



INSTALLATION INSTRUCTIONS



Installation Instructions			<i>KW automotive</i>	
Instruction No.	688 10 0AN		Date	09.04.2021

KW automotive

INSTALLATION INSTRUCTIONS

**Before you begin installation ,
please read the following carefully:**

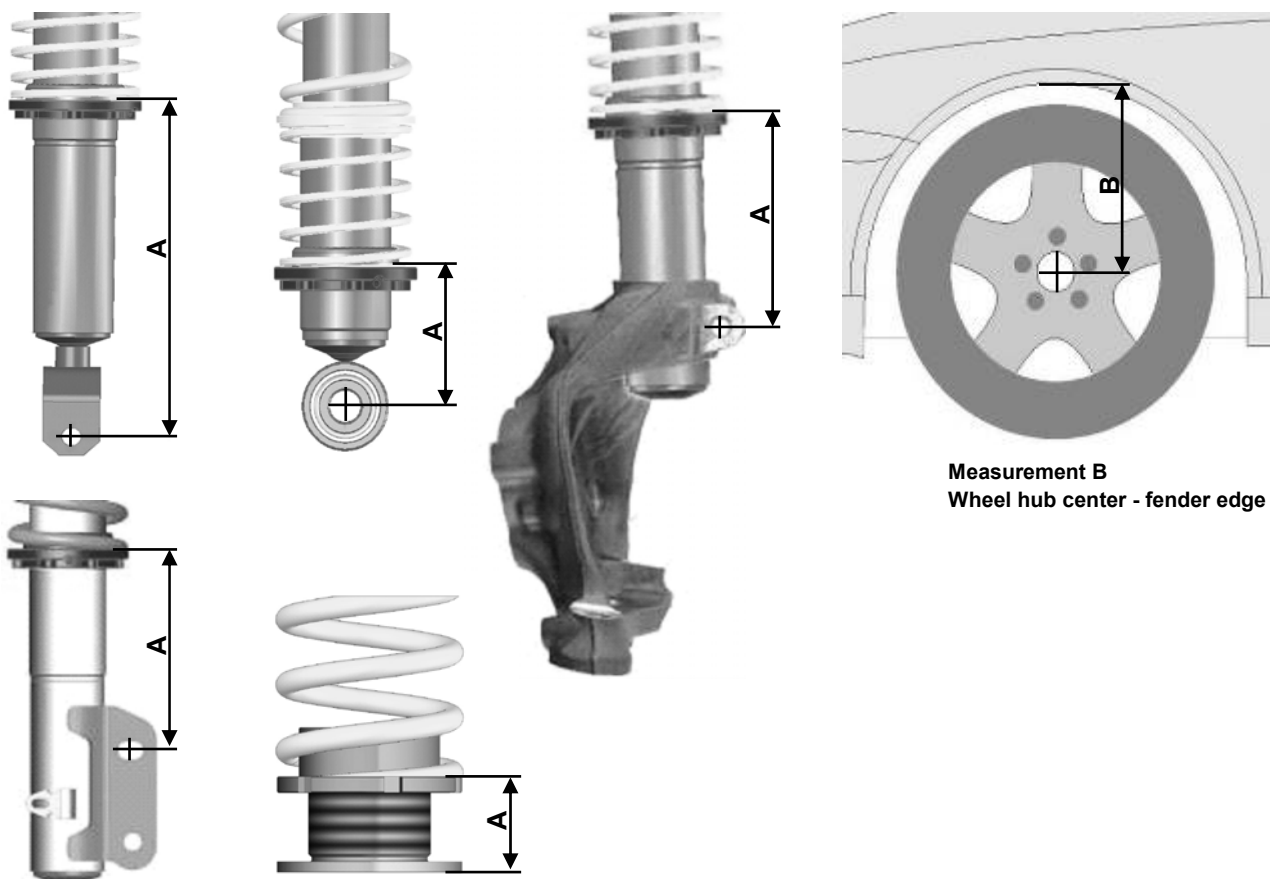
- **Ensure that the certificate matches the vehicle specifications (front vehicle identification number (VIN)) etc...**
- **The suspension components must match the suspensions application specifications (springs and shock/struts identification numbers).**
- **The instructions have to be strictly observed.**

KW Coilovers for automobile suspensions are designed for easy installation. If not otherwise stipulated in these instructions, all suspension components are installed and removed in accordance with the manufacturer's specifications for installing and removing standard springs and damper components. At the time of printing all instructions and specifications are correct.

