

00 Danger of injury if oil comes into contact with eyes and skin



Danger of injury!

Contact with eyes or skin may result in injury!

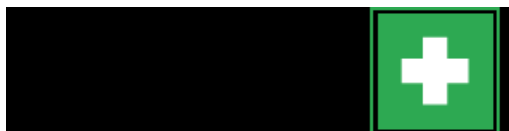
Possible symptoms are:

- Impaired sight
- Irritation of the eyes
- Reddening of the skin
- Rough and cracked skin



Protective measures/rules of conduct:

- Wear safety goggles.
- Wear oil-resistant protective gloves.
- Observe country-specific safety regulations.



First aid measures:

- Eye contact: Immediately flush eyes with lots of water for at least 15 minutes. In the case that it is available, use an eye wash bottle. If eye irritation persists, consult a doctor.
- Skin contact: Wash off with soap and water immediately. If irritation persists, consult a doctor.

Note: Do not use solvents/thinners.

00 Danger of poisoning if oil is ingested/absorbed through the skin



Danger of poisoning!

Ingesting oil or absorbing through the skin may cause poisoning!

Possible symptoms are:

- Headaches
- Dizziness
- Stomach aches
- Vomiting
- Diarrhoea
- Cramps/fits
- Unconsciousness



Protective measures/rules of conduct:

- Fill oil in appropriately marked containers only.
- Do not fill oil in containers meant for drinking out of. (bottles for beverages, glasses or cups)
- Observe country-specific safety regulations.



First aid measures:

- Do not induce vomiting.

If the person affected is still conscious, he/she must rinse out their mouth with water, drink plenty of water and consult a doctor immediately.

Do not administer anything to an unconscious person via their mouth; place them in a stable position on their side. Call the emergency doctor immediately.

33 00 ... Information on replacing shock absorbers

Situation:

When a shock absorber is faulty on one side (leaking, noises, limit values exceeded on the shock tester), often both shock absorbers on the axle in question are replaced.

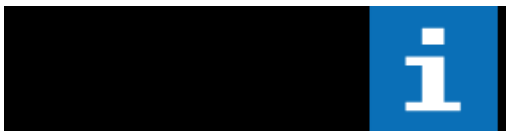
Effect:

This is not necessary for technical reasons and causes the manufacturer not to recognize the unnecessarily removed shock absorbers as defective parts. Unnecessarily high costs for the customer can be avoided by replacing the shock absorber on one side only.

Procedure:

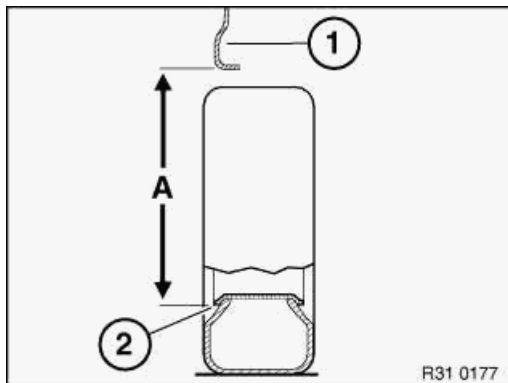
If one shock absorber is damaged, it is only necessary to replace both shock absorbers when the car has driven in excess of 80 000 km.

33 53 ... Measuring vehicle ride height



Necessary preliminary tasks:

- Move vehicle into [normal position](#).



Determine actual ride height (A) - to do so, attach tape measure to rim flange (2) at bottom middle and measure to wheel arch cover (1).

33 00 ... Notes on repairing threads



Important!

Install Helicoil thread inserts so that they are flush with the original thread.

Note:

Damaged threads in the frame side member may be repaired with Helicoil thread inserts. Comply with the [procedure](#) described in the example.

31 00 ... Notes on wheel bearing replacement following accident damage

Wheel bearing facts:

In the event of accidents or driving conditions similar to accidents, shock-like loads to the wheel bearing units can cause slight damage to the bearing track. Despite initial running without noise, with continued use, this results in later noise generation at the wheel bearing.

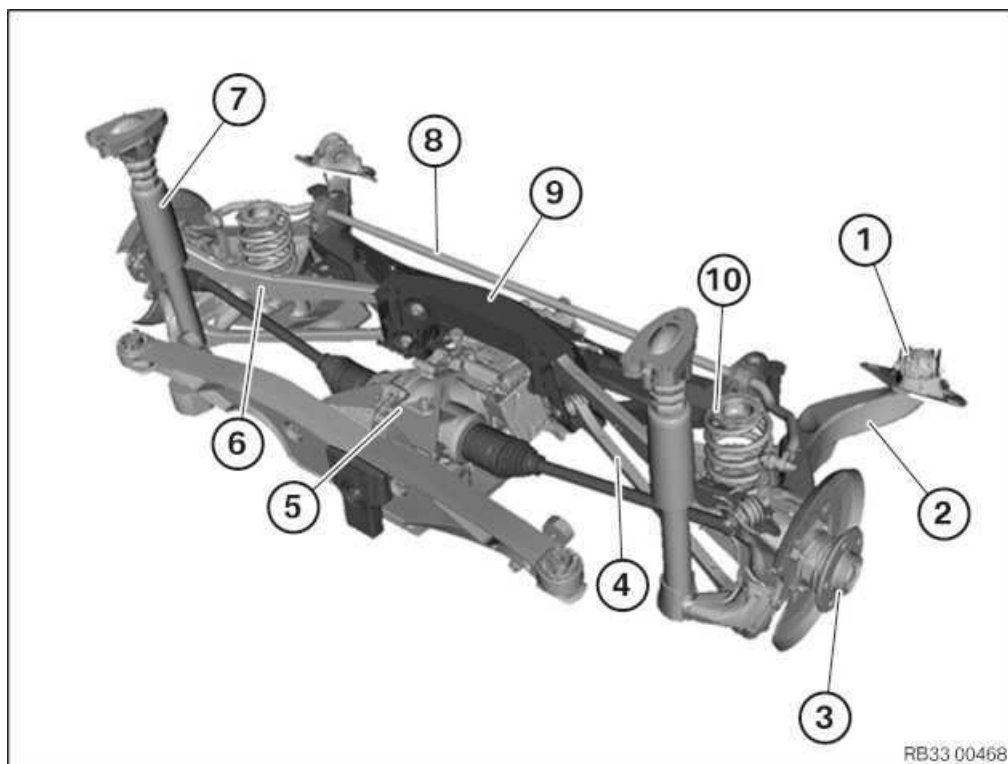
Procedure:

The wheel bearing must be replaced on the damaged side of the axle if one or several of the following points apply:

- Visible or noticeable damage to the wheel bearing
- Rolling noises, radial/lateral runout on the wheel bearing
- Permissible tolerance for the wheel alignment is exceeded and no longer adjustable without the exchange of additional components
- Damage, permanent deformation or fractures to:
 - Wheel rims (major damage) and simultaneous negative result for wheel alignment
 - Spring struts, swivel bearings, wheel carriers
 - Wishbones
 - Struts or trailing links or anti-roll bar with this function
 - Body-side screwing/attachment points for wheel guide/control components
 - Track rods
 - Steering box fixtures

This guideline is binding for all accident repairs to BMW, MINI and Rolls-Royce vehicles!

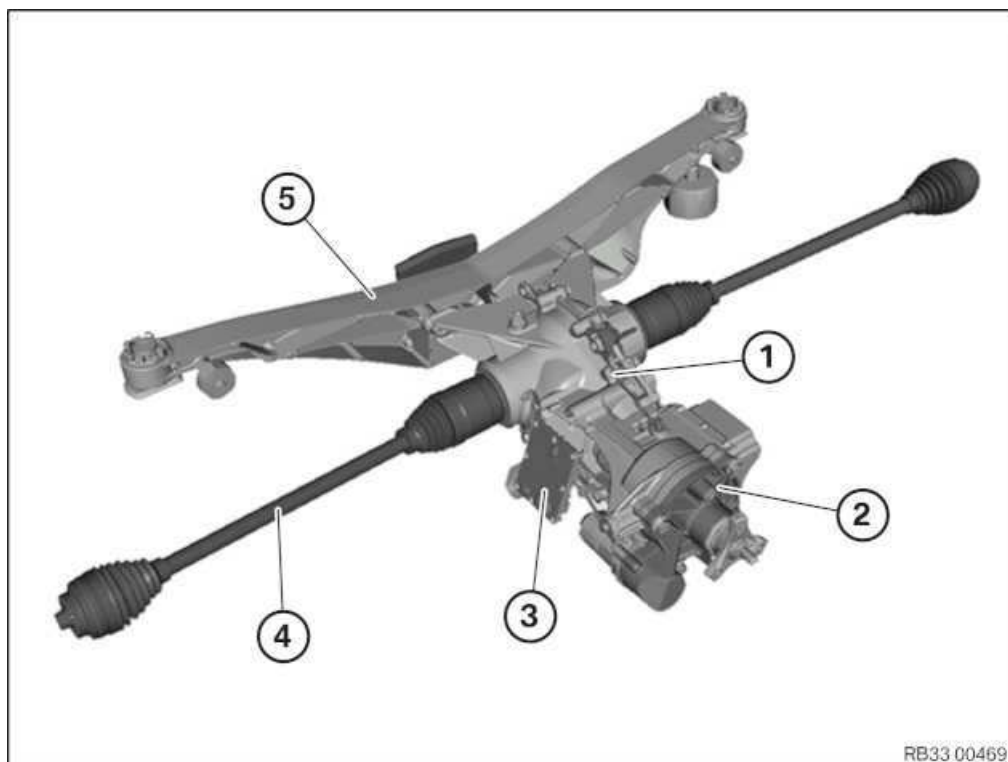
33 Overview of rear axle (all-wheel drive vehicle)



[Safety instructions & general information](#)

1	Trailing arm bearing support/rubber mount	Adjustment work
2	Trailing arm	Testing
3	Wheel bearing	Troubleshooting
4	Lower wishbone	
5	Overview of rear axle final drive/output shafts	
6	Upper wishbone	
7	Shock absorber	
8	Anti-roll bar / anti-roll bar link	
9	Rear axle carrier	
10	Coil spring	

33 Overview of rear axle final drive/output shafts



[Safety instructions & general information](#)

- | | |
|---|---|
| 1 Rear axle final drive | 4 Output shafts |
| 2 Clutch/hydraulic pump | 5 Cross member/vibration absorber |
| 3 Longitudinal moment adjustment control unit | |

00 02 001 Raising the vehicle using a vehicle lift



Warning!

Danger to life!

Read and follow operating instructions for vehicle hoist.

Do not exceed approved load-carrying capacity and load distribution of vehicle hoist.

Weight compensation may be necessary due to the loading situation of the vehicle.

This also applies in the event of considerable removal of parts or conversions on the vehicle.

Note:

The vehicle hoist must comply with the relevant statutory/country-specific accident prevention regulations and be serviced according to the regulations.

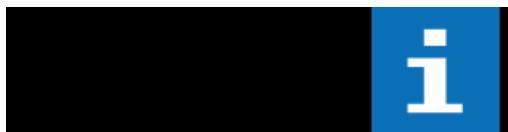


Caution!

Risk of damage!

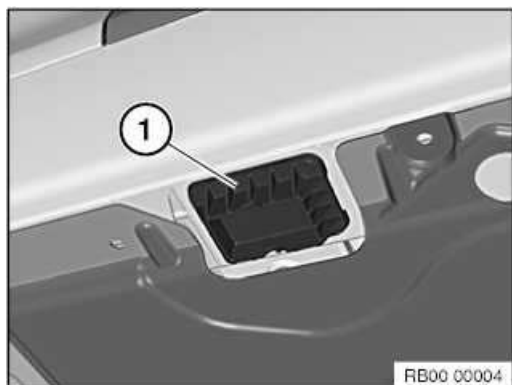
Before driving onto a vehicle hoist, make sure there is sufficient ground clearance between the vehicle hoist and the vehicle.

The vehicle may only be raised with the vehicle hoist at the four jacking points.



Necessary preliminary work:

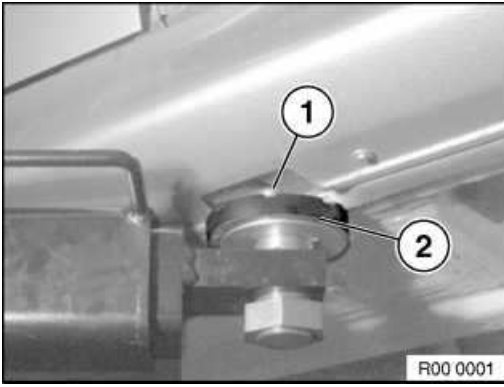
- If necessary, remove jacking points from equipment pack (with new vehicles) and insert from below into openings in front and rear sill areas



Caution!

All four jacking points (1) must be available!

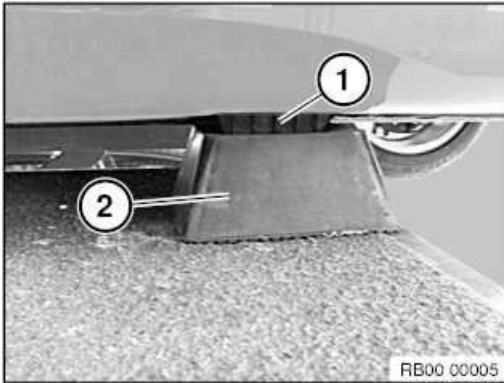
Never raise the vehicle without the jacking points (1)!



Caution!

Risk of damage!

Align support plates (2) of lifting platform arms to jacking points (1) in such a way that no adjoining components are touched and thereby damaged.



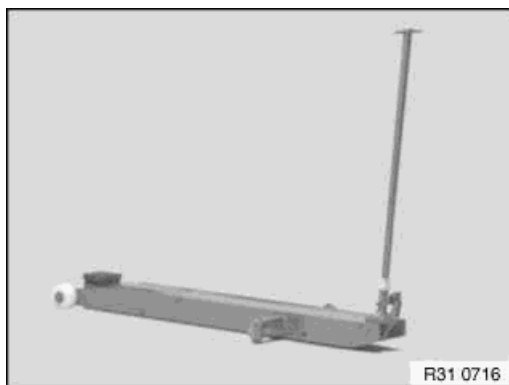
Caution!

Risk of damage!

Align the rubber block (2) with the jacking points (1) in such a way that no adjoining components are touched and thereby damaged.

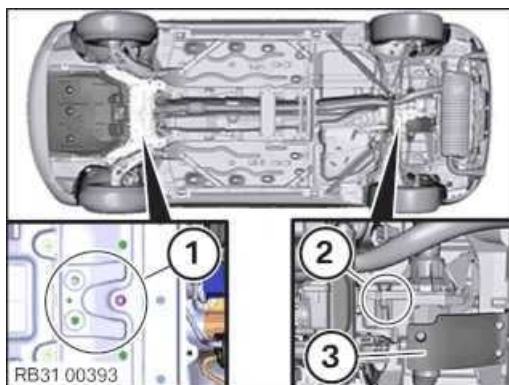
Never raise the vehicle without rubber blocks (or rigid foam blocks)!

There is a major risk of damage to the vehicle underbody!



Observe the following trolley-jack-related notes:

1. Only trolley jacks sold or approved by BMW, with a rubber plate on their mounting, may be used!
2. Trolley jacks must be regularly serviced and always checked for functional reliability before they are used!
3. Check the rubber plate on the trolley jack prior to each use, replacing if necessary.



Warning!

The vehicle may be raised with a trolley jack only at the following mounting point!

- 1 Centre of front axle support

Risk of damage!

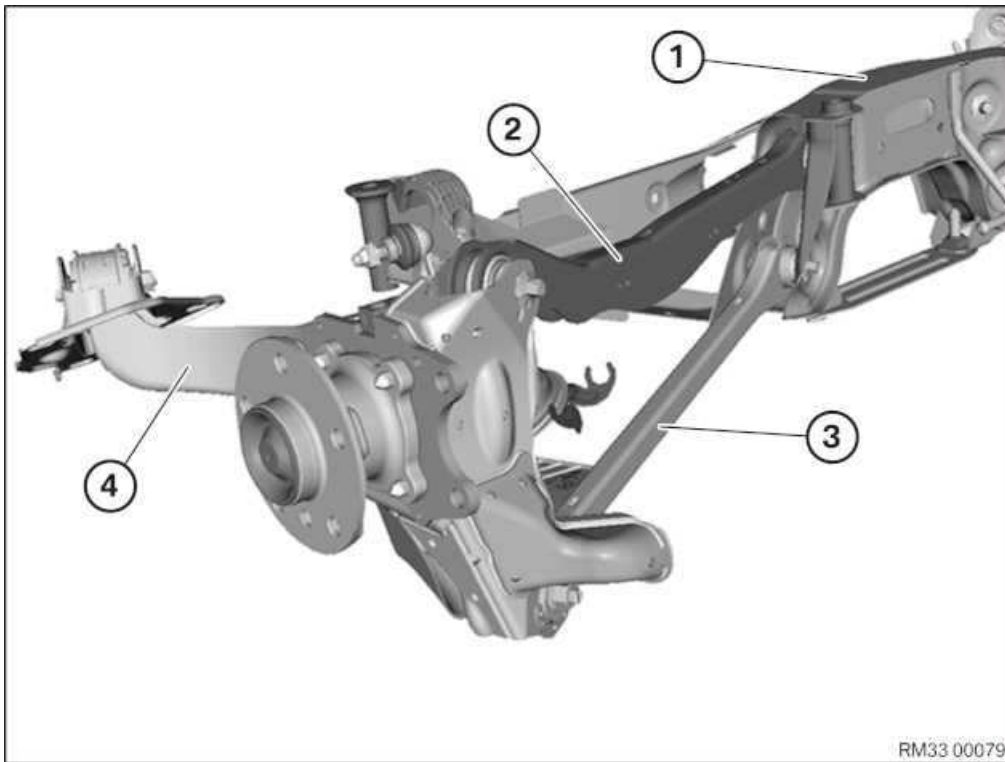
Align the rubber plate on the trolley jack with the front axle support so as to prevent contact with and therefore damage to the underbody protection.

- 2 Rear axle final drive

Risk of damage!

Align the rubber plate on the trolley jack with the rear axle differential to prevent contact with and damage to the cover (3).

33 00 ... Rear axle: Perform wheel alignment after the following repair work



Perform [wheel alignment](#) after the following repair work:

- Release the following screw connection:
 - Trailing arm bearing support to body
 - Trailing arm bearing support to trailing arm rubber mount
 - Upper wishbone to rear axle carrier
 - Bottom wishbone at the rear axle support/trailing arm
- Replacement of following parts:
 1. Rear axle support
 2. Upper wishbone
 3. Lower wishbone
 4. Trailing arm/trailing arm bearing support/rubber mount

00 Safety instructions for handling oil



Warning!

[Danger of poisoning](#) if oil is ingested/absorbed through the skin!

[Risk of injury](#) if oil comes into contact with eyes and skin!



Recycling:

Observe country-specific waste disposal regulations.



Measures if oil is unintentionally released:

- Personal precautionary measures: Danger of slipping! Keep non-involved persons away from the work area. Wear personal protective clothing/equipment.
- Environmental protection measures: Prevent oil from draining into drain channels, sewerage systems, pits, cellars, water and the ground.
- Limiting spread: Use oil blocks to prevent the surface spread of oil.
- Cleaning procedure: Bind and dispose of escaped oil with nonflammable absorbents.

Note: Do not flush oil away with water or aqueous cleaning agents.

**Warning!**

[Danger of poisoning](#) if oil is ingested/absorbed through the skin!

[Risk of injury](#) if oil comes into contact with eyes and skin!

Attention!

Risk of damage!

Use only approved oil for the rear axle differential clutch to prevent damage to the clutch of the rear axle differential. See Electronic Parts Catalogue.

**Recycling:**

Catch and dispose of oil of the rear axle differential clutch in a suitable collecting vessel.

Observe country-specific waste disposal regulations.

**Necessary preliminary work:**

- [Remove](#) complete exhaust system.

**Checking oil level:**

Open screw plug (1).

Check oil level.

- Oil must emerge from the opening.

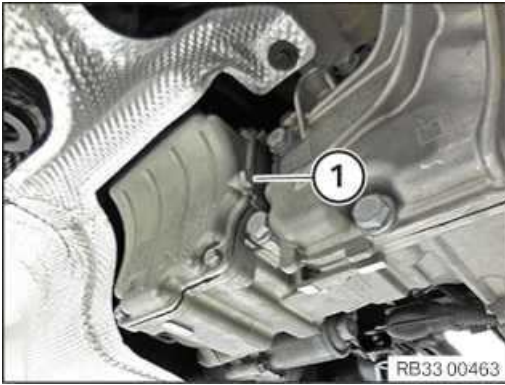
Renew the sealing ring.

Parts: Sealing ring

Apply screw plug (1).

Tightening torque [33 11 2AZ](#).

**Add oil:**



Open screw plug (1).

Slowly top up the [oil](#) until it escapes from the opening.

Wait for 5 minutes.

- The rear axle differential clutch consists of several oil chambers. In order to guarantee equal filling of the oil chambers, the waiting period must be strictly observed.

Top up oil once again.

Tighten the screw plug (1) hand-tight.



Connect the diagnosis system to the vehicle.

Bleed and calibrate the clutch of the rear axle differential as follows:

- Service functions, drive, longitudinal torque distribution, bleeding
- 30 s waiting period
- Service function, drive, longitudinal torque distribution, calibration



Open screw plug (1).

Check oil level, topping up if necessary.

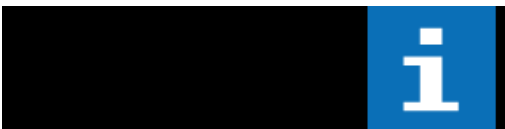
- Oil must emerge from the opening.

Renew the sealing ring.

Parts: Sealing ring

Apply screw plug (1).

Tightening torque [33 11 2AZ](#).



Required follow-up work:

- Completely install the [exhaust system](#).

**Warning!**

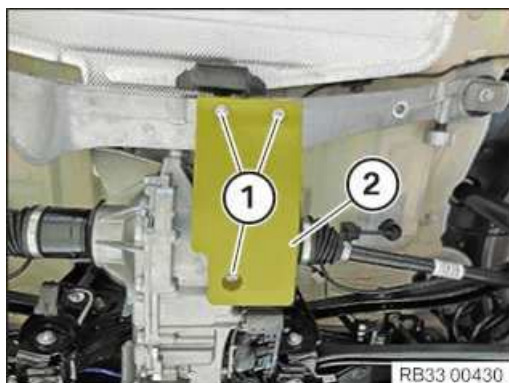
[Danger of poisoning](#) if oil is ingested/absorbed through the skin!

[Risk of injury](#) if oil comes into contact with eyes and skin!

Attention!

Risk of damage!

To avoid serious damage to the rear axle final drive, it is essential to use only [approved gearbox oils](#) in the rear axle final drive.



Loosen screws (1).

Remove cover (2).



Open screw plug (1).

Check oil level.

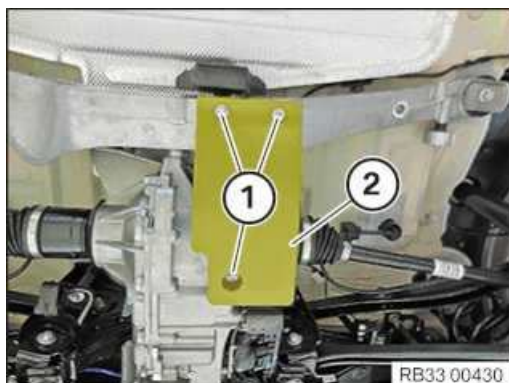
If necessary, pour in final drive oil up to lower edge of opening for screw plug (1).

Renew screw plug (1) with O-ring.

Parts: Plug

Apply screw plug (1).

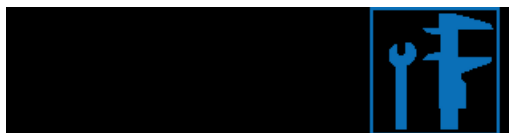
Tightening torque [33 11 1AZ](#).



Position cover (2).

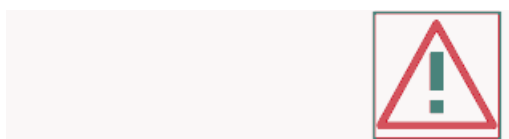
Tighten down screws (1).

Tightening torque [33 31 8AZ](#).



Special tools required:

- [2 358 630](#)
- [23 4 150](#)
- [2 406 773](#)
- [33 5 120](#)
- [0 496 862](#)
- [33 5 122](#)
- [2 406 774](#)



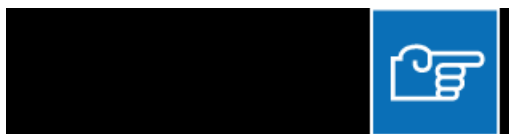
Attention!

- The rear axle final drive must not be tilted by more than 45° during the installation procedure.
- The circlip of the output shaft must be renewed!

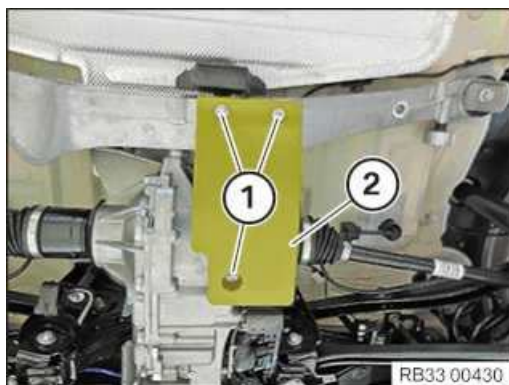


Necessary preliminary work:

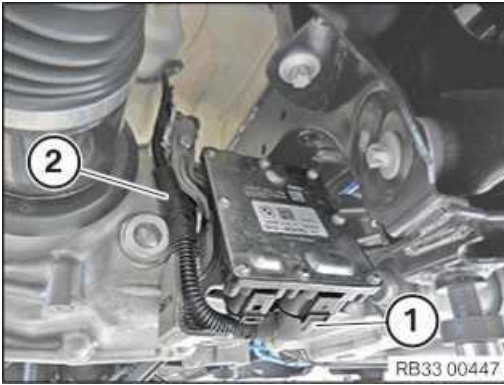
- Remove [right rear wheel](#).
- [Remove](#) complete exhaust system.
- Remove heat shields.
- Remove and tie back [propeller shaft on rear axle differential](#).
- Remove [tank cover on the right](#).
- Remove [right coil spring](#).



Removal:



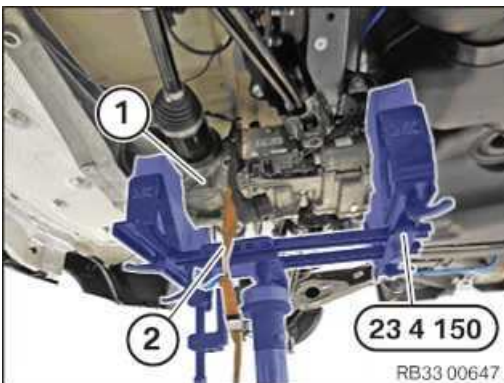
- Loosen screws (1).
Remove cover (2).



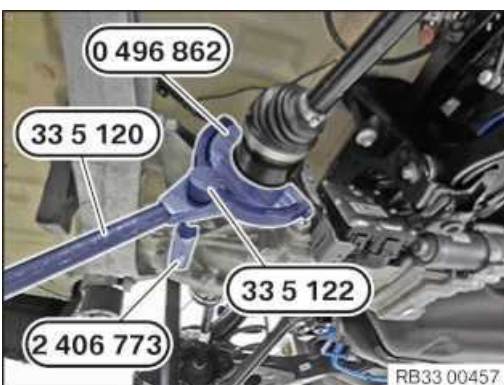
Disconnect connector (1).
Loosen cable (2) from control unit holder.



Secure special tool [2 358 630](#) with wheel studs to drive flange.
Press wheel hub upward with special tool [2 358 630](#) and workshop jack.

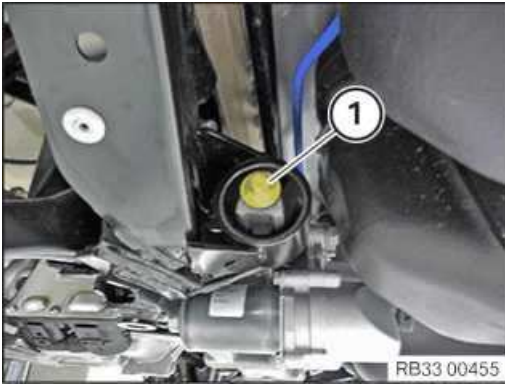


Support rear axle differential (1) with workshop jack and special tool [23 4 150](#).
Secure rear axle differential against falling out with tensioning strap (2).

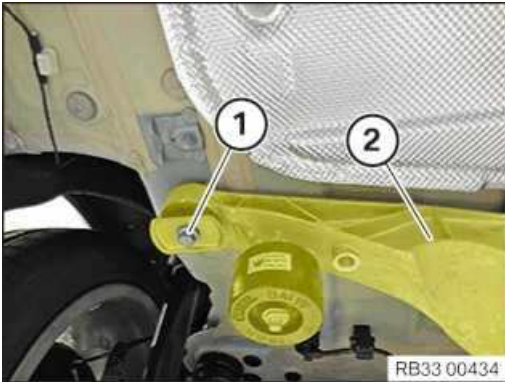


Insert left or support tool [2 406 773](#) into the bore hole on the rear axle differential.
Press left or right output shafts out of rear axle differential with jerky movements using special tool [33 5 120](#) and shaped element [0 496 862](#).

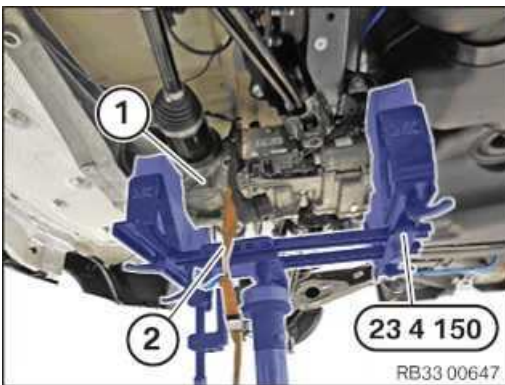
- Position the thrust piece of the screw [33 5 122](#) at the support tool [2 406 773](#).



Release screw (1) of rear axle differential.



Undo screws (1) on left and right of cross member (2) (right side identical).

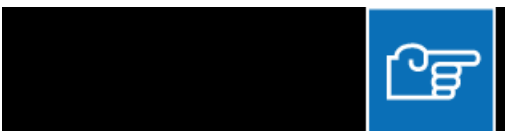


Lower rear axle differential (1).

Feed left or right output shaft out of transmission by shifting rear axle differential sideways.

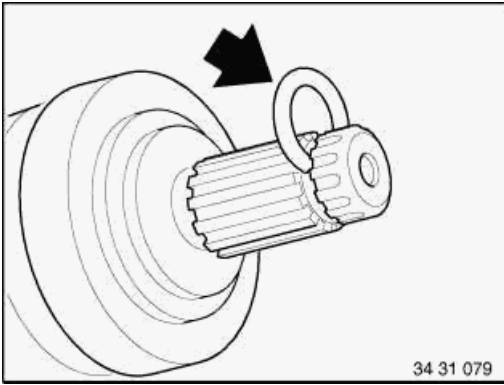


Do not allow output shaft (1) to hang on the joints.
Tie up output shaft (1).



Installation:

Renew [radial shaft seal of left or right output shaft](#).



Renew circlip of output shaft.

Parts: Circlips



Attention!

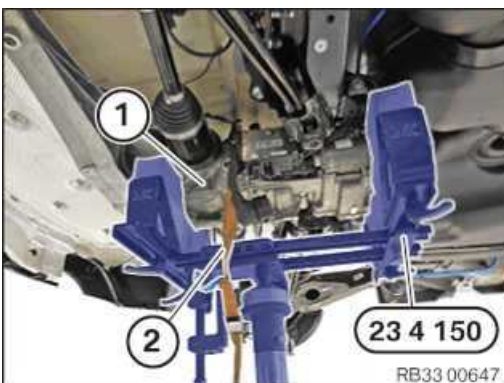
Make sure the installation protection ring has been reinstalled before inserting the output shaft.

Fold open installation protection rings (1) on left or right.

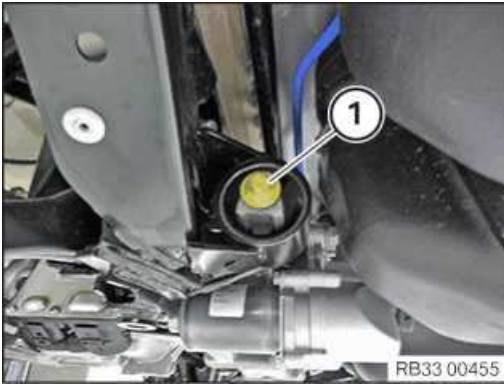


Feed output shafts (1) into the transmission on the left or right by shifting the rear axle differential to the side.

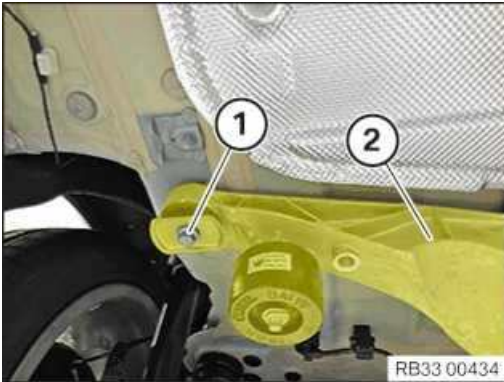
After having inserted the output shaft pull on the installation protection ring tab (3) until one of the two predetermined breaking points gives in. Pull out and dispose of the installation protection ring (3).



Raise rear axle differential (1).



Tighten screw (1) of rear axle differential by hand.



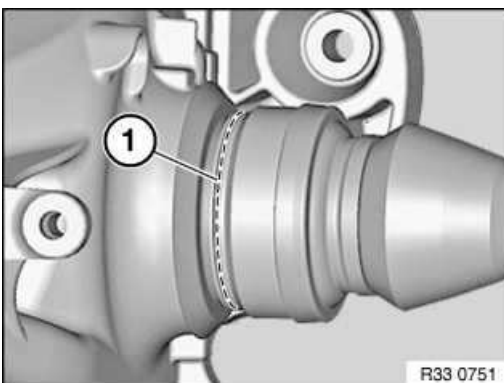
Tighten screws (1) on left and right of cross member (2) (right side identical).

Tightening torque [33 31 3AZ](#).



Tighten screw (1).

Tightening torque [33 17 1AZ](#).



Note:

Special tool [2 406 774](#) must be inserted into the slot (1) of the output shaft on all sides!

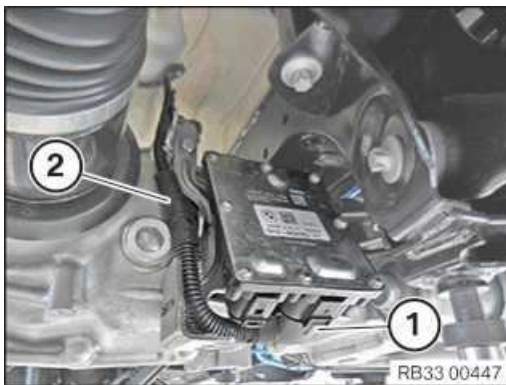


Drive left or right output shaft with special tool [2 406 774](#) and a rubber mallet into rear axle final drive.

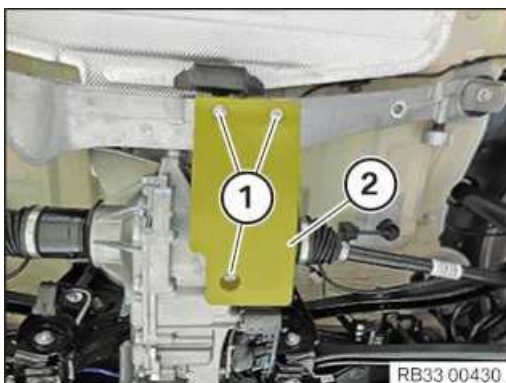


Lower workshop jack.

Note: Do not yet remove special tool [2 358 630](#) (is needed for installation of the coil spring).



Secure cable (2) on control unit holder.
Connect connector (1) to control unit.



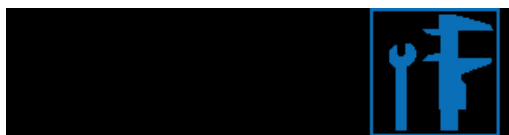
Position cover (2).

Tighten down screws (1).

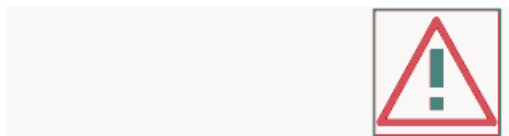
Tightening torque [33 31 8AZ](#).

**Required follow-up work:**

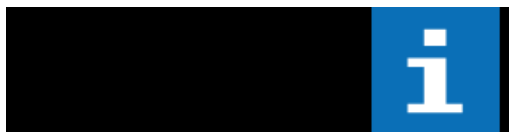
- Install [right coil spring](#).
- Install [right tank cover](#).
- Install [propeller shaft on rear axle differential](#).
- Install heat shields.
- Completely install the [exhaust system](#).
- Mount [right rear wheel](#).
- Check [oil level in the rear axle final drive](#), correct if necessary.

**Special tools required:**

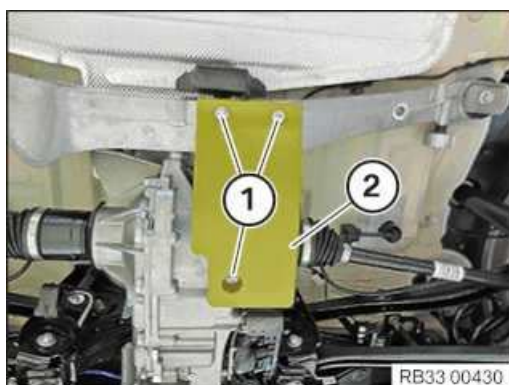
- [2 358 630](#)
- [23 4 150](#)
- [2 406 773](#)
- [33 5 120](#)
- [0 496 862](#)
- [33 5 122](#)
- [2 406 774](#)

**Attention!**

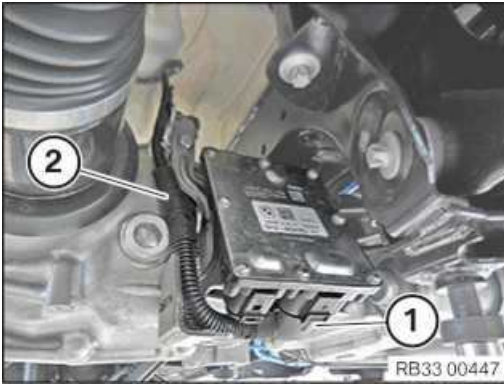
- The rear axle final drive must not be tilted by more than 45° during the installation procedure.
- [Both radial shaft seals of output shafts](#) in rear axle differential must be renewed!
- The circlips on both output shafts must be replaced!

**Necessary preliminary work:**

- Remove [right rear wheel](#).
- [Remove](#) complete exhaust system.
- Remove heat shields.
- Remove and tie back [propeller shaft on rear axle differential](#).
- Remove [tank cover on the right](#).
- Remove [right coil spring](#).

**Removal:**

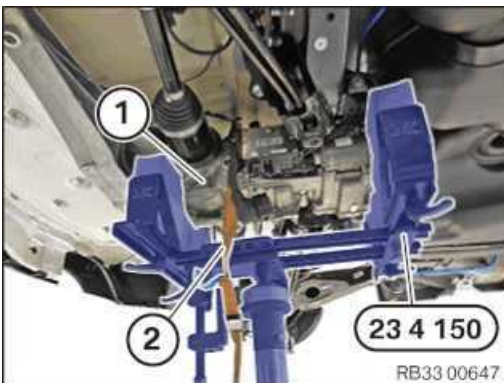
- Loosen screws (1).
Remove cover (2).



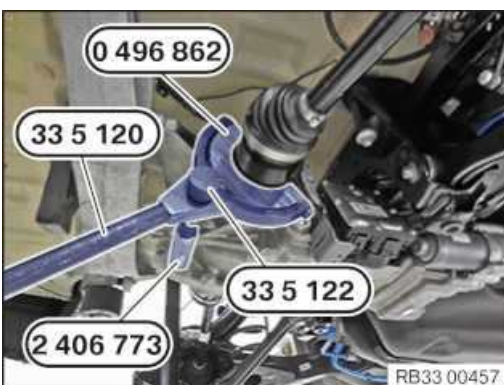
Disconnect connector (1).
Loosen cable (2) from control unit holder.



Secure special tool [2 358 630](#) with wheel studs to drive flange.
Press wheel hub upward with special tool [2 358 630](#) and workshop jack.

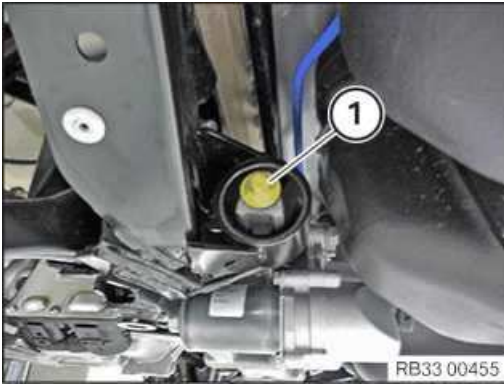


Support rear axle differential (1) with workshop jack and special tool [23 4 150](#).
Secure rear axle differential against falling out with tensioning strap (2).

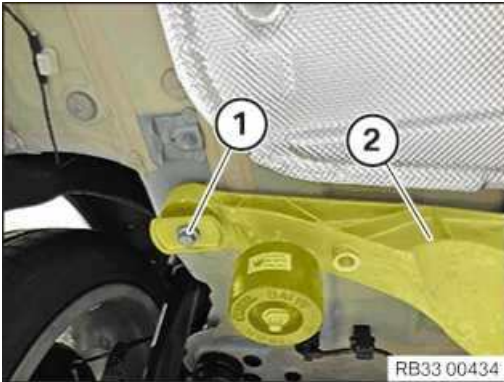


Insert support tool [2 406 773](#) into the bore hole on the rear axle differential.
Press left and right output shafts out of rear axle differential with jerky movements using special tool [33 5 120](#) and shaped element [0 496 862](#).

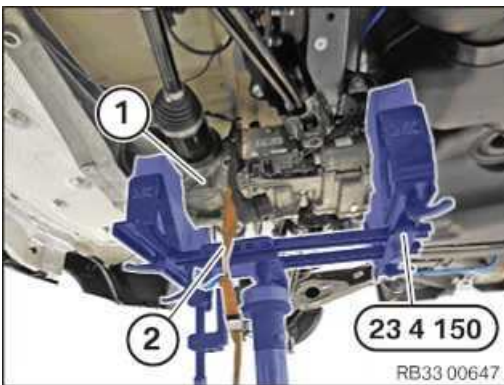
- Position the thrust piece of the screw [33 5 122](#) at the support tool [2 406 773](#).



Release screw (1) of rear axle differential.



Undo screws (1) on left and right of cross member (2) (right side identical).



Lower rear axle differential (1).

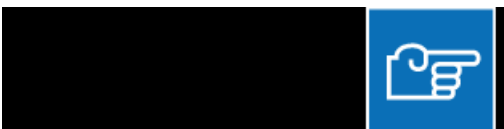
Feed output shafts out of transmission by shifting rear axle differential sideways.

Remove rear axle final drive.



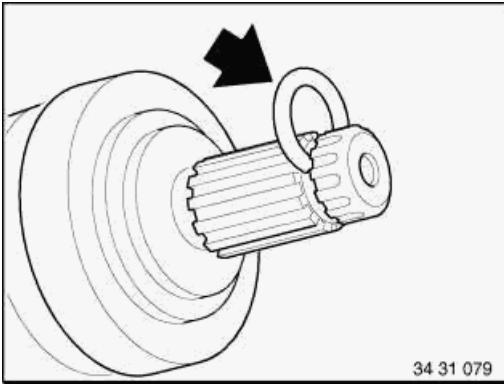
Do not allow output shafts (1) to hang in the joints.

Tie up the output shafts (1).



Installation:

Renew [radial shaft seals of left and right output shafts](#).



Renew circlip of output shafts.

Parts: Circlips



Attention!

Before feeding in the output shafts, make sure that the installation protection rings are fitted again.

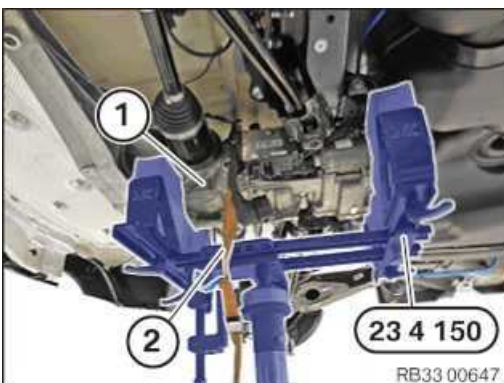
Fold open installation protection rings (1) on left and right.



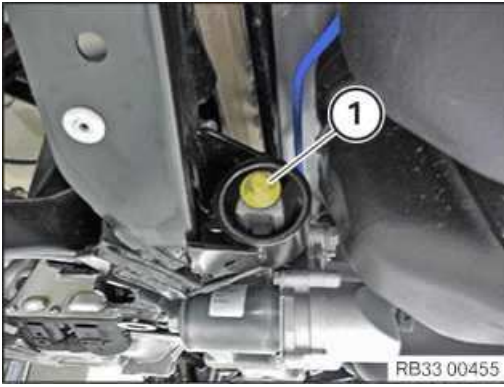
Feed output shafts (1) into the transmission on the left and right by shifting the rear axle differential to the side.

After feeding in the output shafts, pull the tab (3) of the installation protection ring until one of the two predetermined breaking points gives way.

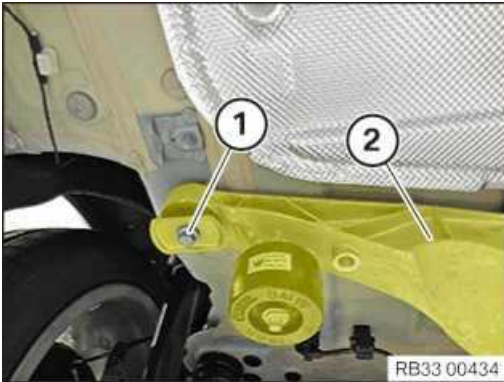
Pull out the installation protection rings (3) and dispose of them.



Raise rear axle differential (1).



Tighten screw (1) of rear axle differential by hand.



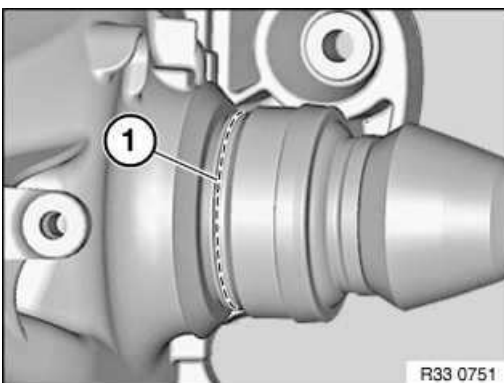
Tighten screws (1) on left and right of cross member (2) (right side identical).

Tightening torque [33 31 3AZ](#).



Tighten screw (1).

Tightening torque [33 17 1AZ](#).



Note:

Special tool [2 406 774](#) must be inserted into the slot (1) of the output shaft on all sides!



Drive output shafts into rear axle differential with special tool [2 406 774](#) and a rubber mallet.



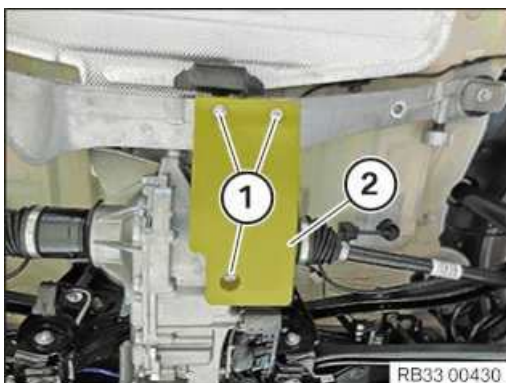
Lower workshop jack.

Note: Do not yet remove special tool [2 358 630](#) (is needed for installation of the coil spring).



Secure cable (2) on control unit holder.

Connect connector (1) to control unit.



Position cover (2).

Tighten down screws (1).

Tightening torque [33 31 8AZ](#).

**Required follow-up work:**

- Install [right coil spring](#).
- Install [right tank cover](#).
- Install [propeller shaft on rear axle differential](#).
- Install heat shields.
- Completely install the [exhaust system](#).
- Mount [right rear wheel](#).
- Check [oil level in the rear axle final drive](#), correct if necessary.

**Warning!**

[Danger of poisoning](#) if oil is ingested/absorbed through the skin!

[Risk of injury](#) if oil comes into contact with eyes and skin!

Attention!

Risk of damage!

Only fill with approved oil, to prevent serious damage to the rear axle differential clutch (see Electronic Parts Catalogue).

**Attention!**

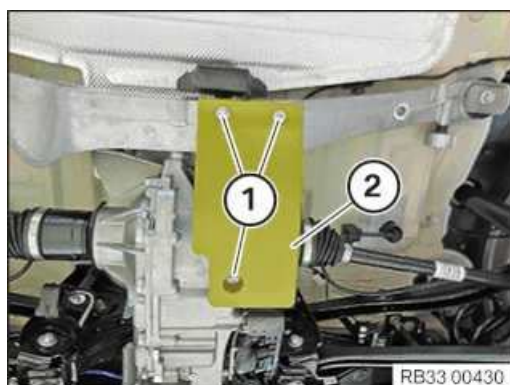
Read and comply with notes on [protection against electrostatic discharge \(ESD protection\)](#).

**Note:**

Replacement of the clutch only in connection with the control unit for longitudinal torque distribution/transfer box.

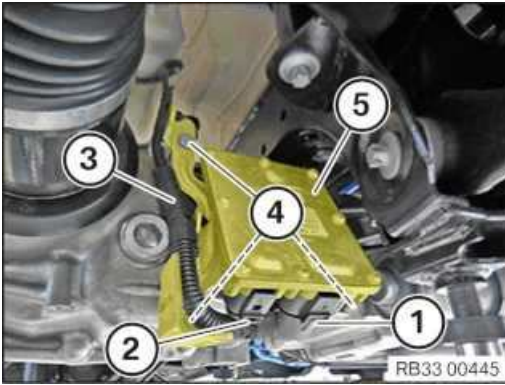
Necessary preliminary tasks:

- Remove [complete exhaust system](#).
- Remove the [left-hand torsion strut](#).
- Remove heat shields.
- Remove and tie back [propeller shaft on rear axle final drive](#).

