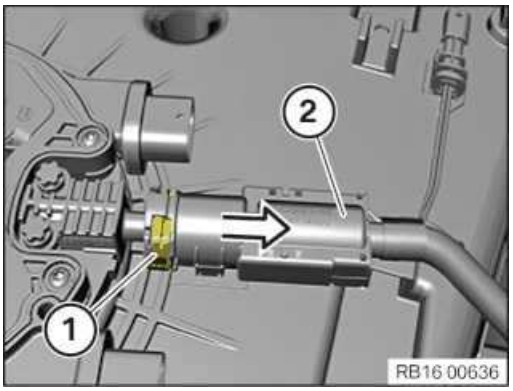
- Unscrew all bolts and nuts (arrows).
- Remove the underbody panelling (1).

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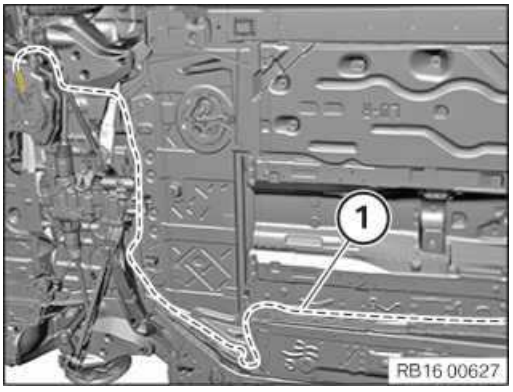
16 – Removing metering line



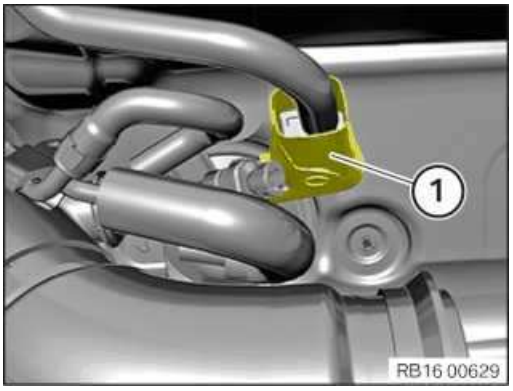
- Loosen plastic nuts (1).
- Remove the cover of the SCR tank (2).



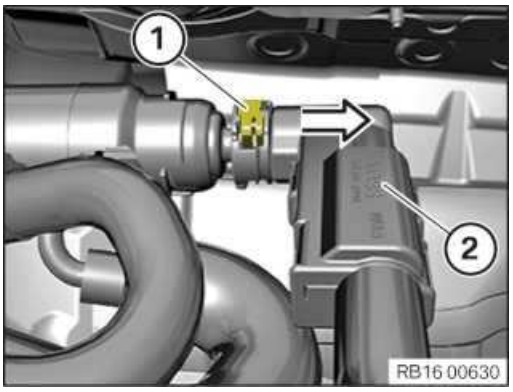
- Push the snap fastener (2) toward the delivery unit.
- Press retaining lug (1) and pull off the snap fastener (2) in direction of arrow.



- Detach metering line over the rear axle along the line (1).

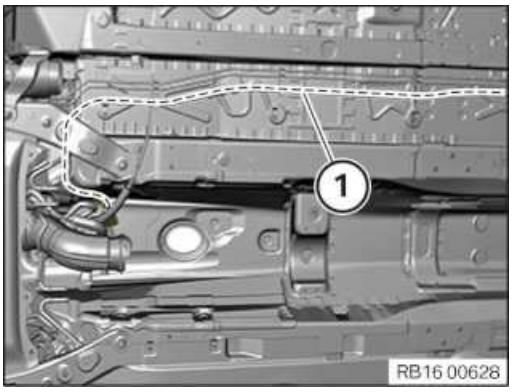


- Remove the heat protection (1).



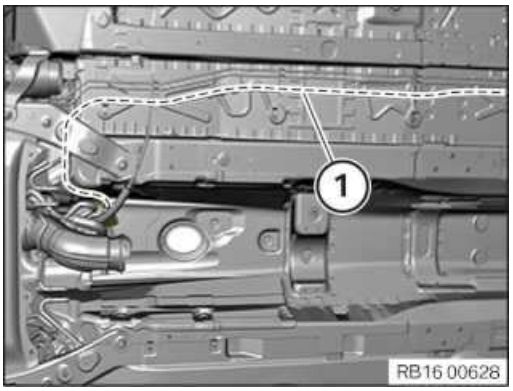
- Push the snap fastener (2) toward the delivery unit.
- Press retaining lug (1) and pull off the snap fastener (2) in direction of arrow.

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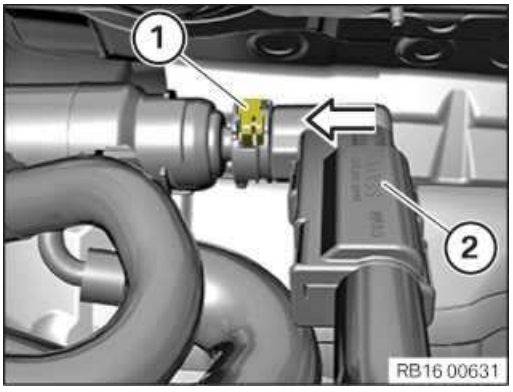


- Unclip metering line out of the brackets (1) along the line and remove.

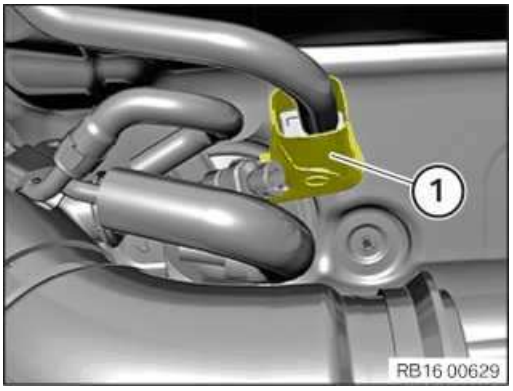
17 – Installing the metering line



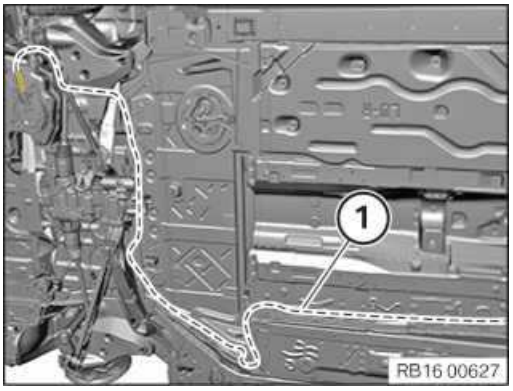
- Position the metering line.
- Clip the metering line along line (1) in the brackets.



- Position snap fastener (2) and lock.
- Ensure that the retaining lug (1) is correctly seated.

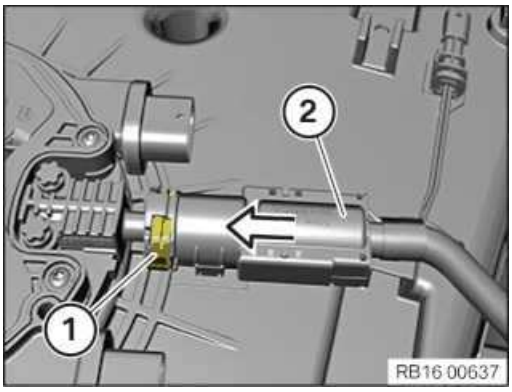


- Install the heat protection (1).

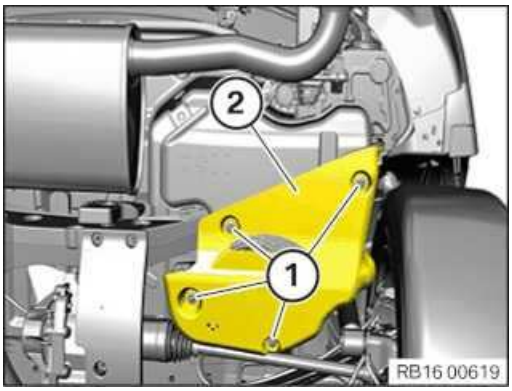


- Feed in the metering line along the line (1) via the rear axle.