Installation Instructions			KW automotive	
Instruction No.	688 10 0AN		Date	09.04.2021

Technical data	Part number 253 10 0AN / 273 10 0AN			
Vehicle model	Audi Quattro R8, R8 Spyder Typ 42		max. permissible front axle load: 945 kg	
	front axle		rear axle	
Spring signature	10-70-70 / 100-70-225*		10-70-70 / 70-70-225*	
Coilover strut / Shock absorber signature	OEM		OEM	
Approximate distance measurement A	min:	max:	min:	max:
	230 mm / 9,1 inch	245 mm / 9,6 inch	110 mm / 4,3 inch	130 mm / 5,1 inch
Approximate measurement* B in mm / inch: wheel hub center to fender edge	min:		min:	
	335 mm / 13,2 inch		340 mm / 13,4 inch	

Calculating the adjustment range (distance measurement A) : (Photos are examples only)



Please enter the adjusted height of the modified car into the list:

Coilover part no	Vehicle type	Measurement A		Wheel hub center - fender edge Measurement B	
		Front	Rear	Front	Rear

* **IMPORTANT:** The allowable measurement between wheel hub center and fender edge as indicated above, may not exceed this measurement when using standard fenders.

Installation Instructions			<i>KW automotive</i>	
Instruction No.	688 10 0AN		Date	09.04.2021



Danger:

Always follow the latest accident prevention regulations (not applicable for North America) for each step to prevent any serious bodily harm or injury.

1. We recommend the use of a vehicle hoist or lift when installing the suspension. If a lift is not available and jacking equipment is used, make sure that the vehicle is secured with commercial wheel blocks and jack stand to ensure safety.
2. The suspension components may only be installed by trained technical personnel using the proper tools.
3. The General Installation instructions, as well as the Technical Inspectorate documents must be read BEFORE attempting installation.
4. Never use impact wrenches or guns to install or remove shock absorber piston hardware.
5. Never disassemble or cut open shock absorbers and/or shock absorber inserts. They contain oil under pressure. Danger of explosion.
6. Before driving on public highways, carry out the work steps on page 7, items 11 through 14 after installation.
7. Please take care in any case that fittings (for example fittings of shock absorber housings or fittings of the lower control arm in the housing of the wheel bearing) are free of dust and oil. (see manufacturer guideline)

General Instructions for Use:

1. When adjusting the vehicle height, make sure that the threads are clean and free of debris. After initial cleaning, move the perch by 10 mm (0.4 Inches) downwards, and then clean the area that you desire to adjust the perch (up or down).
2. During height adjustments on separate shock and spring systems, remove the perch from the vehicle to adjust the height.
3. After adjusting the vehicle height, repeat steps 11 through 14 from page 7.
4. In the area of the piston rod and the sealing package of the new and used damper might be oil and grease collected. This could either be caused by using a special black grease during assembling the washer or due to accumulation of streak oil. Further more oil is used during assembling the cartridge and rod guide. There is no reason of worrying about and damage, as in this area also dust and dirt used to be collected.

Tightening torque for the piston rod nut:

M8 = **25Nm (18 ft-lb)**, M10x1 = **20Nm (15 ft-lb)**, M10x1,25 = **20Nm (15 ft-lb)**, M12x1,25 = **35Nm (26 ft-lb)**,
M12x1,5 = **40Nm (29 ft-lb)**, M14x1,5 = **50Nm (37 ft-lb)**, M16x1,5 = **50Nm (37 ft-lb)**

Installation Instructions			<i>KW automotive</i>	
Instruction No.	688 10 0AN		Date	09.04.2021



General Mounting Specifications:

1. We recommend the use of a vehicle hoist or lift when installing the suspension.
2. **Caution:** If the vehicle is equipped with ride height sensors, they should be removed before removal of struts or dampers, otherwise damage may occur.
3. The struts should be removed as specified by manufacturer's instructions.
4. Manufacturer recommended tools for removal of the original struts, or a suitable spring compressor, must be used in order to remove most factory mounted suspension systems.
5. Mount the complete suspension system as described on the following pages.
6. Never use impact drivers to install nuts on the piston rods as permanent damage may occur. It is imperative that you do not damage the piston rod surface, through use of pliers etc, as the smallest damage will result in seal damage, and will not be covered under warranty.
7. Stay within the lowering range specified in the table on page 3.
Example: With a specified range of 20 - 60 mm (0.8 - 2.3 Inches), 40 mm (1.5 Inches) is your height adjustment range.
8. Ensure that the set screw on each spring collar is tightened to prevent movement of the spring perch. On vehicles with separate shock/spring combinations, no set screw is necessary.
Caution: Do not over tighten the set screw. Maximum torque is 1 - 2 Nm (0.74-1.47 ft-lb).
9. Install the suspension components in the vehicle as specified by the vehicle manufacturers in their document.
10. Except as noted, all torque values must comply with manufacturer recommended specifications.
11. After assembly and installation is complete, the vehicle should be rolled onto level ground. Once on level ground, measure the vehicle height and adjust to the customer's requirements, within the prescribed lowering range.
Caution: Wheel hub center—wheel arch maximum measurement in the table of page 3 must not be exceeded! Also take into account minimum road clearances specified in the table on page 7 (only valid for Germany!).
Caution: It is common for the vehicle suspensions to settle by an additional 5 - 10 mm (0.2 - 0.4 Inches)
12. Examine the clearance between the tires and the suspension over the full range of motion of the wheel. The minimum clearance between the suspension and the tire is 4 mm (0.16 Inches). If this clearance is less than 5 mm (0.2 Inches), wheel spacers may be necessary. With strut designs that are located close to the wheel, but that have no steering functions, use 100 mm (3.9 Inches) spacers on diagonally opposed wheel (e.g. front right, rear left). In this position, you must be able to achieve the minimum clearance required. You can also check the clearance between tire and body.
Caution: With torsion beam trailing arm axles, this method is not sufficient. The wheel must be under full load as well as test driven to properly calculate the clearances of 5 mm (0.2 Inches) from any other components.
13. The geometry of the suspension needs to be adjusted according the regulations of the vehicle manufacturer. If a value cannot be reached due to the difference in the height, a optimal value next to the tolerance range of the vehicle manufacturer needs to be adjusted.
14. All components that are controlled by vehicle ride height (e.g. headlights, brake bias regulator etc.) must be adjusted as specified by the vehicle manufacturer instructions and procedures.
15. For vehicles with ESP, DSC or EPC your new suspension components may cause an engine fault code to appear. This is only temporary as the vehicle electronics adjust to the new components/height. On some models this will end after driving approximately 3-5 miles, or through turning the steering wheel from full left to full right. On other models, this must be reset through the factory diagnostic port by a qualified technician.