**Removal:**

Loosen screws (1).

Remove cover (2).

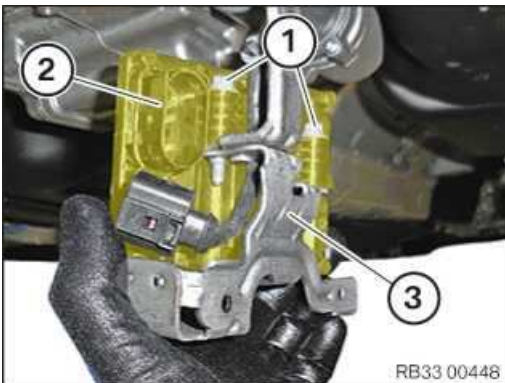


Disconnect plug (2).

Loosen the connector (1) and loosen the cable (3) from the control unit holder.

Unfasten screws (4).

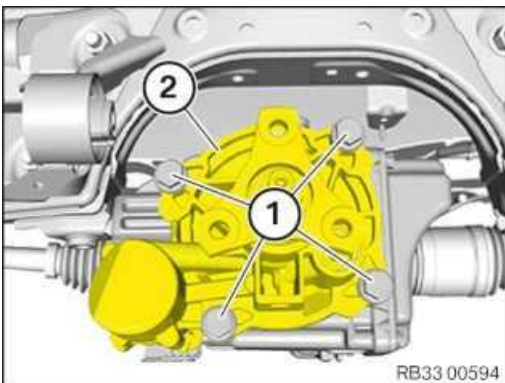
Remove control unit (5) together with bracket.



Loosen screws (1).

Remove the longitudinal torque distribution control unit (2) from the bracket (3).

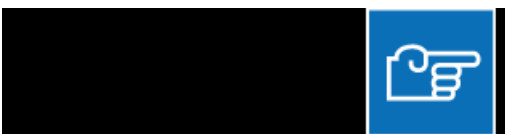
Loosen the cable from the bracket (3).



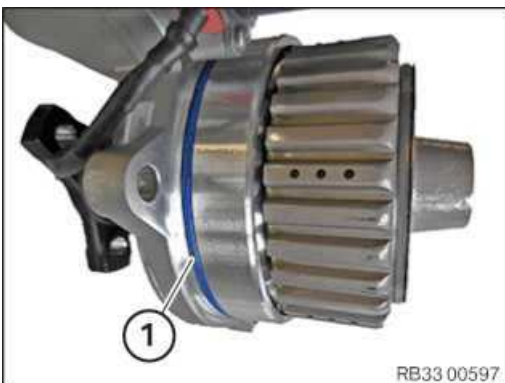
Collect and dispose of any escaping clutch oil.

Loosen screws (1).

Pull out the clutch (2) from the clutch housing.



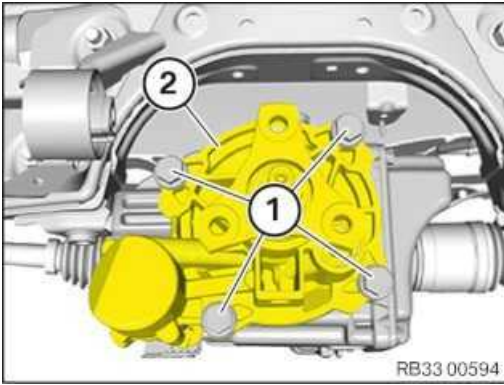
Installation:



Note:

Clean the new coupling (coated with oil) before installation

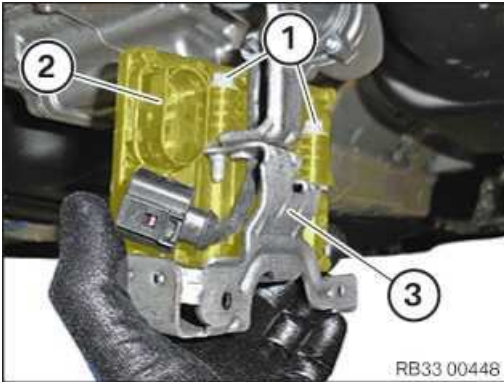
Coat sealing ring (1) with oil.



Insert the clutch (2) into the clutch housing.

Tighten down screws (1).

Tightening torque [33 10 1AZ](#).



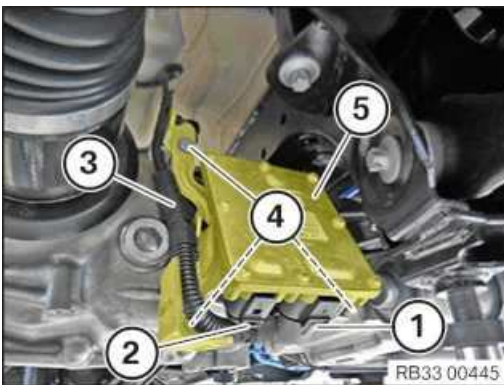
Position the longitudinal torque distribution control unit (2) on the bracket (3).

- Ensure correct cable routing.

Tighten down screws (1).

Tightening torque [33 10 2AZ](#).

Secure the cable to the bracket (3).



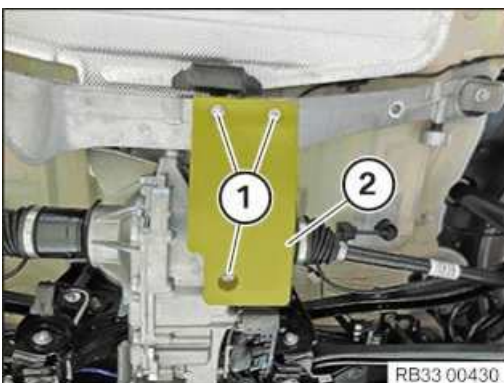
Position control unit (5) with holder on rear axle differential.

Tighten down screws (4).

Tightening torque [33 10 3AZ](#).

Attach connector (2).

Secure the cable (3) to the control unit holder and connect the connector (1).



Position cover (2).

Tighten down screws (1).

Tightening torque [33 31 8AZ](#).



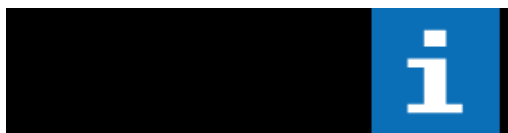
Required follow-up work:

- Fill the [clutch of the rear axle differential with oil](#).
- Remove [propeller shaft on the rear axle differential](#).
- Install heat shields.
- Install the [left-hand torsion strut](#).
- Completely install the [exhaust system](#).
- [Program/encode the control unit](#).

- Calibrate the pump motor.

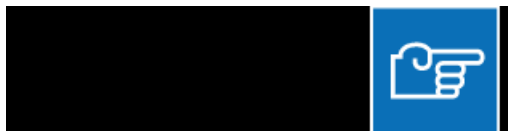
Service function -> engine-> longitudinal torque distribution -> calibration

33 10 805 Replace hydraulic pump of rear axle differential

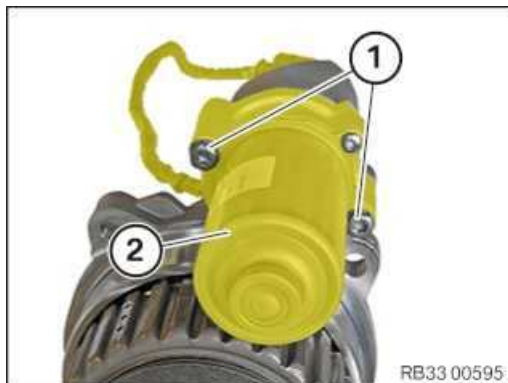


Necessary preliminary work:

- Remove the [rear axle differential clutch](#).

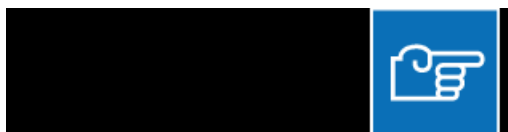


Removal:



Loosen screws (1).

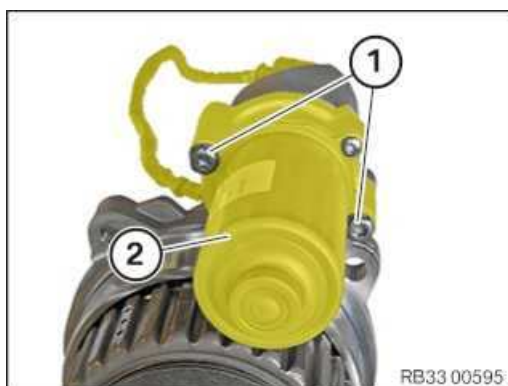
Remove the hydraulic pump (2).



Installation:



Coat both sealing rings (1) on the new hydraulic pump (2) with oil.



Position the hydraulic pump (2) on the clutch housing.

Tighten down screws (1).

Tightening torque [33 10 5AZ](#).



Required follow-up work:

- Install the [rear axle differential clutch](#).
- Top up the [oil level of the rear axle differential clutch](#).
- Calibrate the rear axle differential clutch.

Service function -> engine-> longitudinal torque distribution -> calibration

**Attention!**

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

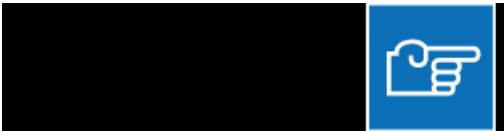
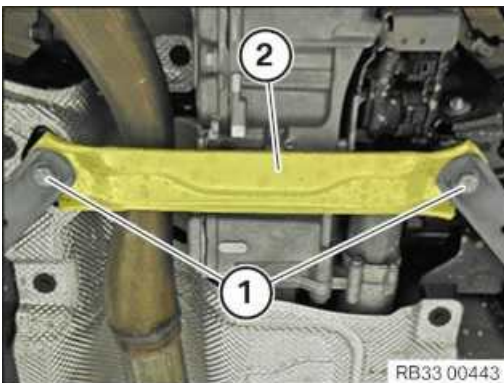
**Necessary preliminary tasks:**

- Individual data must be read out from the control unit before removal without fail and transmitted back to the new control unit after installation (individual data is unique taught data)

Non-compliance leads to functional affects (positioning precision of the HoK)

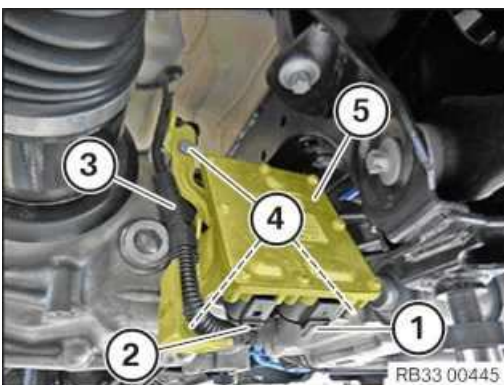
- ISTA/P -> LMV control unit exchange

Note: Only if it is not possible to read out individual data from the previous control unit is it necessary to calibrate the pump motor after having completed the work.

**Removal:**

Loosen screws (1).

Remove cross member (2) on rear axle support.

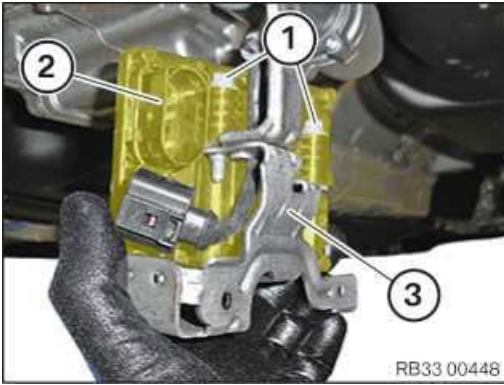


Disconnect plug (2).

Loosen the connector (1) and loosen the cable (3) from the control unit holder.

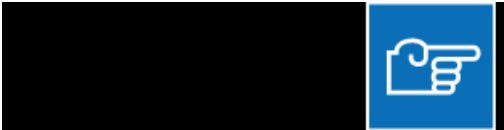
Unfasten screws (4).

Remove control unit (5) together with bracket.

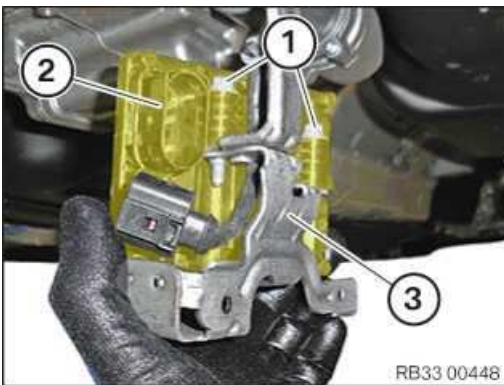


Loosen screws (1).

Remove the longitudinal torque distribution control unit (2) from the bracket (3).



Installation:

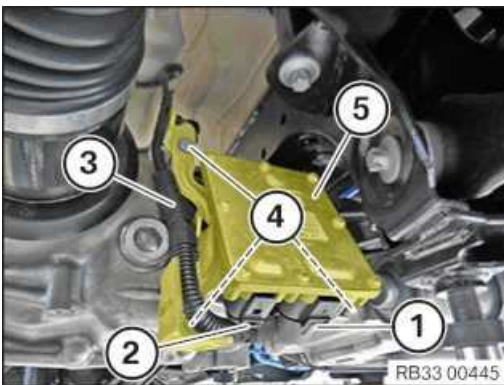


Position the longitudinal torque distribution control unit (2) on the bracket (3).

- Ensure correct cable routing.

Tighten down screws (1).

Tightening torque [33 10 2AZ](#)



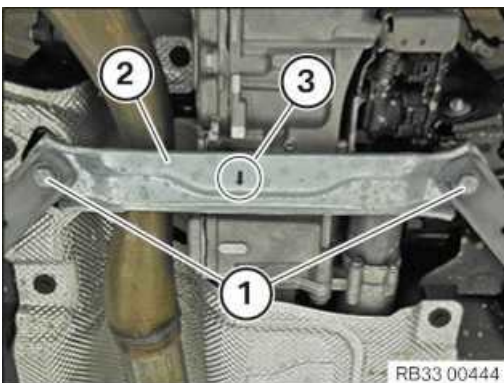
Position control unit (5) with holder on rear axle differential.

Tighten down screws (4).

Tightening torque [33 10 3AZ](#)

Attach connector (2).

Secure the cable (3) to the control unit holder and connect the connector (1).



Position cross member (2) on rear axle support.

- Ensure correct installation position: Arrow (3) on cross member points in direction of travel!

Renew screws (1).

Parts: Bolts

Tighten down screws (1).

Tightening torque [33 31 2AZ](#)



[Programming/encoding control unit](#)



Required follow-up work:

- Load the individual data from the previous control unit to the new control unit.
- Only if the reading out and reading in of the individual data was not possible:
Calibrate the pump motor.
Service function -> engine-> longitudinal torque distribution -> calibration

**Warning!**

[Danger of poisoning](#) if oil is ingested/absorbed through the skin!

[Risk of injury](#) if oil comes into contact with eyes and skin!

Caution!

Risk of damage!

Only fill with approved oil, to prevent serious damage to the rear axle differential clutch (see Electronic Parts Catalogue).

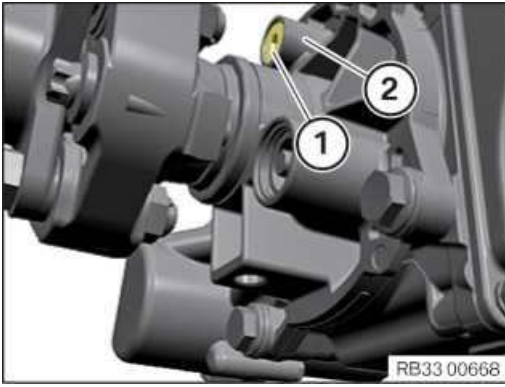
**Necessary preliminary work:**

- Remove [complete exhaust system](#)
- Remove heat shield at rear.

**Removal:**

Loosen pressure relief valve (1) and remove clutch (2) on the rear axle differential.

**Installation:**



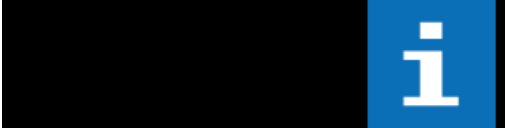
Renew pressure relief valve (1).

Parts: Pressure relief valve

Coat seal of pressure relief valve with oil.

Screw in pressure relief valve (1) by hand and tighten.

Tightening torque [33 10 6 AZ](#)

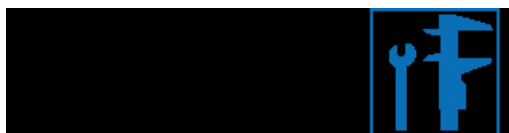


Required follow-up work:

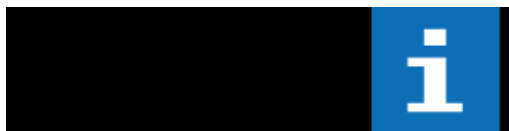
- Installing the rear heat shield
- Installing the [complete exhaust system](#)



- Carry out the "Ventilation" service function twice

**Special tools required:**

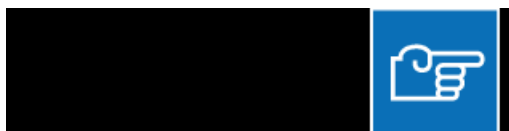
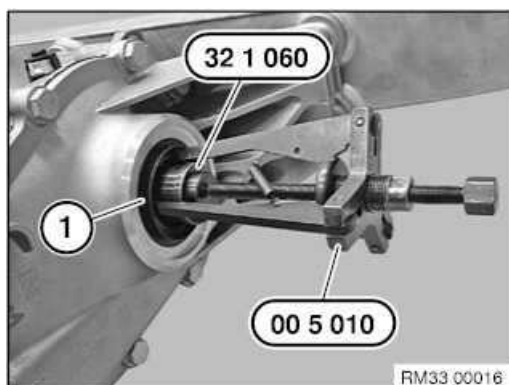
- [00 5 010](#)
- [32 1 060](#)
- [31 5 130](#)

**Note:**

Radial shaft seal ring are equipped with an installation protection ring. The installation protection ring is used to protect the sealing lip when installing the output shaft.

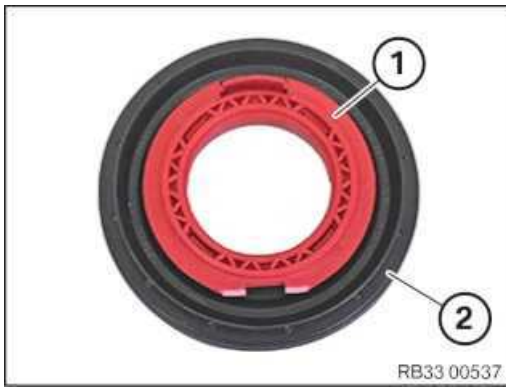
Necessary preliminary work:

- [Lower rear axle differential](#) and release left or right output shaft from the rear axle differential.

**Removal:**

Pull out radial shaft seal (1) with special tools [00 5 010](#) and [32 1 060](#) .

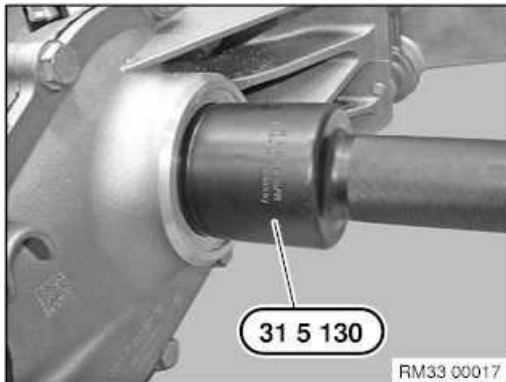
**Installation:**



Replace radial shaft seal (2).

Parts: Radial shaft seal

Remove the installation protection ring (1) from the radial shaft seal (2).

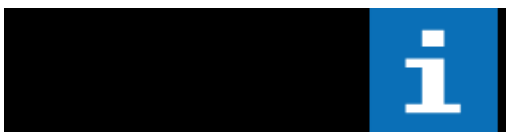


Lightly oil housing flange and sealing lips of the new radial shaft seal.

Drive in radial shaft seal with special tool [31 5 130](#) .



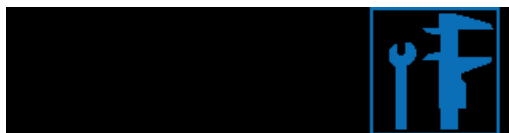
Reinsert the installation protection ring (1) into the radial shaft seal (2).



Required follow-up work:

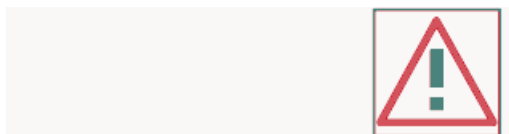
- Secure left or right output shaft on rear axle differential and [raise the rear axle differential](#).
- Check [transmission oil level](#), correct if necessary.

33 10 512 Replacing rear axle differential without clutch (after vehicle diagnosis)



Special tools required:

- [2 358 630](#)
- [23 4 150](#)
- [2 406 773](#)
- [33 5 120](#)
- [0 496 862](#)
- [33 5 122](#)
- [33 5 206](#)
- [2 406 774](#)



Attention!

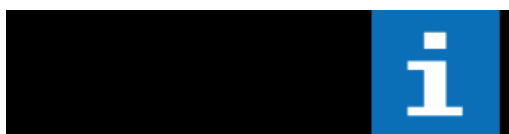
- The circlips on both output shafts must be replaced!

Note:

- The new rear axle differential is supplied without oil.
All oils must be topped up after installation.

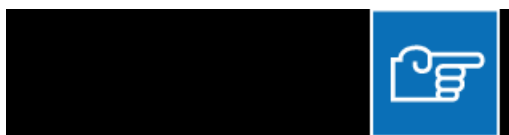


Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.

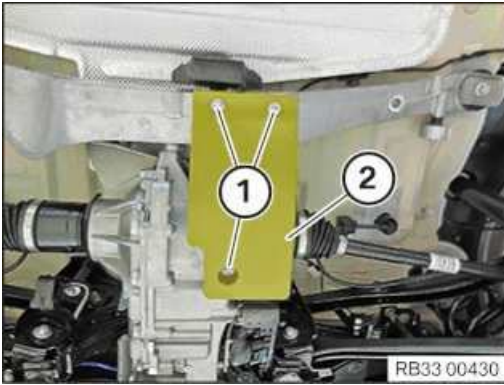


Necessary preliminary work:

- Remove [right rear wheel](#).
- Remove [complete exhaust system](#).
- Remove heat shields.
- Remove and tie back [propeller shaft on rear axle differential](#).
- Remove the [right tank cover](#).
- Remove [right coil spring](#).



Removal:



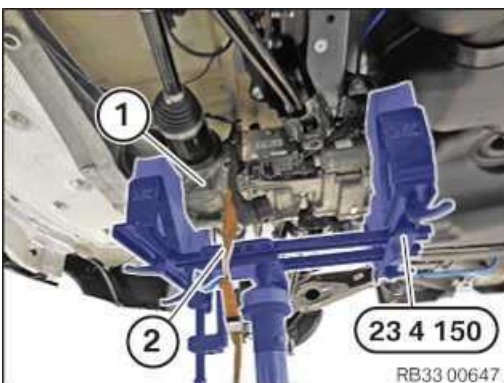
Loosen screws (1).
Remove cover (2).



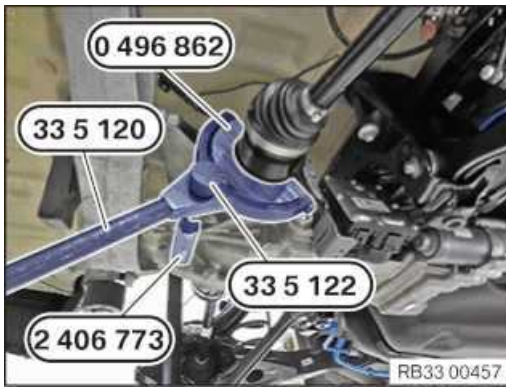
Disconnect connector (1) from control unit.
Loosen cable (2) from control unit holder.



Secure special tool [2 358 630](#) with wheel studs to drive flange.
Press wheel hub upward with special tool [2 358 630](#) and workshop jack.



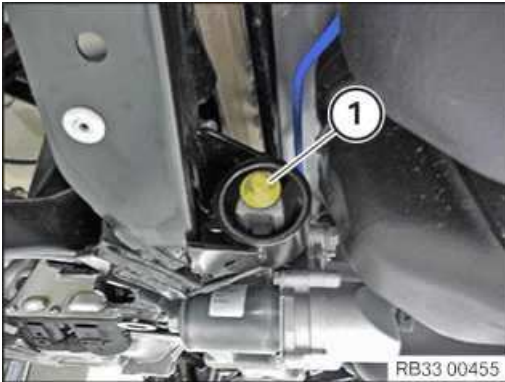
Support rear axle differential (1) with workshop jack and special tool [23 4 150](#).
Secure rear axle differential against falling out with tensioning strap (2).



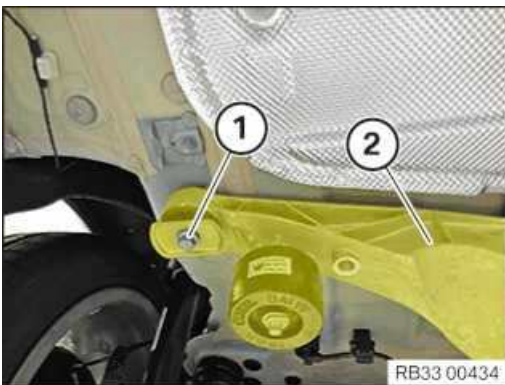
Insert support tool [2 406 773](#) into the bore hole on the rear axle differential.

Press out right and left output shaft out of rear axle differential with jerky movements using special tool [33 5 120](#) and shaped element [0 496 862](#).

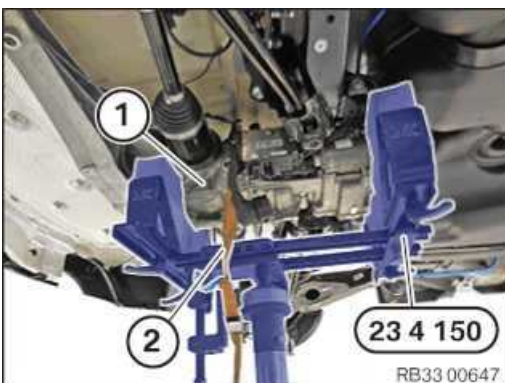
- In the process, position the thrust piece of the bolt [33 5 122](#) on the support tool [2 406 773](#).



Release screw (1) of rear axle differential.



Undo screws (1) on left and right of cross member (2) (right side identical).



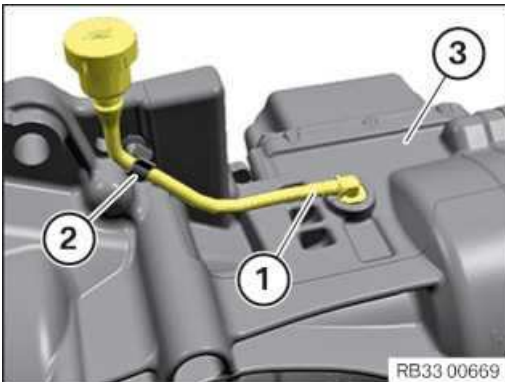
Lower rear axle differential (1).

Feed output shafts out of transmission by shifting rear axle differential sideways.

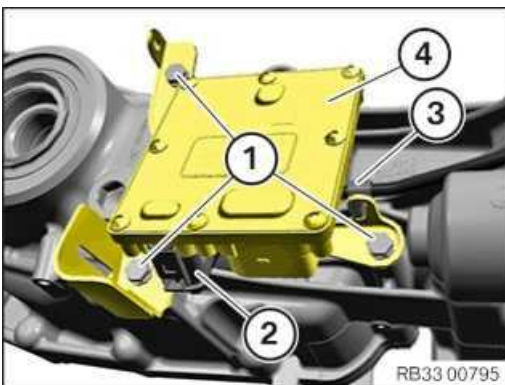
Remove rear axle final drive.



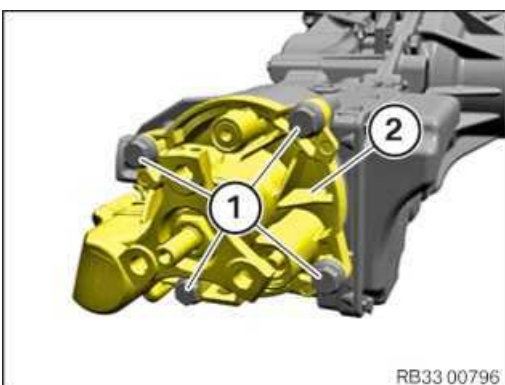
Do not allow output shafts (1) to hang in the joints.
Tie up the output shafts (1).



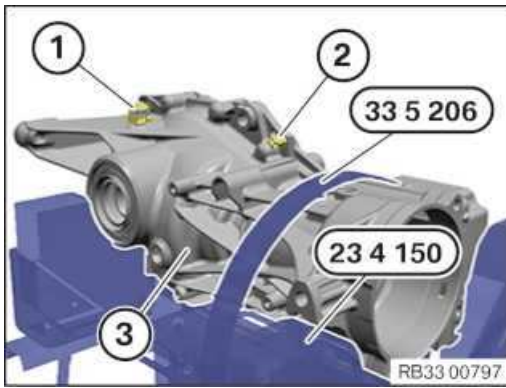
Release ventilation line (1) from holder (2).
Release ventilation line (1) out of rear axle differential (3) and remove.



Loosen screws (1).
Unfasten plug connection (2) and disconnect.
Detach cable from bracket (3).
Remove control unit with holder (4).



Collect and dispose of any escaping clutch oil.
Loosen screws (1).
Pull out the clutch (2) from the clutch housing.

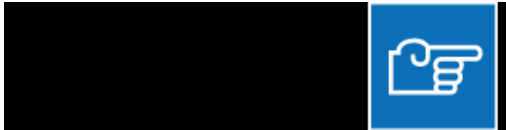


Remove cap (1).

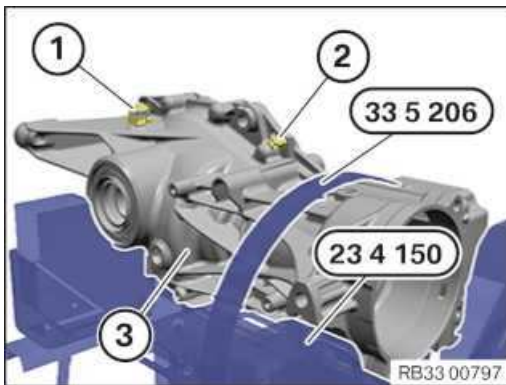
Remove holder (2).

Loosening the tensioning strap [33 5 206](#) .

Lift down rear axle differential (3) from special tool [23 4 150](#) (if necessary with an auxiliary person).



Installation:

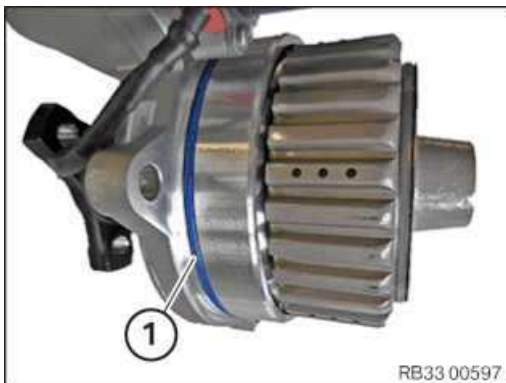


Position new rear axle differential (3) on the special tool [23 4 150](#) (if necessary with an auxiliary person).

Secure rear axle differential (3) with a tensioning strap [33 5 206](#) on the special tool [23 4 150](#) .

Install holder (2).

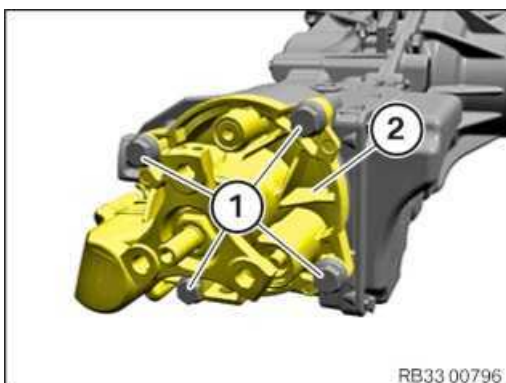
Install cap (1).



Replace sealing ring (1).

Parts: Sealing ring

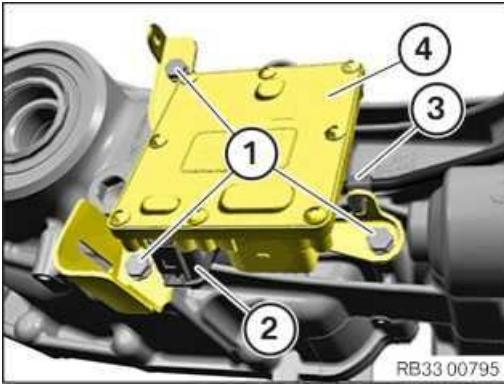
Coat sealing ring (1) with oil.



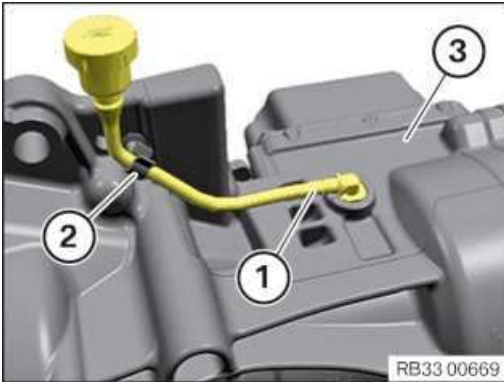
Position clutch (2) in the clutch housing.

Tighten down screws (1).

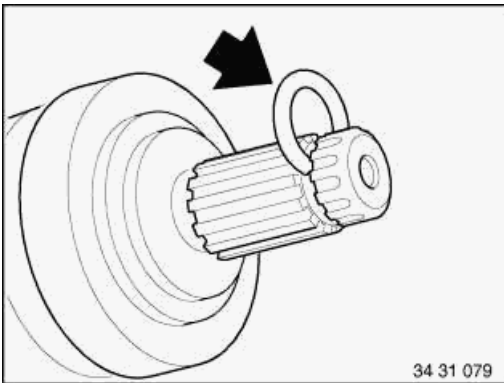
Tightening torque [33 10 1AZ](#).



Position control unit with holder (4).
Secure the cable to the bracket (3).
Connect connector (2) and lock.
Tighten down screws (1).
Tightening torque [33 10 3AZ](#).



Position ventilation line (1) on rear axle differential (3) and secure.
Secure ventilation line (1) on holder (2).



Renew circlips of output shafts.
Parts: Circlips



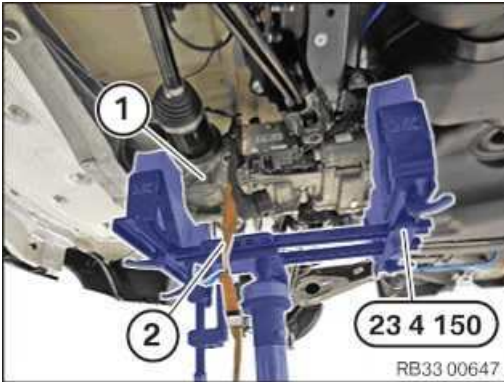
Attention!
Before feeding in the output shafts, make sure that the installation protection rings are installed.
Fold open installation protection rings (1) on left and right.



Feed output shafts (1) into the transmission on the left and right by shifting the rear axle differential to the side.

After feeding in the output shafts, pull the tab (3) of the installation protection ring until one of the two predetermined breaking points gives way.

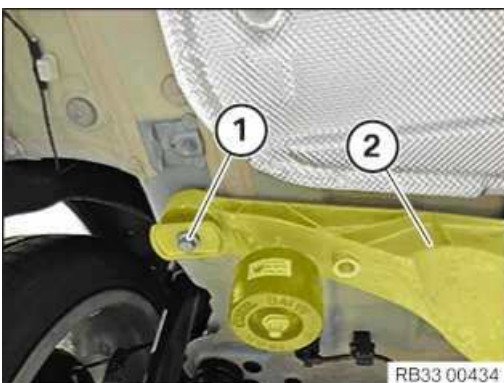
Pull out the installation protection rings (3) and dispose of them.



Raise rear axle differential (1).

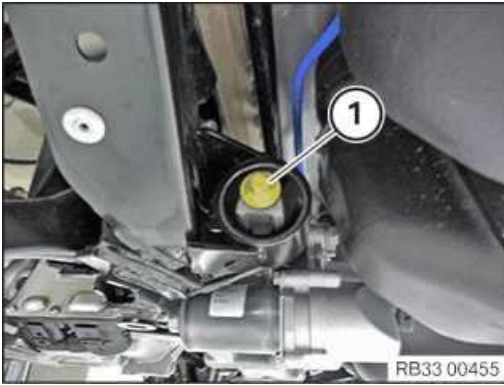


Tighten screw (1) of rear axle differential by hand.



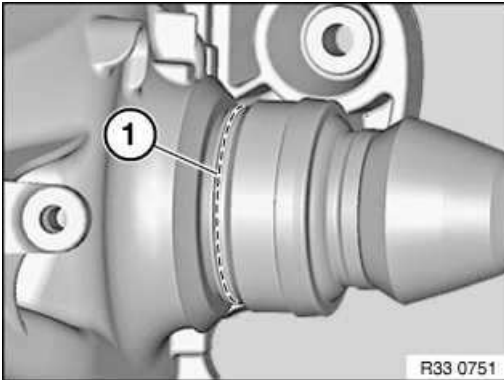
Tighten screws (1) on left and right of cross member (2) (right side identical).

Tightening torque [33 31 3AZ](#).



Tighten screw (1).

Tightening torque [33 17 1AZ](#).



Note:

Special tool [2 406 774](#) must be inserted into the slot (1) of the output shaft on all sides!



Drive output shafts with special tool [2 406 774](#) and a rubber mallet into rear axle differential.

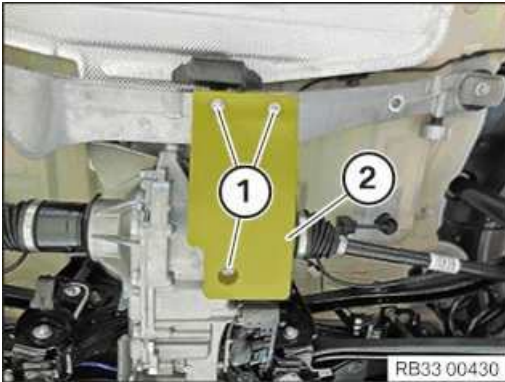


Lower workshop jack.

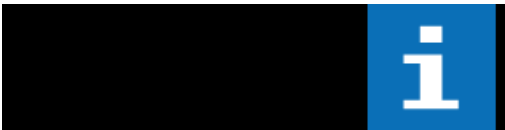
Note: Do not yet remove special tool [2 358 630](#) (is required to install the coil spring).



Secure cable (2) on control unit holder.
Connect connector (1) to control unit.

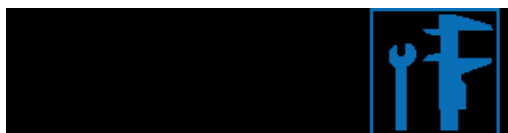


Position cover (2).
Tighten down screws (1).
Tightening torque [33 31 8AZ](#).

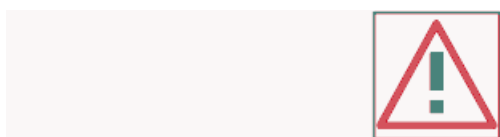


Required follow-up work:

- Install [right coil spring](#).
- Install [right tank cover](#).
- Mount [propeller shaft on rear axle differential](#).
- Install heat shields.
- Completely install the [exhaust system](#).
- Install [right rear wheel](#).
- Top up [oil level in the rear axle differential](#).
- Fill [rear axle differential clutch with oil](#)

**Special tools required:**

- [2 358 630](#)
- [23 4 150](#)
- [2 406 773](#)
- [33 5 120](#)
- [0 496 862](#)
- [33 5 122](#)
- [33 5 200](#)
- [2 406 774](#)

**Attention!**

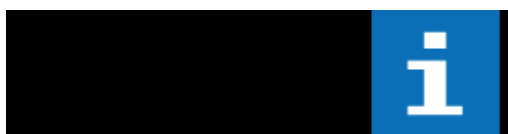
- The rear axle final drive must not be tilted by more than 45° during the installation procedure.
- The circlips on both output shafts must be replaced!

Note:

- The new rear axle differential is delivered with all oils completely filled.

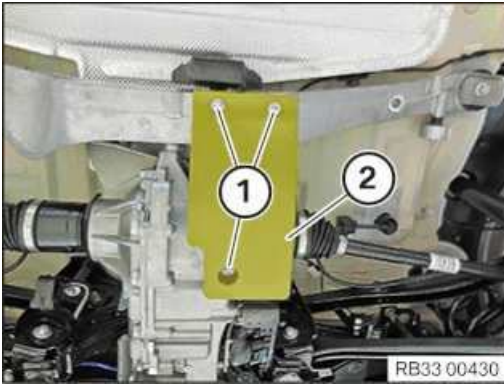
The oil level therefore does not have to be checked.

In rare cases, oil escaping during transport can contaminate the new rear axle differential. If this happens, the [oil levels must be monitored and replenished](#). If oil has leaked through the breather on the clutch on the rear axle differential, the breather must be renewed.

**Necessary preliminary work:**

- Remove [right rear wheel](#).
- [Remove](#) complete exhaust system.
- Remove heat shields.
- Remove and tie back [propeller shaft on rear axle differential](#).
- Remove the [right tank cover](#).
- Remove [right coil spring](#).

**Removal:**



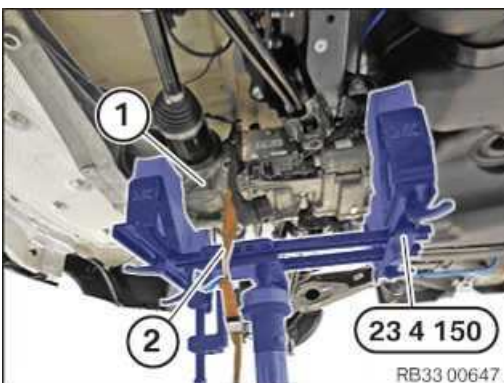
Loosen screws (1).
Remove cover (2).



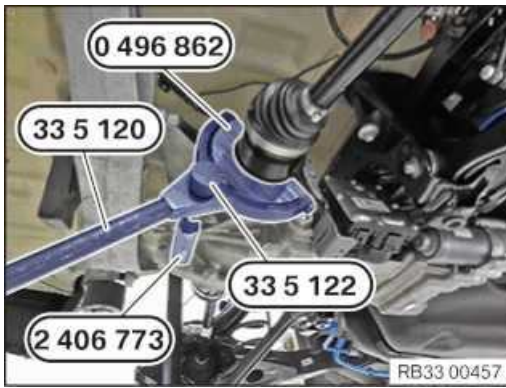
Disconnect connector (1) from control unit.
Loosen cable (2) from control unit holder.



Secure special tool [2 358 630](#) with wheel studs to drive flange.
Press wheel hub upward with special tool [2 358 630](#) and workshop jack.



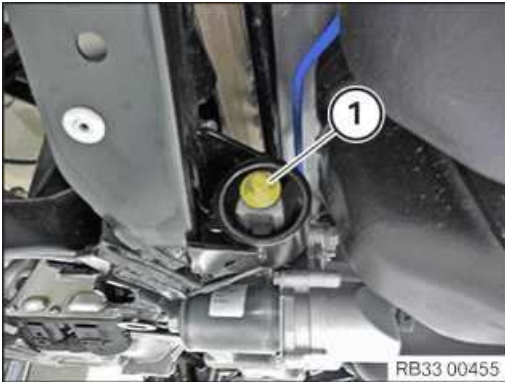
Support rear axle differential (1) with workshop jack and special tool [23 4 150](#).
Secure rear axle differential against falling out with tensioning strap (2).



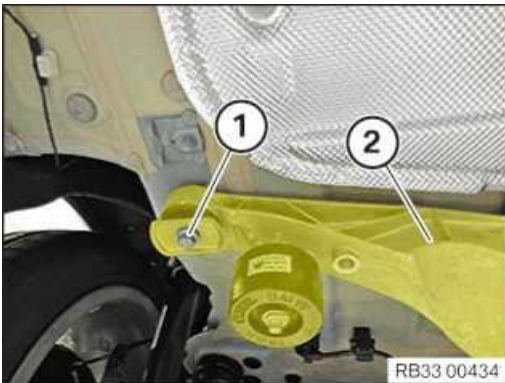
Insert support tool [2 406 773](#) into the bore hole on the rear axle differential.

Press out right and left output shaft out of rear axle differential with jerky movements using special tool [33 5 120](#) and shaped element [0 496 862](#).

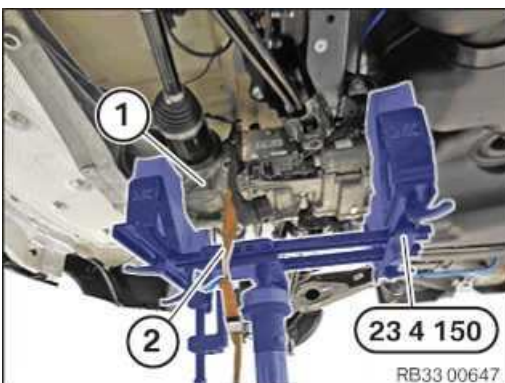
- In the process, position the thrust piece of the bolt [33 5 122](#) on the support tool [2 406 773](#).



Release screw (1) of rear axle differential.



Undo screws (1) on left and right of cross member (2) (right side identical).



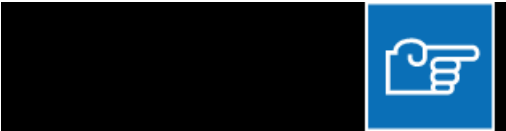
Lower rear axle differential (1).

Feed output shafts out of transmission by shifting rear axle differential sideways.

Remove rear axle final drive.



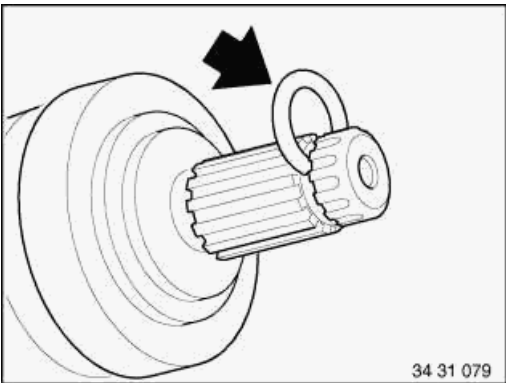
Do not allow output shafts (1) to hang in the joints.
Tie up the output shafts (1).



Installation:

Remove the rear axle differential to be renewed from the special tool [33 5 200](#).

Place new rear axle differential on special tool [33 5 200](#) and secure with tensioning strap.



Renew circlip of output shafts.

Parts: Circlips



Attention!

Before feeding in the output shafts, make sure that the installation protection rings are installed.

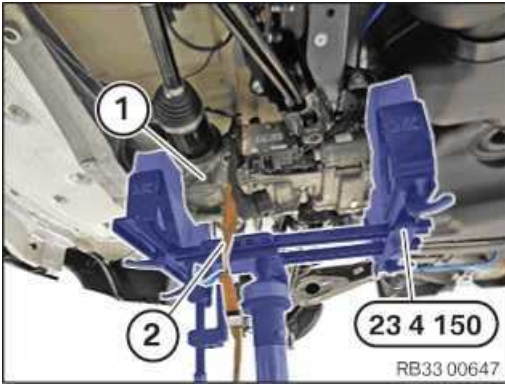
Fold open installation protection rings (1) on left and right.



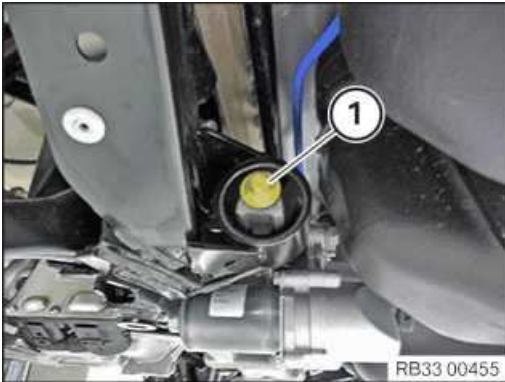
Feed output shafts (1) into the transmission on the left and right by shifting the rear axle differential to the side.

After feeding in the output shafts, pull the tab (3) of the installation protection ring until one of the two predetermined breaking points gives way.

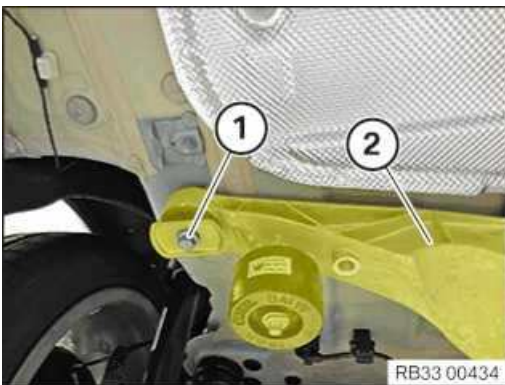
Pull out the installation protection rings (3) and dispose of them.



Raise rear axle differential (1).



Tighten screw (1) of rear axle differential by hand.



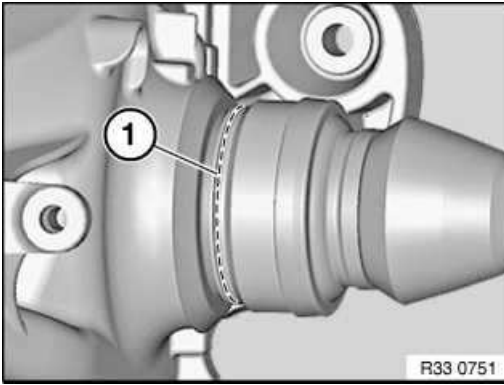
Tighten screws (1) on left and right of cross member (2) (right side identical).

Tightening torque [33 31 3AZ](#).



Tighten screw (1).

Tightening torque [33 17 1AZ](#).



Note:

Special tool [2 406 774](#) must be inserted into the slot (1) of the output shaft on all sides!



Drive output shafts with special tool [2 406 774](#) and a rubber mallet into rear axle differential.



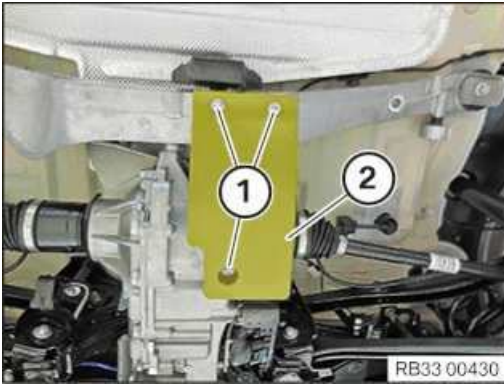
Lower workshop jack.

