

MANTHEY - RACING



Installation manual

**Anti roll bar rear axle Cayman GT4
Clubsport MR EVO 2018
MTH512928**

Version _V1_2017/12

Contact

Manthey-Racing GmbH

Technical Support

Rudolf-Diesel-Str. 11-13

53520 Meuspath

Germany

Phone: +49 (0) 2691 9338 807

E-Mail: techsupport@manthey-racing.de

Note

Due to the ongoing optimization of our products, this document will be updated on a regular basis. Please note that only the current version of this document is valid. The current documents are available in the download area.

Download area:

The installation and operating instructions as well as the technical manuals are available for download under the following link.

<http://www.manthey-racing.de/downloads.htm>

Warning and safety instructions

The classification of the warning and safety information is made using the respective signal word (Danger, Warning, Caution) in addition to the warning icon.

DANGER

Warning of death or serious bodily injuries, which will occur in the event of non-compliance.

WARNING

Warning of death or serious bodily injuries, which may occur in the event of non-compliance.

ATTENTION

Warning of minor bodily injuries in the event of non-compliance.

NOTE

Warning of property damage in the event of non-compliance.

General safety instructions

DANGER

Risk of injury and risk of accident during and after work on the vehicle

- Repairs are to be carried out only if access to the repair handbooks in the PIWIS Information System is also available
- Observe the safety instructions
- Observe the repair handbooks of the vehicle series in the PIWIS Information System.

DANGER

Crashing vehicle

Squeezing or crushing

Damage to the vehicle

- Do not place any rigid objects under the lifted vehicle.
- Secure lifting platform against lowering.
- Remove any rigid objects before lowering.
- Lift the vehicle only at the pick-up points designated for this purpose.
- The outer pick-up points should be used as a matter of priority.

WARNING

Improper handling of safety-relevant fitting

Injuries

Torque reduction

- Use new fastening screws and nuts after every dismantling
- Observe the specified tightening torques.
- Visually inspect the parts used

NOTE

Always observe the currently valid „Technical Information“ (TI) of Porsche AG. These can be viewed and downloaded at motorsport.porsche.de.

If you do not have access to this portal, please contact gt4clubsport@porsche.de.

Always use this manual in accordance with the currently valid Technical Information (TI) of the Porsche AG.

⚠ WARNING
Working with compressed air

Eye injuries

Damage and contamination of components

- Wear safety goggles with side shield.
- Secure the compressed air discharge point with suitable materials.
- Place the compressed air discharge point on suitable areas.

⚠ WARNING
Toxic exhaust fumes

Suffocation

- When the engine is running, position the exhaust gas extraction system behind the exhaust end pipes of the vehicle and switch it on.

⚠ WARNING
Falling objects or loads

Squeezing or crushing

- Secure components against falling.

⚠ WARNING
Flying foreign bodies during grinding, drilling and milling

Eye injuries

- Wear safety goggles.

⚠ WARNING
No heat-resistant materials

Fire

- Avoid contact with hot components or sources of ignition.

⚠ ATTENTION
Sharp or sharp-edged objects

Cracks, punctures, cuts

- Wear personal protective equipment.

⚠ ATTENTION
Hot components

Burns

- Allow hot components to cool down.
- Wear personal protective equipment.

