26 00 Additional work on all-wheel drive vehicles after driving with faulty (non-engaging) drive



Attention!

If the vehicle has been moved under engine power with a non-engaging drive system (e.g. faulty front propeller shaft, or one output shaft is no longer engaging with the drive flange, rear axle differential faulty/no power transmission), it is mandatory to calibrate the transfer box after having repaired the propeller shaft/output shaft(s).



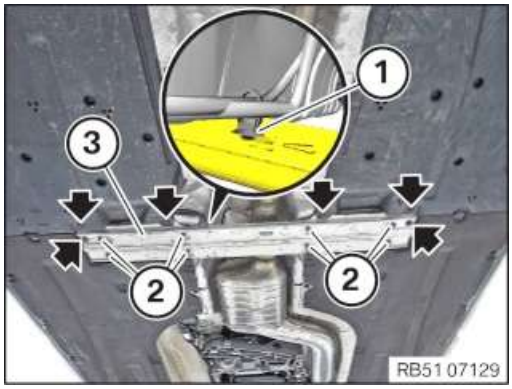
Carry out calibration after having completed the repair using the diagnosis system and information system, in Control unit function - Function check - Transfer box.

cardiagn.com

26 11 000 Removing and installing complete propeller shaft

PRELIMINARY WORK

1 – Remove the connecting support from the tunnel



- Remove screws (arrows).
- **If installed:** Loosen clamp (1).
- Loosen screws (2).
- Guide out and remove connecting support (3) on the tunnel.

2 – Remove complete exhaust system

WARNING

Hot surfaces.

Risk of burning!

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

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.

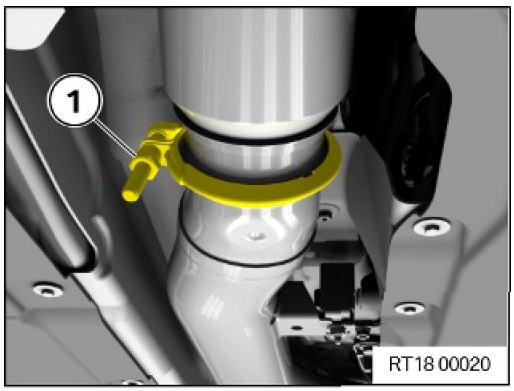
- Remove and install heavy components with the aid of another person/other persons.

cardiagn.com



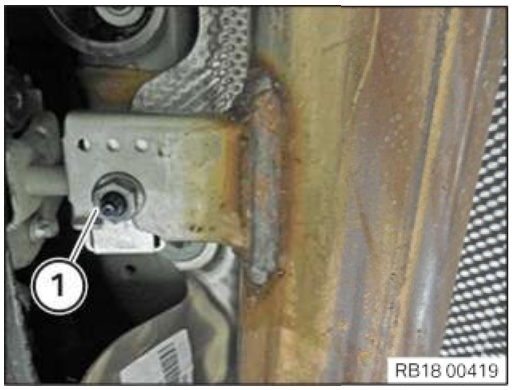
- **Equipment specification 1 (ribbon clamp)**

  Detach the ribbon clamp (1).

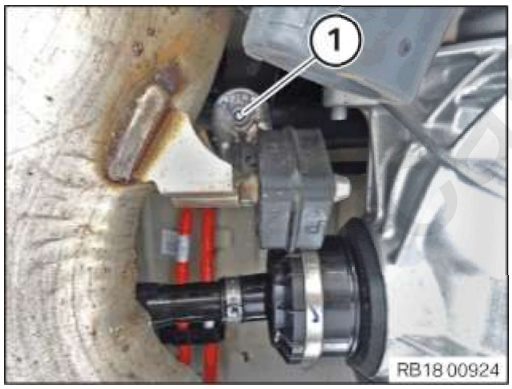


- **Equipment specification 2 (V-clips)**

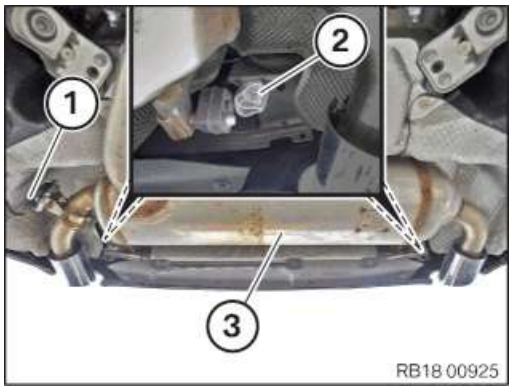
  Unfasten clamp (1).



- Loosen nut (1).



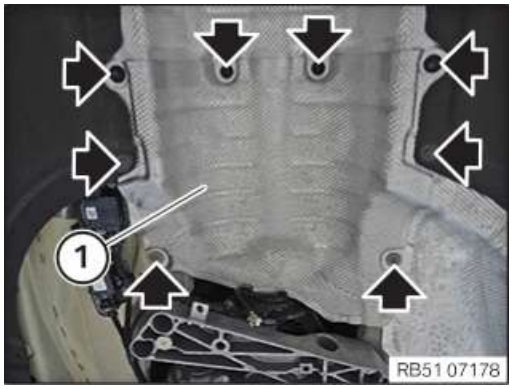
- Release nut (1) on the rear axle support.



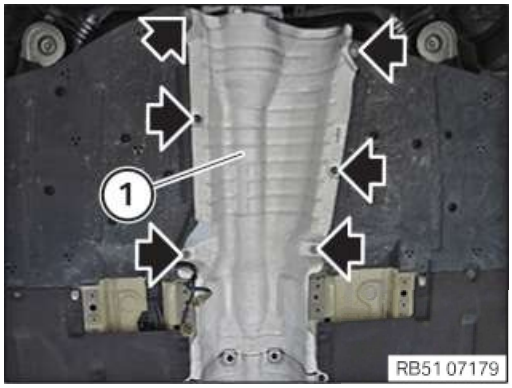
- Unlock plug connection (1) and disconnect.
- Loosen nuts (2).
- Lower and remove the exhaust system (3) with the assistance of a second person.

3 – Remove heat shields

cardiagn.com



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).

MAIN WORK

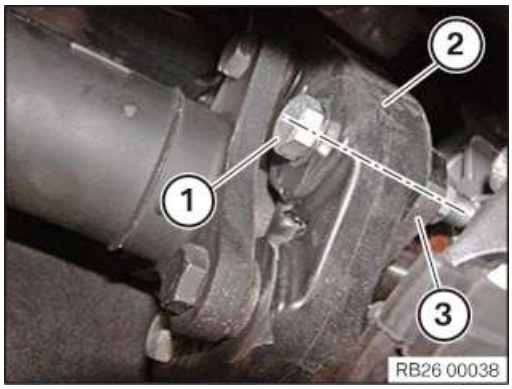
4 – Completely removing the propeller shaft (plug-in - rear flexible disc)

RISK OF DAMAGE

Damage to propeller shaft during removal.

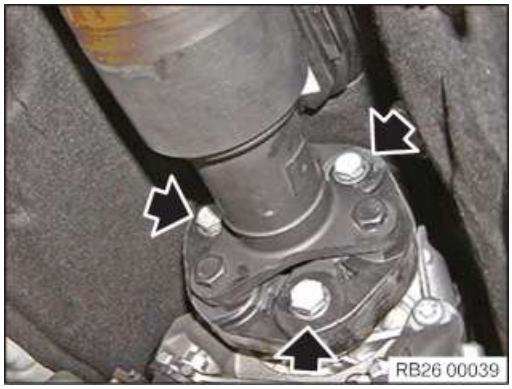
Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- 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.

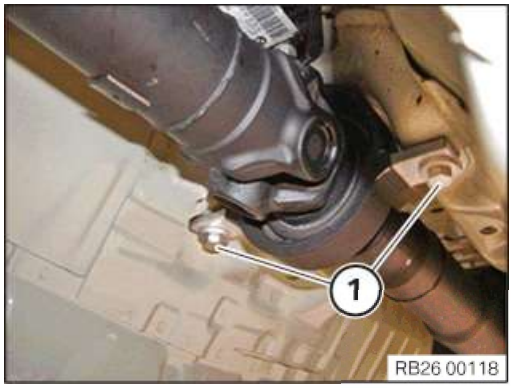


- In order to avoid a humming noise of the drivetrain after reinstalling the propeller shaft:
  - The flexible disc connection (1) on the front at the propeller shaft **must** be marked in one plane with the flexible disc (2) and the three-bolt flange (3) before loosening.
  - During installation the three-bolt flange (3) must be forced back together again with the flexible disc (2) in the same position.

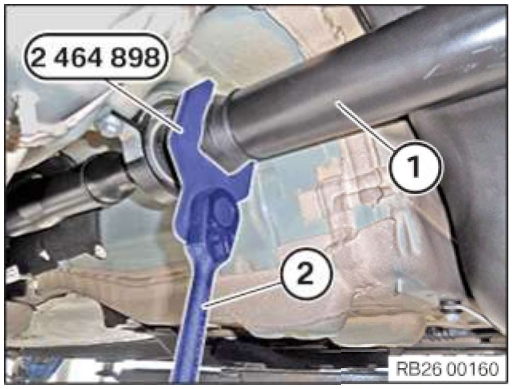
cardiagn.com



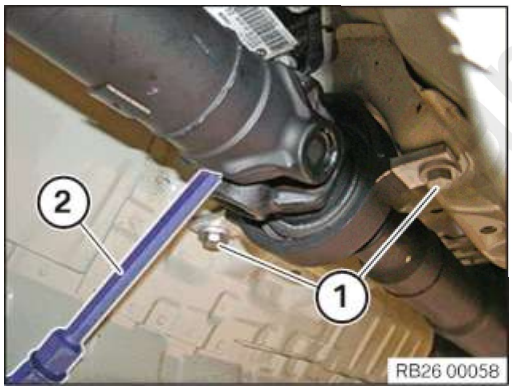
- Remove screws (arrows).



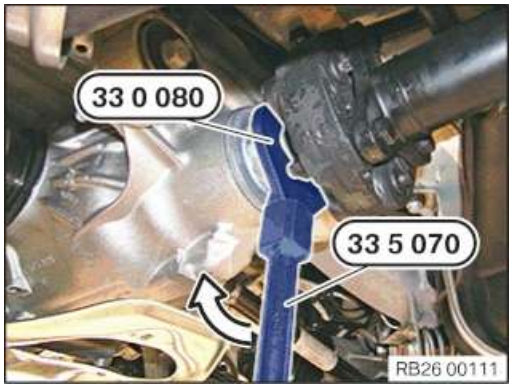
- Loosen screws (1).



- **Vehicles with a narrow universal joint:**
- Using the special tool 2 464 898 and a suitable tool (2), secure the propeller shaft (1) to the centre universal joint against twisting.



- **Vehicles with a broad universal joint:**
- Secure the propeller shaft against twisting at the central universal joint using a suitable tool (2).
- Do not remove the bolts (1) of the centre mount completely until the recessed nut has been opened.



RISK OF DAMAGE

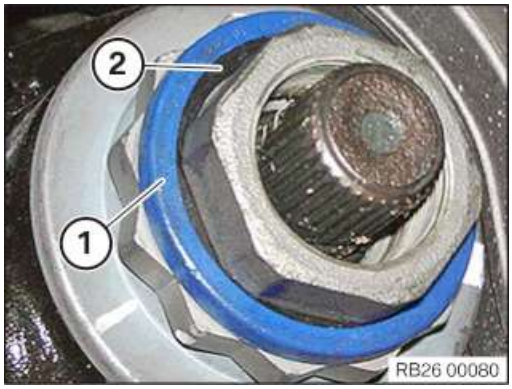
Damage to rear axle differential.

Non-observance of the removal and installation guidelines may cause severe damage to the rear axle differential.

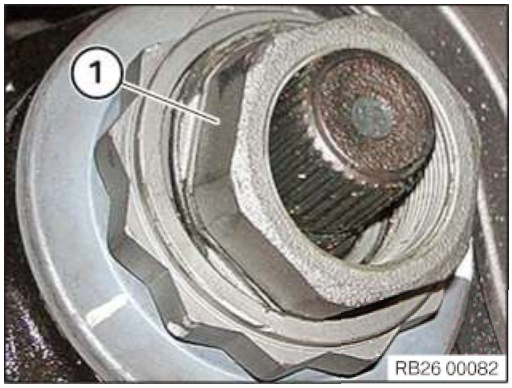
- Do not use the double hexagon head flange nut as counter support.

- Loosen the recessed nut **in clockwise direction, see the direction of the arrow,** using special tools 0 495 554 (33 5 070) and .

rdiagn.com



- Remove mounting clip (1) and gasket (2).



- Remove recessed nut (1).

5 – Completely installing the propeller shaft (plug-in - rear flexible disc)

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.

- Observe following installation sequence:
  - Position propeller shaft on transmission.
  - Position the propeller shaft at the rear axle differential.
  - Position centre mount.
- Observe the following screwing sequence:
  - Insert nut
  - Flexible disc to transmission
  - Centre mount



- Check the centering (arrow) for damage, renew if required.

cardiagn.com

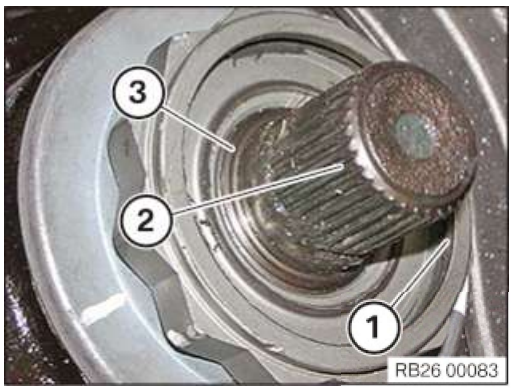


- Apply a thin coat of grease to the soft centring (1), if necessary.

Expendable materials

Lubricating grease Olistamoly 2 LN 584 LO	100 g, Tube	83 19 0 447 919

- Hard centring (2) must **not** be greased.



- Clean all residue from the insert collar (1) of the flange nut and the gearing on the bevel pinion (2) and degrease them.
- Top up the collar insert (1)with grease.

Expendable materials

Lubricating grease Optitemp HT 1 LF	50 g, Tube	83230417754



RISK OF DAMAGE

Damage to the output flange.

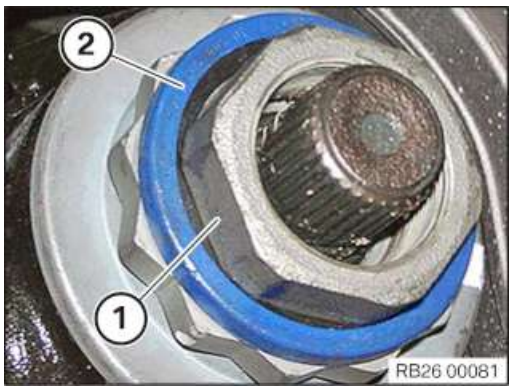
Failure to observe the greasing specifications may lead to damage on the output flange.

- Do not contaminate the thread of the output flange with grease.

- Clean thread (1) of flange off adhesive residue.
- Clean gearing (2).
- Grease gearing (2).

Expendable materials

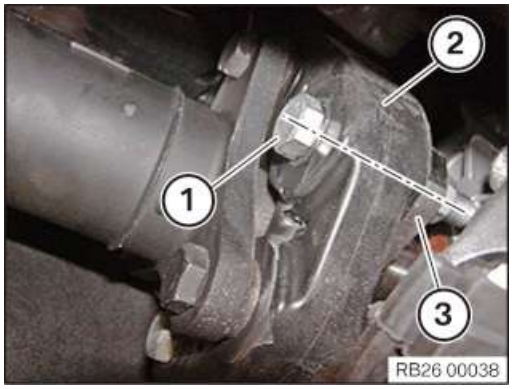
Lubricating grease Optitemp HT 1 LF	50 g, Tube	83230417754



- Renew the seal, recessed nut (1) and the mounting clip (2).

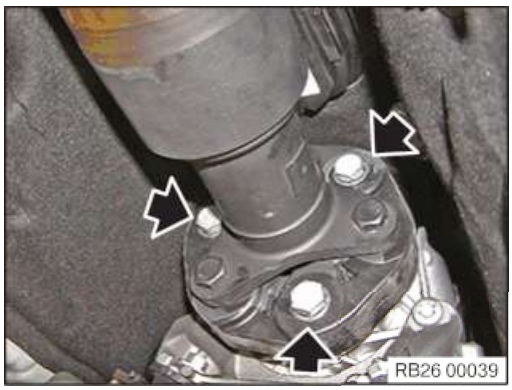
  Parts: Seal, recessed nut and mounting clip
- Insert recessed nut (1) including gasket into collar insert of the flange nut.
- Install the mounting clip (2).

cardiagn.com



- In order to avoid a humming noise of the drivetrain after reinstalling the propeller shaft: It is essential to reassemble the three-hole flange (3) with the flexible disc (2) in the same position.
- Renew ZNS screws and the self-locking nuts (1).

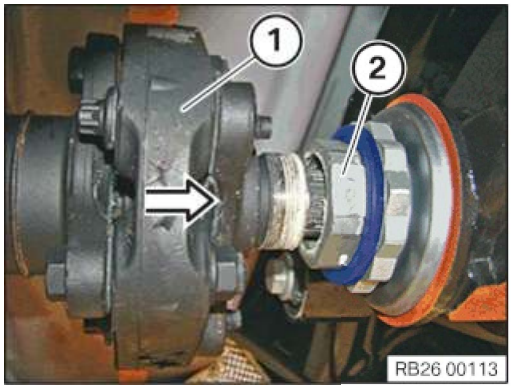
  Parts: ZNS screws, self-locking nuts



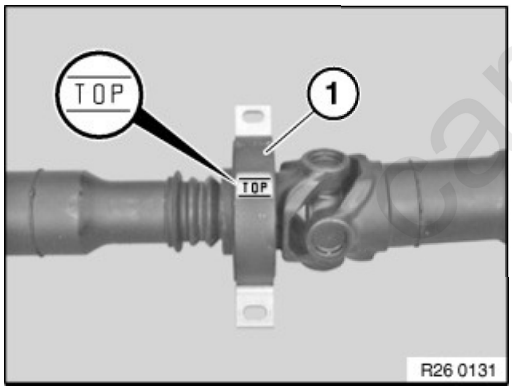
- Position the screws and nuts (arrows).
- Tighten the screws.

Front flexible disc to propeller shaft

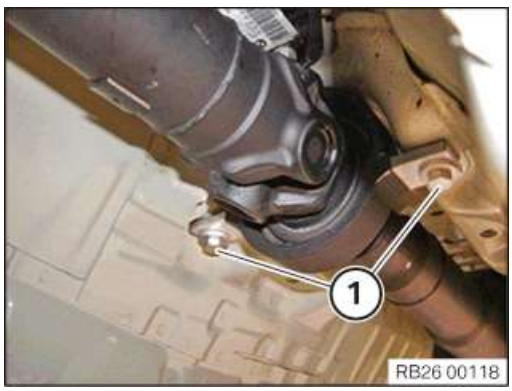
M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °



- Push the propeller shaft (1) in the direction of the arrow against the recessed nut (2) up to the limit position.
- Manually screw on and tighten the recessed nut (2) onto the propeller shaft (1) by a minimum of two threads.

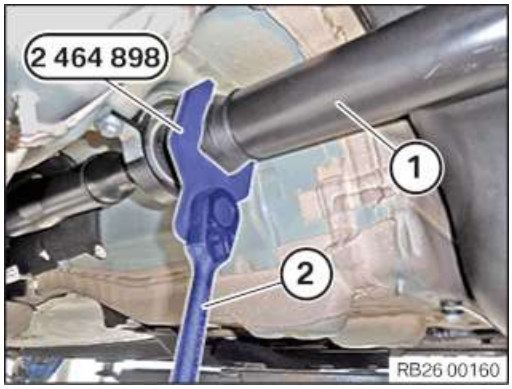


- **Centre mount with TOP marking:**
- The centre mount (1) must be installed with the TOP marking at the top in the gearbox tunnel.

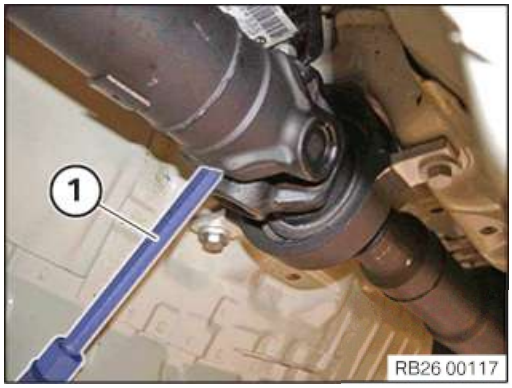


- Position centre mount.
- Position screws (1).

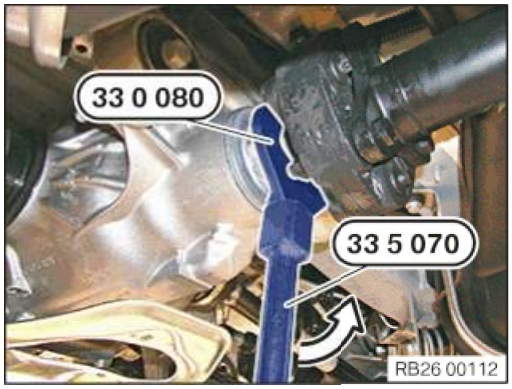
cardiagn.com



- **Propeller shaft with a narrow universal joint:**
- Using the special tool 2 464 898 and a suitable tool (2), secure the propeller shaft (1) to the centre universal joint against twisting.



- **Propeller shaft with a broad universal joint:**
- Secure the propeller shaft against twisting at the central universal joint using a suitable tool (1).



RISK OF DAMAGE

Damage to the flange nut.

Failure to observe the installation specifications may lead to serious damage to the flange nut and the rear axle differential.

- Do not use the double hexagon flange nut as counter support.
- Screw in the recessed nut within 5 minutes.

- Screw in the recessed nut **counter-clockwise, see direction of arrow** with special tools 0 495 554 (33 5 070) and .

  The recessed nut must be screwed in within 5 min .

Propeller shaft on the rear axle differential

Insert nut		Tightening torque	100 Nm

- **After the propeller shaft is installed and the recessed nut is screwed in, strictly observe a hardening time of minimum 3 hours.**

  Do not move or push the vehicle during this time!



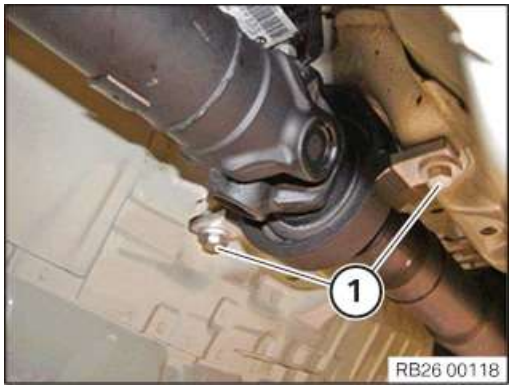
- Brace mounting bolts of flexible disc on nut and tighten by screw.

Rear flexible disc to three-hole flange

M12	Renew screws. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

- Secure the special angle of rotation tool 0 490 504 (00 9 120) with the magnets to the vehicle underbody and screw it further depending on the angle of rotation.

cardiagn.com



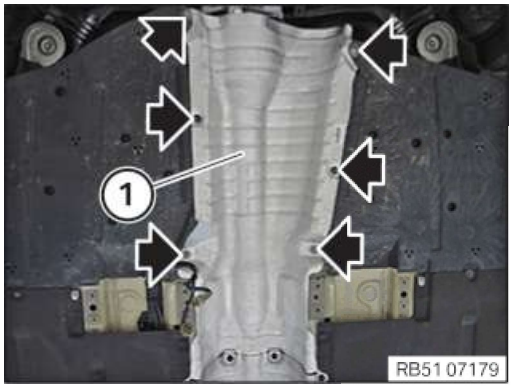
- Tighten the screws (1).

Centre mount to body

M8		Tightening torque	19 Nm

POSTPROCESSES

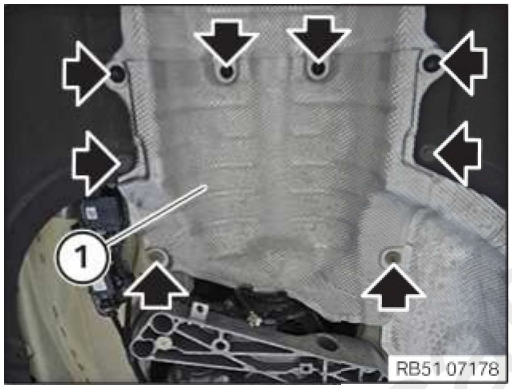
6 – Install the heat shields



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm

7 – Installing the complete 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.

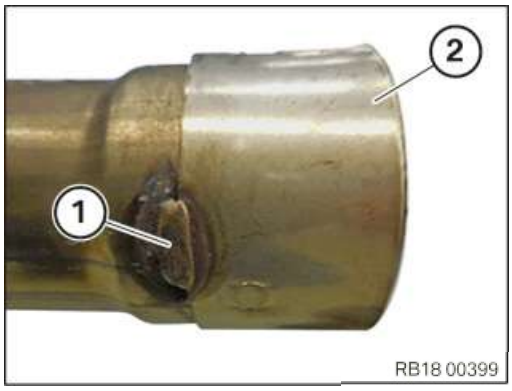
cardiagn.com

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

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



CAUTION

Swarf resulting from sawing or grinding components.

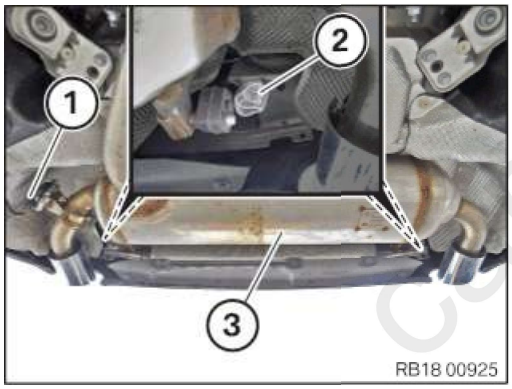
Danger of injury!

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

- **Equipment specification 1 (ribbon clamp)**

  Open the weld seam (1) with a conventional tool.
- Remove ribbon clamp (2).
- Renew the (2) ribbon clamp.

  Parts: Ribbon cable clamp



- Feed in and install the exhaust system (3) with a second person.
- Renew nuts (2).

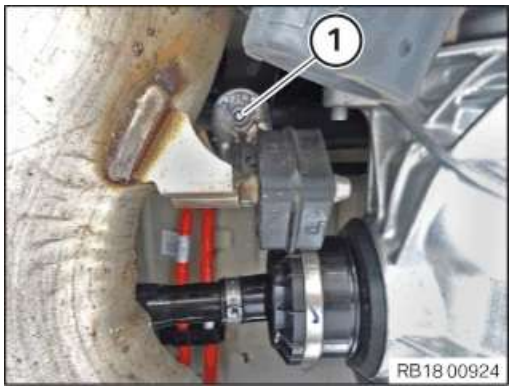
  Parts: Nuts
- Tighten nuts (2).

Rear silencer to body / bumper support

M8	Replace nuts.	Tightening torque	19 Nm

- Connect connectors (1) and lock.

  The connector (1) must engage audibly.



- Renew nut (1).

  Parts: Nut
- Tighten the bolt (1) on the rear axle support.

Exhaust system to rear axle carrier

Nut M8	Renew nut.	Tightening torque	19 Nm

carbagn.com



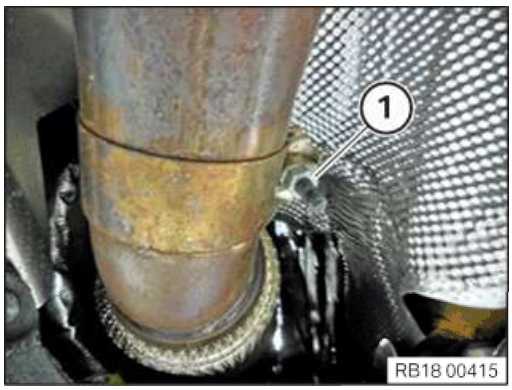
- Renew nut (1).

  Parts: Nut

- Tighten nut (1).

Front pipe / petrol particulate filter on transmission holder

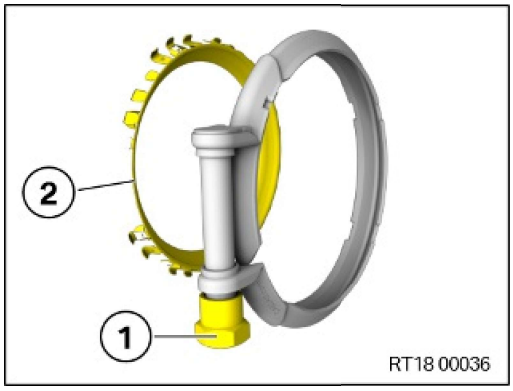
M8	Renew nut.	Tightening torque	19 Nm



- Tighten the ribbon clamp (1).

Exhaust system to catalytic converter

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm

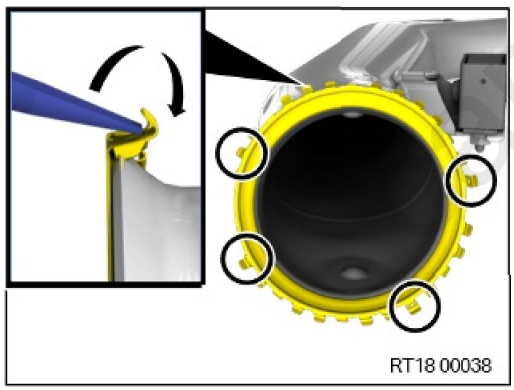


- **Equipment specification 2 (V-clips)**

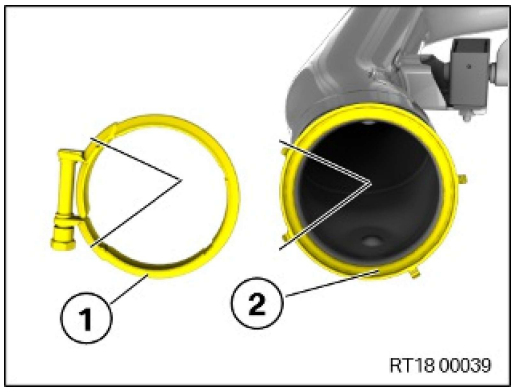
  Renew V-band clamp.

  Parts: V-band clamp

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

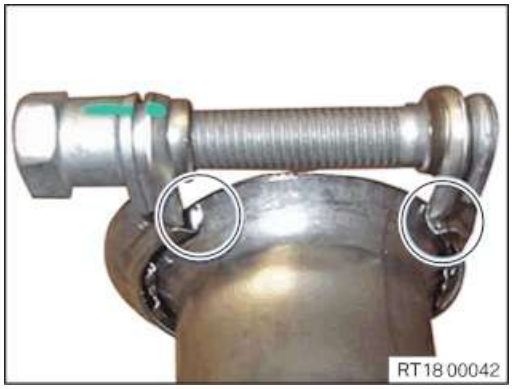


- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.

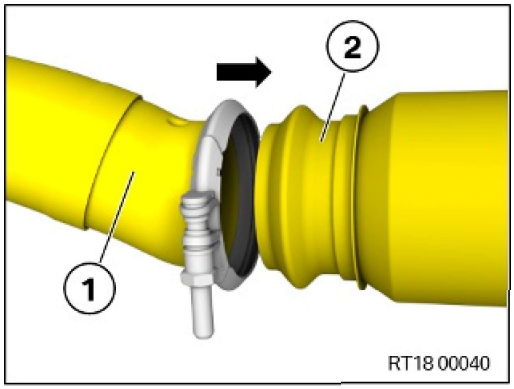


- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).

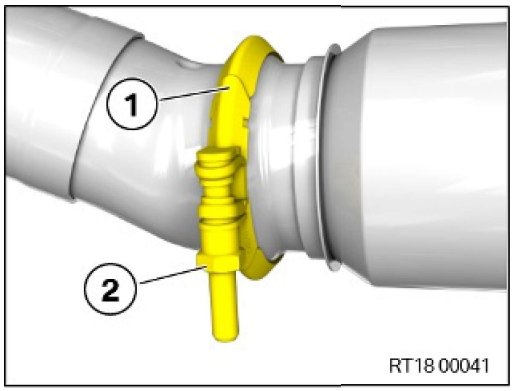
ardiagn.com



- Ensure that the V-clip rests against the sheet metal tabs in the marked areas after mounting.



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

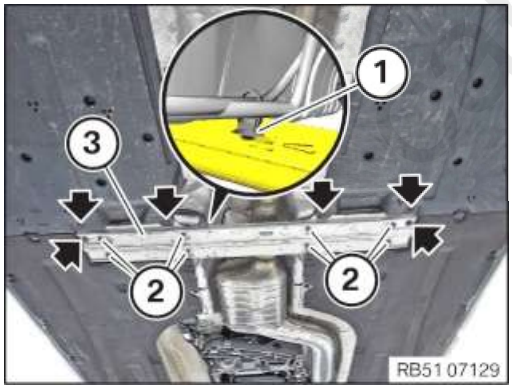


- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

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

8 – Install the connecting supports on the tunnel



- Guide in and install connecting support (3) on the tunnel.
- Tighten the screws (2).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- Tighten screws (arrows).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- **If installed:** Secure clamps (1).

Additional Information

Overview of Tightening Torques

rdiagn.com

Front flexible disc to propeller shaft			Used in step 5
M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

Propeller shaft on the rear axle differential			Used in step 5
Insert nut		Tightening torque	100 Nm

Rear flexible disc to three-hole flange			Used in step 5
M12	Renew screws. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

Centre mount to body			Used in step 5
M8		Tightening torque	19 Nm

Heat shield to vehicle underbody			Used in step 6
Screws and nuts		Tightening torque	3 Nm

Rear silencer to body / bumper support			Used in step 7
M8	Replace nuts.	Tightening torque	19 Nm

Exhaust system to rear axle carrier			Used in step 7
Nut M8	Renew nut.	Tightening torque	19 Nm

Front pipe / petrol particulate filter on transmission holder			Used in step 7
M8	Renew nut.	Tightening torque	19 Nm

Exhaust system to catalytic converter			Used in step 7
Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm

V-clip to catalytic converter			Used in step 7
V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm

Connecting support to tunnel			Used in step 8
M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

Overview of Special Tools

cardiagn.com

2 464 898 Open-end spanner



Common Used in step 45

Usage	Open-end spanner SW50 for disassembly and installation of the propeller shaft on rear axle differential. The silhouette foil is included in the delivery specification.
Included in the tool or work	
Storage location	A7
Replaced by	
In connection with	
SI-Number	01 19 18 (579)

0 495 554 (33 5 070) Extension



Common Used in step 45

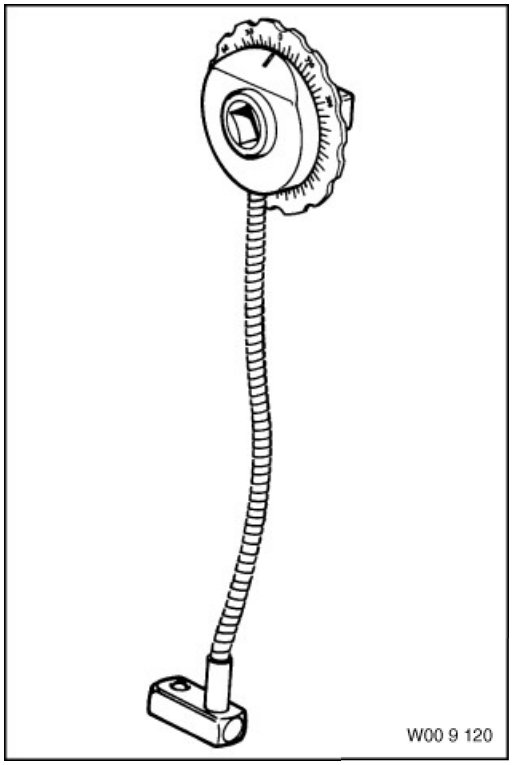
Usage	Pull-out extension for 33 5 040, 33 5 050, 33 5 060.
Included in the tool or work	
Storage location	A18
Replaced by	
In connection with	
SI-Number	01 21 06 (300)

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	

cardiagn.com

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



Common Used in step 5

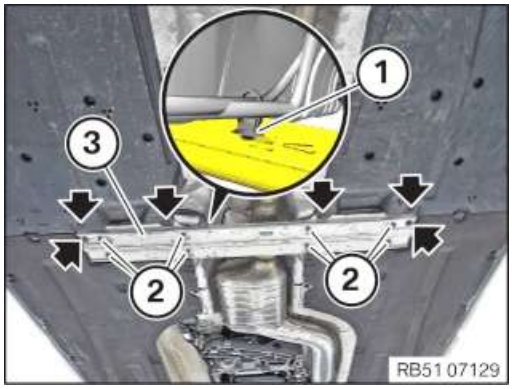
Usage	For torsion angle adjustment of cylinder head bolts (all engines) And reinforcement plate front axle support E46
Included in the tool or work	
Storage location	A4
Replaced by	
In connection with	
SI-Number	

cardiagn.com

26 11 020 Replacing centre mount gaiter

PRELIMINARY WORK

1 – Remove the connecting support from the tunnel



- Remove screws (arrows).
- **If installed:** Loosen clamp (1).
- Loosen screws (2).
- Guide out and remove connecting support (3) on the tunnel.

2 – Remove complete exhaust system

WARNING

Hot surfaces.

Risk of burning!

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

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.

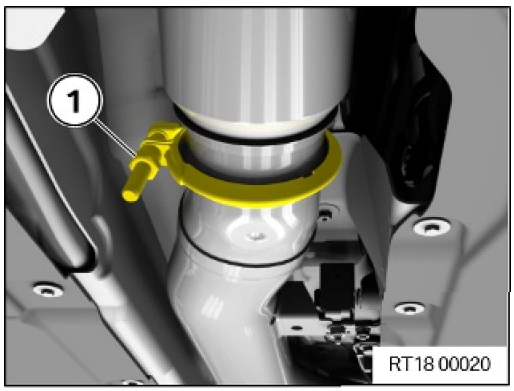
- Remove and install heavy components with the aid of another person/other persons.

cardiagn.com



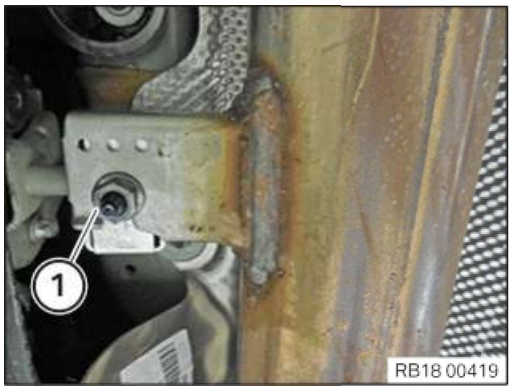
- **Equipment specification 1 (ribbon clamp)**

  Detach the ribbon clamp (1).