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- Position snap fastener (2) and lock.
- Ensure that the retaining lug (1) is correctly seated.



- Install the cover of the SCR tank (2).
- Renew the plastic nuts (1).

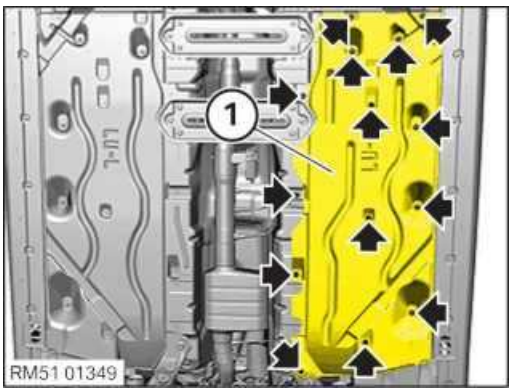
  Parts: Plastic nuts
- Insert plastic nuts (1) and tighten.

Cover on the SCR tank

Plastic nut	Renew plastic nut.	Tightening torque	3 Nm

POSTPROCESSES

18 – Installing underbody panelling , right



- Correctly position the underbody panelling (1).
- Tighten all bolts and nuts (arrows).

Underbody panelling, side

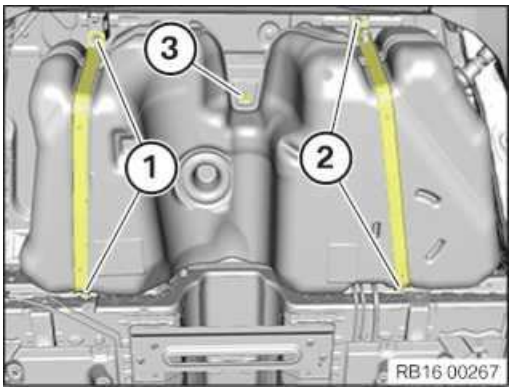
Hexagon screw		Tightening torque	2,6 Nm

Underbody panelling, side

Plastic nut		Tightening torque	2,6 Nm

19 – Install fuel tank (fuel tank capacity 61 l)

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- **Raise fuel tank.**

  While the fuel tank is being raised, the fuel filler neck breather pipe must be guided through the body aperture into the wheel arch!
- Lift fuel tank up to installation position. When doing this, observe the installation position of the fuel filler neck breather pipe.
- Renew nut (3).

  Parts: Nut
- Fit nut (2) and tighten.

Fuel tank to body

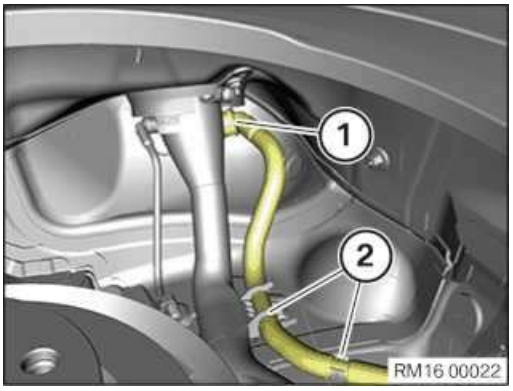
Nut M8	Renew nut.	Tightening torque	19 Nm

- Renew screws (1) and (2).

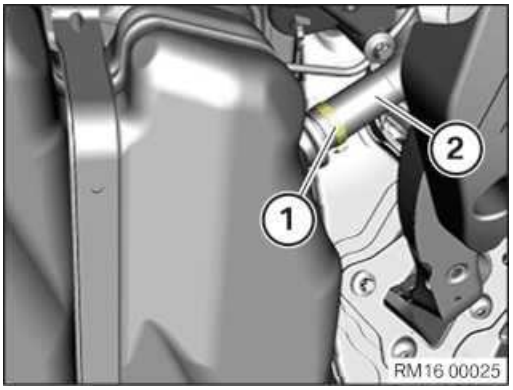
  Parts: Bolts
- Mount the retaining straps and position and tighten the screws (1) and (2).

Fuel tank retaining strap to body

M8 screw	Renew screws.	Tightening torque	19 Nm



- Attach the fuel filler neck breather pipe in the brackets (2).
- Position snap fastener (1) and lock.

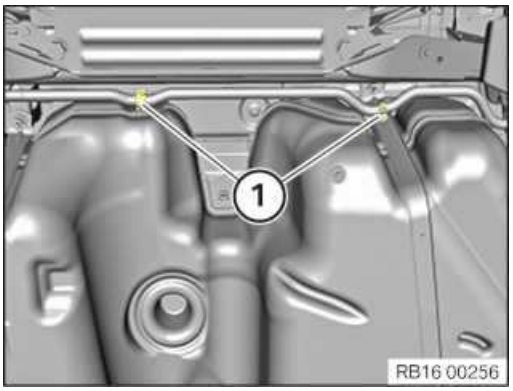


- Mount fuel filling hose (2) on fuel tank in direction of arrow.
- Renew the hose clamp (1).

  Parts: Hose clamp
- Position hose clamp (1) and tighten.

Filling hose on fuel tank

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm



- Attach the tank ventilation line in the brackets (1).

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WARNING

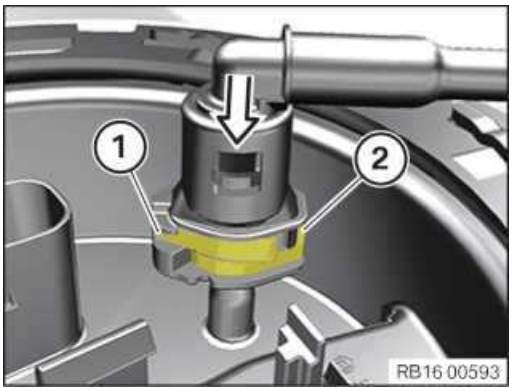
Working on fuel system.

Risk of fire! Danger of explosion!

- When working on the fuel system, make sure that the workbay is sufficiently ventilated, e.g. using extraction unit.
- Tightly seal off open lines and connections; collect any escaping fuel directly at the point of exit.
- No fire, sparks, open flames or smoking.

TECHNICAL INFORMATION

Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Check locks of snap fastener for damage, and replace if required.

  The retaining lugs (1) and (2) must be locked.
- Mount the snap fastener and lock.

  The snap fastener must engage audibly and noticeably.
- Ensure correct locking of snap fastener with a tensile test.



- Connect connector (1).



- Renew sealing cap of the floor panel (1).

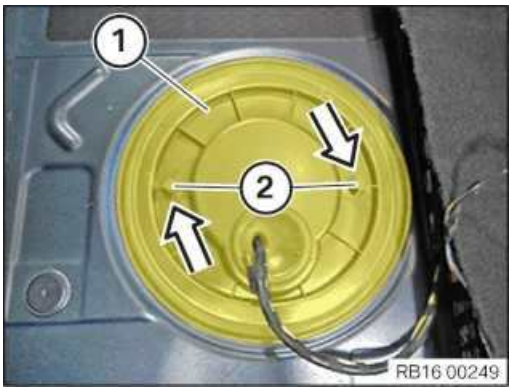
  Parts: Sealing cap of the floor panel

  The sealing cap of the floor panel must not be reused, as there is the risk of leak during reuse.
- Lubricate seal in the area (1) with lubricant.

Expendable materials

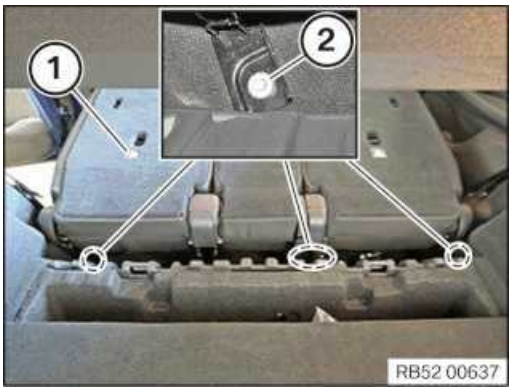
Lubricants PF1	50 g, Pin	83230309627

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- Install sealing cap of the floor panel (1).
- Turn sealing cap of the floor panel (1) on the plastic tabs (2) in the direction of arrow till the limit position and engage.