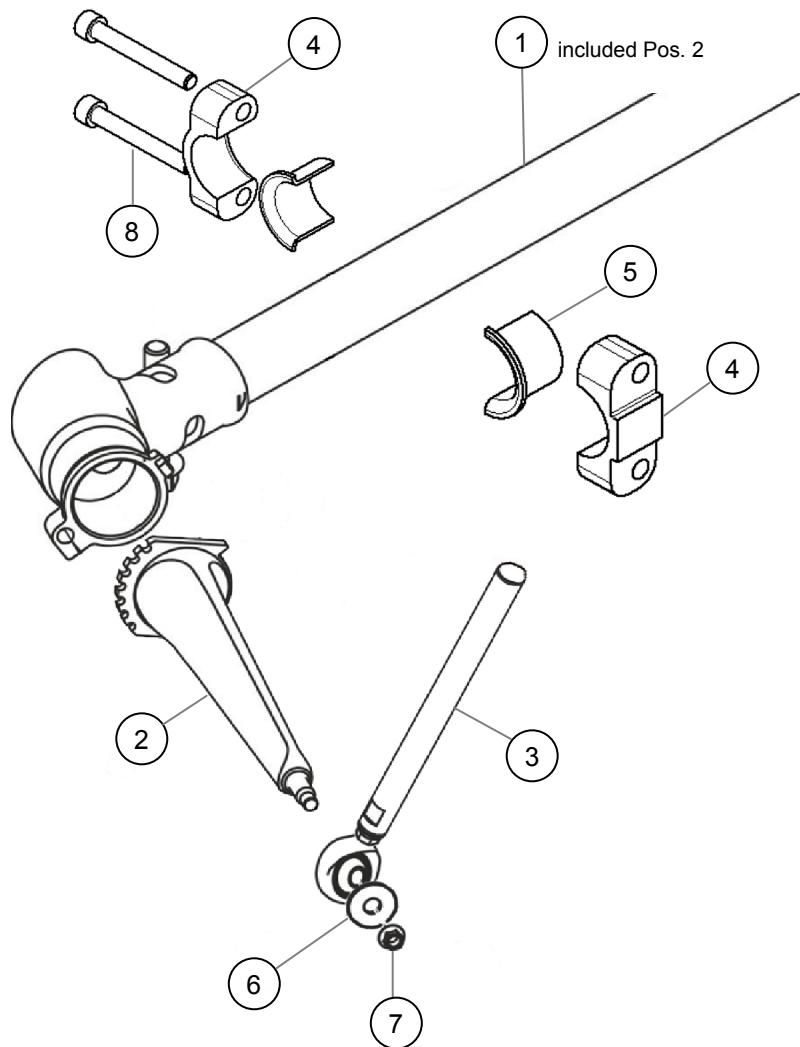
⚠ ATTENTION
Heavy components

Crushing

- Wear personal protective equipment.
- If necessary call somebody to help you.

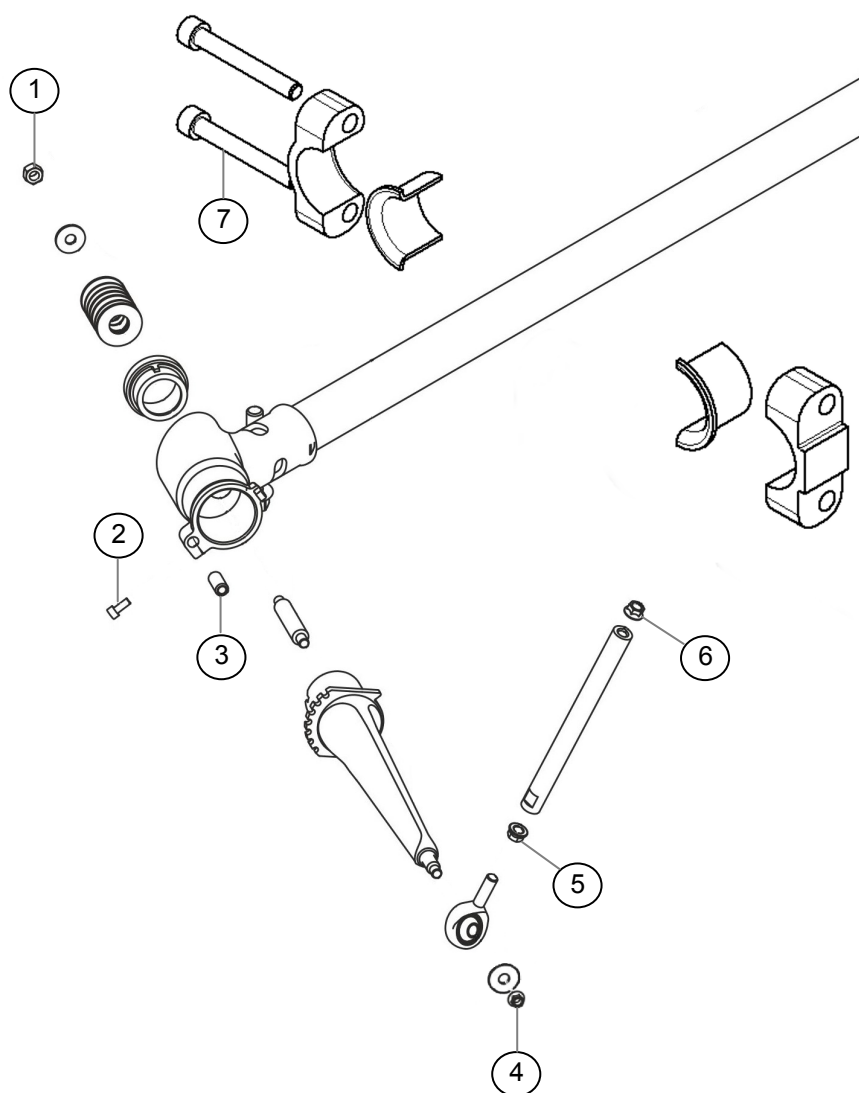
Cayman 981 GT4 Clubsport MR
Anti roll bar rear axle
EVO 2018