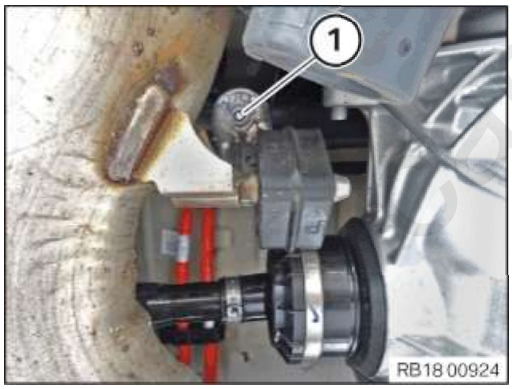


- **Equipment specification 2 (V-clips)**

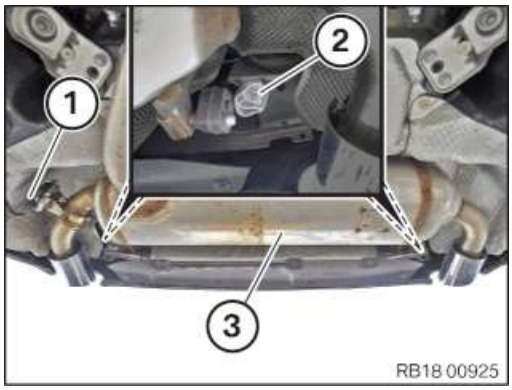
  Unfasten clamp (1).



- Loosen nut (1).



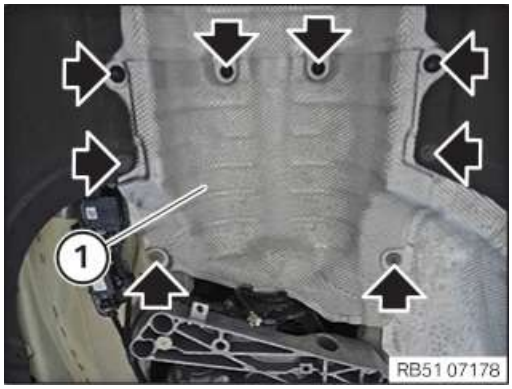
- Release nut (1) on the rear axle support.



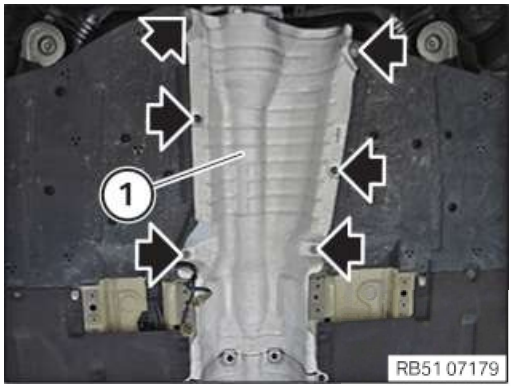
- Unlock plug connection (1) and disconnect.
- Loosen nuts (2).
- Lower and remove the exhaust system (3) with the assistance of a second person.

3 – Remove heat shields

cardiagn.com



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).

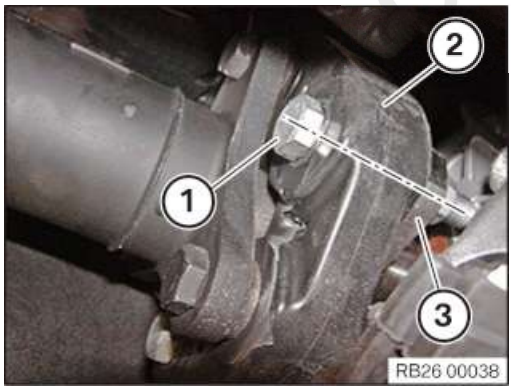
4 – Completely removing the propeller shaft (plug-in - rear flexible disc)

RISK OF DAMAGE

Damage to propeller shaft during removal.

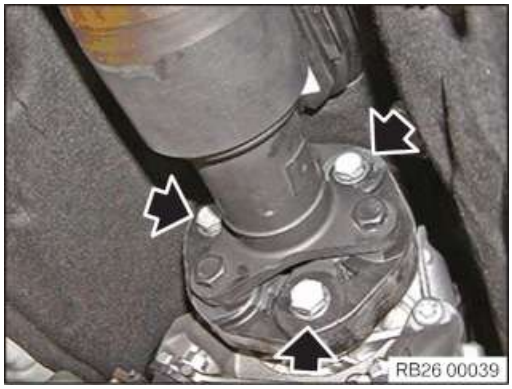
Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- 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.

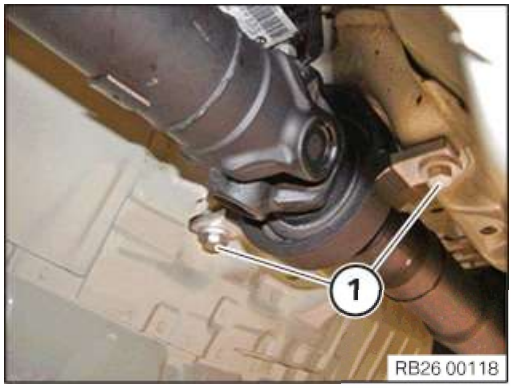


- In order to avoid a humming noise of the drivetrain after reinstalling the propeller shaft:
  - The flexible disc connection (1) on the front at the propeller shaft **must** be marked in one plane with the flexible disc (2) and the three-bolt flange (3) before loosening.
  - During installation the three-bolt flange (3) must be forced back together again with the flexible disc (2) in the same position.

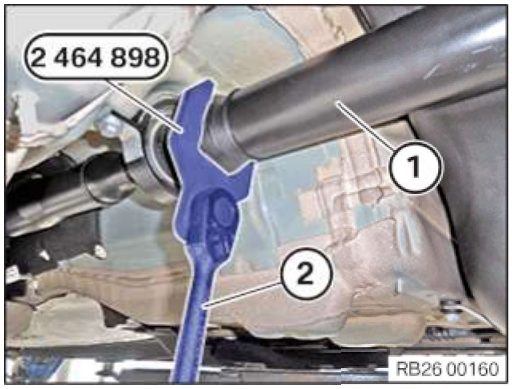
carmagn.com



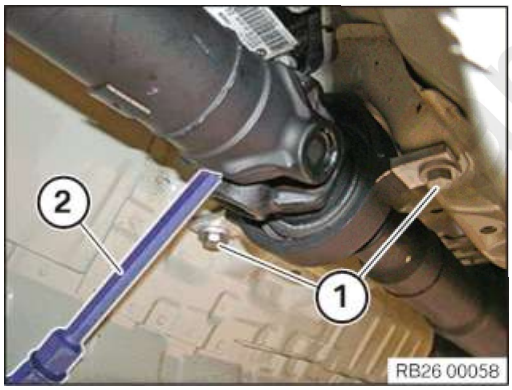
- Remove screws (arrows).



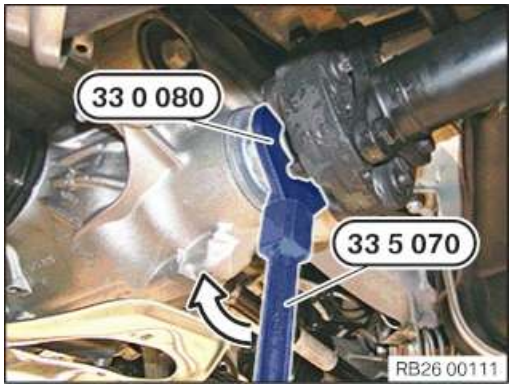
- Loosen screws (1).



- **Vehicles with a narrow universal joint:**
- Using the special tool 2 464 898 and a suitable tool (2), secure the propeller shaft (1) to the centre universal joint against twisting.



- **Vehicles with a broad universal joint:**
- Secure the propeller shaft against twisting at the central universal joint using a suitable tool (2).
- Do not remove the bolts (1) of the centre mount completely until the recessed nut has been opened.



RISK OF DAMAGE

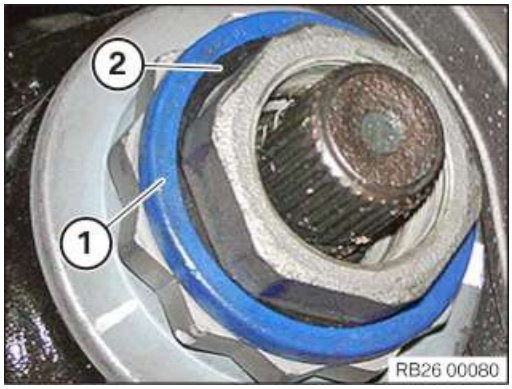
Damage to rear axle differential.

Non-observance of the removal and installation guidelines may cause severe damage to the rear axle differential.

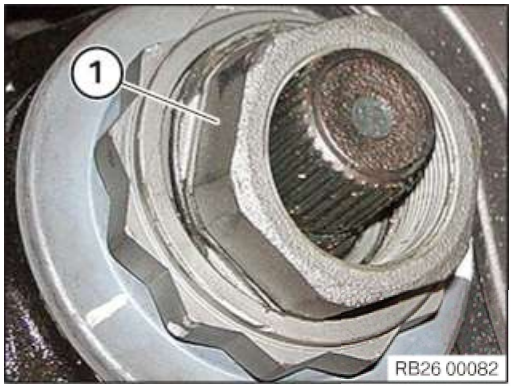
- Do not use the double hexagon head flange nut as counter support.

- Loosen the recessed nut **in clockwise direction, see the direction of the arrow,** using special tools 0 495 554 (33 5 070) and .

rdiagn.com



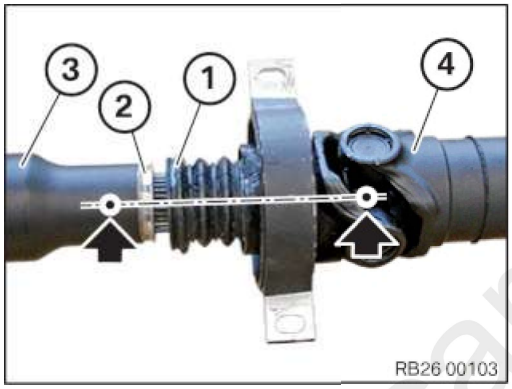
- Remove mounting clip (1) and gasket (2).



- Remove recessed nut (1).

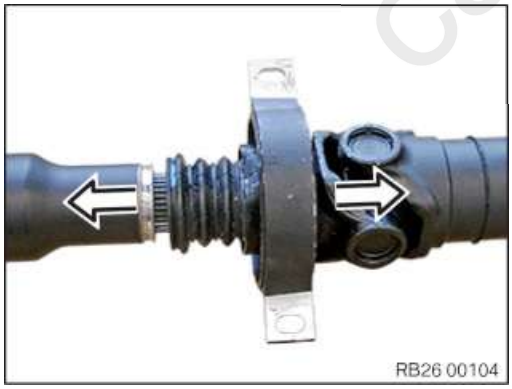
MAIN WORK

5 – Removing the gaiter of the centre mount



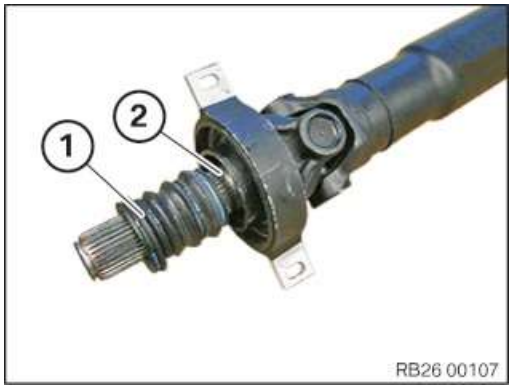
- Pull off the gaiter (1) from the groove (2).
- Mark the alignment of the installation positions of the front propeller shaft (3) and the rear propeller shaft (4).

  The identification allows the front and rear propeller shafts to be installed at the same position. This guarantees that the propeller shaft will once again be balanced within the system following installation.



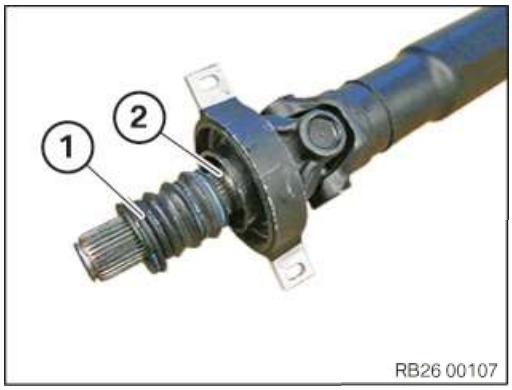
- Pull apart the propeller shaft in the direction of the arrow.

cardiagn.com



- Release the gaiter (1) from the groove (2) using a screwdriver and pull it off over the longitudinal splines.

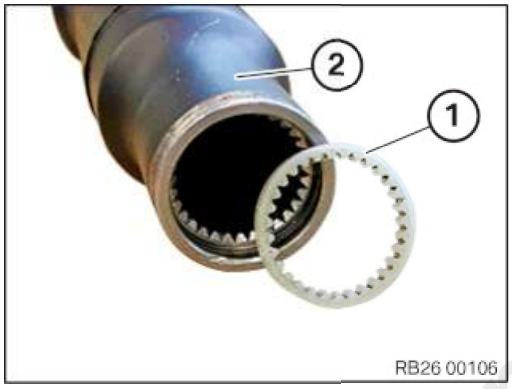
6 – Installing the gaiter of the centre mount



- Evenly grease the longitudinal splines of the propeller shaft.
- Push in the gaiter (1) onto the groove (2) and make sure it is securely positioned.

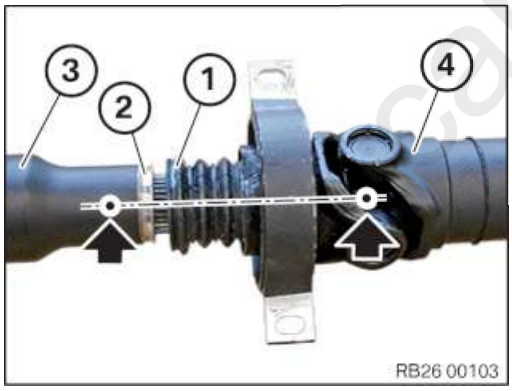
Expendable materials

Lubricating grease Olistamoly 2 LN 584 LO	100 g, Tube	83 19 0 447 919



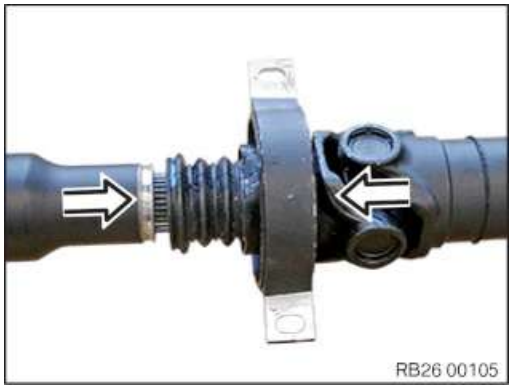
- If applicable, renew the clamping ring (1) and insert it in the front propeller shaft (2).

  Parts: Clamping ring



- Push the front propeller shaft (3) onto the longitudinal splines of the rear propeller shaft (4) as per the individually applied marks.

  The marks (arrows) must be aligned.
- Push in the gaiter (1) onto the groove (2) and make sure it is securely positioned.



- Push the propeller shaft together in the direction of the arrow.

POSTPROCESSES

cardiagn.com

7 – Completely installing the propeller shaft (plug-in - rear flexible disc)

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.

- Observe following installation sequence:
  - Position propeller shaft on transmission.
  - Position the propeller shaft at the rear axle differential.
  - Position centre mount.
- Observe the following screwing sequence:
  - Insert nut
  - Flexible disc to transmission
  - Centre mount



- Check the centering (arrow) for damage, renew if required.

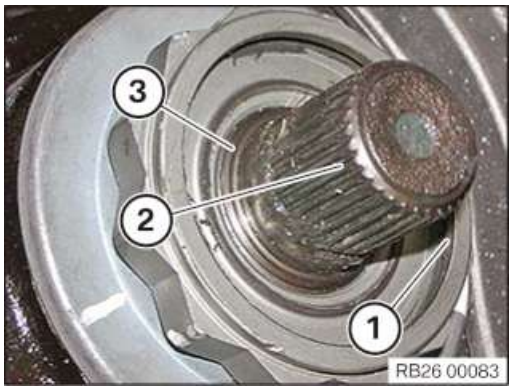


- Apply a thin coat of grease to the soft centring (1), if necessary.

Expendable materials

Lubricating grease Olistamoly 2 LN 584 LO	100 g, Tube	83 19 0 447 919

- Hard centring (2) must **not** be greased.



- Clean all residue from the insert collar (1) of the flange nut and the gearing on the bevel pinion (2) and degrease them.
- Top up the collar insert (1)with grease.

Expendable materials

Lubricating grease Optitemp HT 1 LF	50 g, Tube	83230417754

rdiagn.com



RISK OF DAMAGE

Damage to the output flange.

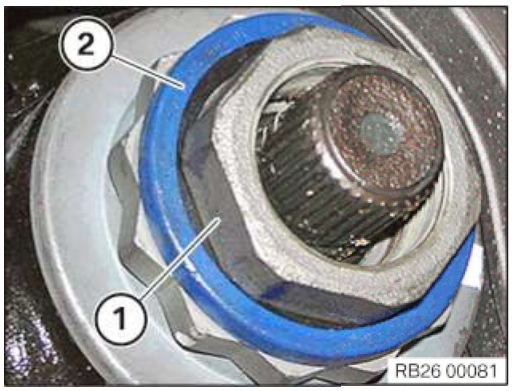
Failure to observe the greasing specifications may lead to damage on the output flange.

- Do not contaminate the thread of the output flange with grease.

- Clean thread (1) of flange off adhesive residue.
- Clean gearing (2).
- Grease gearing (2).

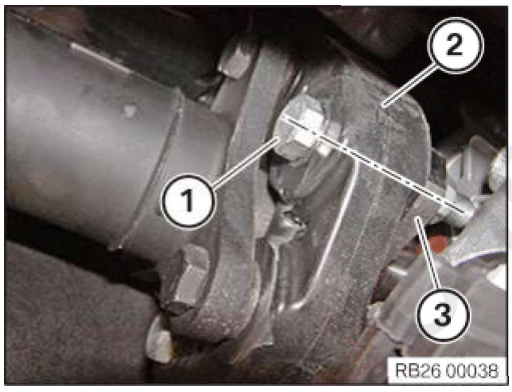
Expendable materials

Lubricating grease Optitemp HT 1 LF	50 g, Tube	83230417754



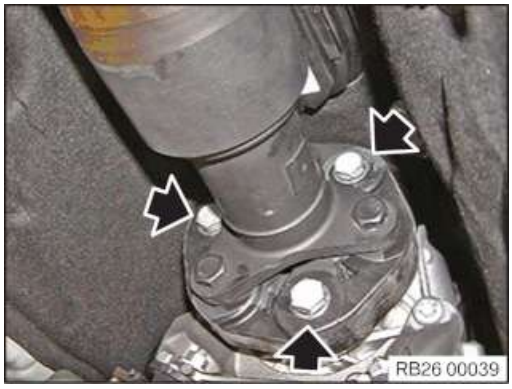
- Renew the seal, recessed nut (1) and the mounting clip (2).

  Parts: Seal, recessed nut and mounting clip
- Insert recessed nut (1) including gasket into collar insert of the flange nut.
- Install the mounting clip (2).



- In order to avoid a humming noise of the drivetrain after reinstalling the propeller shaft: It is essential to reassemble the three-hole flange (3) with the flexible disc (2) in the same position.
- Renew ZNS screws and the self-locking nuts (1).

  Parts: ZNS screws, self-locking nuts

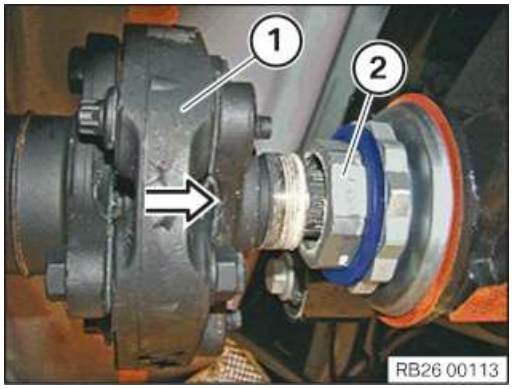


- Position the screws and nuts (arrows).
- Tighten the screws.

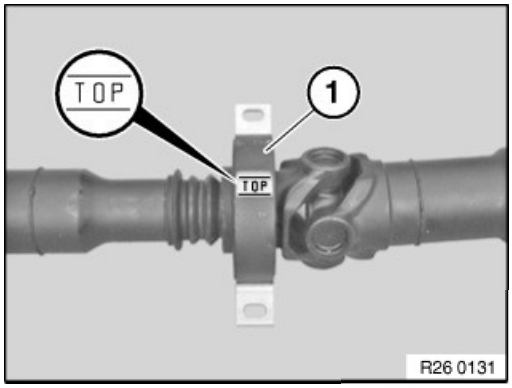
Front flexible disc to propeller shaft

M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

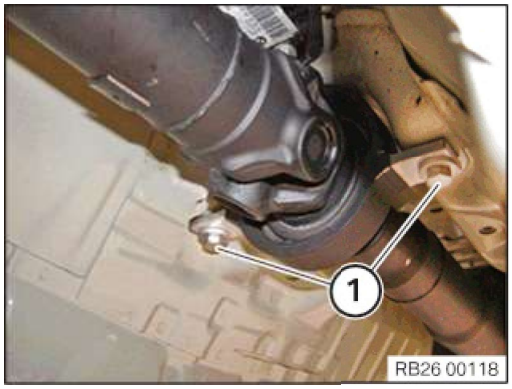
ardiagn.com



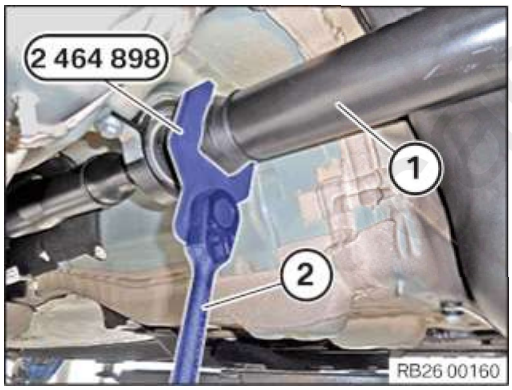
- Push the propeller shaft (1) in the direction of the arrow against the recessed nut (2) up to the limit position.
- Manually screw on and tighten the recessed nut (2) onto the propeller shaft (1) by a minimum of two threads.



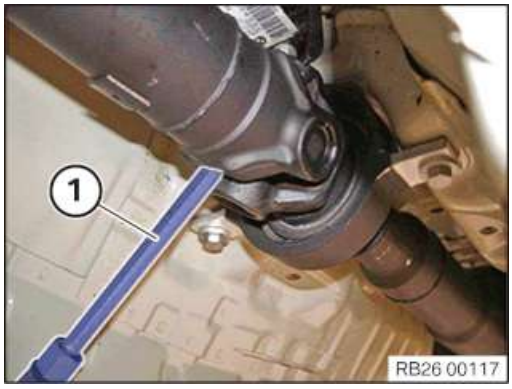
- **Centre mount with TOP marking:**
- The centre mount (1) must be installed with the TOP marking at the top in the gearbox tunnel.



- Position centre mount.
- Position screws (1).



- **Propeller shaft with a narrow universal joint:**
- Using the special tool 2 464 898 and a suitable tool (2), secure the propeller shaft (1) to the centre universal joint against twisting.



- **Propeller shaft with a broad universal joint:**
- Secure the propeller shaft against twisting at the central universal joint using a suitable tool (1).

rdiagn.com



RISK OF DAMAGE

Damage to the flange nut.

Failure to observe the installation specifications may lead to serious damage to the flange nut and the rear axle differential.

- Do not use the double hexagon flange nut as counter support.
- Screw in the recessed nut within 5 minutes.

- Screw in the recessed nut **counter-clockwise, see direction of arrow** with special tools 0 495 554 (33 5 070) and .

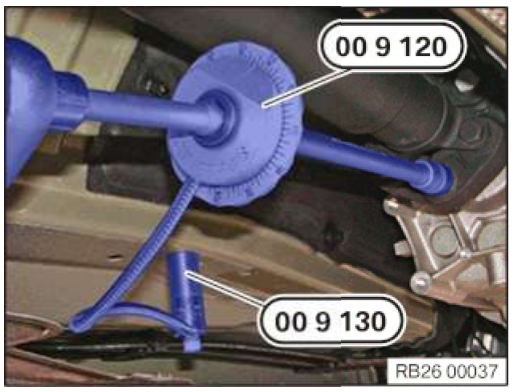
  The recessed nut must be screwed in within 5 min .

Propeller shaft on the rear axle differential

Insert nut		Tightening torque	100 Nm

- **After the propeller shaft is installed and the recessed nut is screwed in, strictly observe a hardening time of minimum 3 hours.**

  Do not move or push the vehicle during this time!

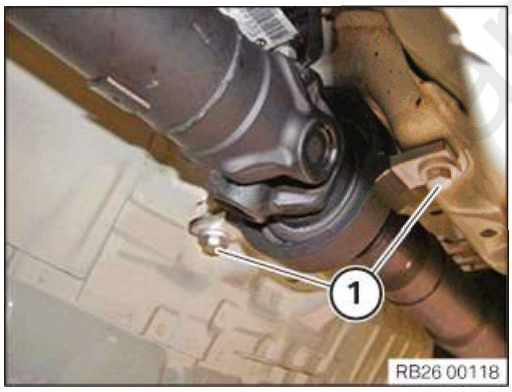


- Brace mounting bolts of flexible disc on nut and tighten by screw.

Rear flexible disc to three-hole flange

M12	Renew screws. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

- Secure the special angle of rotation tool 0 490 504 (00 9 120) with the magnets to the vehicle underbody and screw it further depending on the angle of rotation.

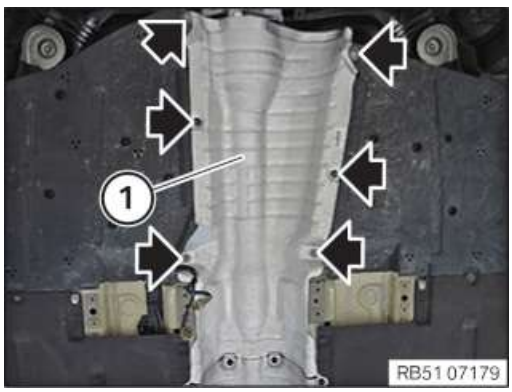


- Tighten the screws (1).

Centre mount to body

M8		Tightening torque	19 Nm

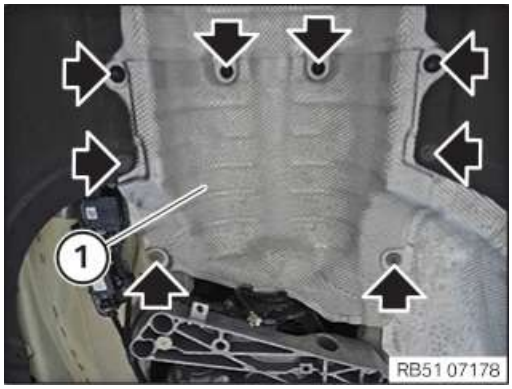
8 – Install the heat shields



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm

9 – Installing the complete exhaust system

CAUTION

Component with heavy weight.

Danger of injury!

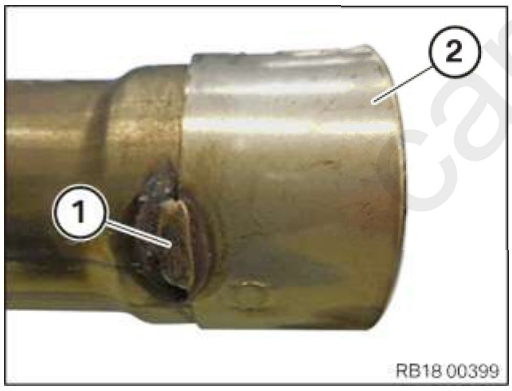
- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

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



CAUTION

Swarf resulting from sawing or grinding components.

Danger of injury!

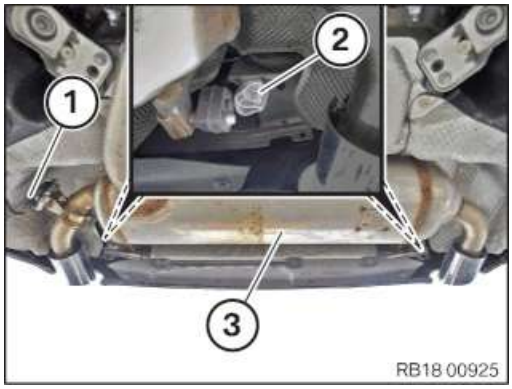
- Conduct all work in appropriate personal protective equipment only.
- Wear safety goggles and protective gloves.

- **Equipment specification 1 (ribbon clamp)**

  Open the weld seam (1) with a conventional tool.
- Remove ribbon clamp (2).
- Renew the (2) ribbon clamp.

  Parts: Ribbon cable clamp

cardiagn.com



- Feed in and install the exhaust system (3) with a second person.
- Renew nuts (2).

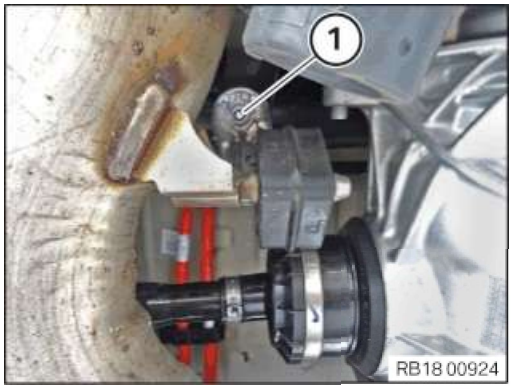
  Parts: Nuts
- Tighten nuts (2).

Rear silencer to body / bumper support

M8	Replace nuts.	Tightening torque	19 Nm

- Connect connectors (1) and lock.

  The connector (1) must engage audibly.

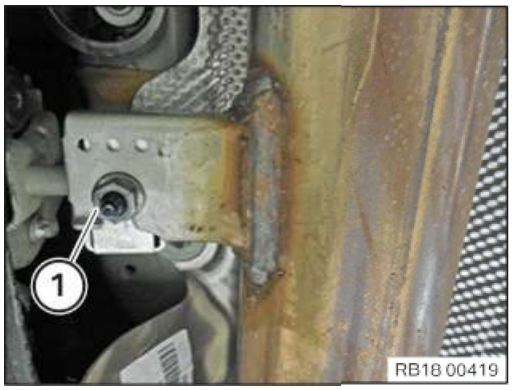


- Renew nut (1).

  Parts: Nut
- Tighten the bolt (1) on the rear axle support.

Exhaust system to rear axle carrier

Nut M8	Renew nut.	Tightening torque	19 Nm

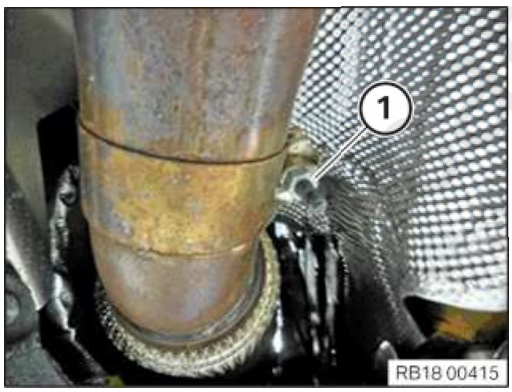


- Renew nut (1).

  Parts: Nut
- Tighten nut (1).

Front pipe / petrol particulate filter on transmission holder

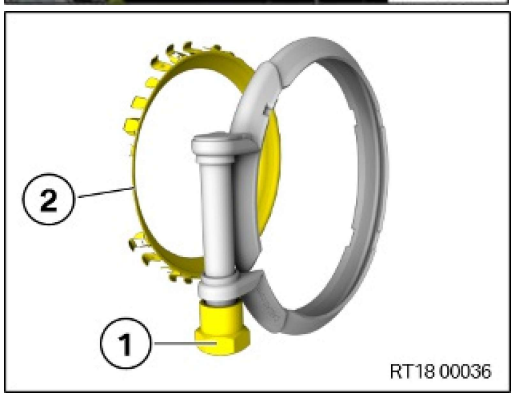
M8	Renew nut.	Tightening torque	19 Nm



- Tighten the ribbon clamp (1).

Exhaust system to catalytic converter

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm



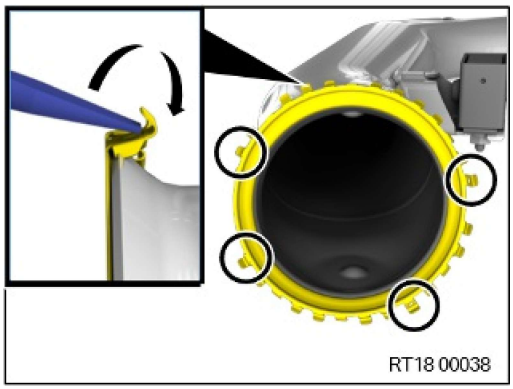
- **Equipment specification 2 (V-clips)**

  Renew V-band clamp.

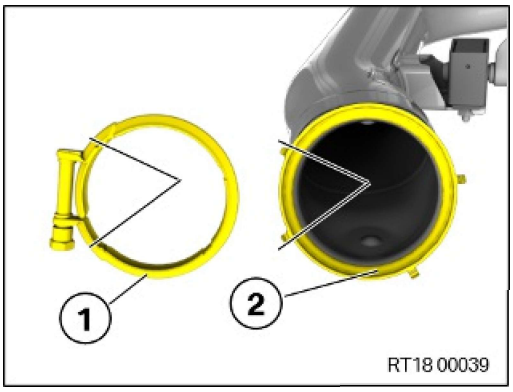
  Parts: V-band clamp

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

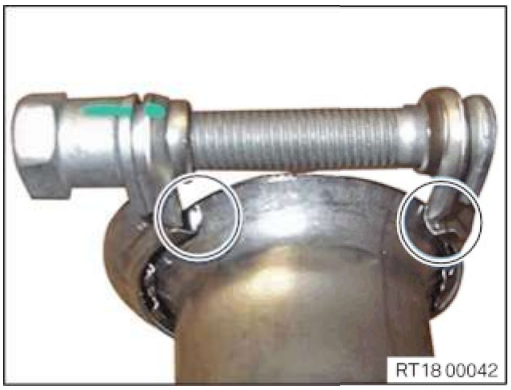
diag.com



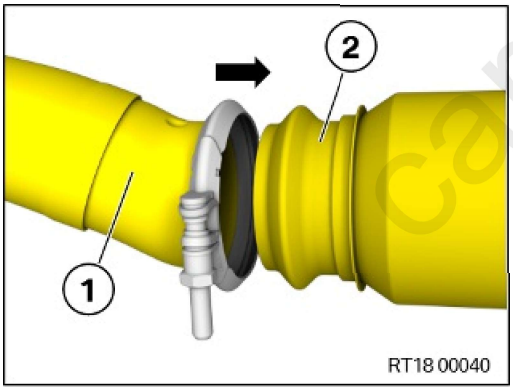
- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.



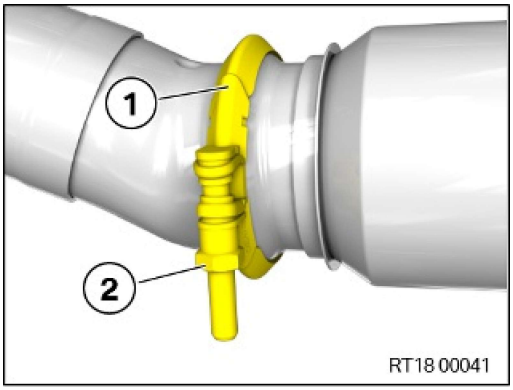
- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).



- Ensure that the V-clip rests against the sheet metal tabs in the marked areas after mounting.



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



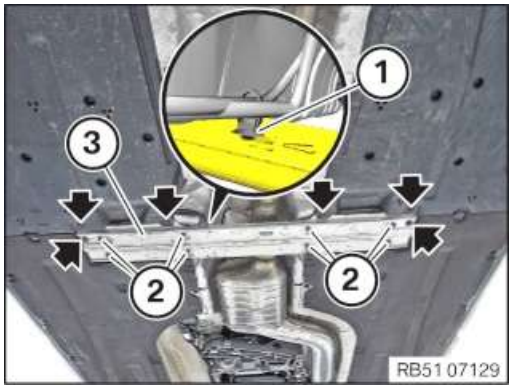
- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

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

10 – Install the connecting supports on the tunnel

cardiagn.com



- Guide in and install connecting support (3) on the tunnel.
- Tighten the screws (2).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- Tighten screws (arrows).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- **If installed:** Secure clamps (1).

Additional Information

Overview of Tightening Torques

Front flexible disc to propeller shaft — Used in step 7

M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

Propeller shaft on the rear axle differential — Used in step 7

Insert nut		Tightening torque	100 Nm

Rear flexible disc to three-hole flange — Used in step 7

M12	Renew screws. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

Centre mount to body — Used in step 7

M8		Tightening torque	19 Nm

Heat shield to vehicle underbody — Used in step 8

Screws and nuts		Tightening torque	3 Nm

Rear silencer to body / bumper support — Used in step 9

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust system to rear axle carrier — Used in step 9

Nut M8	Renew nut.	Tightening torque	19 Nm

Front pipe / petrol particulate filter on transmission holder — Used in step 9

M8	Renew nut.	Tightening torque	19 Nm

cardiagn.com

Exhaust system to catalytic converter Used in step 9

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm

V-clip to catalytic converter Used in step 9

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

Connecting support to tunnel Used in step 10

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

Overview of Special Tools

2 464 898 Open-end spanner



Common Used in step 47

Usage	Open-end spanner SW50 for disassembly and installation of the propeller shaft on rear axle differential. The silhouette foil is included in the delivery specification.
Included in the tool or work	
Storage location	A7
Replaced by	
In connection with	
SI-Number	01 19 18 (579)

0 495 554 (33 5 070) Extension



Common Used in step 47

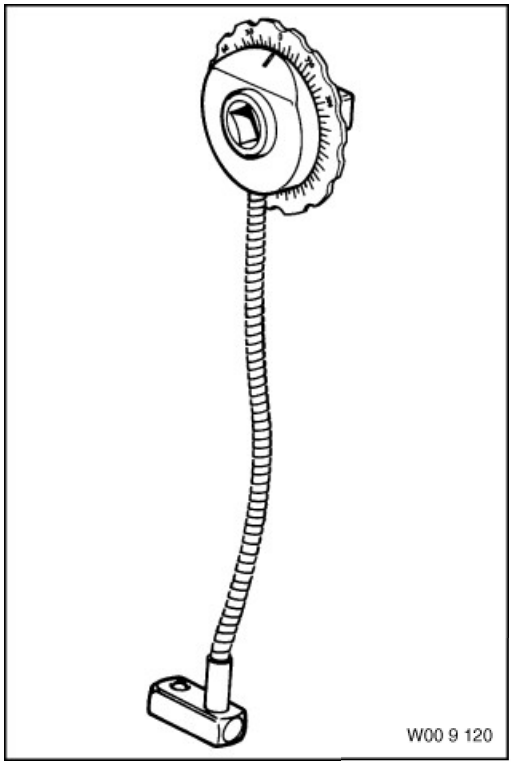
Usage	Pull-out extension for 33 5 040, 33 5 050, 33 5 060.
Included in the tool or work	
Storage location	A18
Replaced by	
In connection with	
SI-Number	01 21 06 (300)

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	

cartagn.com

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



Common Used in step 7

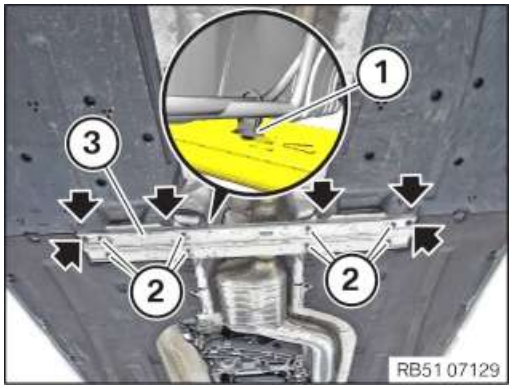
Usage	For torsion angle adjustment of cylinder head bolts (all engines) And reinforcement plate front axle support E46
Included in the tool or work	
Storage location	A4
Replaced by	
In connection with	
SI-Number	

cardiagn.com

26 11 090 Replacing centring for propeller shaft

PRELIMINARY WORK

1 – Remove the connecting support from the tunnel



- Remove screws (arrows).
- **If installed:** Loosen clamp (1).
- Loosen screws (2).
- Guide out and remove connecting support (3) on the tunnel.