21 – Install rear seat bench



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.

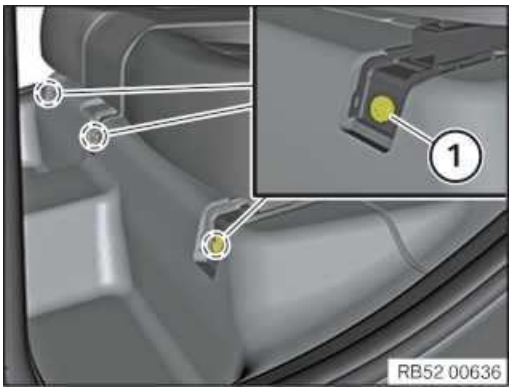
RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

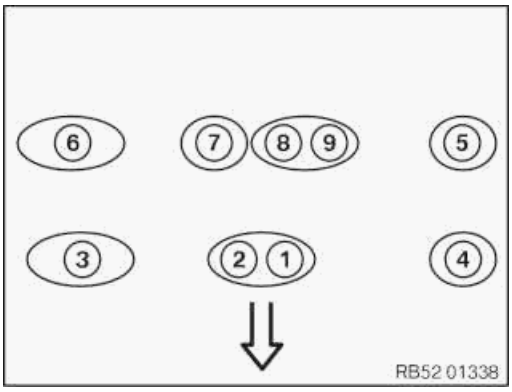
- Remove and install heavy components with the aid of another person/other persons.

- Hoist the rear seat bench into the vehicle and position it with the assistance of an auxiliary person.
- If required, connect the available connectors.
- Screw the bolts (2) in a few turns.



- Screw the bolts (1) in a few turns.

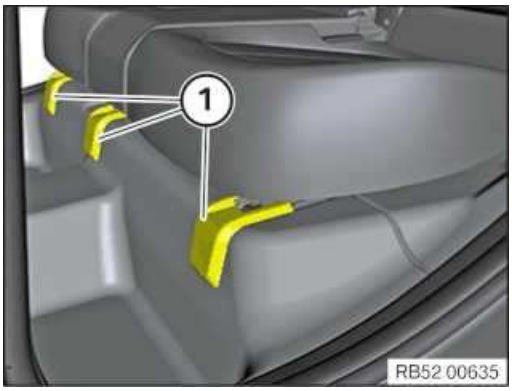
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- Tighten screws in the order (1) to (9).

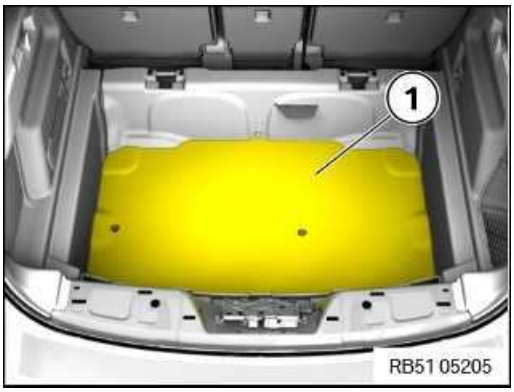
Seat bench to body

Oval-head screw		42 Nm



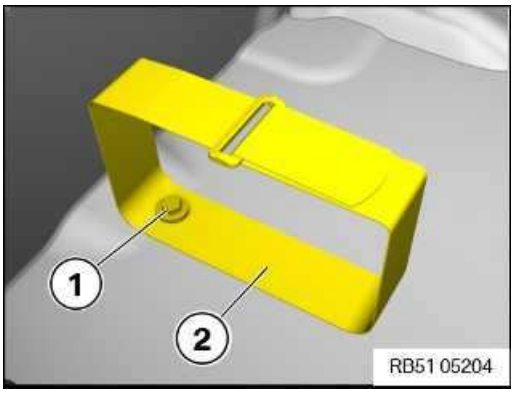
- Clip in the covers (1).

▸ **Installing the luggage compartment floor trim panel**



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

▸ **Inserting the Velcro fastener for the toolkit**



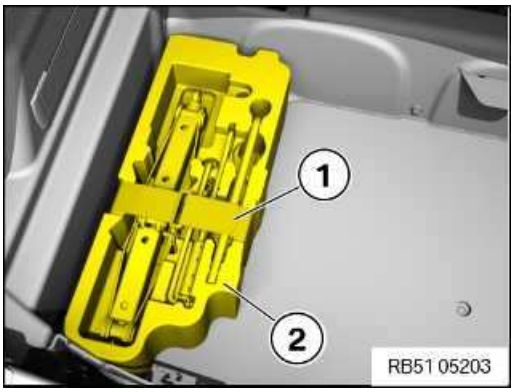
- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

▸ **Install the tool kit**

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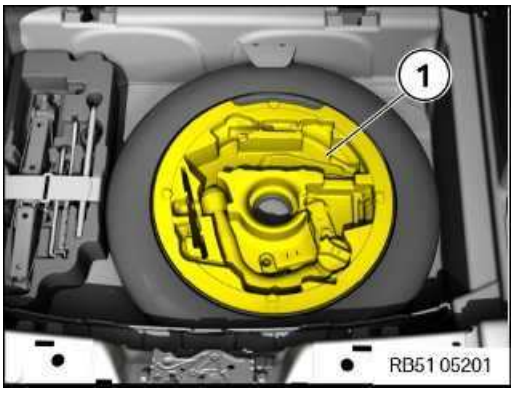


- Install the tool kit (2).
- Close the hook and loop tape (1).

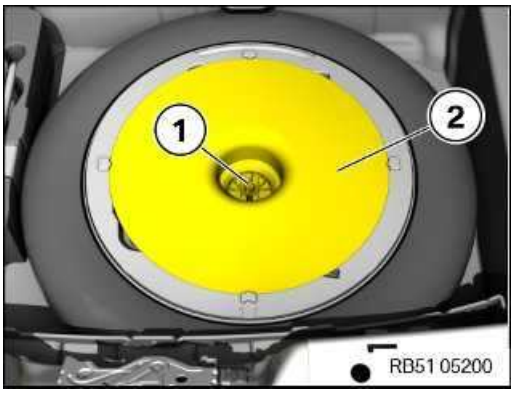
▸ **Install the emergency wheel**



- Insert compact spare wheel(1).



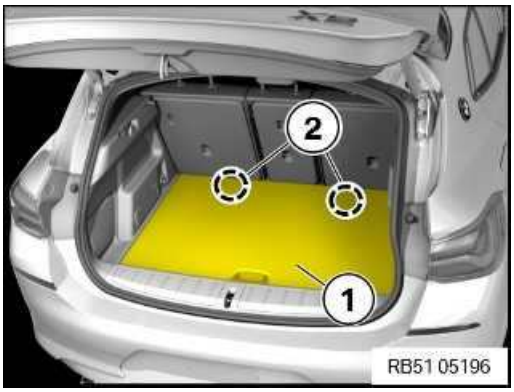
- Insert oddments tray into the compact spare wheel (1).



- Insert the lid (2).
- Hand-tighten the bolt (1).

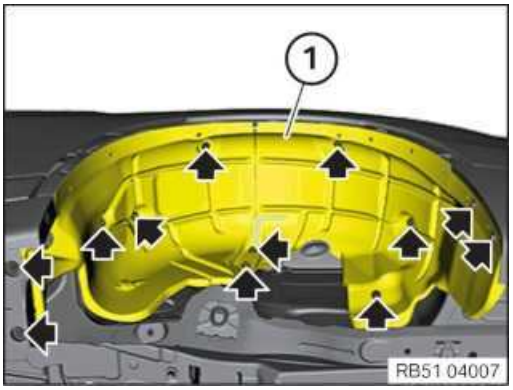
▸ **Installing the luggage compartment removable panel**

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- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

22 – Installing the rear wheel arch cover on the right



- Feed in wheel arch cover (1) and correctly position it.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

▸ **Installing the rear wheel arch trim**

TECHNICAL INFORMATION

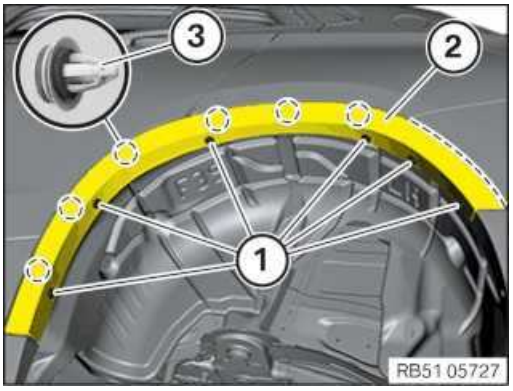
Latch mechanisms, guides and mounting elements must not be damaged or missing.