Overview anti roll bar rear axle (MTH512928)



Pos.	Bezeichnung / Description	M	A.	Teile Nr. / Part no.
1	Z STABILISATOR AS ANTI-ROLL BAR		1	MTH512928
2	BIEGEHEBEL BENDING LEVER	X	2	9913437258E
3	Z KOPPELSTANGE AS COUPLING ROD		2	MTH512934
4	KLEMMUNG STABILISATOR BRACKET ROLL BAR		2	MTH512935
5	STABILISATORLAGER ROLL BAR BEARING	X	2	99733379293
6	KONUSSCHEIBE CONE WASHER		2	MTH343585
7	K-NUT M8x1,25 HEXAGON NUT M8		2	MTH343011
8	ZYLINDERSCHRAUBE M8 x 60 SOCKET CAP SCREW M8 x 60		4	0083860

Tightening torques anti roll bar rear axle



Pos.	Bezeichnung / Abmessung Description / Dimension	Drehmoment /Torque [Nm]
1	Mutter / hexagon nut M6	10 Nm
2	Schraube / bolt M4 x 10	3 Nm
3	Schraube / bolt M8 x 18	0,25 mm Spalt einstellen / adjust a gap of 0,25 mm
4	K-nut M6	20 Nm
5	Mutter / hexagon nut M8	10 Nm
6	Mutter / hexagon nut M8	10 Nm
7	Schraube / bolt M8 x 65	35 Nm

NOTE

The dual sword-type anti roll bar can be adjusted in 7 positions on both sides. Every consecutive position changes the bending lever's angle by 15°. Maximum stiffness can be achieved by aligning the bending lever and the roll bar linkage parallel to each other. The minimum stiffness of the anti roll bar is reached by placing the bending lever and the roll bar linkage at a 90° angle to each other.

NOTE

In order to prevent wear and to ensure the smooth running of the bending lever permanently, it is recommended to disassemble the bending lever at regular intervals and to remove any dirt in the area of the contact surfaces. For lubrication, the lubricant TOP 2000 from Autol is recommended.

NOTE

The following components of the standard rear-axle stabilizer of the Cayman Clubsport GT4 are adopted for conversion to sword stabilizer

(1) Upper Link	9973431709A	2x
(2) Hexagon nut	90081701801	2x
(3) Adapter plate	9813312788A	2x
(4) Brace	9813312758A	1x

Step 1:

Remove the rear axle stabilizer according to Porsche specifications. Observe the technical manual of the Cayman GT4 Clubsport.

NOTE

Clean the contact surfaces of the adapter plates and the brace. Dirt on the contact surfaces can lead to malfunctions.

NOTE

Remove the brake air ducts for machining according to the specifications of Porsche AG. The installation is also carried out according to the specifications of Porsche AG.

Step 2:

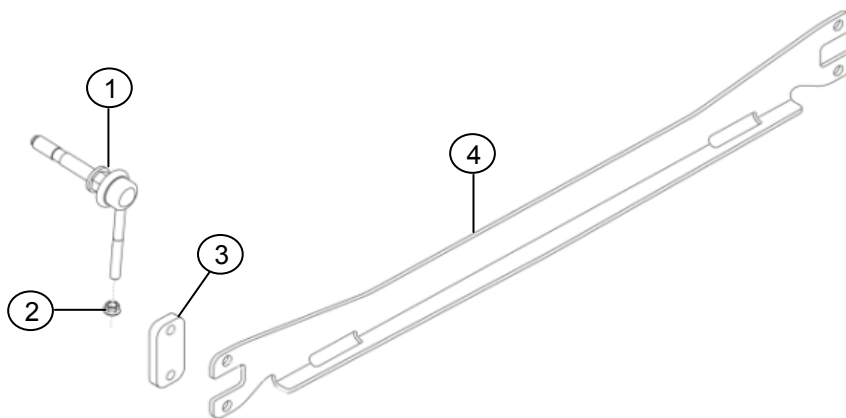
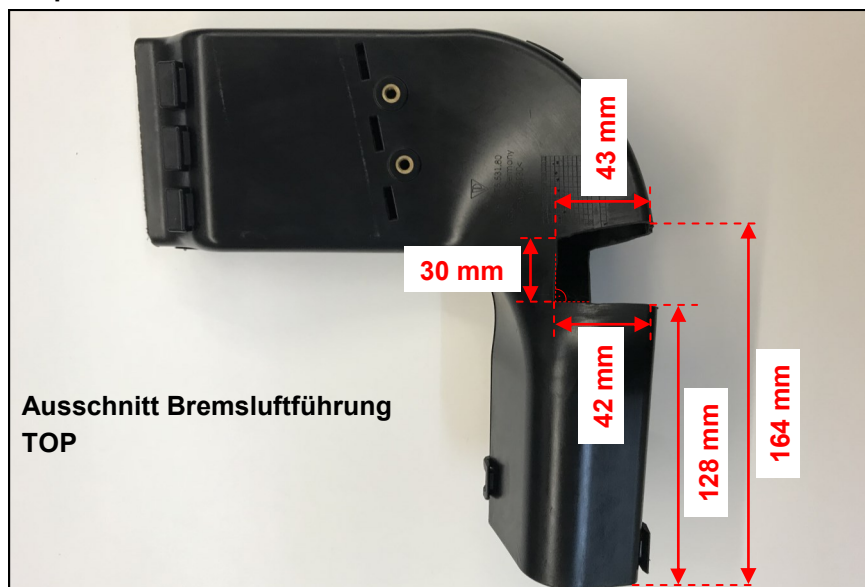
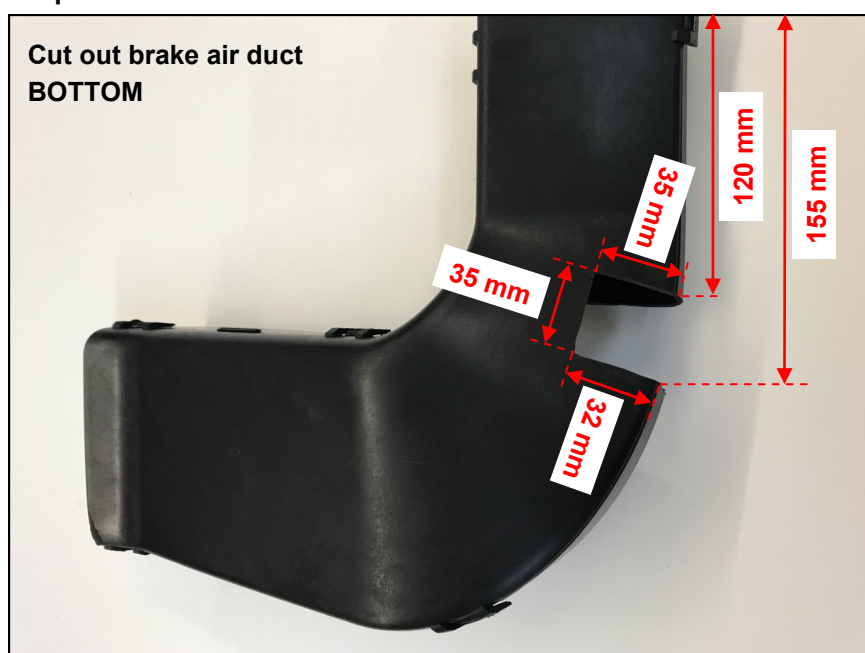
Shorten the two brake air ducts of the rear axle. The dimensions are shown in the illustrations below.