2 – Remove complete exhaust system

WARNING

Hot surfaces.

Risk of burning!

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

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.

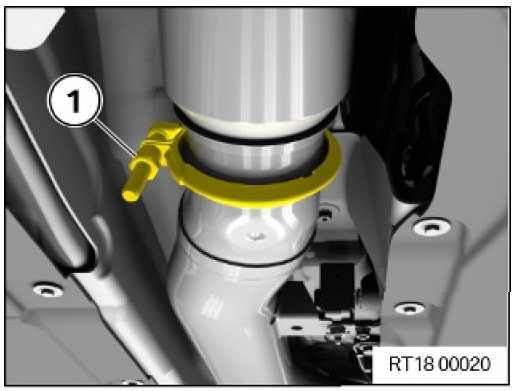
- Remove and install heavy components with the aid of another person/other persons.

cardiagn.com



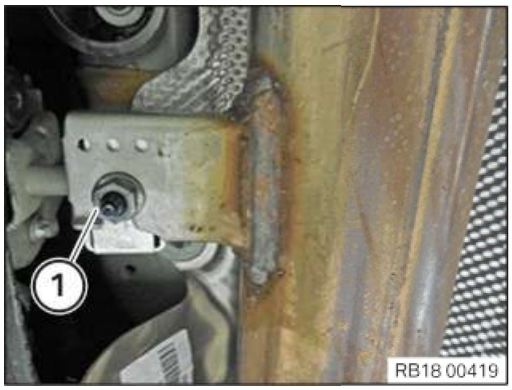
- **Equipment specification 1 (ribbon clamp)**

  Detach the ribbon clamp (1).

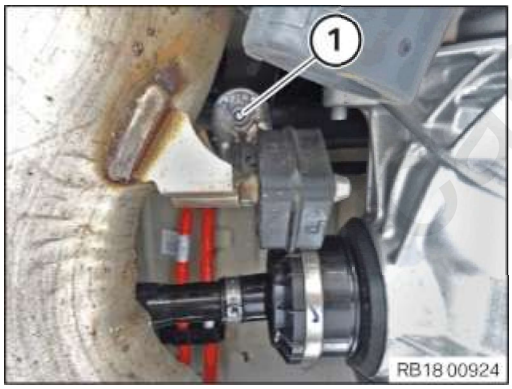


- **Equipment specification 2 (V-clips)**

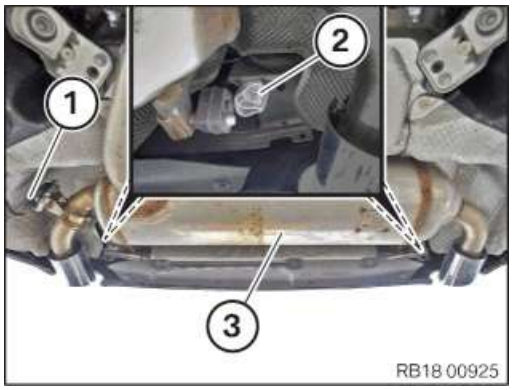
  Unfasten clamp (1).



- Loosen nut (1).



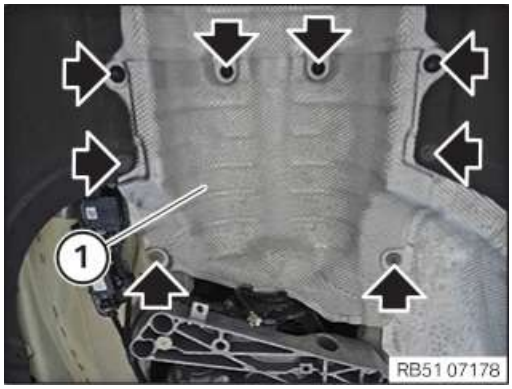
- Release nut (1) on the rear axle support.



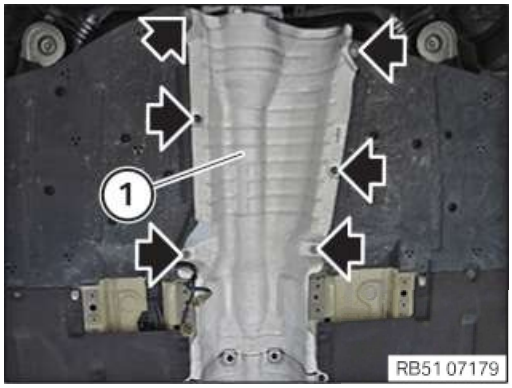
- Unlock plug connection (1) and disconnect.
- Loosen nuts (2).
- Lower and remove the exhaust system (3) with the assistance of a second person.

3 – Remove heat shields

cardiagn.com



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).

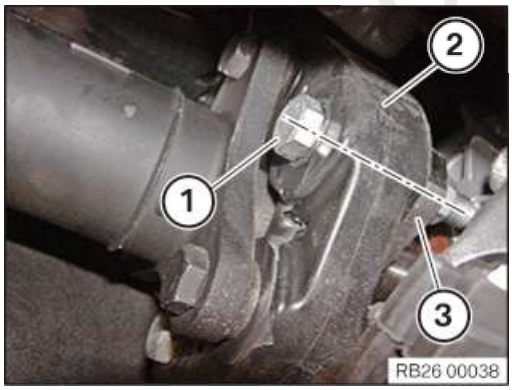
4 – Completely removing the propeller shaft (plug-in - rear flexible disc)

RISK OF DAMAGE

Damage to propeller shaft during removal.

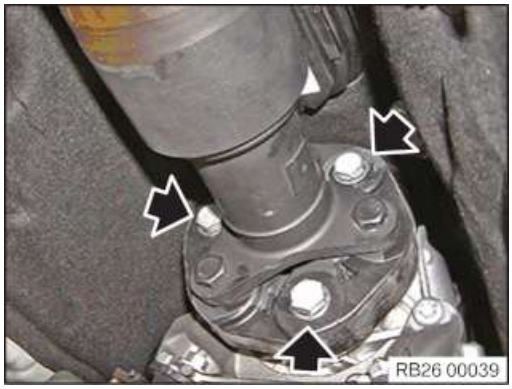
Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- 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.

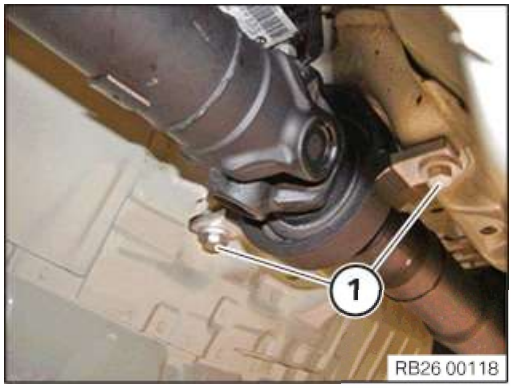


- In order to avoid a humming noise of the drivetrain after reinstalling the propeller shaft:
  - The flexible disc connection (1) on the front at the propeller shaft **must** be marked in one plane with the flexible disc (2) and the three-bolt flange (3) before loosening.
  - During installation the three-bolt flange (3) must be forced back together again with the flexible disc (2) in the same position.

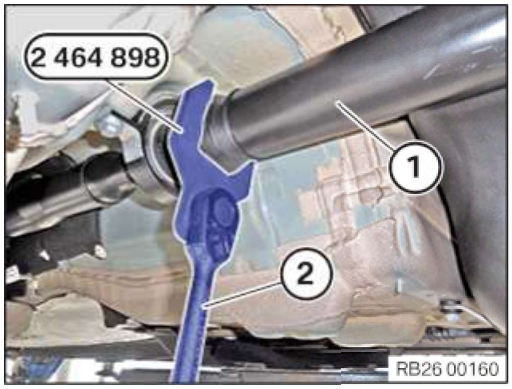
carmagn.com



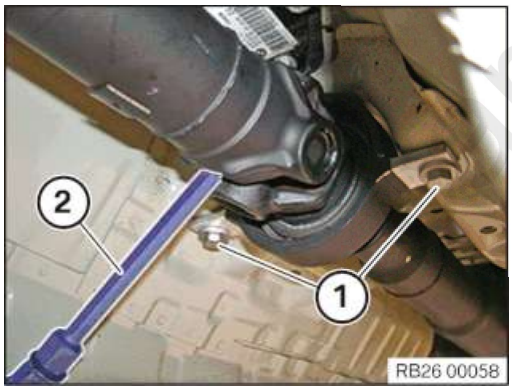
- Remove screws (arrows).



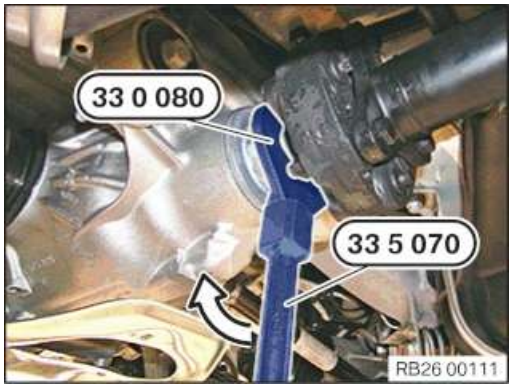
- Loosen screws (1).



- **Vehicles with a narrow universal joint:**
- Using the special tool 2 464 898 and a suitable tool (2), secure the propeller shaft (1) to the centre universal joint against twisting.



- **Vehicles with a broad universal joint:**
- Secure the propeller shaft against twisting at the central universal joint using a suitable tool (2).
- Do not remove the bolts (1) of the centre mount completely until the recessed nut has been opened.



RISK OF DAMAGE

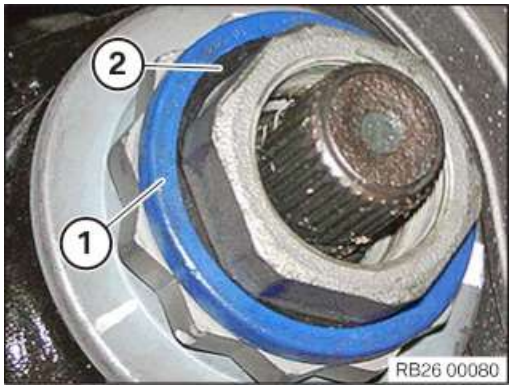
Damage to rear axle differential.

Non-observance of the removal and installation guidelines may cause severe damage to the rear axle differential.

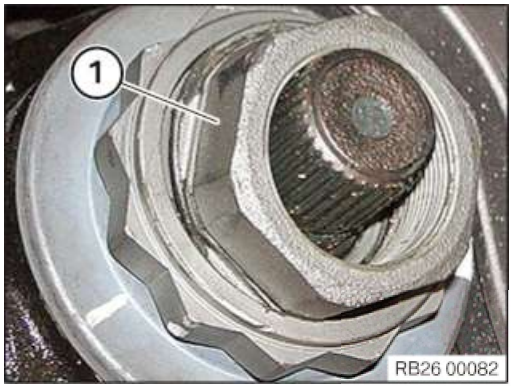
- Do not use the double hexagon head flange nut as counter support.

- Loosen the recessed nut **in clockwise direction, see the direction of the arrow,** using special tools 0 495 554 (33 5 070) and .

rdiagn.com



- Remove mounting clip (1) and gasket (2).



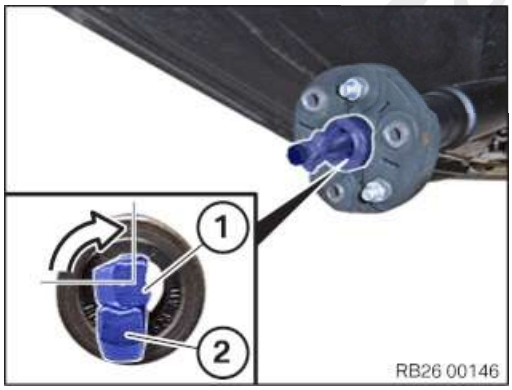
- Remove recessed nut (1).

MAIN WORK

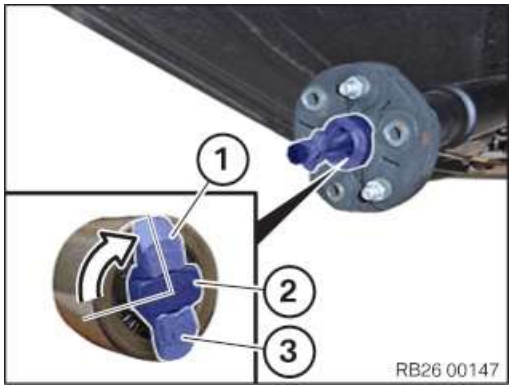
5 – Removing the centring for the propeller shaft



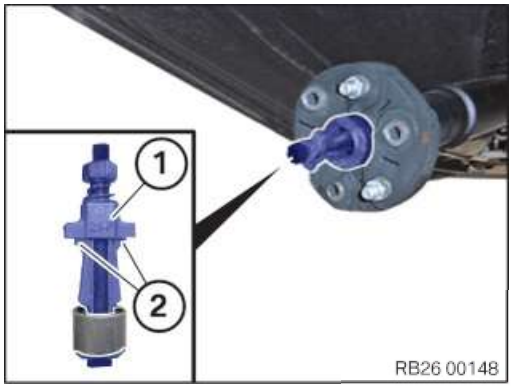
- Use special tool 2 450 247 to remove the centring bearing.



- Insert pin (1) and the pin (2) of the special tool 2 450 247 in the centring bearing of the propeller shaft.
- Turn pin (1) by 90° in relation to pin (2).

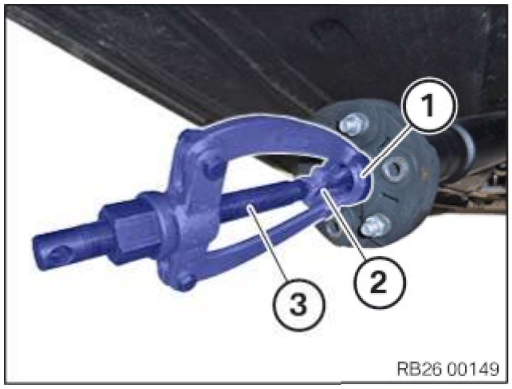


- Insert the pin (2) between pins (1) and (3) of the special tool 2 450 247 in the centering bearing of the propeller shaft.

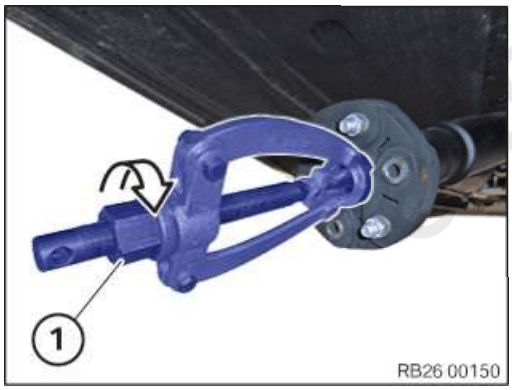


- Lock the special tool 2 450 247 by turning the sleeve (1).

  The pins (2) are retained by the sleeve (1).

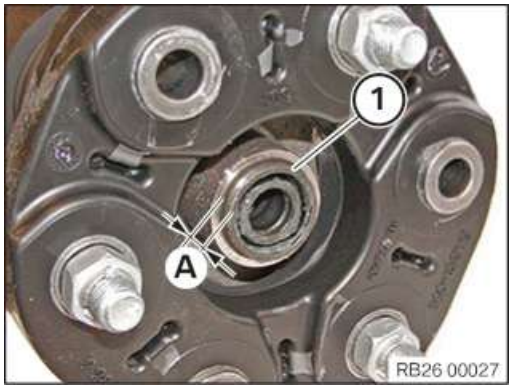


- Install the guide sleeve (1).
- Screw together spindle (3) with the special tool 2 450 247(2) and support at the guide sleeve (1).



- Turn nut (1) in direction of arrow and pull out the centring bearing.

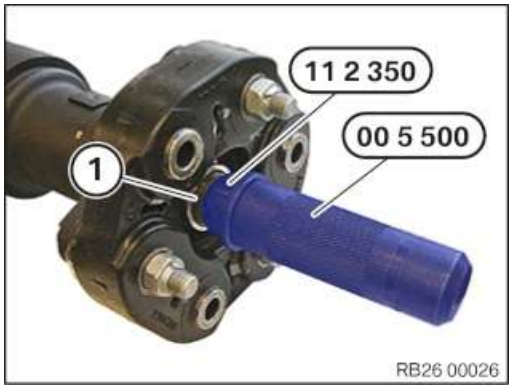
6 – Install propeller shaft centring



- Pay attention to the protrusion (A) on the centring (1).

  Protrusion (A) = 4+2 mm

carsdiagn.com



- Remove grease or water from mount bore.
- Tap the centring (1) into the propeller shaft using the special tools and . Pay attention to the protrusion.



- Apply a thin coat of grease to the soft centring (1), if necessary.

  Do not grease the hard centring (2).

Expendable materials

Lubricating grease Olistamoly 2 LN 584 LO	100 g, Tube	83 19 0 447 919

POSTPROCESSES

7 – Completely installing the propeller shaft (plug-in - rear flexible disc)

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.

- Observe following installation sequence:
  - Position propeller shaft on transmission.
  - Position the propeller shaft at the rear axle differential.
  - Position centre mount.
- Observe the following screwing sequence:
  - Insert nut
  - Flexible disc to transmission
  - Centre mount

cardiagn.com



- Check the centering (arrow) for damage, renew if required.

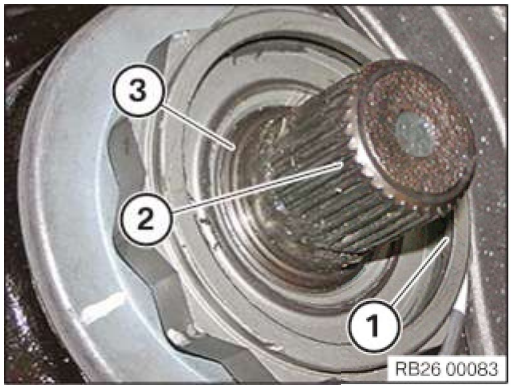


- Apply a thin coat of grease to the soft centring (1), if necessary.

Expendable materials

Lubricating grease Olistamoly 2 LN 584 LO	100 g, Tube	83 19 0 447 919

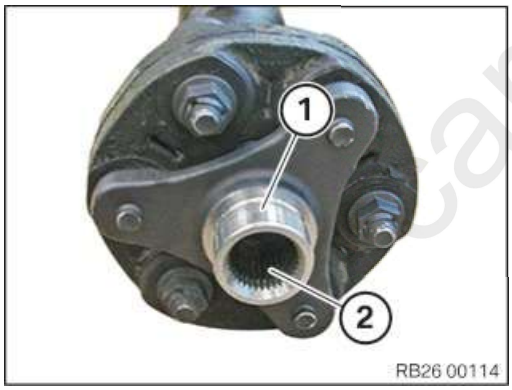
- Hard centring (2) must **not** be greased.



- Clean all residue from the insert collar (1) of the flange nut and the gearing on the bevel pinion (2) and degrease them.
- Top up the collar insert (1)with grease.

Expendable materials

Lubricating grease Optitemp HT 1 LF	50 g, Tube	83230417754



RISK OF DAMAGE

Damage to the output flange.

Failure to observe the greasing specifications may lead to damage on the output flange.

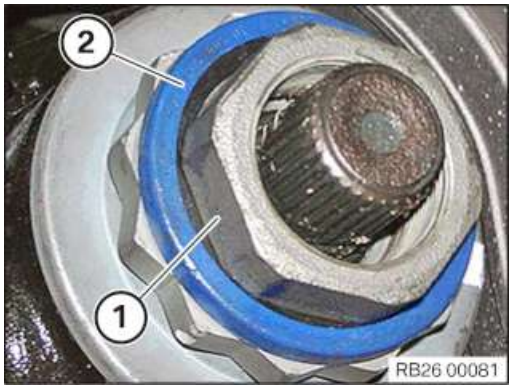
- Do not contaminate the thread of the output flange with grease.

- Clean thread (1) of flange off adhesive residue.
- Clean gearing (2).
- Grease gearing (2).

Expendable materials

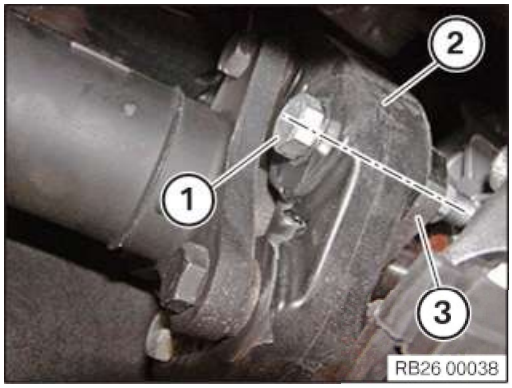
Lubricating grease Optitemp HT 1 LF	50 g, Tube	83230417754

carmanuals.com



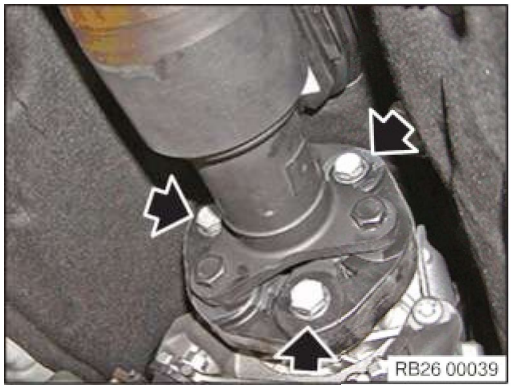
- Renew the seal, recessed nut (1) and the mounting clip (2).

  Parts: Seal, recessed nut and mounting clip
- Insert recessed nut (1) including gasket into collar insert of the flange nut.
- Install the mounting clip (2).



- In order to avoid a humming noise of the drivetrain after reinstalling the propeller shaft: It is essential to reassemble the three-hole flange (3) with the flexible disc (2) in the same position.
- Renew ZNS screws and the self-locking nuts (1).

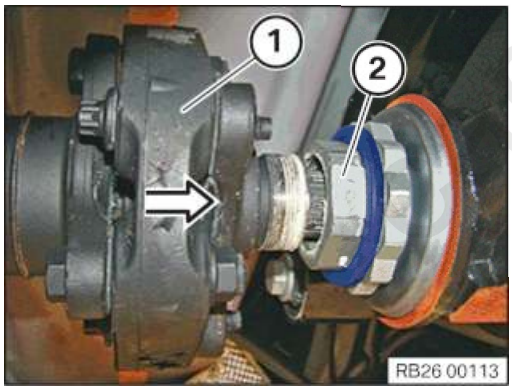
  Parts: ZNS screws, self-locking nuts



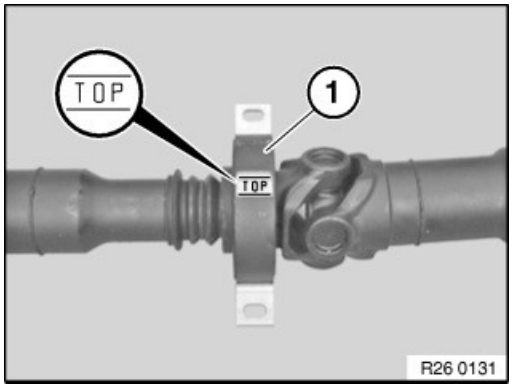
- Position the screws and nuts (arrows).
- Tighten the screws.

Front flexible disc to propeller shaft

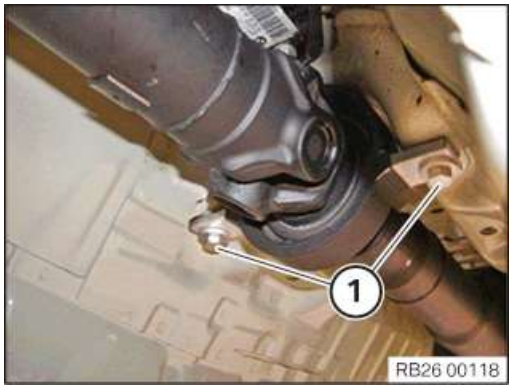
M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °



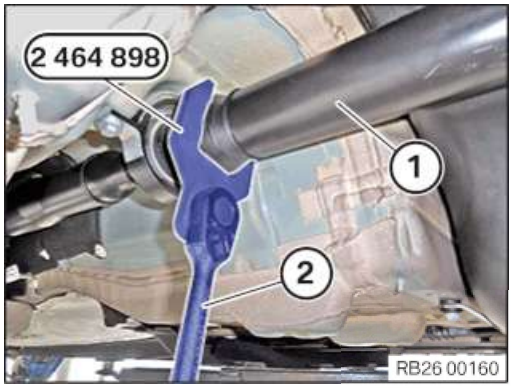
- Push the propeller shaft (1) in the direction of the arrow against the recessed nut (2) up to the limit position.
- Manually screw on and tighten the recessed nut (2) onto the propeller shaft (1) by a minimum of two threads.



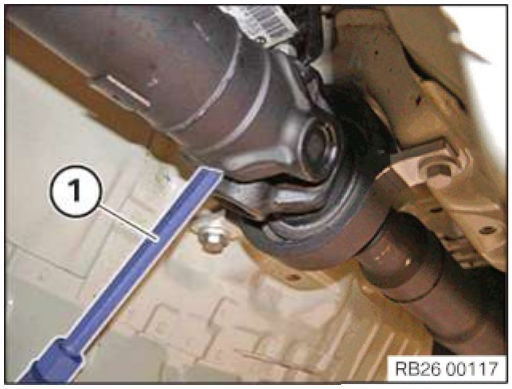
- **Centre mount with TOP marking:**
- The centre mount (1) must be installed with the TOP marking at the top in the gearbox tunnel.



- Position centre mount.
- Position screws (1).



- **Propeller shaft with a narrow universal joint:**
- Using the special tool 2 464 898 and a suitable tool (2), secure the propeller shaft (1) to the centre universal joint against twisting.



- **Propeller shaft with a broad universal joint:**
- Secure the propeller shaft against twisting at the central universal joint using a suitable tool (1).



RISK OF DAMAGE

Damage to the flange nut.

Failure to observe the installation specifications may lead to serious damage to the flange nut and the rear axle differential.

- Do not use the double hexagon flange nut as counter support.
- Screw in the recessed nut within 5 minutes.

- Screw in the recessed nut **counter-clockwise, see direction of arrow** with special tools 0 495 554 (33 5 070) and .

  The recessed nut must be screwed in within 5 min .

Propeller shaft on the rear axle differential

Insert nut		Tightening torque	100 Nm

- **After the propeller shaft is installed and the recessed nut is screwed in, strictly observe a hardening time of minimum 3 hours.**

  Do not move or push the vehicle during this time!

mydiagn.com

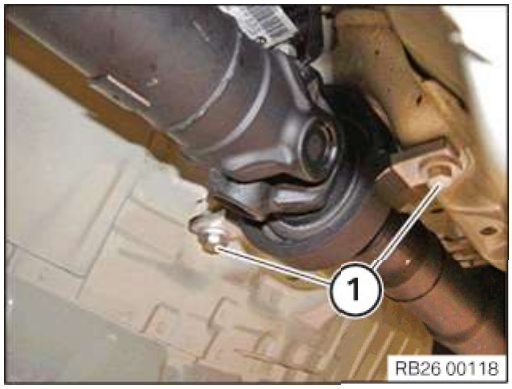


- Brace mounting bolts of flexible disc on nut and tighten by screw.

Rear flexible disc to three-hole flange

M12	Renew screws. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

- Secure the special angle of rotation tool 0 490 504 (00 9 120) with the magnets to the vehicle underbody and screw it further depending on the angle of rotation.

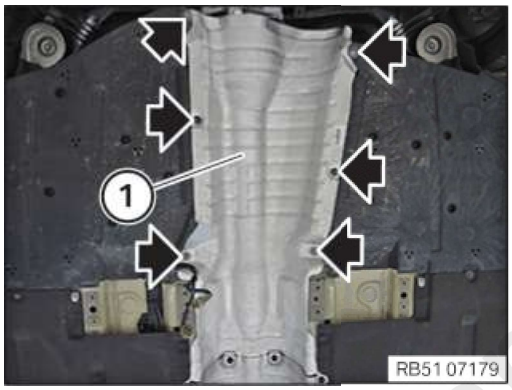


- Tighten the screws (1).

Centre mount to body

M8		Tightening torque	19 Nm

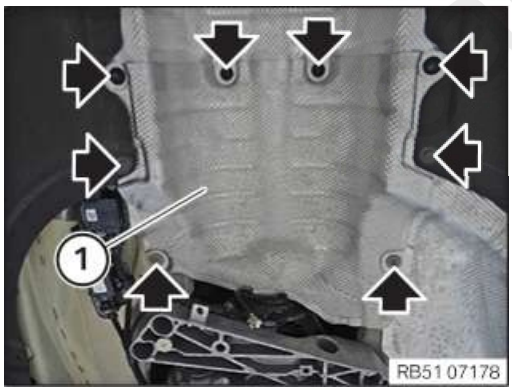
8 – Install the heat shields



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm

9 – Installing the complete exhaust system

CAUTION

Component with heavy weight.

Danger of injury!

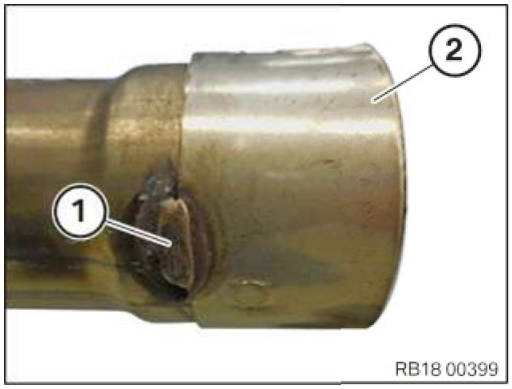
- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

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



CAUTION

Swarf resulting from sawing or grinding components.

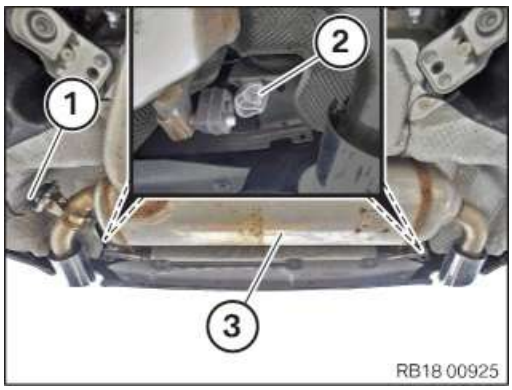
Danger of injury!

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

- **Equipment specification 1 (ribbon clamp)**

  Open the weld seam (1) with a conventional tool.
- Remove ribbon clamp (2).
- Renew the (2) ribbon clamp.

  Parts: Ribbon cable clamp



- Feed in and install the exhaust system (3) with a second person.
- Renew nuts (2).

  Parts: Nuts
- Tighten nuts (2).

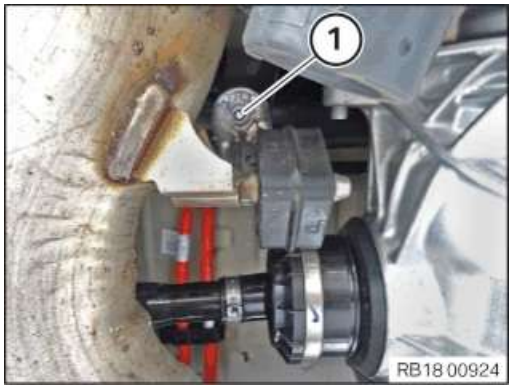
Rear silencer to body / bumper support

M8	Replace nuts.	Tightening torque	19 Nm

- Connect connectors (1) and lock.

  The connector (1) must engage audibly.

cardiagn.com



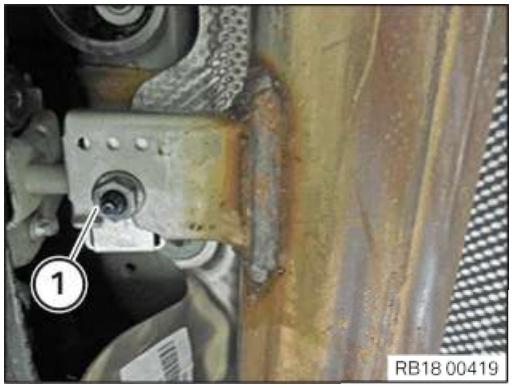
- Renew nut (1).

  Parts: Nut

- Tighten the bolt (1) on the rear axle support.

Exhaust system to rear axle carrier

Nut M8	Renew nut.	Tightening torque	19 Nm



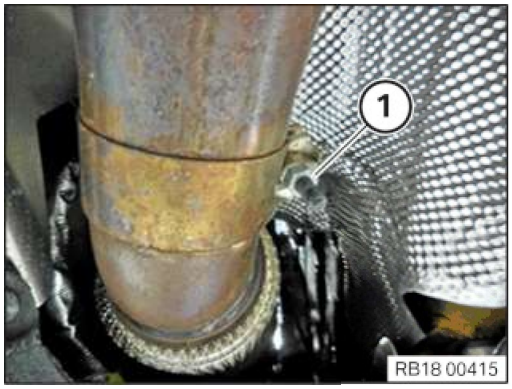
- Renew nut (1).

  Parts: Nut

- Tighten nut (1).

Front pipe / petrol particulate filter on transmission holder

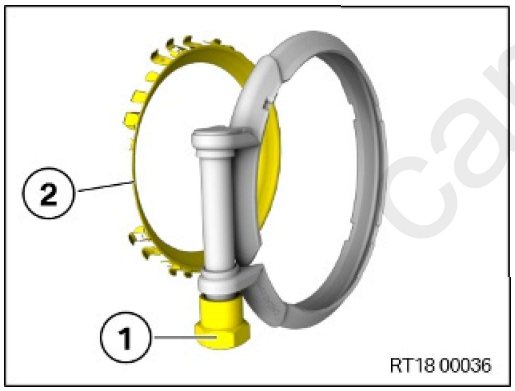
M8	Renew nut.	Tightening torque	19 Nm



- Tighten the ribbon clamp (1).

Exhaust system to catalytic converter

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm

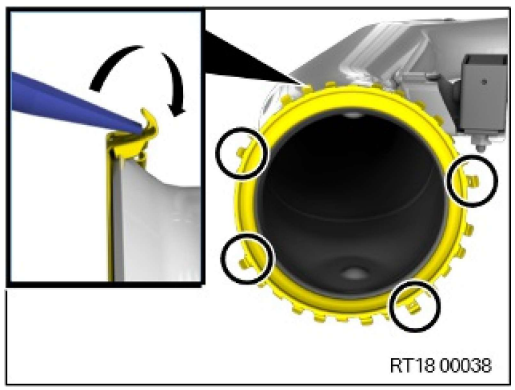


- **Equipment specification 2 (V-clips)**

  Renew V-band clamp.

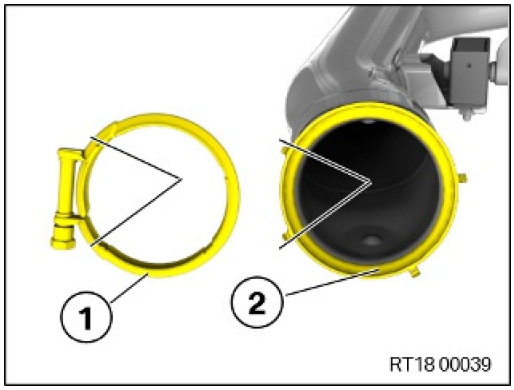
  Parts: V-band clamp

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

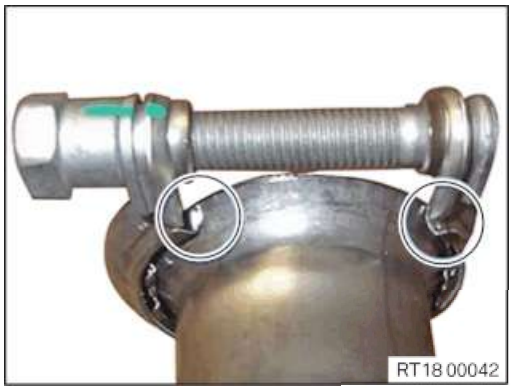


- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.

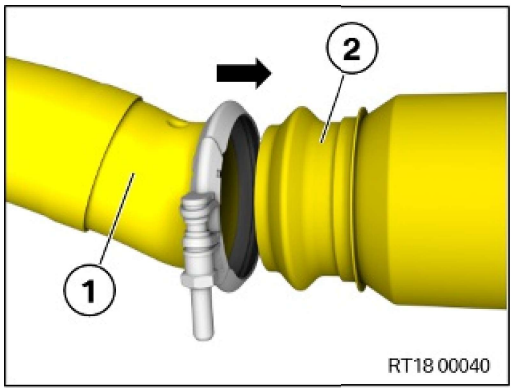
cardiagn.com



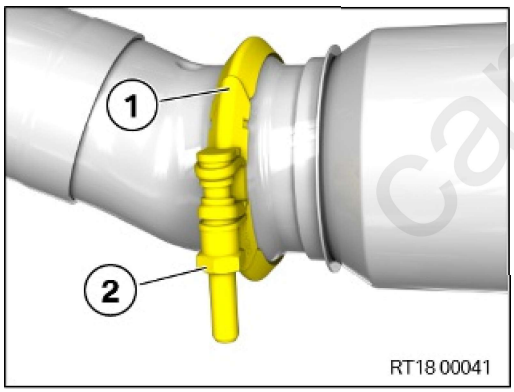
- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).



- Ensure that the V-clip rests against the sheet metal tabs in the marked areas after mounting.