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

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



- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage the wheel arch trim (2) with the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

23 – Installing rear right wheel

▸ **Mounting the wheel**

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▷ **Clean the contact surfaces between the brake disc and the wheel rim**



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

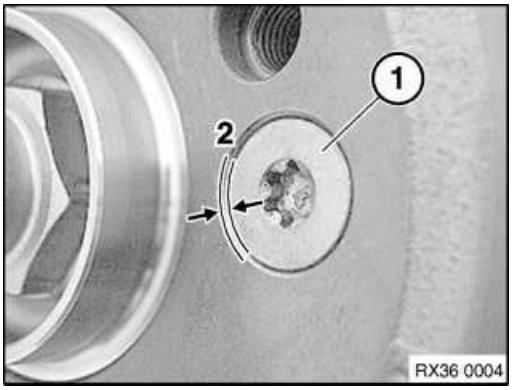
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).



- Renew mounting bolt (1).

  Parts: Mounting bolt
- Check that the mounting bolt (1) for the brake disc is securely seated.

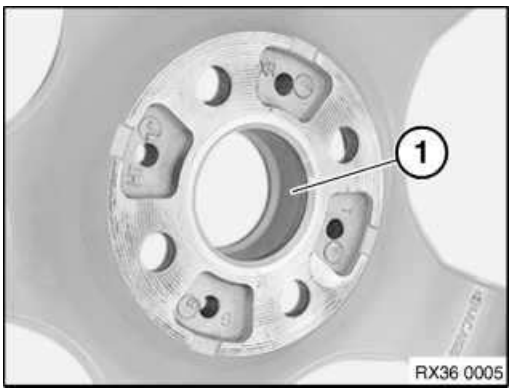
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

24 – Installing the tank covers on the left and right

NOTICE

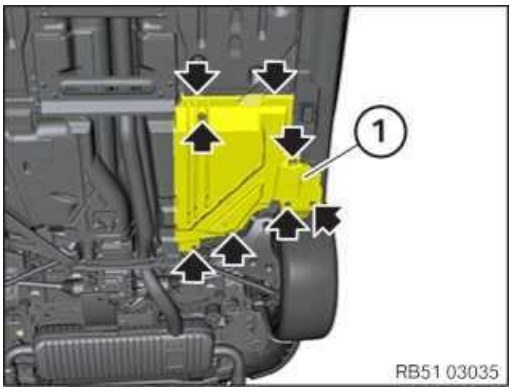
Perform the operations on the left and right side.

NOTICE

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

▸ **Installing tank cover**

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- Install tank cover (1).
- Tighten screws (arrows).

25 – Install propeller shaft.

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

RISK OF DAMAGE

Damage to the propeller shaft during installation.

Non-observance of the installation guidelines for the propeller shaft on the rear axle differential may cause severe damage.

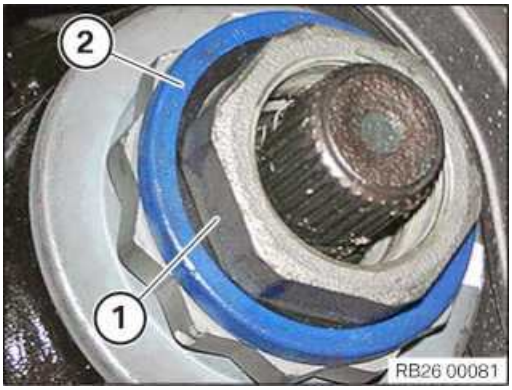
- Always renew the recessed nut on the rear axle differential. Screw locking must be available.
- Strictly observe a minimum hardening time of two hours after having screwed in the recessed nut. The hardening time may be longer at lower temperatures.

RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

- Do not use the double hexagon head flange nut as counter support.



- Renew recessed nut (1).

  Parts: Insert nut
- Renew the retaining clip (2) and the seal.

  Parts: Retaining clip, seal
- Insert the seal with the recessed nut (1) and install.
- Insert the retaining clip (2) and install.
- Make sure that recessed nut (1) is screwed in within 5 min.
- Make sure that the hardening time of **minimum** 2 h for the recessed nut is observed.

  The hardening time must be extended at lower temperatures.

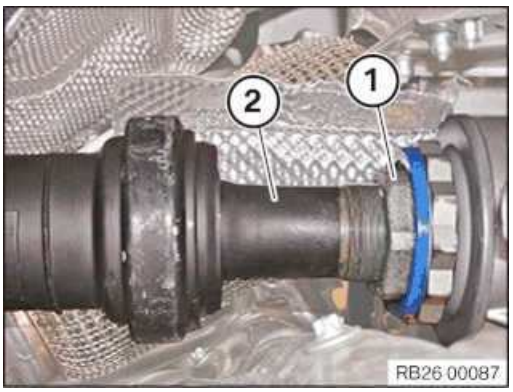
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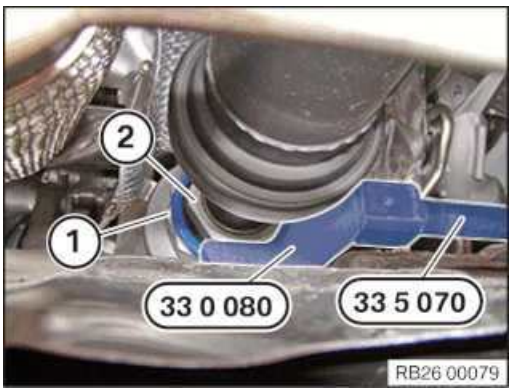
- Insert the propeller shaft (1) and install.
- Always support the propeller shaft (1) with a conventional jack.



- Hand-tighten the bolts (1).



- Push the propeller shaft (2) against the recessed nut (1) up to the limit position.
- Screw the propeller shaft (2) at least 2 thread starts onto the recessed nut (1) by hand.



RISK OF DAMAGE

Damage to the transfer box.

Non-observance of the removal and installation guidelines may cause severe damage to the transfer box.

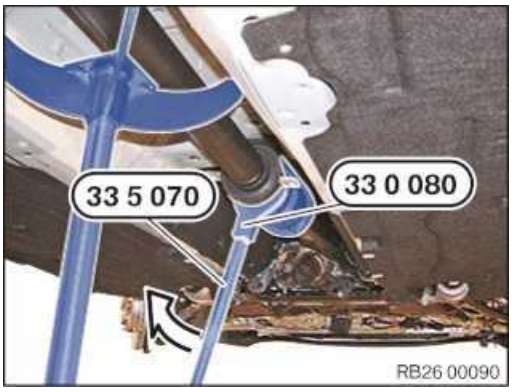
- Do not use the double hexagon head flange nut as counter support.

- Protect the recessed nut (2) on the transfer box from twisting with the special tools **0 495 554 (33 5 070)** and .

  The recessed nut (2) on the transfer box must **not** be used to tighten the propeller shaft.

  The double hexagon flange nut (1) must **not** be used for counter support.

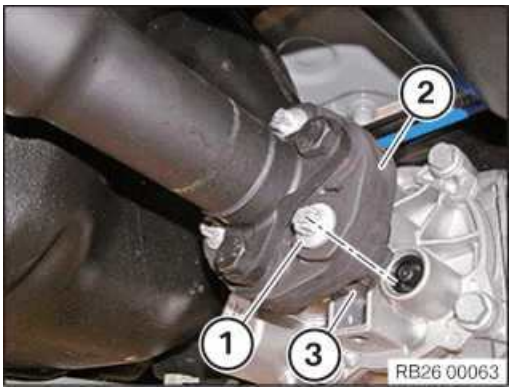
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- Tighten the front propeller shaft with the special tools **0 495 554 (33 5 070)** and in the direction of the arrow.