NOTE

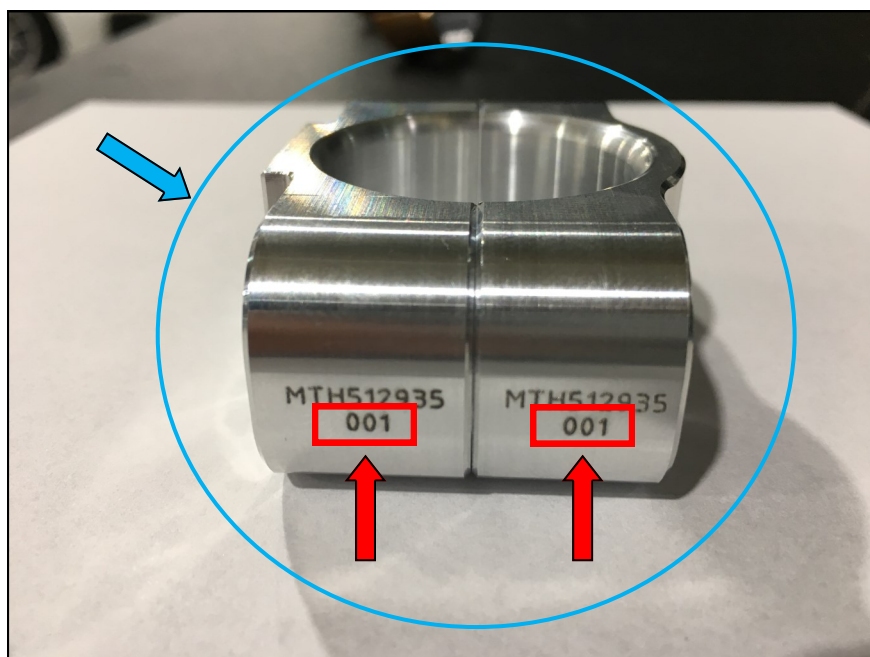
The free movement of the coupling rod and the bending lever must be ensured with suspension settings and driving situations. If necessary, the cutouts must be reworked.

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Transfer parts from the existing anti roll bar and preparing the brake air ducts on the rear axle


Step 2:

Step 2:


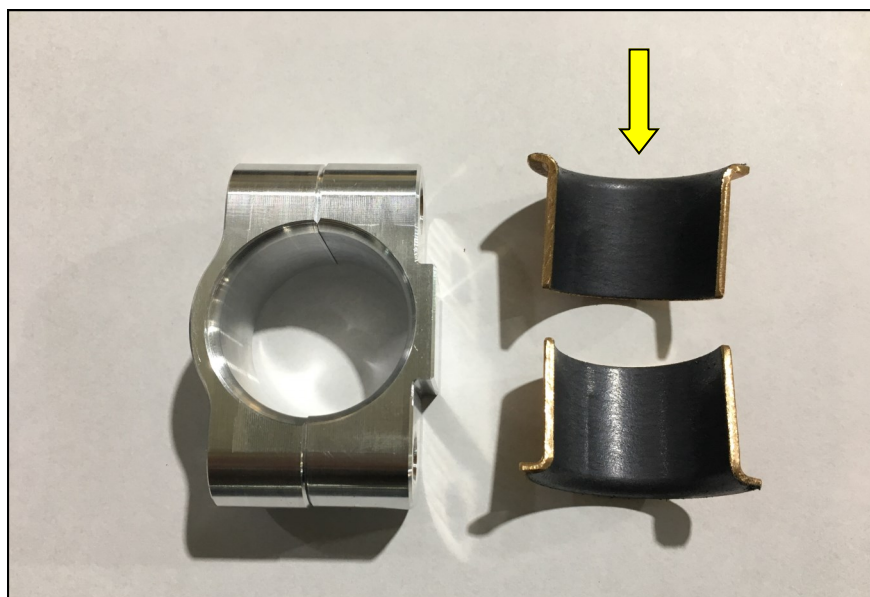
Assembly of the new anti roll bar



NOTE

The clamping pieces for the anti roll bar are processed due to the required tight tolerances together on the milling machine. Therefore, both halves have the same serial number. It should be noted that only halves with the same serial number per clamping may be installed. Failure to do so may cause malfunction.

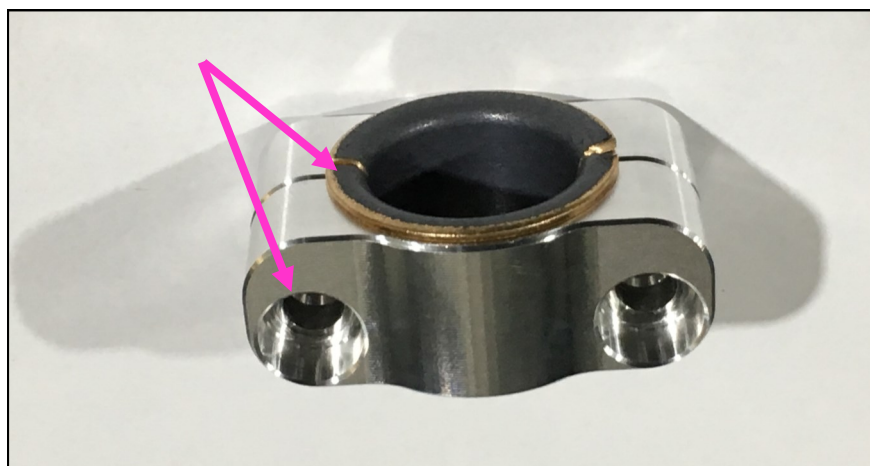
Step 1:



Step 1:

Equip the halves of the clamping pieces with the bearing shells. Pay attention to the orientation of the bearing shells in the clamping piece. The collar of the bearing shells must lie on the opposite side to the holes in the clamping piece (the holes are set eccentrically)

Step 1:



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Step 2:

Mount the anti roll bar with the mentioned components to the vehicle.
Note the installation order:

- (1) Adapter plate
- (2) Brace
- (3) Clamping



Pay attention to the installation position of the clamping pieces!

The screw connection must point to the center of the vehicle. The collar of the bearing shell must point in the direction of the bending lever.



NOTE

Tightening torque of the Clamping screws M8x60:

35 Nm

NOTE

To compensate any axial play of the anti roll bar, Porsche Motorsport can purchase shims in the thicknesses of 1 mm and 2 mm.

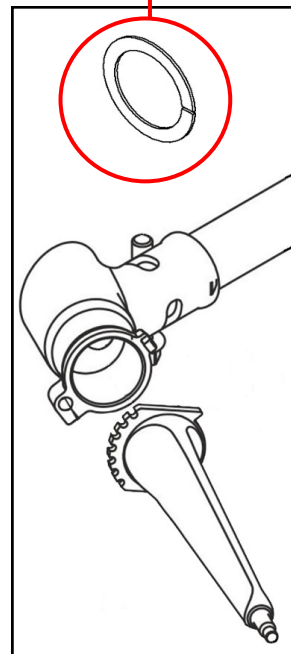
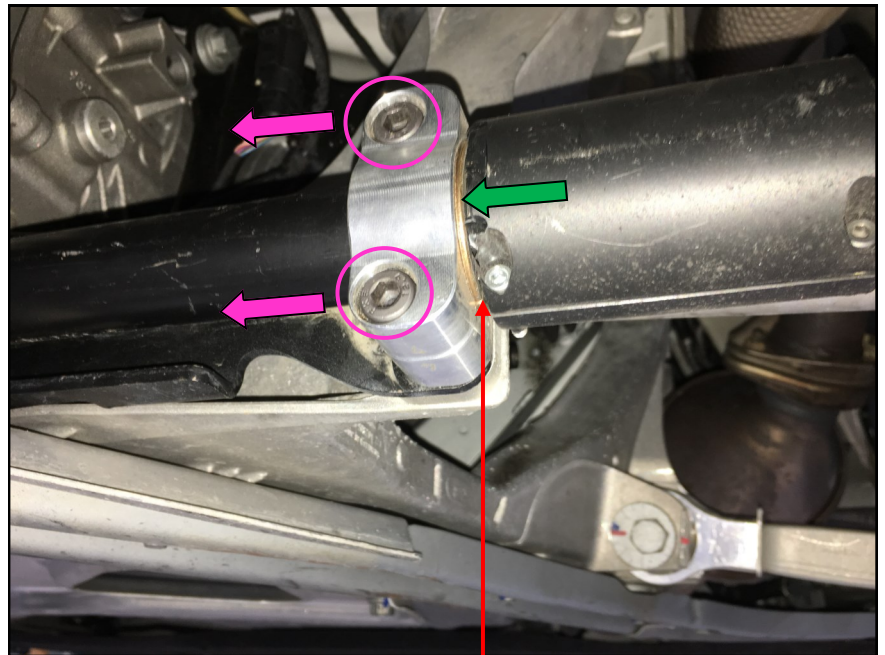
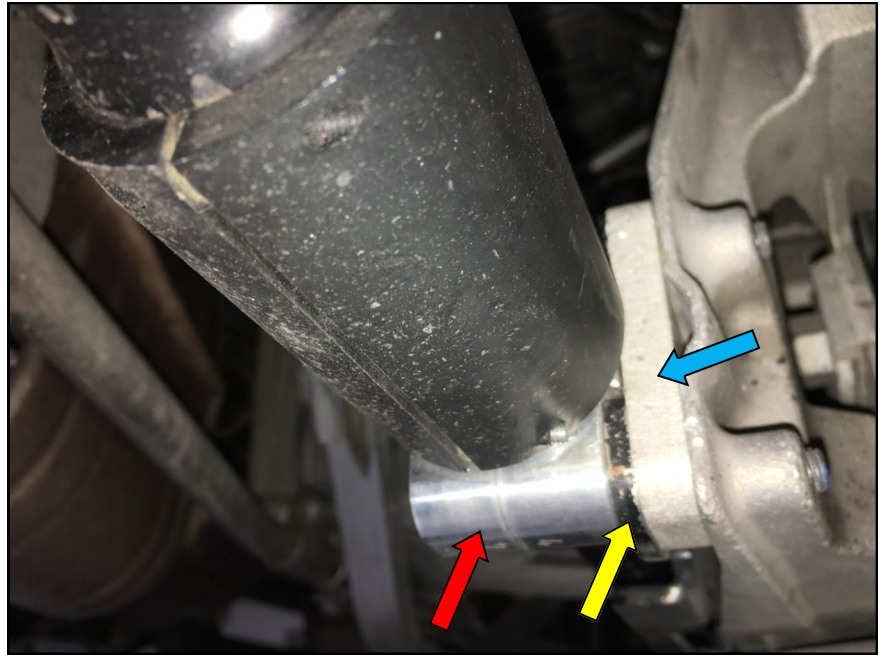
The shims are mounted between the collar of the bearing shell and the bending lever.