Installation Instructions			KW automotive	
Instruction No.	688 10 0AN		Date	09.04.2021

Front axle:

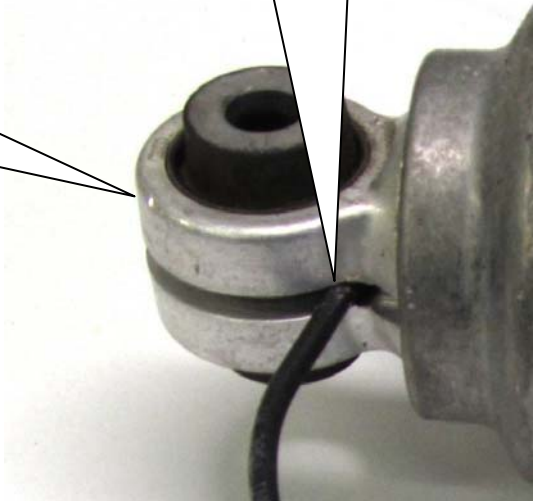
Dismantle coilover strut according to the manufacturer.



Disassemble the plug on the strut with a suitable tool.
Note the positions of the lines (color and pin number).

Spray teflon spray into the hole of the damper eye (wire) as shown in the picture.

Spray here

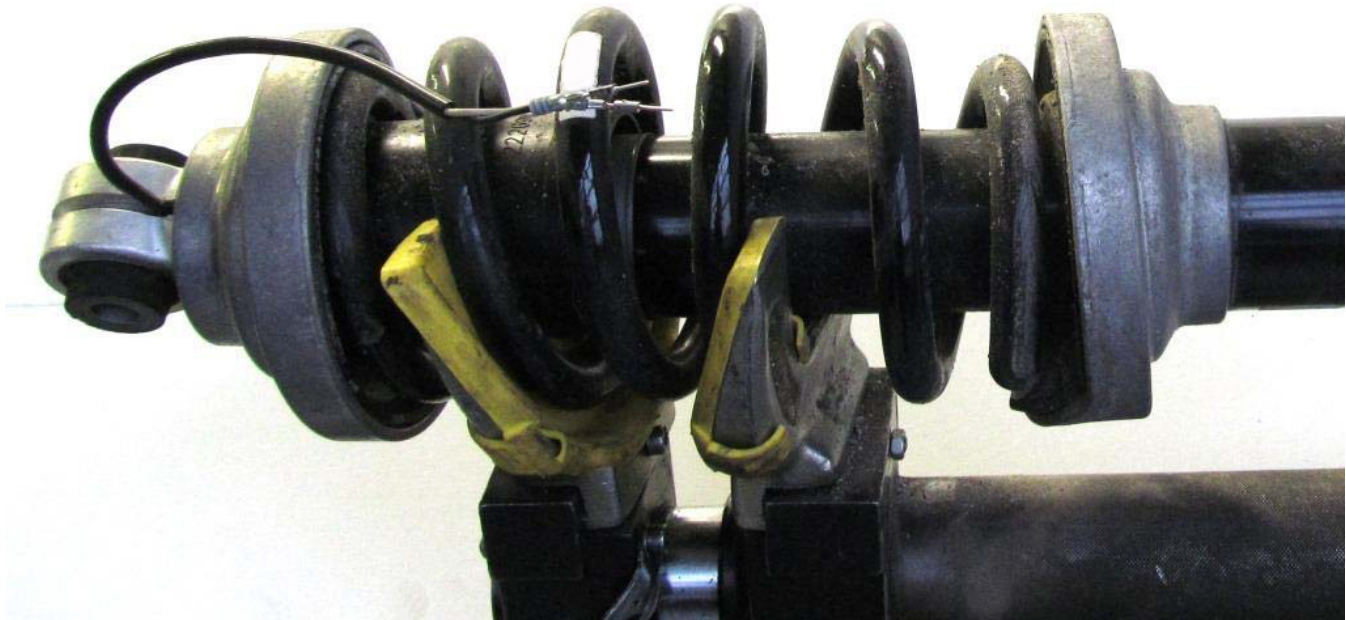


Installation Instructions			<i>KW automotive</i>	
----------------------------------	--	--	-----------------------------	--

Instruction No.	688 10 0AN		Date	09.04.2021
-----------------	------------	--	------	------------

Front axle:

Use a audited spring spring compressor and compress the spring.