Note: Do not yet remove special tool [2 358 630](#) (is required to install the coil spring).



Secure cable (2) on control unit holder.

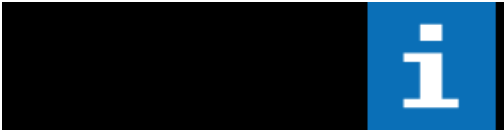
Connect connector (1) to control unit.



Position cover (2).

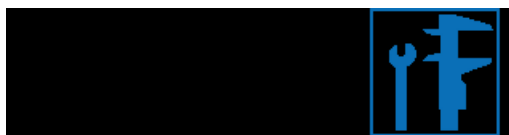
Tighten down screws (1).

Tightening torque [33 31 8AZ](#).



Required follow-up work:

- Install [right coil spring](#).
- Install [right tank cover](#)
- Mount [propeller shaft on rear axle differential](#).
- Install heat shields.
- Completely install the [exhaust system](#).
- Install [right rear wheel](#).
- Check [oil level in the rear axle final drive](#), correct if necessary.
- Encode/program rear axle differential control unit.

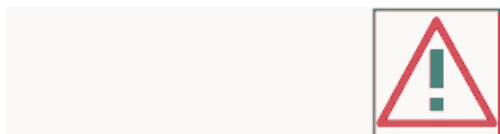
**Special tools required:**

- [11 4 471](#)
- [11 4 472](#)

**Warning!**

[Danger of poisoning](#) if oil is ingested/absorbed through the skin!

[Risk of injury](#) if oil comes into contact with eyes and skin!

**Attention!**

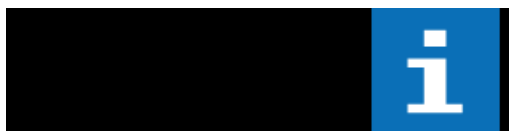
Risk of damage!

Exclusively top up using the [approved oil](#) to prevent severe damage to the clutch of the rear axle differential.

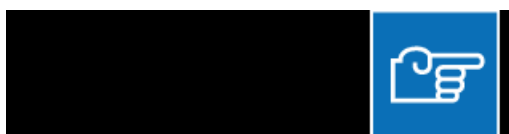
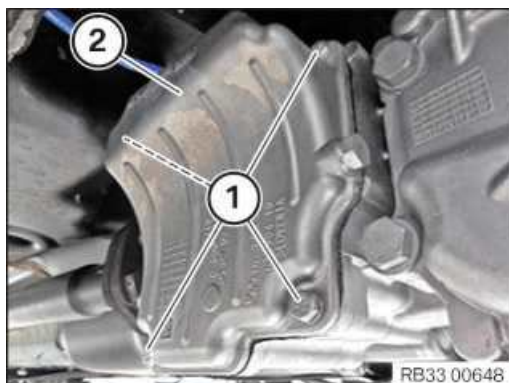
**Recycling:**

Catch and dispose of oil of the rear axle differential clutch in a suitable collecting vessel.

Observe country-specific waste disposal regulations.

**Necessary preliminary work:**

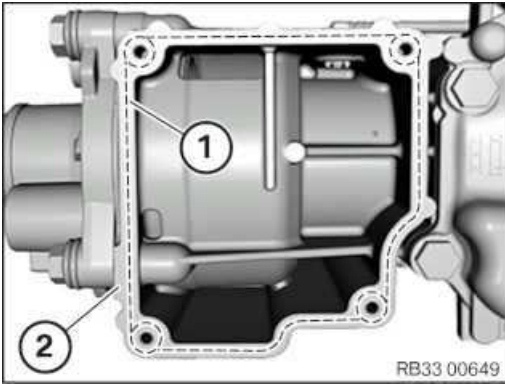
- Remove [complete exhaust system](#).
- Remove the [left-hand torsion strut](#).
- Remove rear heat shield.

**Removal:****Attention!**

Collect and dispose of any escaping rear axle differential clutch oil.

Loosen screws (1).

Remove the oil filler cap (2).



Attention!

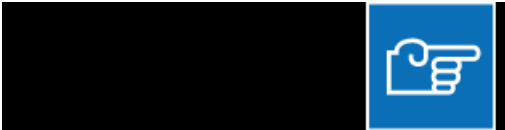
Do not use any metal-cutting tools (e.g. emery cloth).

Clean the sealing surface (1) on the rear axle differential (2).

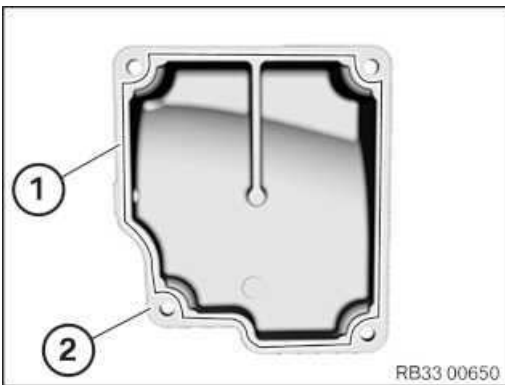
If necessary, remove any surface sealing compound residue using special tool [11 4 471](#) or [11 4 472](#).

Installation note:

The sealing surfaces on the oil filler cap and at the rear axle differential must be free from oil, grease and cleaning agent.



Installation:

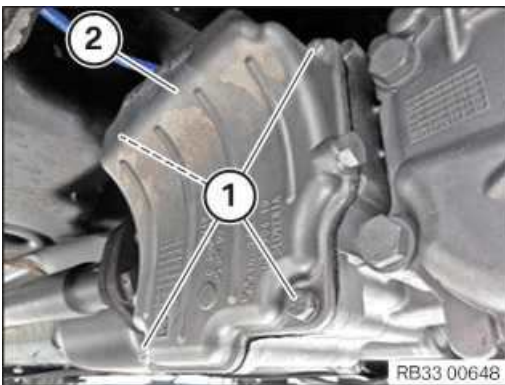


Apply Loctite 5970 surface sealing compound (see Electronic Parts Catalogue) in this area (1) on the oil filler cap (2).

Installation note:

Make sure that the sealing bead runs along the inner edge.

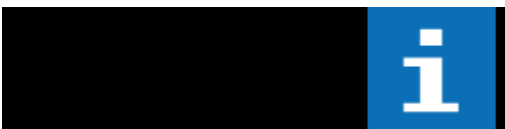
After having applied the surface sealing compound the oil filler cap must be installed in approximately 10 minutes.



Position the oil filler cap (2).

Tighten down screws (1).

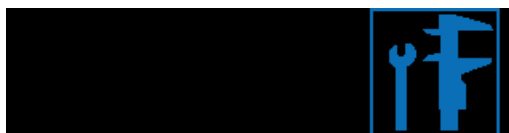
Tightening torque [33 11 3AZ](#).



Required follow-up work:

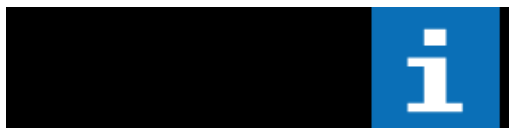
- Fill the [clutch of the rear axle differential with oil](#).
- Install rear heat shield.
- Install the [left-hand torsion strut](#).
- Completely install the [exhaust system](#).

33 10 210 Replacing the rear axle differential ventilation line



Special tools required:

- [2 407 851](#)
- [23 4 150](#)



Necessary preliminary work:

- [Remove](#) complete exhaust system.
- Remove the [right tank cover](#).
- Remove heat shields.



Removal:



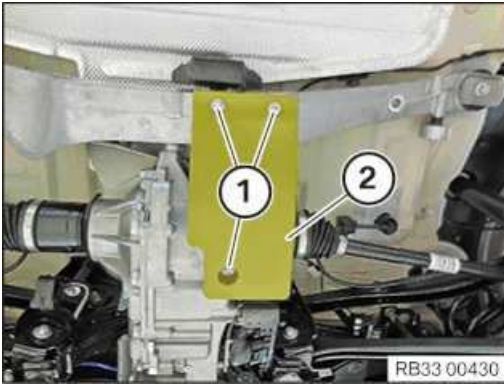
In order to protect the propeller shaft, install special tool [2 407 851](#) between the front and rear propeller shaft. **Attention!**

The arrows on special tool [2 407 851](#) must point to the front in the direction of travel during the installation.



Loosen screws (1).

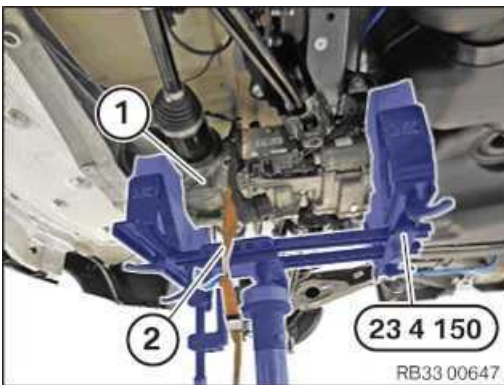
Tie the propeller shaft must be tied away **without fail** or supported with a suitable tool.



Loosen screws (1).
Remove cover (2).



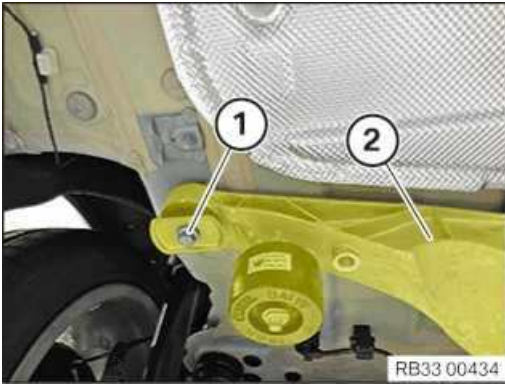
Disconnect connector (1).
Loosen cable (2) from control unit holder.



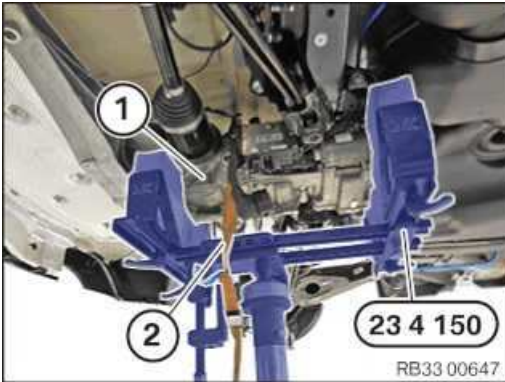
Support rear axle differential (1) with workshop jack and special tool [23 4 150](#).
Secure the rear axle differential (1) with tensioning strap (2) to special tool [23 4 150](#).



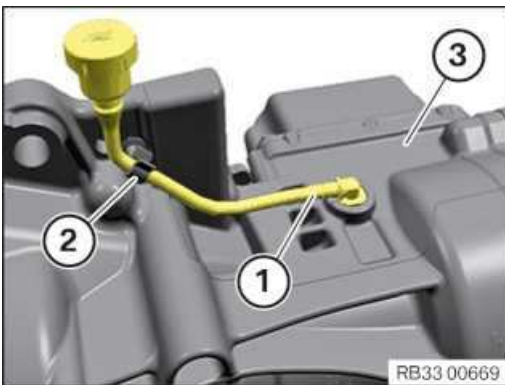
Release screw (1) of rear axle differential.



Undo screws (1) on left and right of cross member (2) (right side identical).

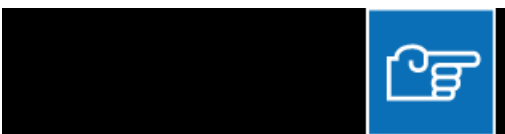


Lower rear axle differential (1) by a maximum of 10 cm.

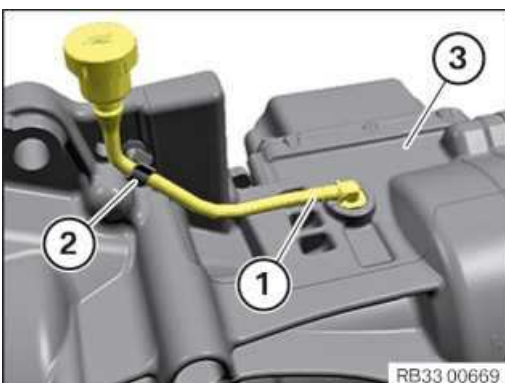


Release ventilation line (1) from holder (2).

Release ventilation line (1) out of rear axle differential (3) and remove.

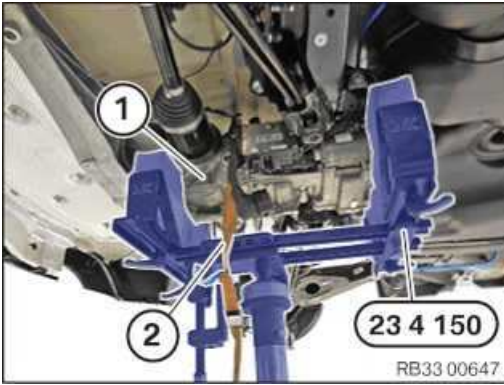


Installation:

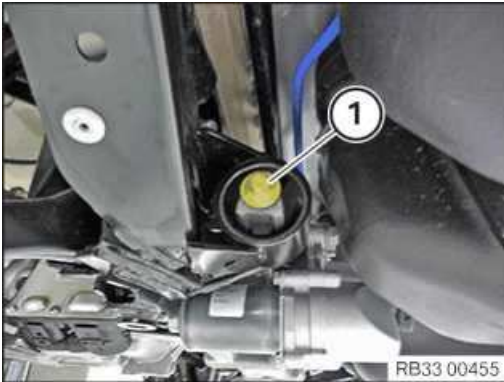


Position ventilation line (1) on rear axle differential (3) and secure.

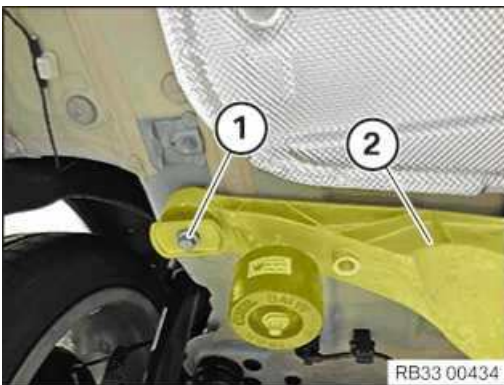
Secure ventilation line (1) on holder (2).



Raise rear axle differential (1).



Tighten screw (1) of rear axle differential by hand.



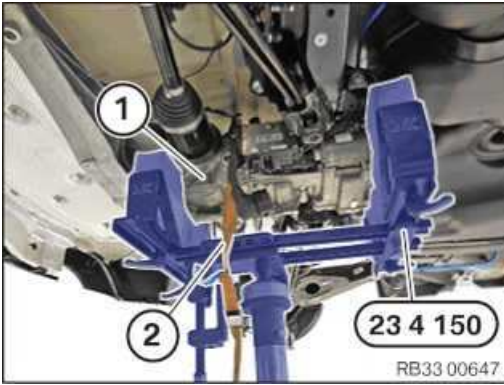
Tighten screws (1) on left and right of cross member (2) (right side identical).

Tightening torque [33 31 3AZ](#).



Tighten screw (1).

Tightening torque [33 17 1AZ](#).



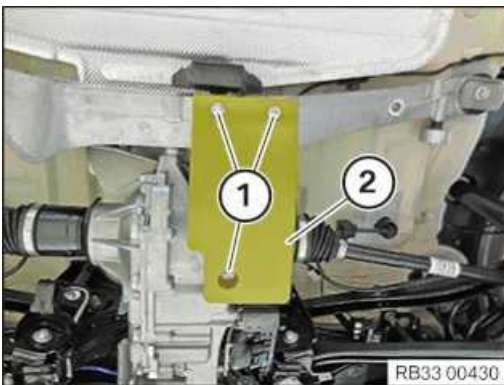
Remove tensioning strap (2).

Lower universal jack using special tool [23 4 150](#) and put away.



Secure cable (2) on control unit holder.

Connect connector (1) to control unit.



Position cover (2).

Tighten down screws (1).

Tightening torque [33 31 8AZ](#).

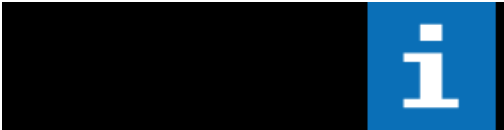


Tighten down screws (1).

Tightening torque [26 11 4AZ](#).



Remove special tool [2 407 851](#) .



Required follow-up work:

- Install heat shields.
- Install [right tank cover](#).
- Completely install the [exhaust system](#).

**Warning!**

[Danger of poisoning](#) if oil is ingested/absorbed through the skin!

[Risk of injury](#) if oil comes into contact with eyes and skin!

Attention!

Risk of damage!

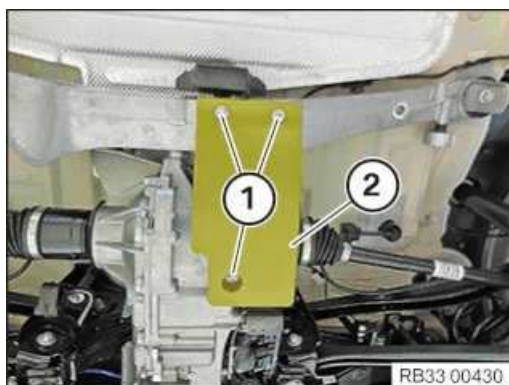
Only fill with approved oil, to prevent serious damage to the rear axle differential clutch (see Electronic Parts Catalogue).

**Attention!**

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

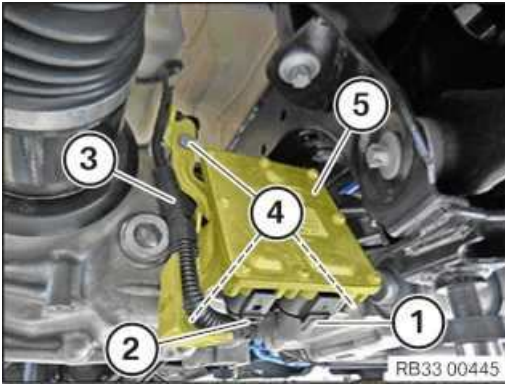
**Necessary preliminary work:**

- Remove [complete exhaust system](#).
- Remove the [left-hand torsion strut](#).
- Remove heat shields.
- Remove and tie back [propeller shaft on rear axle final drive](#).

**Removal:**

Loosen screws (1).

Remove cover (2).

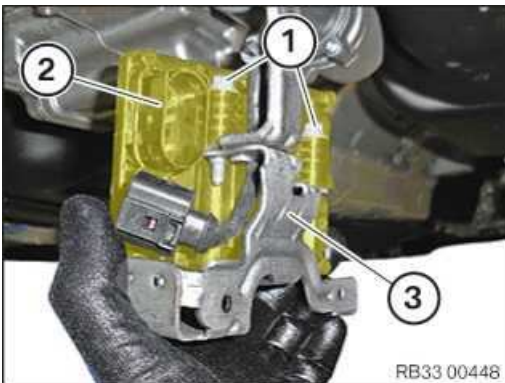


Disconnect plug (2).

Loosen the connector (1) and loosen the cable (3) from the control unit holder.

Unfasten screws (4).

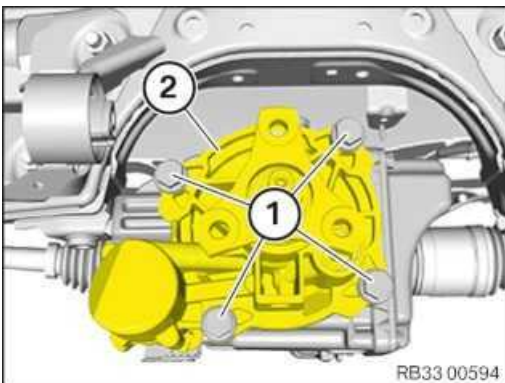
Remove control unit (5) together with bracket.



Loosen screws (1).

Remove the longitudinal torque distribution control unit (2) from the bracket (3).

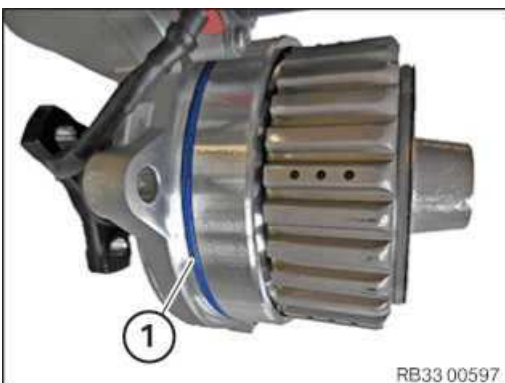
Loosen the cable from the bracket (3).



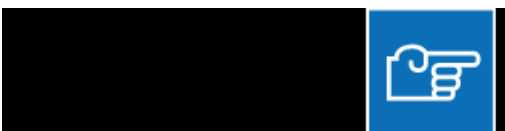
Collect and dispose of any escaping clutch oil.

Loosen screws (1).

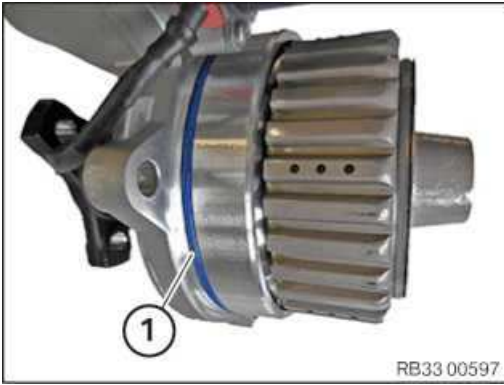
Pull out the clutch (2) from the clutch housing.



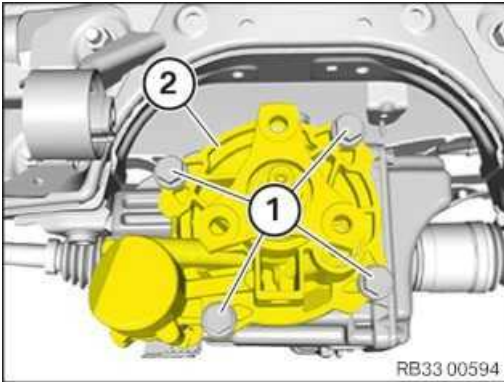
Replace sealing ring (1).



Installation:



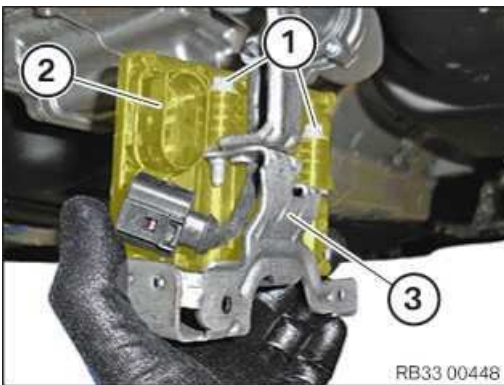
Coat sealing ring (1) with oil.



Insert the clutch (2) into the clutch housing.

Tighten down screws (1).

Tightening torque [33 10 1AZ](#).



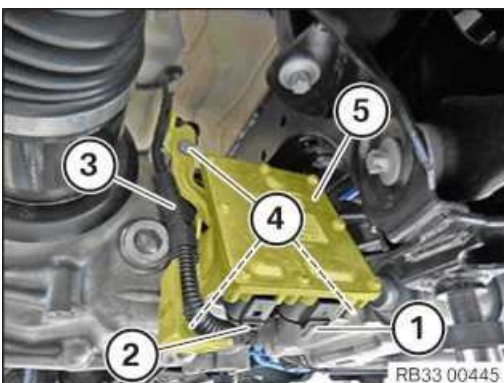
Position the longitudinal torque distribution control unit (2) on the bracket (3).

- Ensure correct cable routing.

Tighten down screws (1).

Tightening torque [33 10 2AZ](#).

Secure the cable to the bracket (3).



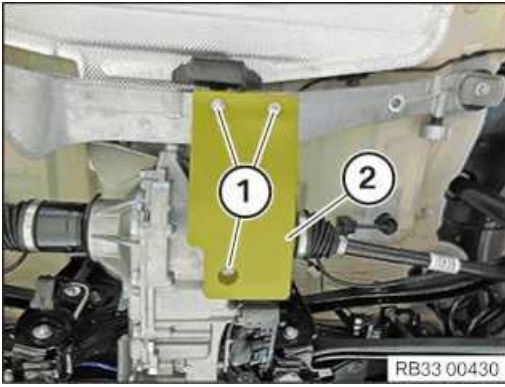
Position control unit (5) with holder on rear axle differential.

Tighten down screws (4).

Tightening torque [33 10 3AZ](#).

Attach connector (2).

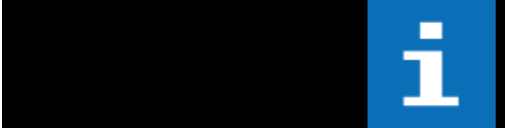
Secure the cable (3) to the control unit holder and connect the connector (1).



Position cover (2).

Tighten down screws (1).

Tightening torque [33 31 8AZ](#).



Required follow-up work:

- Fill the [clutch of the rear axle differential with oil](#).
- Remove [propeller shaft on the rear axle differential](#).
- Install heat shields.
- Install the [left-hand torsion strut](#).
- Completely install the [exhaust system](#).

**Warning!**

[Danger of poisoning](#) if oil is ingested/absorbed through the skin!

[Risk of injury](#) if oil comes into contact with eyes and skin!

Caution!

Risk of damage!

Only fill with approved oil, to prevent serious damage to the rear axle differential clutch (see Electronic Parts Catalogue).

**Necessary preliminary work:**

- Remove [complete exhaust system](#)
- Remove heat shield at rear.

**Removal:**

Loosen pressure relief valve (1) and remove clutch (2) on the rear axle differential.

**Installation:**



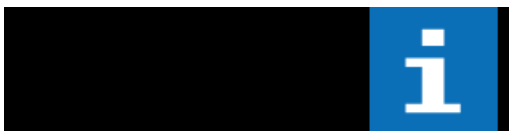
Renew pressure relief valve (1).

Parts: Pressure relief valve

Coat seal of pressure relief valve with oil.

Screw in pressure relief valve (1) by hand and tighten.

Tightening torque [33 10 6 AZ](#)

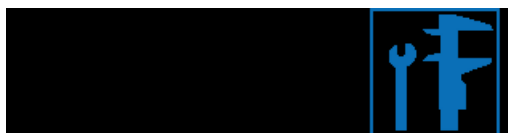


Required follow-up work:

- Installing the rear heat shield
- Installing the [complete exhaust system](#)



- Carry out the "Ventilation" service function twice

**Special tools required:**

- [23 0 020](#)
- [11 8 720](#)
- [00 5 010](#)
- [2 408 149](#)
- [2 413 037](#)

**Warning!**

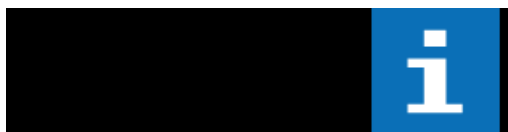
[Danger of poisoning](#) if oil is ingested/absorbed through the skin!

[Risk of injury](#) if oil comes into contact with eyes and skin!

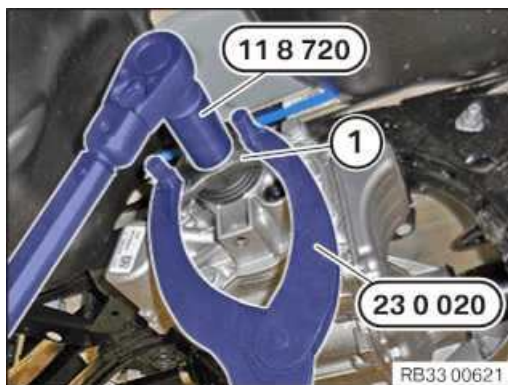
Attention!

Risk of damage!

Only fill with approved oil, to prevent serious damage to the rear axle differential clutch (see Electronic Parts Catalogue).

**Necessary preliminary work:**

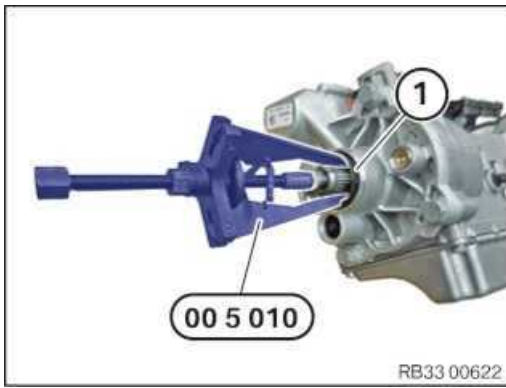
- Remove [complete exhaust system](#).
- Remove heat shields.
- Remove and tie back [propeller shaft on rear axle final drive](#).

**Removal:**

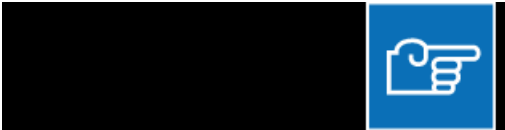
Grip the three-bolt flange (1) with special tool [23 0 020](#) .

Release nut with special tool [11 8 720](#) .

Remove the three-bolt flange (1).



Pull out the radial shaft seal (1) with special tool [00 5 010](#) .



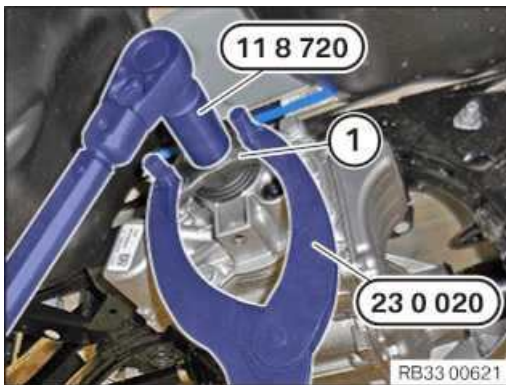
Installation:



Renew radial shaft seal at front.

Parts: Radial shaft seal

Lightly oil housing flange and sealing lips of the new radial shaft seal.
Drive in radial shaft seal using special tool [2 408 149](#) and [2 413 037](#) .



Renew the three-bolt flange (1).

Parts: Three-hole flange

Position the three-bolt flange (1).

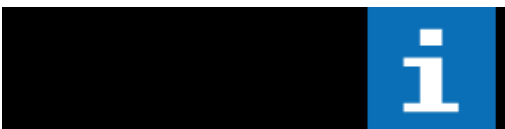
Renew nut.

Parts: Nut

Grip the three-bolt flange (1) with special tool [23 0 020](#) .

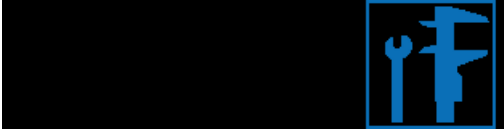
Tighten down nut with special tool [11 8 720](#) .

Tightening torque [33 10 4AZ](#).



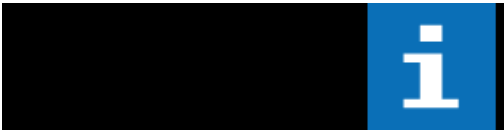
Required follow-up work:

- Fill the [clutch of the rear axle differential with oil](#).
- Install heat shields.
- Remove [propeller shaft on the rear axle differential](#).
- Completely install the [exhaust system](#).



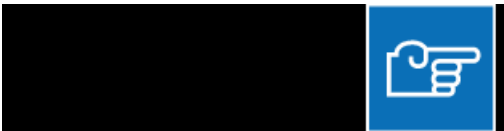
Special tools required:

- [23 4 150](#)
- [33 0 181](#)
- [33 0 183](#)
- [33 0 184](#)
- [33 0 185](#)
- [2 406 775](#)

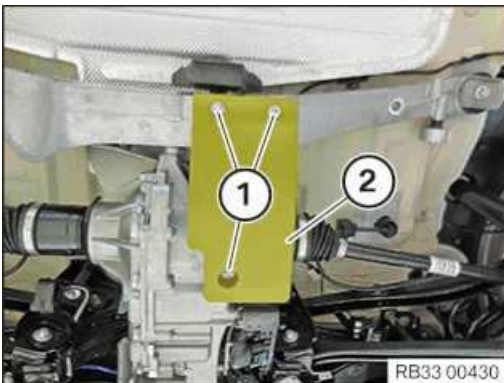


Necessary preliminary work:

- [Remove](#) complete exhaust system.
- Remove the [right tank cover](#).
- Remove and tie back [propeller shaft on rear axle final drive](#).



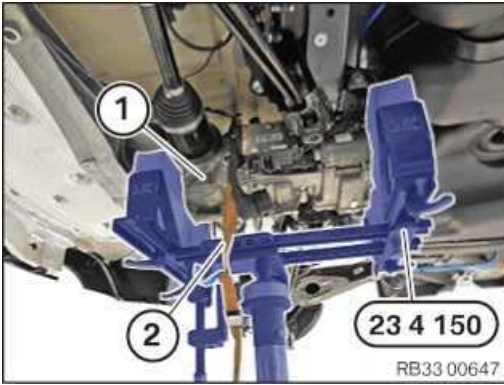
Removal:



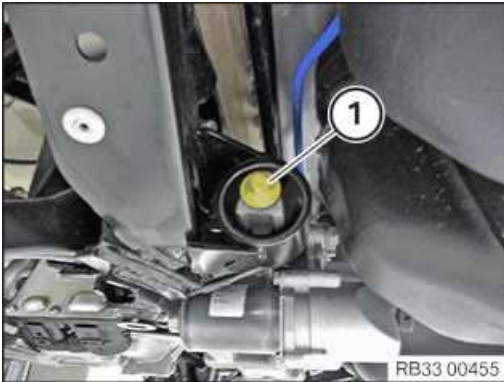
Loosen screws (1).
Remove cover (2).



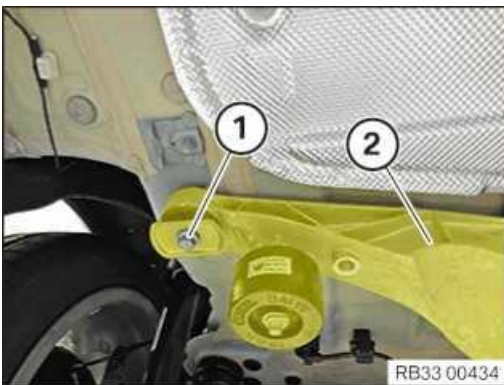
Disconnect connector (1).
Loosen cable (2) from control unit holder.



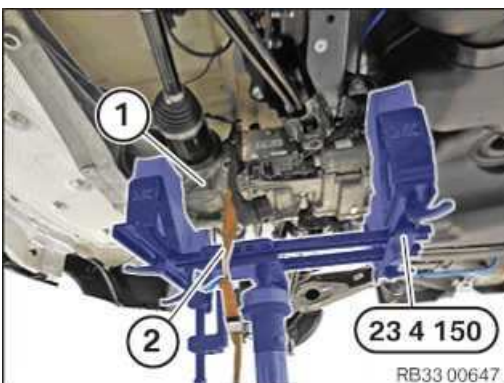
Support rear axle differential (1) with workshop jack and special tool [23 4 150](#) .
Secure rear axle differential against falling out with tensioning strap (2).



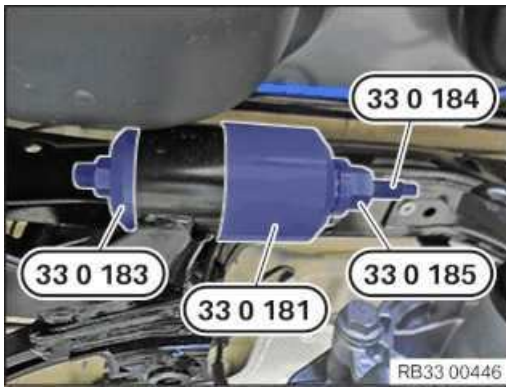
Loosen screw (1).



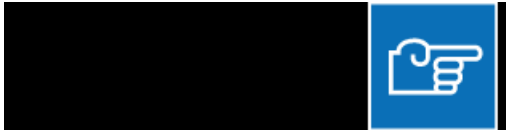
Loosen screws (1) on cross member (2) on the left and right.



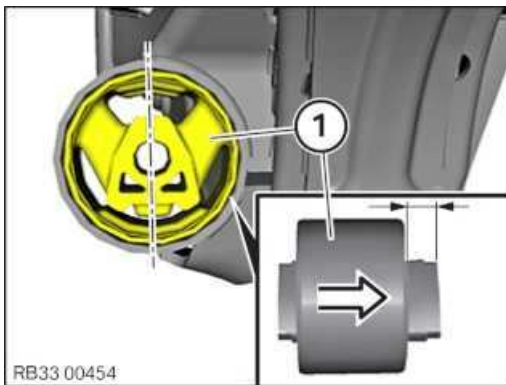
Carefully lower rear axle differential (1) until the rubber mount becomes accessible on the rear axle support.



Pull out rubber mount with special tools [33 0 181](#) , [33 0 183](#) , [33 0 184](#) and [33 0 185](#) .



Installation:

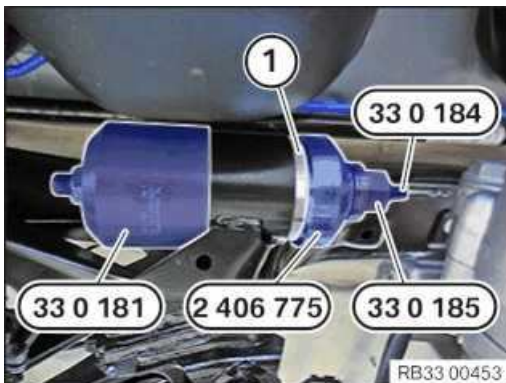


Attention!

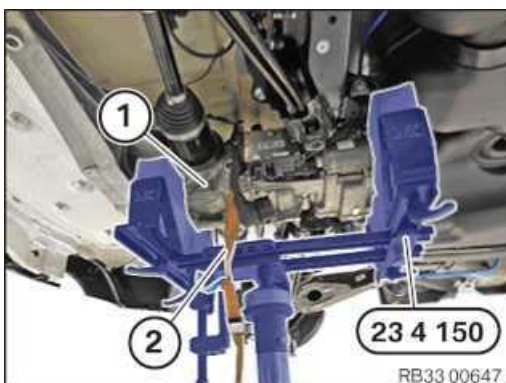
Coat bearing bush in rear axle support and new rubber mount (1) with Circo Light (refer to BMW Group Parts Sales).

Make sure that the larger protruding part of the rubber mount (1) is pointing towards the rear axle differential (arrow).

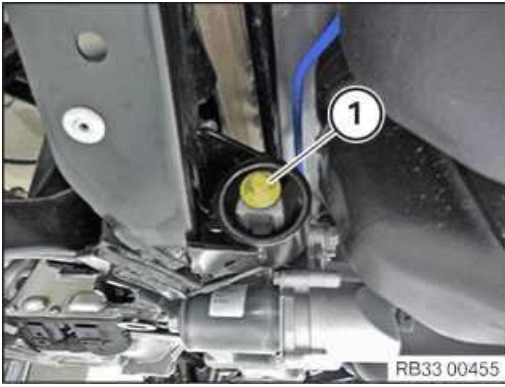
Align rubber mount (1) with the rear axle support as shown in the graphic.



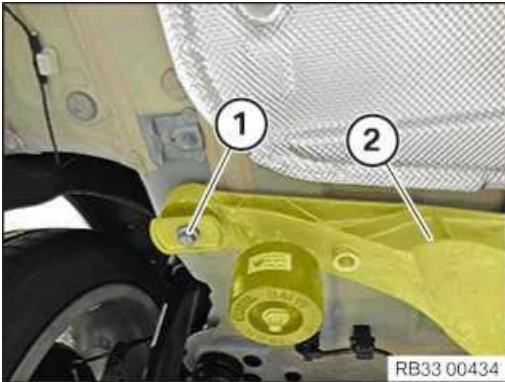
Install rubber mount (1) with special tools [33 0 181](#) , [33 0 184](#) , [33 0 185](#) and [2 406 775](#) up to the limit position in the rear axle support.



Lift rear axle differential (1) and align with rear axle support.



Hand-tighten screw (1).



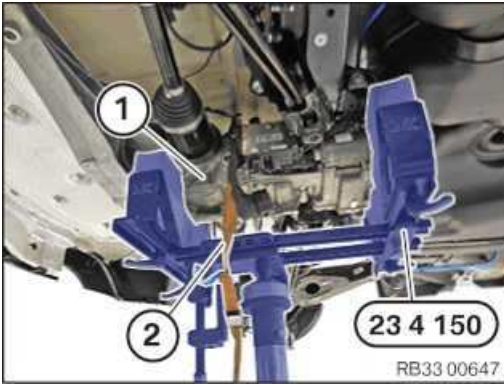
Tighten screws (1) on the cross member (2) on the left and right.
Tightening torque [33 31 3AZ](#).



Tighten screw (1).
Tightening torque [33 17 1AZ](#).

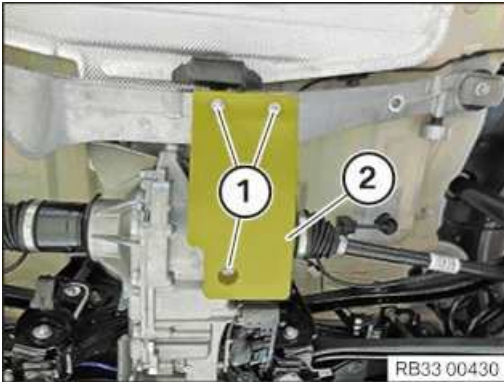


Secure cable (2) on control unit holder.
Connect connector (1) to control unit.



Release tensioning strap (2).

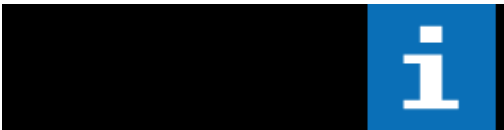
Lower and place aside special tools [23 4 150](#) and workshop jack.



Position cover (2).

Tighten down screws (1).

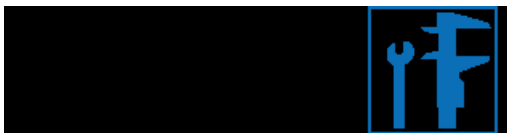
Tightening torque [33 31 8AZ](#).



Required follow-up work:

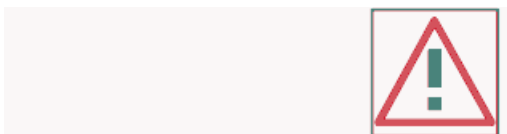
- Remove [propeller shaft on the rear axle differential](#).
- Install [right tank cover](#).
- Completely install the [exhaust system](#).

33 21 001 Removing and installing/replacing left output shaft



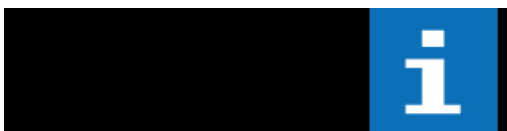
Special tools required:

- [2 358 630](#)
- [23 4 150](#)
- [2 406 773](#)
- [33 5 120](#)
- [0 496 862](#)
- [33 5 122](#)
- [2 406 774](#)



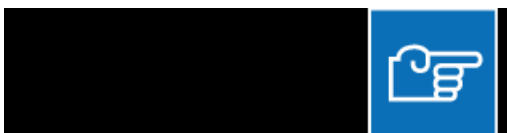
Attention!

- [The radial shaft seal for the output shaft in the left rear axle differential](#) must always be replaced after having been removed.

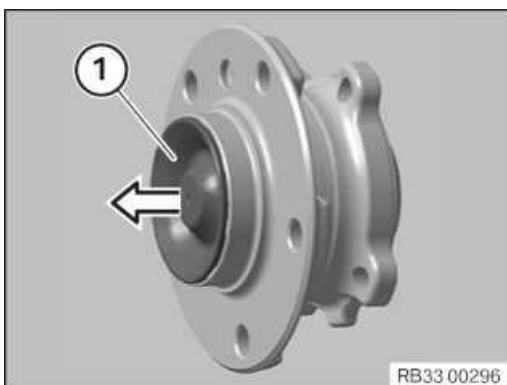


Necessary preliminary work:

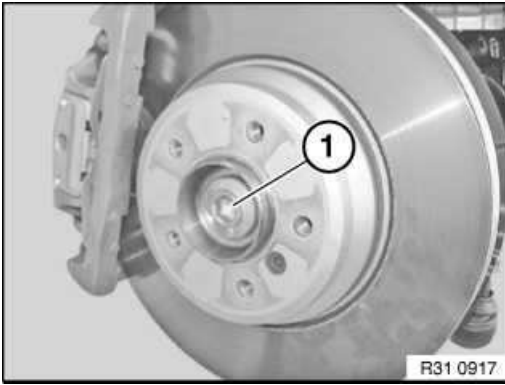
- Remove [left rear wheel](#).
- [Remove](#) complete exhaust system.
- Remove the propeller shaft heat shields.
- Remove and tie back [propeller shaft on rear axle differential](#).
- Remove [tank cover on the right](#).



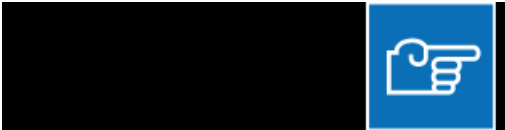
Removal:



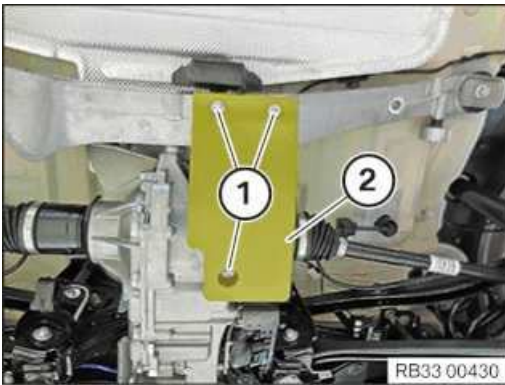
Lever off protective cap (1).



Release collar bolt (1), press brake pedal to floor for this purpose.



- Remove [left coil spring](#).



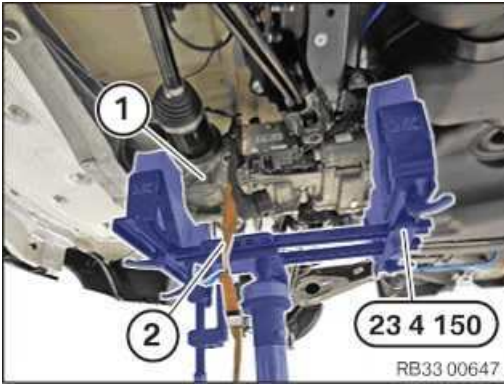
Loosen screws (1).
Remove cover (2).



Disconnect connector (1).
Loosen cable (2) from control unit holder.

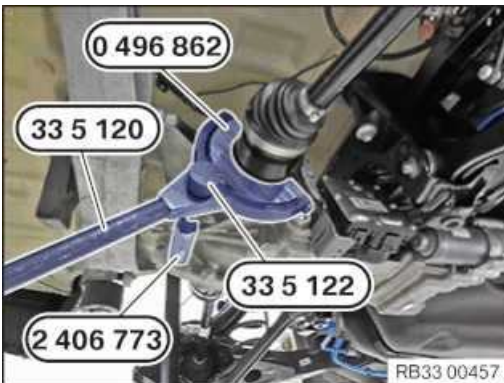


Secure special tool [2 358 630](#) with wheel studs to drive flange.
Press wheel hub upwards using special tool [2 358 630](#) and the workshop jack.



Support rear axle differential (1) with workshop jack and special tool [23 4 150](#) .

Secure rear axle differential against falling out with tensioning strap (2).



Note: Press out left output shaft ONLY! The procedure for the right output shaft is shown here.

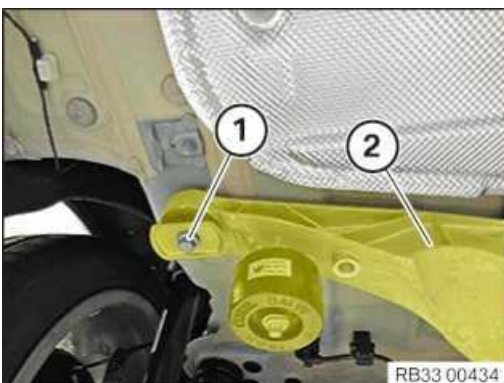
Insert the support tool [2 406 773](#) in the bore hole on the rear axle differential.

Use special tool [33 5 120](#) and shaped element [0 496 862](#) to press (in jolts) the left output shaft out of the rear axle differential.

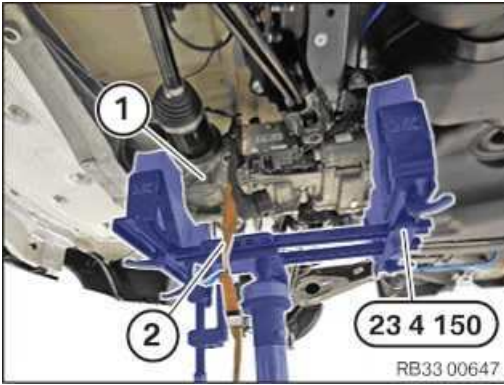
- In this process, position the thrust piece of screw [33 5 122](#) on the support tool [2 406 773](#) .



Release screw (1) of rear axle differential.



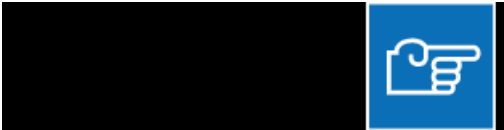
Undo screws (1) on left and right of cross member (2) (right side identical).



Lower rear axle differential (1).

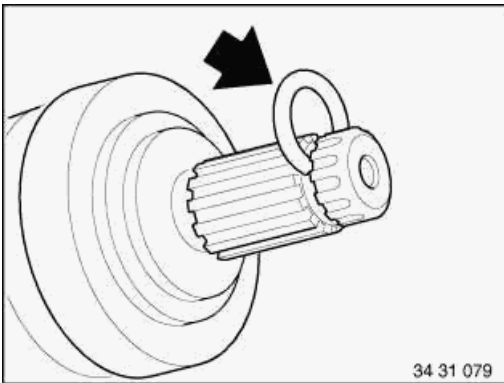
Secure output shaft against falling out.

Remove the output shaft from the transmission by moving the rear axle differential towards the side.