Part numbers of available shims:

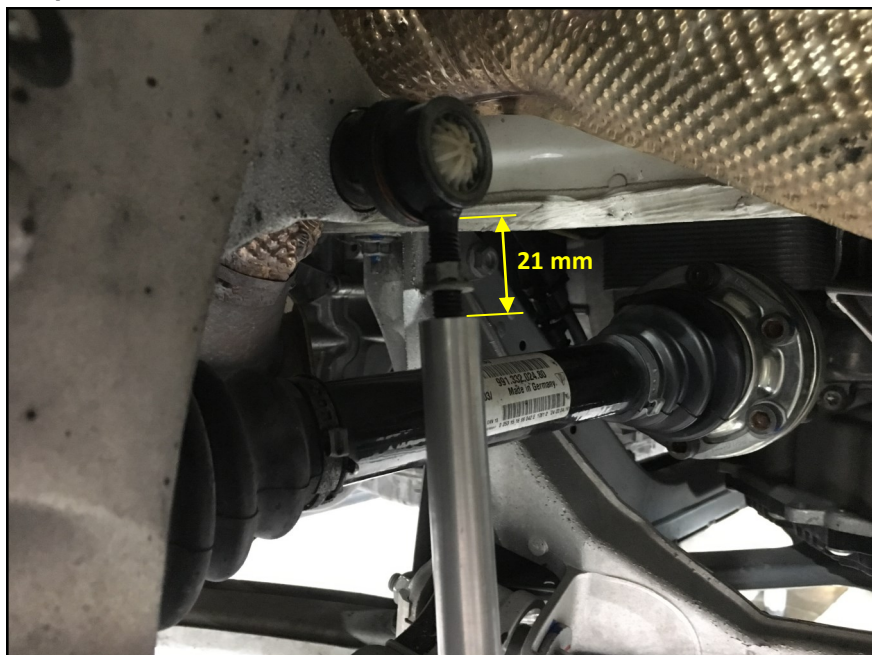
Shim 1 mm: 9913437618A

Shim 2 mm: 9913437618B

Step 2:



Step 3:



Step 3:

↓ Screw the coupling rod to the standard linkage.

Adjust the thread lengths of the two rod ends as follows:

↓ **Thread length upper ball joint:**
21 mm

↓ **Thread length lower ball joint:**
11 mm

NOTE

Tightening torque hexagon nut:

10 Nm

Step 4:

↓ Attach the lower ball joint to the bending lever using a cone washer and a K-Nut M6.