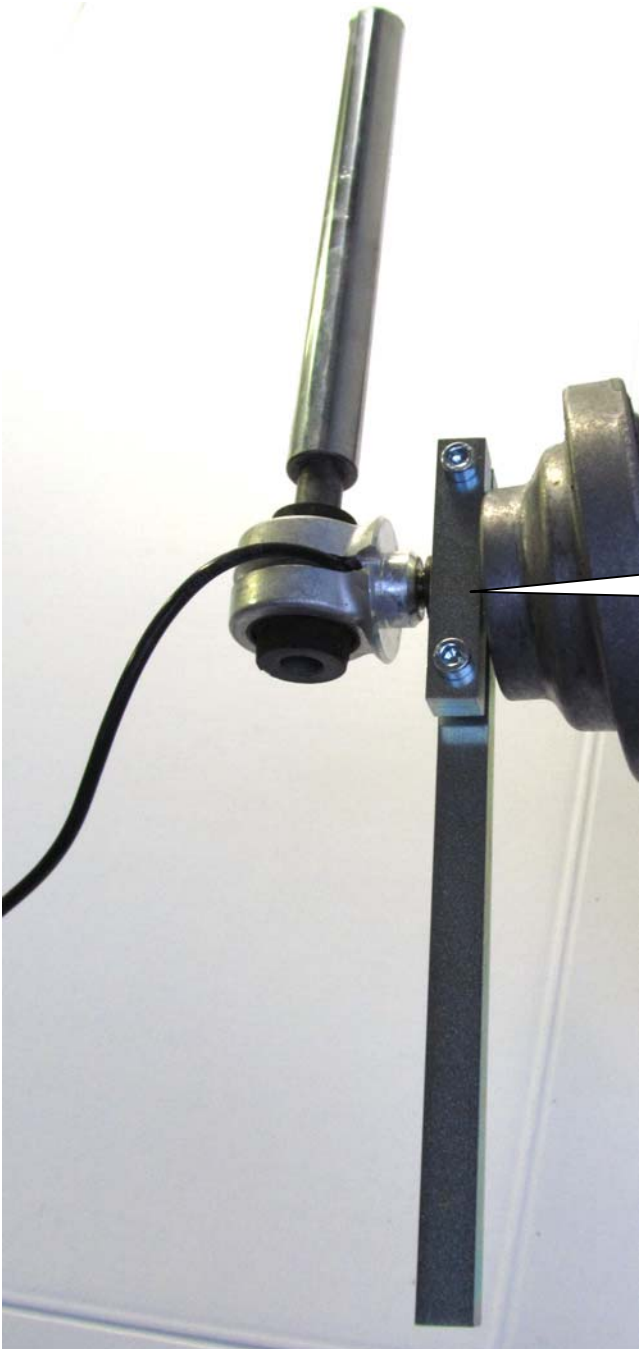
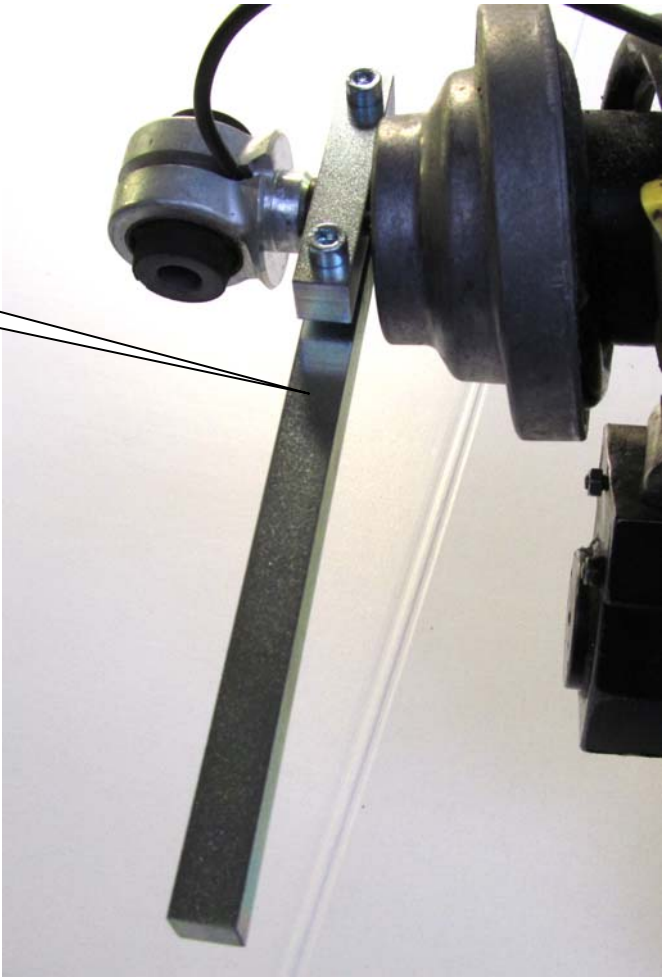
The damper can now be moved in the direction of arrow.