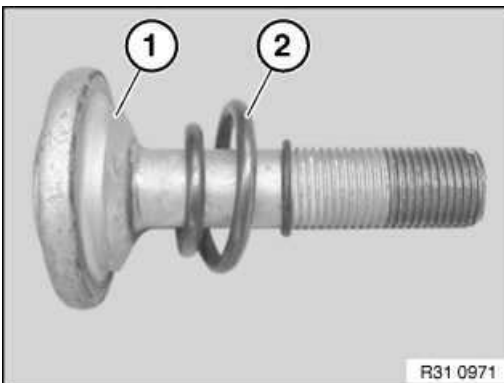
Installation:

- Renew [radial shaft seal in left rear axle differential](#).



Renew circlip of output shaft.

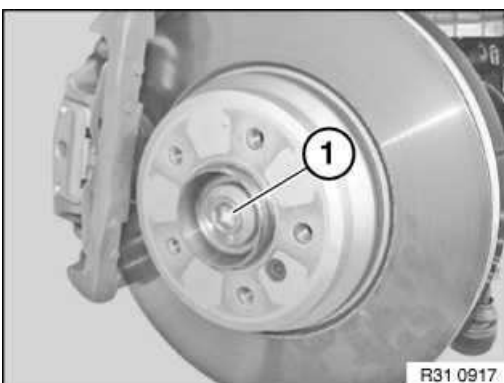
Parts: Circlip



- Pay attention to installation position of compression spring (2).
- Keep collar bolt and spur gearing of wheel bearing/output shaft clean and free from grease

Attention!

Following installation note for spur gearing must be observed without fail!



Position output shaft on wheel bearing.

Replace collar bolt and compression spring.

Parts: Collar bolt and compression spring

Tighten collar bolt (1) and compression spring hand-tight.



Attention!

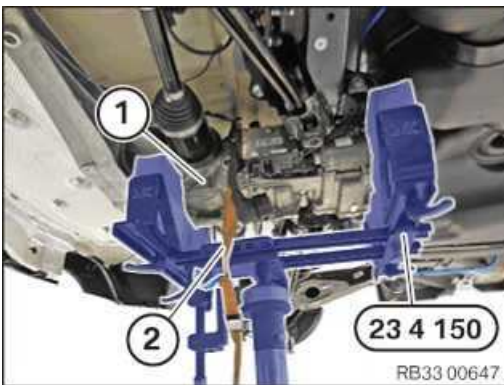
Make sure the installation protection ring has been reinstalled before inserting the output shaft.

Open installation protective ring (1).



Insert the output shaft (1) into the transmission by moving the rear axle differential (2) towards the side.

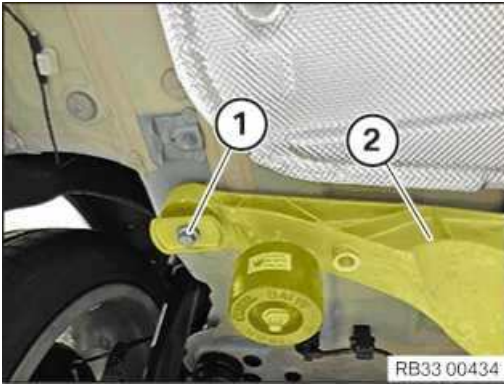
After having inserted the output shaft pull on the installation protection ring tab (3) until one of the two predetermined breaking points gives in. Pull out and dispose of the installation protection ring (3).



Raise rear axle differential (1).

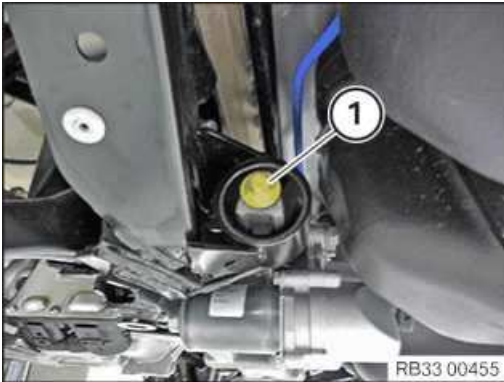


Tighten screw (1) of rear axle differential by hand.



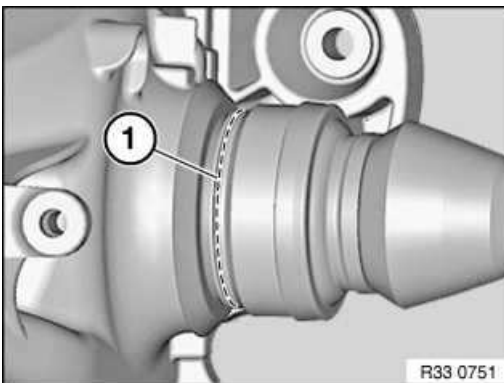
Tighten screws (1) on left and right of cross member (2) (right side identical).

Tightening torque [33 31 3AZ](#).



Tighten screw (1).

Tightening torque [33 17 1AZ](#).



Note:

Special tool [2 406 774](#) must be inserted into the slot (1) of the output shaft on all sides!

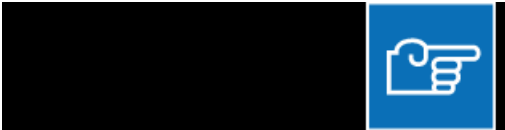


Note: The procedure for the right output shaft is shown here.

Drive the left output shaft into the rear axle differential with special tool [2 406 774](#) and a rubber mallet.



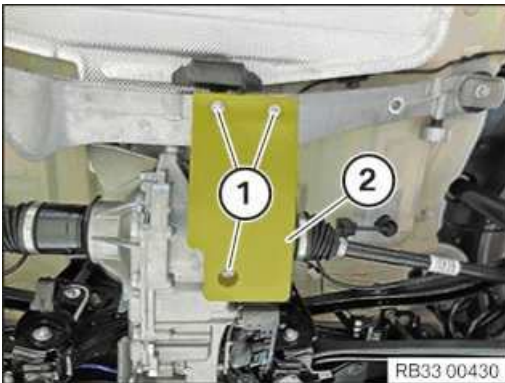
Secure cable (2) on control unit holder.
Connect connector (1) to control unit.



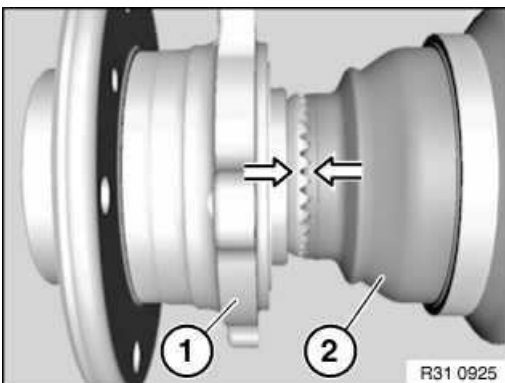
- Install [left coil spring](#).



Lower workshop jack.
Remove special tool [2 358 630](#) .



Position cover (2).
Tighten down screws (1).
Tightening torque [33 31 8AZ](#).

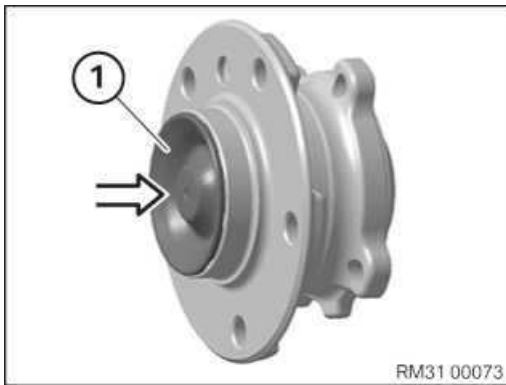


- Spur gearing of wheel bearing (1) and output shaft (2) must be installed form-fit (tooth in tooth position)!

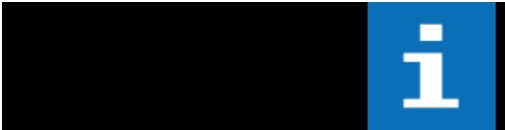
Check whether spur gearing is locked tooth in tooth by reciprocally rotating wheel hub/output shaft.

Once positive locking has been established, fully depress the brake pedal and tighten the screw.

Tightening torque [33 41 2AZ](#)



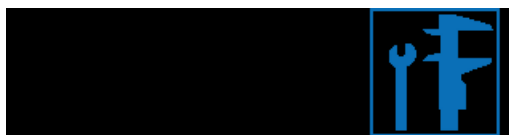
Connect protective cap (1).



Required follow-up work:

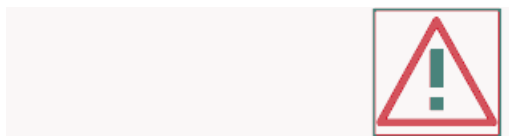
- Mounting the [tank cover on the right](#).
- Install [propeller shaft on rear axle differential](#).
- Install the propeller shaft heat shields.
- Completely install the [exhaust system](#).
- Install [left rear wheel](#).
- Check [oil level in the rear axle final drive](#), correct if necessary.

33 21 002 Removing and installing/replacing right output shaft



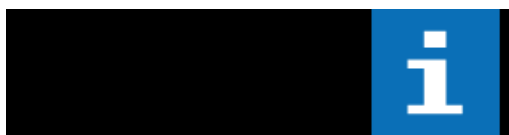
Special tools required:

- [2 358 630](#)
- [23 4 150](#)
- [2 406 773](#)
- [33 5 120](#)
- [0 496 862](#)
- [33 5 122](#)
- [2 406 774](#)



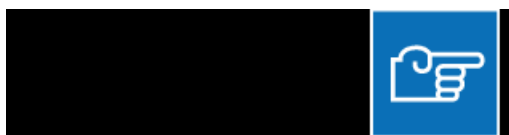
Attention!

- [Radial shaft seal for output shaft in right rear axle differential](#) must be replaced each time after removal.

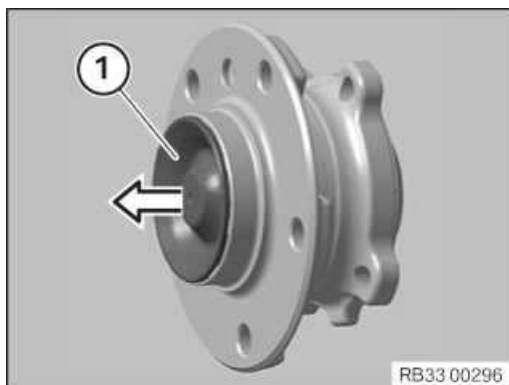


Necessary preliminary work:

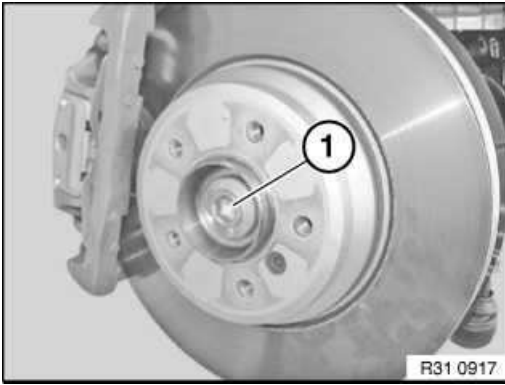
- Remove [right rear wheel](#).
- [Remove](#) complete exhaust system.
- Remove the propeller shaft heat shields.
- Remove and tie back [propeller shaft on rear axle differential](#).
- Remove [tank cover on the right](#).



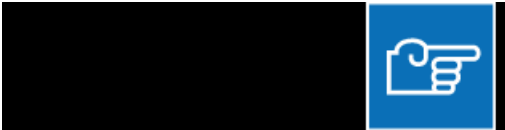
Removal:



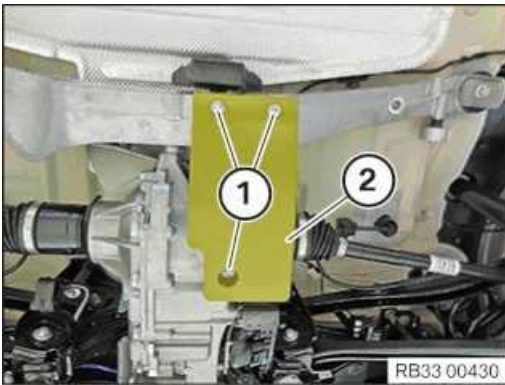
Lever off protective cap (1).



Release collar bolt (1), press brake pedal to floor for this purpose.



- Remove [right coil spring](#).



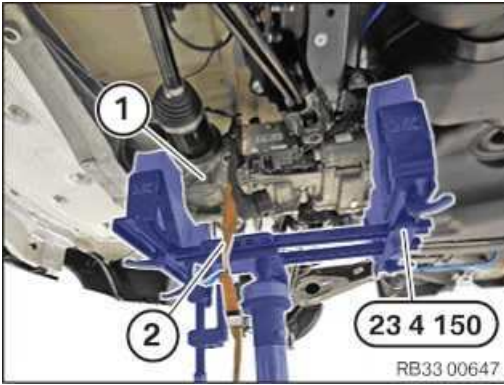
Loosen screws (1).
Remove cover (2).



Disconnect connector (1).
Loosen cable (2) from control unit holder.

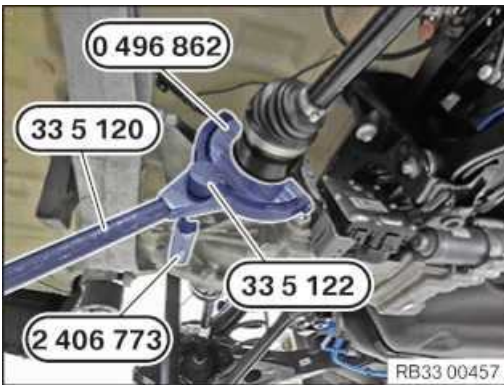


Secure special tool [2 358 630](#) with wheel studs to drive flange.
Press wheel hub upward with special tool [2 358 630](#) and workshop jack.



Support rear axle differential (1) with workshop jack and special tool [23 4 150](#).

Secure rear axle differential against falling out with tensioning strap (2).



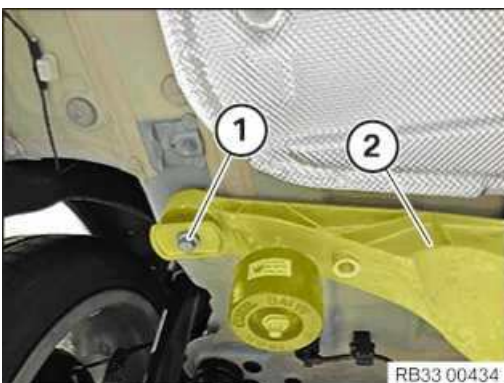
Insert support tool [2 406 773](#) into the bore hole on the rear axle differential.

Press out right output shaft out of rear axle differential with jerky movements using special tool [33 5 120](#) and shaped element [0 496 862](#).

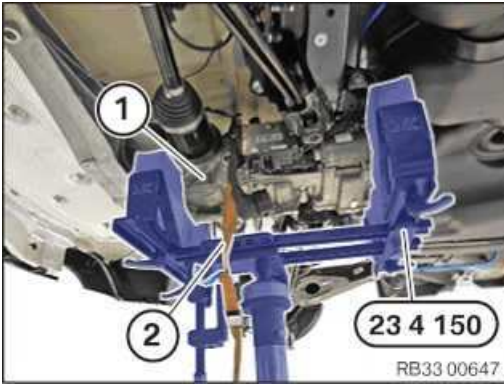
- In the process, position the thrust piece of the bolt [33 5 122](#) on the support tool [2 406 773](#).



Release screw (1) of rear axle differential.



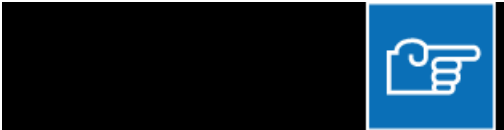
Undo screws (1) on left and right of cross member (2) (right side identical).



Lower rear axle differential (1).

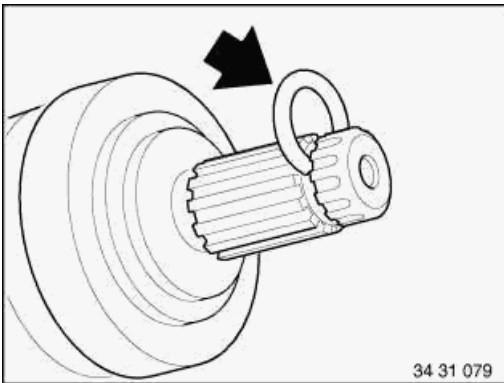
Secure output shaft against falling out.

Remove the output shaft from the transmission by moving the rear axle differential towards the side.



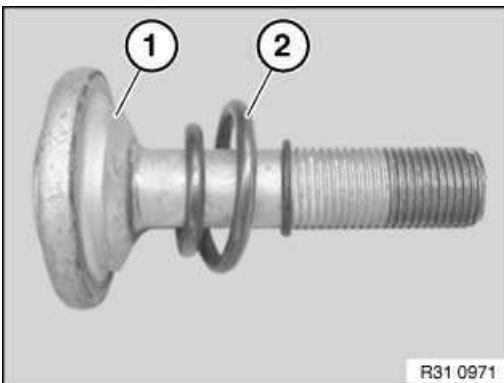
Installation:

- Renew [radial shaft seal in right rear axle differential](#).



Renew circlip of output shaft.

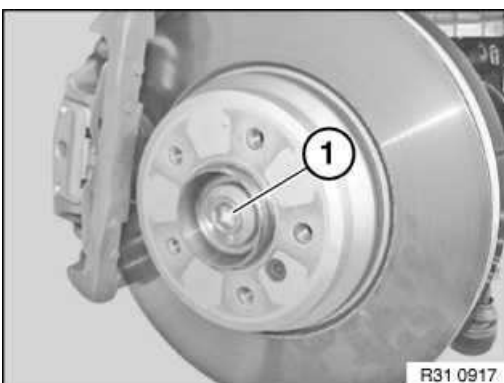
Parts: Circlip



- Pay attention to installation position of compression spring (2).
- Keep collar bolt and spur gearing of wheel bearing/output shaft clean and free from grease.

Attention!

Following installation note for spur gearing must be observed without fail!



Position output shaft on wheel bearing.

Replace collar bolt and compression spring.

Parts: Collar bolt and compression spring

Tighten collar bolt (1) and compression spring hand-tight.



Attention!

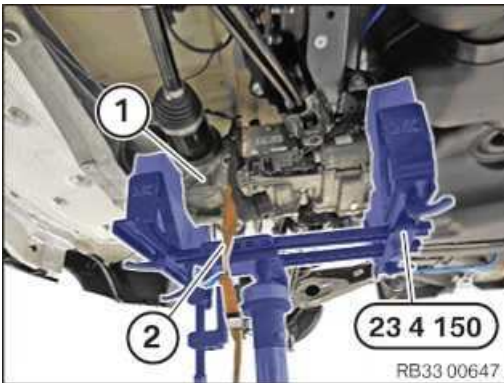
Make sure the installation protection ring has been reinstalled before inserting the output shaft.

Open installation protective ring (1).



Insert the output shaft (1) into the transmission by moving the rear axle differential (2) towards the side.

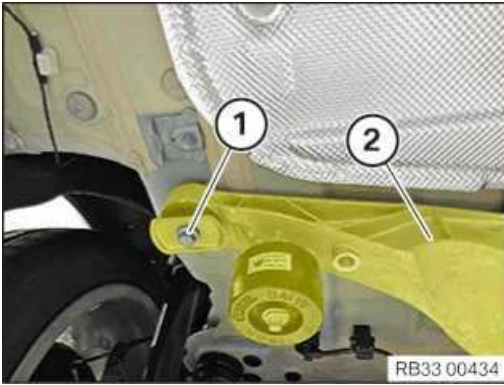
After having inserted the output shaft pull on the installation protection ring tab (3) until one of the two predetermined breaking points gives in. Pull out and dispose of the installation protection ring (3).



Raise rear axle differential (1).

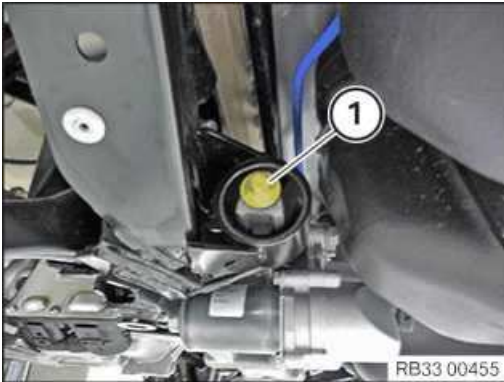


Tighten screw (1) of rear axle differential by hand.



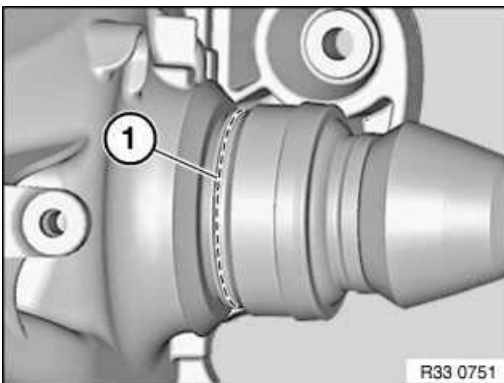
Tighten screws (1) on left and right of cross member (2) (right side identical).

Tightening torque [33 31 3AZ](#).



Tighten screw (1).

Tightening torque [33 17 1AZ](#).

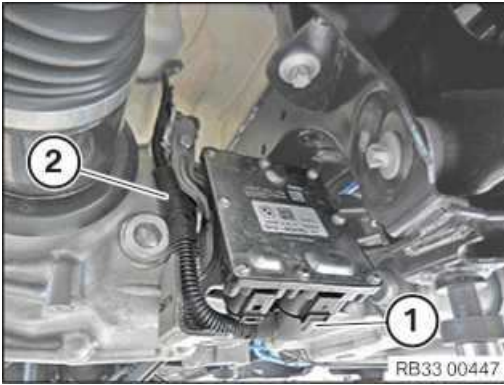


Note:

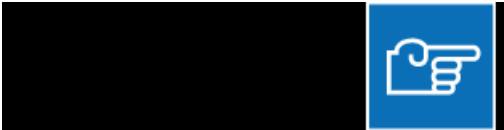
Special tool [2 406 774](#) must be inserted into the slot (1) of the output shaft on all sides!



Drive output shaft with special tool [2 406 774](#) and a rubber mallet into rear axle final drive.



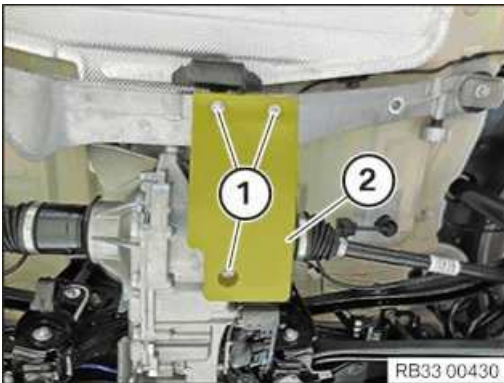
Secure cable (2) on control unit holder.
Connect connector (1) to control unit.



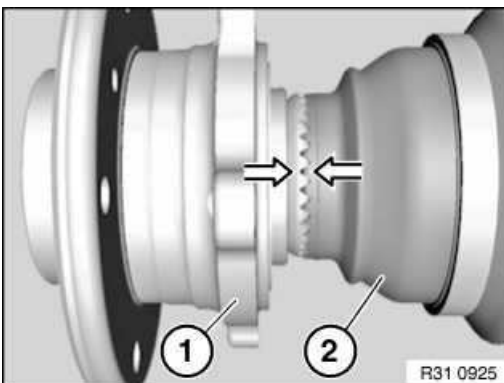
- Install [right coil spring](#).



Lower workshop jack.
Remove special tool [2 358 630](#) .



Position cover (2).
Tighten down screws (1).
Tightening torque [33 31 8AZ](#).

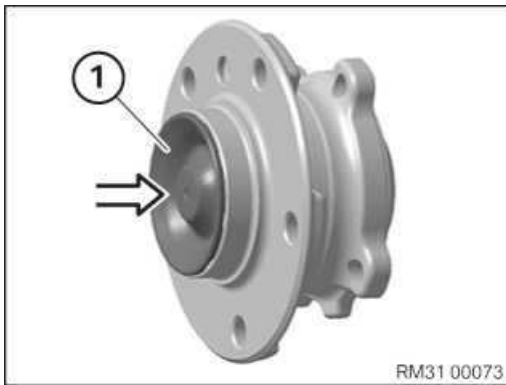


- Spur gearing of wheel bearing (1) and output shaft (2) must be installed form-fit (tooth in tooth position)!

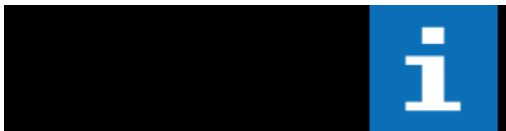
Check whether spur gearing is locked tooth in tooth by reciprocally rotating wheel hub/output shaft.

Once positive locking has been established, fully depress the brake pedal and tighten the screw.

Tightening torque [33 41 2AZ](#)

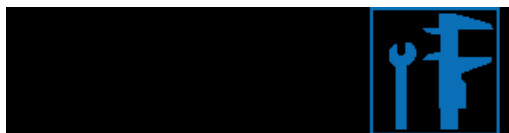


Connect protective cap (1).



Required follow-up work:

- Install [right tank cover](#).
- Install [propeller shaft on rear axle differential](#).
- Install the propeller shaft heat shields.
- Completely install the [exhaust system](#).
- Install [right rear wheel](#).
- Check [oil level in the rear axle final drive](#), correct if necessary.



Special tools required:

- [31 5 251](#)
- [00 2 030](#)
- [31 5 255](#)
- [31 5 253](#)
- [31 2 251](#)
- [31 2 253](#)
- 31 2 255



Warning!

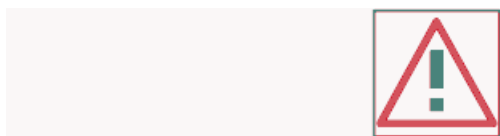
Danger of injury!

Failure to comply with the following instructions may result in the vehicle slipping off the vehicle hoist and critically injuring other persons.

Load the luggage compartment with a minimum of 100 kg before lowering/removing the rear axle support. This prevents the vehicle from tilting or sliding off the vehicle hoist!

When supporting components, make sure that:

- the vehicle can no longer be raised or lowered.
- the vehicle does not lift off the locating plates on the vehicle hoist.

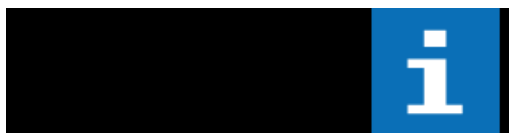


Attention!

Before lowering/removing rear axle support:

Observe [safety information](#) for raising the vehicle

In order to avoid damage to vehicle hoist, perform weight compensation on vehicle.



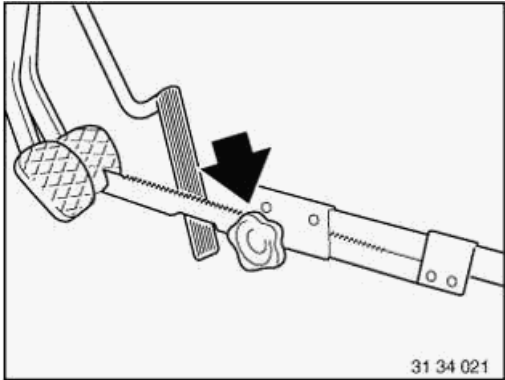
Necessary preliminary work:

- Remove [rear wheels](#).
- Remove the [left and right trailing arm covers](#).
- Remove [rear axle final drive](#).
- Remove [tank cover on left and right](#).
- Remove [both rear coil springs](#).

Note: Screw the shock absorbers onto the trailing arm after removal of the coil springs.

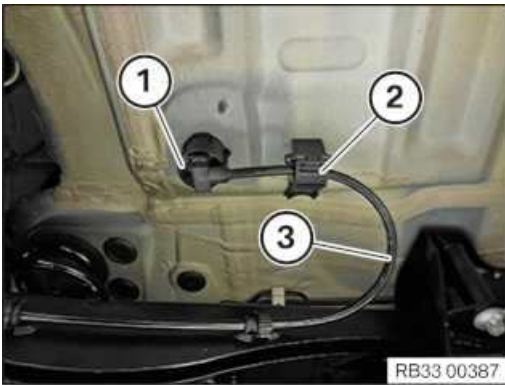


Removal:



Press brake pedal down to floor and secure with pedal support. *Note:* The pedal support may only be released when the brake lines are reconnected.

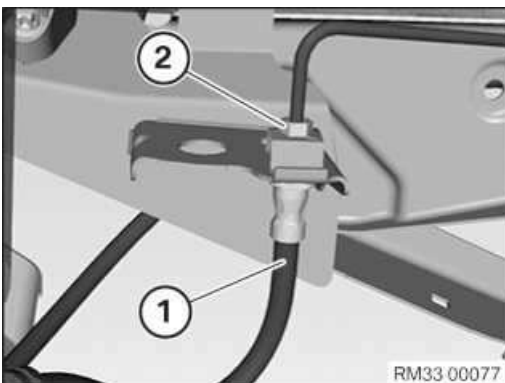
This prevents brake fluid from emerging from the expansion tank and air from entering the system when the brake lines are opened.



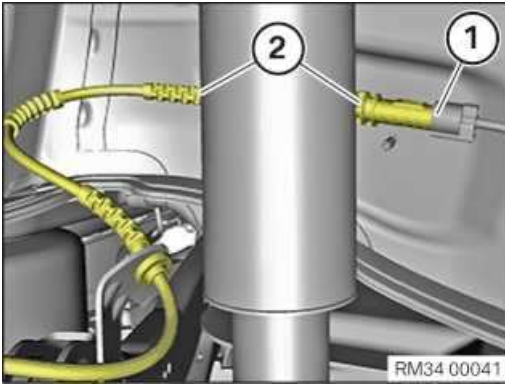
Unlock and disconnect the connector (1).
Release cable (3) from cable clip (2).



Only for rear ride height sensor:
Disconnect connector (1).



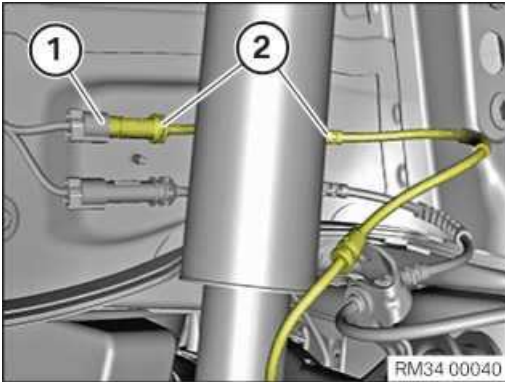
Release hollow nut (2).
Disconnect brake hose (1) on left and right from the brake line.



Disconnect left and right plug connections (1) of the pulse sensor.

- To do so, partly release the wheel arch panels.

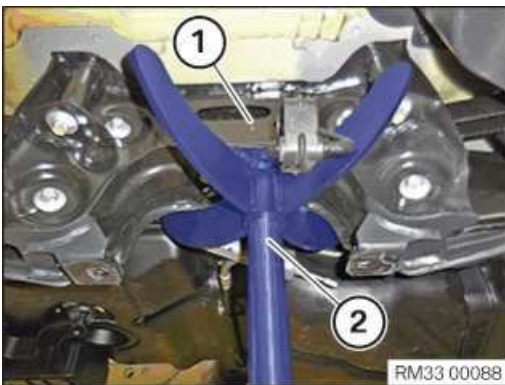
Disengage cable from holders (2).



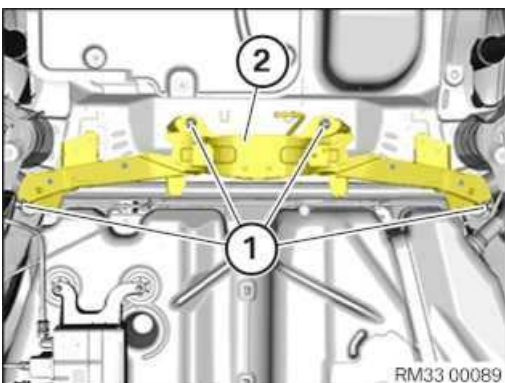
Right side only:

Detach the brake pad wear sensor from the brackets (2) as an additional measure.

Disconnect plug connection (1).



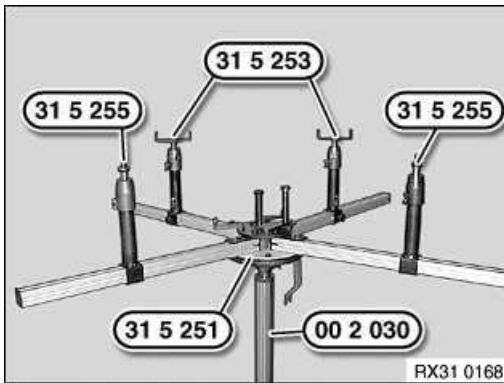
Support rear axle support (1) with workshop jack (2).



Release screws (1) from rear axle support (2).

Lower rear axle support.

Lower workshop jack and place to one side.



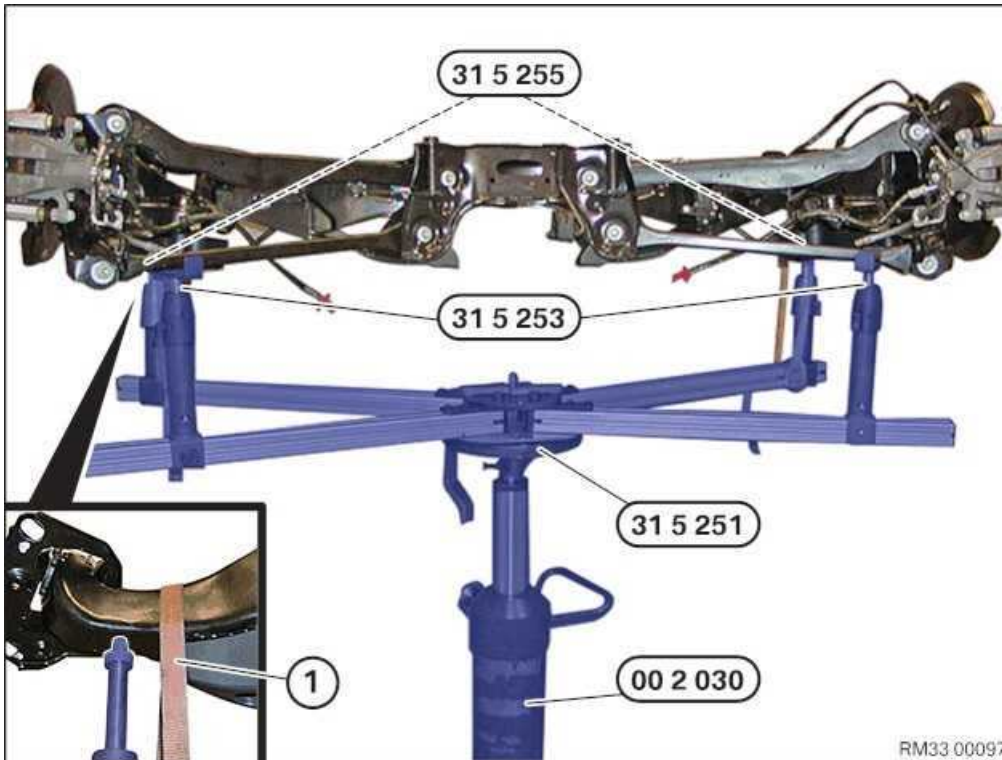
Engage special tool [31 5 251](#) with a 2nd person helping completely on workshop jack [00 2 030](#).

Insert special tools [31 5 255](#) in telescopic supports of a profile rail pair.

Insert special tools [31 5 253](#) in telescopic supports of other profile rail pair.

Note:

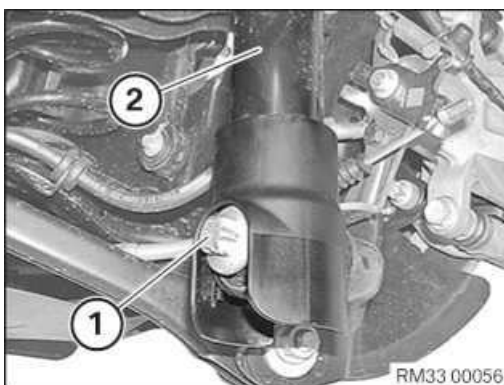
In a profile rail pair, two profile rails are connected to one another by gearing.



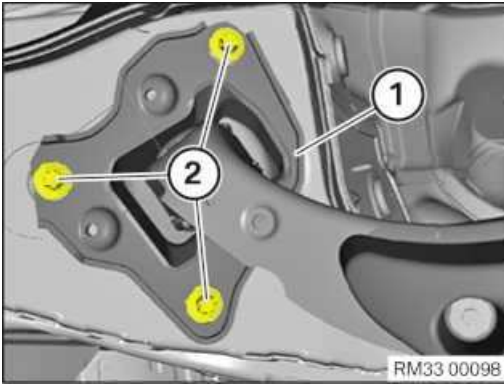
Align special tools [31 2 251](#), [31 2 253](#) and 31 2 255 with rear axle support.

Support rear axle support by operating workshop jack [00 2 030](#).

Secure the trailing arm (rear axle support) on the special tool [31 5 251](#) using tensioning straps (1).

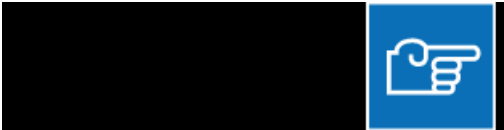


Release left and right shock absorber (2) from trailing arm by unscrewing screw (1).

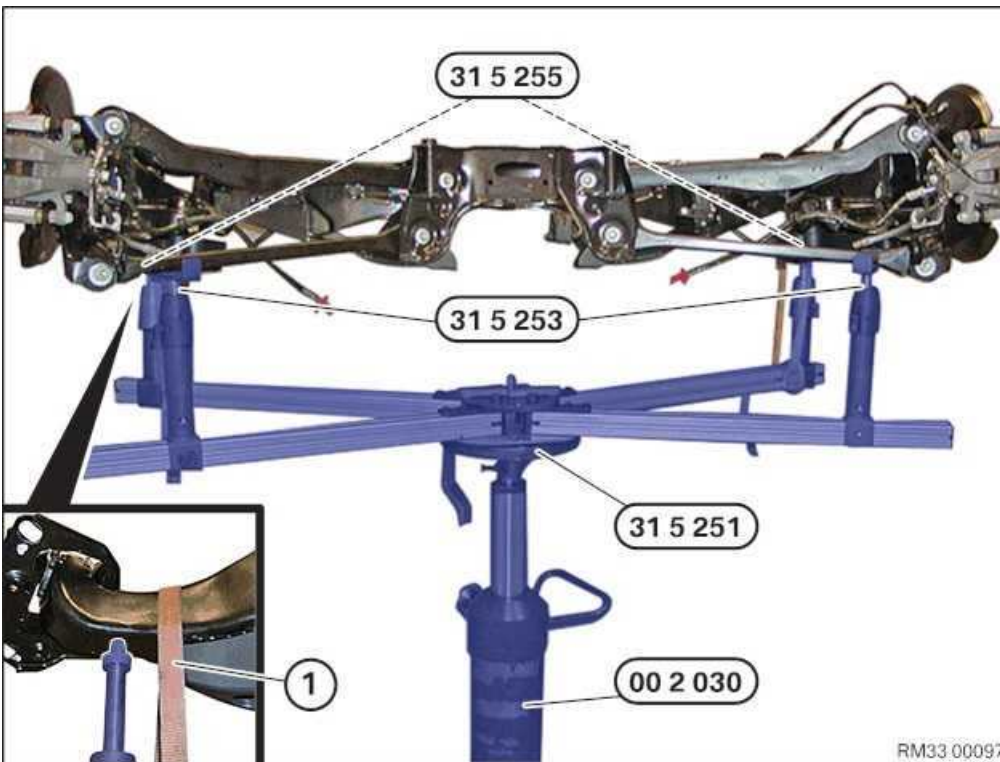


Release screws (2) on left and right trailing arm bearing support (1) on the body.

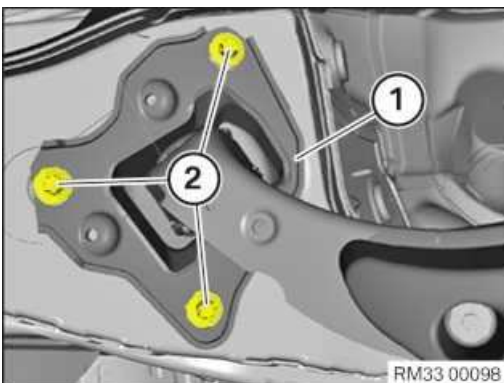
Lower rear axle support.



Installation:



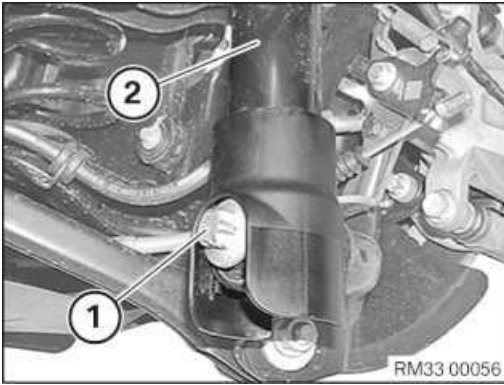
Position rear axle support on vehicle.



Tighten screws (2) on left and right trailing arm bearing support (1).

Replace screws (2).

Tightening torque [33 32 5AZ](#).



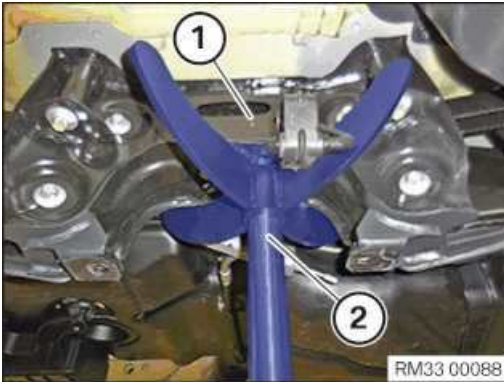
Position left and right shock absorber (2) on trailing arm.

Tighten screw (1).

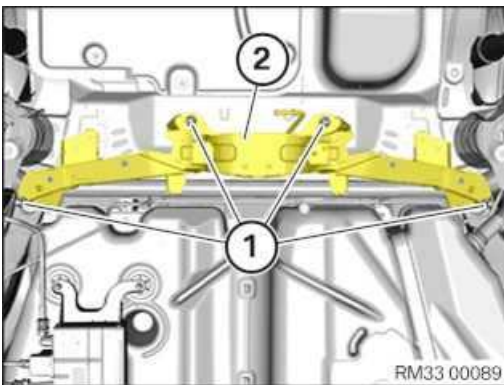
Tightening torque [33 52 1AZ](#).

Release tensioning straps.

Lower workshop jack [00 2 030](#) with special tool [31 5 251](#) and place to one side.

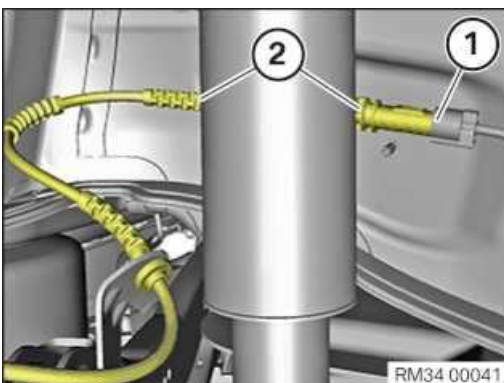


Lift rear axle support (1) by means of workshop jack (2).



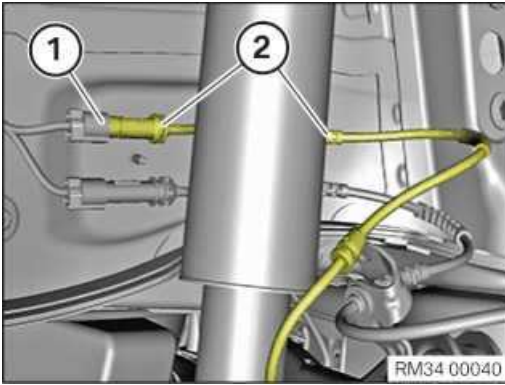
Tighten screws (1) on rear axle support (2).

Tightening torque [33 31 1AZ](#).

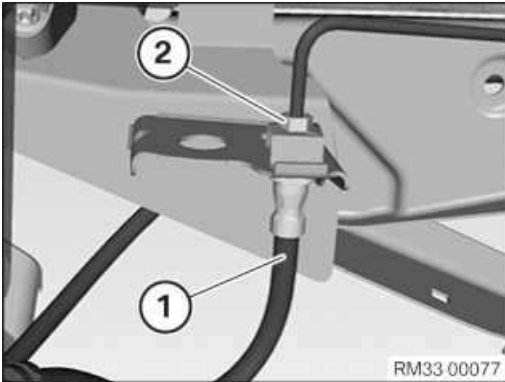


Attach brake pad wear sensor in the brackets (2).

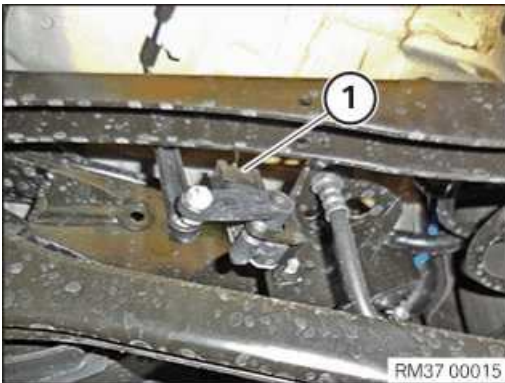
Connect plug connection (1).



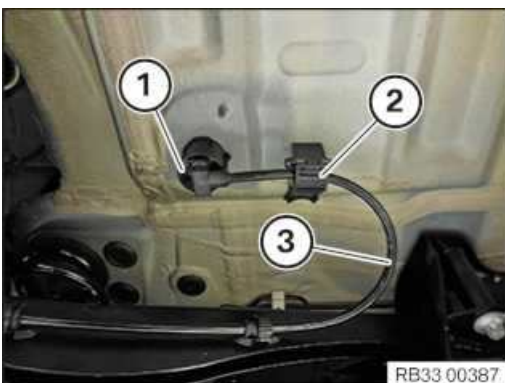
Attach brake pad wear sensor in the brackets (2).
Connect plug connection (1).



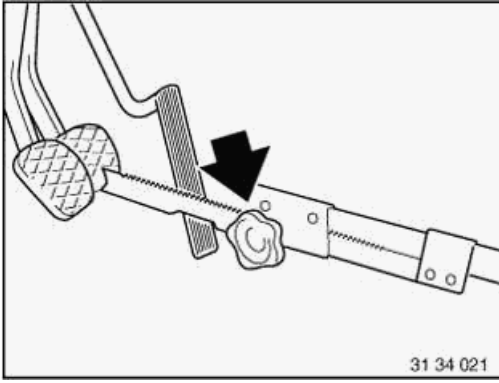
Align brake hose (1).
Tighten down hollow nut (2).
Tightening torque [34 32 1AZ](#).



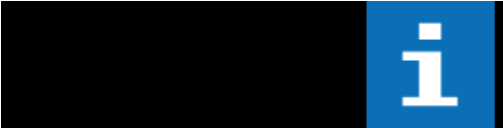
Only for rear ride height sensor:
Insert connector (1) on ride height sensor.



Insert connector (1) and lock.
Secure cable (3) with cable clip (2).

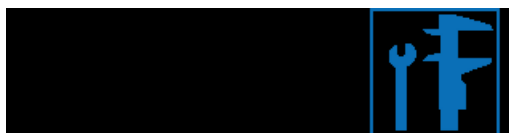


Release pedal support.



Required follow-up work:

- Install [both rear coil springs](#).
- Install [tank cover on left and right](#).
- Install the [left and right trailing arm covers](#).
- Install the [rear axle differential](#).
- Install [rear wheels](#).
- [Bleed brake system](#).
- Carry out [wheel alignment procedure](#).

**Special tools required:**

- [31 5 250](#)
- [00 2 030](#)
- [31 5 255](#)
- [31 5 256](#)
- [31 5 251](#)

**Warning!**

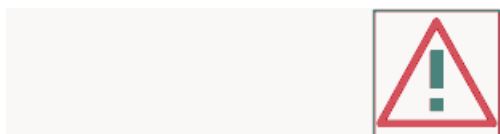
Danger of injury!

Failure to comply with the following instructions may result in the vehicle slipping off the lifting platform and critically injuring other persons.

Load the luggage compartment with a minimum of 100 kg before lowering/removing the rear axle support. This prevents the vehicle from tilting or sliding off the vehicle hoist!

When supporting components, make sure that:

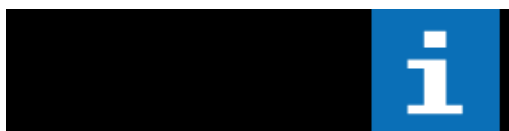
- the vehicle can no longer be raised or lowered
- the vehicle does not lift off the locating plates on the vehicle hoist.

**Important!**

Before lowering/removing rear axle support:

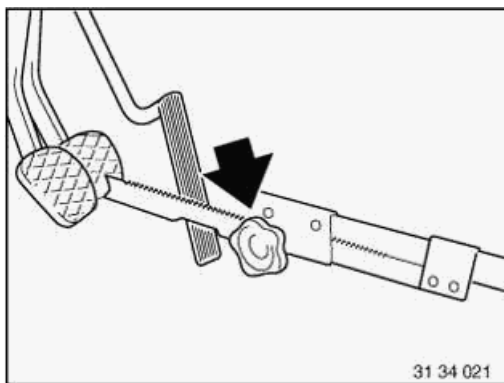
Observe [safety instructions](#) for raising the vehicle

In order to avoid damage to vehicle hoist, perform weight compensation on vehicle.

**Necessary preliminary tasks:**

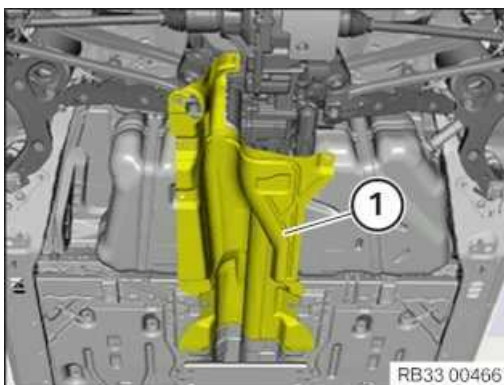
- [Remove](#) both rear wheels.
- Remove [complete exhaust system](#).
- Remove the left and right [trailing arm covers](#).
- Remove the [tank cover on the left and right](#).