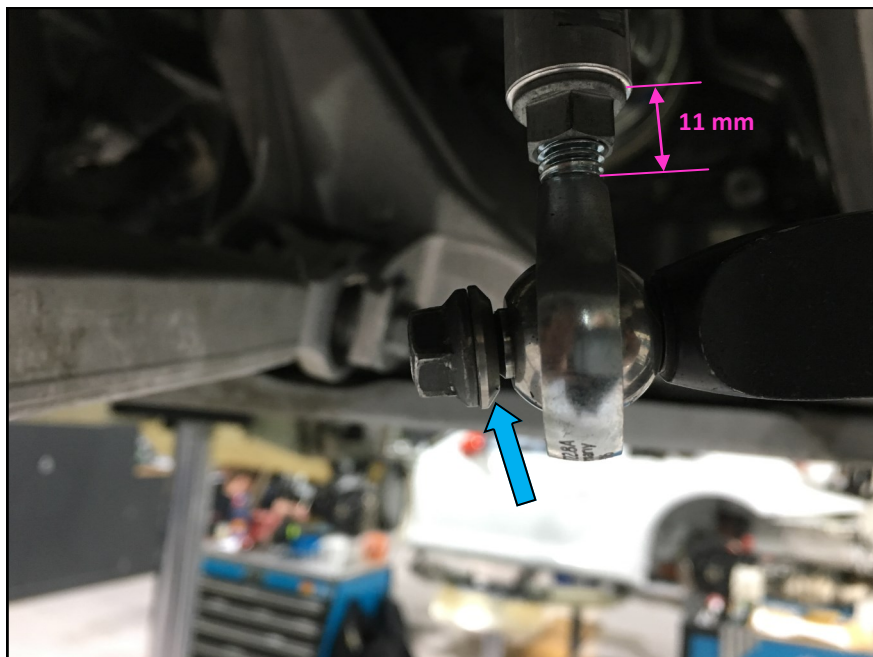
Observe installation direction of the cone washer!

NOTE

Tightening torque K-Nut M6

13 Nm

Step 4:



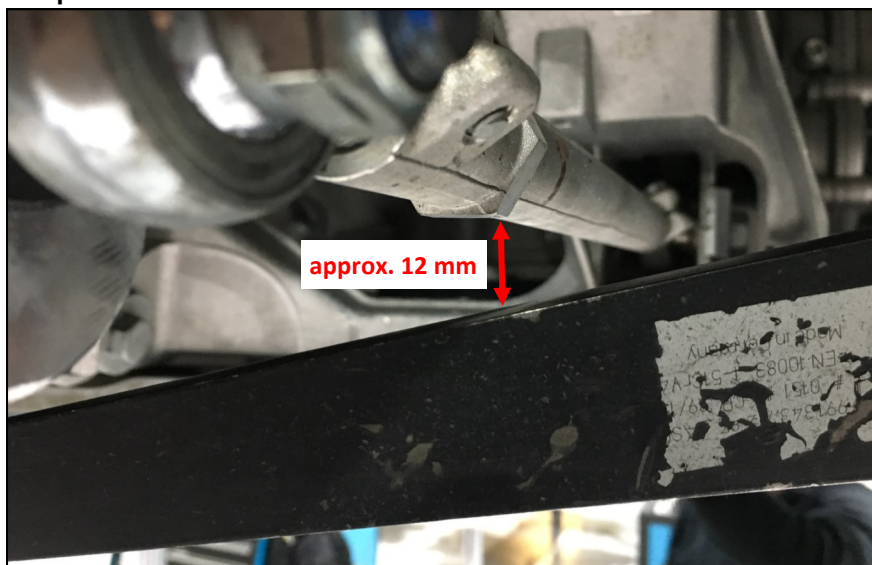
Step 5:

If the anti roll bar with all components is installed, finally check the distance between the bending lever (setting HART) and the rod.

NOTE

The distance between bending lever and rod should be approx. 12 mm with full deflected rear axle.

Step 5:



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NOTE

Use suitable tools to rotate the bending lever. Notches or other mechanical damage can cause a breaking of the bending lever.

The following diagram shows the wheel related stiffness of the anti roll bar depending on the position of the bending lever. The bending levers are on both sides set to the same position.

The picture below shows the maximum and minimum stiffness of the anti roll bar:

Minimum stiffness (soft) is achieved:

Bending lever is at 90 ° to the coupling rod

Maximum stiffness (hard) is achieved:

Bending lever is parallel to the coupling rod

Overall Stiffness in relation to the angle of the bending lever