Installation Instructions			KW automotive	
Instruction No.	688 10 0AN		Date	09.04.2021

Front axle:

Mount the supplied special tool on the piston rod.



Dismantle the damper eye.

Installation Instructions

KW automotive

Instruction No.

688 10 0AN

Date

09.04.2021

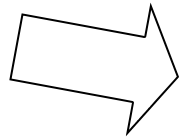
Front axle:

Dismantle all parts of the damper.

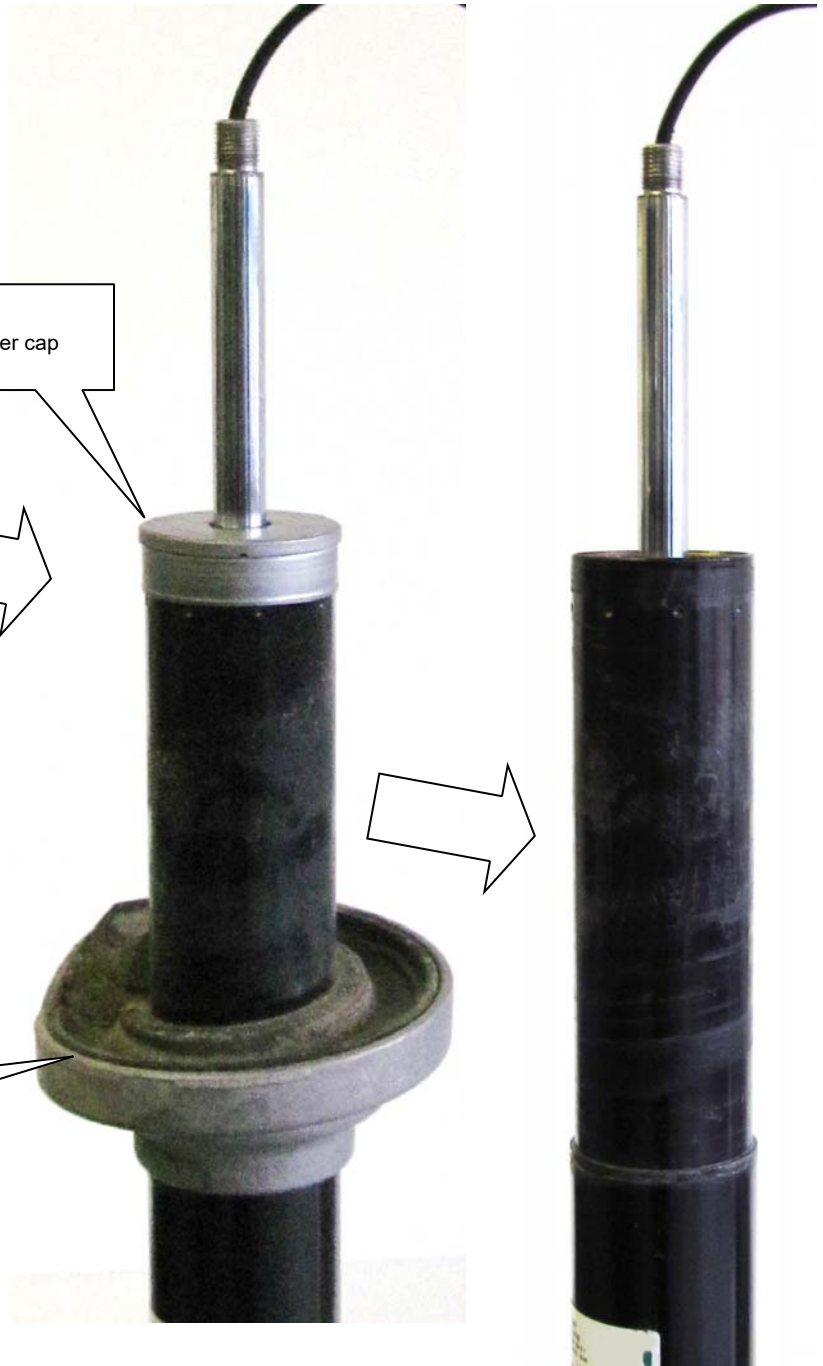
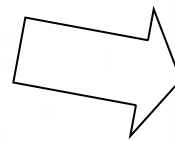
Dismantle or pull of the cover cap and the spring perch. After the disassembling clean the damper.