**Lowering:**

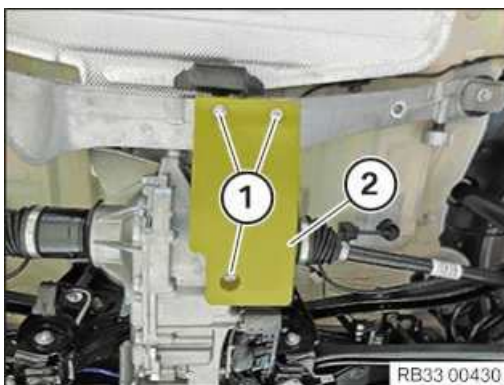


Press brake pedal down to floor and secure with pedal support. *Note:* The pedal support may only be released when the brake lines are reconnected.

This prevents brake fluid from emerging from the expansion tank and air from entering the system when the brake lines are opened.



Remove heat shield (1).



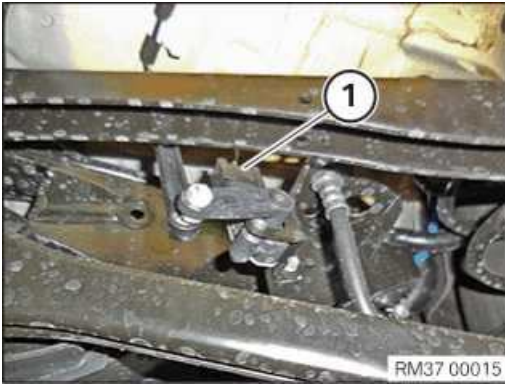
Loosen screws (1).

Remove cover (2).

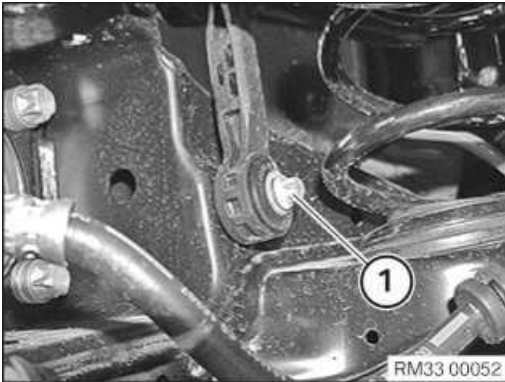


Disconnect connector (1).

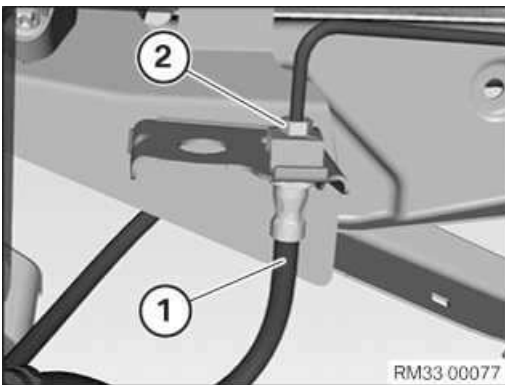
Release cable (2) from control unit holder.



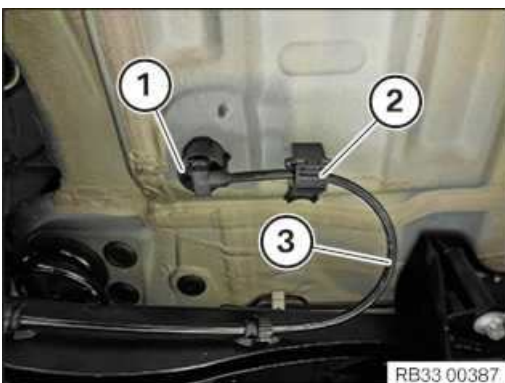
Only for rear ride height sensor:
Disconnect connector (1).



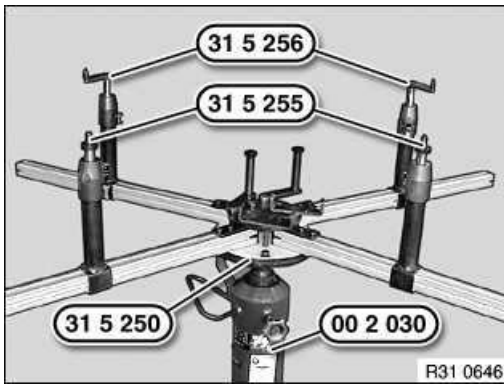
Release screw (1) of anti-roll bar links on left and right on trailing arm.



Release hollow nut (2).
Detach brake hose (1) on left and right from brake line.



Unlock and disconnect connectors (1) on the right and left.
Release cable (3) on left and right from cable clip (2).



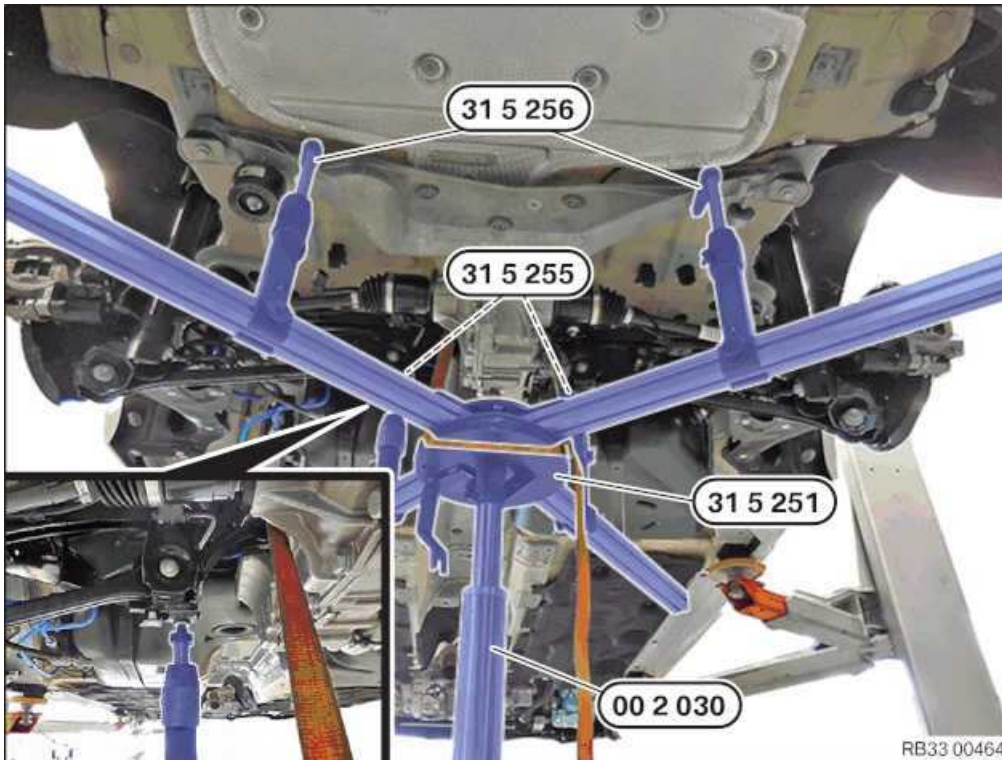
Engage special tool [31 5 250](#) with a 2nd person helping completely on workshop jack [00 2 030](#).

Insert special tools [31 5 255](#) in telescopic supports of a profile rail pair.

Insert special tools [31 5 256](#) in telescopic supports of other profile rail pair.

Note:

In a profile rail pair, two profile rails are connected to one another by gearing.



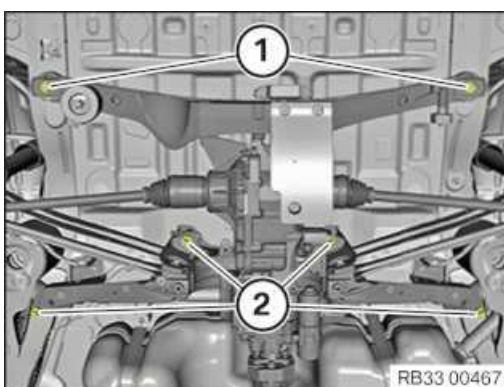
Align special tools [31 5 256](#), [31 5 255](#) and [31 5 251](#) to rear axle support.

Support rear axle support by operating workshop jack [00 2 030](#).

Important!

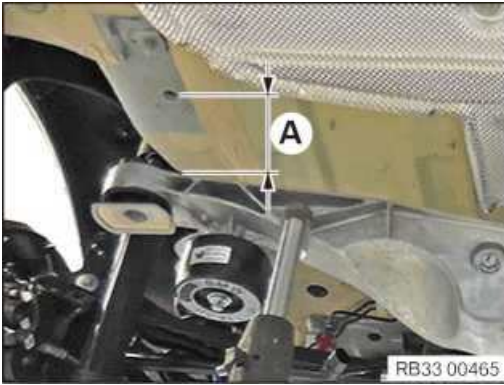
The centre of gravity of the rear axle must be positioned centrally over the workshop jack.

Secure rear axle support with tensioning strap to special tool [31 5 251](#).

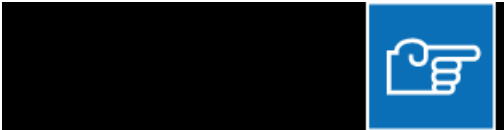


Release screws (1) from cross member.

Release screws (2) from rear axle support.

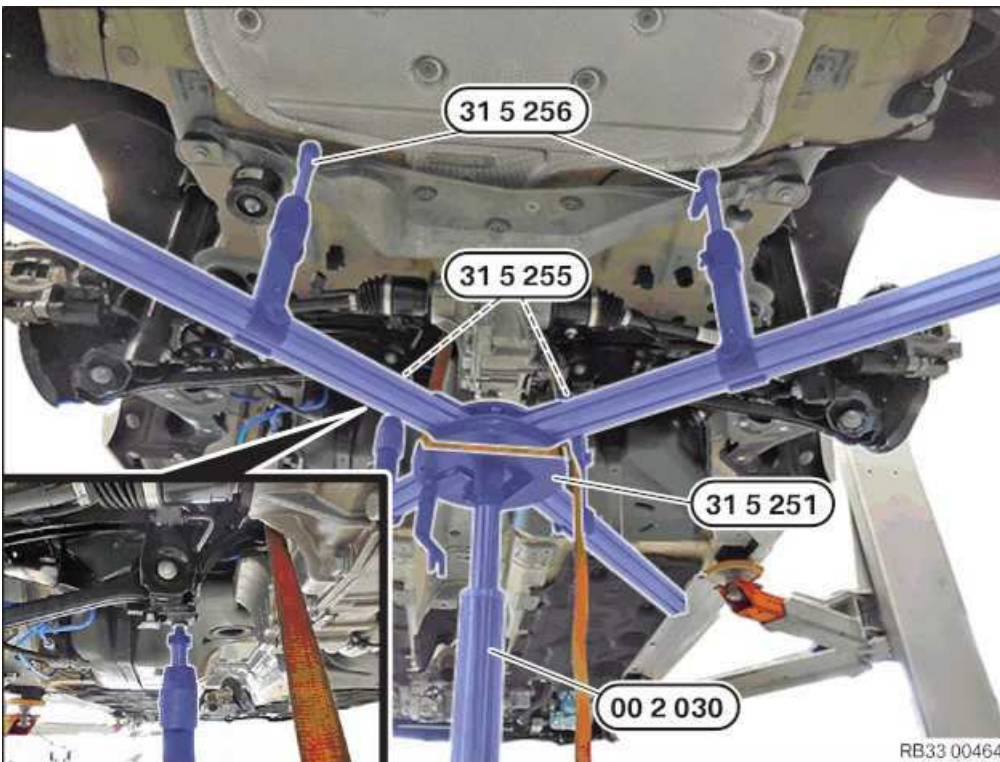


Lower rear axle support by max. A = 100 mm.

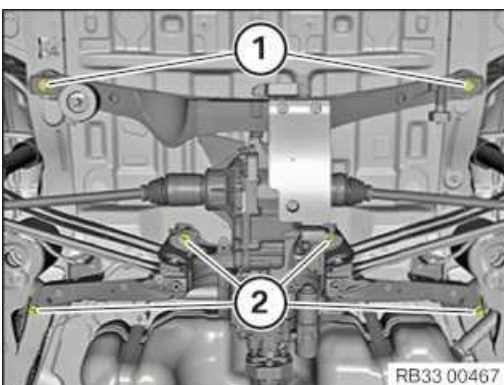


Raising: *Installation note:*

Check threads for damage; if necessary, repair with [Helicoil thread inserts](#).



Align and raise rear axle support.

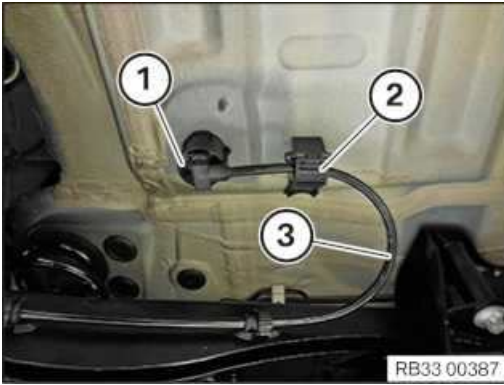


Tighten screws (2) on rear axle support.

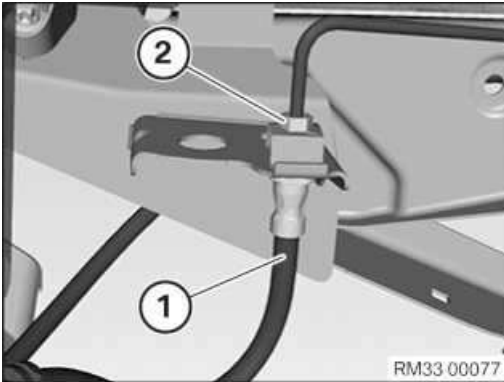
Tightening torque [33 31 1AZ](#).

Tighten screws (1) on cross member.

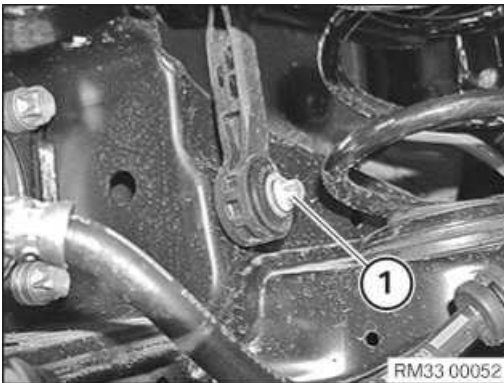
Tightening torque [33 31 3AZ](#).



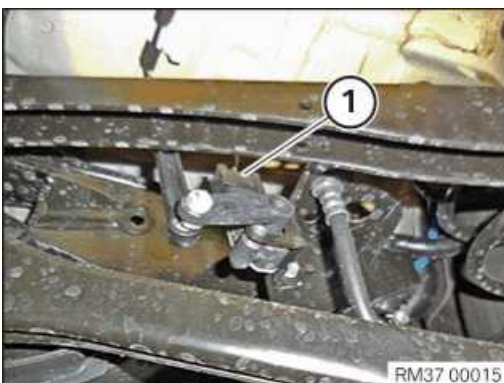
Connect plug connections (1) on left and right.
Secure cable (3) on left and right with cable clip (2).



Align brake hose (1), left and right.
Tighten down hollow nut (2).
Tightening torque [34 32 1AZ](#).



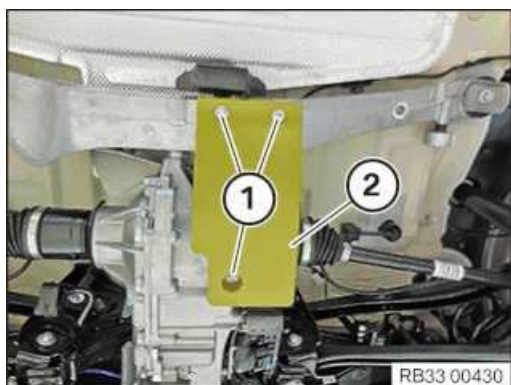
Tighten down anti-roll bar links on left and right with screw (1) on trailing arm.
Tightening torque [33 55 2AZ](#).



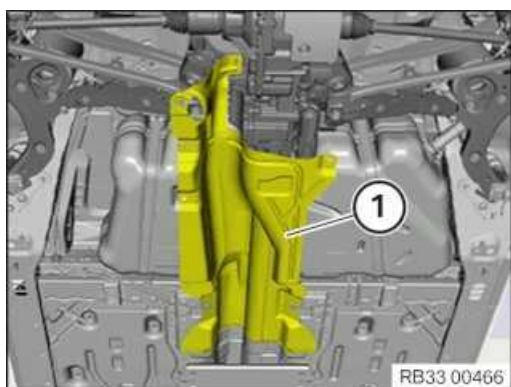
Only for rear ride height sensor:
Insert connector (1) on ride height sensor.



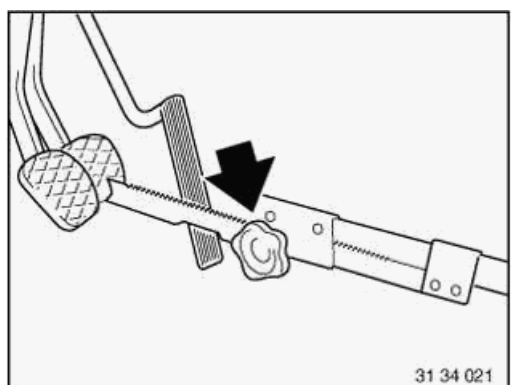
Fasten cable (2) on control unit holder.
Connect connector (1) to control unit.



Position cover (2).
Tighten down screws (1).
Tightening torque [33 31 8AZ](#).



Install heat shield (1).



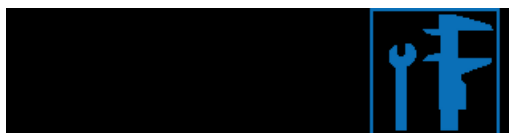
Release pedal support.



Required follow-up work:

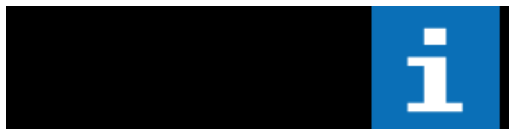
- Install [tank cover on left and right](#).
- Install [trailing arm cover](#), left and right.
- Completely install the [exhaust system](#).
- Install [both rear wheels](#).
- [Bleed brake system](#).

33 31 012 Removing and installing rear cross-member



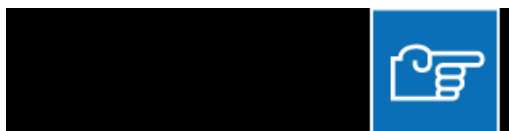
Special tools required:

- [23 4 150](#)

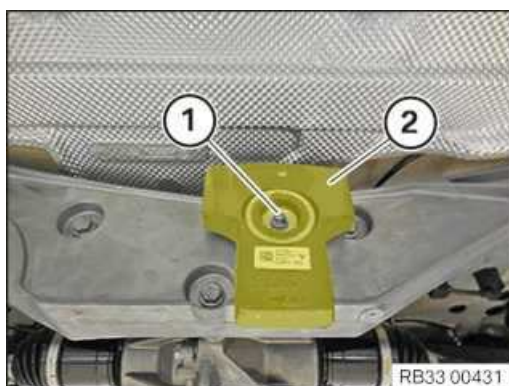
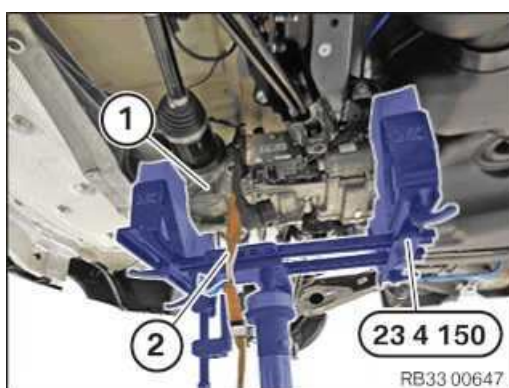
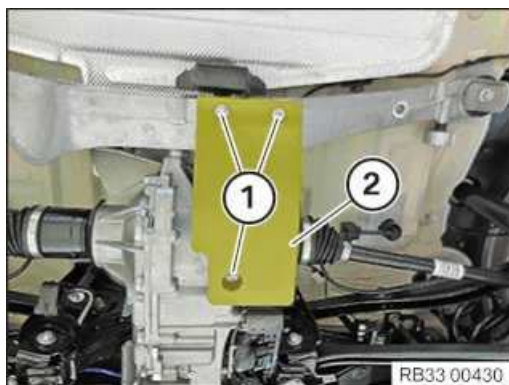


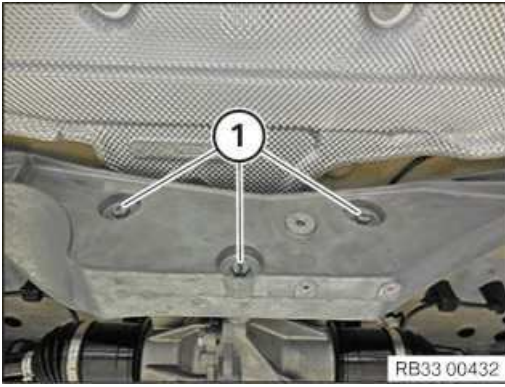
Necessary preliminary work:

- Remove [exhaust system](#).

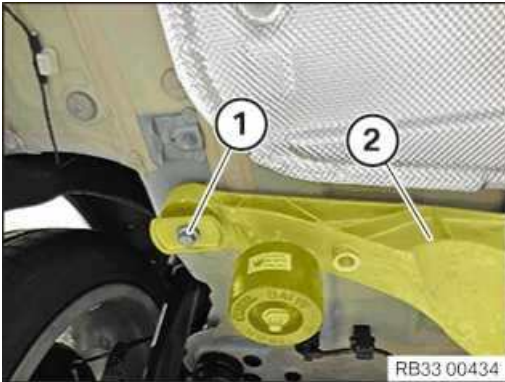


Removal:

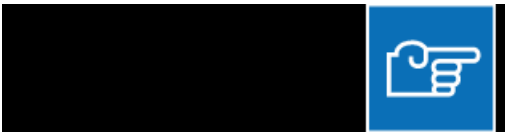




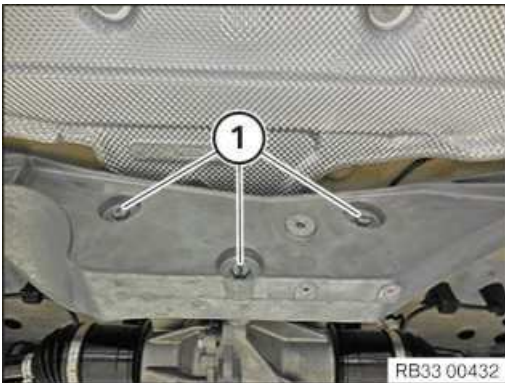
Loosen screw (1) from the cross member on the rear axle differential.



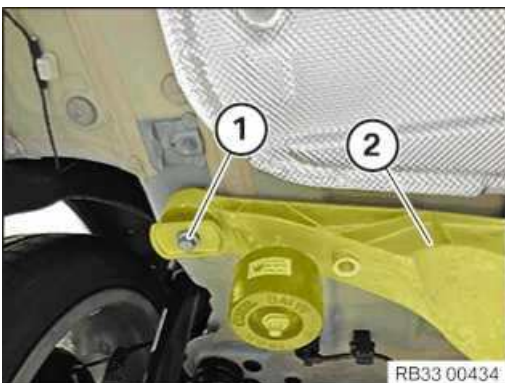
Release screws (1) on left and right.
Remove cross member (2)



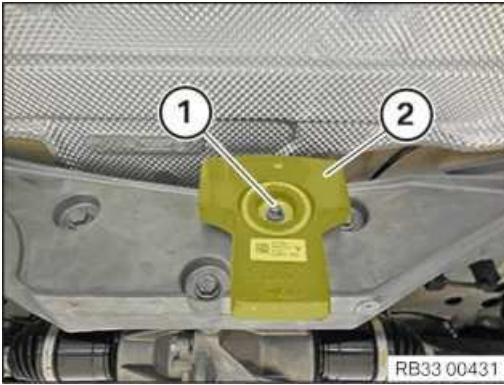
Installation:



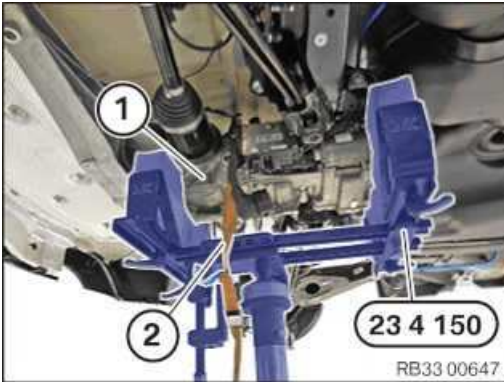
Position cross member on the rear axle differential.
Tighten down screws (1).
Tightening torque [33 31 4AZ](#).



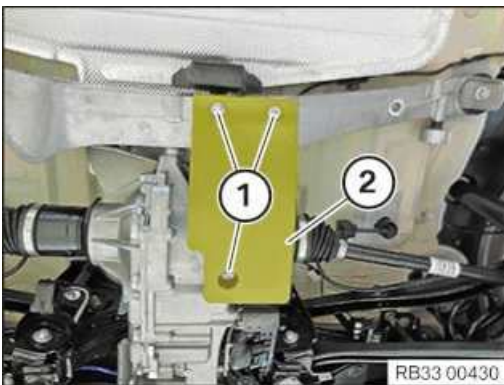
Tighten screw (1) on the left and right of the cross member (2).
Tightening torque [33 31 3AZ](#).



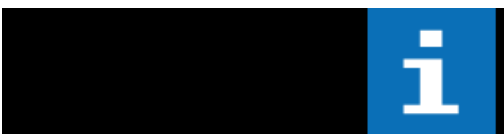
Position vibration absorber (2) on the cross member.
Tighten screw (1).
Tightening torque [33 31 6AZ](#).



Release tensioning strap (2).
Lower and place aside special tools [23 4 150](#) and workshop jack.



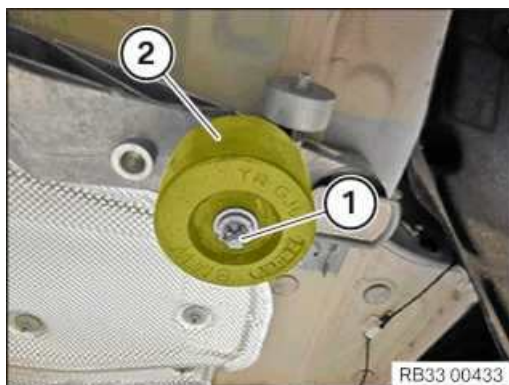
Position cover (2).
Tighten down screws (1).
Tightening torque [33 31 8AZ](#).



Required follow-up work:

- [Install exhaust system.](#)

33 31 ... Removing and installing/replacing vibration absorber



Version A:

Release screw (1).

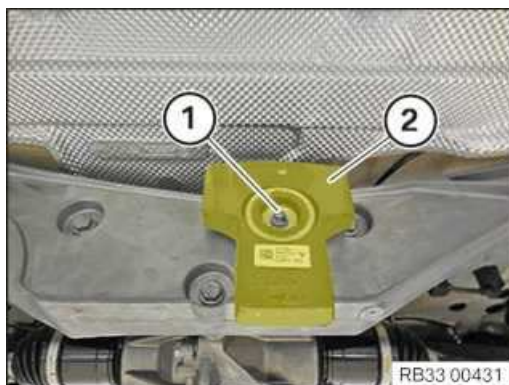
Remove vibration absorber (2).

Position new vibration absorber (2) on cross member.

Part: Replace screw (1).

Tighten down screw.

Tightening torque [33 31 5AZ](#).



Version B:

Release screw (1).

Remove vibration absorber (2).

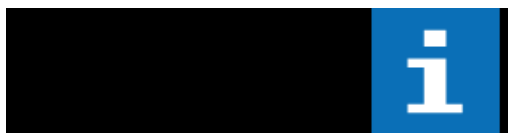
Position new vibration absorber (2) on cross member.

Part: Replace screw (1).

Tighten screw (1).

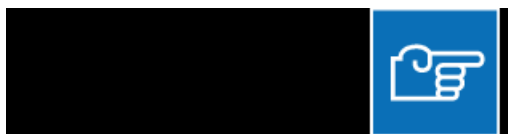
Tightening torque [33 31 6AZ](#).

33 31 011 Replacing rear axle support

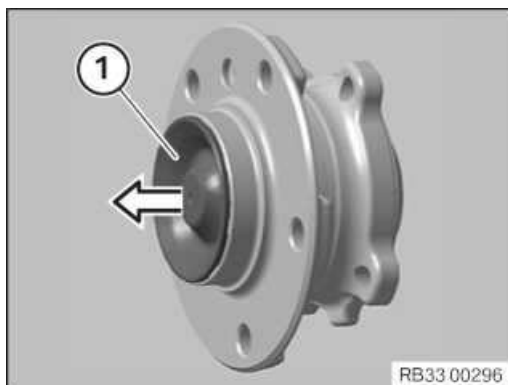


Necessary preliminary tasks:

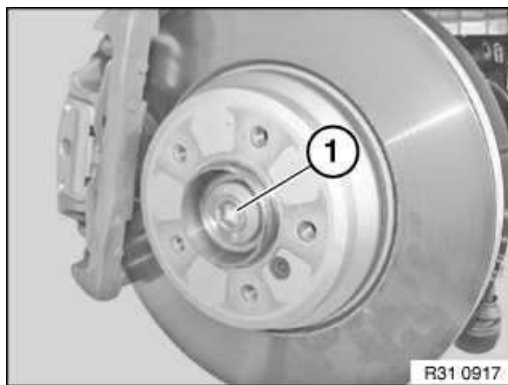
- Remove [rear wheels](#).
- Remove [complete exhaust system](#).
- Remove [rear axle final drive](#).
- Remove the [left and right trailing arm covers](#).
- Remove [tank cover](#) on left and right.



Removal:

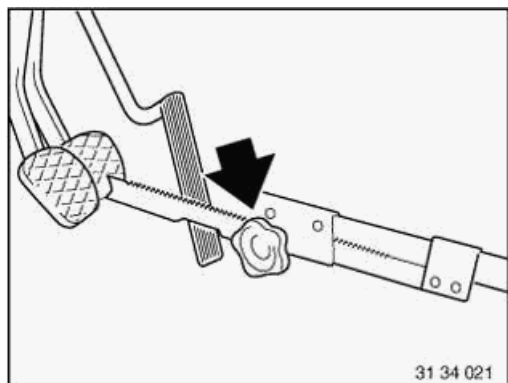


Lever out the protective cap (1) to the left and right.



Release collar bolt (1) to the left and right and to do this press the brake pedal.

Remove the left and right output shafts.

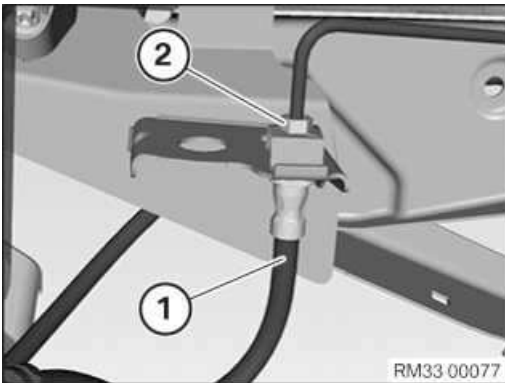


Press brake pedal down to floor and secure with pedal support. *Note:* The pedal support may only be released when the brake lines are reconnected.

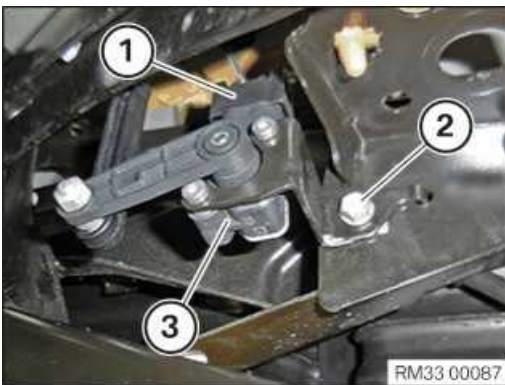
This prevents brake fluid from emerging from the expansion tank and air from entering the system when the brake lines are opened.



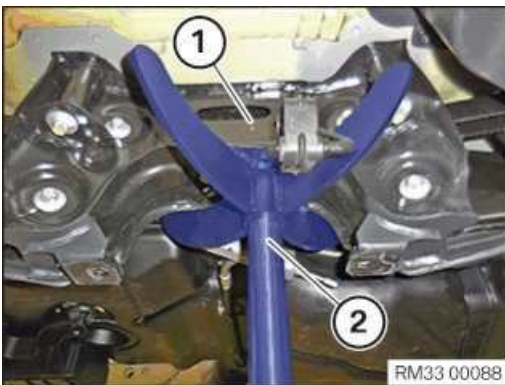
- Remove [all wishbones](#).



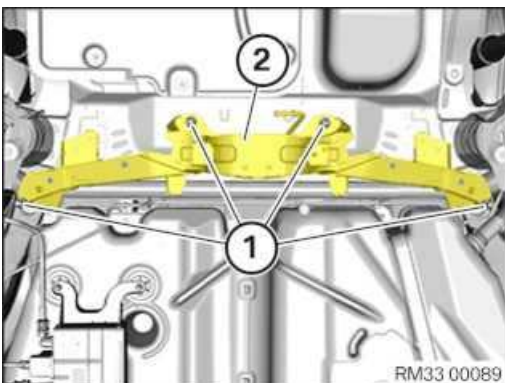
Release hollow nut (2).
Detach brake hose (1) on left and right from brake line.



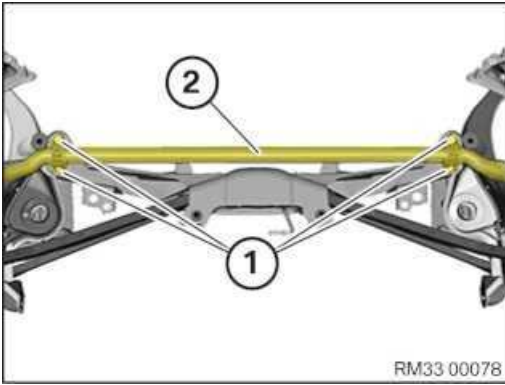
Only for rear ride height sensor:
Disconnect connector (1).
Release screw (2).
Remove ride height sensor.



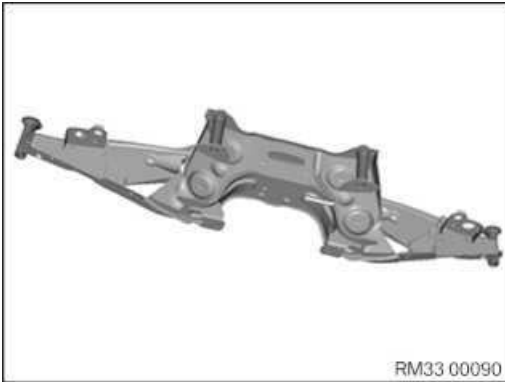
Support rear axle support (1) with workshop jack (2).



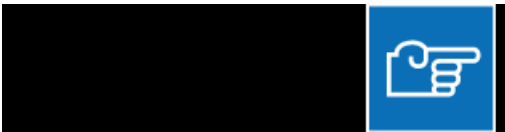
Release screws (1) from rear axle support (2).
Lower rear axle support by approx. 10 cm.



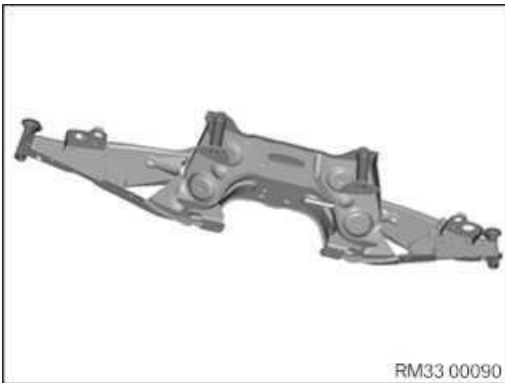
Release screws (1) from anti-roll bar (2).



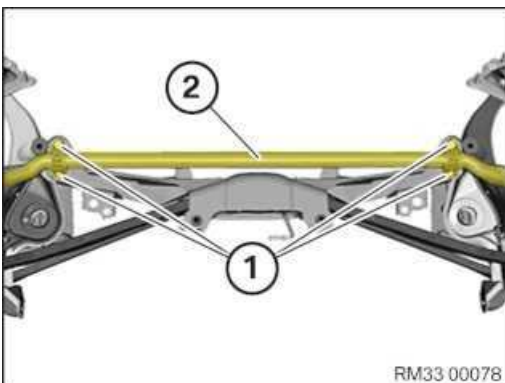
Remove rear axle support.



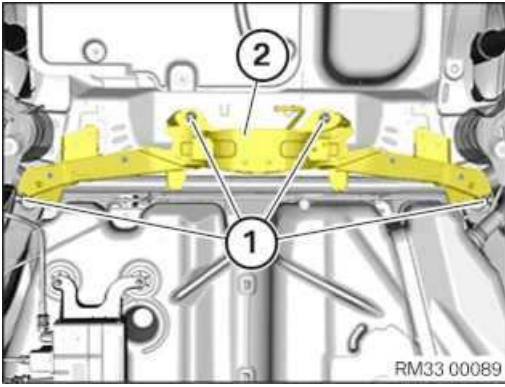
Installation:



Position rear axle support with workshop jack on vehicle.



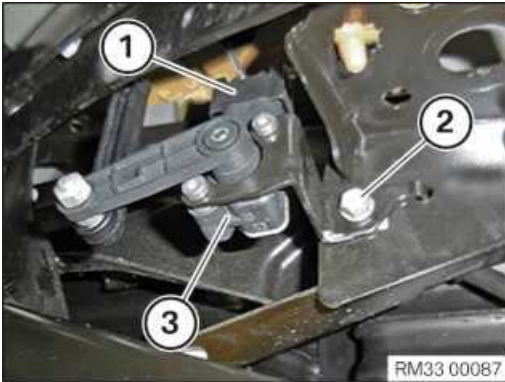
Tighten down anti-roll bar (2) with screws (1) on rear axle support.
Tightening torque [33 55 3AZ](#).



Tighten down rear axle support (2) with screws (1) on vehicle.

Tightening torque [33 31 1AZ](#)

Lower workshop jack and put away.



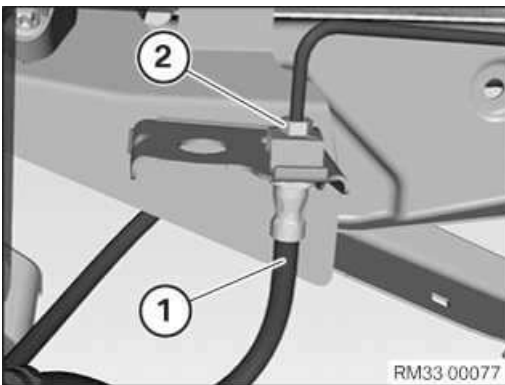
Only for rear ride height sensor:

Position ride height sensor.

Tighten screw (2).

Tightening torque [37 14 3AZ](#).

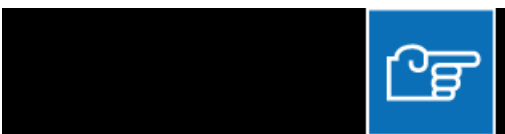
Connect the connector (1).



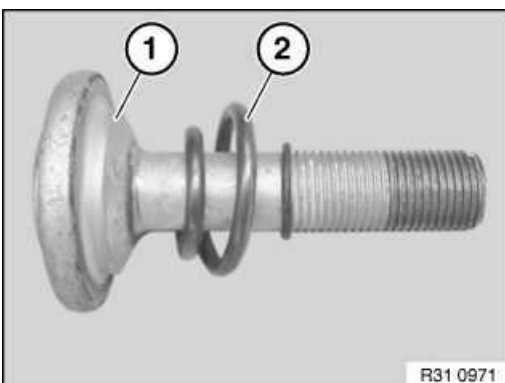
Connect brake hose (1) on left and right to brake line.

Tighten down hollow nut (2).

Tightening torque [34 32 1AZ](#).



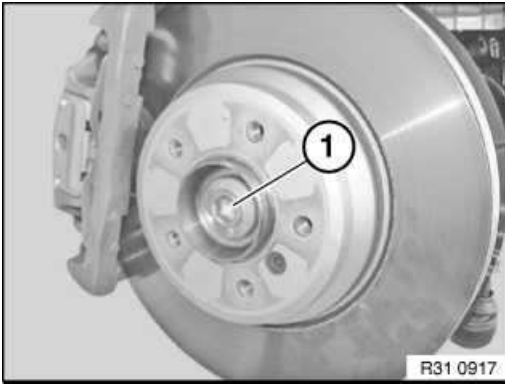
- Install [all wishbones](#).
- [Bleed brake system](#).



- Pay attention to installation position of compression spring (2).
- Keep collar bolt and spur gearing of wheel bearing/output shaft clean and free from grease

Important!

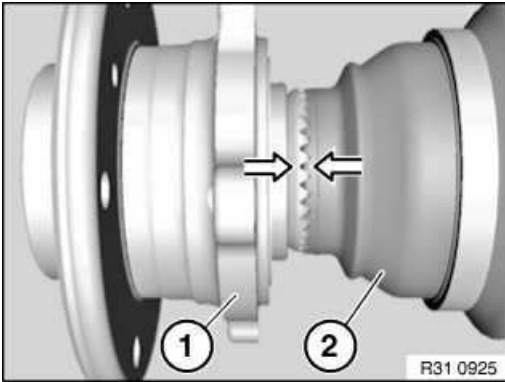
Following installation note for spur gearing must be observed without fail!



Position the left and right output shafts at the wheel bearing.

Part: Replace the collar bolts and compression springs.

Tighten collar bolt (1) and compression spring hand-tight.

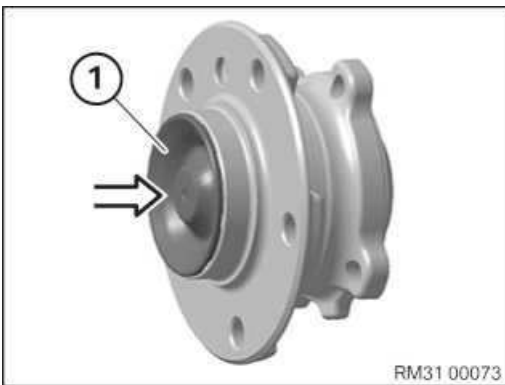


- Spur gearing of wheel bearing (1) and output shaft (2) must be installed form-fit (tooth in tooth position)!

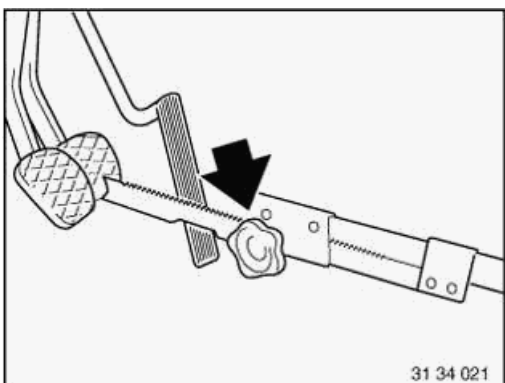
Check whether spur gearing is locked tooth in tooth by reciprocally rotating wheel hub/output shaft.

Once a form-fit has been ensured, tighten to final torque.

Tightening torque [33 41 2AZ](#)



Fit the left and right protective caps (1).



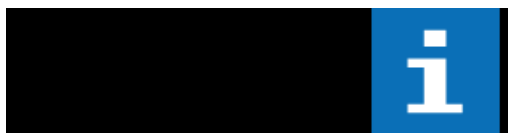
Release pedal support.



Required follow-up work:

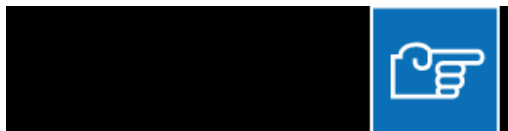
- Install the [rear axle differential](#).
- Install [tank cover](#) on left and right.
- [Install exhaust system](#).
- Install [rear wheels](#).
- Perform [wheel alignment](#).

33 31 013 Replacing rear cross member

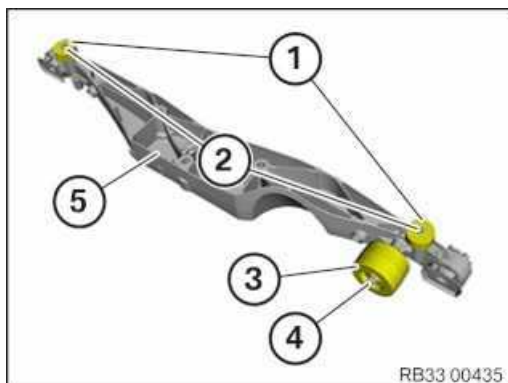


Necessary preliminary tasks:

- Remove [cross member](#).



Removal:

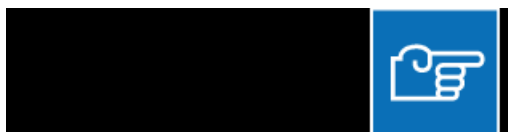


Unfasten screws (2).

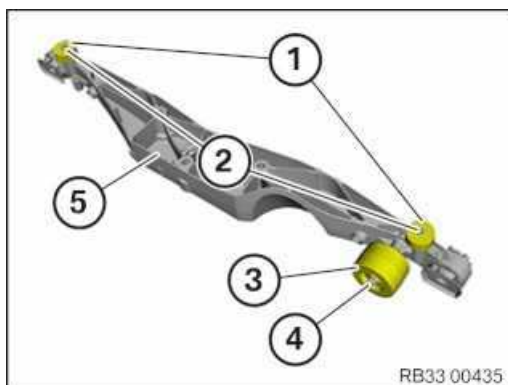
Remove additional weights (1) from rear axle support (5).

Release screw (4).

Remove vibration absorber (3) from rear axle support (5).



Installation:



Position additional weights (1) on rear axle support (5).

Part: Replace screws (2).

Tighten down screws (2).

Tightening torque [33 31 7AZ](#).

Position vibration absorber (3) on rear axle support (5).

Part: Replace screw (4).

Tighten screw (4).

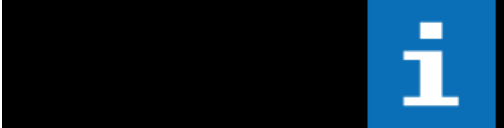
Tightening torque [33 31 5AZ](#).



Required follow-up work:

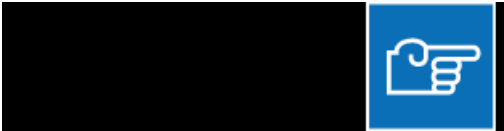
- Install [cross member](#).

33 32 000 Completely remove and install the left or right trailing arm (all-wheel drive vehicle)

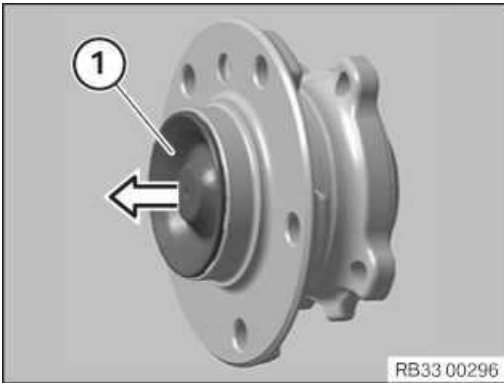


Necessary preliminary work:

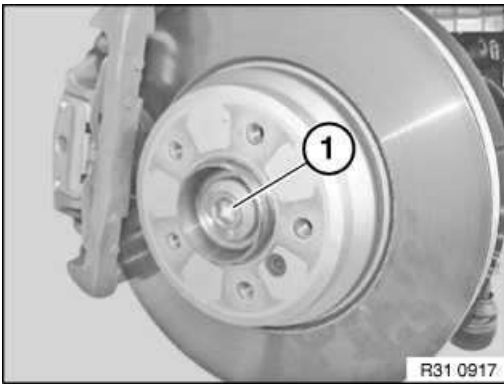
- Remove [rear wheel](#).



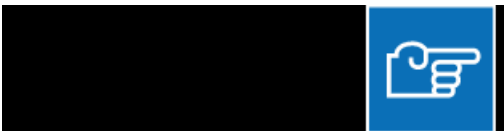
Removal:



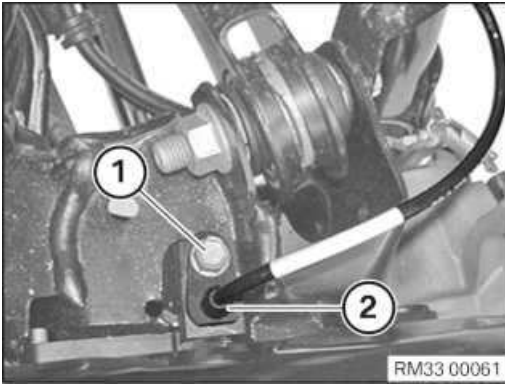
Lever off protective cap (1).



Release collar bolt (1), press brake pedal to floor for this purpose.
Tie up output shaft.

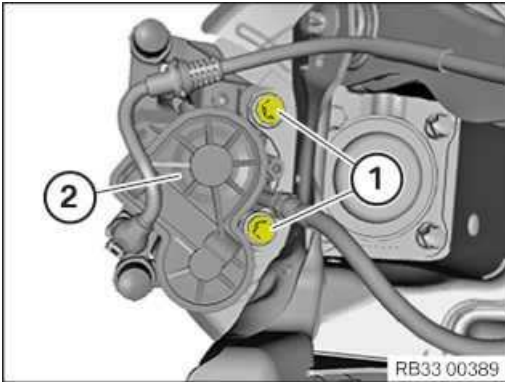


- Remove [coil spring](#).



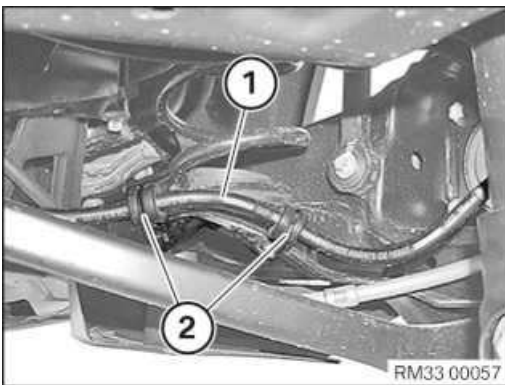
Loosen screw (1).

Detach wheel speed sensor (2) from the trailing arm and put to one side.

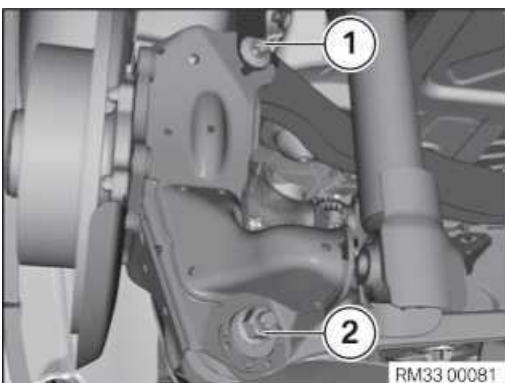


Loosen screws (1).