Propeller shaft to transfer box

		Tightening torque	80 Nm



TECHNICAL INFORMATION

Compliance with the following instructions is required to avoid a humming noise from the propeller shaft after refitting the propeller shaft.

- Assemble the screw connection (1) of the flexible disc (2) and the three-hole flange (3) according to the mark.
- Renew screws (1).

  Parts: Bolts
- Hand-tighten the bolts (1).



- Protect the propeller shaft (1) with the special tools **0 495 554 (33 5 070)** and from twisting.



- Tighten the bolts with the special tools **0 490 504 (00 9 120)** and .

Flexible disc to rear axle final drive

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °



- Tighten the screws (1).

Centre mount to body

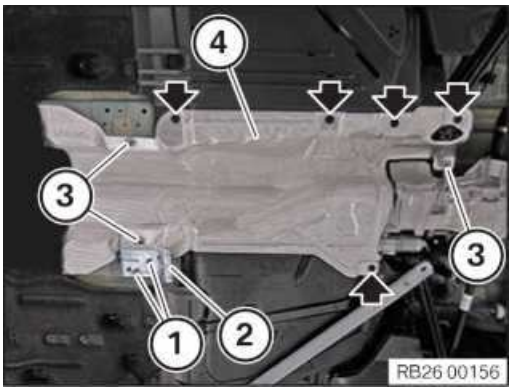
M8		Tightening torque	19 Nm

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- Guide the special too l out between the front and rear propeller shaft and remove.

26 – Installing the rear heat shield



- Insert and install the heat shield (4).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (3).

Heat shield to body

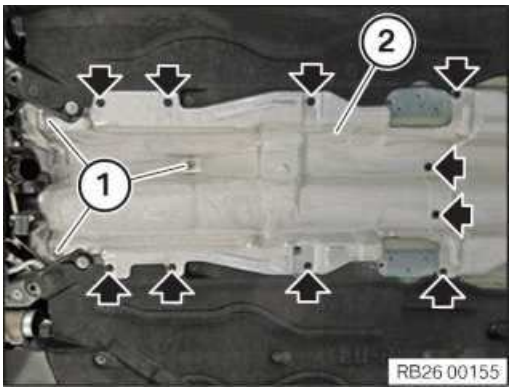
Bolts/nut		Tightening torque	3 Nm

- Insert and install the holder (2).
- Tighten the screws (1).

Bracket to body

M8		Tightening torque	21 Nm

27 – Install the front heat shield



- Insert and install the heat shield (2).
- Tighten screws (arrows).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

- Tighten nuts (1).

Heat shield to body

Bolts/nut		Tightening torque	3 Nm

28 – Install exhaust system

CAUTION

Component with heavy weight.

Danger of injury!

- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

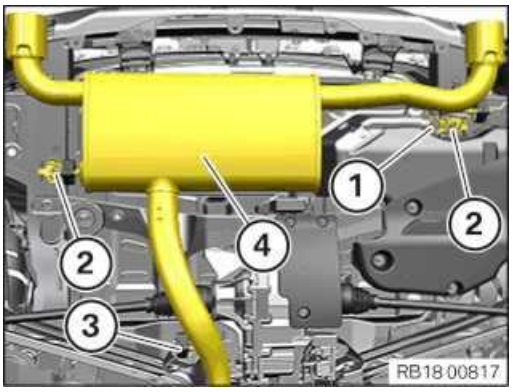
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CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.



- Feed in and install the exhaust system (4) with a second person.
- Renew nuts (2).

  Parts: Nuts
- Tighten nuts (2).

Exhaust system to body

M8	Replace nuts.	Tightening torque	19 Nm

- Tighten down screw (1).

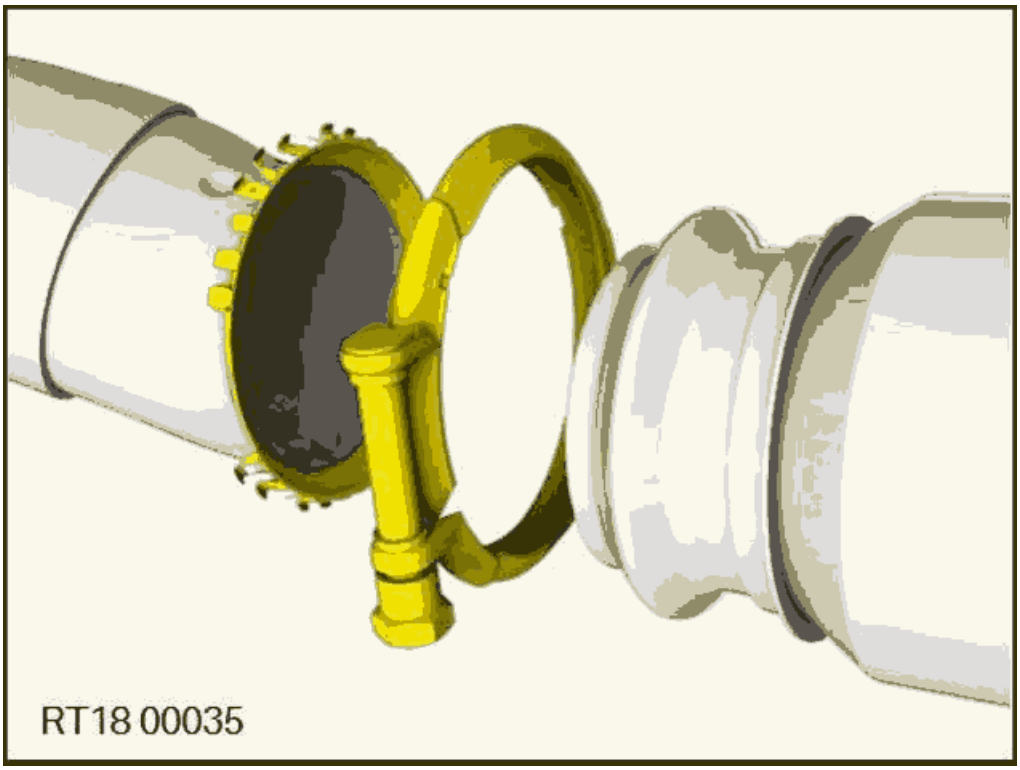
Exhaust bracket on body

Hexagon screw M8x30		Tightening torque	19 Nm

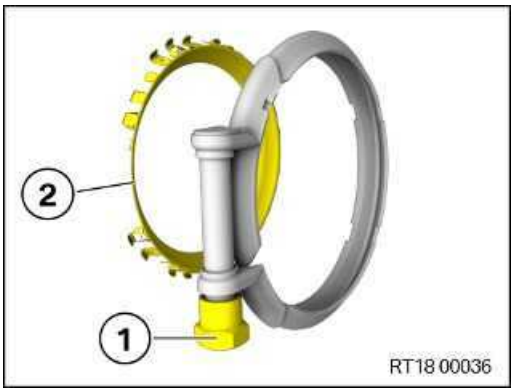
- Check the rubber mount (3) for damage and renew as needed.
- Mount rubber mount (3) on the exhaust system (4).

▸ **Install the V-clip**

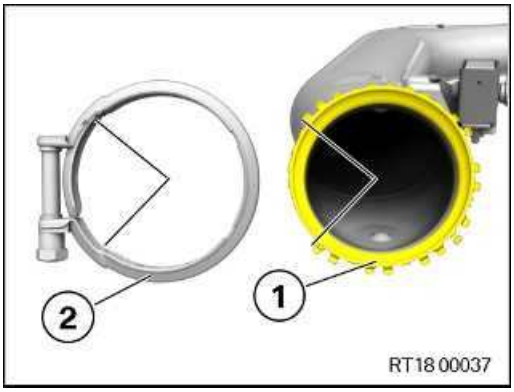
V-band clamp



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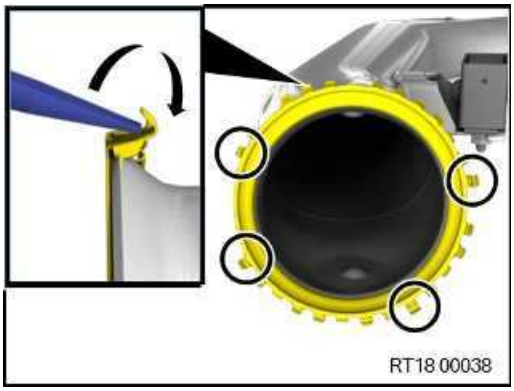


- Unscrew the nut (1) and remove the sealing ring (2).