Cover cap



Spring perch

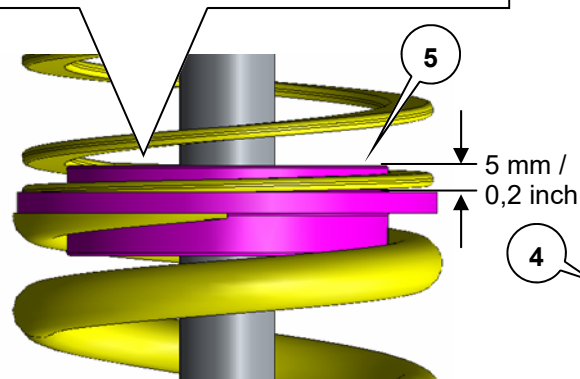


Front axle:

Install the following part in this order:

1. The threaded sleeve with threaded ring.
2. Adaptring
3. The standard cover cap
4. Spring 100-70-225*
5. intermediate ring
6. Insert the bump stop with dust cover
7. OEM supporting washer

Mount the intermediate ring with the small collar towards to the helper spring.



Installation Instructions

KW automotive

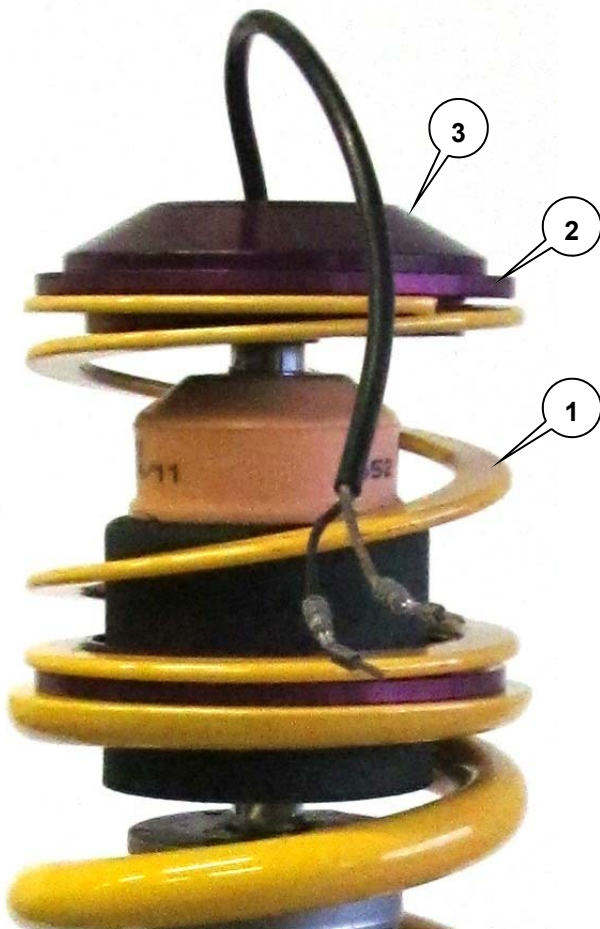
Instruction No.

688 10 0AN

Date

09.04.2021

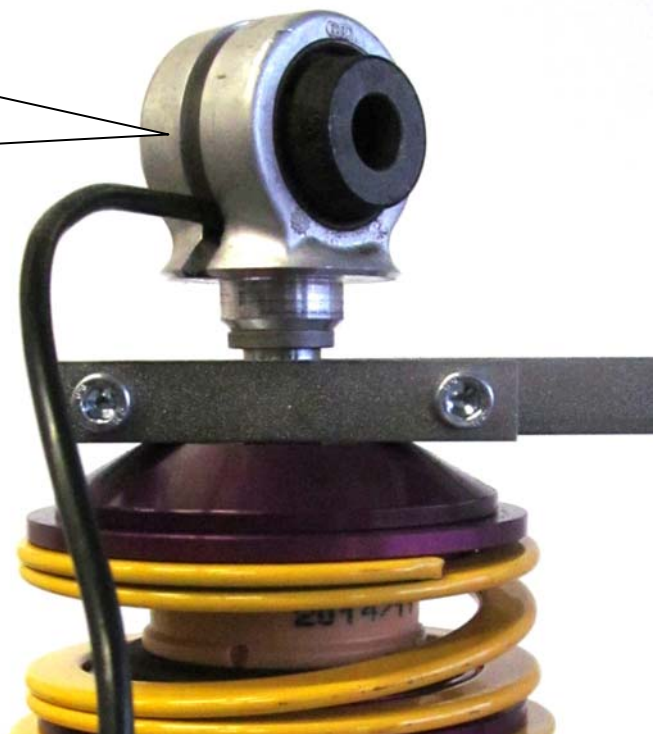
Front axle:



Install the following part in this order:

1. Helper spring
2. Adapter ring
3. Spring perch

Install the standard damper eye with the supplied special tool. Lock the damper eye with bolt adhesive. Tightening torque is 35 Nm (26 ft-lb).



Installation Instructions

KW automotive

Instruction No.

688 10 0AN

Date

09.04.2021

Front axle:

Pin the line of the damper again in the plug.
Note the cable color / PIN number!



Please install the strut unit to manufacturers recommended settings regarding tightening torque and fixing specifications.