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



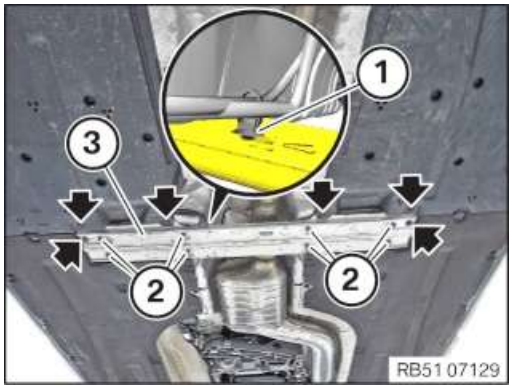
- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

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

10 – Install the connecting supports on the tunnel

cardiagn.com



- Guide in and install connecting support (3) on the tunnel.
- Tighten the screws (2).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- Tighten screws (arrows).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- **If installed:** Secure clamps (1).

Additional Information

Overview of Tightening Torques

Front flexible disc to propeller shaft — Used in step 7

M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

Propeller shaft on the rear axle differential — Used in step 7

Insert nut		Tightening torque	100 Nm

Rear flexible disc to three-hole flange — Used in step 7

M12	Renew screws. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

Centre mount to body — Used in step 7

M8		Tightening torque	19 Nm

Heat shield to vehicle underbody — Used in step 8

Screws and nuts		Tightening torque	3 Nm

Rear silencer to body / bumper support — Used in step 9

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust system to rear axle carrier — Used in step 9

Nut M8	Renew nut.	Tightening torque	19 Nm

Front pipe / petrol particulate filter on transmission holder — Used in step 9

M8	Renew nut.	Tightening torque	19 Nm

cardiagn.com

Exhaust system to catalytic converter Used in step 9

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm

V-clip to catalytic converter Used in step 9

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

Connecting support to tunnel Used in step 10

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

Overview of Special Tools

2 464 898 Open-end spanner



Common Used in step 47

Usage	Open-end spanner SW50 for disassembly and installation of the propeller shaft on rear axle differential. The silhouette foil is included in the delivery specification.
Included in the tool or work	
Storage location	A7
Replaced by	
In connection with	
SI-Number	01 19 18 (579)

0 495 554 (33 5 070) Extension



Common Used in step 47

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	

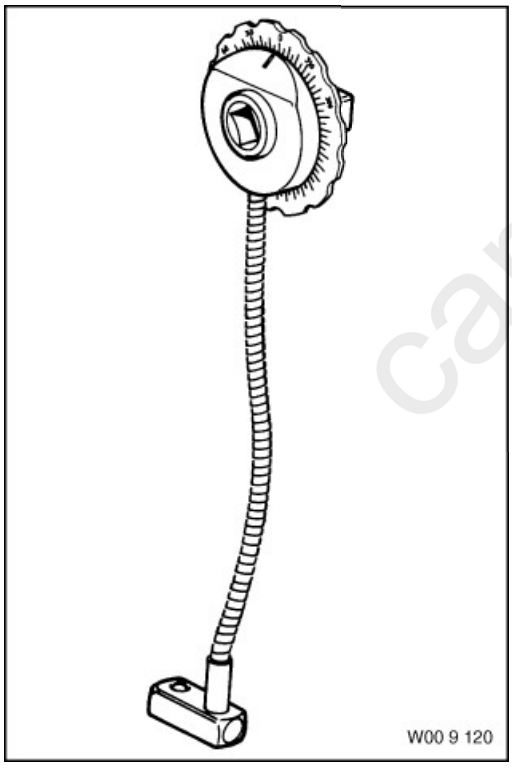
cartagn.com

2 450 247 Puller



Common	Used in step 5
Usage	Tool for the disassembly of the front and right centring / guide sleeve for propeller shafts
Included in the tool or work	
Storage location	B5
Replaced by	
In connection with	
SI-Number	01 11 17 (494)

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



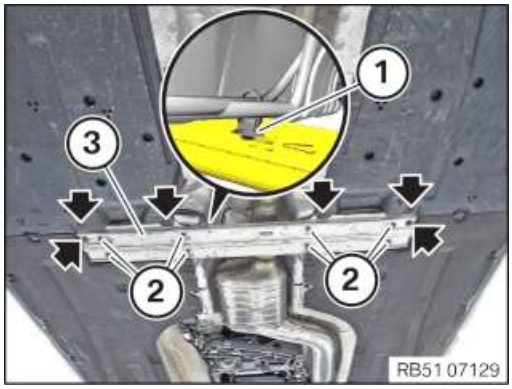
Common	Used in step 7
Usage	For torsion angle adjustment of cylinder head bolts (all engines) And reinforcement plate front axle support E46
Included in the tool or work	
Storage location	A4
Replaced by	
In connection with	
SI-Number	

cardiagn.com

26 11 051 Replacing flexible disc for propeller shaft

PRELIMINARY WORK

1 – Remove the connecting support from the tunnel



- Remove screws (arrows).
- **If installed:** Loosen clamp (1).
- Loosen screws (2).
- Guide out and remove connecting support (3) on the tunnel.

2 – Remove complete exhaust system

WARNING

Hot surfaces.

Risk of burning!

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

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.

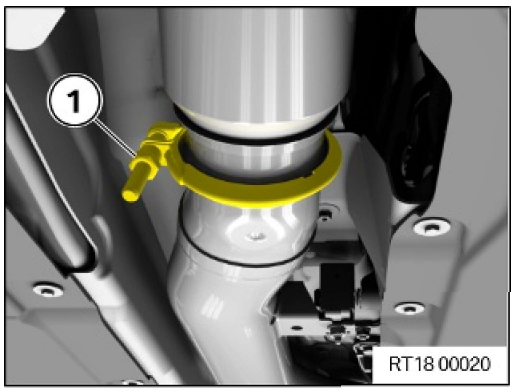
- Remove and install heavy components with the aid of another person/other persons.

cardiagn.com



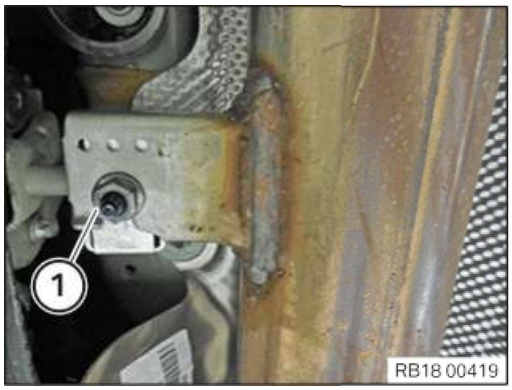
- **Equipment specification 1 (ribbon clamp)**

  Detach the ribbon clamp (1).

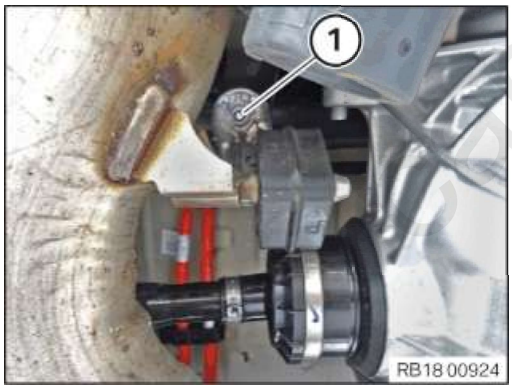


- **Equipment specification 2 (V-clips)**

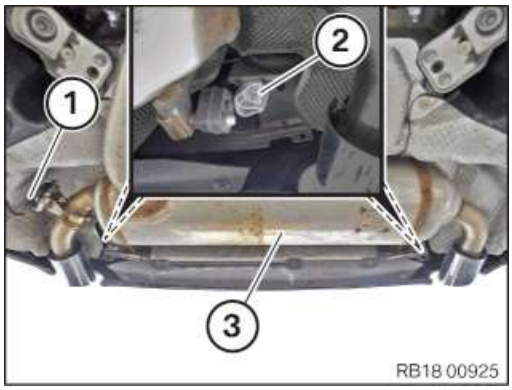
  Unfasten clamp (1).



- Loosen nut (1).



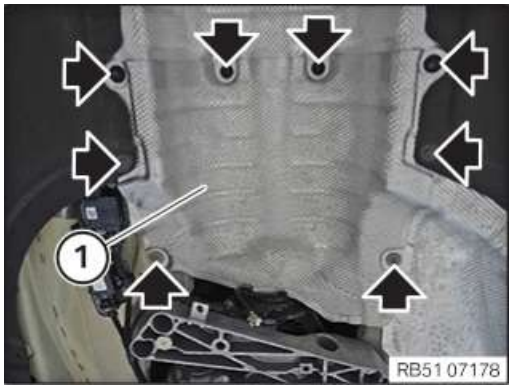
- Release nut (1) on the rear axle support.



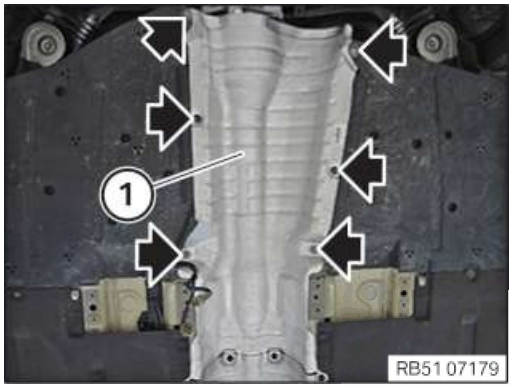
- Unlock plug connection (1) and disconnect.
- Loosen nuts (2).
- Lower and remove the exhaust system (3) with the assistance of a second person.

3 – Remove heat shields

cardiagn.com



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).

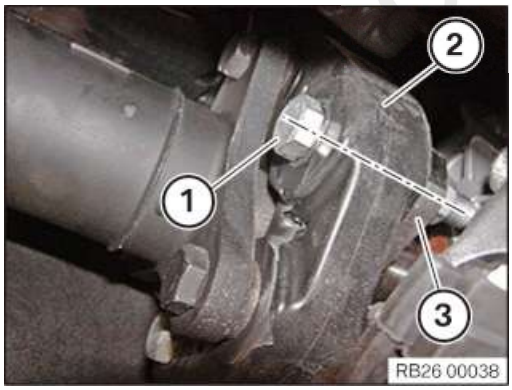
4 – Partially release propeller shaft

RISK OF DAMAGE

Damage to propeller shaft during removal.

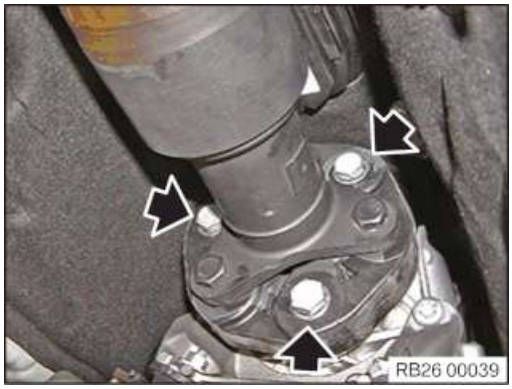
Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- 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.

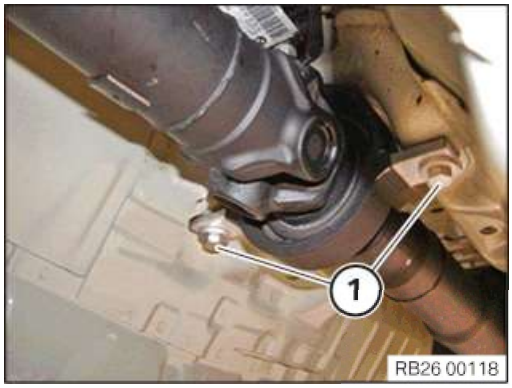


- Mark the installation position of the screw connection (1) of the flexible disc (2) and the three-hole flange (3).

  The mark makes it possible for the propeller shaft to be installed again in the same position. This should prevent a humming noise from the drive train during driving.



- Remove screws (arrows).



- Unscrew the bolts (1) on the centre mount and hold down the propeller shaft.

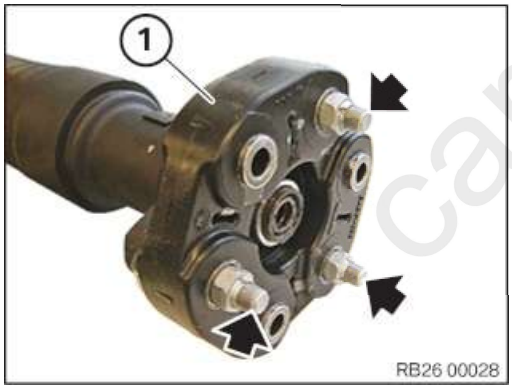
  Major deflection angles of the propeller shaft may damage the propeller shaft and/or the joints.
- Tie up propeller shaft to underbody.

MAIN WORK

5 – Removing the flexible disc for the front propeller shaft

TECHNICAL INFORMATION

To protect universal joints, tie back propeller shaft in area of centre mount.



- Release screws the (arrows) and remove the flexible disc (1) from the propeller shaft.

6 – Installing the flexible disc for the front propeller shaft



- Check the centring (arrow) for damage and renew it if necessary.

cardiagn.com

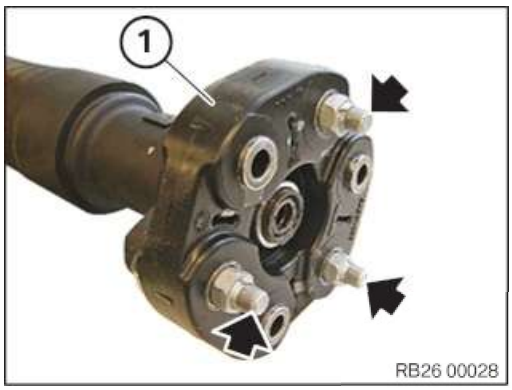


- Apply a thin coat of grease to the soft centring (1), if necessary.

Expendable materials

Lubricating grease Olistamoly 2 LN 584 LO	100 g, Tube	83 19 0 447 919

- Do (2) **not** grease the hard centering.



- Install the flexible disc (1) on the propeller shaft.
- Renew screws and self-locking nuts (arrows).

  Parts: Self-locking nuts and screws
- Insert screws and tighten.

Front flexible disc to propeller shaft

M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

POSTPROCESSES

7 – Partially installing the propeller shaft



- Check centring (1) for damage; renew if necessary.



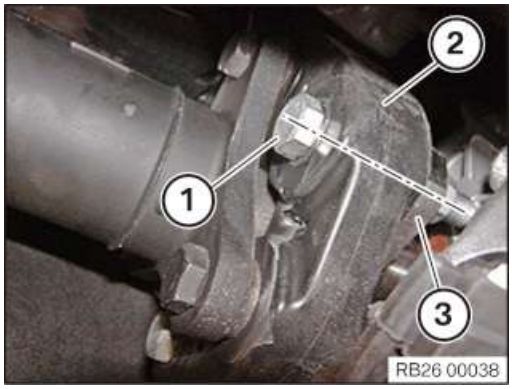
- Apply a thin coat of grease to the soft centring (1), if necessary.

  Do not grease the hard centring (2).

Expendable materials

Lubricating grease Olistamoly 2 LN 584 LO	100 g, Tube	83 19 0 447 919

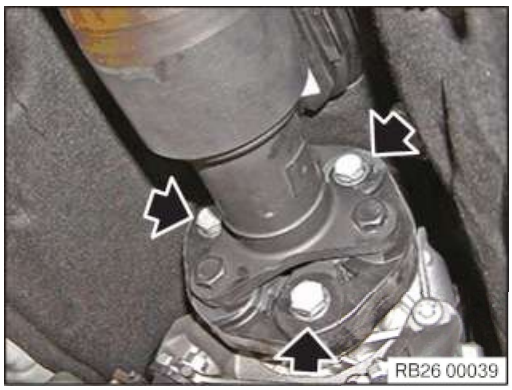
cardiagn.com



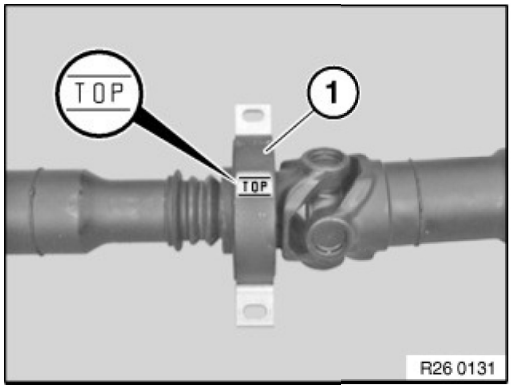
- Renew screws and the self-locking nuts.

  Parts: Screws, self-locking nuts
- Assemble the screw connections (1) of the flexible disc (2) and the three-hole flange (3) according to the self-affixed identification.

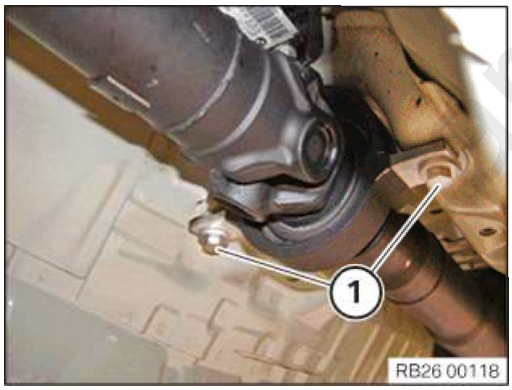
  This should prevent a humming noise from the drive train during driving.



- Hand-tighten the screws and nuts (arrows), but do not tighten fully.



- **Centre mount with TOP marking:**
- The centre mount (1) must be installed with the TOP marking at the top in the gearbox tunnel.



- Position centre mount.
- Hand-tighten the bolts (1), but do not tighten fully.



- Renew screws.

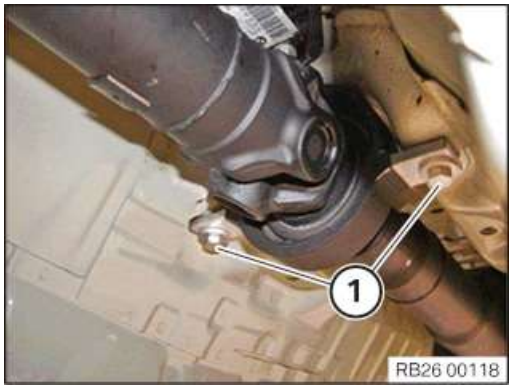
  Parts: Bolts
- Provide counter support for the bolts of the flexible disc on the nut and tighten with the bolts.

Front flexible disc to propeller shaft

M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

- Secure the special tool 0 490 504 (00 9 120) with the special tool on the vehicle underbody and continue to screw it in according to the angle of rotation.

rdiagn.com

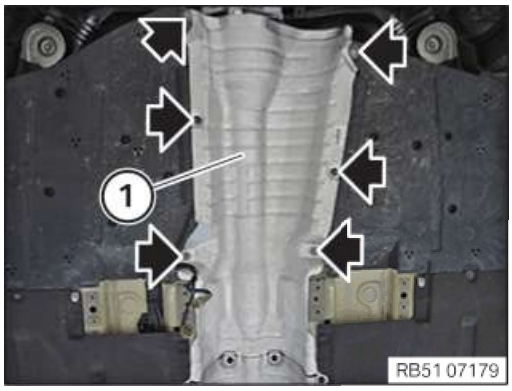


- Tighten the screws (1).

Centre mount to body

M8		Tightening torque	19 Nm

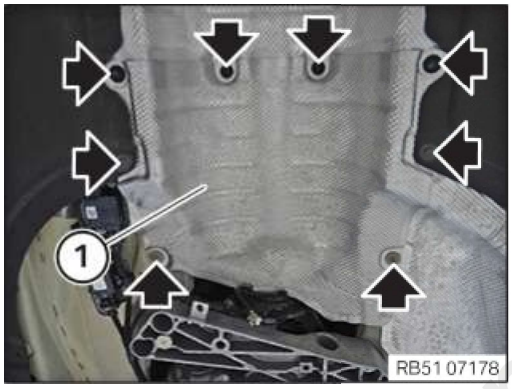
8 – Install the heat shields



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm

9 – Installing the complete 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.

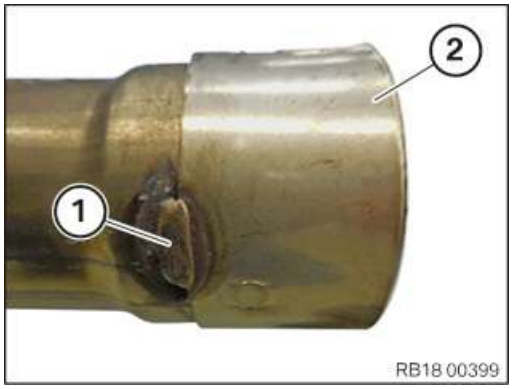
CAUTION

Heavy component.

Heavy components can lead to injury or damage.

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

cardiagn.com



CAUTION

Swarf resulting from sawing or grinding components.

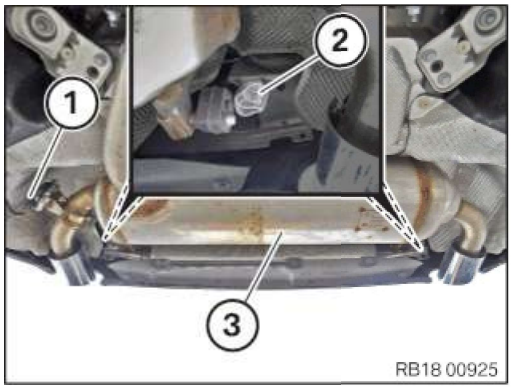
Danger of injury!

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

- **Equipment specification 1 (ribbon clamp)**

  Open the weld seam (1) with a conventional tool.
- Remove ribbon clamp (2).
- Renew the (2) ribbon clamp.

  Parts: Ribbon cable clamp



- Feed in and install the exhaust system (3) with a second person.
- Renew nuts (2).

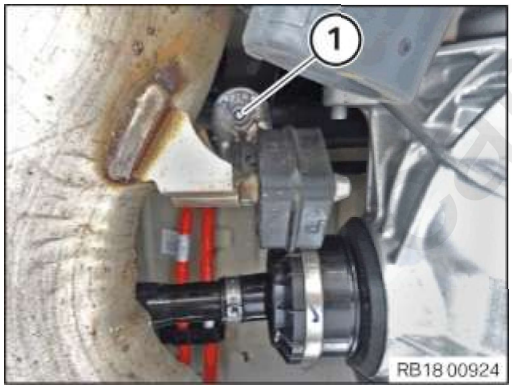
  Parts: Nuts
- Tighten nuts (2).

Rear silencer to body / bumper support

M8	Replace nuts.	Tightening torque	19 Nm

- Connect connectors (1) and lock.

  The connector (1) must engage audibly.



- Renew nut (1).

  Parts: Nut
- Tighten the bolt (1) on the rear axle support.

Exhaust system to rear axle carrier

Nut M8	Renew nut.	Tightening torque	19 Nm



- Renew nut (1).

  Parts: Nut
- Tighten nut (1).

Front pipe / petrol particulate filter on transmission holder

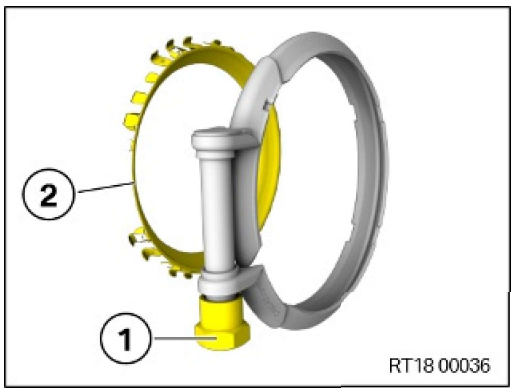
M8	Renew nut.	Tightening torque	19 Nm



- Tighten the ribbon clamp (1).

Exhaust system to catalytic converter

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm

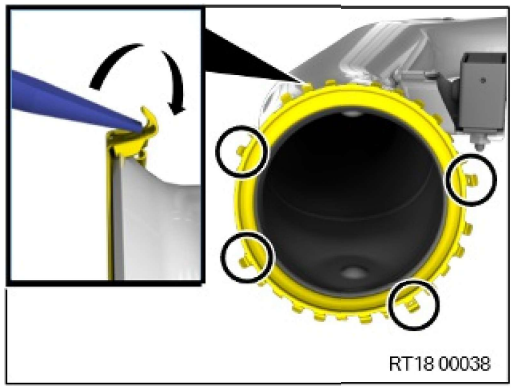


- **Equipment specification 2 (V-clips)**

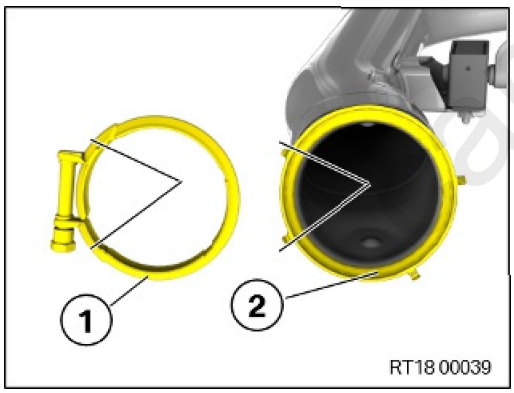
  Renew V-band clamp.

  Parts: V-band clamp

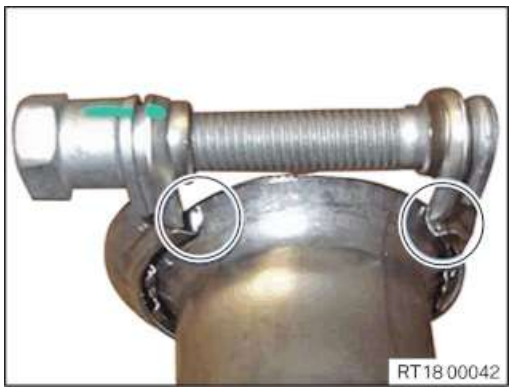
  Unscrew the nut (1) and remove the sealing ring (2).



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

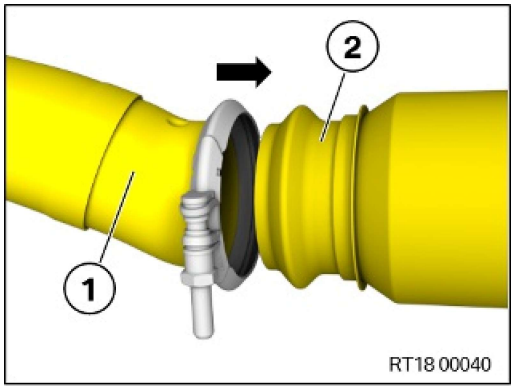


- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).

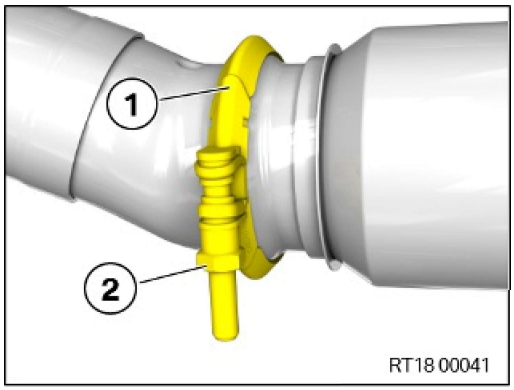


- Ensure that the V-clip rests against the sheet metal tabs in the marked areas after mounting.

cardiagn.com



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

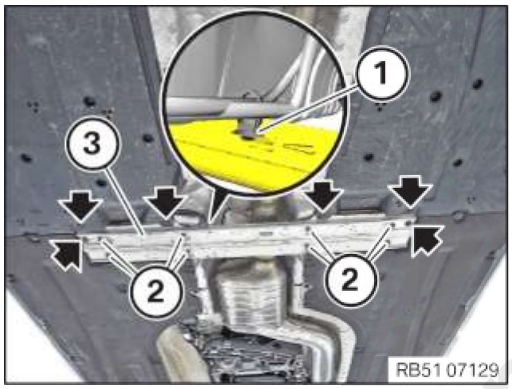


- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

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

10 – Install the connecting supports on the tunnel



- Guide in and install connecting support (3) on the tunnel.
- Tighten the screws (2).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- Tighten screws (arrows).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- **If installed:** Secure clamps (1).

cardiagn.com

Additional Information

Overview of Tightening Torques

Front flexible disc to propeller shaft — Used in step 67

M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

Centre mount to body — Used in step 7

M8		Tightening torque	19 Nm

Heat shield to vehicle underbody			Used in step 8
Screws and nuts		Tightening torque	3 Nm

Rear silencer to body / bumper support			Used in step 9
M8	Replace nuts.	Tightening torque	19 Nm

Exhaust system to rear axle carrier			Used in step 9
Nut M8	Renew nut.	Tightening torque	19 Nm

Front pipe / petrol particulate filter on transmission holder			Used in step 9
M8	Renew nut.	Tightening torque	19 Nm

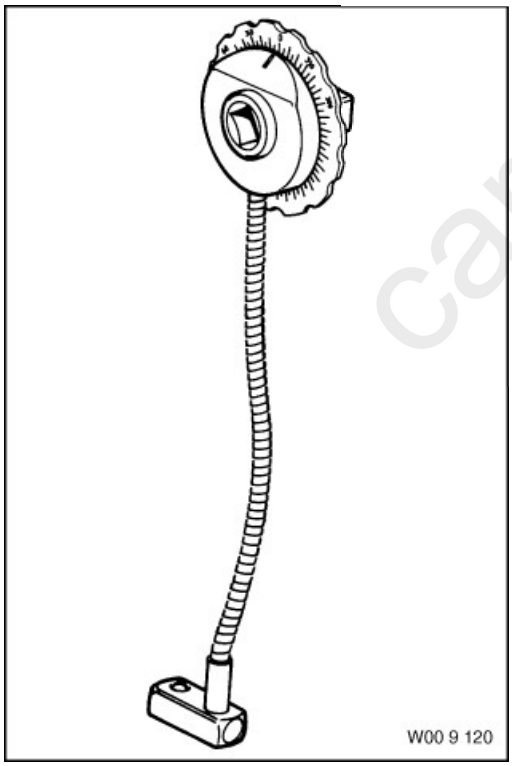
Exhaust system to catalytic converter			Used in step 9
Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm

V-clip to catalytic converter			Used in step 9
V-band clamp	Renew V-band clamp.	Tightening torque	22 Nm

Connecting support to tunnel			Used in step 10
M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

Overview of Special Tools

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



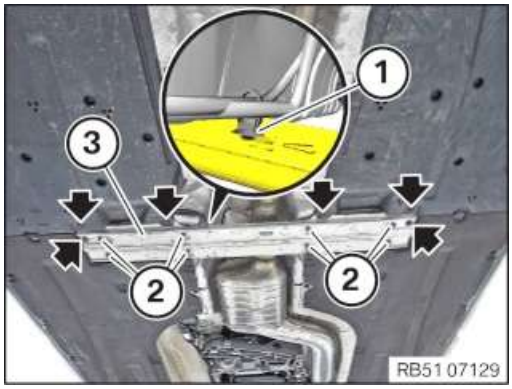
Common	Used in step 7
Usage	For torsion angle adjustment of cylinder head bolts (all engines) And reinforcement plate front axle support E46
Included in the tool or work	
Storage location	A4
Replaced by	
In connection with	
SI-Number	

cardiagn.com

26 11 052 Replacing flexible disc for rear propeller shaft

PRELIMINARY WORK

1 – Remove the connecting support from the tunnel



- Remove screws (arrows).
- **If installed:** Loosen clamp (1).
- Loosen screws (2).
- Guide out and remove connecting support (3) on the tunnel.

2 – Remove complete exhaust system

WARNING

Hot surfaces.

Risk of burning!

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

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.

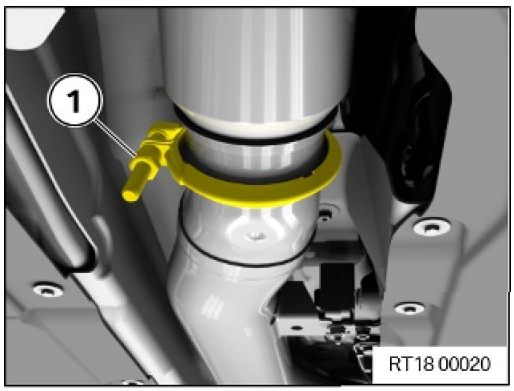
- Remove and install heavy components with the aid of another person/other persons.

cardiagn.com



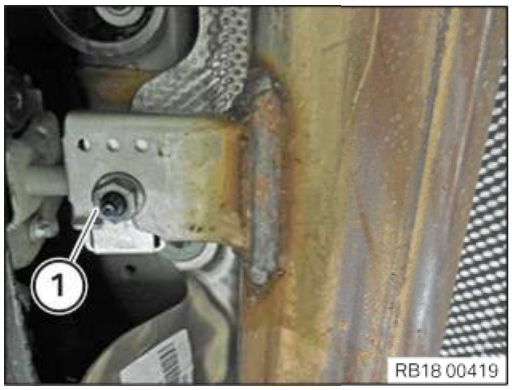
- **Equipment specification 1 (ribbon clamp)**

  Detach the ribbon clamp (1).

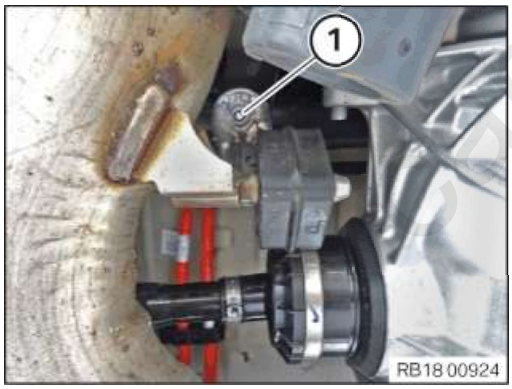


- **Equipment specification 2 (V-clips)**

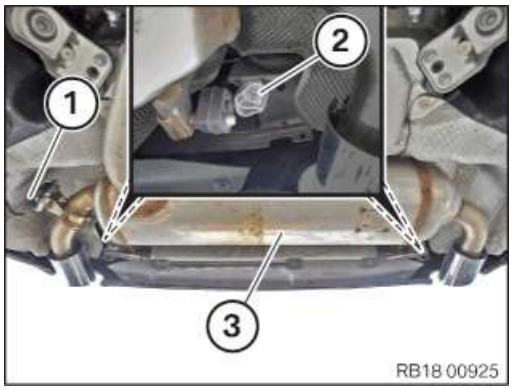
  Unfasten clamp (1).



- Loosen nut (1).



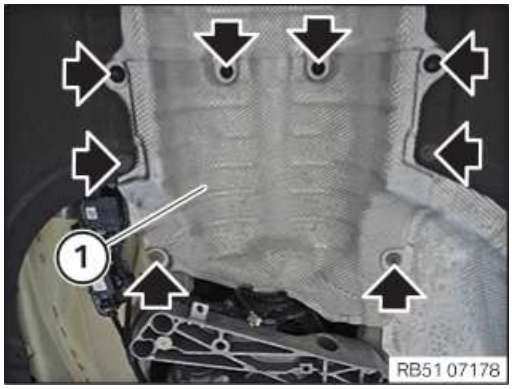
- Release nut (1) on the rear axle support.



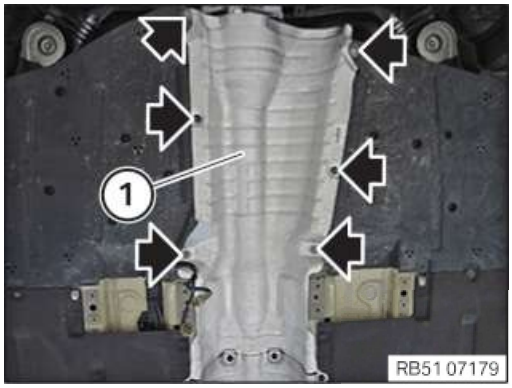
- Unlock plug connection (1) and disconnect.
- Loosen nuts (2).
- Lower and remove the exhaust system (3) with the assistance of a second person.

3 – Remove heat shields

cardiagn.com



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).



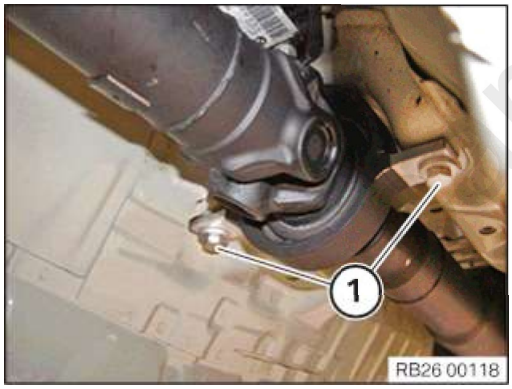
- Loosen bolts and nuts (arrows).
- Remove heat shield (1).

MAIN WORK

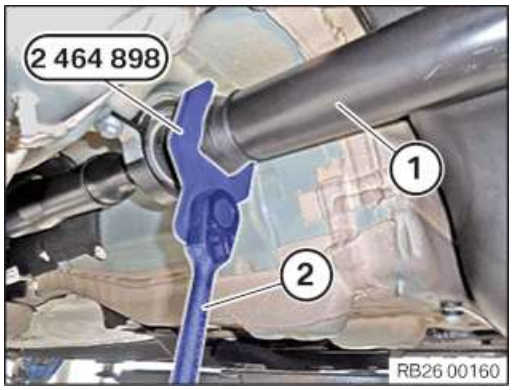
4 – Removing the flexible disc for the rear propeller shaft

TECHNICAL INFORMATION

To protect universal joints, tie back propeller shaft in area of centre mount.

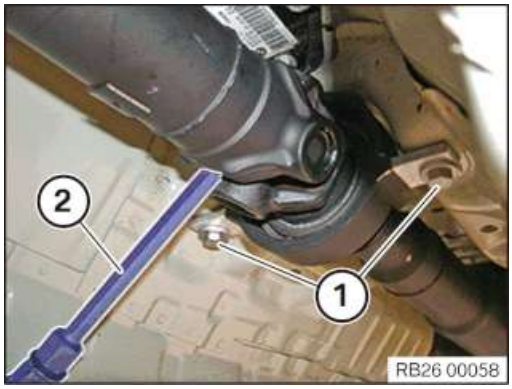


- Loosen screws (1).

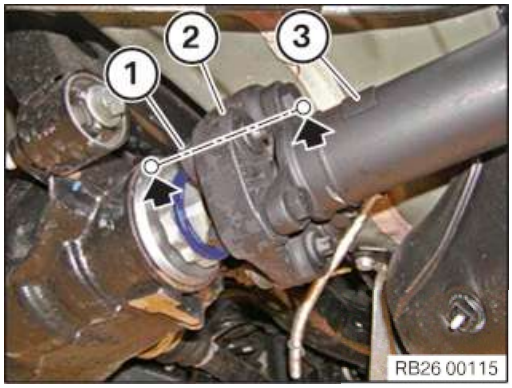


- **Vehicles with a narrow universal joint:**
- Using the special tool 2 464 898 and a suitable tool (2), secure the propeller shaft (1) to the centre universal joint against twisting.

rdiag.com

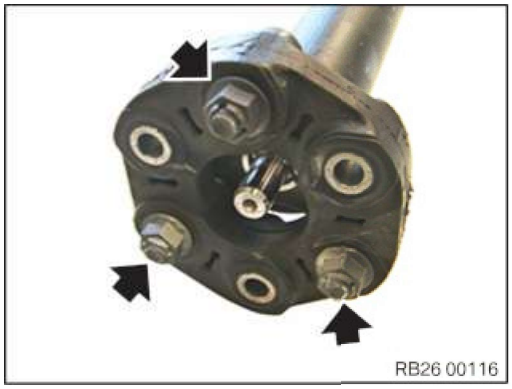


- **Vehicles with a broad universal joint:**
- Secure the propeller shaft against twisting at the central universal joint using a suitable tool (2).
- Only after opening the screws on the three-hole flange should the screws (1) be completely removed.