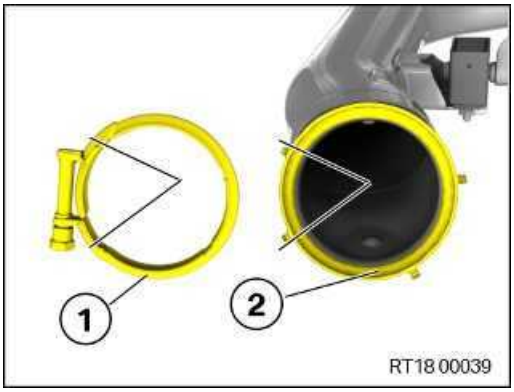


- Renew the V-clip (2).

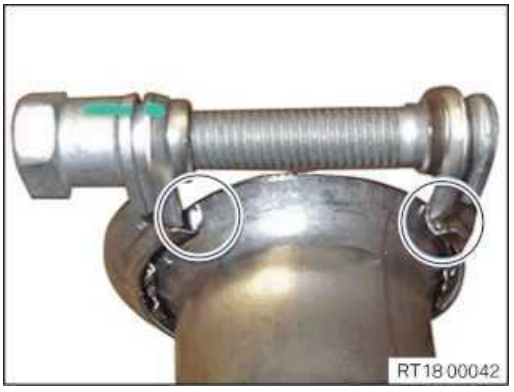
  Parts: V-band clamp
- Mount the sealing ring (1) on the exhaust system.
- Ensure that the sealing ring (1) for the V-clip (2) is positioned correctly.



- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.

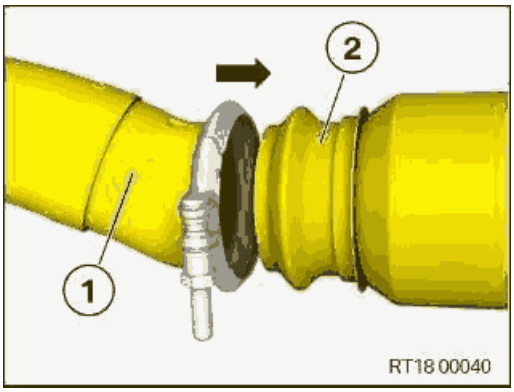


- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).

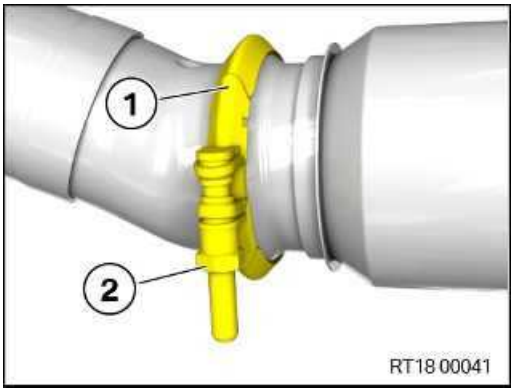


- Make sure that the V-clip rests against the sheet metal tabs after mounting (marks).

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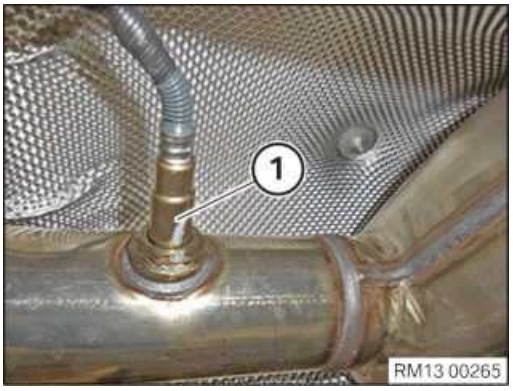
- Connect the exhaust system (1) with the catalytic converter (2) and position correctly.



- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

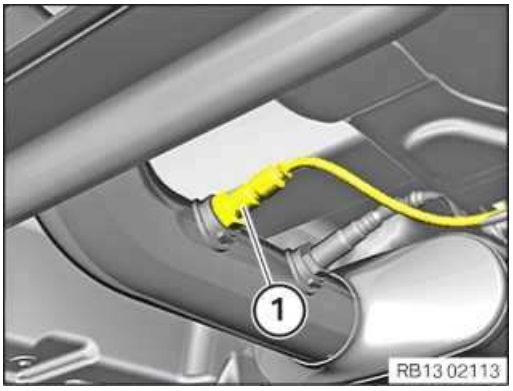
V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm



- Feed in, install and tighten diesel particulate sensor (1).

Diesel particulate sensor to exhaust system

Sensor		Tightening torque	50 Nm



- Feed in, install and tighten nitrogen oxide sensor (1).

Nitrogen oxide sensor downstream of SCR catalytic converter

Sensor		Tightening torque	50 Nm

29 – Install exhaust system

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

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CAUTION

Swarf resulting from sawing or grinding components.

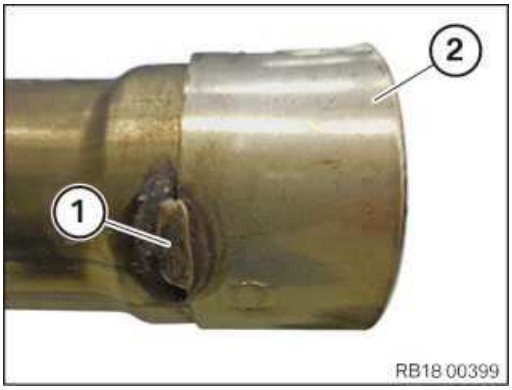
Danger of injury!



- Conduct all work in appropriate personal protective equipment only.

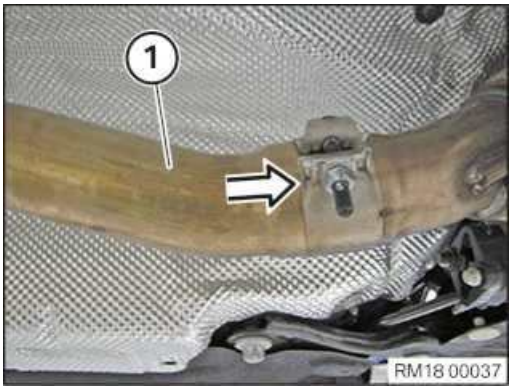


- Wear safety goggles and protective gloves.



- Open the weld seam (1) with a conventional tool.
- Remove the clamp (2).
- If necessary, renew clamp (2).

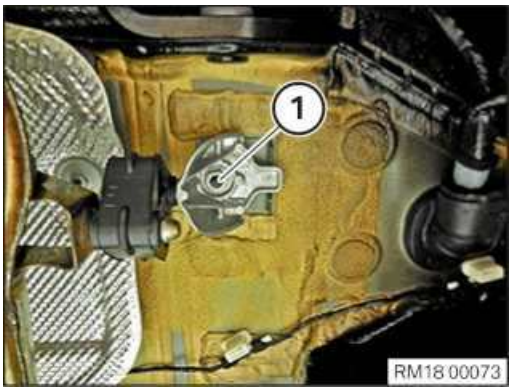
  Parts: Clamp



- Install the exhaust system with the assistance of a second person and connect to the diesel particulate filter.
- Tighten clamp (1).

Exhaust system to diesel particle filter

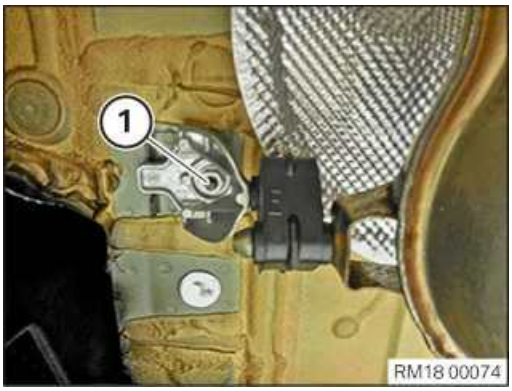
Ribbon cable clamp	Replace clamp		26 Nm



- Tighten the nut (1), left.