Take off brake caliper (2) with holder and tie back.



Unclip brake line (1) from holder (2) on trailing arm.

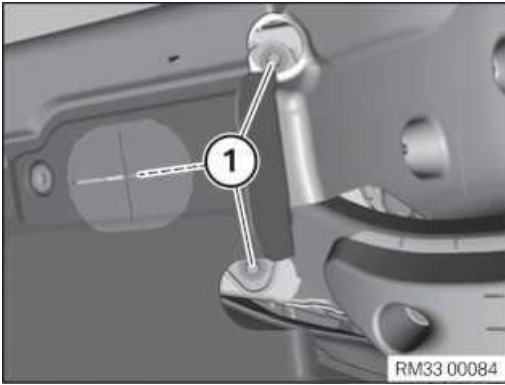


Release nut and remove screws (1).

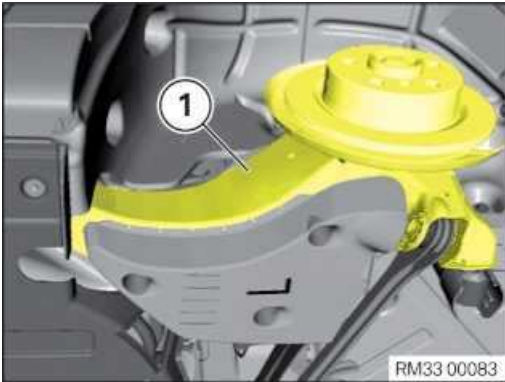
Mark position of eccentric adjustment washer to trailing arm to simplify subsequent adjustment of rear axle.

Slacken nut (2).

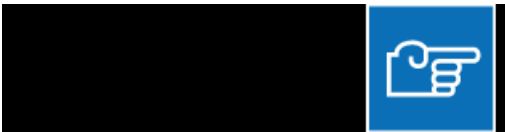
Remove eccentric washer and unscrew screw.



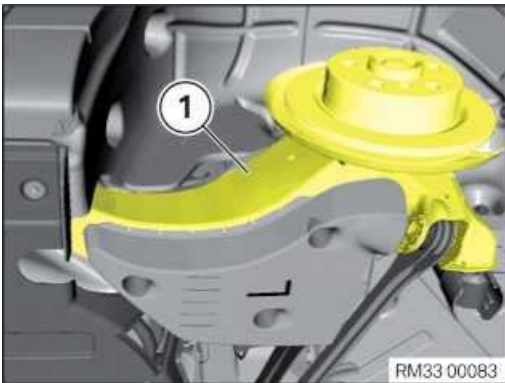
Undo screws (1) on trailing arm bearing support on the body.



Remove trailing arm (1) with trailing arm bearing support.



Installation:



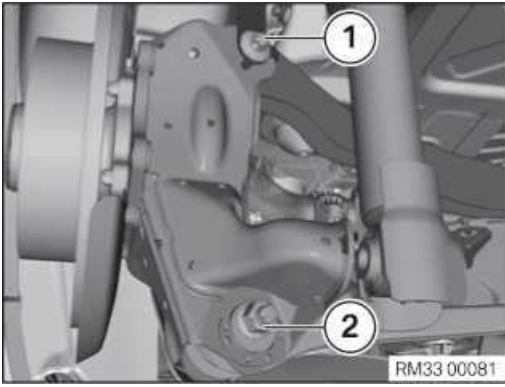
Position trailing arm (1) with trailing arm bearing support at the vehicle.



Tighten screws (1) on trailing arm bearing support on the body.

Renew screws (1)!

Tightening torque [33 32 5AZ](#).



Part: Renew nut.

Insert screw (1) and tighten nut.

Tightening torque [33 32 1AZ](#).

Insert bolt (2) and connect eccentric washer.

Align eccentric washer to the marked position.

Part: Replace nut (2).

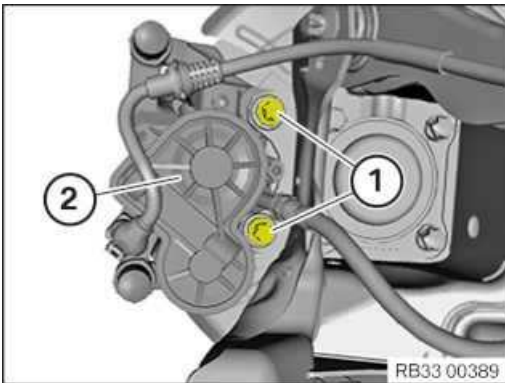
Screw on the nut (2).

- Do not yet tighten to specified torque!

Move vehicle into [normal position](#).

Tighten nut (2) in normal position.

Tightening torque [33 32 2AZ](#).

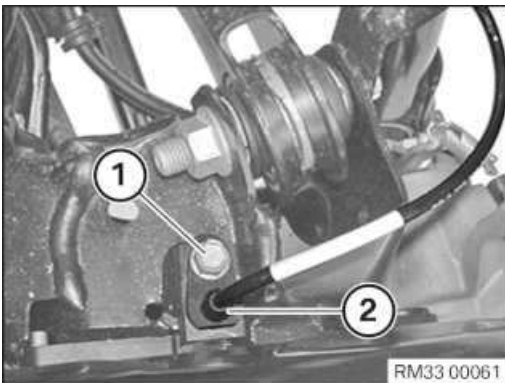


Position brake caliper (2) with holder.

Part: Renew screws (1).

Tighten down screws (1).

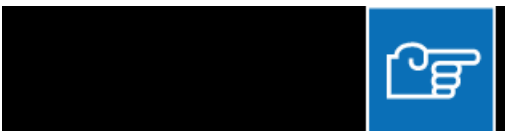
Tightening torque [34 21 2AZ](#).



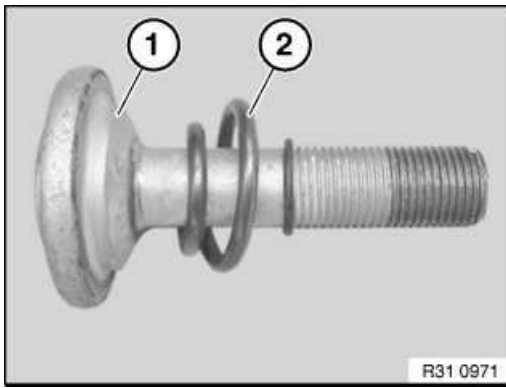
Position wheel speed sensor (2) on trailing arm.

Tighten screw (1).

Tightening torque, [34 51 5AZ](#).



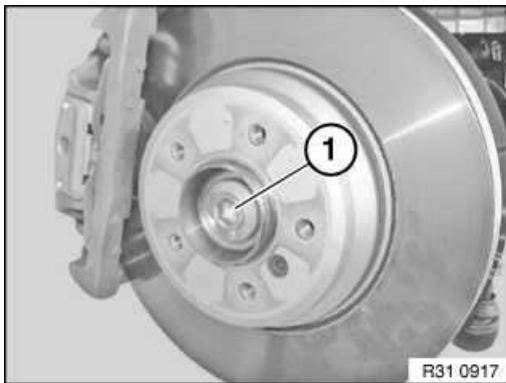
- Installing the [helical spring](#).



- Pay attention to installation position of compression spring (2).
- Keep collar bolt and spur gearing of wheel bearing/output shaft clean and free from grease

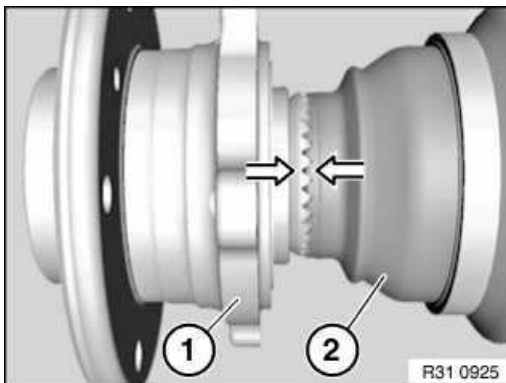
Attention!

Following installation note for spur gearing must be observed without fail!



Part: Replace collar bolt and compression spring.

Tighten collar bolt (1) and compression spring hand-tight.

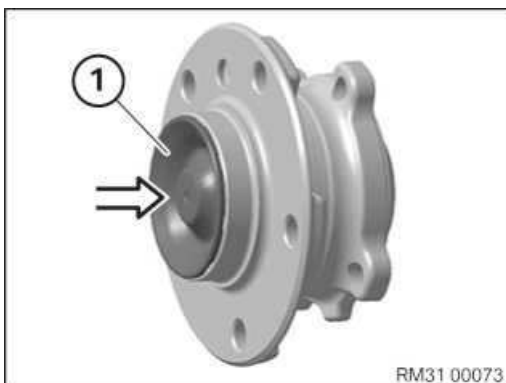


- Spur gearing of wheel bearing (1) and output shaft (2) must be installed form-fit (tooth in tooth position)!

Check whether spur gearing is locked tooth in tooth by reciprocally rotating wheel hub/output shaft.

Once a form-fit has been ensured, tighten to final torque.

Tightening torque [33 41 2AZ](#)

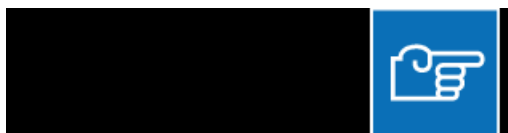


Connect protective cap (1).

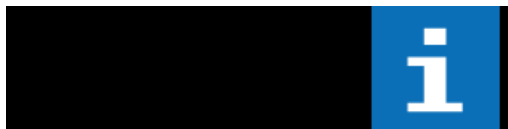


Required follow-up work:

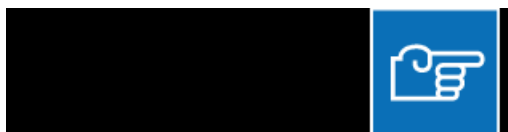
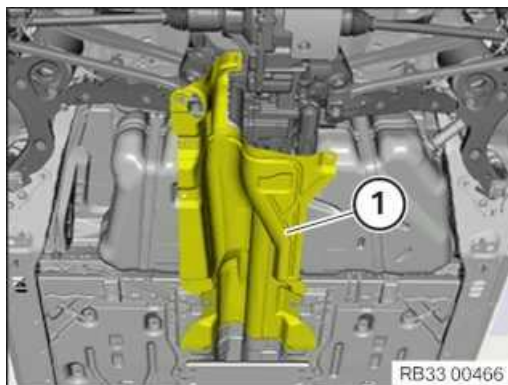
- Install [rear wheel](#).
- Perform [wheel alignment check](#)

**Note:**

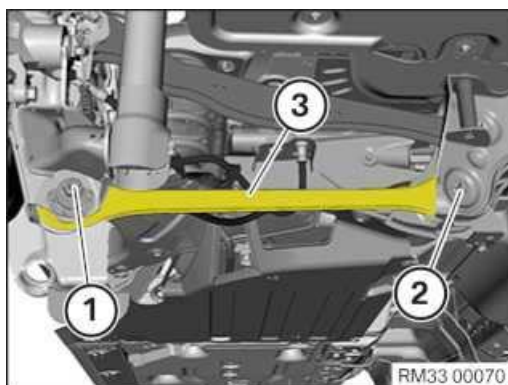
If the bottom wishbone is detached from the rear axle support/trailing arm, [wheel alignment](#) must be carried out after installation.

**Necessary preliminary work:**

- Remove left [rear wheel](#).
- Remove [exhaust system](#).

**Removal:**

Remove rear heat shield (1).



Mark position of eccentric adjustment washer to trailing arm to simplify subsequent adjustment of rear axle.

Release nut and remove screw (2).

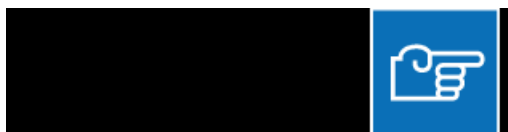
Slacken nut (1).

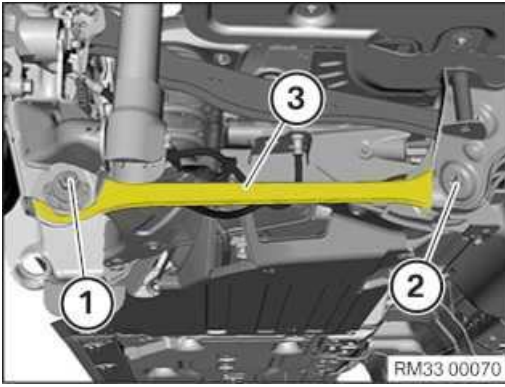
Remove eccentric washer and unscrew screw.

Remove wishbone (3).

Installation note:

Tighten screw connection (1) and (2) in [normal position](#).

**Installation:**



Align wishbone (3).

Insert bolt (1) and connect eccentric adjustment washer.

Align eccentric adjustment washer to marked position.

Part: Renew screw (1) and nut.

Tighten nut (1) in normal position (during wheel alignment).

Tightening torque [33 32 2AZ](#).

Part: Renew nut.

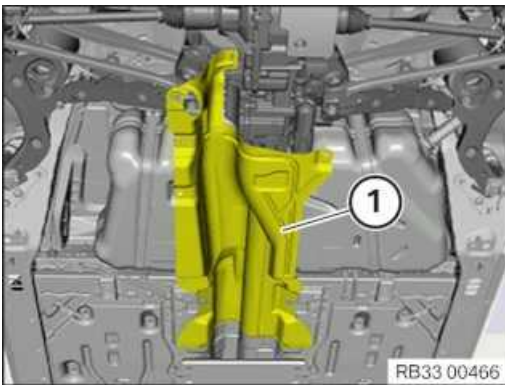
Insert bolt (2) and screw on new nut.

- Do not yet tighten to specified torque!

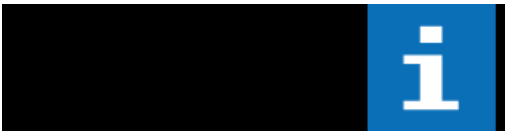
Move vehicle into [normal position](#).

Tighten nut of bolt (2) in normal position.

Tightening torque [33 32 3AZ](#).



Mount heat shield (1).

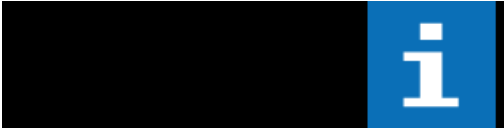


Required follow-up work:

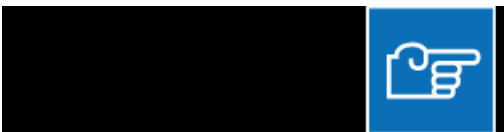
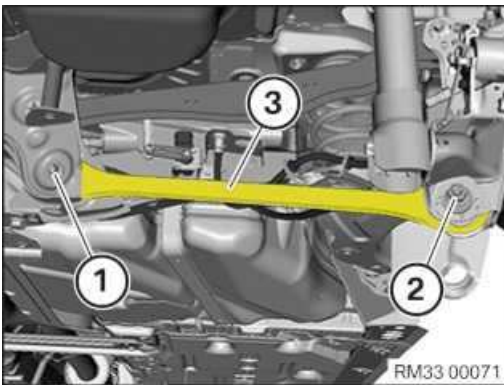
- Mount [exhaust system](#).
- Mount left [rear wheel](#).
- Carry out [wheel alignment procedure](#).

**Note:**

If the bottom wishbone is detached from the rear axle support/trailing arm, [wheel alignment](#) must be carried out after installation.

**Necessary preliminary work:**

- Remove right [rear wheel](#).
- Remove [tank cover on the right](#).

**Removal:**

Mark position of eccentric adjustment washer to trailing arm to simplify subsequent adjustment of rear axle.

Release nut and remove screw (1).

- If necessary, remove tapered slide for compact spare wheel.

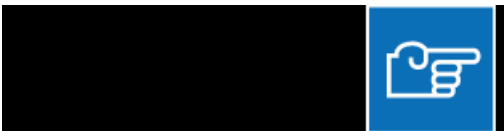
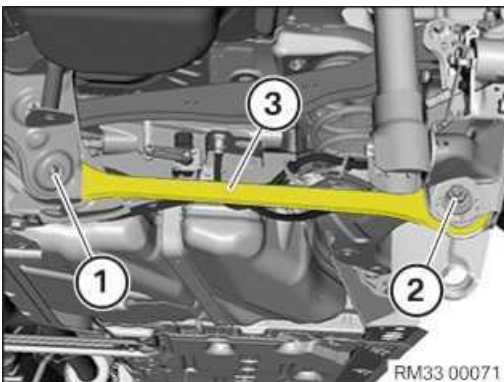
Slacken nut (2).

Remove eccentric washer and unscrew screw.

Remove wishbone (3).

Installation note:

Tighten screw connection (1) and (2) in [normal position](#).

**Installation:**

Align wishbone (3).

Insert bolt (2) and connect eccentric adjustment washer.

Align eccentric adjustment washer to marked position.

Part: Replace screw and nut (2).

Tighten nut (2) in normal position (during wheel alignment).

Tightening torque [33 32 2AZ](#).

Part: Renew nut.

Insert bolt (1) and screw on new nut.

- Do not yet tighten to specified torque!

Move vehicle into [normal position](#).

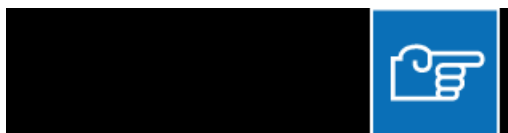
Tighten nut of bolt (1) in normal position.

Tightening torque [33 32 3AZ](#).



Required follow-up work:

- Mount [right tank cover](#).
- Mount right [rear wheel](#).
- Carry out [wheel alignment procedure](#).

**Removal:**

Release screws (1).

Remove cover (2).

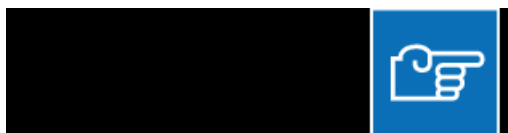
**Installation:**

Align cover (2) to trailing arm.

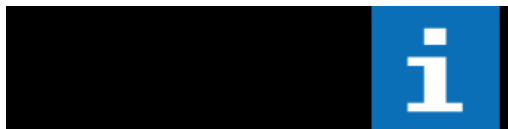
- Observe side designation (L = left or R = right) on cover.

Tighten down screws (1).

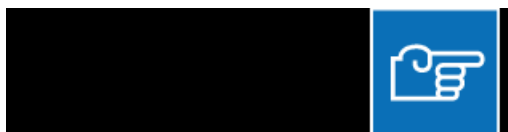
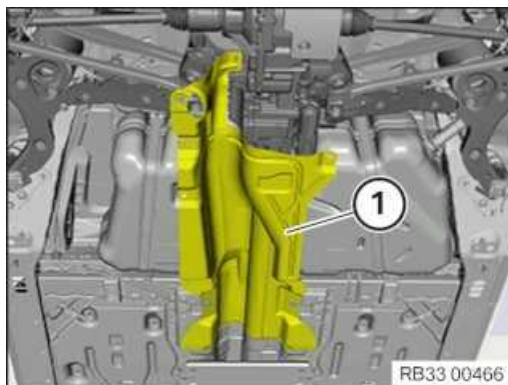
Tightening torque [33 32 6AZ](#)

**Note:**

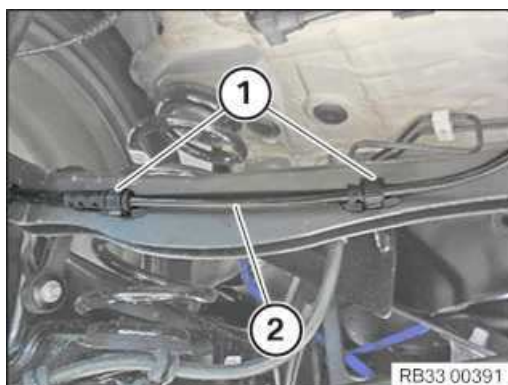
If the top wishbone is detached from the rear axle support, [wheel alignment](#) must be carried out after installation.

**Necessary preliminary work:**

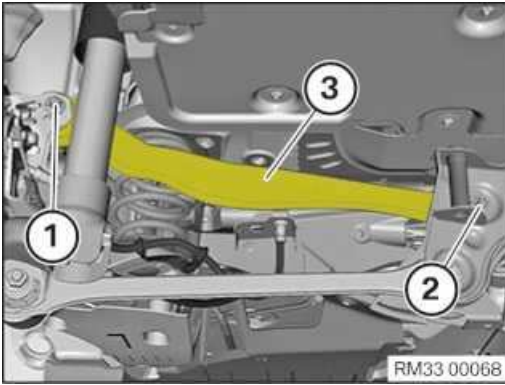
- Remove left [rear wheel](#).
- Remove [exhaust system](#).

**Removal:**

Remove heat shield (1).



Remove cable (2) from holder (1).



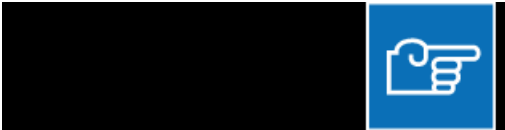
Release nut and remove screw (1).

Release nut and remove screw (2).

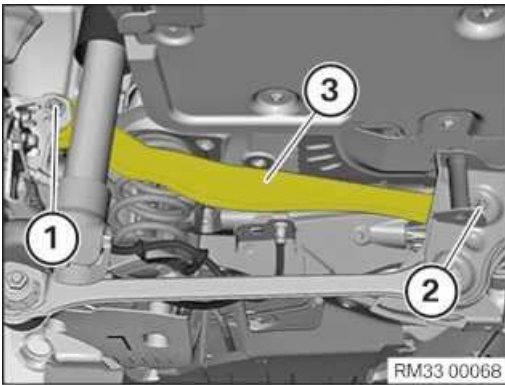
Remove wishbone (3).

Installation note:

Tighten screw connection (2) in [normal position](#).



Installation:



Align wishbone (3).

Part: Renew nut.

Insert screw (1) and tighten nut.

Tightening torque [33 32 1AZ](#).

Part: Renew nut.

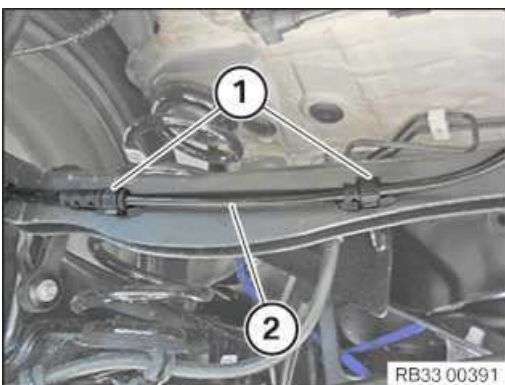
Insert bolt (2) and screw on nut.

- Do not yet tighten to specified torque!

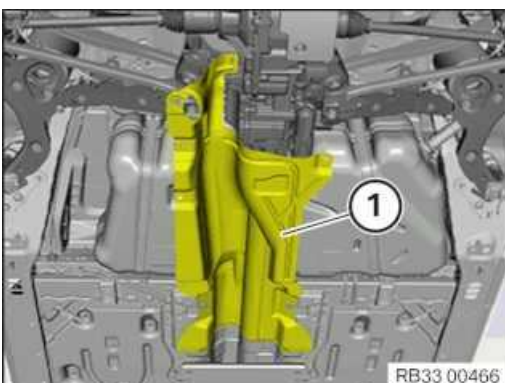
Move vehicle into [normal position](#).

Tighten nut of bolt (2) in normal position.

Tightening torque [33 32 3AZ](#).



Secure cable (2) on wishbone.

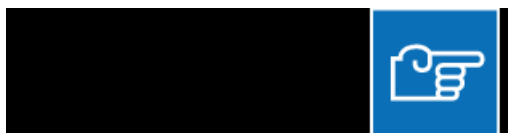


Mount heat shield (1).

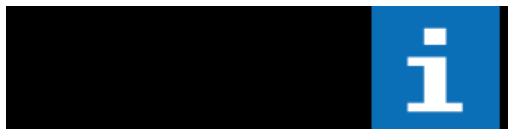


Required follow-up work:

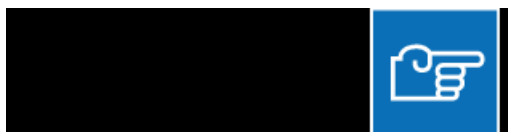
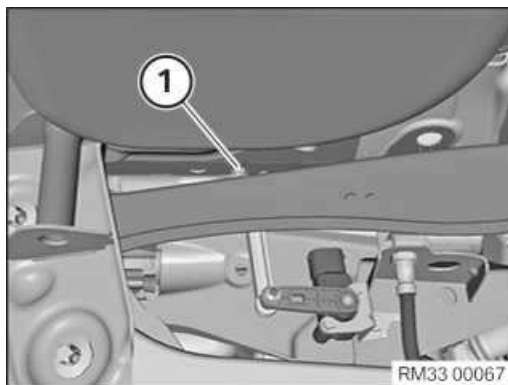
- [Install exhaust system.](#)
- Install [rear wheel](#).
- Perform [wheel alignment check](#)

**Note:**

If the top wishbone is detached from the rear axle support, [wheel alignment](#) must be carried out after installation.

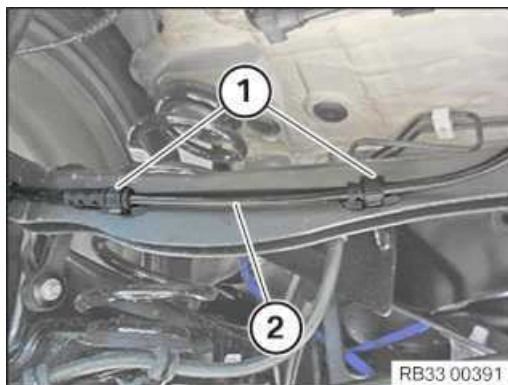
**Necessary preliminary work:**

- Remove right [rear wheel](#).
- Remove the [right tank cover](#).

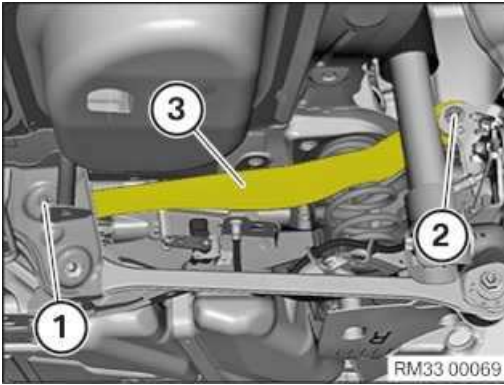
**Removal:**

Only for right ride height sensor:

Release screws (1) for jointed rod on wishbone.



Remove cable (2) from holder (1).



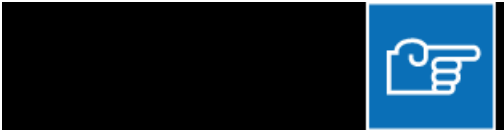
Release nut and remove screw (2).

Release nut and remove screw (1).

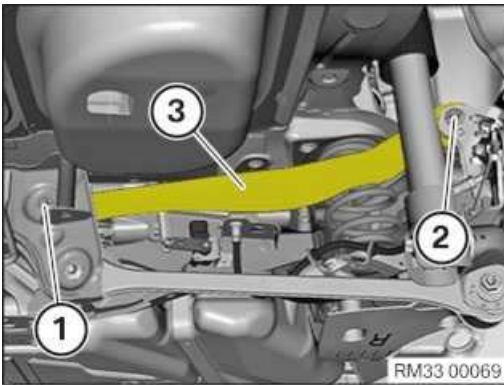
Take off wishbone.

Installation note:

Tighten screw connection (1) and (2) in [normal position](#).



Installation:



Align wishbone (3).

Part: Renew nut.

Insert bolt (2) and screw on new nut.

- Do not yet tighten to specified torque!

Part: Renew nut.

Insert bolt (1) and screw on new nut.

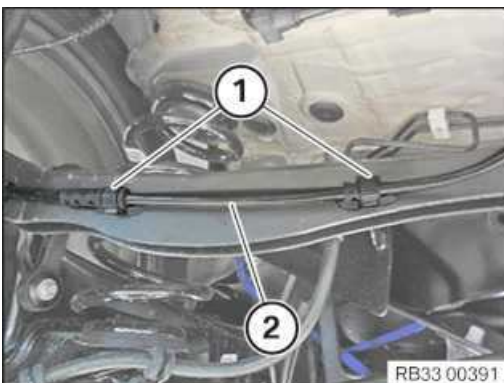
- Do not yet tighten to specified torque!

Move vehicle into [normal position](#).

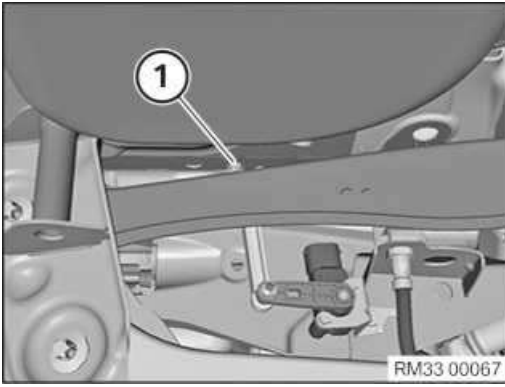
Tighten nut of bolt (1) and (2) in normal position.

Tightening torque [33 32 1AZ](#)

Tightening torque [33 32 3AZ](#).



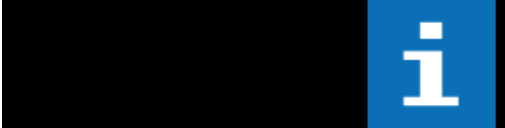
Secure cable (2) on wishbone.



Only for right ride height sensor:

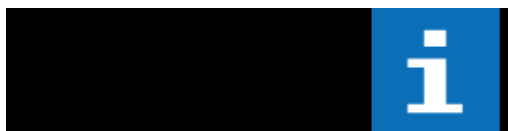
Tighten screws (1) for jointed rod on wishbone.

Tightening torque [37 14 5AZ](#).

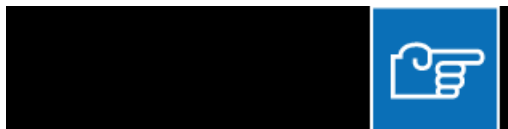
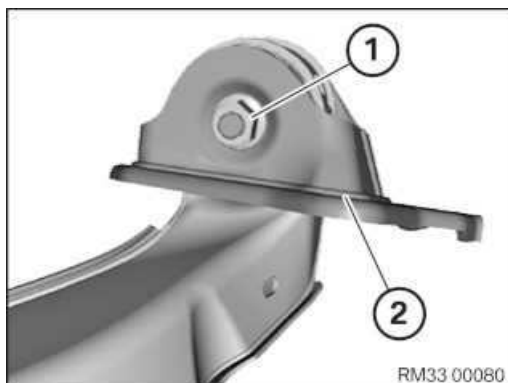


Required follow-up work:

- Mount [right tank cover](#).
- Mount right [rear wheel](#).
- Carry out [wheel alignment procedure](#).

**Necessary preliminary tasks:**

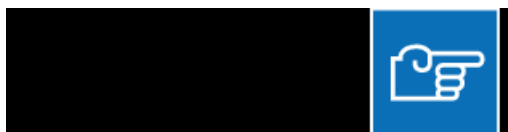
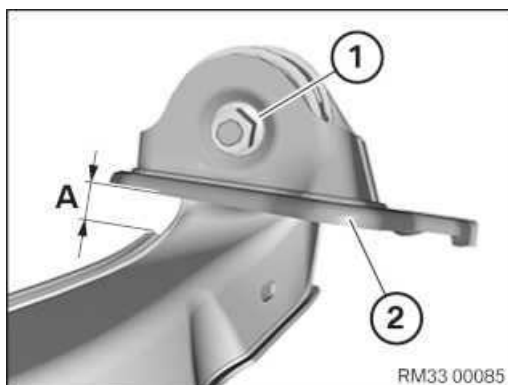
- Remove [trailing arm](#).

**Removal:**

Slacken nut (1).

Pull out screw.

Remove the trailing arm bearing support (2).

**Installation:**

Position the trailing arm bearing support (2).

Parts: Replace nut (1).

Insert bolt and screw on nut (1).

Adjust the trailing arm bearing support to dimension A in relation to the trailing arm.

- Dimension A = 18 mm (± 3 mm)

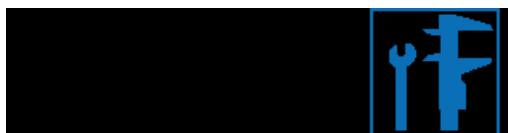
Tighten nut (1).

Tightening torque [33 32 4AZ](#).

**Required follow-up work:**

- Installing the [trailing arm](#).
- Carry out [wheel alignment procedure](#).

33 32 042 Replacing a rubber mount in trailing arm, front



Special tools required:

- [2 361 473](#)
- [2 361 474](#)
- [2 361 475](#)
- [33 3 011](#)
- [33 4 450](#)
- [2 361 480](#)
- [2 361 477](#)

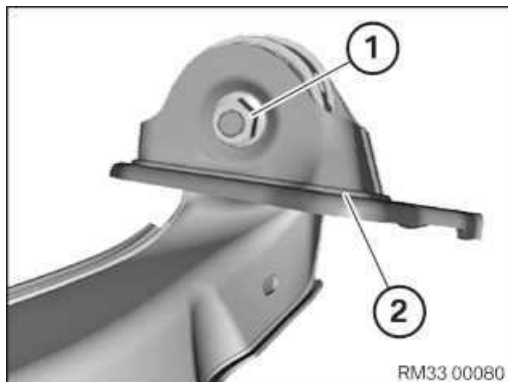


Necessary preliminary work:

- Remove [trailing arm](#).



Removal:



Slacken nut (1).

Pull out screw.

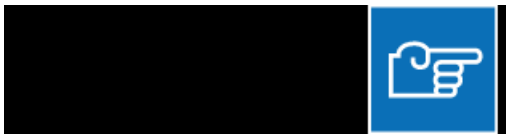
Remove the trailing arm bearing support (2).



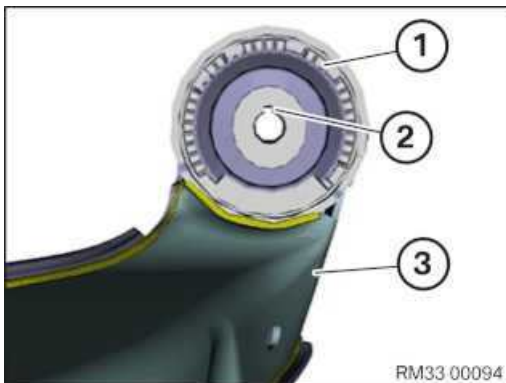
Pull out rubber mount with special tools [2 361 473](#) , [2 361 474](#) , [2 361 475](#) and [33 3 011](#) .**Attention!**

Risk of damage!

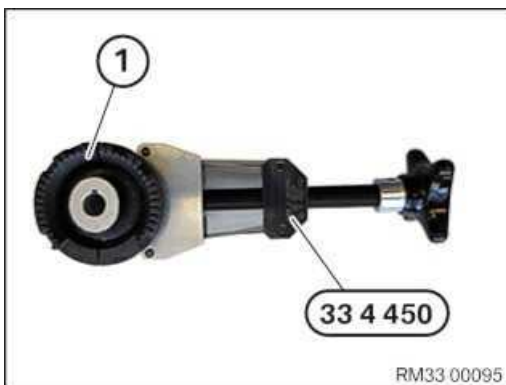
Position special tool [2 361 475](#) in such a way that the recesses on the special tool align with the notches (1) on the trailing arm.



Installation:



When pulling in the rubber mount (1), the slot (2) has to be positioned in regards to the trailing arm (3) as shown in the graphic.



Pull together the rubber mount (1) using the special tool [33 4 450](#).



Position the rubber mount (1) on the trailing arm.

- Make absolutely sure the rubber mount is in its proper installation position!

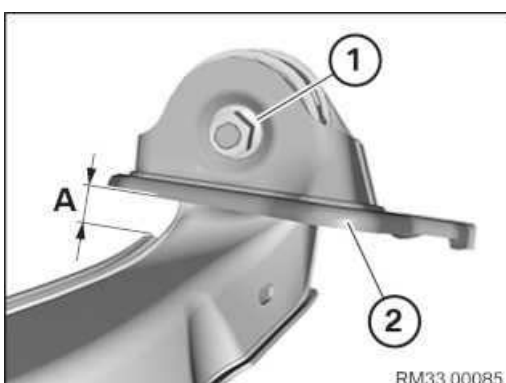
Mount special tools [2 361 480](#), [2 361 477](#) and [33 3 011](#).

Pull special tool [2 361 480](#) over rubber mount (1).

Insert rubber mount (1) to the point where special tool [33 4 450](#) abuts with trailing arm.

Remove special tool [33 4 450](#).

Insert rubber mount (1) to limit position.



Position the trailing arm bearing support (2).

Part: Replace nut (1).

Insert bolt and screw on nut (1).

Adjust dimension A of the trailing arm bearing support in relation to the trailing arm.

- Dimension A = 18 mm (± 3 mm)

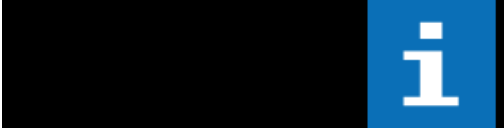
Tighten nut (1).

Tightening torque [33 32 4AZ](#).



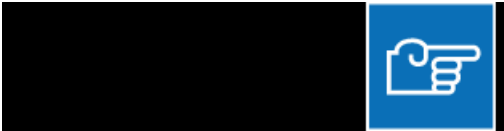
Required follow-up work:

- Installing the [trailing arm](#).
- Carry out [wheel alignment procedure](#).

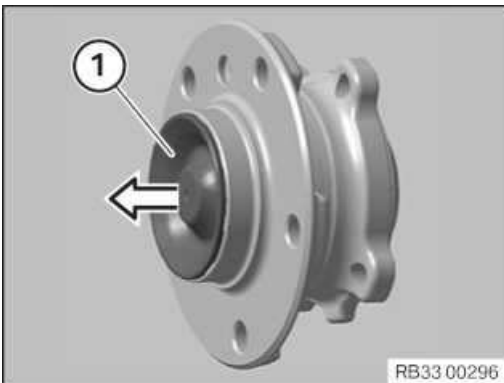


Necessary preliminary work:

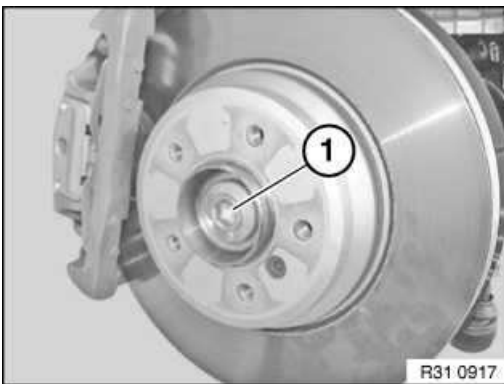
- Remove [rear wheel](#).



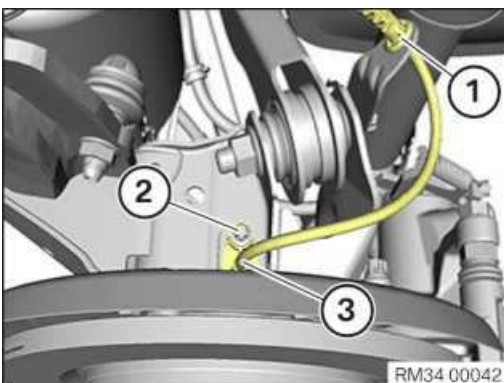
Removal:



Lever off protective cap (1).

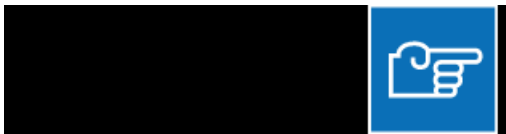


Release collar bolt (1), press brake pedal to floor for this purpose.

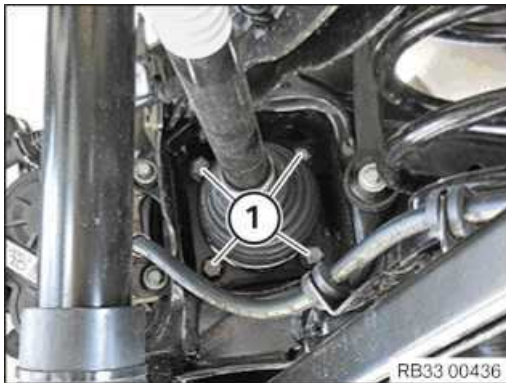


Release screw (2).

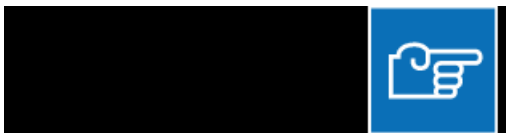
Withdraw pulse generator (3) from the trailing arm.



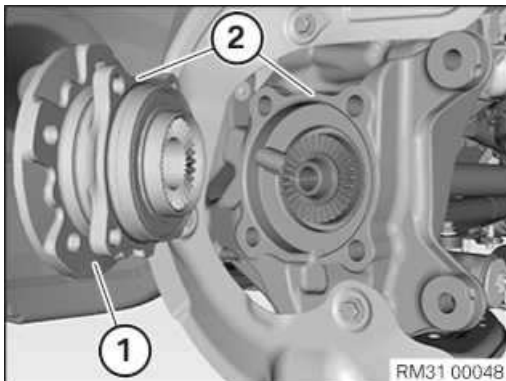
- Remove [brake disc](#).



Release screws (1).
Remove wheel bearing.



Installation:



Installation note:

- Keep contact surface (2) of wheel bearing (1) and swivel bearing clean and free from grease.

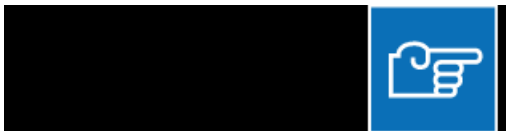


Align new wheel bearing on trailing arm.

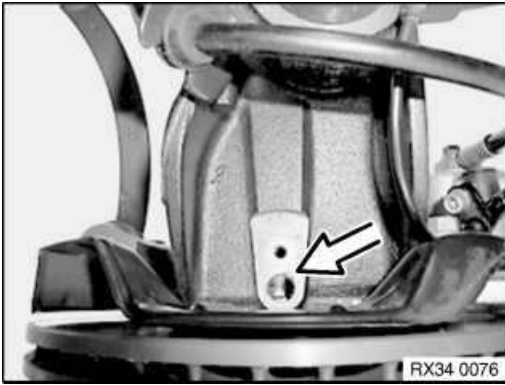
Part: Renew screws (1).

Tighten screws (1).

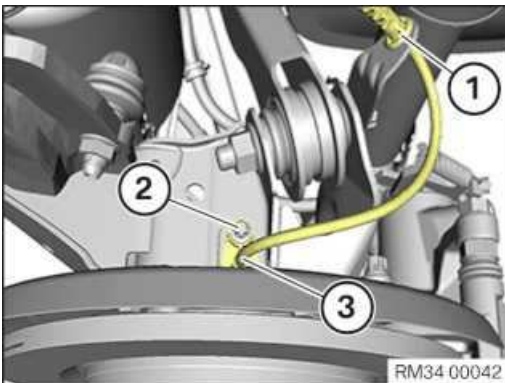
Tightening torque [33 41 1AZ](#)



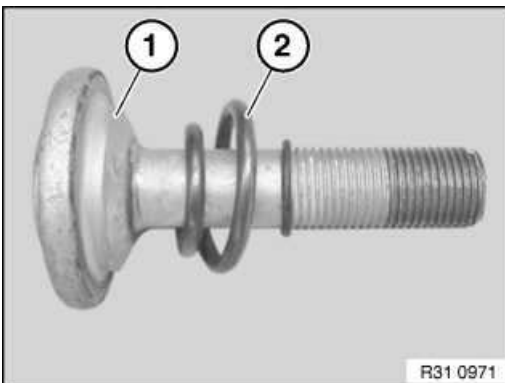
- [Install brake disc](#).



Clean bore hole for pulse sensor and grease with Staburags NBU 12/K lubricating grease (refer to BMW Service Operating Fluids). **Caution!** Check sensor head prior to installation for damage, replacing if necessary.



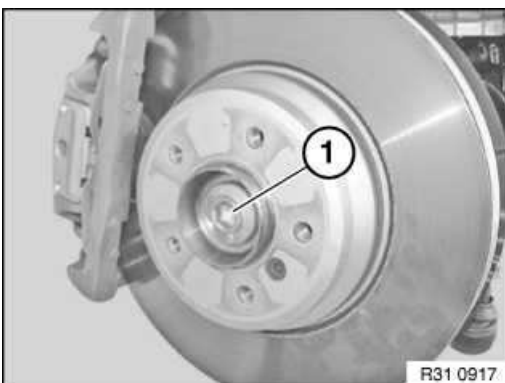
Install pulse sensor (3).
Fit bolt (2) and tighten.
Tightening torque, [34 51 5AZ](#).



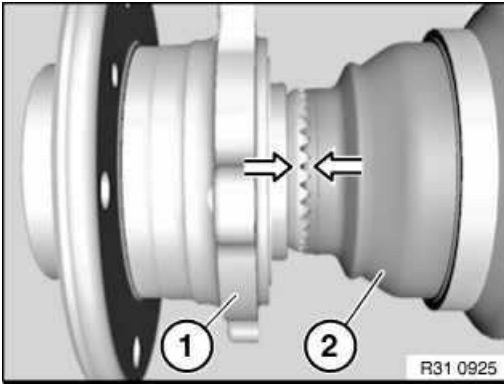
- Pay attention to installation position of compression spring (2).
- Keep collar bolt and spur gearing of wheel bearing/output shaft clean and free from grease

Caution!

Following installation note for spur gearing must be observed without fail!



Part: Replace collar bolt and compression spring.
Tighten collar bolt (1) and compression spring by hand.

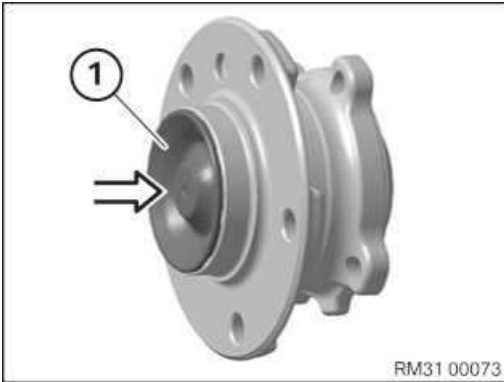


- Spur gearing of wheel bearing (1) and output shaft (2) must be installed form-fit (tooth in tooth position)!

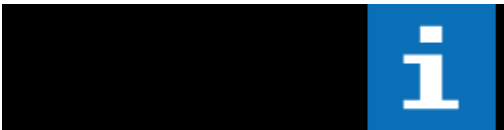
Check whether spur gearing is locked tooth in tooth by reciprocally rotating wheel hub/output shaft.

Once a form-fit has been ensured, tighten to final torque.

Tightening torque [33 41 2AZ](#).



Connect protective cap (1).



Required follow-up work:

- Install [rear wheel](#).

33 00 ... Information on replacing shock absorbers

Situation:

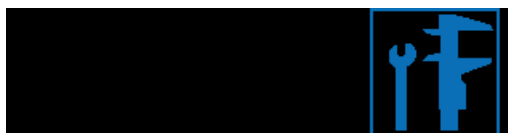
When a shock absorber is faulty on one side (leaking, noises, limit values exceeded on the shock tester), often both shock absorbers on the axle in question are replaced.

Effect:

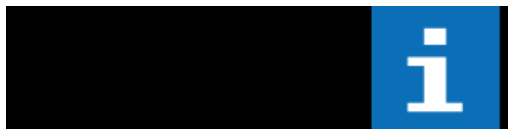
This is not necessary for technical reasons and causes the manufacturer not to recognize the unnecessarily removed shock absorbers as defective parts. Unnecessarily high costs for the customer can be avoided by replacing the shock absorber on one side only.

Procedure:

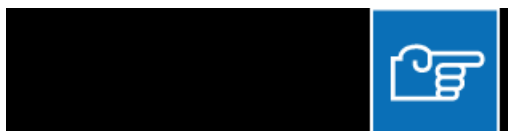
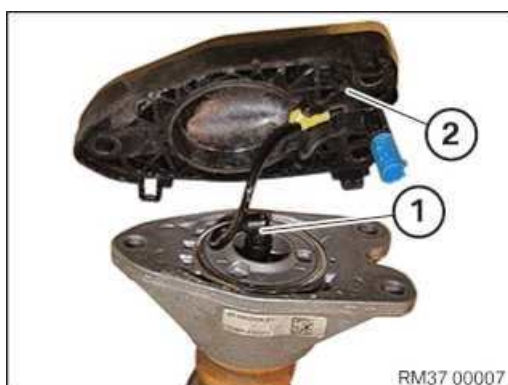
If one shock absorber is damaged, it is only necessary to replace both shock absorbers when the car has driven in excess of 80 000 km.

**Special tools required:**

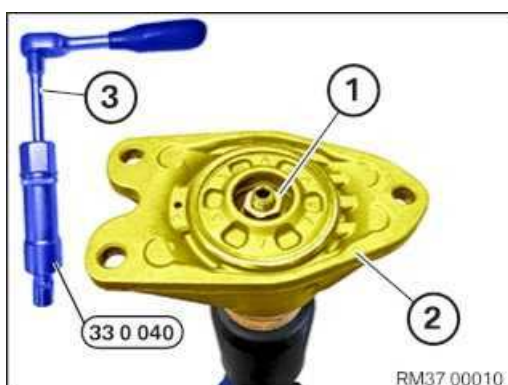
- [33 0 040](#)

**Necessary preliminary tasks:**

- Remove [rear shock absorber](#).

**Removal:**

Release adapter plate (2) from support bearing.
Disconnect connector (1) from shock absorber.
Remove adapter plate (2).



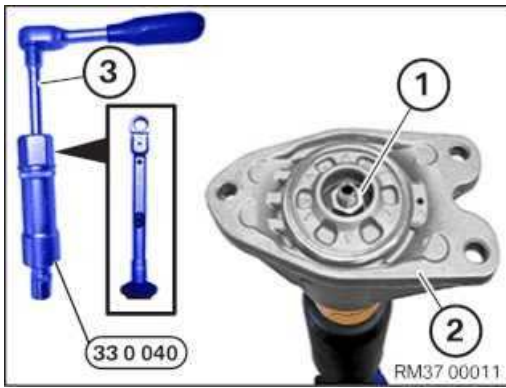
Release nut (1) with special tool [33 0 040](#), reversible ratchet with extension and socket SW10.
Remove spring strut mounting (2).



Impact screwdrivers are prohibited!