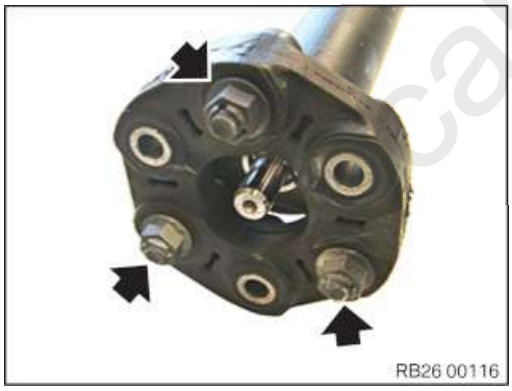
- Mark the installation position of the three-hole flange (1), the flexible disc (2) and the propeller shaft (3) on the same level (arrows).

  The identification allows the three-hole flange and the propeller shaft to be installed at the same position. This guarantees that the three-hole punch for the rear axle differential will once again be balanced with the propeller shaft after installation.
- Detach the propeller shaft (3) at the three-hole flange (1) and at the centre mount.



- Release screws (arrows) and remove flexible disc from the propeller shaft.

5 – Install the flexible disc for the rear propeller shaft

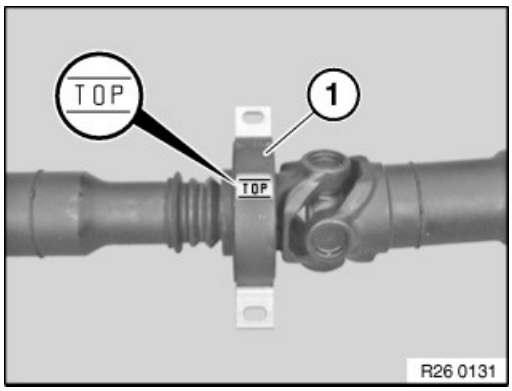


- Renew screws and self-locking nuts.

  Parts: Self-locking nuts and screws
- Mount the flexible disc on the propeller shaft and tighten the bolts (arrows).

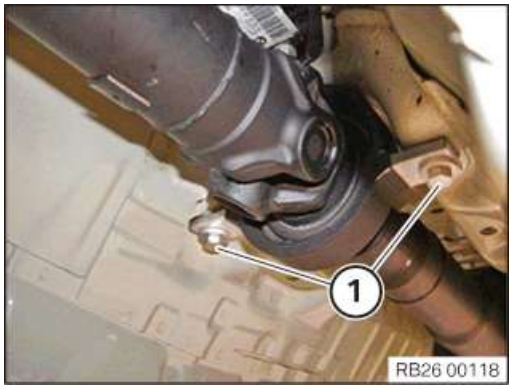
Flexible disc, rear, to propeller shaft

M12	Renew screws and nuts. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

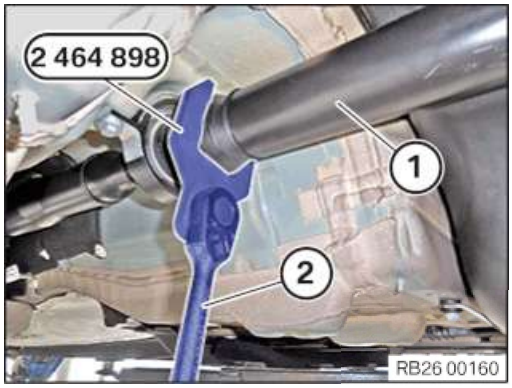


- **Centre mount with TOP marking:**
- The centre mount (1) must be installed with the TOP marking at the top in the gearbox tunnel.

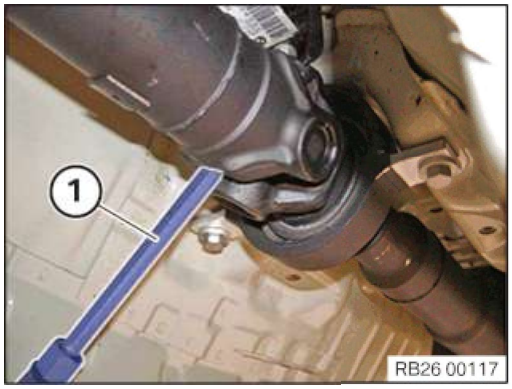
cardiagn.com



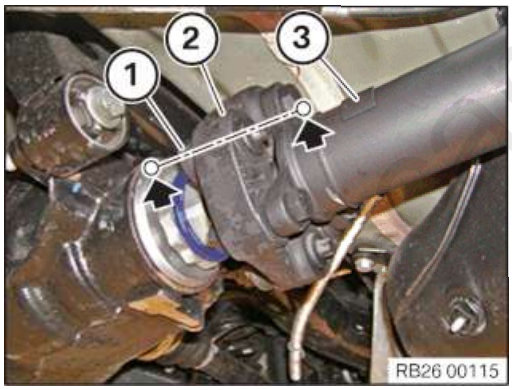
- Position centre mount.
- Position screws (1).



- **Drive shaft with a narrow universal joint:**
- Using the special tool 2 464 898 and a suitable tool (2), secure the propeller shaft (1) to the centre universal joint against twisting.



- **Drive shaft with a wide universal joint:**
- Secure the propeller shaft against twisting at the central universal joint using a suitable tool (1).

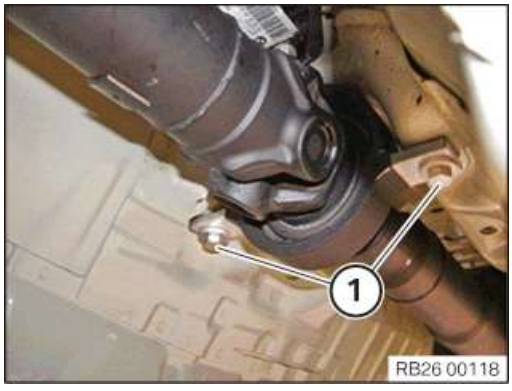


- Assemble the three-hole flange (1), flexible disc (2) and propeller shaft (3) in the same position that was marked during the removal.
- Renew screws.

  Parts: Bolts
- Tighten the screws.

Rear flexible disc to three-hole flange

M12	Renew screws. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °



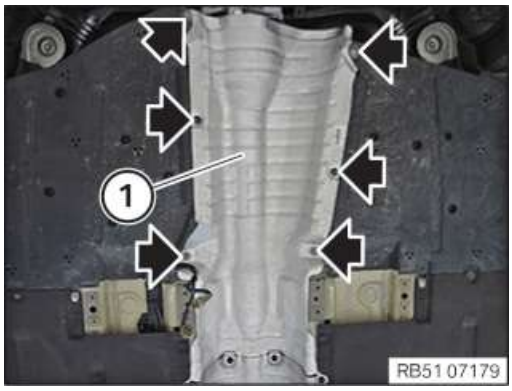
- Tighten the screws (1).

Centre mount to body

M8		Tightening torque	19 Nm

mydiagn.com

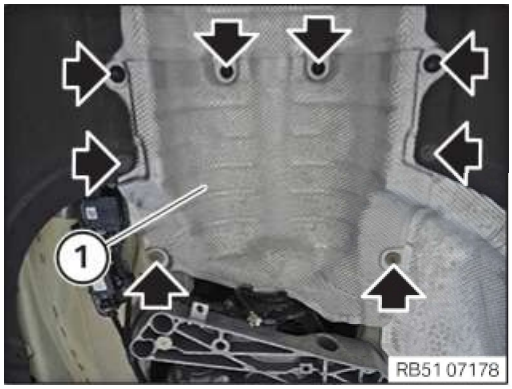
6 – Install the heat shields



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm

7 – Installing the complete 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.

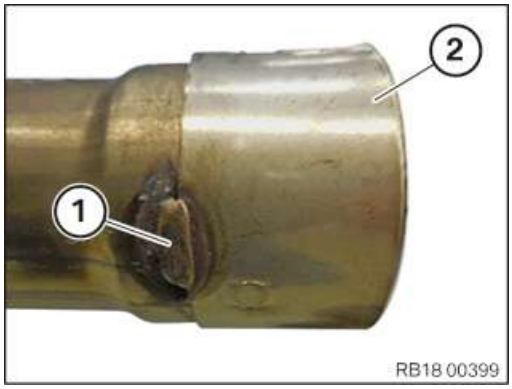
CAUTION

Heavy component.

Heavy components can lead to injury or damage.

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

cardiagn.com



CAUTION

Swarf resulting from sawing or grinding components.

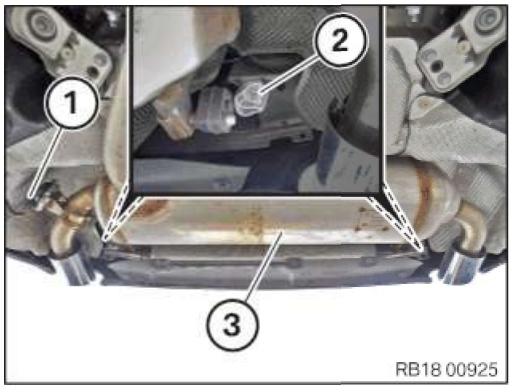
Danger of injury!

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

- **Equipment specification 1 (ribbon clamp)**

  Open the weld seam (1) with a conventional tool.
- Remove ribbon clamp (2).
- Renew the (2) ribbon clamp.

  Parts: Ribbon cable clamp



- Feed in and install the exhaust system (3) with a second person.
- Renew nuts (2).

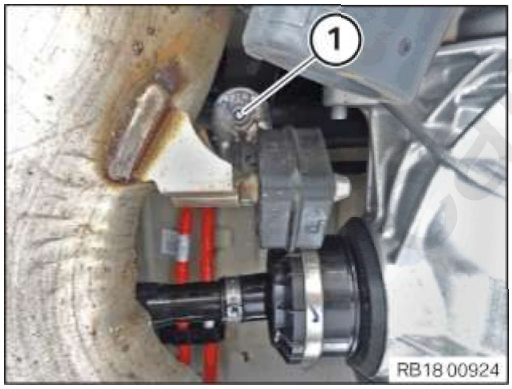
  Parts: Nuts
- Tighten nuts (2).

Rear silencer to body / bumper support

M8	Replace nuts.	Tightening torque	19 Nm

- Connect connectors (1) and lock.

  The connector (1) must engage audibly.



- Renew nut (1).

  Parts: Nut
- Tighten the bolt (1) on the rear axle support.

Exhaust system to rear axle carrier

Nut M8	Renew nut.	Tightening torque	19 Nm



- Renew nut (1).

  Parts: Nut
- Tighten nut (1).

Front pipe / petrol particulate filter on transmission holder

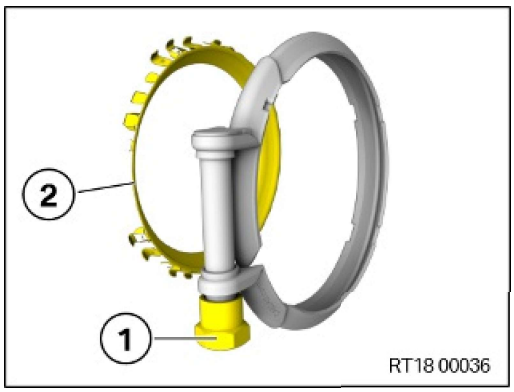
M8	Renew nut.	Tightening torque	19 Nm



- Tighten the ribbon clamp (1).

Exhaust system to catalytic converter

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm

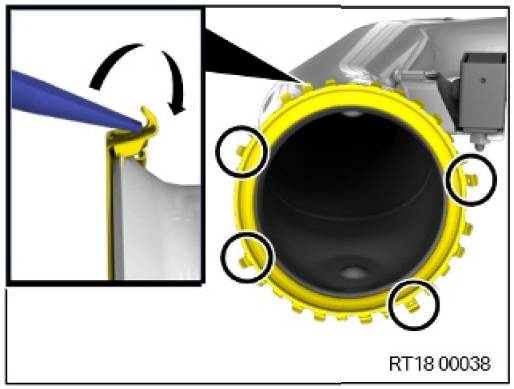


- **Equipment specification 2 (V-clips)**

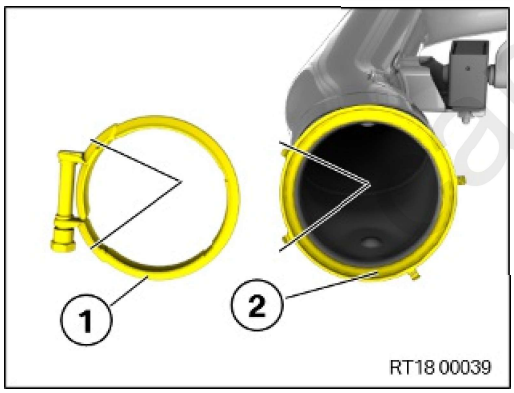
  Renew V-band clamp.

  Parts: V-band clamp

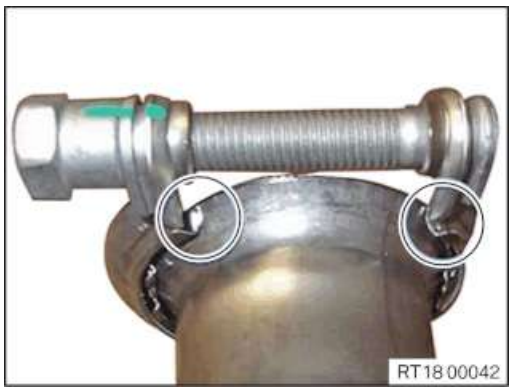
  Unscrew the nut (1) and remove the sealing ring (2).



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

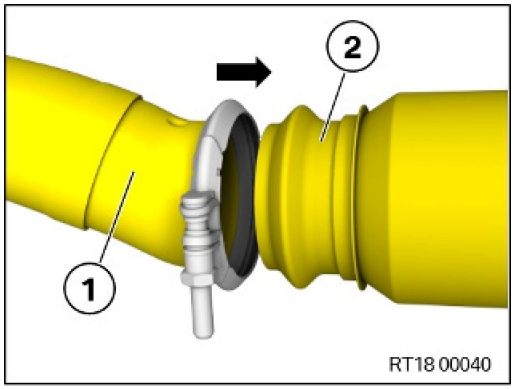


- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).

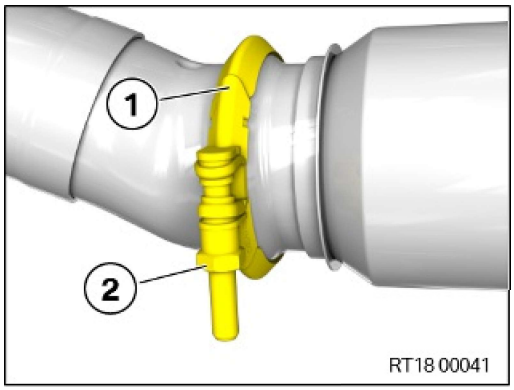


- Ensure that the V-clip rests against the sheet metal tabs in the marked areas after mounting.

cardiagn.com



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

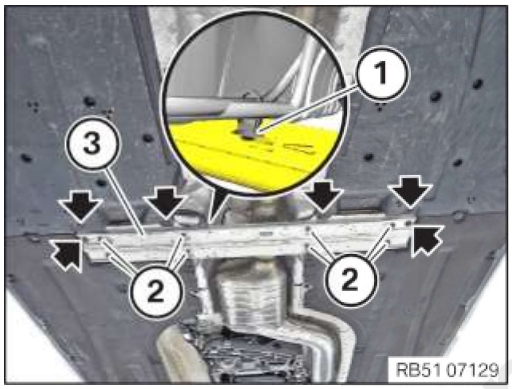


- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

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

8 – Install the connecting supports on the tunnel



- Guide in and install connecting support (3) on the tunnel.
- Tighten the screws (2).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- Tighten screws (arrows).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- **If installed:** Secure clamps (1).

Additional Information

Overview of Tightening Torques

Flexible disc, rear, to propeller shaft Used in step 5

M12	Renew screws and nuts. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

cardiagn.com

Rear flexible disc to three-hole flange — Used in step 5

M12	Renew screws. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

Centre mount to body — Used in step 5

M8		Tightening torque	19 Nm

Heat shield to vehicle underbody — Used in step 6

Screws and nuts		Tightening torque	3 Nm

Rear silencer to body / bumper support — Used in step 7

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust system to rear axle carrier — Used in step 7

Nut M8	Renew nut.	Tightening torque	19 Nm

Front pipe / petrol particulate filter on transmission holder — Used in step 7

M8	Renew nut.	Tightening torque	19 Nm

Exhaust system to catalytic converter — Used in step 7

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm

V-clip to catalytic converter — Used in step 7

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

Connecting support to tunnel — Used in step 8

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

Overview of Special Tools

2 464 898 Open-end spanner



Common — Used in step 45

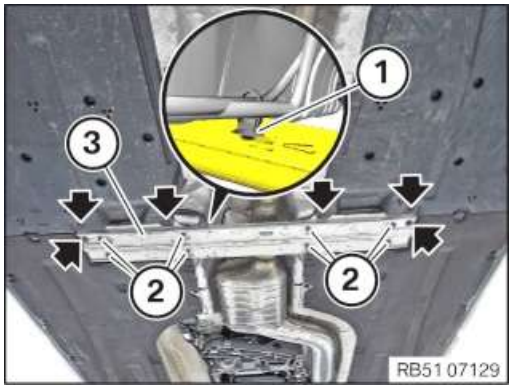
Usage	Open-end spanner SW50 for disassembly and installation of the propeller shaft on rear axle differential. The silhouette foil is included in the delivery specification.
Included in the tool or work	
Storage location	A7
Replaced by	
In connection with	
SI-Number	01 19 18 (579)

cardiagn.com

26 12 001 Replacing complete propeller shaft centre bearing

PRELIMINARY WORK

1 – Remove the connecting support from the tunnel



- Remove screws (arrows).
- **If installed:** Loosen clamp (1).
- Loosen screws (2).
- Guide out and remove connecting support (3) on the tunnel.

2 – Remove complete exhaust system

WARNING

Hot surfaces.

Risk of burning!

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

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.

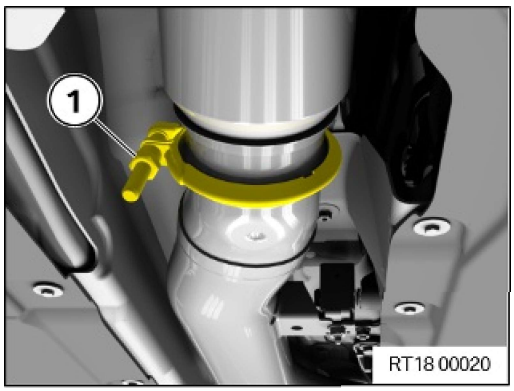
- Remove and install heavy components with the aid of another person/other persons.

cardiagn.com



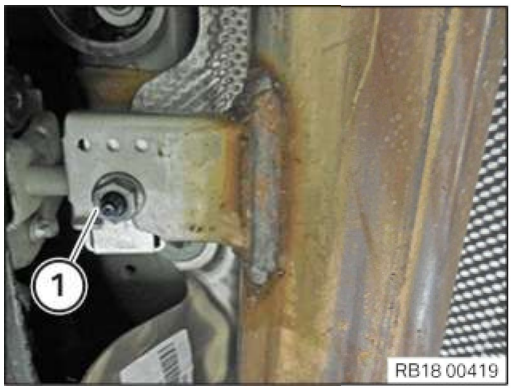
- **Equipment specification 1 (ribbon clamp)**

  Detach the ribbon clamp (1).

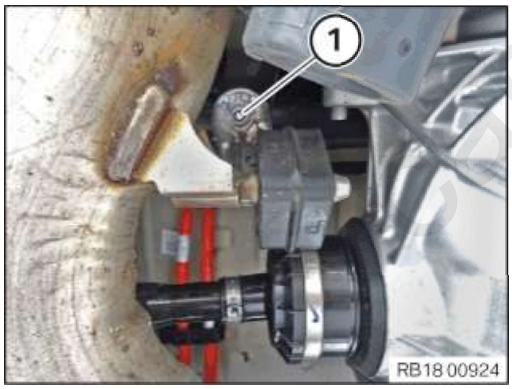


- **Equipment specification 2 (V-clips)**

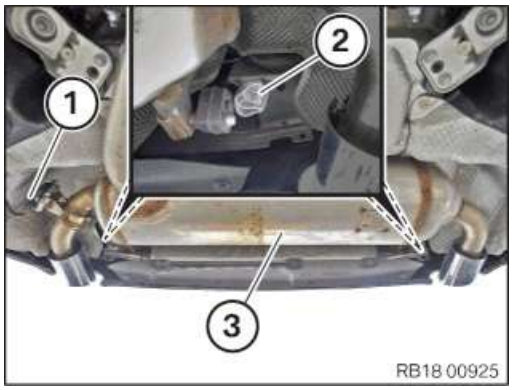
  Unfasten clamp (1).



- Loosen nut (1).



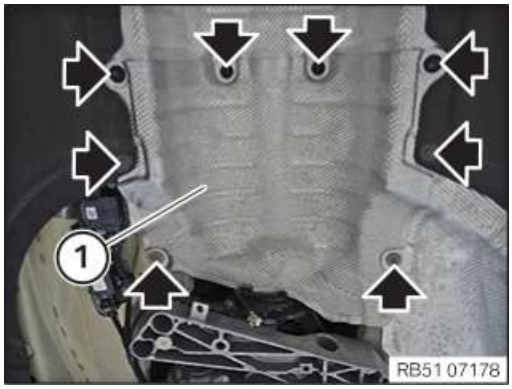
- Release nut (1) on the rear axle support.



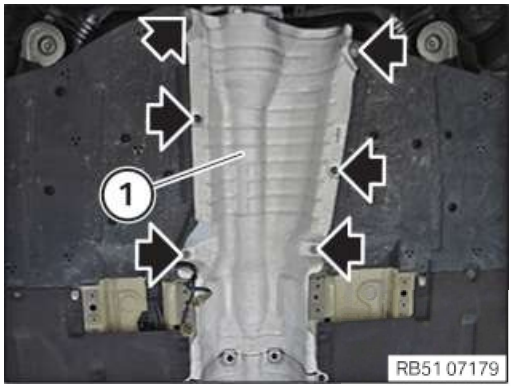
- Unlock plug connection (1) and disconnect.
- Loosen nuts (2).
- Lower and remove the exhaust system (3) with the assistance of a second person.

3 – Remove heat shields

cardiagn.com



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).

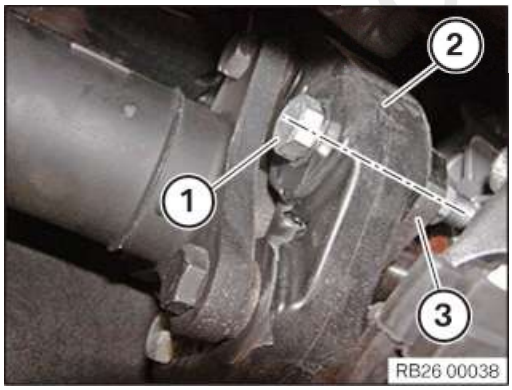
4 – Completely removing the propeller shaft (plug-in - rear flexible disc)

RISK OF DAMAGE

Damage to propeller shaft during removal.

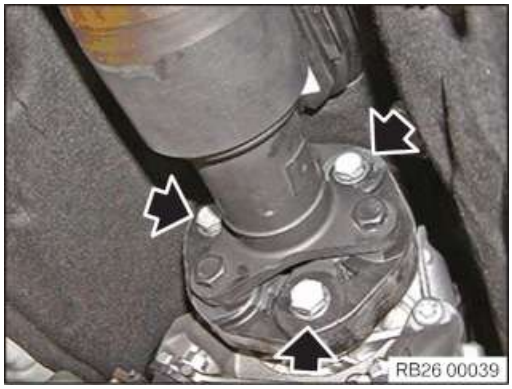
Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- 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.

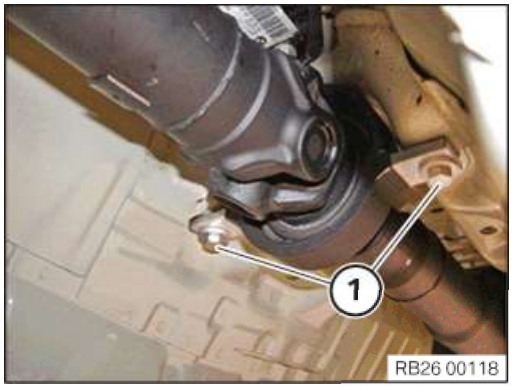


- In order to avoid a humming noise of the drivetrain after reinstalling the propeller shaft:
  - The flexible disc connection (1) on the front at the propeller shaft **must** be marked in one plane with the flexible disc (2) and the three-bolt flange (3) before loosening.
  - During installation the three-bolt flange (3) must be forced back together again with the flexible disc (2) in the same position.

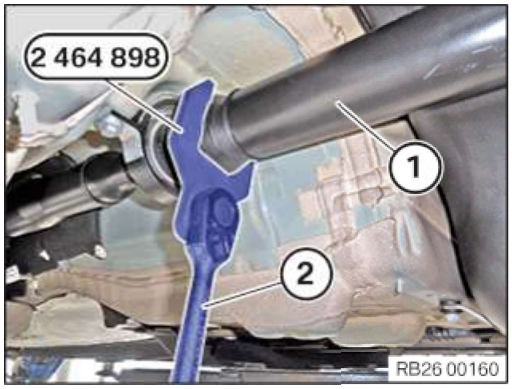
carmagn.com



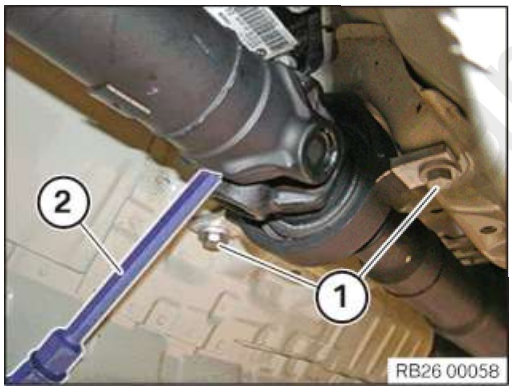
- Remove screws (arrows).



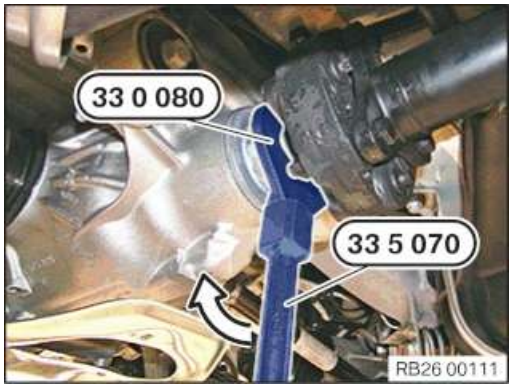
- Loosen screws (1).



- **Vehicles with a narrow universal joint:**
- Using the special tool 2 464 898 and a suitable tool (2), secure the propeller shaft (1) to the centre universal joint against twisting.



- **Vehicles with a broad universal joint:**
- Secure the propeller shaft against twisting at the central universal joint using a suitable tool (2).
- Do not remove the bolts (1) of the centre mount completely until the recessed nut has been opened.



RISK OF DAMAGE

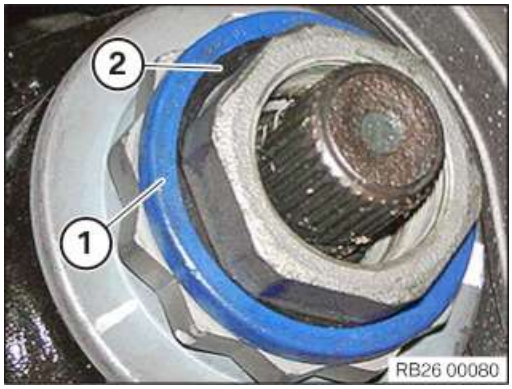
Damage to rear axle differential.

Non-observance of the removal and installation guidelines may cause severe damage to the rear axle differential.

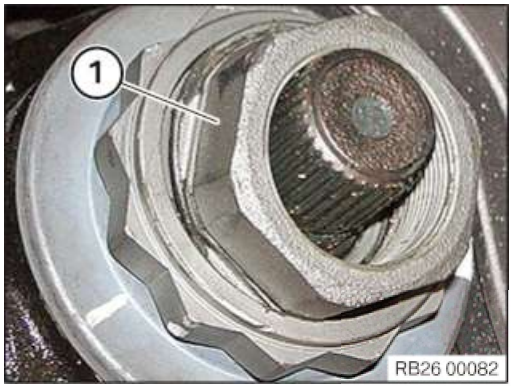
- Do not use the double hexagon head flange nut as counter support.

- Loosen the recessed nut **in clockwise direction, see the direction of the arrow,** using special tools 0 495 554 (33 5 070) and .

rdiagn.com



- Remove mounting clip (1) and gasket (2).

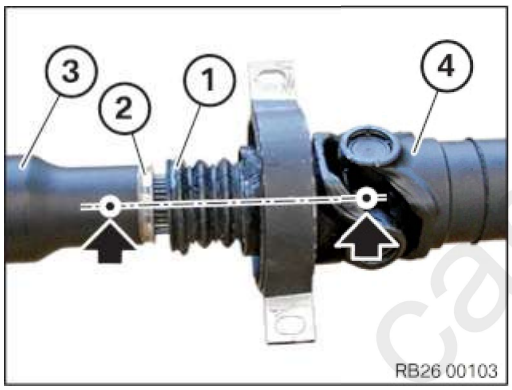


- Remove recessed nut (1).

MAIN WORK

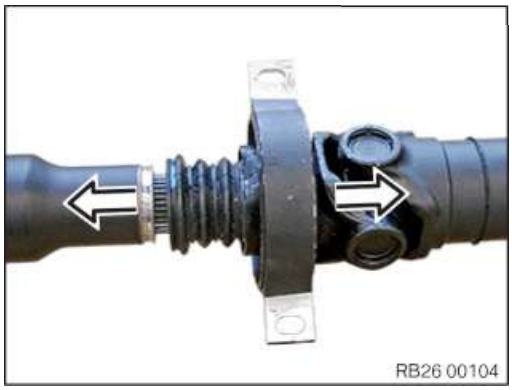
5 – Removing the centre mount of the propeller shaft

▸ **Removing the gaiter of the centre mount**



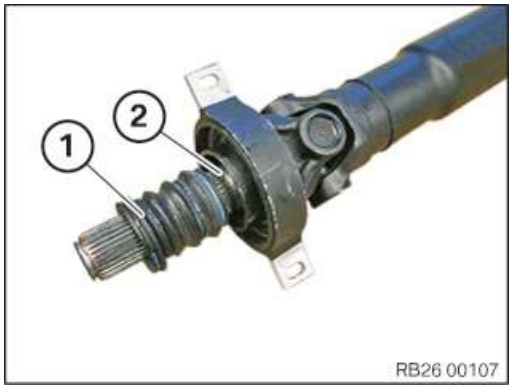
- Pull off the gaiter (1) from the groove (2).
- Mark the alignment of the installation positions of the front propeller shaft (3) and the rear propeller shaft (4).

  The identification allows the front and rear propeller shafts to be installed at the same position. This guarantees that the propeller shaft will once again be balanced within the system following installation.

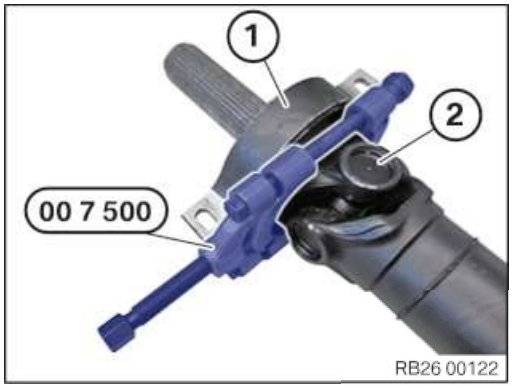


- Pull apart the propeller shaft in the direction of the arrow.

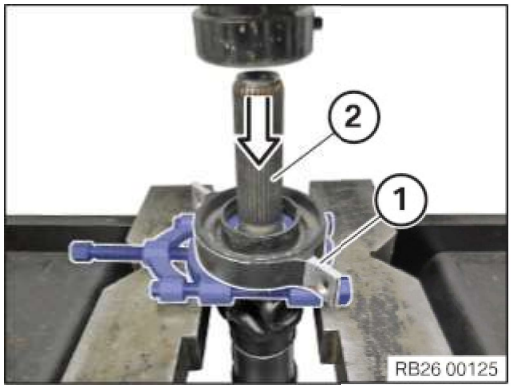
cardiagn.com



- Release the gaiter (1) from the groove (2) using a screwdriver and pull it off over the longitudinal splines.

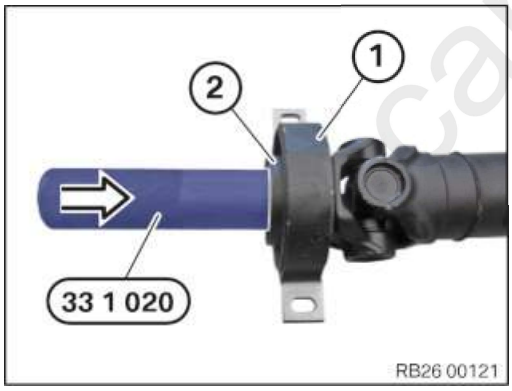


- Install the special tool between the centre mount (1) and the propeller shaft (2).



- Use the hydraulic press to push the centre mount (1) off the propeller shaft (2).

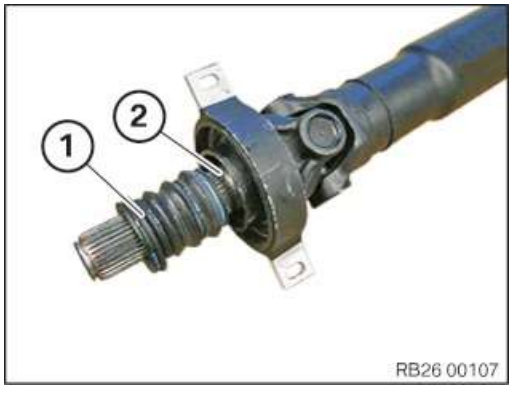
6 – Installing the centre mount on the propeller shaft



- Push the centre mount (1) onto the propeller shaft.

  The collar (2) must point toward the front propeller shaft in the direction of travel.
- Push on the centre mount up to limit position with the special tool .

▸ **Installing the gaiter of the centre mount**

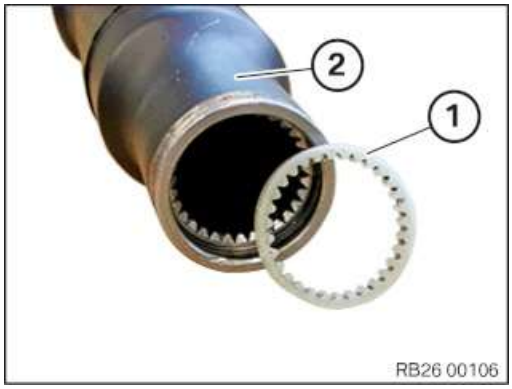


- Evenly grease the longitudinal splines of the propeller shaft.
- Push in the gaiter (1) onto the groove (2) and make sure it is securely positioned.

Expendable materials

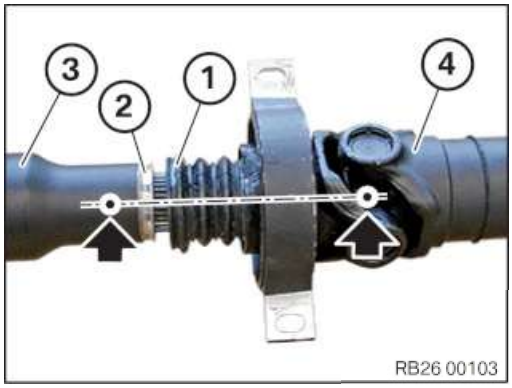
Lubricating grease Olistamoly 2 LN 584 LO	100 g, Tube	83 19 0 447 919

cardiagn.com



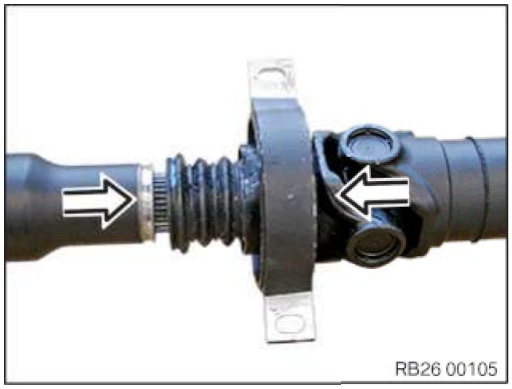
- If applicable, renew the clamping ring (1) and insert it in the front propeller shaft (2).

  Parts: Clamping ring



- Push the front propeller shaft (3) onto the longitudinal splines of the rear propeller shaft (4) as per the individually applied marks.

  The marks (arrows) must be aligned.
- Push in the gaiter (1) onto the groove (2) and make sure it is securely positioned.



- Push the propeller shaft together in the direction of the arrow.

POSTPROCESSES

7 – Completely installing the propeller shaft (plug-in - rear flexible disc)

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.

cardiagn.com

- Observe following installation sequence:
  - Position propeller shaft on transmission.
  - Position the propeller shaft at the rear axle differential.
  - Position centre mount.
- Observe the following screwing sequence:
  - Insert nut
  - Flexible disc to transmission
  - Centre mount



- Check the centering (arrow) for damage, renew if required.

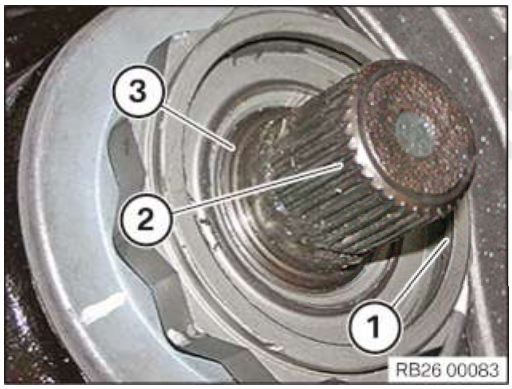


- Apply a thin coat of grease to the soft centring (1), if necessary.

Expendable materials

Lubricating grease Olistamoly 2 LN 584 LO	100 g, Tube	83 19 0 447 919

- Hard centring (2) must **not** be greased.



- Clean all residue from the insert collar (1) of the flange nut and the gearing on the bevel pinion (2) and degrease them.
- Top up the collar insert (1)with grease.

Expendable materials

Lubricating grease Optitemp HT 1 LF	50 g, Tube	83230417754

rdiagn.com



RISK OF DAMAGE

Damage to the output flange.