Installation Instructions

KW automotive

Instruction No.

688 10 0AN

Date

09.04.2021

Rear axle:

Dismantle coilover strut according to the manufacturer.

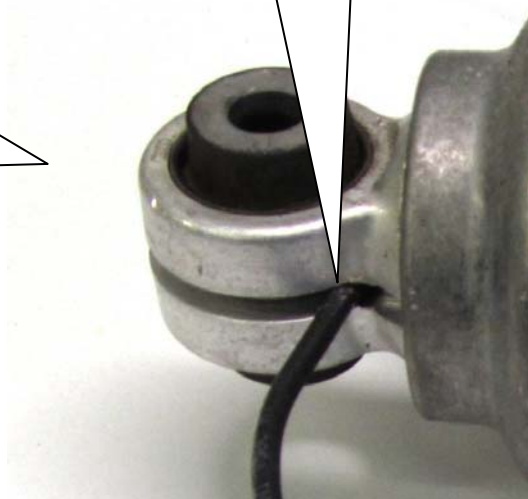


Spray teflon spray into the hole of the damper eye (wire) as shown in the picture.



Disassemble the plug on the strut with a suitable tool.
Note the positions of the lines (color and pin number).

Spray here

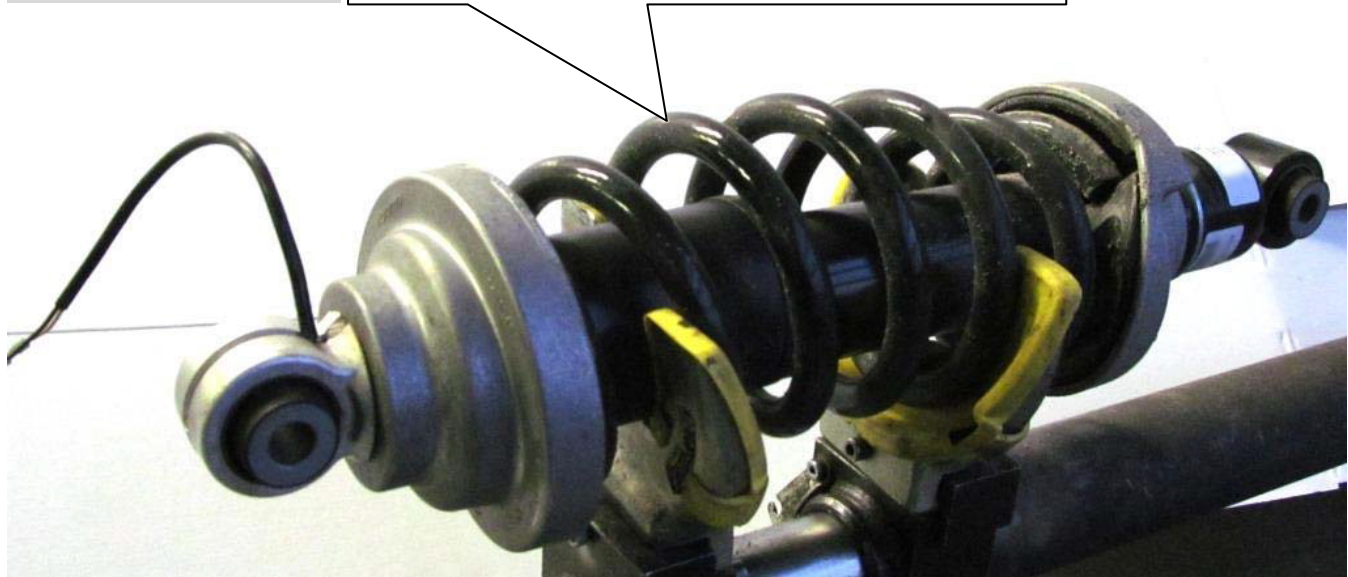


Installation Instructions			KW automotive	
----------------------------------	--	--	----------------------	--

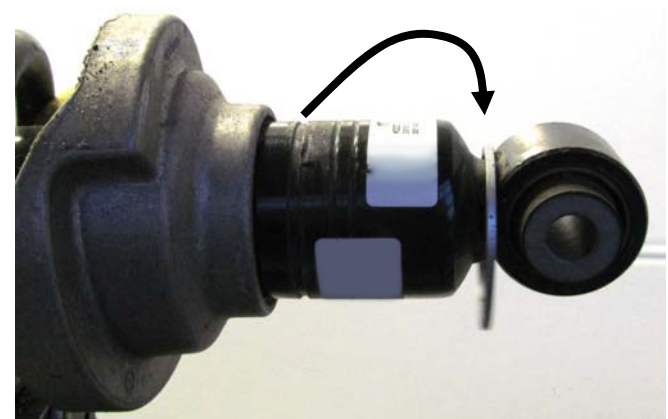
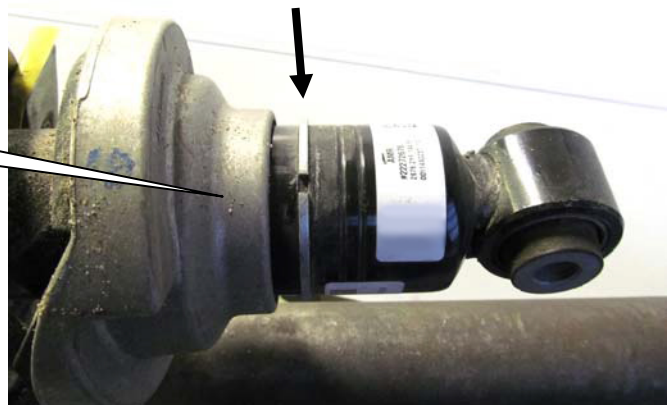
Instruction No.	688 10 0AN		Date	09.04.2021
-----------------	------------	--	------	------------