Risk of damage inside the shock absorber!

**Installation:**



Fit support bearing (2).

Part: Replace nut (1).

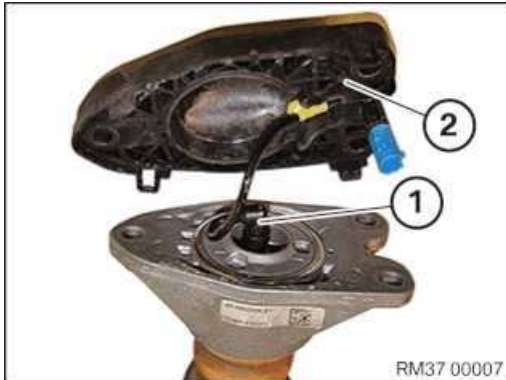
Tighten down nut (1) with special tool [33 0 040](#) , reversible ratchet with extension, socket SW10 and torque wrench with ring spanner attachment SW21.

Tightening torque [33 52 3AZ](#).



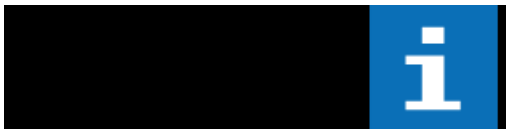
Impact screwdrivers are prohibited!

Risk of damage inside the shock absorber!



Connect connector (1) to shock absorber.

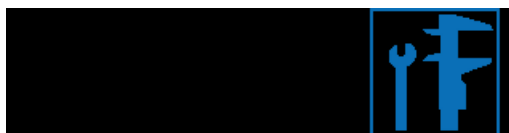
Fit adapter plate (2) on support bearing and engage.



Required follow-up work:

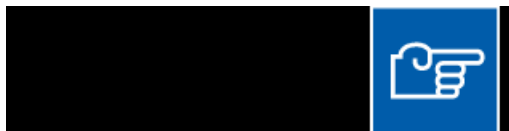
- Install [rear shock absorber](#).

33 52 010 Removing and installing rear left or right shock absorber



Special tools required:

- [2 358 630](#)



Installation note:

1. All screws, nuts, bolts and hose clamps removed during the repair must be replaced.
2. Retaining elements on chassis and suspension and steering parts must be replaced.

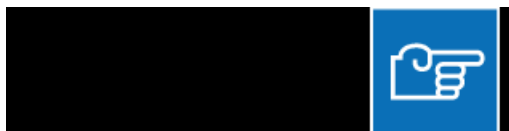


Note:

Separate procedure for [EDC shock absorbers](#).

Necessary preliminary work:

- Remove [rear wheel](#).

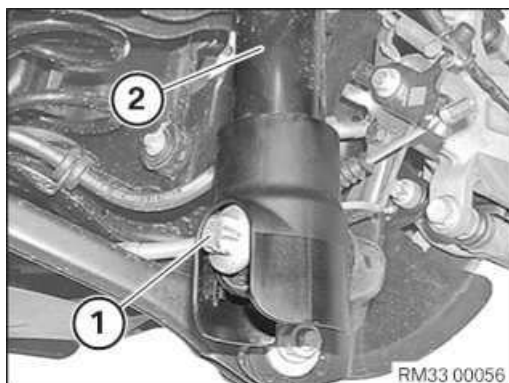


Removal:



Secure special tool [2 358 630](#) with wheel studs to drive flange.

Support trailing arm with special tool [2 358 630](#) and workshop jack on wheel hub.



Release shock absorber (2) from trailing arm by unscrewing screw (1).

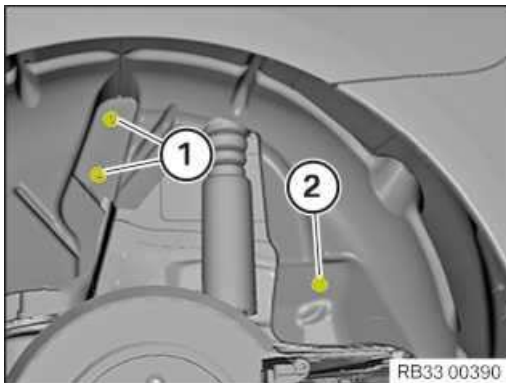


Lower workshop jack and relieve coil spring.

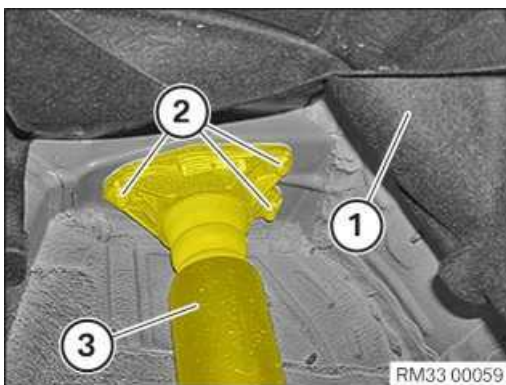
Place workshop jack to side.

Note:

Special tool [2 358 630](#) can remain on wheel hub.



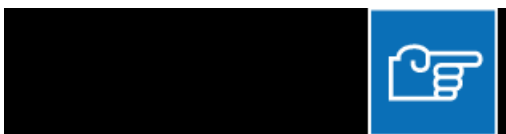
Release nuts (1) and screw (2) of wheel arch panel.



Bend wheel arch panel (1) to one side.

Loosen screws (2).

Remove shock absorber (3).



Installation:



Note:

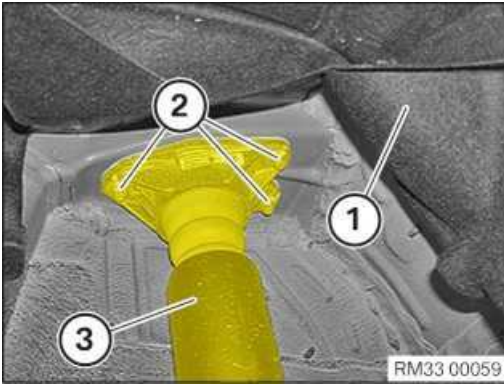
Seal (2) may be omitted or must not be reinstalled!

Remove protective cap (1).

Check protective cap (1) for damage.

Part: Replace protective cap (1) if necessary.

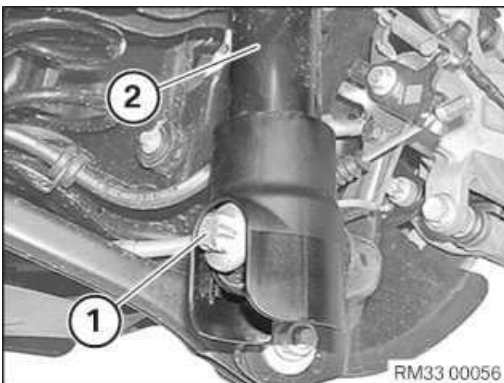
Mount protective cap (1).



Bend wheel arch panel (1) to one side.
Align shock absorber (3) to body.
Tighten down screws (2).
Tightening torque [33 52 2AZ](#).



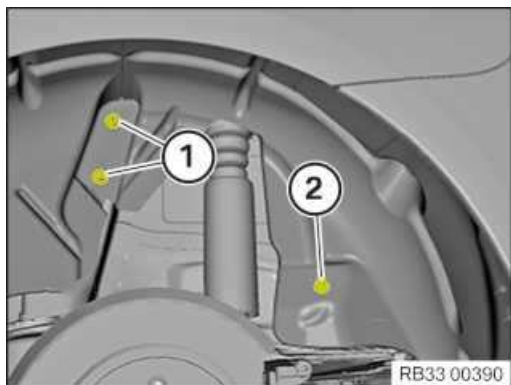
Insert workshop jack into special tool [2 358 630](#) .
Press trailing arm upwards with special tool [2 358 630](#) and workshop jack until shock absorber can be screwed to trailing arm.



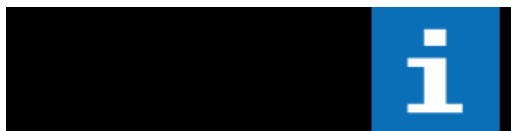
Tighten screw (1).
Tightening torque [33 52 1AZ](#).



Lower workshop jack and place to one side.
Remove special tool [2 358 630](#) .

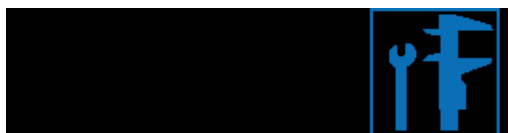


Tighten wheel arch panel nuts (1) and screw (2).

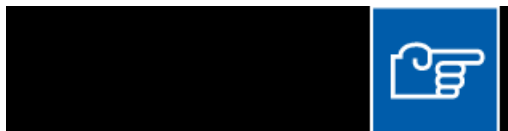


Required follow-up work:

- Install [rear wheel](#).

**Special tools required:**

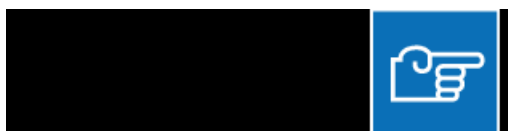
- [2 358 630](#)

**Installation note:**

1. All screws, nuts, bolts and hose clamps removed during the repair must be replaced.
2. Retaining elements on chassis and suspension and steering parts must be replaced.

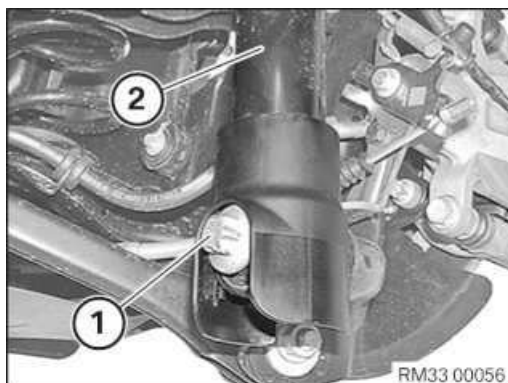
**Necessary preliminary tasks:**

- Remove [rear wheel](#).

**Removal:**

Secure special tool [2 358 630](#) with wheel studs to drive flange.

Support trailing arm with special tool [2 358 630](#) and workshop jack on wheel hub.

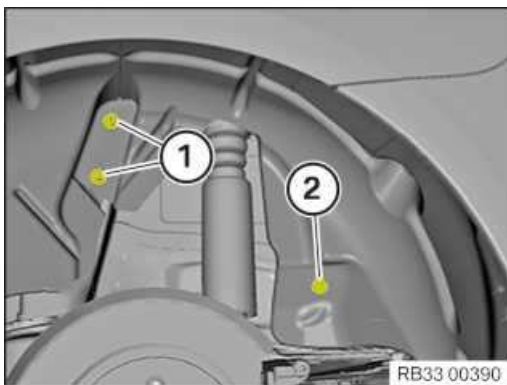


Release shock absorber (2) from trailing arm by unscrewing screw (1).

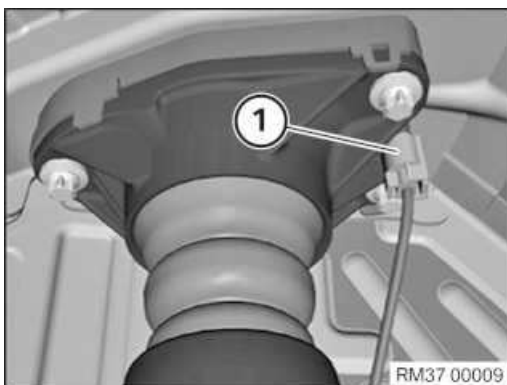


Lower workshop jack and relieve coil spring.
Place workshop jack to side.

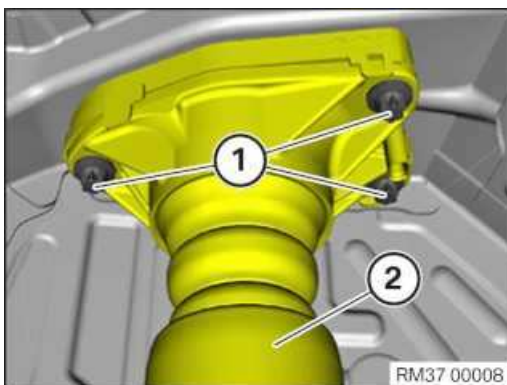
Note:
Special tool [2 358 630](#) can remain on wheel hub.



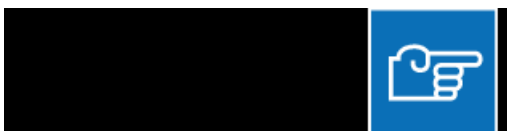
Release nuts (1) and screw (2) of wheel arch panel.



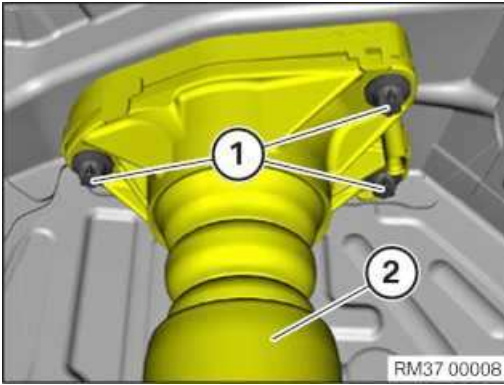
Bend wheel arch panel to side.
Disconnect plug connection (1).



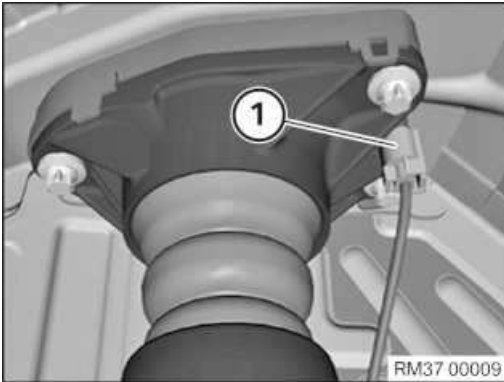
Loosen screws (1).
Remove shock absorber (2).



Installation:



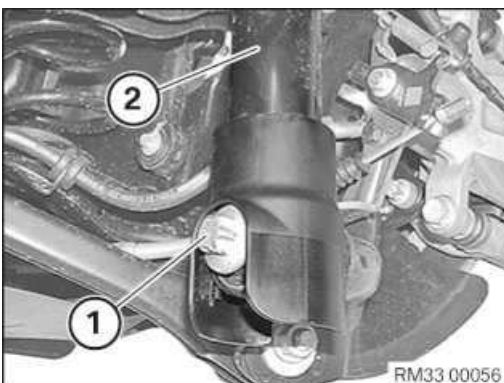
Bend wheel arch panel to side.
Align shock absorber (2) to body.
Tighten down screws (1).
Tightening torque [33 52 2AZ](#).



Connect plug connection (1).



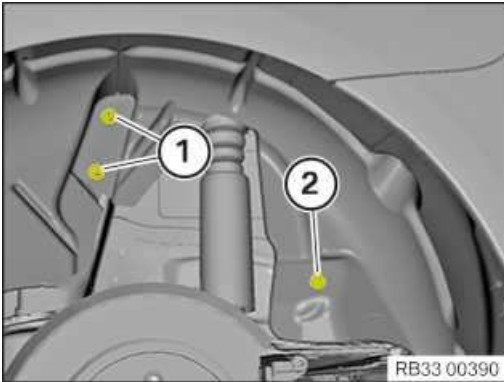
Insert workshop jack into special tool [2 358 630](#) .
Press trailing arm upwards with special tool [2 358 630](#) until shock absorber can be screwed to trailing arm.



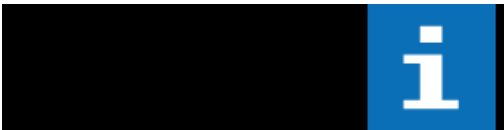
Tighten screw (1).
Tightening torque [33 52 1AZ](#).



Lower workshop jack and place to one side.
Remove special tool [2 358 630](#).



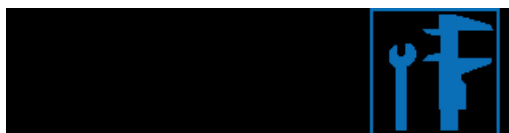
Tighten wheel arch panel nuts (1) and screw (2).



Required follow-up work:

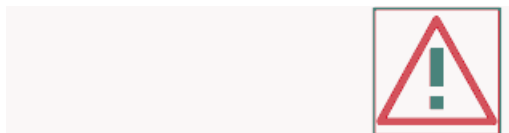
- Install [rear wheel](#).

37 12 310 Replace rear left or right shock absorber (EDC)



Special tools required:

- [33 0 040](#)



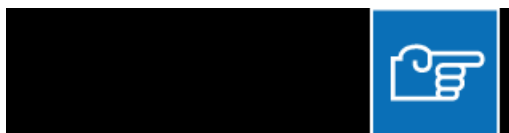
Attention!

- On replacement of shock absorber, replace additional absorber!
- In vehicles up to 06/2017, the shock absorbers must always be exchanged in pairs. (Shock absorbers from 06/2017 have a different alignment)

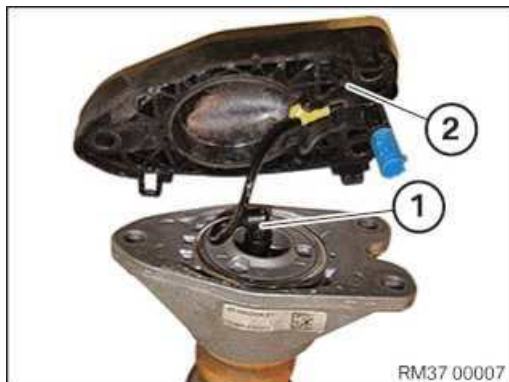


Necessary preliminary work:

- Remove [rear shock absorber](#).



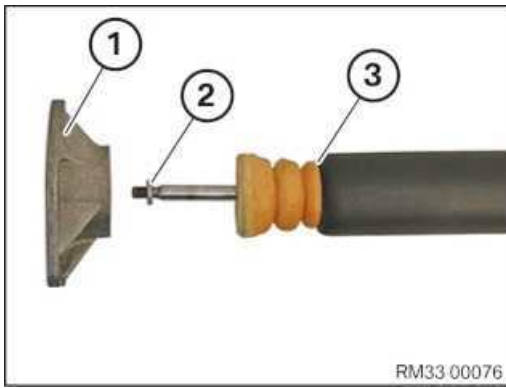
Removal:



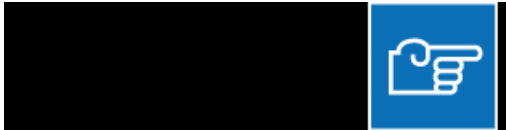
Release adapter plate (2) from support bearing.
Disconnect connector (1) from shock absorber.
Remove adapter plate (2).



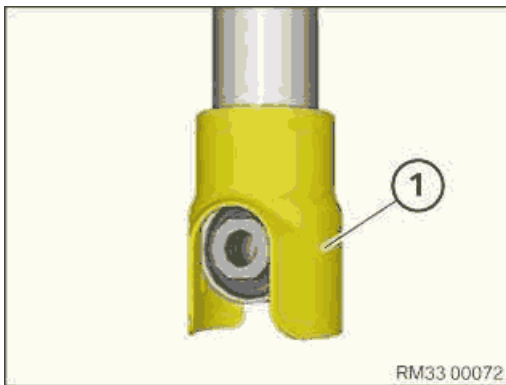
Release nut (1) with special tool [33 0 040](#), reversible ratchet with extension and socket SW10.
Remove spring strut mounting (2).



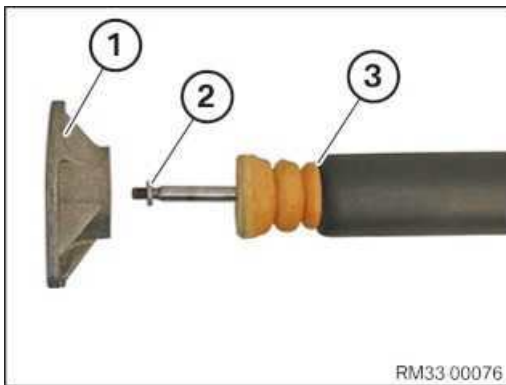
Remove gasket (2).



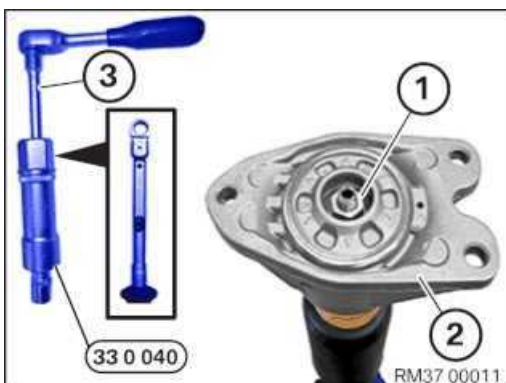
Installation:



Remount stoneguard (1). *Installation note:*
Check stoneguard and replace if necessary.



Part: Replace auxiliary damper with protective tube (3).
Connect additional absorber with protective tube (3) onto shock absorber.
Connect gasket (2) and support bearing (1).

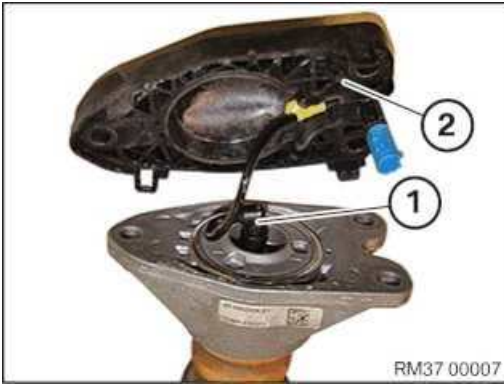


Part: Replace nut (1).
Tighten down nut (1) with special tool [33 0 040](#), reversible ratchet with extension, socket SW10 and torque wrench with ring spanner attachment SW21.
Tightening torque [33 52 3AZ](#).

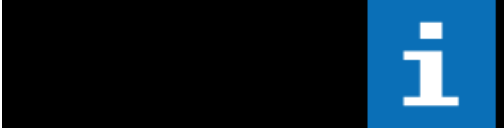


Impact screwdrivers are prohibited!

Risk of damage inside the shock absorber!



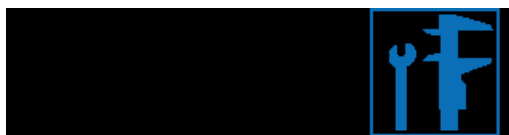
Connect connector (1) to shock absorber.
Fit adapter plate (2) on support bearing and engage.



Required follow-up work:

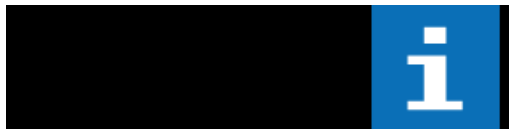
- Install [rear shock absorber](#).

33 52 161 Replacing left or right support bearing for shock absorber



Special tools required:

- [2 355 965](#)
- [2 355 966](#)



Note:

A separate procedure is to be followed for [EDC shock absorbers](#).

Necessary preliminary work:

- Remove [rear shock absorber](#).

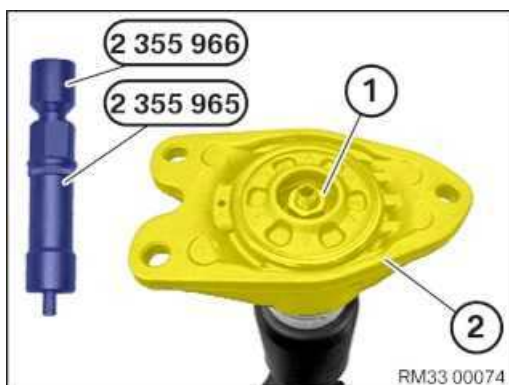


Removal:



Remove protective cap (1).

Remove gasket (2).



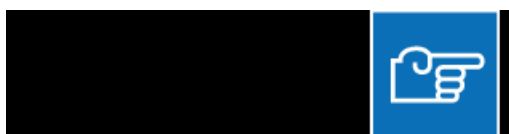
Use special tools [2 355 965](#) and [2 355 966](#) to undo the nut (1).

Remove spring strut mounting (2).

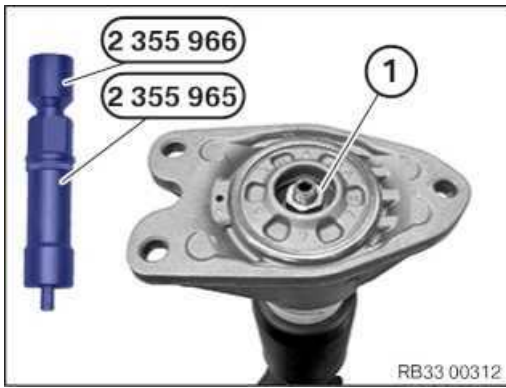


Impact screwdrivers are prohibited!

Risk of damage inside the shock absorber!



Installation:



Place new support bearing on shock absorber.

Part: Replace nut (1).

Screw on nut (1) and tighten with special tool [2 355 965](#) and [2 355 966](#).

Tightening torque [33 52 3AZ](#).



Impact screwdrivers are prohibited!

Risk of damage inside the shock absorber!



Note:

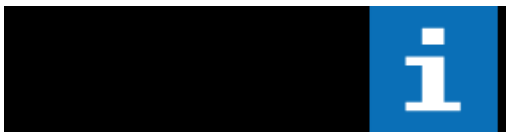
Seal (2) may be omitted or must not be reinstalled!

Remove protective cap (1).

Check protective cap (1) for damage.

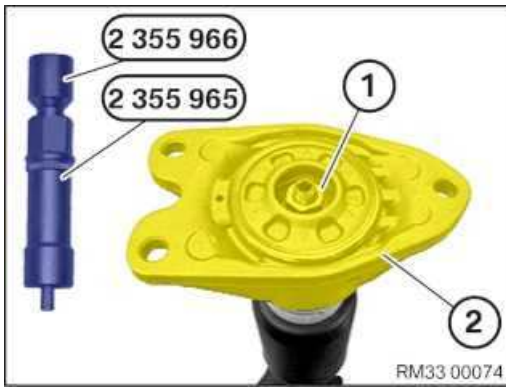
Part: Replace protective cap (1) if necessary.

Mount protective cap (1).

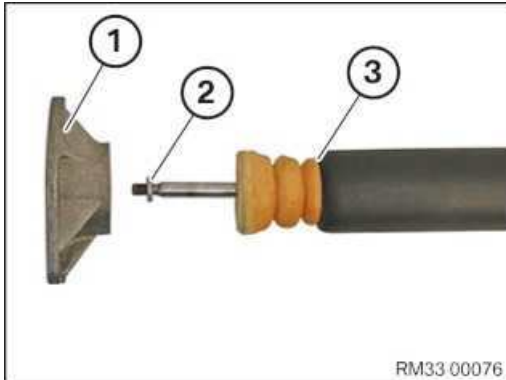


Required follow-up work:

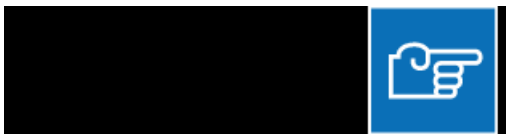
- Install [rear shock absorber](#).



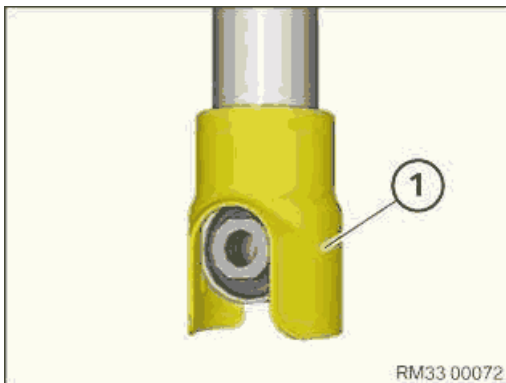
Release nut (1) with special tool [2 355 965](#) and [2 355 966](#) .
Remove spring strut mounting (2).



Remove gasket (2).



Installation:

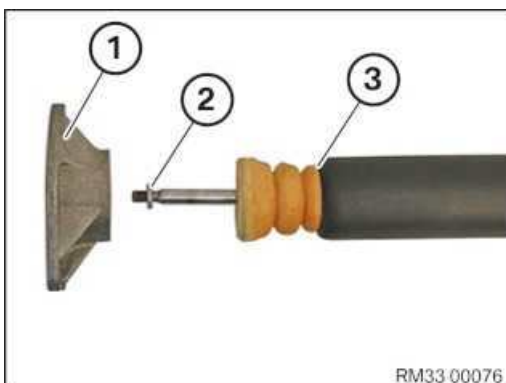


Where applicable and if available, remount stoneguard (1). *Installation note:*

Attention!

Stoneguard (1) is different on the left and right. Also refer to the BMW Electronic Parts Catalogue!

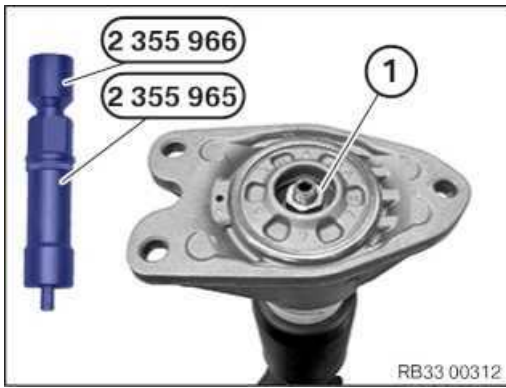
Ensure correct latch mechanism/tight fit during installation. Stoneguard must engage noticeably (double click).



Part: Replace auxiliary damper with protective tube (3).

Connect additional absorber with protective tube (3) onto shock absorber.

Connect gasket (2) and support bearing (1).



Part: Replace nut (1).

Screw on nut (1) and tighten with special tool [2 355 965](#) and [2 355 966](#) .
Tightening torque [33 52 3AZ](#).



Impact screwdrivers are prohibited!

Risk of damage inside the shock absorber!



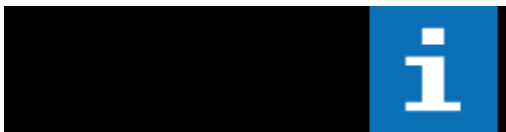
Note:

Seal (2) may be omitted or must not be reinstalled!

Check protective cap (1) for damage.

Part: Replace protective cap (1) if necessary.

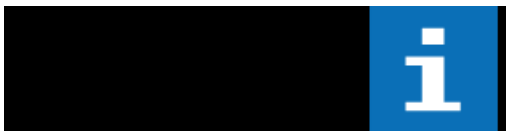
Mount protective cap (1).



Required follow-up work:

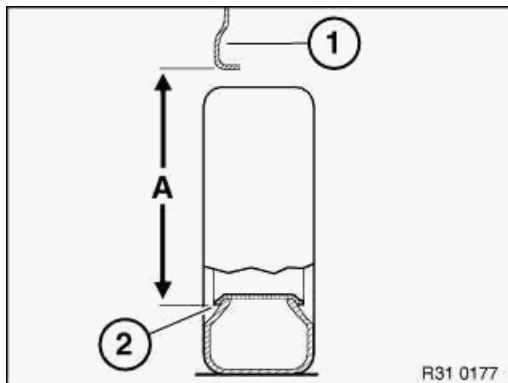
- Install [rear shock absorber](#).

33 53 ... Measuring vehicle ride height

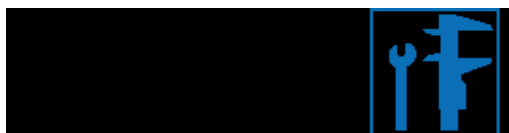


Necessary preliminary tasks:

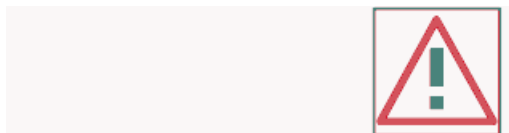
- Move vehicle into [normal position](#).



Determine actual ride height (A) - to do so, attach tape measure to rim flange (2) at bottom middle and measure to wheel arch cover (1).

**Special tools required:**

- [2 358 630](#)

**Attention!**

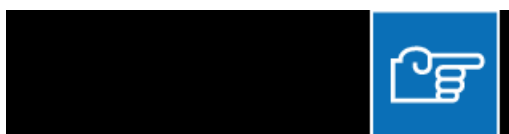
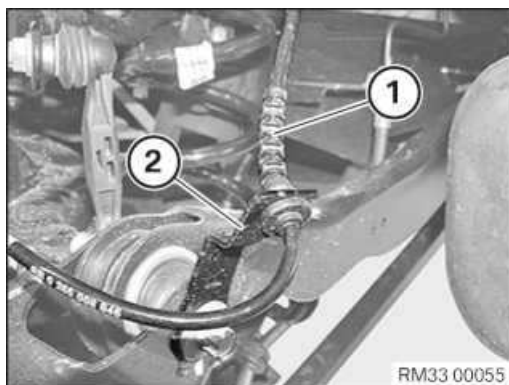
- It is necessary to replace both coil springs of the respective axle only in the event of fracture of a coil spring due to corrosion!
- The spring pads at the top and bottom must also be renewed when replacing the coil springs.

Note:

The coil spring is allocated in the Electronic Parts Catalogue (EPC) under the item "Spring table" after the vehicle identification number has been entered and the optional equipment of the car has been selected.

**Necessary preliminary tasks:**

- Remove [rear wheel](#).

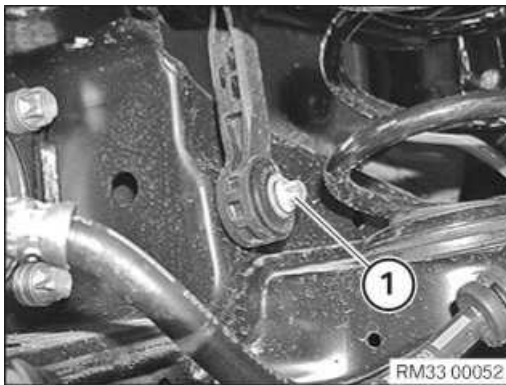
**Removal:**

Unclip the cable of the wheel speed sensor (1) from holder (2).

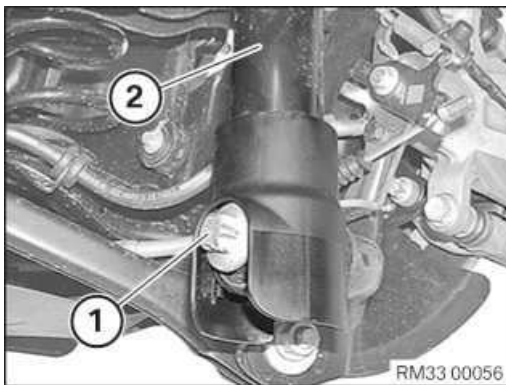
- On the right side, additionally unclip the cable of the brake pad wear indicator from the holder.



Secure special tool [2 358 630](#) to drive flange with wheel bolts.
Support trailing arm with special tool [2 358 630](#) and workshop jack on the wheel hub.



Undo screw (1) of anti-roll bar link on trailing arm.

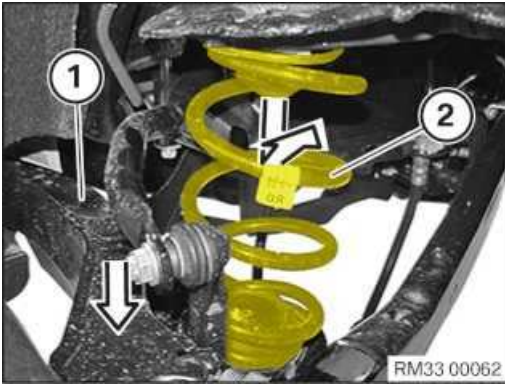


Detach shock absorber (2) from trailing arm by unscrewing screw (1).

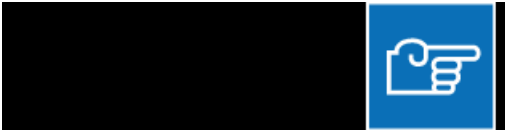


Lower workshop jack with the special tool [2 358 630](#) .
Place workshop jack to side.

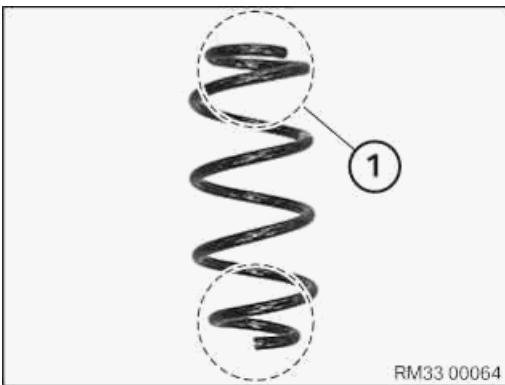
Note:
Special tool [2 358 630](#) can remain on wheel hub.



Pull trailing arm (1) down slightly.
Remove coil spring (2).



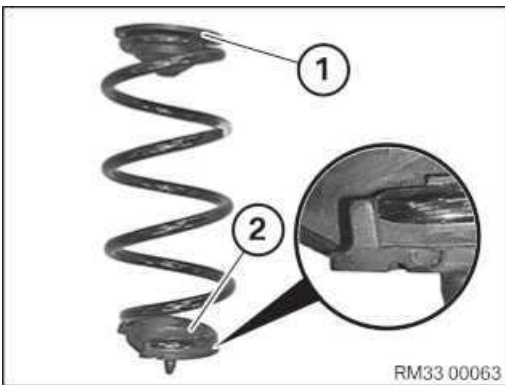
Installation:



Attention!

Incorrect assembly is possible.

The upper end of the coil spring (1) is flatter.



When replacing spring: Replace top (1) and bottom (2) spring pads.

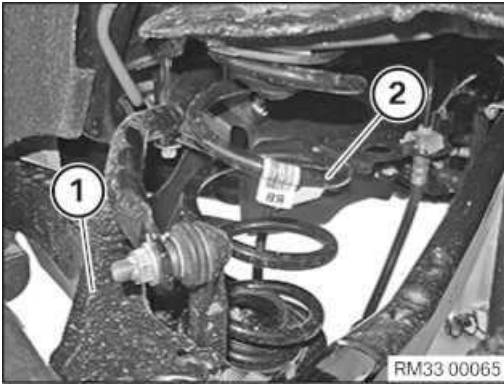
Parts: Top and bottom spring pad

Fit spring pads on the coil spring at top (1) and bottom (2).

The end stop of the spring pad at the bottom must be in contact with the coil spring end.



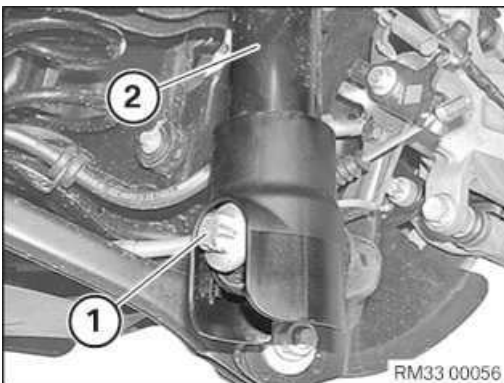
When installing spring, pin (1) of bottom spring pad must be inserted into bore hole (2).



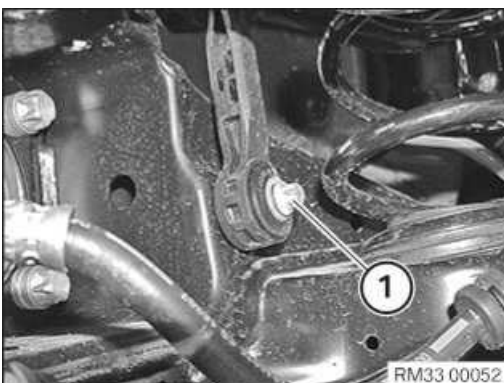
Pull trailing arm (1) down slightly.
Insert coil spring (2).



Insert the universal jack into the special tool [2 358 630](#) .
Press trailing arm upwards with special tool [2 358 630](#) and the workshop jack until shock absorber can be screwed to the trailing arm.



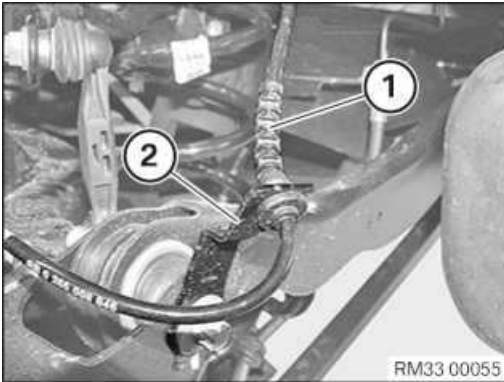
Tighten screw (1).
Tightening torque [33 52 1AZ](#).



Position the anti-roll bar link on the trailing arm.
Tighten screw (1).
Tightening torque [33 55 2AZ](#).

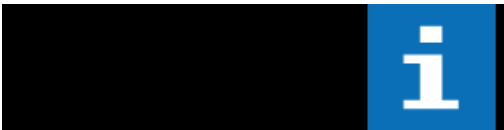


Lower the universal jack and put it away.
Remove special tool [2 358 630](#).



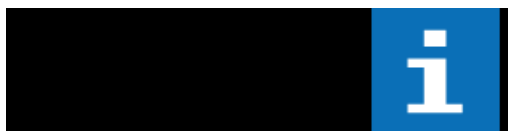
Clip in the cable of the wheel speed sensor (1) at the holder (2).

- On the right side, additionally clip in the cable of the brake pad wear indicator in the holder.

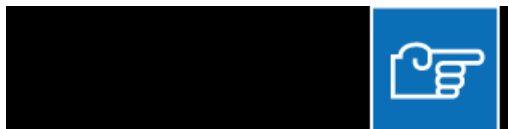
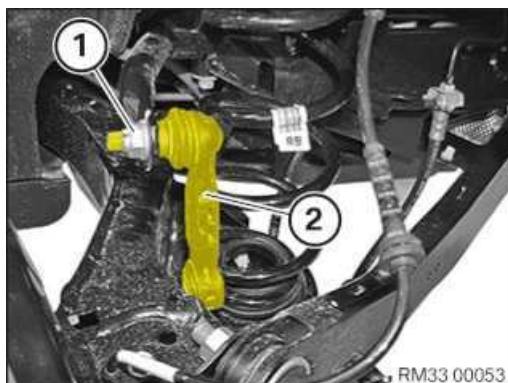


Required follow-up work:

- Install [rear wheel](#).
- Check [headlight adjustment](#), correct if necessary.

**Necessary preliminary tasks:**

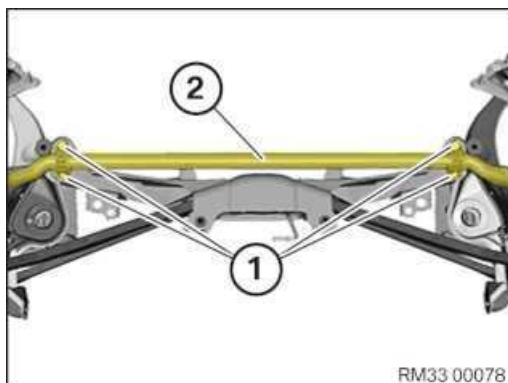
- Lower [rear axle support](#).

**Removal:**

Slacken nut (1).

- If necessary, counter-hold at the Torx socket.

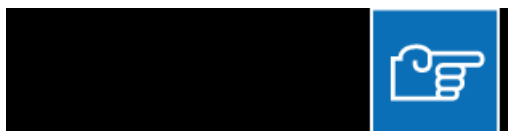
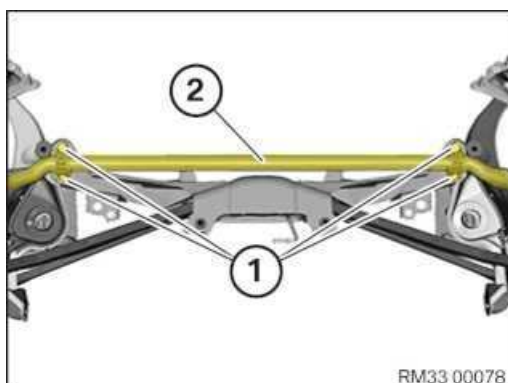
Remove anti-roll bar link (2) from anti-roll bar on left and right.



Release screws (1).

Remove retaining brackets.

Feed out anti-roll bar to one side.

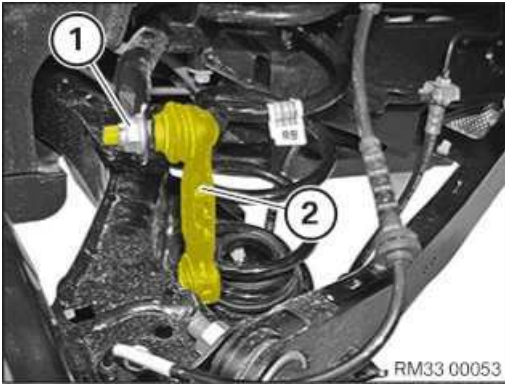
**Installation:**

Feed in anti-roll bar from the side and position.

Mount the retaining bracket.

Tighten down screws (1).

Tightening torque [33 55 3AZ](#).



Insert anti-roll bar link (2) into anti-roll bar on left and right.

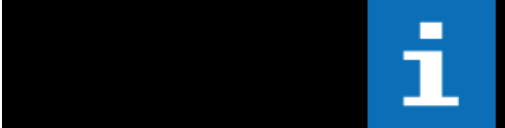
Replace nuts (1).

Parts: Nuts

Tighten down nuts (1).

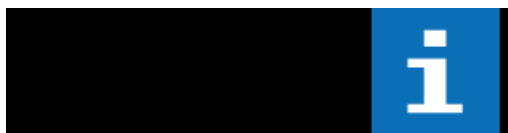
- If necessary, counter-hold at the Torx socket.

Tightening torque [33 55 1AZ](#).

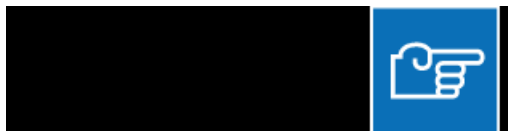
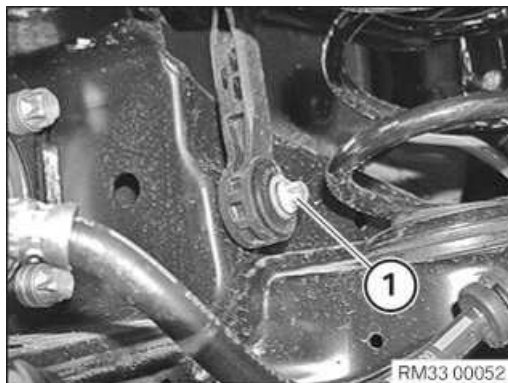


Required follow-up work:

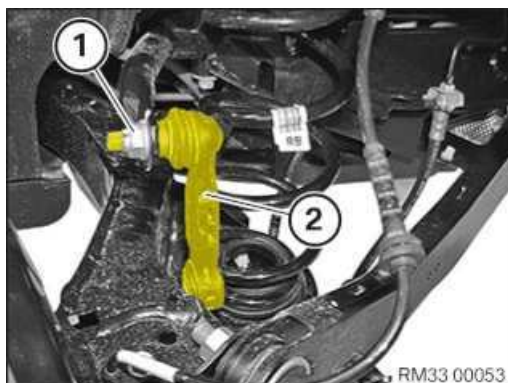
- Raise [rear axle support](#).

**Necessary preliminary tasks:**

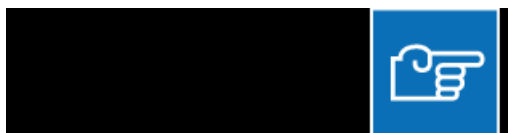
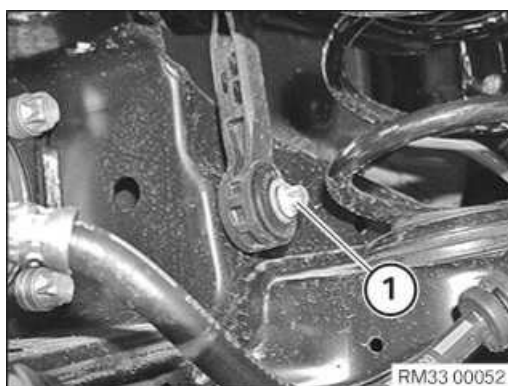
- Remove [rear wheel](#).

**Removal:**

Release screw (1).

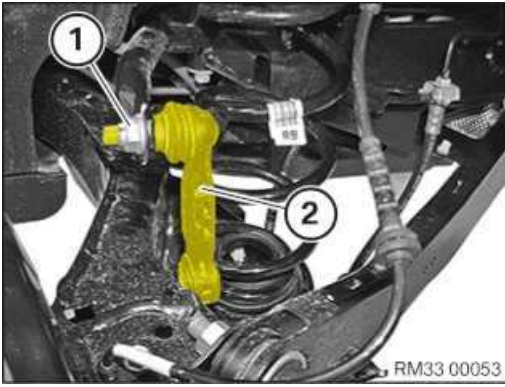


Release nut (1), if necessary, grip at inner Torx socket.
Remove anti-roll bar link (2).

**Installation:**

Screw on new anti-roll bar link by hand with screw (1) to trailing arm.

- Do not yet apply torque!

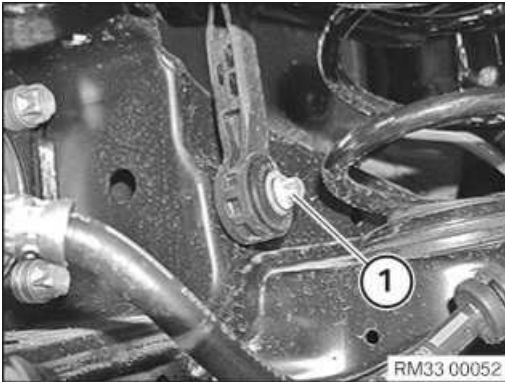


Insert anti-roll bar link (2) on anti-roll bar.

Part: Replace nut (1).

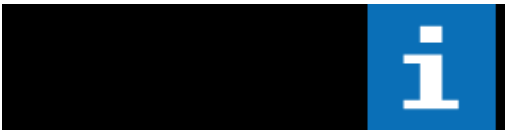
Tighten nut (1). If necessary, hold up at the Torx socket.

Tightening torque [33 55 1AZ](#).



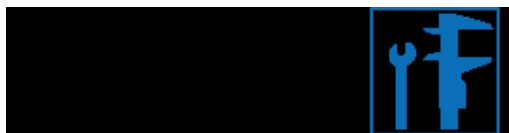
Tighten screw (1) on trailing arm.

Tightening torque [33 55 2AZ](#).



Required follow-up work:

- Install [rear wheel](#).



Special tools required:

- [31 5 251](#)
- [00 2 030](#)
- [31 5 255](#)
- [31 5 253](#)
- [31 2 251](#)
- [31 2 253](#)
- 31 2 255



Warning!