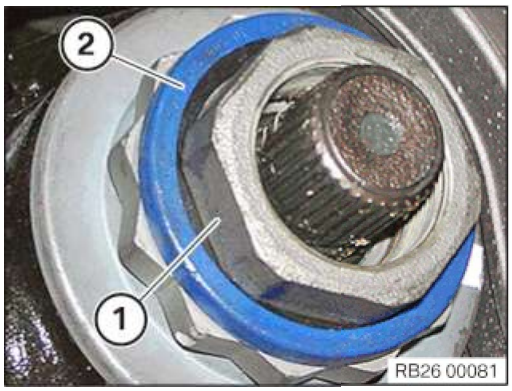
Failure to observe the greasing specifications may lead to damage on the output flange.

- Do not contaminate the thread of the output flange with grease.

- Clean thread (1) of flange off adhesive residue.
- Clean gearing (2).
- Grease gearing (2).

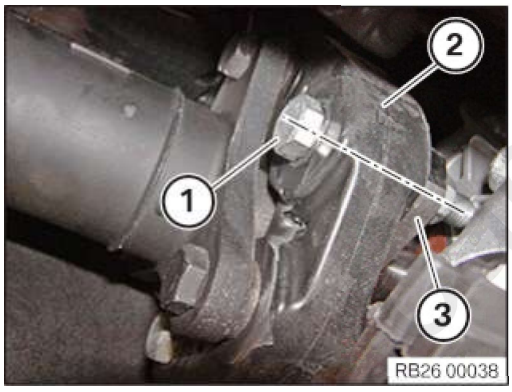
Expendable materials

Lubricating grease Optitemp HT 1 LF	50 g, Tube	83230417754



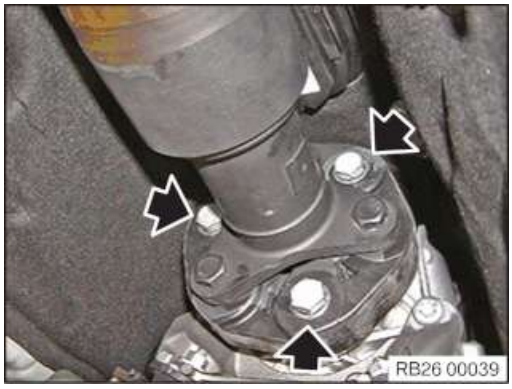
- Renew the seal, recessed nut (1) and the mounting clip (2).

  Parts: Seal, recessed nut and mounting clip
- Insert recessed nut (1) including gasket into collar insert of the flange nut.
- Install the mounting clip (2).



- In order to avoid a humming noise of the drivetrain after reinstalling the propeller shaft: It is essential to reassemble the three-hole flange (3) with the flexible disc (2) in the same position.
- Renew ZNS screws and the self-locking nuts (1).

  Parts: ZNS screws, self-locking nuts

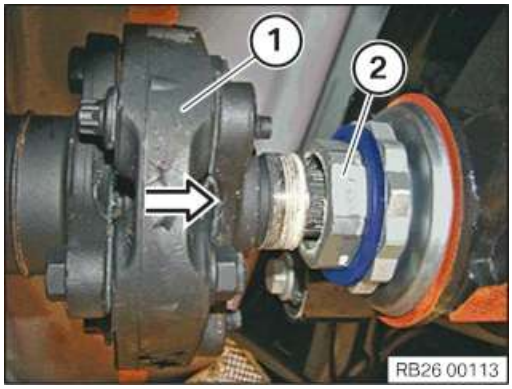


- Position the screws and nuts (arrows).
- Tighten the screws.

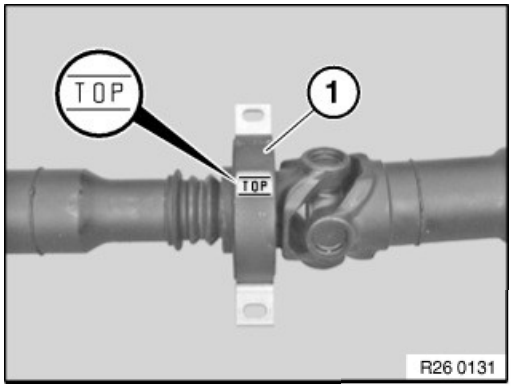
Front flexible disc to propeller shaft

M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

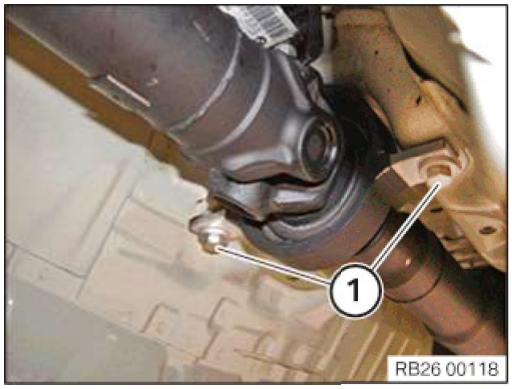
ardiagn.com



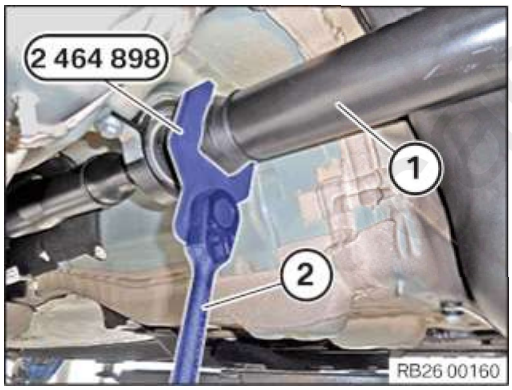
- Push the propeller shaft (1) in the direction of the arrow against the recessed nut (2) up to the limit position.
- Manually screw on and tighten the recessed nut (2) onto the propeller shaft (1) by a minimum of two threads.



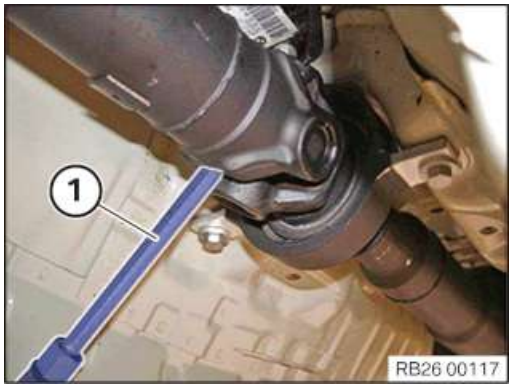
- **Centre mount with TOP marking:**
- The centre mount (1) must be installed with the TOP marking at the top in the gearbox tunnel.



- Position centre mount.
- Position screws (1).



- **Propeller shaft with a narrow universal joint:**
- Using the special tool 2 464 898 and a suitable tool (2), secure the propeller shaft (1) to the centre universal joint against twisting.



- **Propeller shaft with a broad universal joint:**
- Secure the propeller shaft against twisting at the central universal joint using a suitable tool (1).

rdiagn.com



RISK OF DAMAGE

Damage to the flange nut.

Failure to observe the installation specifications may lead to serious damage to the flange nut and the rear axle differential.

- Do not use the double hexagon flange nut as counter support.
- Screw in the recessed nut within 5 minutes.

- Screw in the recessed nut **counter-clockwise, see direction of arrow** with special tools 0 495 554 (33 5 070) and .

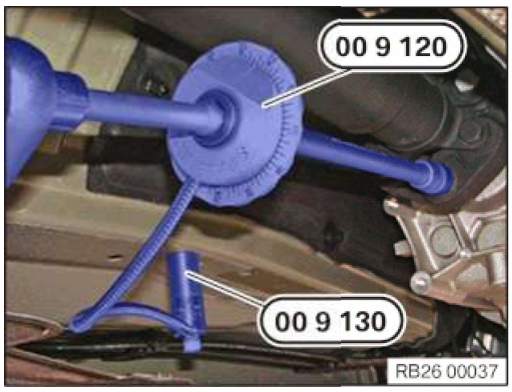
  The recessed nut must be screwed in within 5 min .

Propeller shaft on the rear axle differential

Insert nut		Tightening torque	100 Nm

- **After the propeller shaft is installed and the recessed nut is screwed in, strictly observe a hardening time of minimum 3 hours.**

  Do not move or push the vehicle during this time!

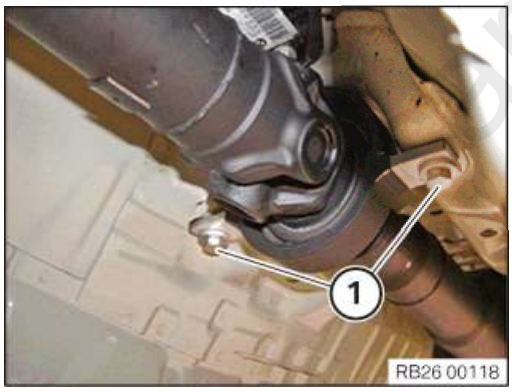


- Brace mounting bolts of flexible disc on nut and tighten by screw.

Rear flexible disc to three-hole flange

M12	Renew screws. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

- Secure the special angle of rotation tool 0 490 504 (00 9 120) with the magnets to the vehicle underbody and screw it further depending on the angle of rotation.

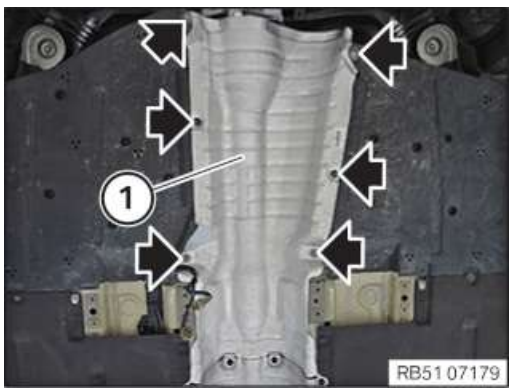


- Tighten the screws (1).

Centre mount to body

M8		Tightening torque	19 Nm

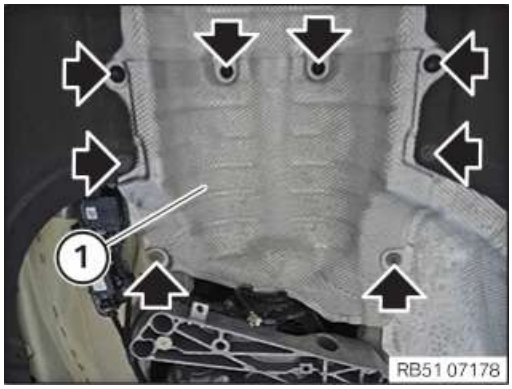
8 – Install the heat shields



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm

9 – Installing the complete exhaust system

CAUTION

Component with heavy weight.

Danger of injury!

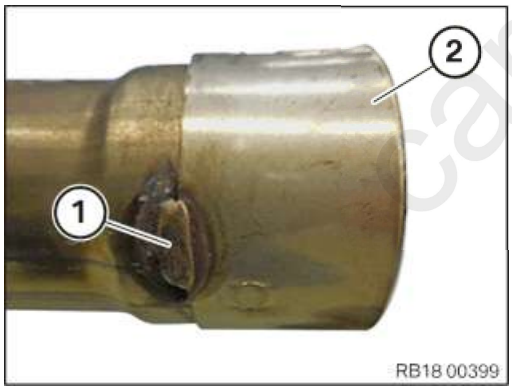
- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

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



CAUTION

Swarf resulting from sawing or grinding components.

Danger of injury!

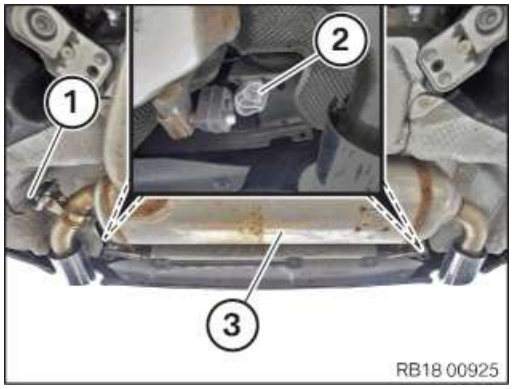
- Conduct all work in appropriate personal protective equipment only.
- Wear safety goggles and protective gloves.

- **Equipment specification 1 (ribbon clamp)**

  Open the weld seam (1) with a conventional tool.
- Remove ribbon clamp (2).
- Renew the (2) ribbon clamp.

  Parts: Ribbon cable clamp

cardiagn.com



- Feed in and install the exhaust system (3) with a second person.
- Renew nuts (2).

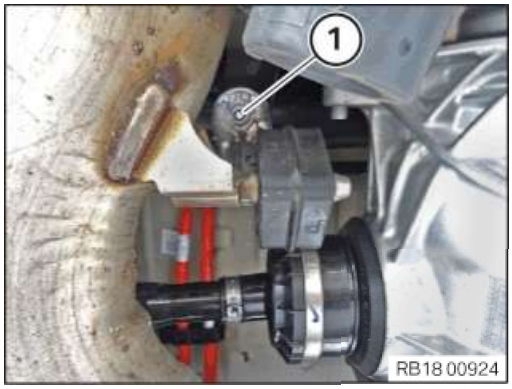
  Parts: Nuts
- Tighten nuts (2).

Rear silencer to body / bumper support

M8	Replace nuts.	Tightening torque	19 Nm

- Connect connectors (1) and lock.

  The connector (1) must engage audibly.

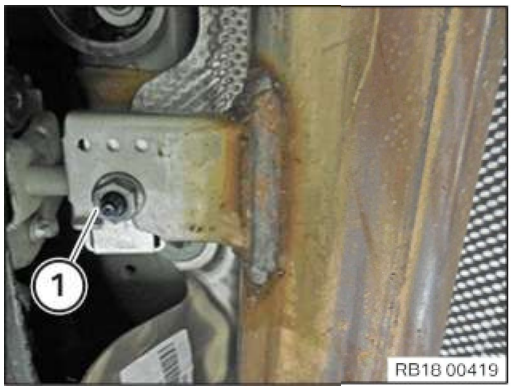


- Renew nut (1).

  Parts: Nut
- Tighten the bolt (1) on the rear axle support.

Exhaust system to rear axle carrier

Nut M8	Renew nut.	Tightening torque	19 Nm

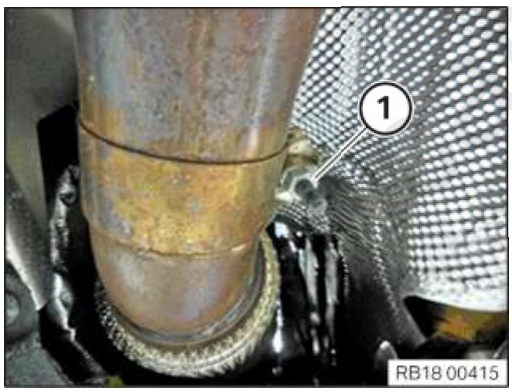


- Renew nut (1).

  Parts: Nut
- Tighten nut (1).

Front pipe / petrol particulate filter on transmission holder

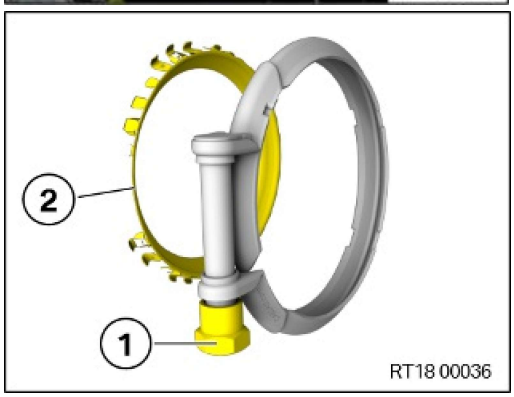
M8	Renew nut.	Tightening torque	19 Nm



- Tighten the ribbon clamp (1).

Exhaust system to catalytic converter

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm



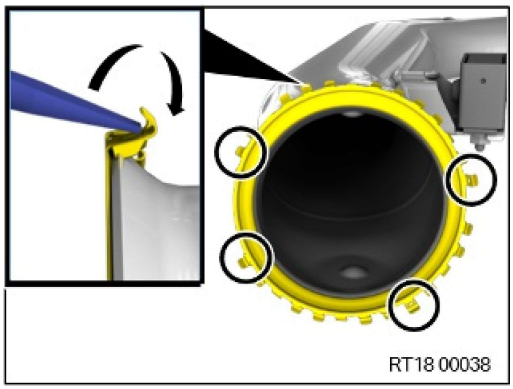
- **Equipment specification 2 (V-clips)**

  Renew V-band clamp.

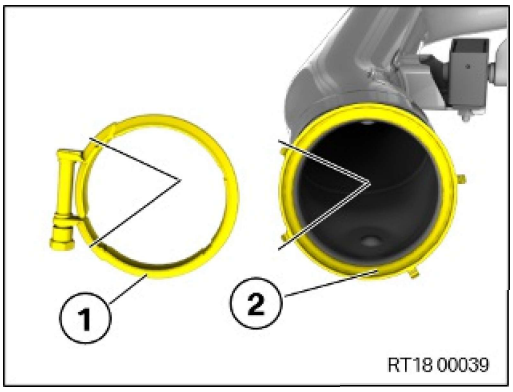
  Parts: V-band clamp

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

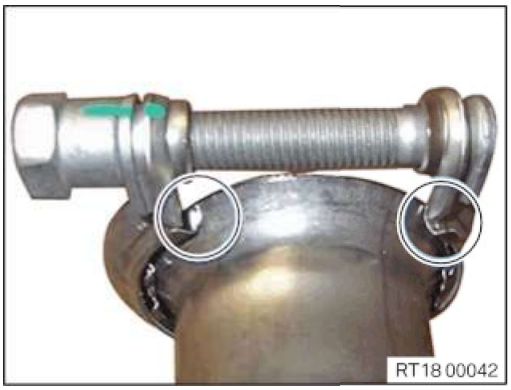
diag.com



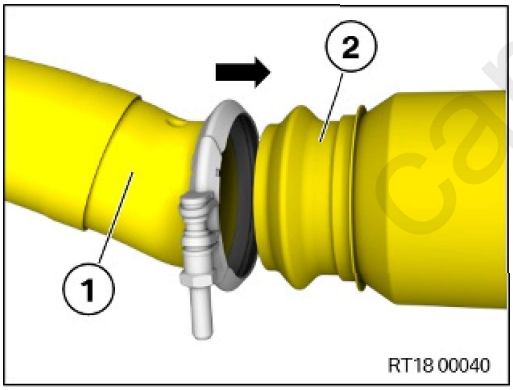
- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.



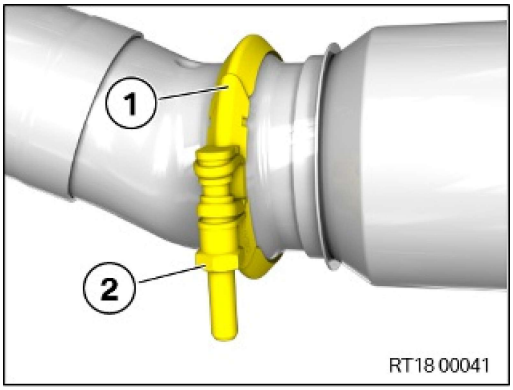
- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).



- Ensure that the V-clip rests against the sheet metal tabs in the marked areas after mounting.



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



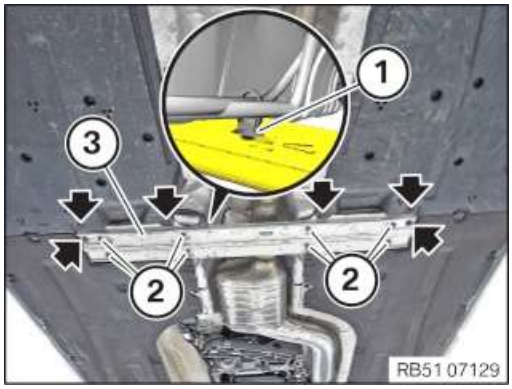
- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

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

10 – Install the connecting supports on the tunnel

cardiagn.com



- Guide in and install connecting support (3) on the tunnel.
- Tighten the screws (2).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- Tighten screws (arrows).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- **If installed:** Secure clamps (1).

Additional Information

Overview of Tightening Torques

Front flexible disc to propeller shaft — Used in step 7

M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

Propeller shaft on the rear axle differential — Used in step 7

Insert nut		Tightening torque	100 Nm

Rear flexible disc to three-hole flange — Used in step 7

M12	Renew screws. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

Centre mount to body — Used in step 7

M8		Tightening torque	19 Nm

Heat shield to vehicle underbody — Used in step 8

Screws and nuts		Tightening torque	3 Nm

Rear silencer to body / bumper support — Used in step 9

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust system to rear axle carrier — Used in step 9

Nut M8	Renew nut.	Tightening torque	19 Nm

Front pipe / petrol particulate filter on transmission holder — Used in step 9

M8	Renew nut.	Tightening torque	19 Nm

cardiagn.com

Exhaust system to catalytic converter Used in step 9

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm

V-clip to catalytic converter Used in step 9

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

Connecting support to tunnel Used in step 10

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

Overview of Special Tools

2 464 898 Open-end spanner



Common Used in step 47

Usage	Open-end spanner SW50 for disassembly and installation of the propeller shaft on rear axle differential. The silhouette foil is included in the delivery specification.
Included in the tool or work	
Storage location	A7
Replaced by	
In connection with	
SI-Number	01 19 18 (579)

0 495 554 (33 5 070) Extension



Common Used in step 47

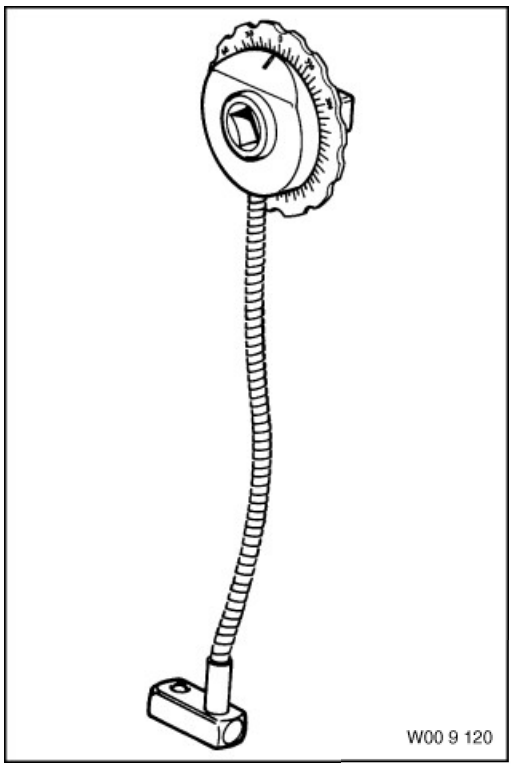
Usage	Pull-out extension for 33 5 040, 33 5 050, 33 5 060.
Included in the tool or work	
Storage location	A18
Replaced by	
In connection with	
SI-Number	01 21 06 (300)

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	

cartagn.com

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



Common Used in step 7

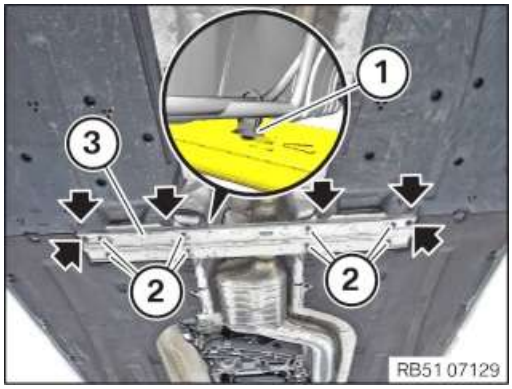
Usage	For torsion angle adjustment of cylinder head bolts (all engines) And reinforcement plate front axle support E46
Included in the tool or work	
Storage location	A4
Replaced by	
In connection with	
SI-Number	

cardiagn.com

26 12 011 Replacing grooved ball bearing in propeller shaft centre bearing

PRELIMINARY WORK

1 – Remove the connecting support from the tunnel



- Remove screws (arrows).
- **If installed:** Loosen clamp (1).
- Loosen screws (2).
- Guide out and remove connecting support (3) on the tunnel.

2 – Remove complete exhaust system

WARNING

Hot surfaces.

Risk of burning!

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

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.

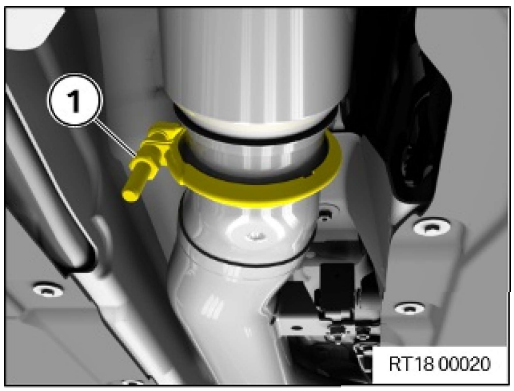
- Remove and install heavy components with the aid of another person/other persons.

cardiagn.com



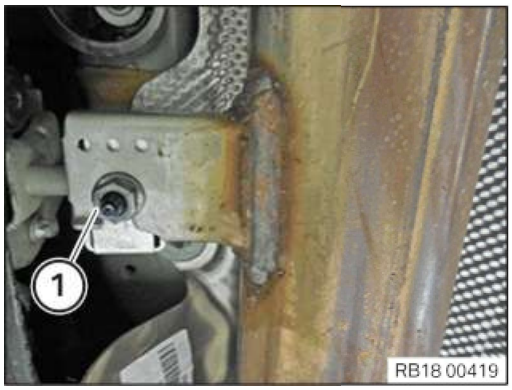
- **Equipment specification 1 (ribbon clamp)**

  Detach the ribbon clamp (1).

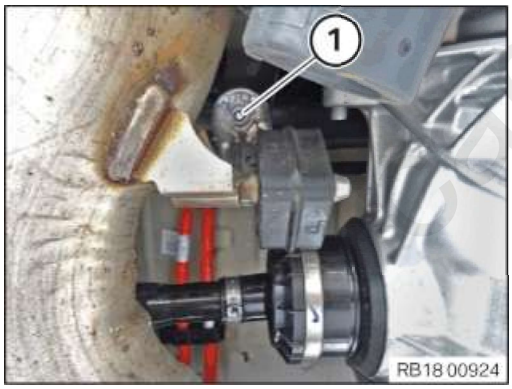


- **Equipment specification 2 (V-clips)**

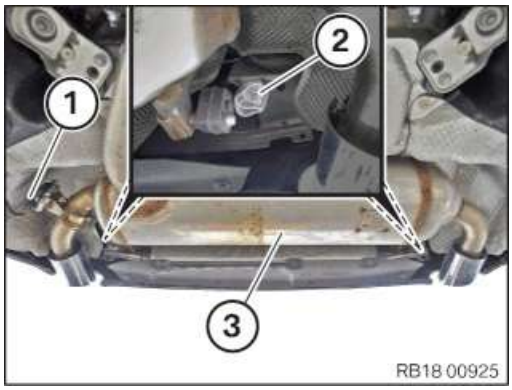
  Unfasten clamp (1).



- Loosen nut (1).



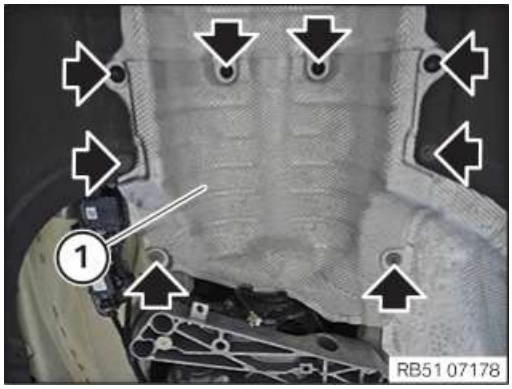
- Release nut (1) on the rear axle support.



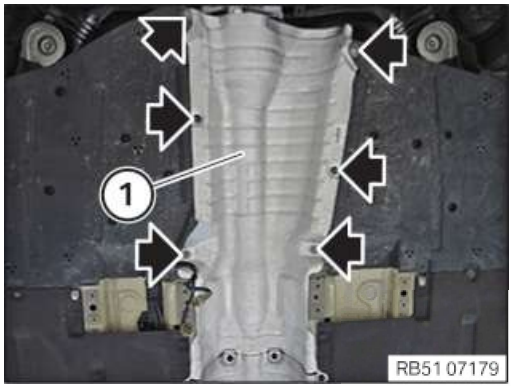
- Unlock plug connection (1) and disconnect.
- Loosen nuts (2).
- Lower and remove the exhaust system (3) with the assistance of a second person.

3 – Remove heat shields

cardiagn.com



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).

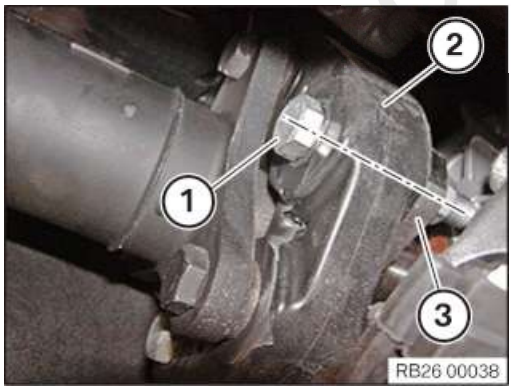
4 – Completely removing the propeller shaft (plug-in - rear flexible disc)

RISK OF DAMAGE

Damage to propeller shaft during removal.

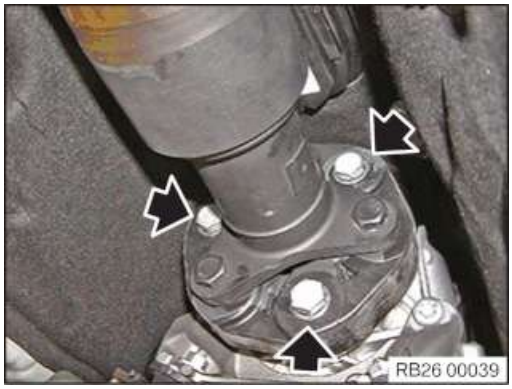
Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- 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.

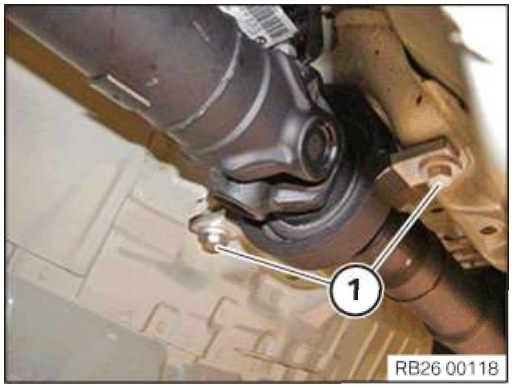


- In order to avoid a humming noise of the drivetrain after reinstalling the propeller shaft:
  - The flexible disc connection (1) on the front at the propeller shaft **must** be marked in one plane with the flexible disc (2) and the three-bolt flange (3) before loosening.
  - During installation the three-bolt flange (3) must be forced back together again with the flexible disc (2) in the same position.

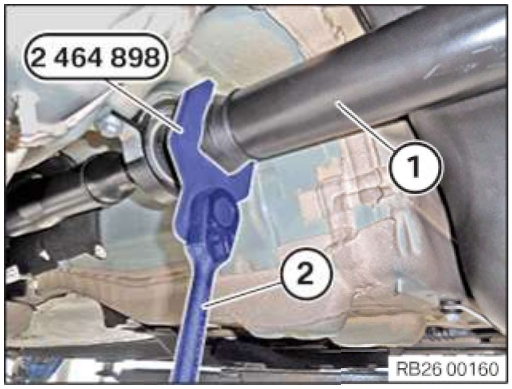
carmagn.com



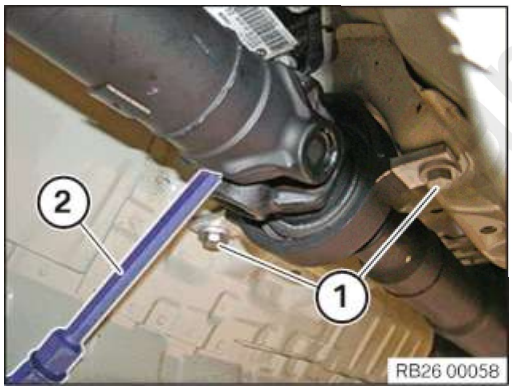
- Remove screws (arrows).



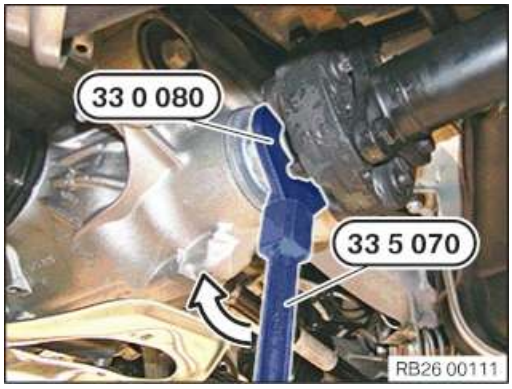
- Loosen screws (1).



- **Vehicles with a narrow universal joint:**
- Using the special tool 2 464 898 and a suitable tool (2), secure the propeller shaft (1) to the centre universal joint against twisting.



- **Vehicles with a broad universal joint:**
- Secure the propeller shaft against twisting at the central universal joint using a suitable tool (2).
- Do not remove the bolts (1) of the centre mount completely until the recessed nut has been opened.



RISK OF DAMAGE

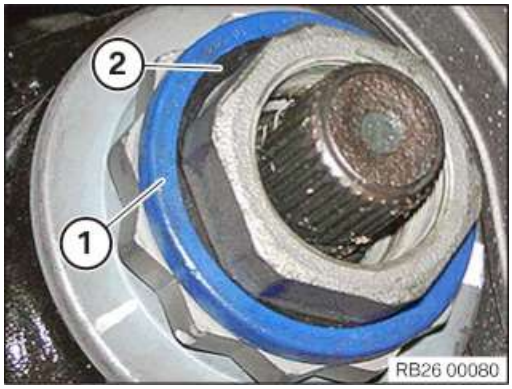
Damage to rear axle differential.

Non-observance of the removal and installation guidelines may cause severe damage to the rear axle differential.

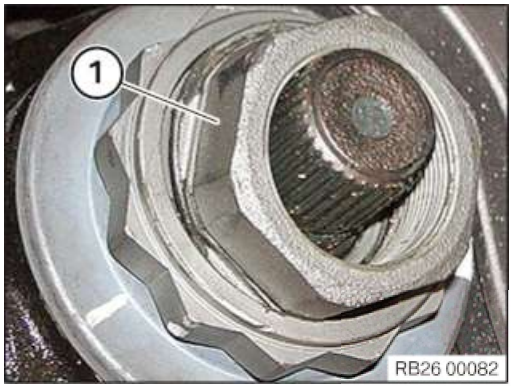
- Do not use the double hexagon head flange nut as counter support.

- Loosen the recessed nut **in clockwise direction, see the direction of the arrow,** using special tools 0 495 554 (33 5 070) and .

rdiagn.com



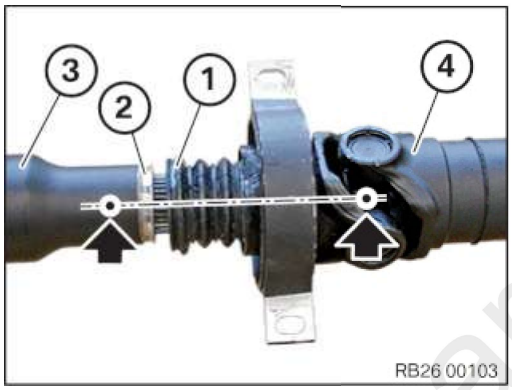
- Remove mounting clip (1) and gasket (2).



- Remove recessed nut (1).

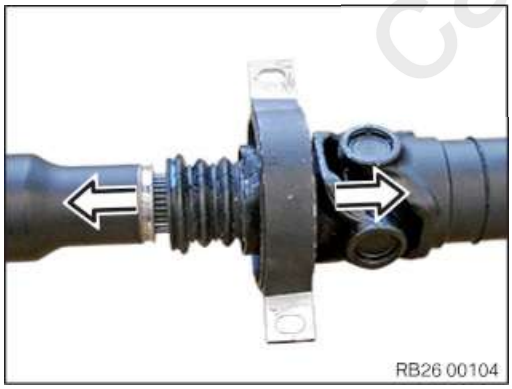
5 – Removing the centre mount of the propeller shaft

▸ **Removing the gaiter of the centre mount**



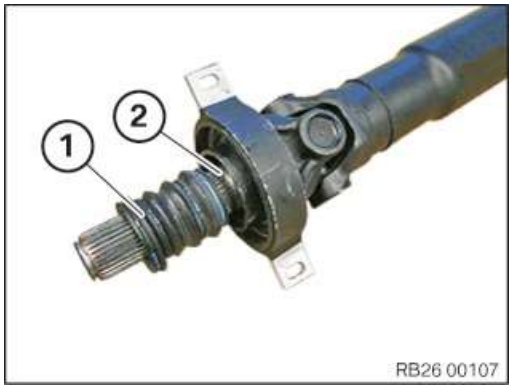
- Pull off the gaiter (1) from the groove (2).
- Mark the alignment of the installation positions of the front propeller shaft (3) and the rear propeller shaft (4).

  The identification allows the front and rear propeller shafts to be installed at the same position. This guarantees that the propeller shaft will once again be balanced within the system following installation.

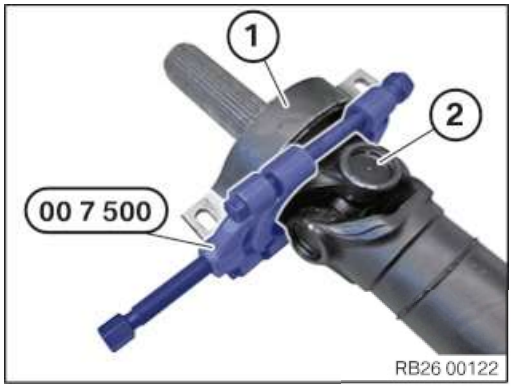


- Pull apart the propeller shaft in the direction of the arrow.

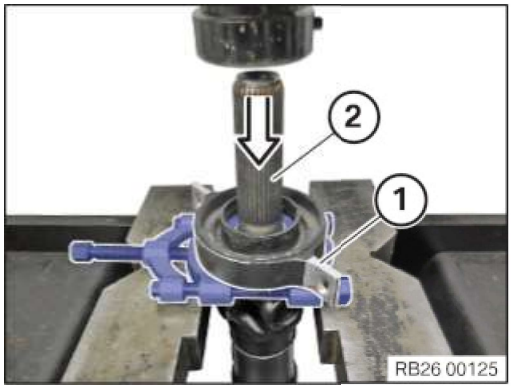
cardiagn.com



- Release the gaiter (1) from the groove (2) using a screwdriver and pull it off over the longitudinal splines.



- Install the special tool between the centre mount (1) and the propeller shaft (2).