Exhaust system suspension to body

Nut M8		19 Nm

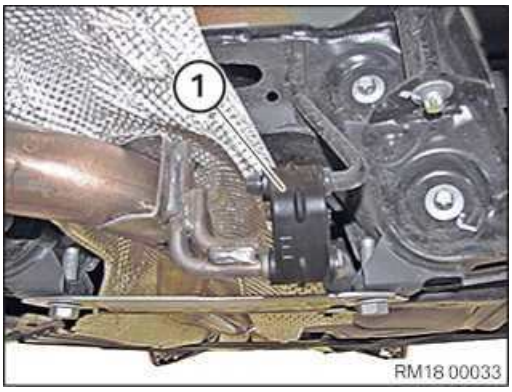


- Tighten the nut (1), right.

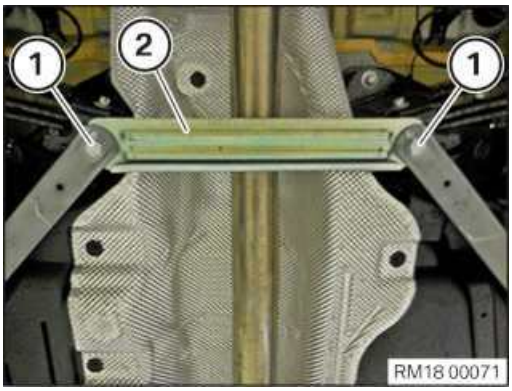
Exhaust system suspension to body

Nut M8		19 Nm

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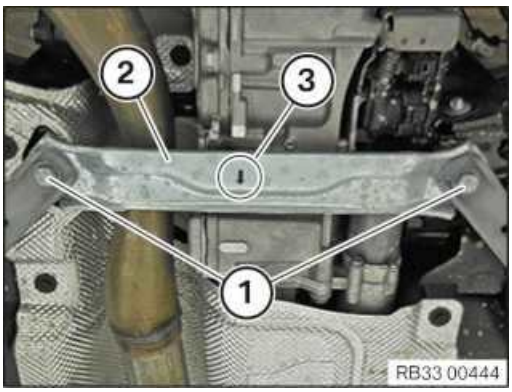
- Check the rubber mounts (1) for damage and renew, if necessary.
- Fasten exhaust system on the rubber mount (1).



- Install the cross-member (2).
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °

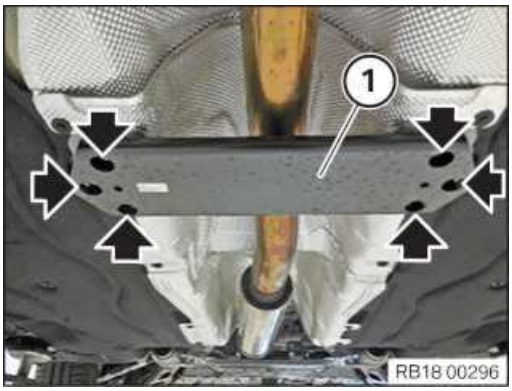


- In **all-wheel drive vehicles:** Ensure that the arrow (3) on the cross-member points in the direction of travel when installing it.
- Position cross-member (2) on the rear axle support.
- Renew screws (1).

  Parts: Bolts(1)
- Tighten the screws (1).

Cross-member to rear axle support

M12	Renew screws.	Tightening torque	100 Nm 90 °



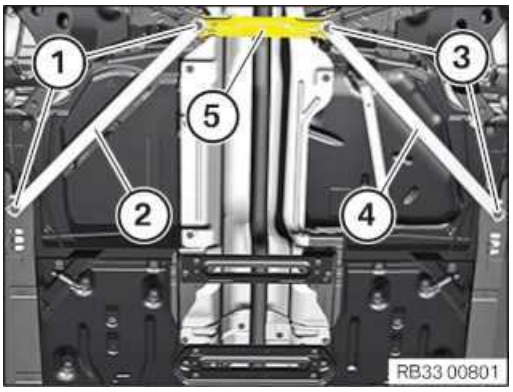
- Insert and install connecting supports (1).
- Tighten screws (arrows).

Front connection carrier to body

M10x18		Tightening torque	56 Nm

30 – Install the cross-member with torsion struts

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- Insert and install the cross-member (5).
- Thread in torsion strut (4) at right and install.
- Renew screws (3).

  Parts: Bolts
- Tighten down screws (3).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

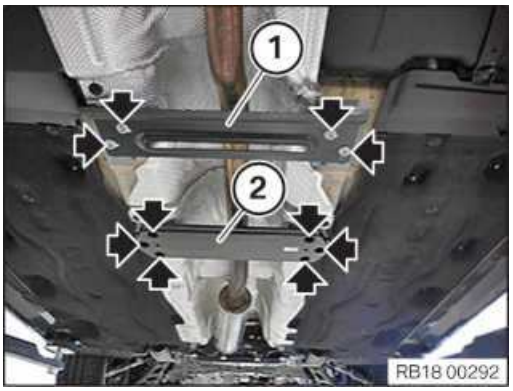
- Guide in and install the left torsion strut (2).
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Cross-member/torsion strut to axle support and mounting

M12x48	Renew screws.	Jointing torque	100 Nm
		Angle of rotation	90 °

31 – Install the connecting support on the tunnel in front and back



- Insert and install connecting supports (2).
- Tighten the screws (arrows) from the connecting support (2).

Front connection carrier to body

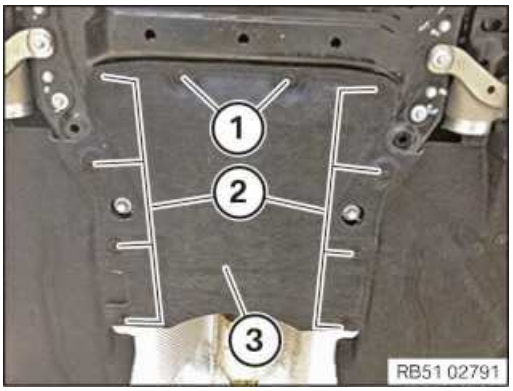
M10x18		Tightening torque	56 Nm

- Insert and install connecting supports (1).
- Tighten the screws (arrows) from the connecting support (1).

Rear connection carrier to body

M8x18		Tightening torque	28 Nm

32 – If installed: Installing underbody protection at rear



- Install the underbody protection (3).
- Tighten down screws (1) and (2).

Underbody protection to body

Screw		Tightening torque	3 Nm

33 – Topping up the fuel tank

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- Insert special tool into fuel filler neck.

  Special tool has two different diameters: for petrol and diesel fuel.
- Slide the suction hose (1) of the extractor unit approximately 40 cm into the fuel filler pipe. If necessary, slightly turn the suction hose.
- Fill fuel from suction extractor unit.
- After completing the work and before starting the engine for the first time: fill the fuel tank via the fuel filler pipe with a minimum of 5 l of fuel.

34 – Putting the SCR tank system into operation



- Connect diagnosis and information system.
- Carry out start-up of the SCR tank system.
- Reset adaptations and adjustments in the SCR system.