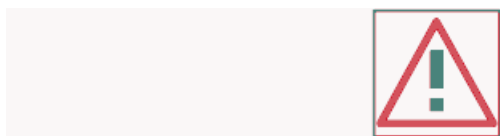
Danger of injury!

Failure to comply with the following instructions may result in the vehicle slipping off the vehicle hoist and critically injuring other persons.

Load the luggage compartment with a minimum of 100 kg before lowering/removing the rear axle support. This prevents the vehicle from tilting or sliding off the vehicle hoist!

When supporting components, make sure that:

- the vehicle can no longer be raised or lowered.
- the vehicle does not lift off the locating plates on the vehicle hoist.



Attention!

Before lowering/removing rear axle support:

Observe [safety information](#) for raising the vehicle

In order to avoid damage to vehicle hoist, perform weight compensation on vehicle.



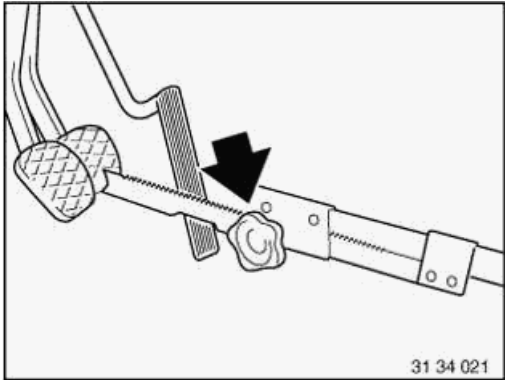
Necessary preliminary work:

- Remove [rear wheels](#).
- Remove the [left and right trailing arm covers](#).
- Remove [rear axle final drive](#).
- Remove [tank cover on left and right](#).
- Remove [both rear coil springs](#).

Note: Screw the shock absorbers onto the trailing arm after removal of the coil springs.

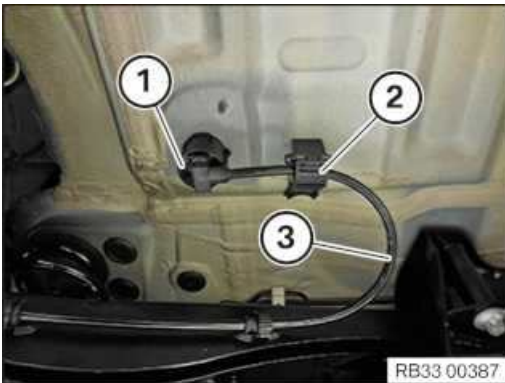


Removal:

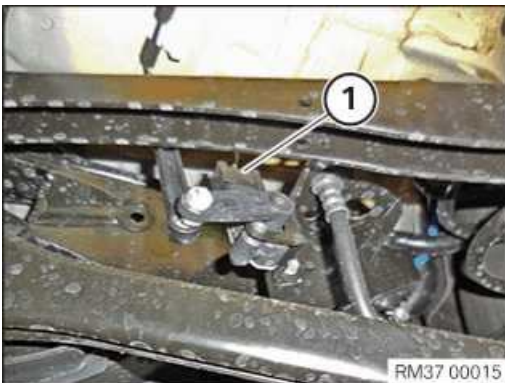


Press brake pedal down to floor and secure with pedal support. *Note:* The pedal support may only be released when the brake lines are reconnected.

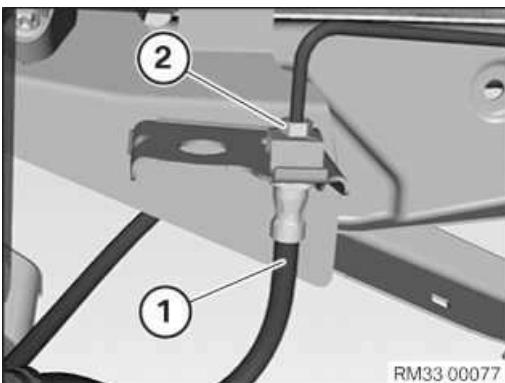
This prevents brake fluid from emerging from the expansion tank and air from entering the system when the brake lines are opened.



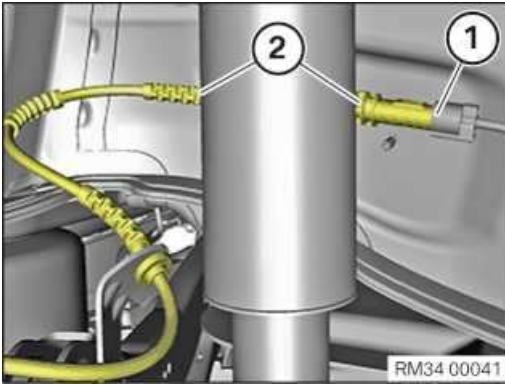
Unlock and disconnect the connector (1).
Release cable (3) from cable clip (2).



Only for rear ride height sensor:
Disconnect connector (1).



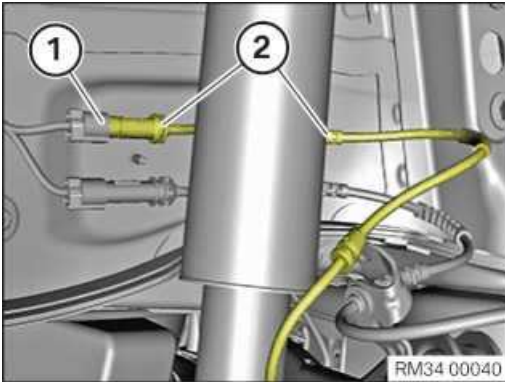
Release hollow nut (2).
Disconnect brake hose (1) on left and right from the brake line.



Disconnect left and right plug connections (1) of the pulse sensor.

- To do so, partly release the wheel arch panels.

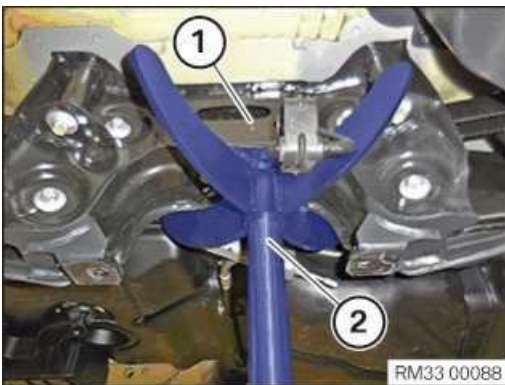
Disengage cable from holders (2).



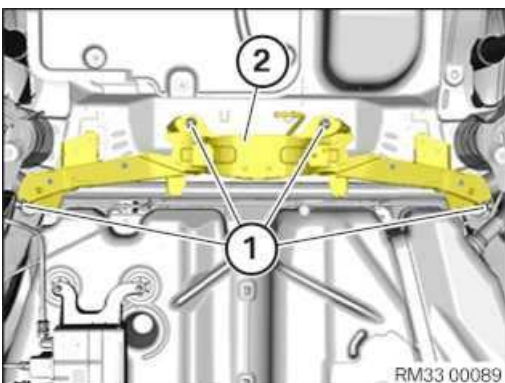
Right side only:

Detach the brake pad wear sensor from the brackets (2) as an additional measure.

Disconnect plug connection (1).



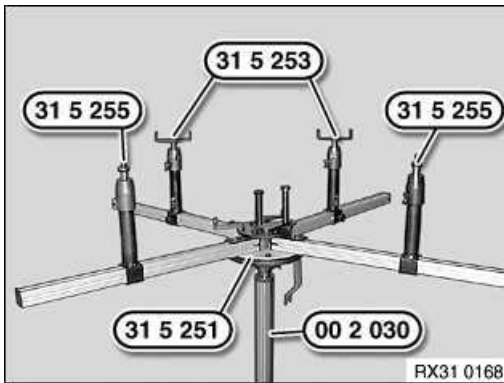
Support rear axle support (1) with workshop jack (2).



Release screws (1) from rear axle support (2).

Lower rear axle support.

Lower workshop jack and place to one side.



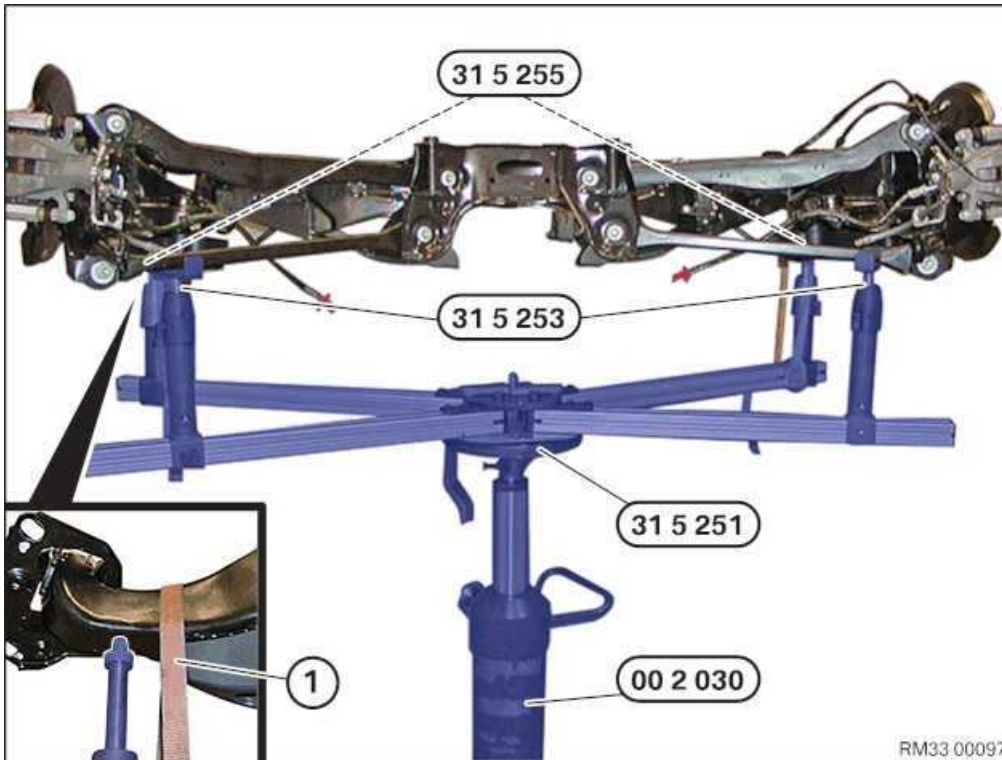
Engage special tool [31 5 251](#) with a 2nd person helping completely on workshop jack [00 2 030](#).

Insert special tools [31 5 255](#) in telescopic supports of a profile rail pair.

Insert special tools [31 5 253](#) in telescopic supports of other profile rail pair.

Note:

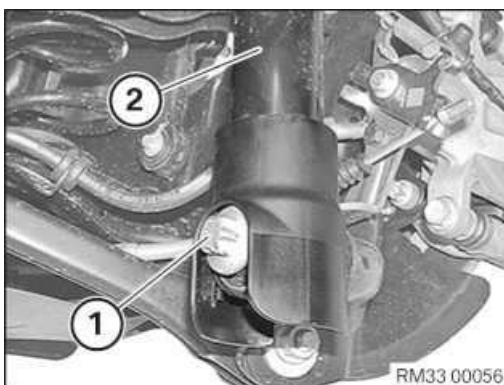
In a profile rail pair, two profile rails are connected to one another by gearing.



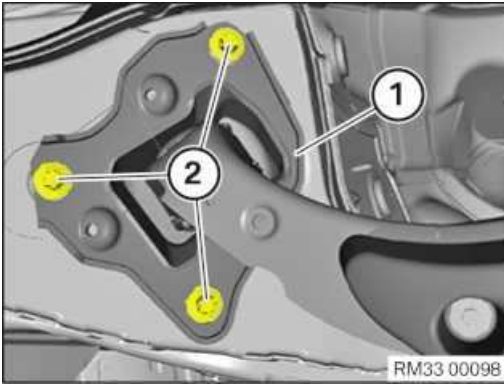
Align special tools [31 2 251](#), [31 2 253](#) and 31 2 255 with rear axle support.

Support rear axle support by operating workshop jack [00 2 030](#).

Secure the trailing arm (rear axle support) on the special tool [31 5 251](#) using tensioning straps (1).

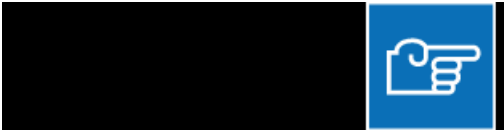


Release left and right shock absorber (2) from trailing arm by unscrewing screw (1).

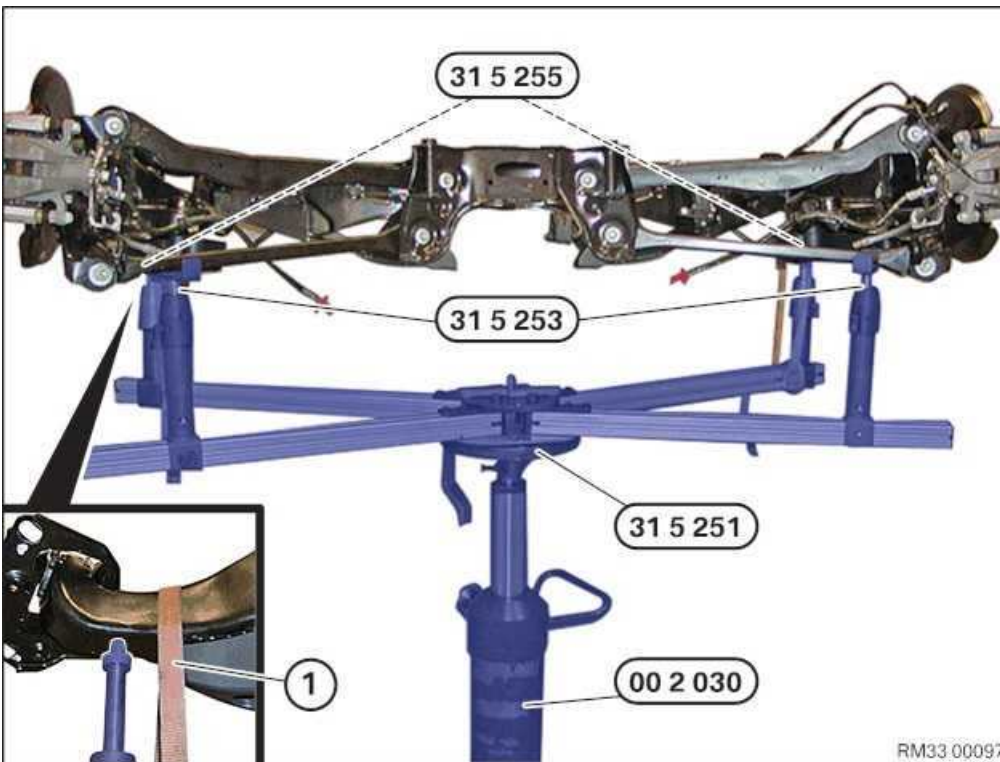


Release screws (2) on left and right trailing arm bearing support (1) on the body.

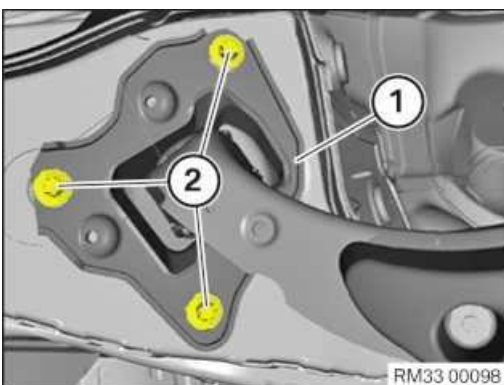
Lower rear axle support.



Installation:



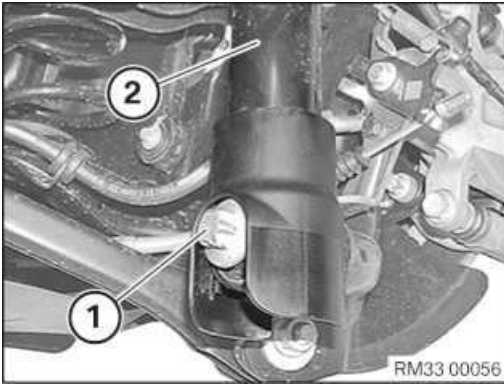
Position rear axle support on vehicle.



Tighten screws (2) on left and right trailing arm bearing support (1).

Replace screws (2).

Tightening torque [33 32 5AZ](#).



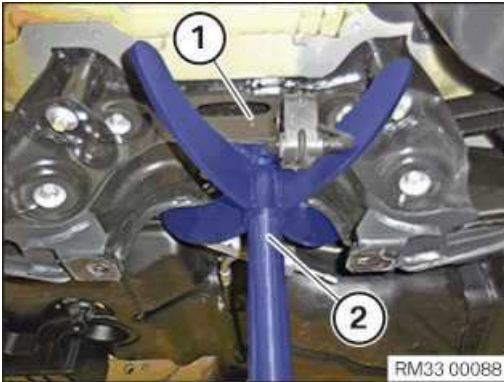
Position left and right shock absorber (2) on trailing arm.

Tighten screw (1).

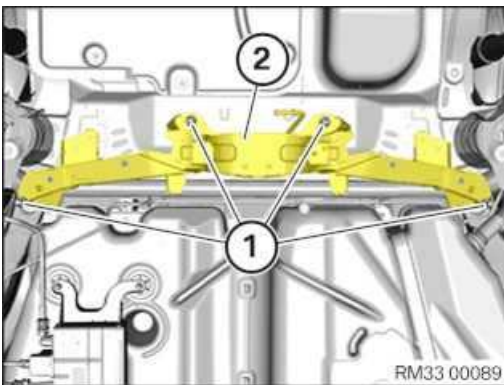
Tightening torque [33 52 1AZ](#).

Release tensioning straps.

Lower workshop jack [00 2 030](#) with special tool [31 5 251](#) and place to one side.

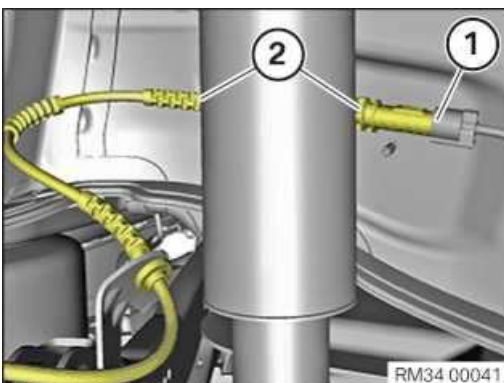


Lift rear axle support (1) by means of workshop jack (2).



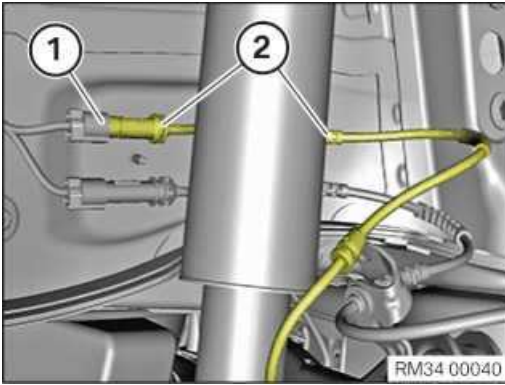
Tighten screws (1) on rear axle support (2).

Tightening torque [33 31 1AZ](#).

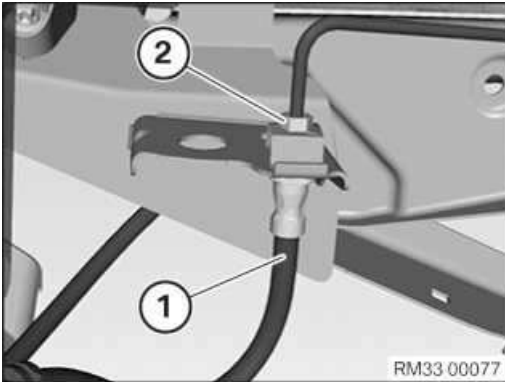


Attach brake pad wear sensor in the brackets (2).

Connect plug connection (1).



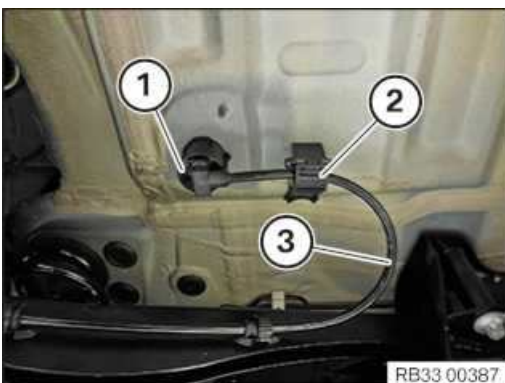
Attach brake pad wear sensor in the brackets (2).
Connect plug connection (1).



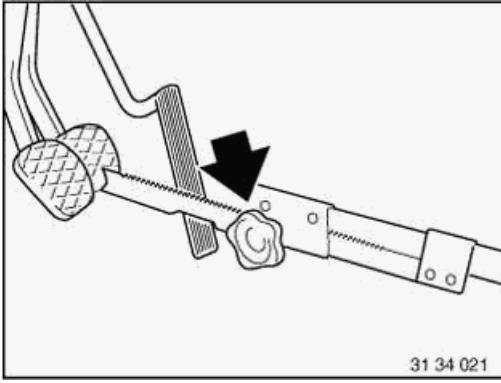
Align brake hose (1).
Tighten down hollow nut (2).
Tightening torque [34 32 1AZ](#).



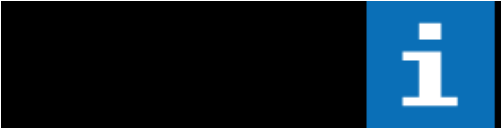
Only for rear ride height sensor:
Insert connector (1) on ride height sensor.



Insert connector (1) and lock.
Secure cable (3) with cable clip (2).



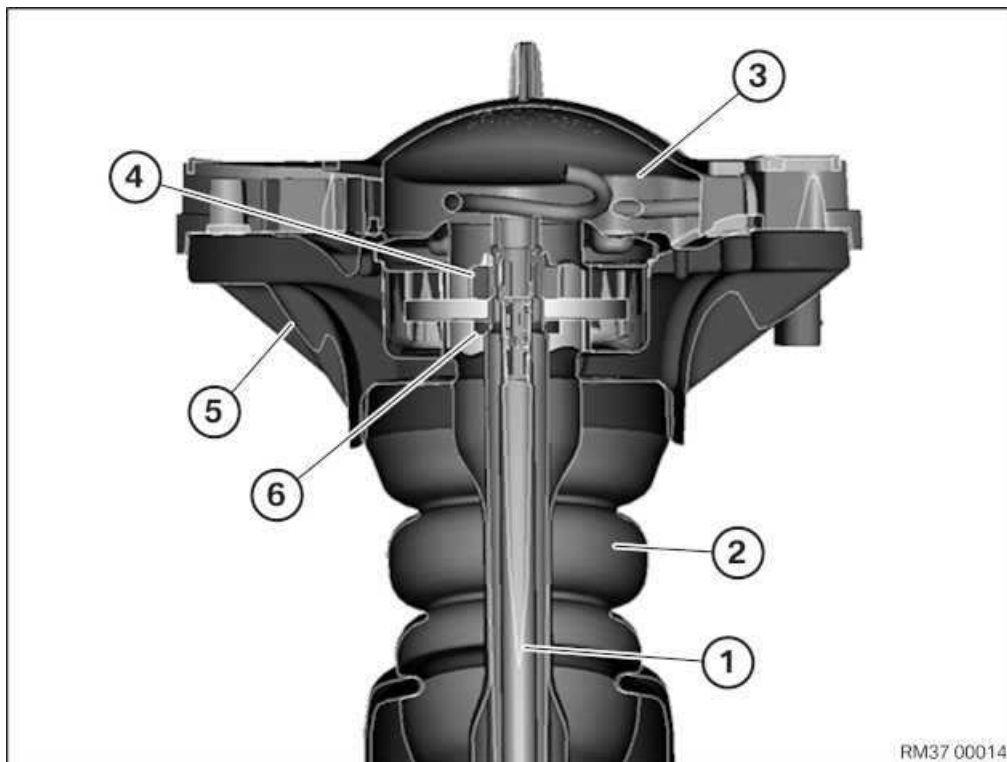
Release pedal support.



Required follow-up work:

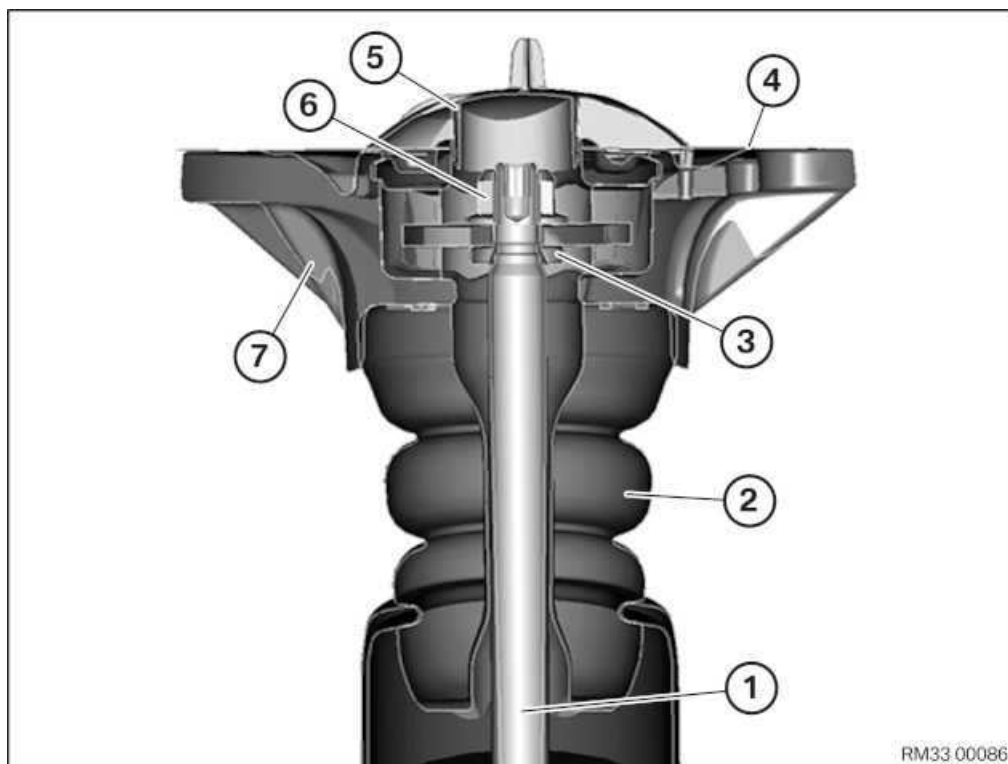
- Install [both rear coil springs](#).
- Install [tank cover on left and right](#).
- Install the [left and right trailing arm covers](#).
- Install the [rear axle differential](#).
- Install [rear wheels](#).
- [Bleed brake system](#).
- Carry out [wheel alignment procedure](#).

37 Layout of EDC shock absorber



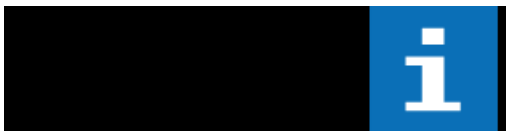
- | | |
|-----------------------------------|-------------------|
| 1 Shock Absorbers | 4 Nut |
| 2 Auxiliary damper with dust boot | 5 Support bearing |
| 3 Adapter plate | 6 Gasket |

33 Layout of shock absorber



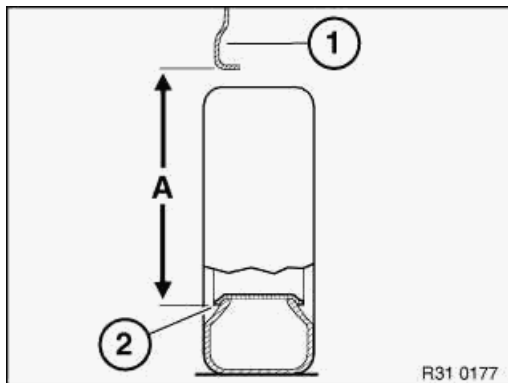
- | | |
|-----------------------------------|-------------------|
| 1 Shock Absorbers | 5 Protective cap |
| 2 Auxiliary damper with dust boot | 6 Nut |
| 3 Gasket | 7 Support bearing |
| 4 Gasket | |

33 53 ... Measuring vehicle ride height

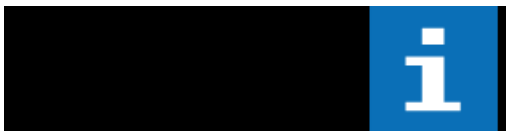


Necessary preliminary tasks:

- Move vehicle into [normal position](#).

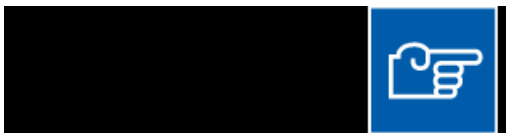


Determine actual ride height (A) - to do so, attach tape measure to rim flange (2) at bottom middle and measure to wheel arch cover (1).



Screw securing adhesive is a means of preventing a screwed connection from being loosened by external influences.

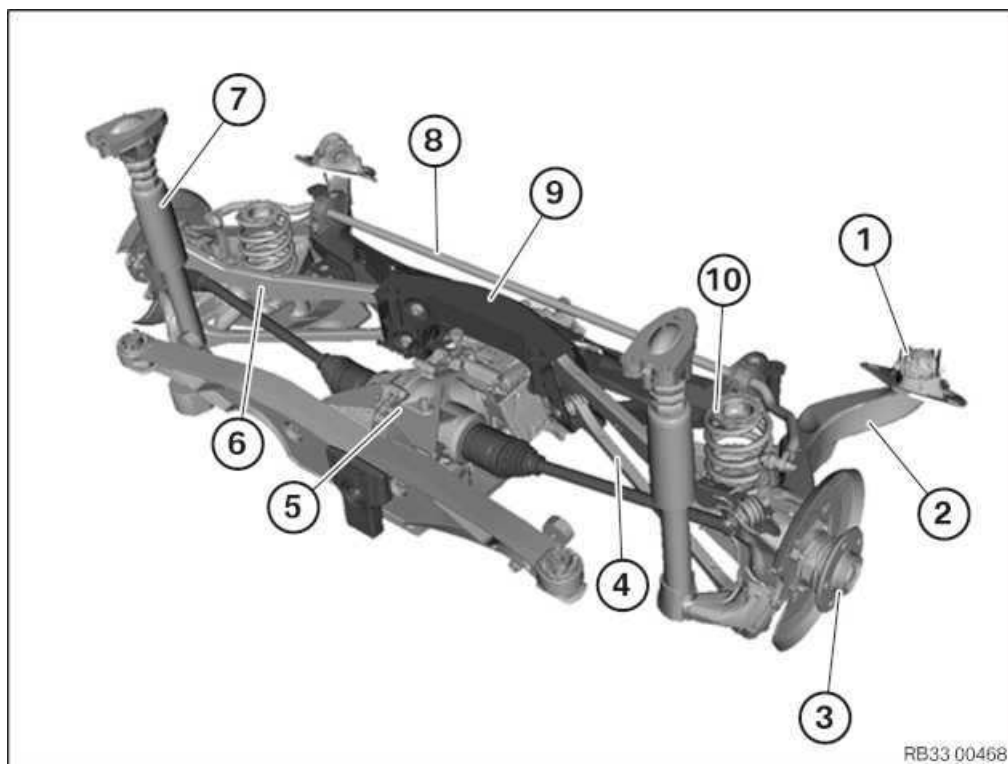
Once the screw has been coated with adhesive, the adhesive remains inactive until such time that it is activated by the encapsulation breaking when the screw is inserted and then cures (hardens) at room temperature.



Installation note:

- Screw connection must be completed within 20 mins. (start of curing)
- Microencapsulated screws must not be retightened
- Thread of nut must be cleaned beforehand in event of repeated use

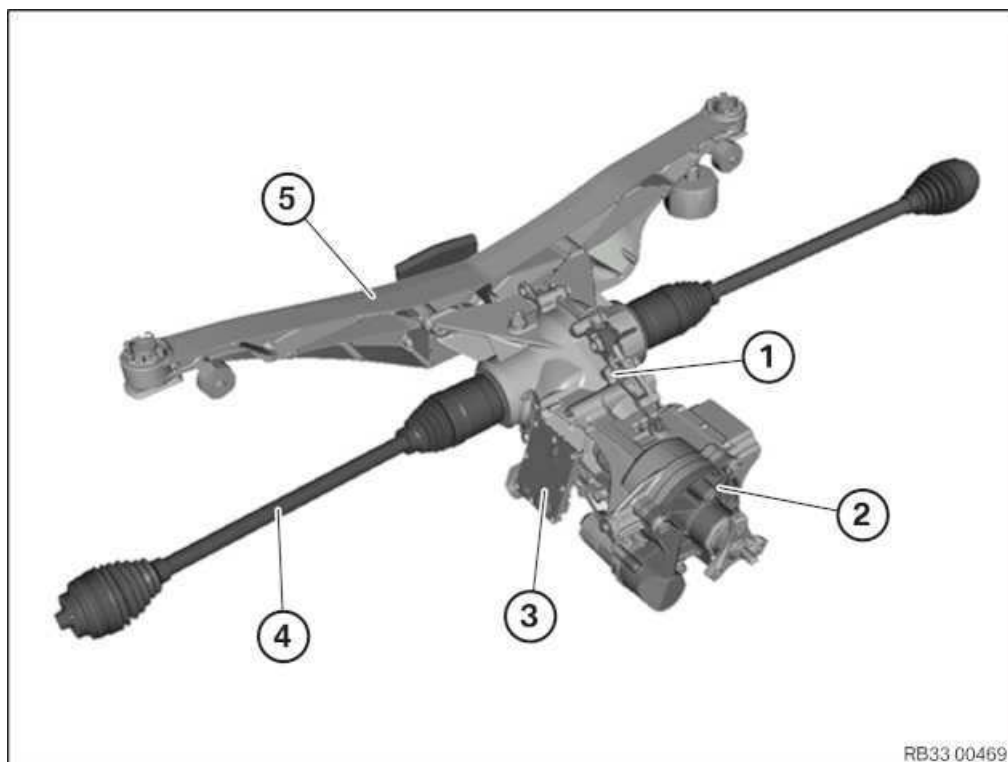
33 Overview of rear axle (all-wheel drive vehicle)



[Safety instructions & general information](#)

1	Trailing arm bearing support/rubber mount	Adjustment work
2	Trailing arm	Testing
3	Wheel bearing	Troubleshooting
4	Lower wishbone	
5	Overview of rear axle final drive/output shafts	
6	Upper wishbone	
7	Shock absorber	
8	Anti-roll bar / anti-roll bar link	
9	Rear axle carrier	
10	Coil spring	

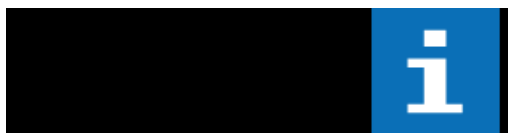
33 Overview of rear axle final drive/output shafts



[Safety instructions & general information](#)

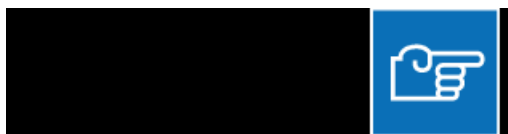
- | | |
|---|---|
| 1 Rear axle final drive | 4 Output shafts |
| 2 Clutch/hydraulic pump | 5 Cross member/vibration absorber |
| 3 Longitudinal moment adjustment control unit | |

33 31 011 Replacing rear axle support

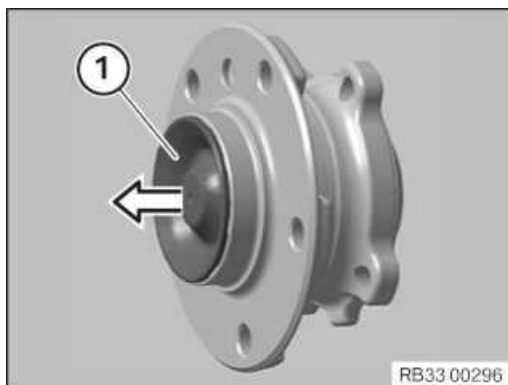


Necessary preliminary tasks:

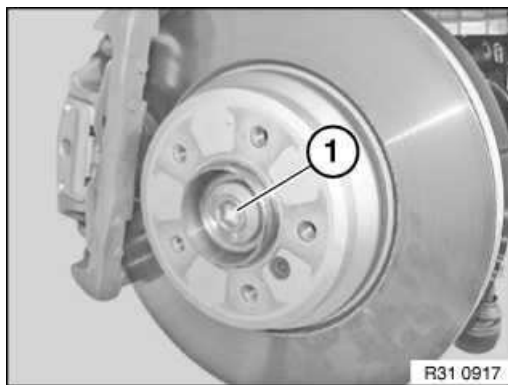
- Remove [rear wheels](#).
- Remove [complete exhaust system](#).
- Remove [rear axle final drive](#).
- Remove the [left and right trailing arm covers](#).
- Remove [tank cover](#) on left and right.



Removal:

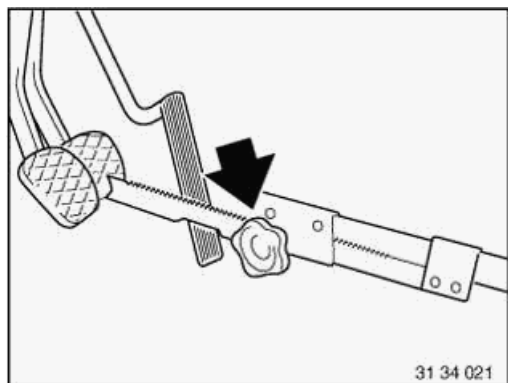


Lever out the protective cap (1) to the left and right.



Release collar bolt (1) to the left and right and to do this press the brake pedal.

Remove the left and right output shafts.

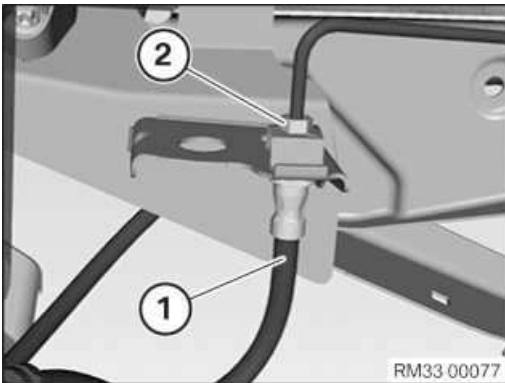


Press brake pedal down to floor and secure with pedal support. *Note:* The pedal support may only be released when the brake lines are reconnected.

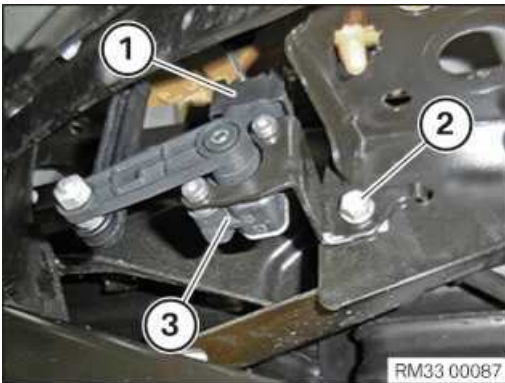
This prevents brake fluid from emerging from the expansion tank and air from entering the system when the brake lines are opened.



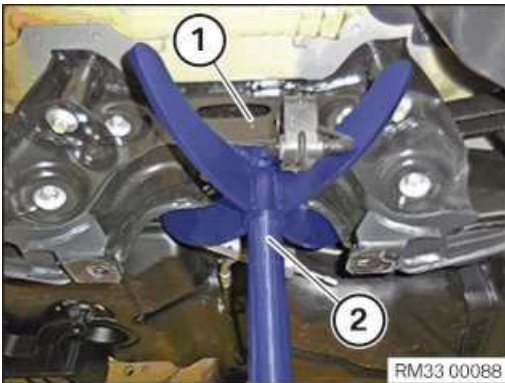
- Remove [all wishbones](#).



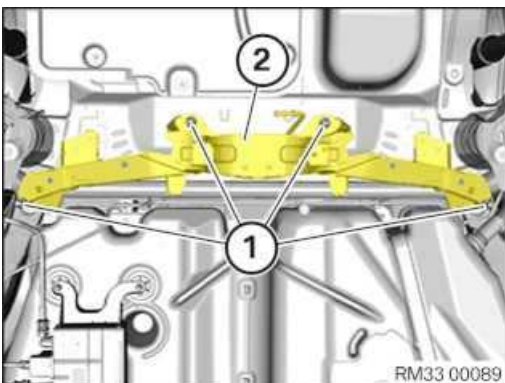
Release hollow nut (2).
Detach brake hose (1) on left and right from brake line.



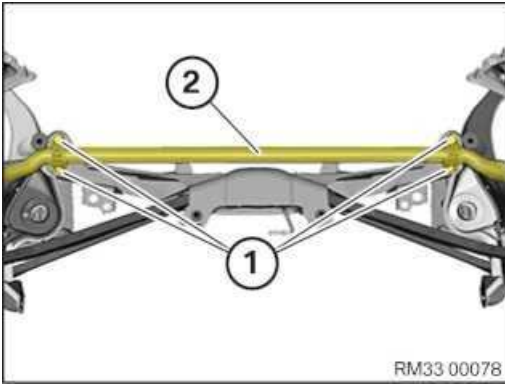
Only for rear ride height sensor:
Disconnect connector (1).
Release screw (2).
Remove ride height sensor.



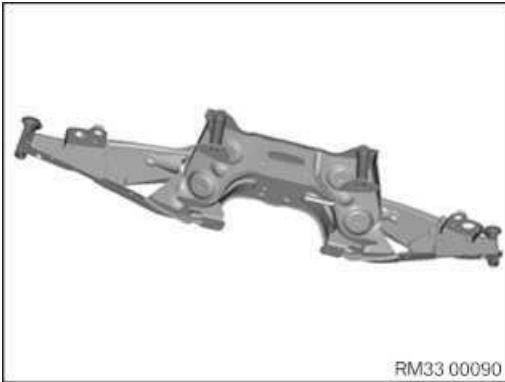
Support rear axle support (1) with workshop jack (2).



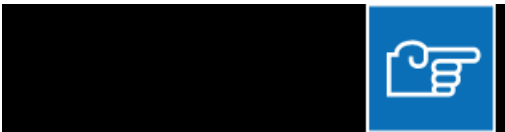
Release screws (1) from rear axle support (2).
Lower rear axle support by approx. 10 cm.



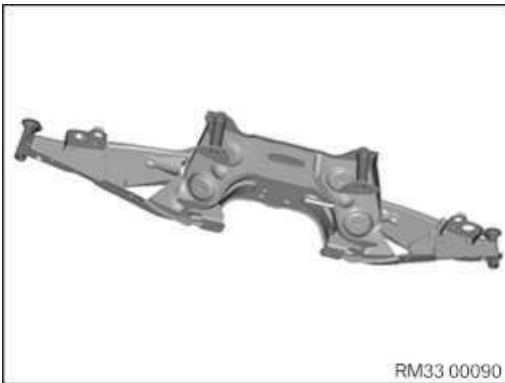
Release screws (1) from anti-roll bar (2).



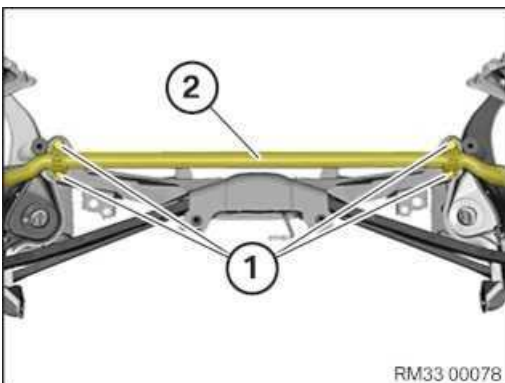
Remove rear axle support.



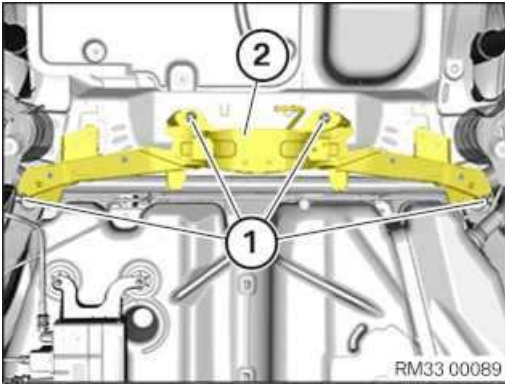
Installation:



Position rear axle support with workshop jack on vehicle.



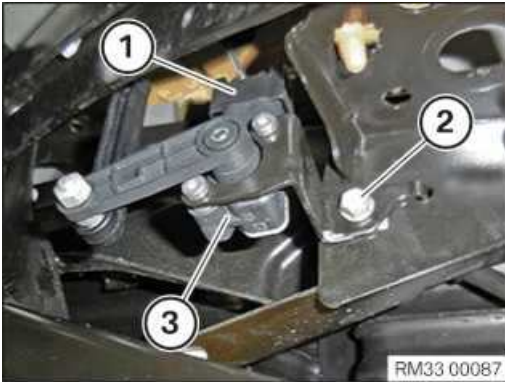
Tighten down anti-roll bar (2) with screws (1) on rear axle support.
Tightening torque [33 55 3AZ](#).



Tighten down rear axle support (2) with screws (1) on vehicle.

Tightening torque [33 31 1AZ](#)

Lower workshop jack and put away.



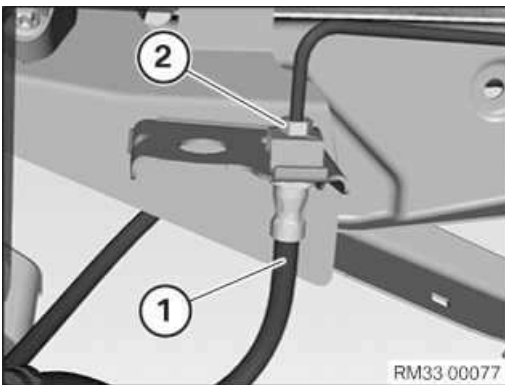
Only for rear ride height sensor:

Position ride height sensor.

Tighten screw (2).

Tightening torque [37 14 3AZ](#).

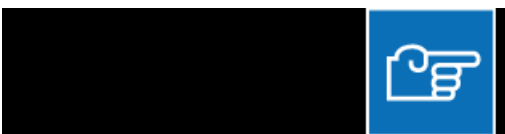
Connect the connector (1).



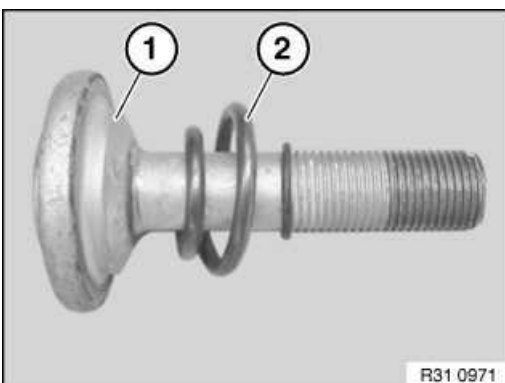
Connect brake hose (1) on left and right to brake line.

Tighten down hollow nut (2).

Tightening torque [34 32 1AZ](#).



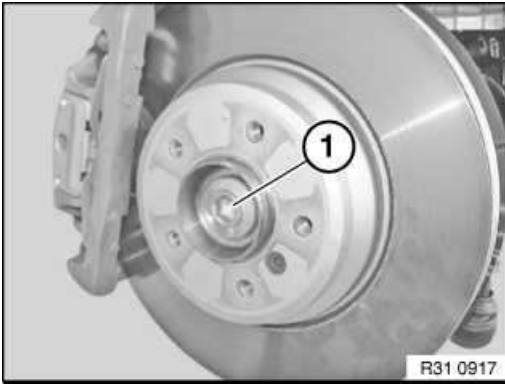
- Install [all wishbones](#).
- [Bleed brake system](#).



- Pay attention to installation position of compression spring (2).
- Keep collar bolt and spur gearing of wheel bearing/output shaft clean and free from grease

Important!

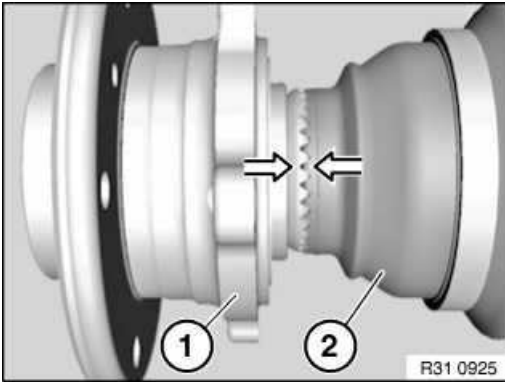
Following installation note for spur gearing must be observed without fail!



Position the left and right output shafts at the wheel bearing.

Part: Replace the collar bolts and compression springs.

Tighten collar bolt (1) and compression spring hand-tight.

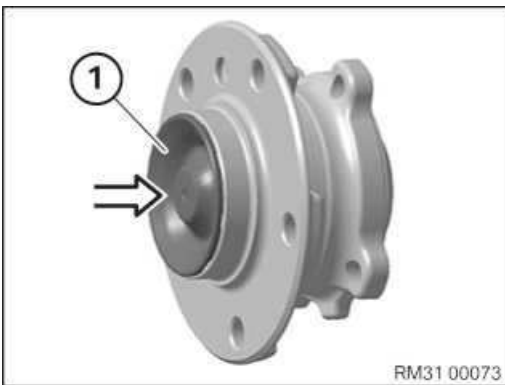


- Spur gearing of wheel bearing (1) and output shaft (2) must be installed form-fit (tooth in tooth position)!

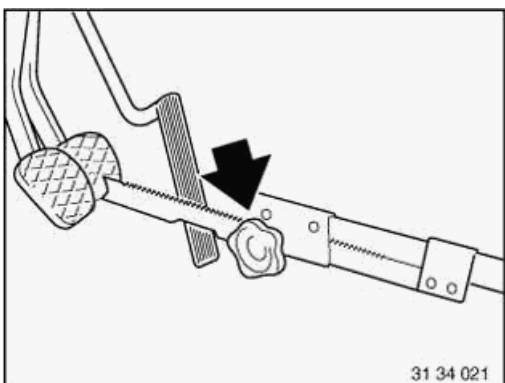
Check whether spur gearing is locked tooth in tooth by reciprocally rotating wheel hub/output shaft.

Once a form-fit has been ensured, tighten to final torque.

Tightening torque [33 41 2AZ](#)



Fit the left and right protective caps (1).



Release pedal support.



Required follow-up work:

- Install the [rear axle differential](#).
- Install [tank cover](#) on left and right.
- [Install exhaust system](#).
- Install [rear wheels](#).
- Perform [wheel alignment](#).