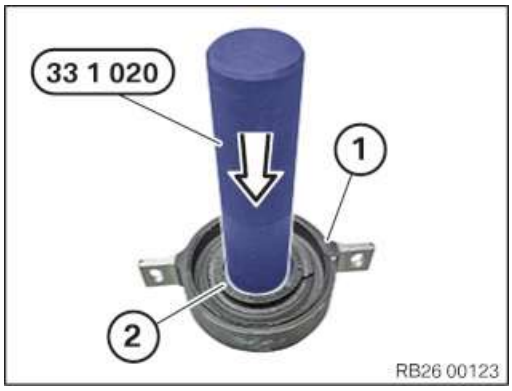


- Use the hydraulic press to push the centre mount (1) off the propeller shaft (2).

cardiagn.com

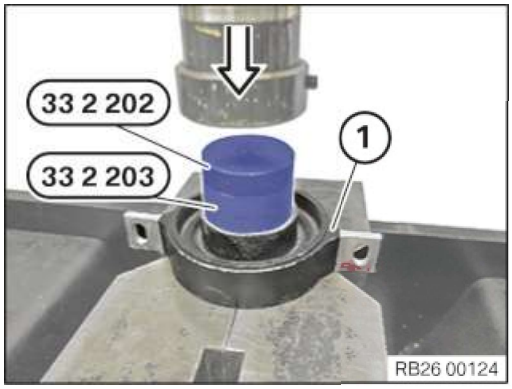
MAIN WORK

6 – Removing the grooved ball bearing in the propeller shaft centre bearing



- Press the grooved ball bearing (2), using the special tool out of the prop shaft centre bearing (1) and remove.

7 – Installing the grooved ball bearing in the propeller shaft centre bearing

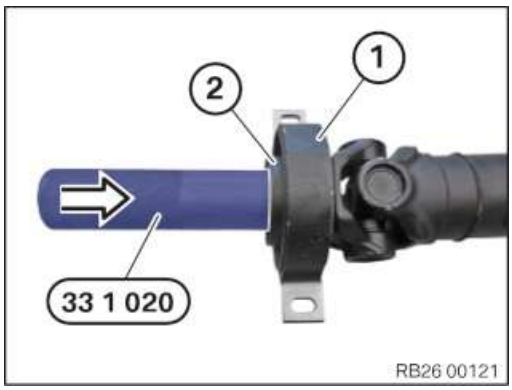


- Apply Circolight to the rubber-coated bearing seat of the propeller shaft centre bearing (1).
- Press in the grooved ball bearing using special tools and into the propeller shaft centre bearing (1).

cardiagn.com

POSTPROCESSES

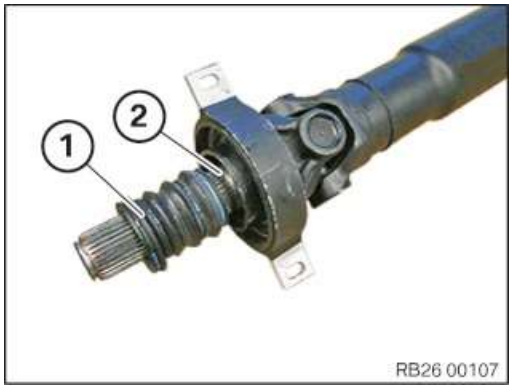
8 – Installing the centre mount on the propeller shaft



- Push the centre mount (1) onto the propeller shaft.

  The collar (2) must point toward the front propeller shaft in the direction of travel.
- Push on the centre mount up to limit position with the special tool .

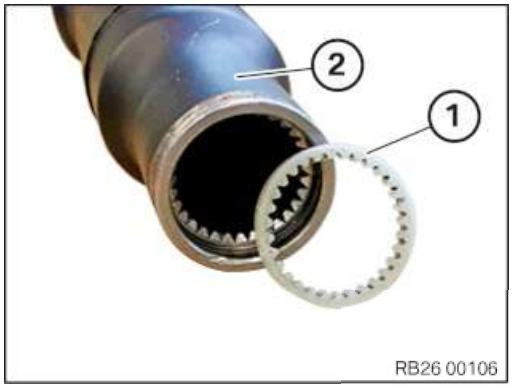
▸ **Installing the gaiter of the centre mount**



- Evenly grease the longitudinal splines of the propeller shaft.
- Push in the gaiter (1) onto the groove (2) and make sure it is securely positioned.

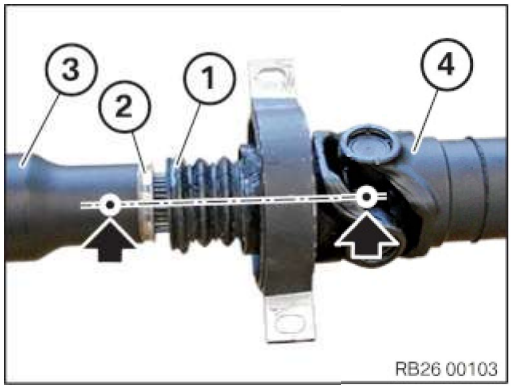
Expendable materials

Lubricating grease Olistamoly 2 LN 584 LO	100 g, Tube	83 19 0 447 919



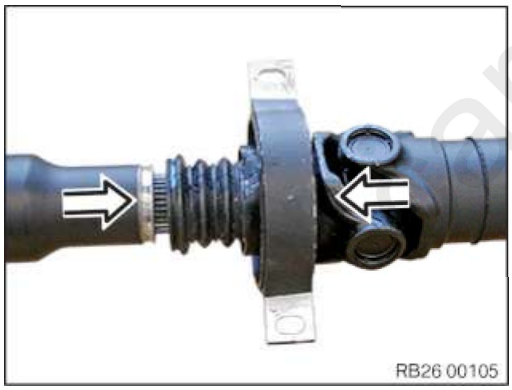
- If applicable, renew the clamping ring (1) and insert it in the front propeller shaft (2).

  Parts: Clamping ring



- Push the front propeller shaft (3) onto the longitudinal splines of the rear propeller shaft (4) as per the individually applied marks.

  The marks (arrows) must be aligned.
- Push in the gaiter (1) onto the groove (2) and make sure it is securely positioned.



- Push the propeller shaft together in the direction of the arrow.

9 – Completely installing the propeller shaft (plug-in - rear flexible disc)

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.

- Observe following installation sequence:
  - Position propeller shaft on transmission.
  - Position the propeller shaft at the rear axle differential.
  - Position centre mount.
- Observe the following screwing sequence:
  - Insert nut
  - Flexible disc to transmission
  - Centre mount



- Check the centering (arrow) for damage, renew if required.

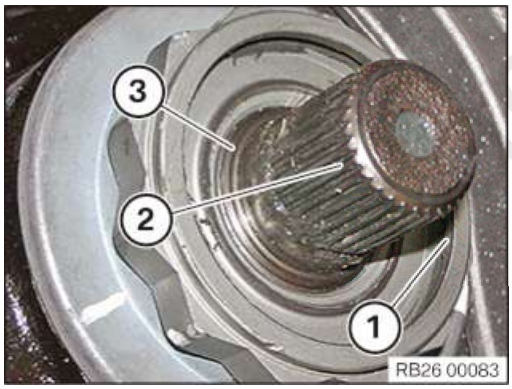


- Apply a thin coat of grease to the soft centring (1), if necessary.

Expendable materials

Lubricating grease Olistamoly 2 LN 584 LO	100 g, Tube	83 19 0 447 919

- Hard centring (2) must **not** be greased.



- Clean all residue from the insert collar (1) of the flange nut and the gearing on the bevel pinion (2) and degrease them.
- Top up the collar insert (1)with grease.

Expendable materials

Lubricating grease Optitemp HT 1 LF	50 g, Tube	83230417754

rdiagn.com



RISK OF DAMAGE

Damage to the output flange.

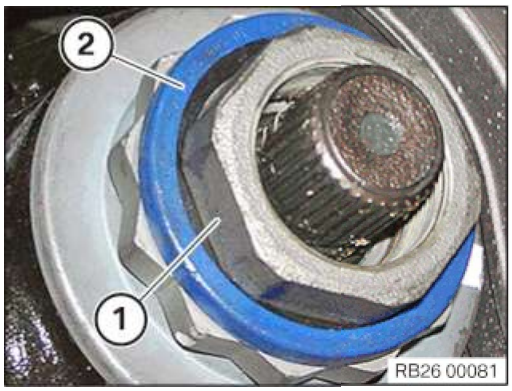
Failure to observe the greasing specifications may lead to damage on the output flange.

- Do not contaminate the thread of the output flange with grease.

- Clean thread (1) of flange off adhesive residue.
- Clean gearing (2).
- Grease gearing (2).

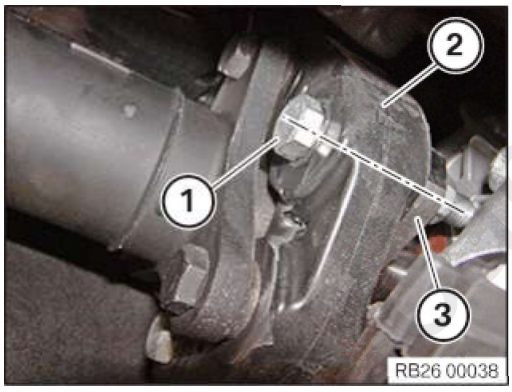
Expendable materials

Lubricating grease Optitemp HT 1 LF	50 g, Tube	83230417754



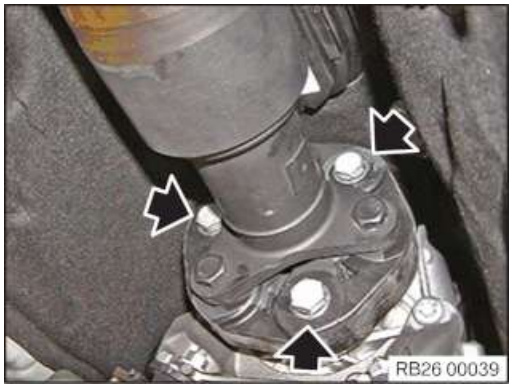
- Renew the seal, recessed nut (1) and the mounting clip (2).

  Parts: Seal, recessed nut and mounting clip
- Insert recessed nut (1) including gasket into collar insert of the flange nut.
- Install the mounting clip (2).



- In order to avoid a humming noise of the drivetrain after reinstalling the propeller shaft: It is essential to reassemble the three-hole flange (3) with the flexible disc (2) in the same position.
- Renew ZNS screws and the self-locking nuts (1).

  Parts: ZNS screws, self-locking nuts

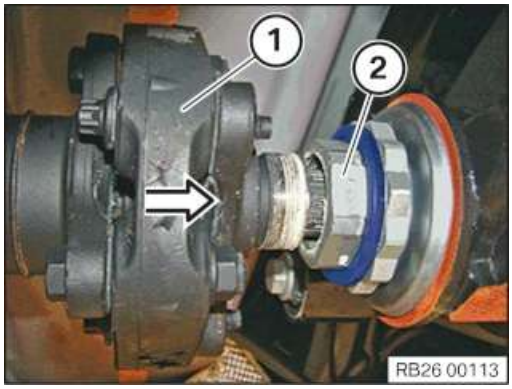


- Position the screws and nuts (arrows).
- Tighten the screws.

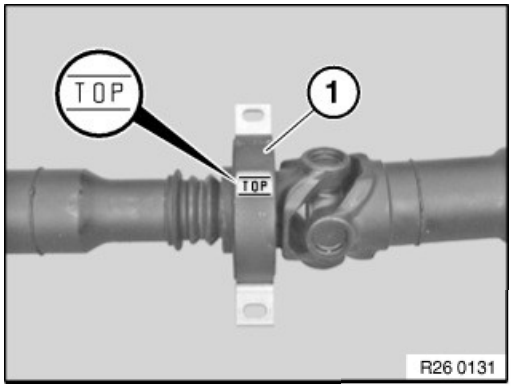
Front flexible disc to propeller shaft

M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

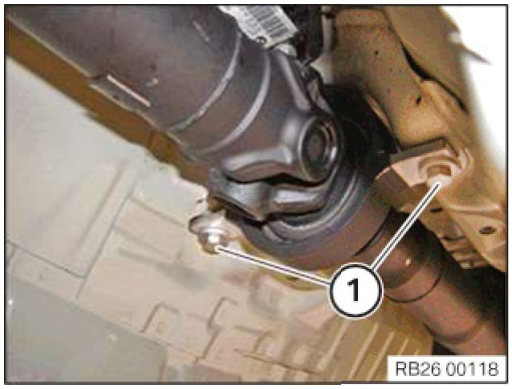
ardiagn.com



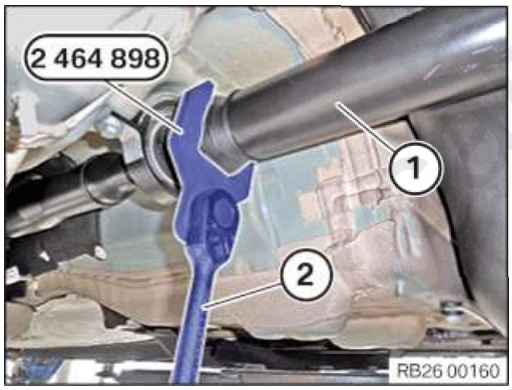
- Push the propeller shaft (1) in the direction of the arrow against the recessed nut (2) up to the limit position.
- Manually screw on and tighten the recessed nut (2) onto the propeller shaft (1) by a minimum of two threads.



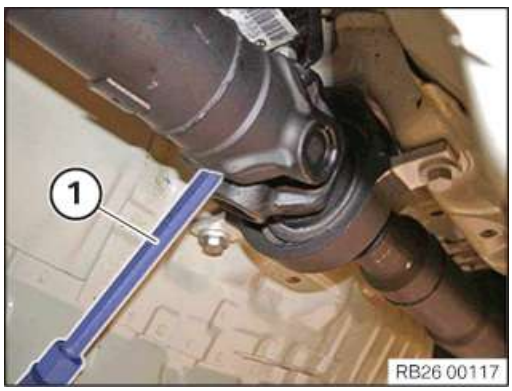
- **Centre mount with TOP marking:**
- The centre mount (1) must be installed with the TOP marking at the top in the gearbox tunnel.



- Position centre mount.
- Position screws (1).



- **Propeller shaft with a narrow universal joint:**
- Using the special tool 2 464 898 and a suitable tool (2), secure the propeller shaft (1) to the centre universal joint against twisting.



- **Propeller shaft with a broad universal joint:**
- Secure the propeller shaft against twisting at the central universal joint using a suitable tool (1).

rdiagn.com



RISK OF DAMAGE

Damage to the flange nut.

Failure to observe the installation specifications may lead to serious damage to the flange nut and the rear axle differential.

- Do not use the double hexagon flange nut as counter support.
- Screw in the recessed nut within 5 minutes.

- Screw in the recessed nut **counter-clockwise, see direction of arrow** with special tools 0 495 554 (33 5 070) and .

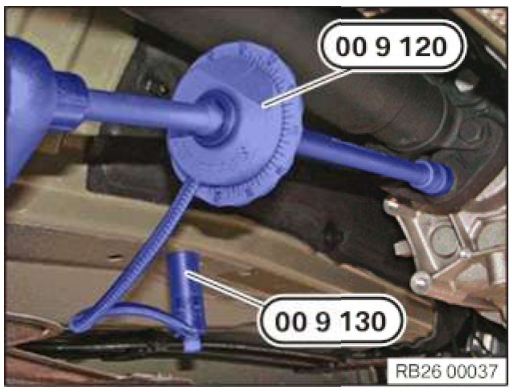
  The recessed nut must be screwed in within 5 min .

Propeller shaft on the rear axle differential

Insert nut		Tightening torque	100 Nm

- **After the propeller shaft is installed and the recessed nut is screwed in, strictly observe a hardening time of minimum 3 hours.**

  Do not move or push the vehicle during this time!

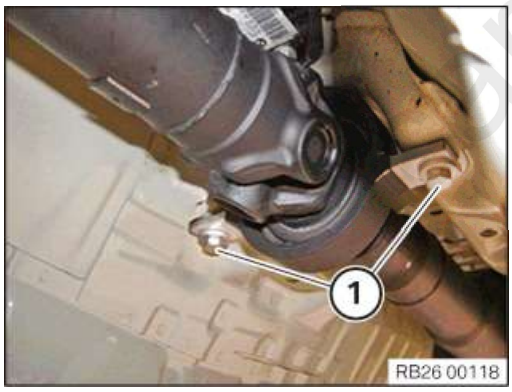


- Brace mounting bolts of flexible disc on nut and tighten by screw.

Rear flexible disc to three-hole flange

M12	Renew screws. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

- Secure the special angle of rotation tool 0 490 504 (00 9 120) with the magnets to the vehicle underbody and screw it further depending on the angle of rotation.

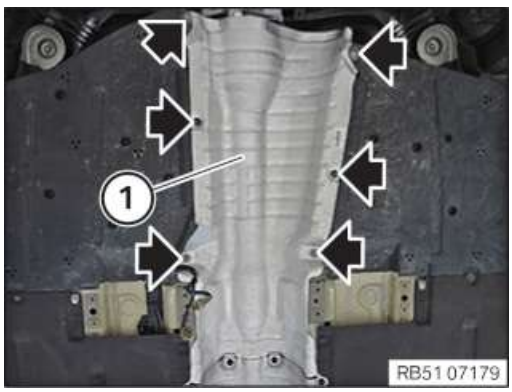


- Tighten the screws (1).

Centre mount to body

M8		Tightening torque	19 Nm

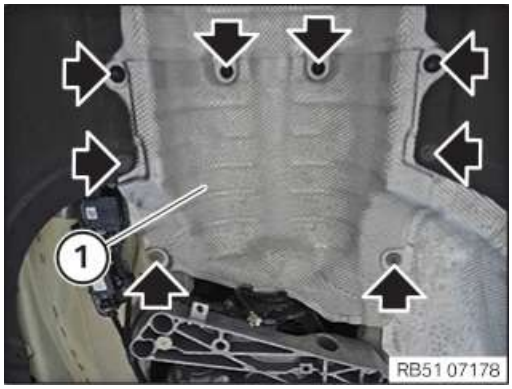
10 – Install the heat shields



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm

11 – Installing the complete exhaust system

CAUTION

Component with heavy weight.

Danger of injury!

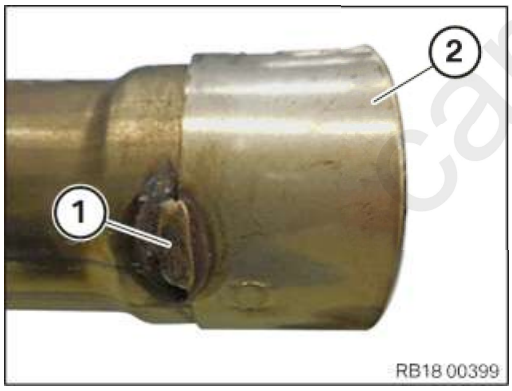
- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

CAUTION

Heavy component.

Heavy components can lead to injury or damage.

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



CAUTION

Swarf resulting from sawing or grinding components.

Danger of injury!

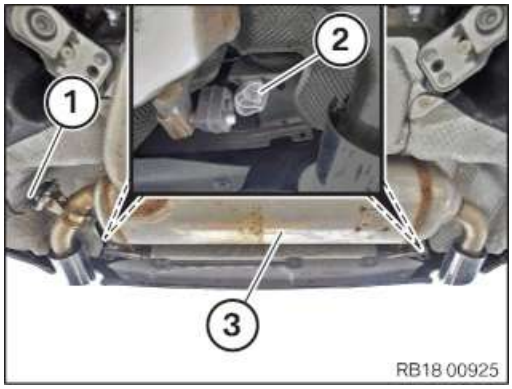
- Conduct all work in appropriate personal protective equipment only.
- Wear safety goggles and protective gloves.

- **Equipment specification 1 (ribbon clamp)**

  Open the weld seam (1) with a conventional tool.
- Remove ribbon clamp (2).
- Renew the (2) ribbon clamp.

  Parts: Ribbon cable clamp

carflagn.com



- Feed in and install the exhaust system (3) with a second person.
- Renew nuts (2).

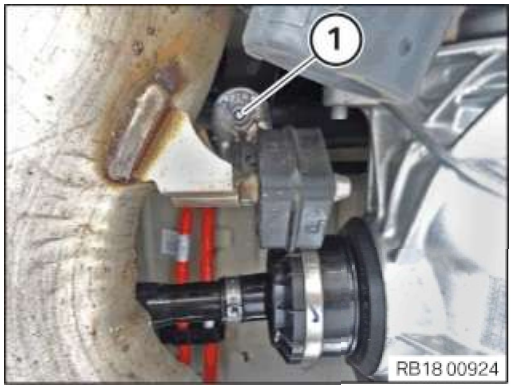
  Parts: Nuts
- Tighten nuts (2).

Rear silencer to body / bumper support

M8	Replace nuts.	Tightening torque	19 Nm

- Connect connectors (1) and lock.

  The connector (1) must engage audibly.

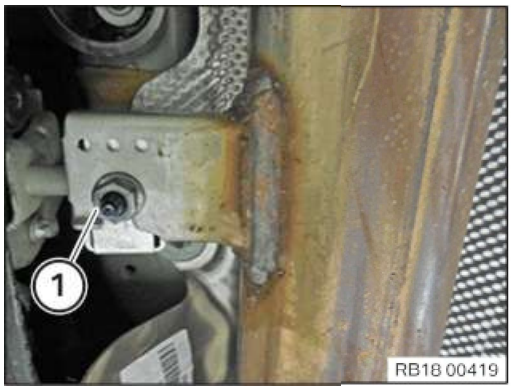


- Renew nut (1).

  Parts: Nut
- Tighten the bolt (1) on the rear axle support.

Exhaust system to rear axle carrier

Nut M8	Renew nut.	Tightening torque	19 Nm

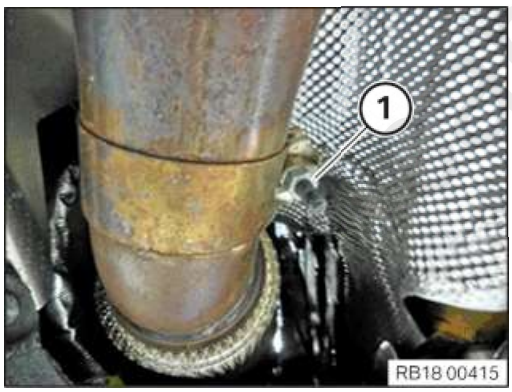


- Renew nut (1).

  Parts: Nut
- Tighten nut (1).

Front pipe / petrol particulate filter on transmission holder

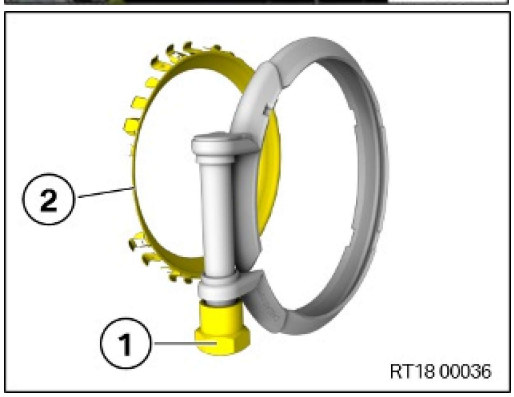
M8	Renew nut.	Tightening torque	19 Nm



- Tighten the ribbon clamp (1).

Exhaust system to catalytic converter

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm



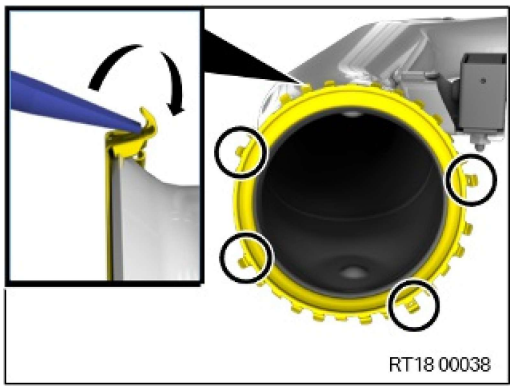
- **Equipment specification 2 (V-clips)**

  Renew V-band clamp.

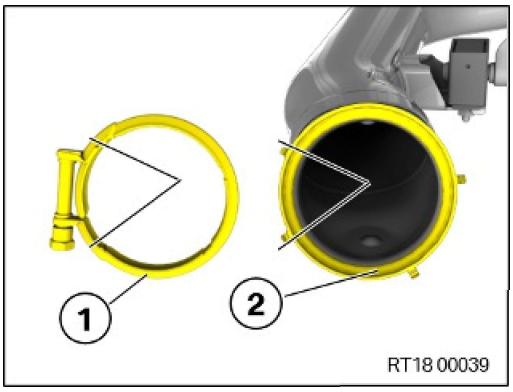
  Parts: V-band clamp

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

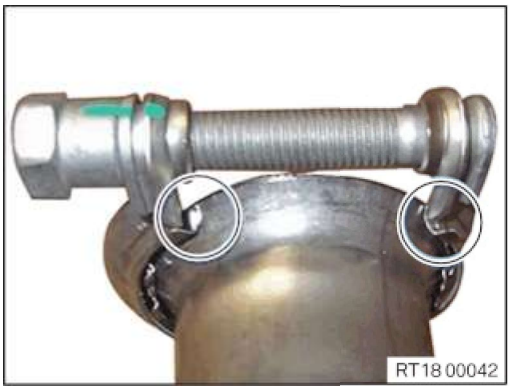
diag.com



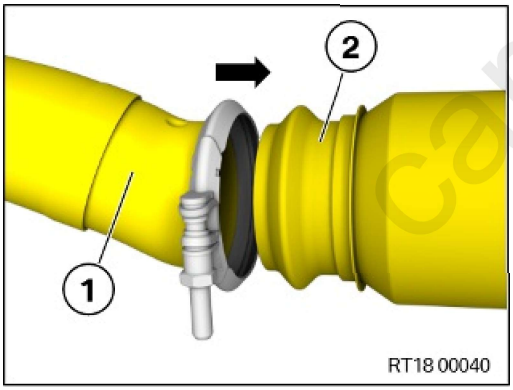
- Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.



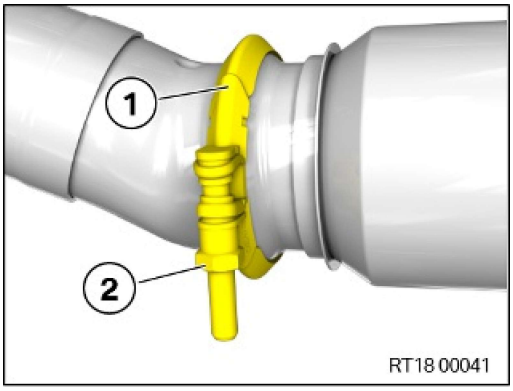
- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).



- Ensure that the V-clip rests against the sheet metal tabs in the marked areas after mounting.



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



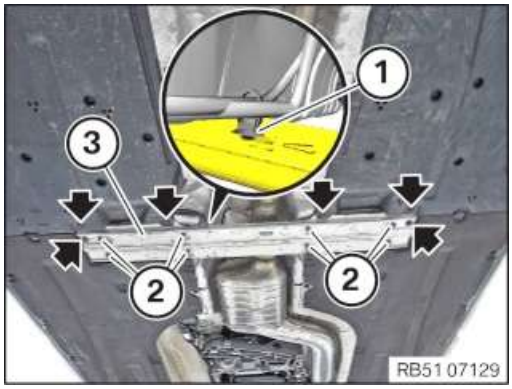
- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

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

12 – Install the connecting supports on the tunnel

cardiagn.com



- Guide in and install connecting support (3) on the tunnel.
- Tighten the screws (2).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- Tighten screws (arrows).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- **If installed:** Secure clamps (1).

Additional Information

Overview of Tightening Torques

Front flexible disc to propeller shaft — Used in step 9

M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

Propeller shaft on the rear axle differential — Used in step 9

Insert nut		Tightening torque	100 Nm

Rear flexible disc to three-hole flange — Used in step 9

M12	Renew screws. Jointing torque and angle of rotation must be observed without fail. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

Centre mount to body — Used in step 9

M8		Tightening torque	19 Nm

Heat shield to vehicle underbody — Used in step 10

Screws and nuts		Tightening torque	3 Nm

Rear silencer to body / bumper support — Used in step 11

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust system to rear axle carrier — Used in step 11

Nut M8	Renew nut.	Tightening torque	19 Nm

Front pipe / petrol particulate filter on transmission holder — Used in step 11

M8	Renew nut.	Tightening torque	19 Nm

cardiagn.com

Exhaust system to catalytic converter Used in step 11

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm

V-clip to catalytic converter Used in step 11

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

Connecting support to tunnel Used in step 12

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

Overview of Special Tools

2 464 898 Open-end spanner



Common Used in step 49

Usage	Open-end spanner SW50 for disassembly and installation of the propeller shaft on rear axle differential. The silhouette foil is included in the delivery specification.
Included in the tool or work	
Storage location	A7
Replaced by	
In connection with	
SI-Number	01 19 18 (579)

0 495 554 (33 5 070) Extension



Common Used in step 49

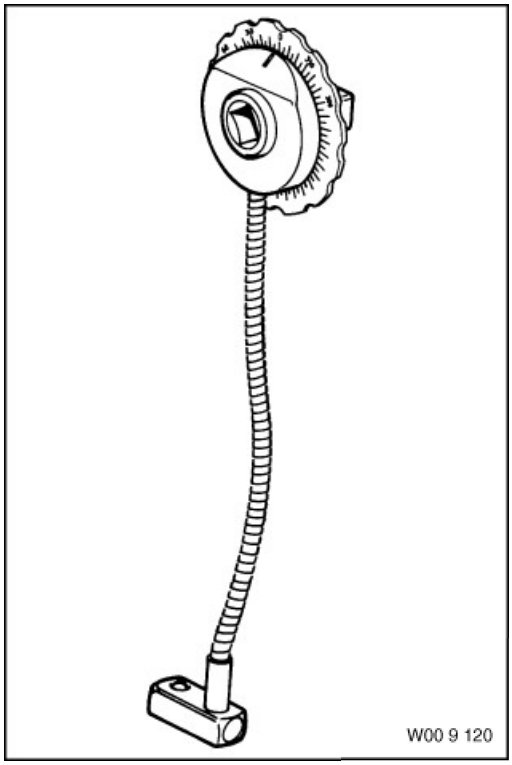
Usage	Pull-out extension for 33 5 040, 33 5 050, 33 5 060.
Included in the tool or work	
Storage location	A18
Replaced by	
In connection with	
SI-Number	01 21 06 (300)

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	

cartagn.com

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



Common Used in step 9

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	

cardiagn.com

26 20 000 Removing and installing the front propeller shaft

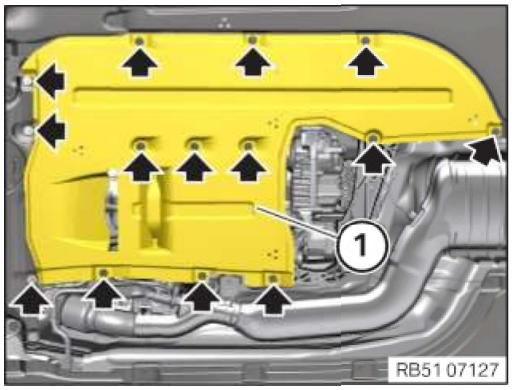
PRELIMINARY WORK

1 – Disconnecting all battery earth leads



- See additional information.

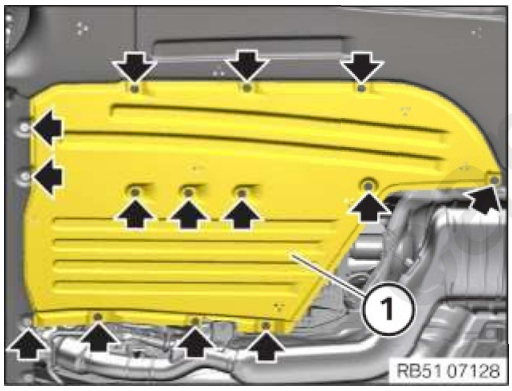
2 – Remove rear underbody protection



- **Version 1:**

  Remove screws (arrows).

  Feed out the rear underbody protection (1).

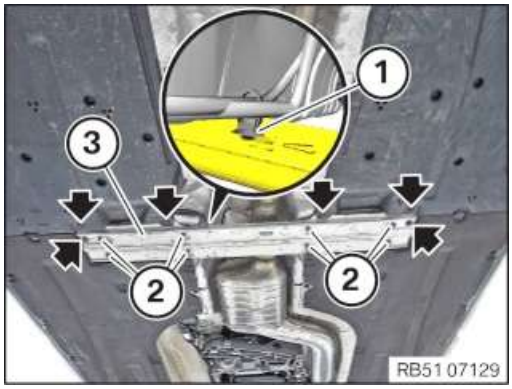


- **Version 2:**

  Remove screws (arrows).

  Guide out rear underbody protection (1) and remove it.

3 – Remove the connecting support from the tunnel



- Remove screws (arrows).
- **If installed:** Loosen clamp (1).
- Loosen screws (2).
- Guide out and remove connecting support (3) on the tunnel.

4 – Remove complete exhaust system

mdiagn.com

WARNING

Hot surfaces.

Risk of burning!

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

CAUTION

Component with heavy weight.

Danger of injury!

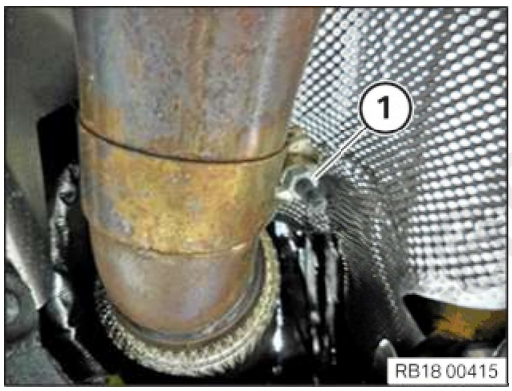
- Note component's centre of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

CAUTION

Heavy component.

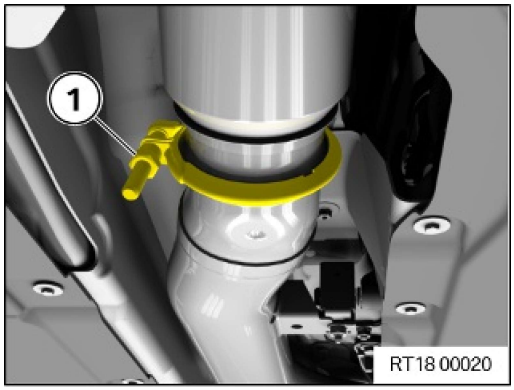
Heavy components can lead to injury or damage.

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



- **Equipment specification 1 (ribbon clamp)**

  Detach the ribbon clamp (1).



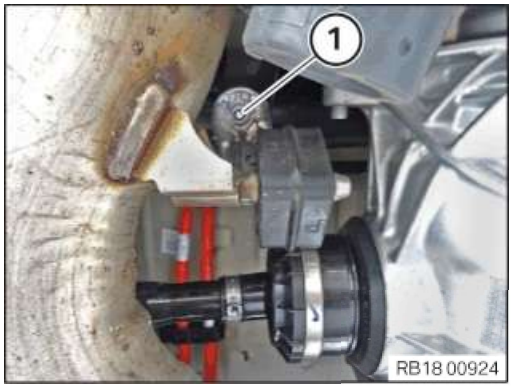
- **Equipment specification 2 (V-clips)**

  Unfasten clamp (1).

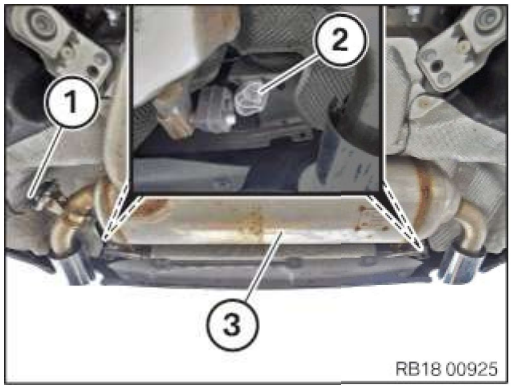
tdiag.com



- Loosen nut (1).

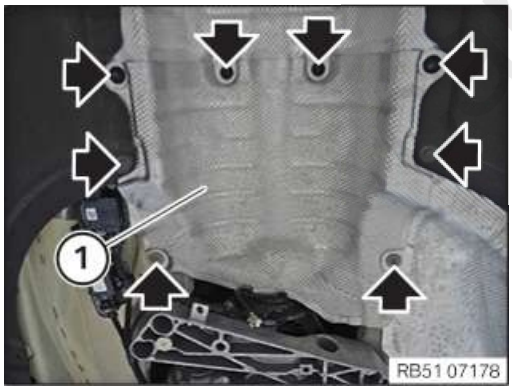


- Release nut (1) on the rear axle support.

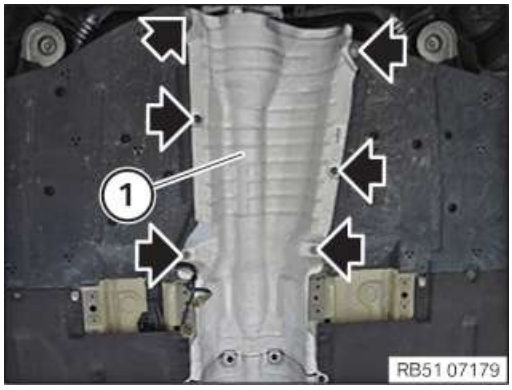


- Unlock plug connection (1) and disconnect.
- Loosen nuts (2).
- Lower and remove the exhaust system (3) with the assistance of a second person.

5 – Remove heat shields



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).



- Loosen bolts and nuts (arrows).
- Remove heat shield (1).

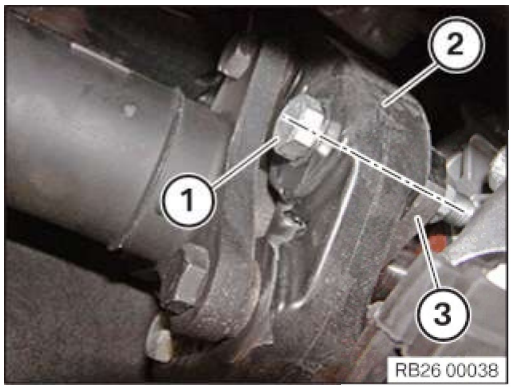
6 – Partially release propeller shaft

RISK OF DAMAGE

Damage to propeller shaft during removal.

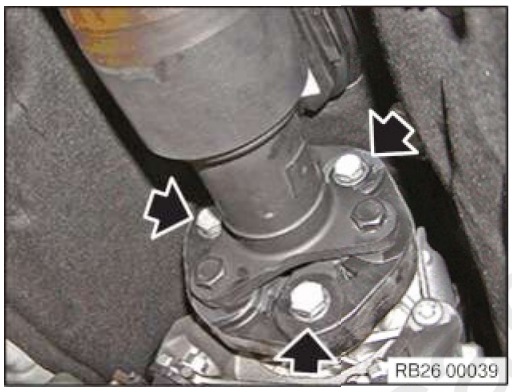
Non-observance of the removal guidelines for the propeller shaft on the rear axle differential may cause severe damage.

- 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.