Additional Information

Overview of Tightening Torques

Cover on the SCR tank — Used in step 17

Plastic nut	Renew plastic nut.	Tightening torque	3 Nm

Underbody panelling, side — Used in step 18

Hexagon screw		Tightening torque	2,6 Nm

Underbody panelling, side — Used in step 18

Plastic nut		Tightening torque	2,6 Nm

Fuel tank to body — Used in step 19

Nut M8	Renew nut.	Tightening torque	19 Nm

Fuel tank retaining strap to body — Used in step 19

M8 screw	Renew screws.	Tightening torque	19 Nm

Filling hose on fuel tank — Used in step 19

Hose clamp	Replace hose clamp.	Tightening torque	4 Nm

Seat bench to body — Used in step 21

Oval-head screw			42 Nm

Toolkit hook and loop tape to body — Used in step 21

Bolt M6 x 20		Tightening torque	4 Nm

Wheel arch cover to body — Used in step 22

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Brake disc to rear wheel hub — Used in step 23

M8	Renew screw.	Tightening torque	16 Nm

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Brake disc to front wheel hub

Used in step 23

M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts

Used in step 23

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Propeller shaft to transfer box

Used in step 25

		Tightening torque	80 Nm

Flexible disc to rear axle final drive

Used in step 25

M12x1.5	Renew screws.	Tightening torque	55 Nm 90 °

Centre mount to body

Used in step 25

M8		Tightening torque	19 Nm

Heat shield to body

Used in step 26 27

Bolts/nut		Tightening torque	3 Nm

Bracket to body

Used in step 26

M8		Tightening torque	21 Nm

Exhaust system to body

Used in step 28

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust bracket on body

Used in step 28

Hexagon screw M8x30		Tightening torque	19 Nm

V-clip to catalytic converter

Used in step 28

V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm

Diesel particulate sensor to exhaust system

Used in step 28

Sensor		Tightening torque	50 Nm

Nitrogen oxide sensor downstream of SCR catalytic converter

Used in step 28

Sensor		Tightening torque	50 Nm

Exhaust system to diesel particle filter

Used in step 29

Ribbon cable clamp	Replace clamp		26 Nm

Exhaust system suspension to body

Used in step 29

Nut M8			19 Nm

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Cross-member to rear axle support

Used in step 29

M12	Renew screws.	Tightening torque	100 Nm 90 °

Front connection carrier to body

Used in step 29

M10x18		Tightening torque	56 Nm

Cross-member/torsion strut to axle support and mounting

Used in step 30

M12x48	Renew screws.	Jointing torque Angle of rotation	100 Nm 90 °

Front connection carrier to body

Used in step 31

M10x18		Tightening torque	56 Nm

Rear connection carrier to body

Used in step 31

M8x18		Tightening torque	28 Nm

Underbody protection to body

Used in step 32

Screw		Tightening torque	3 Nm

Overview of Special Tools

0 495 554 (33 5 070) Extension



Common

Used in step 9 25

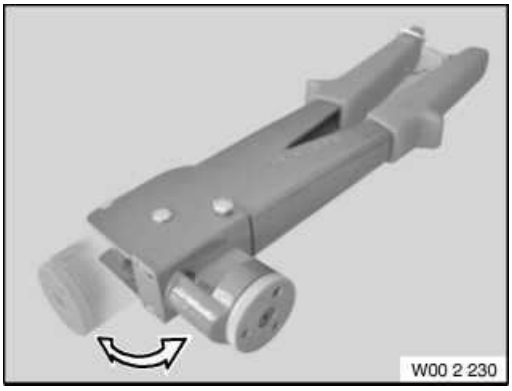
Usage	Pull-out extension for 33 5 040, 33 5 050, 33 5 060.
Included in the tool or work	
Storage location	A18
Replaced by	
In connection with	
SI-Number	01 21 06 (300)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 495 592 (33 5 071)		**Extension** (Extension (1 item)) discontinued, can only be ordered using complete tool	

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0 496 521 (00 2 230) Pliers



Common	Used in step 22
Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

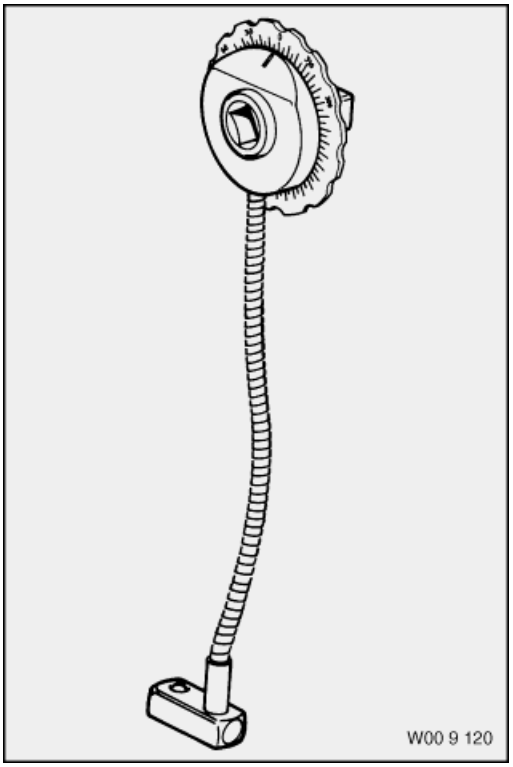
2 344 011 Tool



Common	Used in step 23
Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

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0 490 504 (00 9 120) Torque angle measuring dial



Common	Used in step 25
Usage	For torsion angle adjustment of cylinder head bolts (all engines) And reinforcement plate front axle support E46
Included in the tool or work	
Storage location	A4
Replaced by	
In connection with	
SI-Number	

Replacement tools:

0 495 221 (36 1 323) Wheel stud



Common	Used in step 11
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 224 (36 1 326) Wheel stud



Common	Used in step 11
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 225 (36 1 327) Wheel stud



Common	Used in step 11
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



Common	Used in step 11
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

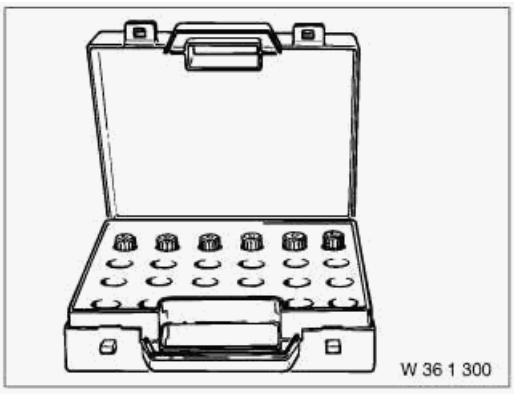
0 495 227 (36 1 329) Wheel stud



Common	Used in step 11
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 228 (36 1 331) Wheel stud



Common	Used in step 11
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 229 (36 1 332) Wheel stud



Common	Used in step 11
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 11
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Links

Operating materials	Used in step
2.0 Grease for wheel centring	23

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64 00 ... Information on using cleaning agent/paints (personal protection equipment)



Warning!

Use of cleaning agents/paints not compliant with instructions can cause serious injuries or burns!

Handling cleaning agents/paints can trigger allergic skin and respiratory reactions!



Important!

Observe following instructions:

- Store cleaning agents/paints only in a secure cabinet.
- Keep cleaning agents/paints away from naked flames and other sources of ignition.
- Protect cleaning agents/paints from high temperatures and direct sunlight.
- Always keep an eye douche on hand, change the water regularly (once a month).



Important!

Observe following instructions before use:

- Manufacturer's instructions (on container/packaging)
- Hazard warnings (on container/packaging)
- Manufacturer's instructions on package insert
- Material safety data sheet of manufacturer
- Product information in EPC
- National market regulations



Important!

Observe following instructions during use:

- Do not eat, drink or smoke while working with these products.
- Avoid direct contact with skin and eyes.
- Wear personal protective clothing/equipment.
- Ensure that all enclosed areas are well ventilated or extract fumes directly.
- Immediately change working clothes soiled with cleaning agent/paint.
- After finishing work, wash your hands and apply protective skin cream.



Important!

Follow hazard warnings and wear personal protection equipment!

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First Aid:

- If product comes in contact with eyes, immediately flush with running water for about 10 - 15 minutes. Seek the advice of eye specialist.
- In the event of skin contact and where applicable an allergic skin reaction, clean the affected areas immediately with soap and water and then apply silicone-free skin cream. Seek advice of physician.
- If an adhesive product is swallowed, rinse mouth/parts of mouth thoroughly with running water. Drink 1-2 glasses of water. Do not induce vomiting. Consult a doctor.
- After inhaling vapours ensure ample supply of fresh air. Keep calm, keep respiratory tracks clear and call doctor.



Recycling:

Dispose of cleaning agents/paints in a professional manner!

Observe national/country-specific disposal regulations.

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