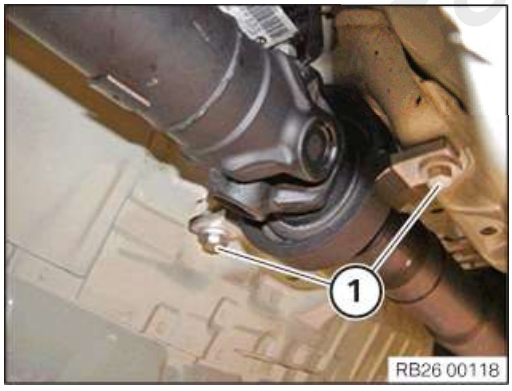


- Mark the installation position of the screw connection (1) of the flexible disc (2) and the three-hole flange (3).

  The mark makes it possible for the propeller shaft to be installed again in the same position. This should prevent a humming noise from the drive train during driving.



- Remove screws (arrows).

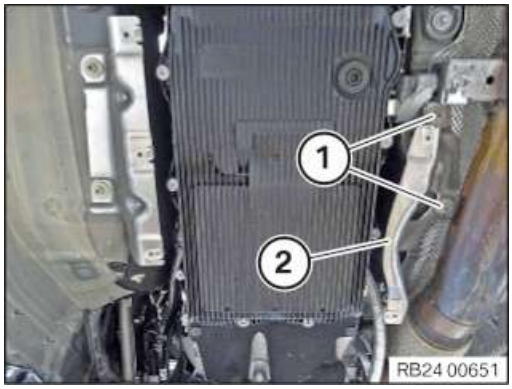


- Unscrew the bolts (1) on the centre mount and hold down the propeller shaft.

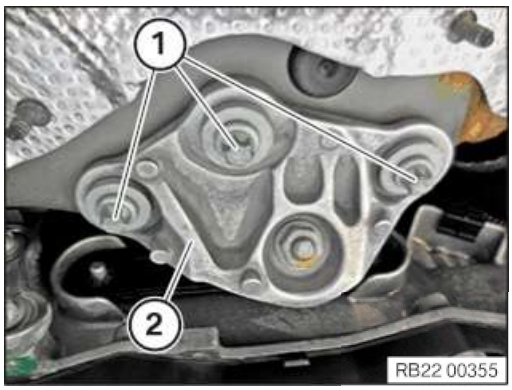
  Major deflection angles of the propeller shaft may damage the propeller shaft and/or the joints.

- Tie up propeller shaft to underbody.

7 – Removing the transmission bearing support

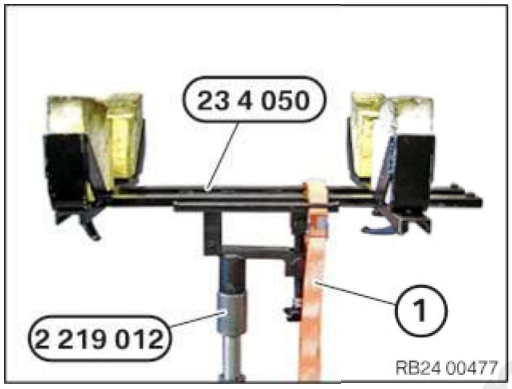


- Loosen nuts (1).
- Remove retaining plate (2).

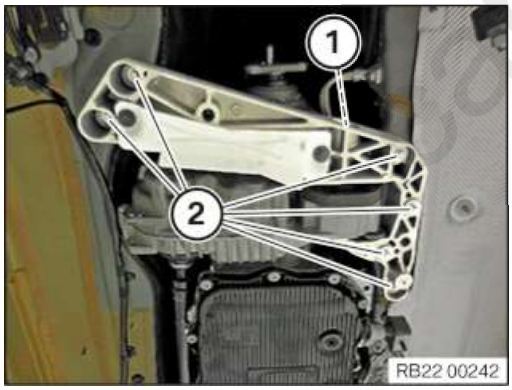


- Unscrew the bolts (1) on the transmission bearing support (2).

8 – Remove transmission cross-member.

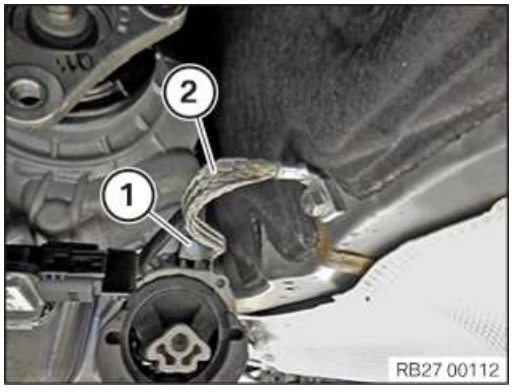


- Support the transmission using special tools 0 495 498 (23 4 050) and 2 219 012.
- Secure the transmission with the tensioning strap (1).



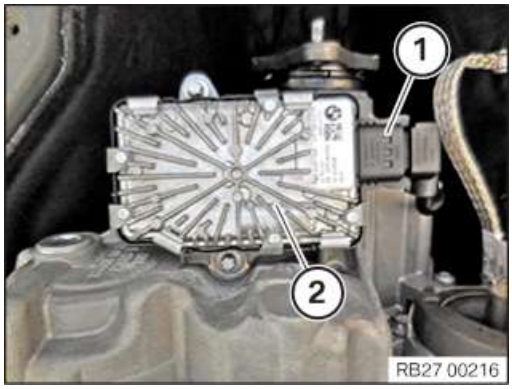
- Loosen screw (1).
- Loosen screws (2).
- Remove transmission cross-member.

9 – Remove the transfer box (ATC 13-1)

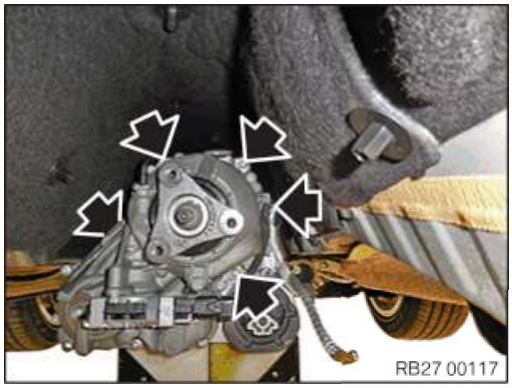


- Unscrew the bolt (1) and disconnect the ground strap (2).

carsdiagn.com



- Disconnect connector (1) from transfer box control unit (longitudinal torque distribution) (2).



- Unscrew the screw connection (arrows) of the transfer box.
- Tie up/secure the front propeller shaft on the underbody.

  It is imperative to prevent damage to the surface coating!
- Carefully pull the transfer box off.

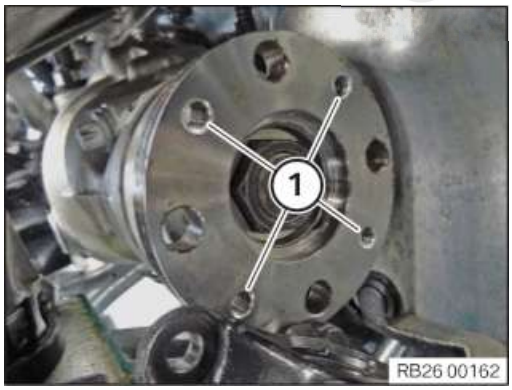
MAIN WORK

10 – Remove the propeller shaft front at the front axle differential



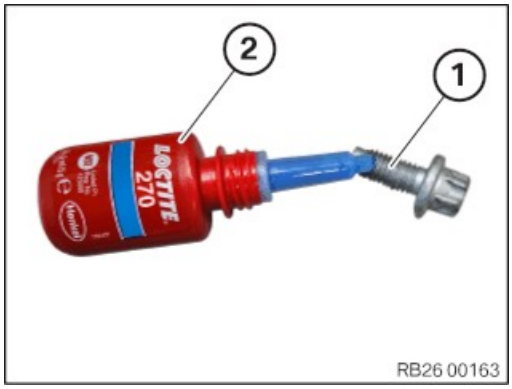
- Remove screws (arrows).
- Remove propeller shaft.

11 – Installing front propeller shaft at the front axle transmission



- Before fitting the propeller shaft to the front axle transmission, all the 4 threads (1) must be cleaned and free from possible residues and contaminations in the front axle transmission flange.

Cardiagn.com



- Renew screws.

  Parts: Bolts

- A drop of Loctite 270 (2) must be given before the screw connection on each thread at the end of the respective screw (1).

Expendable materials

High-strength screw lock, Loctite 270	10 ml, Tube	83 19 2 210 337



TECHNICAL INFORMATION

A 30-minute hardening time must be ensured after screwing the front propeller shaft before the vehicle is driven again.

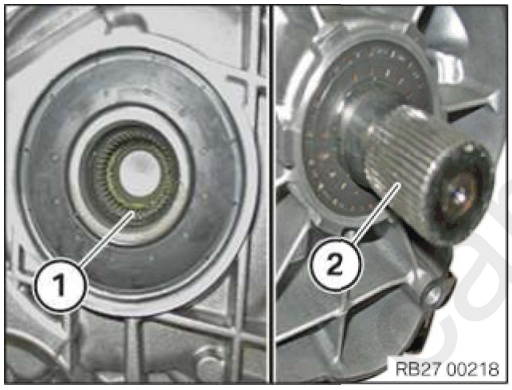
- Tighten screws (arrows).

Propeller shaft before the front axle differential

Renew screws. Jointing torque and angle of rotation must be observed without fail.	Tightening torque	25 Nm
	Angle of rotation	45 °

POSTPROCESSES

12 – Install the transfer box (ATC 13-1)



- Apply a thin layer of grease to the gearing (1) in the transfer box (VTG) and the gearing (2) on the automatic transmission.

Expendable materials

Ball bearing grease	100 g, Tube	81229407174



- Before installing the front propeller shaft in the transfer box (VTG), renew the O-ring (1).

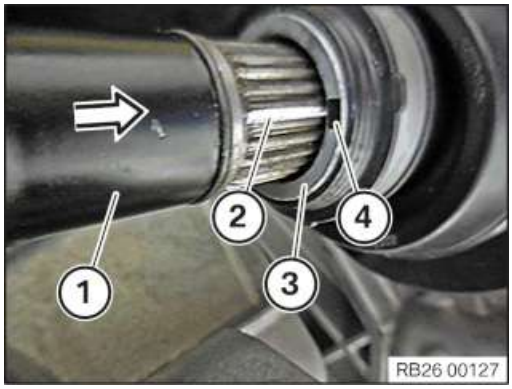
  Parts: O-ring

- Apply a thin coat of grease to the gearing of the output flange in the transfer box (VTG).

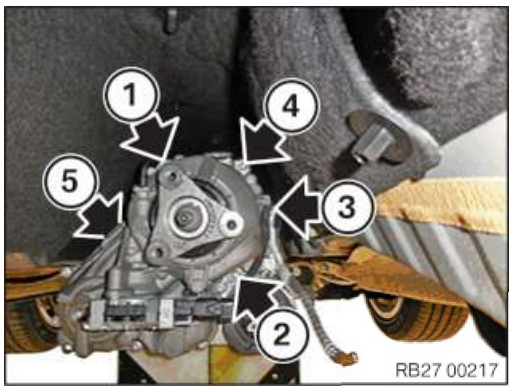
Expendable materials

Ball bearing grease	100 g, Tube	81229407174

carflash.com



- Position the transfer box (VTG) with a helper.
- Position the front propeller shaft (1) on the output flange (3) of the transfer box (VTG).
- Align the front propeller shaft (1) with markings (2) and (4).
- Install the transfer box (VTG) and slide the front propeller shaft (1) into the output flange (3) of the transfer box (VTG) at the same time.
- Remove any grease that has emerged at the propeller shaft after the installation.



TECHNICAL INFORMATION

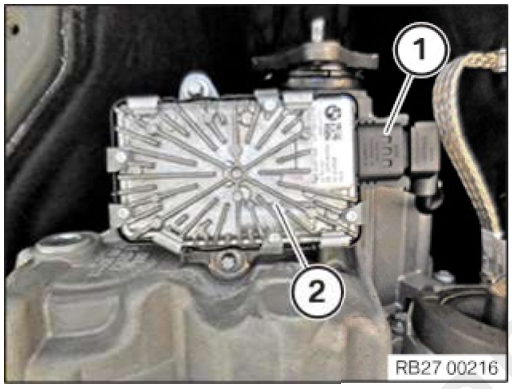
When assembling, it is essential to observe screwing sequences and tightening torques.

Non-observance of these requirements may result in leaks and damage.

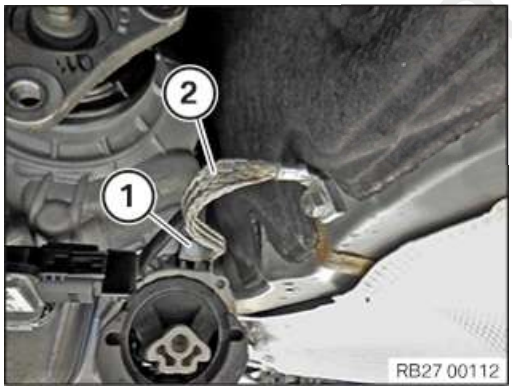
- Tighten screws in the order (1) to (5).

Transfer box to automatic transmission

M10		Tightening torque	43 Nm



- Connect the connector (1) on the VTG control unit (longitudinal torque distribution) (2).



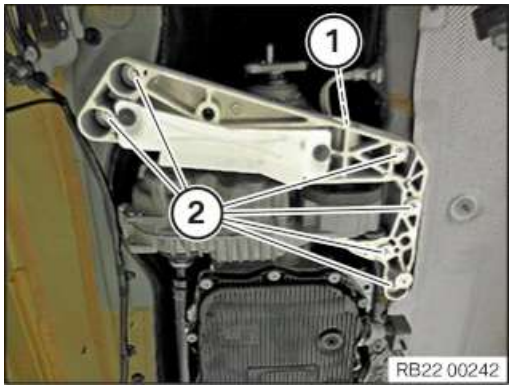
- Install the ground strap (2).
- Tighten down screw (1).

Ground strap to transmission or body

M8		Tightening torque	19 Nm

13 – Install transmission cross member.

vidiag.com



- Install transmission cross-member.
- Tighten down screw (1).

Transmission cross member to rubber mounts

M12	Renew screw.	Tightening torque	68 Nm

- Tighten down screws (2).

Transmission cross member to body

M8	Renew screws.	Tightening torque	19 Nm

- Remove the transmission jack.

14 – Partially installing the propeller shaft



- Check centring (1) for damage; renew if necessary.

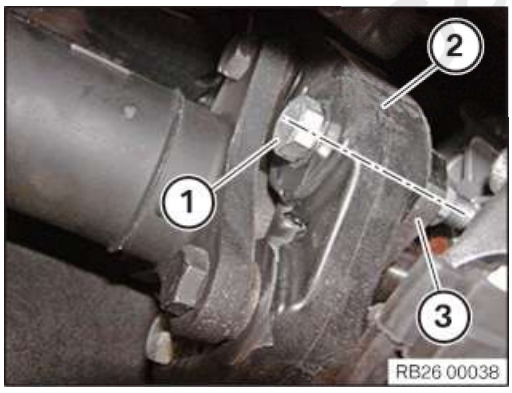


- Apply a thin coat of grease to the soft centring (1), if necessary.

  Do not grease the hard centring (2).

Expendable materials

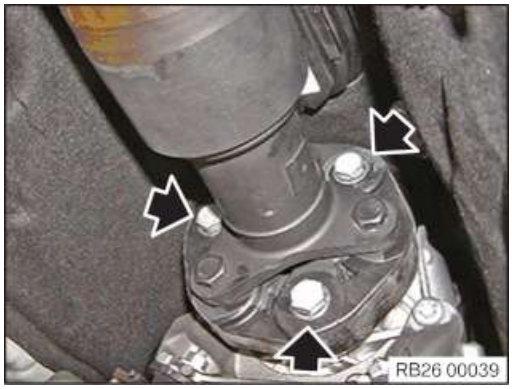
Lubricating grease Olistamoly 2 LN 584 LO	100 g, Tube	83 19 0 447 919



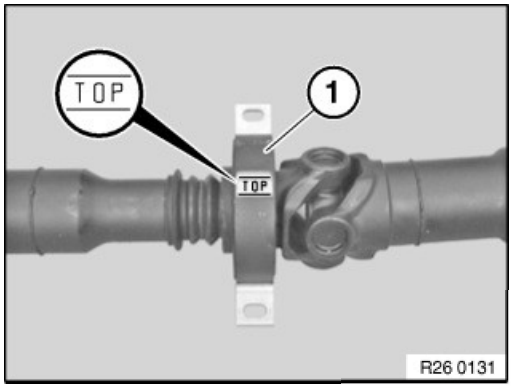
- Renew screws and the self-locking nuts.

  Parts: Screws, self-locking nuts
- Assemble the screw connections (1) of the flexible disc (2) and the three-hole flange (3) according to the self-affixed identification.

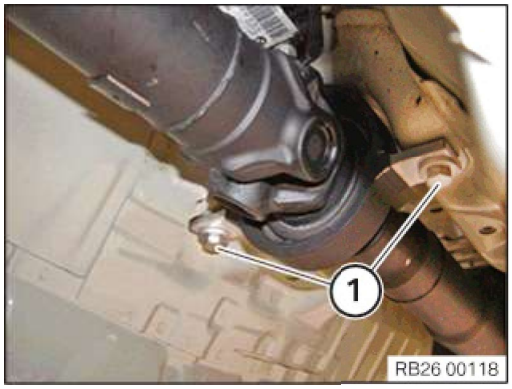
  This should prevent a humming noise from the drive train during driving.



- Hand-tighten the screws and nuts (arrows), but do not tighten fully.



- **Centre mount with TOP marking:**
- The centre mount (1) must be installed with the TOP marking at the top in the gearbox tunnel.



- Position centre mount.
- Hand-tighten the bolts (1), but do not tighten fully.



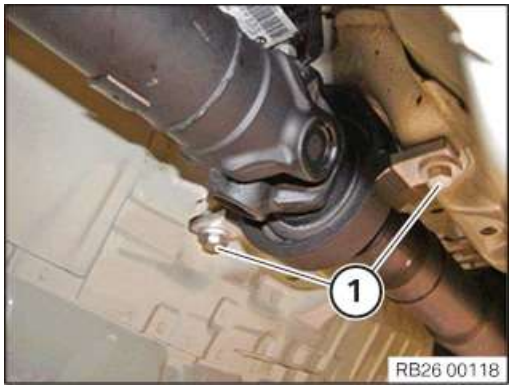
- Renew screws.

  Parts: Bolts
- Provide counter support for the bolts of the flexible disc on the nut and tighten with the bolts.

Front flexible disc to propeller shaft

M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

- Secure the special tool 0 490 504 (00 9 120) with the special tool on the vehicle underbody and continue to screw it in according to the angle of rotation.



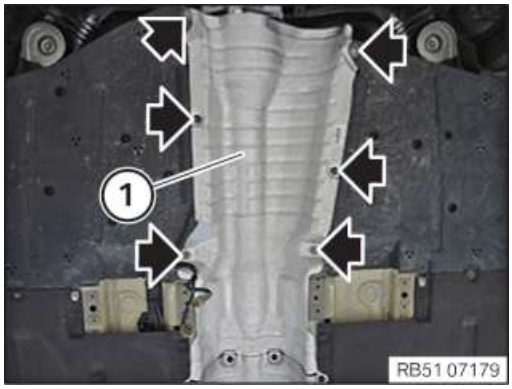
- Tighten the screws (1).

Centre mount to body

M8		Tightening torque	19 Nm

rdiagn.com

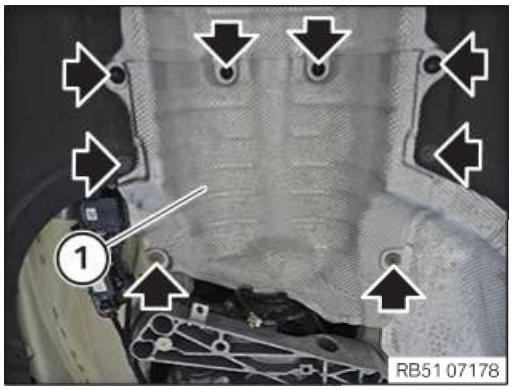
15 – Install the heat shields



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm



- Install heat shield (1).
- Tighten the nuts and bolts (arrows).

Heat shield to vehicle underbody

Screws and nuts		Tightening torque	3 Nm

16 – Installing the complete 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.

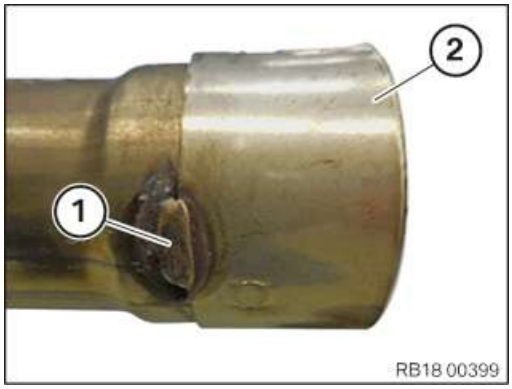
CAUTION

Heavy component.

Heavy components can lead to injury or damage.

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

cardiagn.com



CAUTION

Swarf resulting from sawing or grinding components.

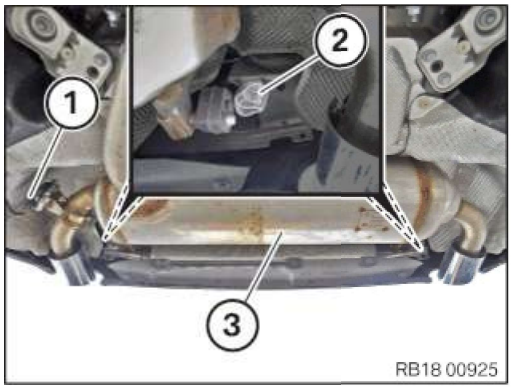
Danger of injury!

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

- **Equipment specification 1 (ribbon clamp)**

  Open the weld seam (1) with a conventional tool.
- Remove ribbon clamp (2).
- Renew the (2) ribbon clamp.

  Parts: Ribbon cable clamp



- Feed in and install the exhaust system (3) with a second person.
- Renew nuts (2).

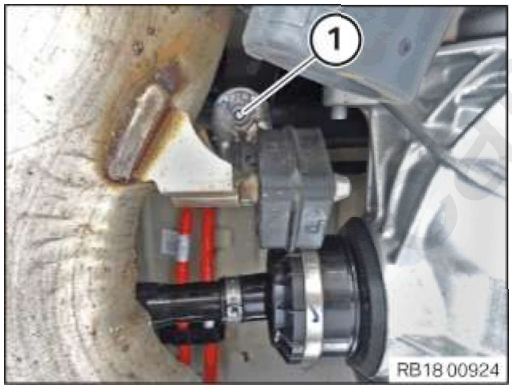
  Parts: Nuts
- Tighten nuts (2).

Rear silencer to body / bumper support

M8	Replace nuts.	Tightening torque	19 Nm

- Connect connectors (1) and lock.

  The connector (1) must engage audibly.



- Renew nut (1).

  Parts: Nut
- Tighten the bolt (1) on the rear axle support.

Exhaust system to rear axle carrier

Nut M8	Renew nut.	Tightening torque	19 Nm



- Renew nut (1).

  Parts: Nut
- Tighten nut (1).

Front pipe / petrol particulate filter on transmission holder

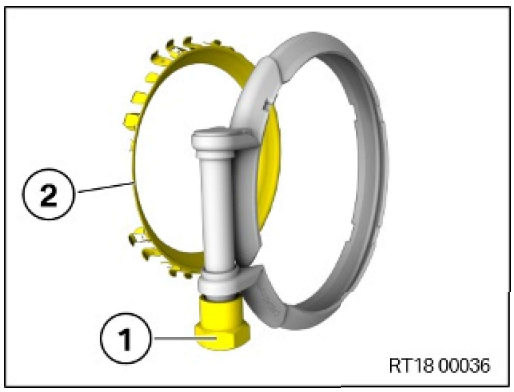
M8	Renew nut.	Tightening torque	19 Nm



- Tighten the ribbon clamp (1).

Exhaust system to catalytic converter

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm

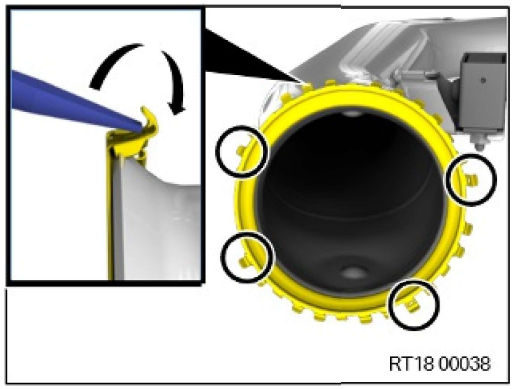


- **Equipment specification 2 (V-clips)**

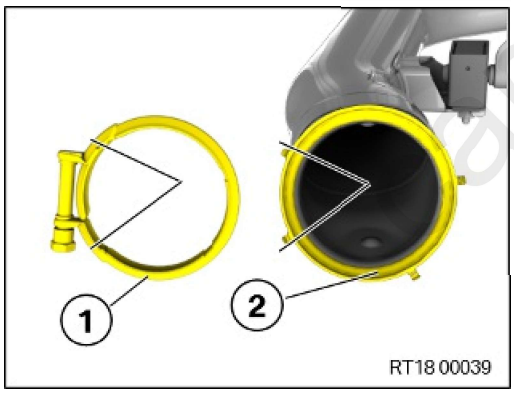
  Renew V-band clamp.

  Parts: V-band clamp

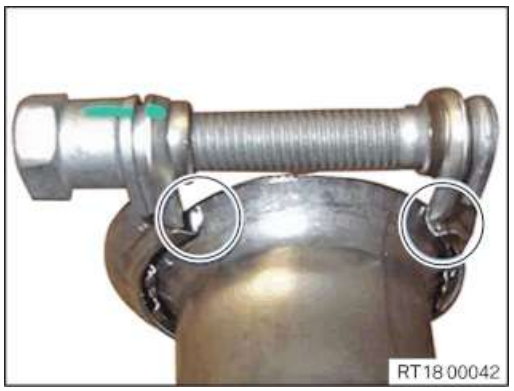
  Unscrew the nut (1) and remove the sealing ring (2).



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

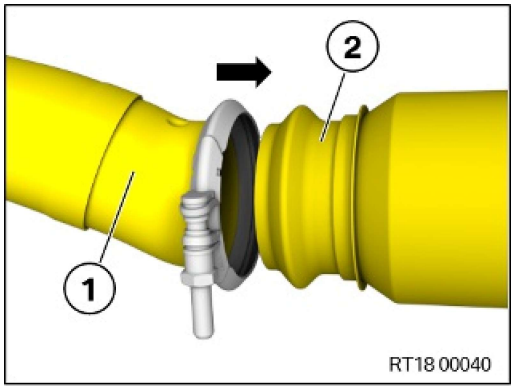


- Mount the V-clip (1) on the sealing ring (2).
- Make sure that the V-clip (1) is positioned correctly on the sealing ring (2).

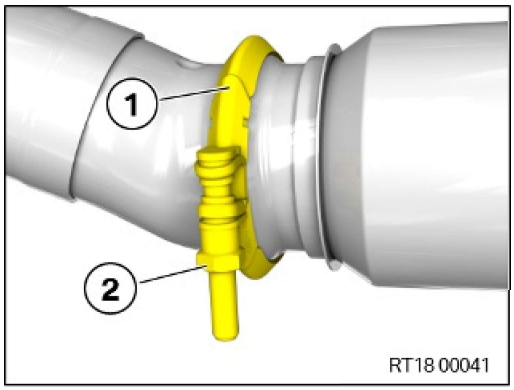


- Ensure that the V-clip rests against the sheet metal tabs in the marked areas after mounting.

cardiagn.com



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

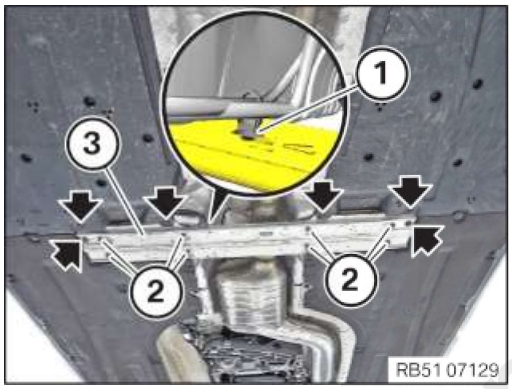


- Make sure that V-clip (1) is fitted correctly.
- Tighten down screw (2).

V-clip to catalytic converter

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

17 – Install the connecting supports on the tunnel



- Guide in and install connecting support (3) on the tunnel.
- Tighten the screws (2).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- Tighten screws (arrows).

Connecting support to tunnel

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

- **If installed:** Secure clamps (1).

18 – Disconnecting all battery earth leads



- See additional information.

19 – Top up the transfer box oil (ATC 13-1)

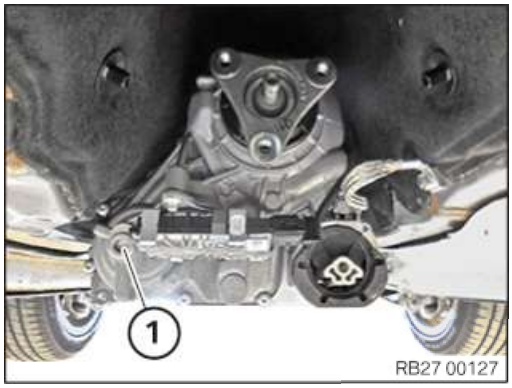
cardiagn.com

RISK OF DAMAGE

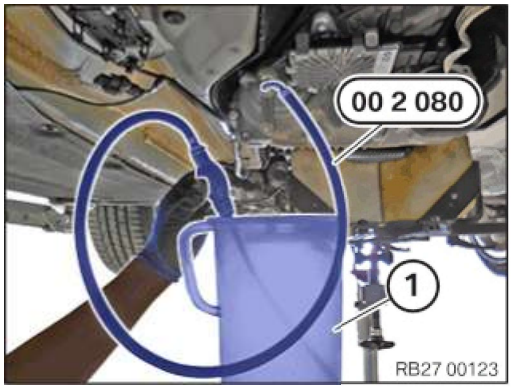
Damage to the transmission.

Damage to the transmission through unapproved transmission oil.

- Use only the approved transmission oil.
- After completion of repair work, check transmission oil level.



- Open the oil filler plug (1).
- Check transmission oil level at the transfer box (VTG).

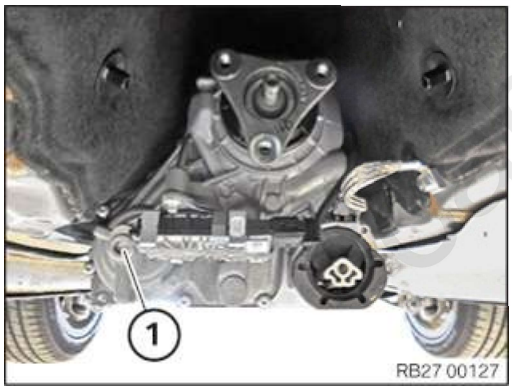


- If necessary, top up the transmission oil with the special tool 0 493 337 (00 2 080) up to the lower edge of the opening for the oil filler plug.

Transfer box capacity ATC-13-1

Transfer-box oil	min. 0,7 l

Transmission oil: Technically suitable transfer box and electrical transmission oils



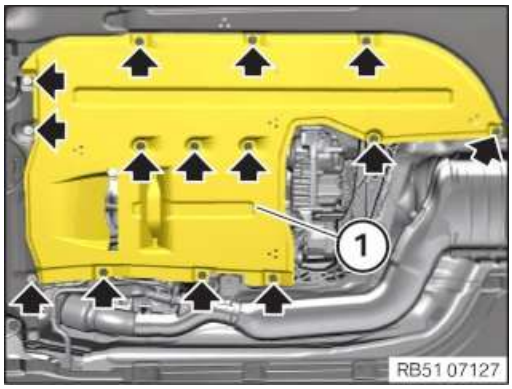
- Replace the oil filler plug (1).

  Parts: Oil filler plug
- Tighten the oil filler plug (1).

Oil filler plug and oil drain plug

M22		Tightening torque	60 Nm

20 – Installing underbody protection at rear



- **Version 1:**

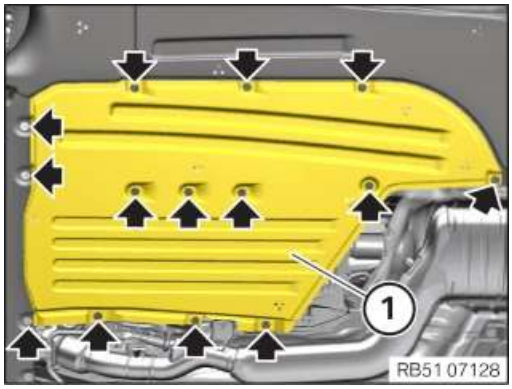
  Insert and install the rear underbody protection (1).

  Tighten screws (arrows).

Underbody protection

Hexagon screw		Tightening torque	3 Nm

carsdiagn.com



- **Version 2:**

  Insert and install the rear underbody protection (1).

  Tighten screws (arrows).

Underbody protection

Hexagon screw		Tightening torque	3 Nm

Additional Information

Overview of Tightening Torques

Propeller shaft before the front axle differential — Used in step 11

Renew screws. Jointing torque and angle of rotation must be observed without fail.		Tightening torque Angle of rotation	25 Nm 45 °

Transfer box to automatic transmission — Used in step 12

M10		Tightening torque	43 Nm

Ground strap to transmission or body — Used in step 12

M8		Tightening torque	19 Nm

Transmission cross member to rubber mounts — Used in step 13

M12	Renew screw.	Tightening torque	68 Nm

Transmission cross member to body — Used in step 13

M8	Renew screws.	Tightening torque	19 Nm

Front flexible disc to propeller shaft — Used in step 14

M12	Renew screws. Comply with jointing torque and angle of rotation. Tightening via screw.	Jointing torque Angle of rotation	55 Nm 90 °

Centre mount to body — Used in step 14

M8		Tightening torque	19 Nm

Heat shield to vehicle underbody — Used in step 15

Screws and nuts		Tightening torque	3 Nm

Rear silencer to body / bumper support — Used in step 16

M8	Replace nuts.	Tightening torque	19 Nm

Exhaust system to rear axle carrier — Used in step 16

Nut M8	Renew nut.	Tightening torque	19 Nm

Front pipe / petrol particulate filter on transmission holder — Used in step 16

M8	Renew nut.	Tightening torque	19 Nm

cardiagn.com

Exhaust system to catalytic converter Used in step 16

Ribbon cable clamp	Renew flat band clip.	Tightening torque	26 Nm

V-clip to catalytic converter Used in step 16

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

Connecting support to tunnel Used in step 17

M8x25 screw		Tightening torque	20 Nm
Screw		Tightening torque	3 Nm

Oil filler plug and oil drain plug Used in step 19

M22		Tightening torque	60 Nm

Underbody protection Used in step 20

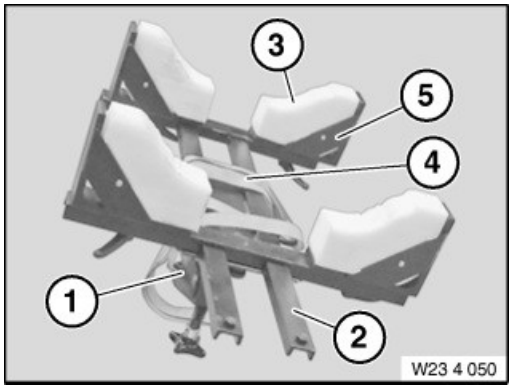
Hexagon screw		Tightening torque	3 Nm

Overview of Special Tools

0 495 498 (23 4 050) Support

Used in step 8

cardiagn.com



Common

Usage	(universal gearbox holder) Support for removing and installing manual gearboxes and automatic transmissions for BMW & RR.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 06 (256)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
3	0 495 549 (23 4 053)		**Insert** (Foam material insert (1 set = 4 pieces)) deleted, can be ordered only via tool set	
1	0 495 547 (23 4 051)		**Joint** Available only as a complete tool set 23 4 050 (83 30 0 495 498) - as of 16.07.12.	
2	0 495 548 (23 4 052)		**Frame** (Basic frame) Available only as a complete tool set 23 4 050 (83 30 0 495 498) - as of 16.07.12.	
4	0 495 550 (23 4 054)		**Belt** (Tensioning strap) Available only as a complete tool set 23 4 050 (83 30 0 495 498) - as of 16.07.12.	
5	0 496 018 (23 4 055)		**Support** (Fixture for foam insert) Available only as a complete tool set 23 4 050 (83 30 0 495 498) - as of 16.07.12.	

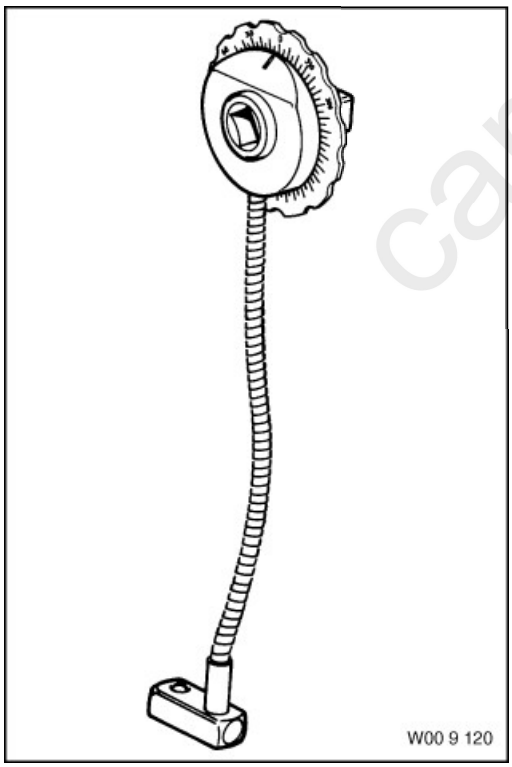
cardiagn.com

2 219 012 Hydraulic lifter



Common	Used in step 8
Usage	For raising and lowering various vehicle components.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	01 05 90 (207)

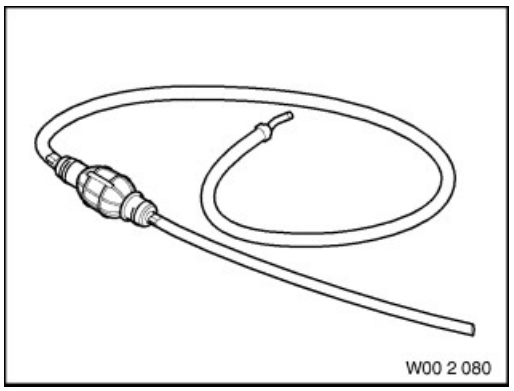
0 490 504 (00 9 120) Torque angle measuring dial



Common	Used in step 14
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	

cardiagn.com

0 493 337 (00 2 080) Pump



Common	Used in step 19
Usage	(Hand pump) For lifetime oil filling
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 01 98 (294)

Overview Technical Data

Transfer box capacity ATC-13-1 — Used in step 19

Transfer-box oil	min. 0,7 l

Transmission oil: Technically suitable transfer box and electrical transmission oils

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	118
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	118
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118

cardiagn.com

61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118
61 20 900 Disconnecting and connecting battery earth lead	118

Operating materials	**Used in step**

cardiagn.com