Rear axle:

Use a GS audited spring spring compressor and compress the spring.



Move the circlip / clamping ring from the upper nut to the lower position.



Installation Instructions

KW automotive

Instruction No.

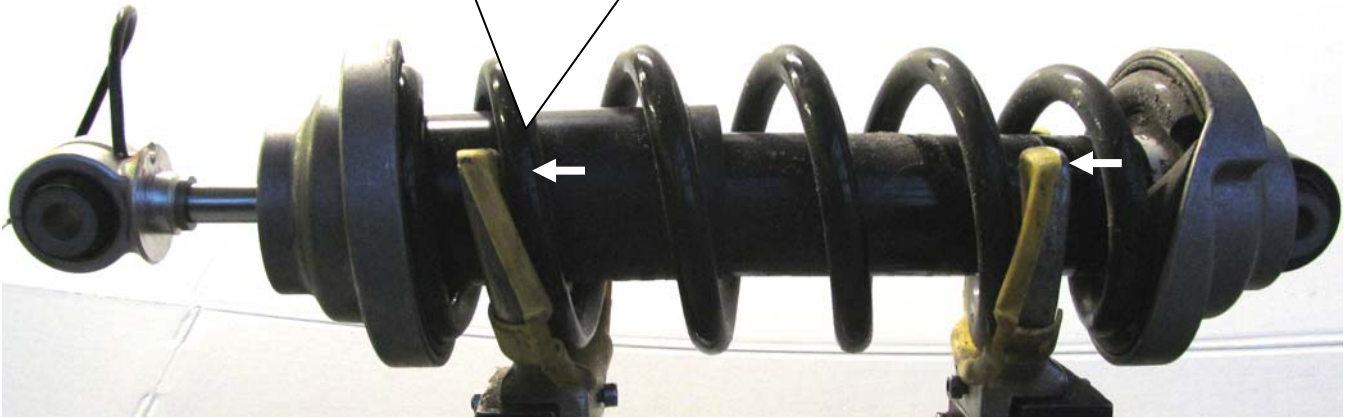
688 10 0AN

Date

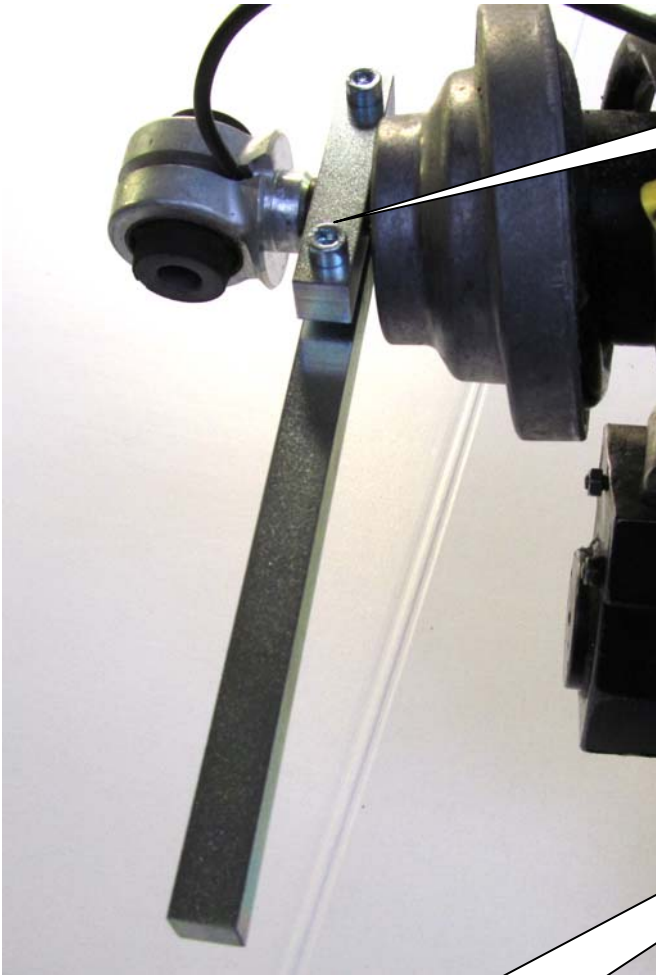
09.04.2021

Rear axle:

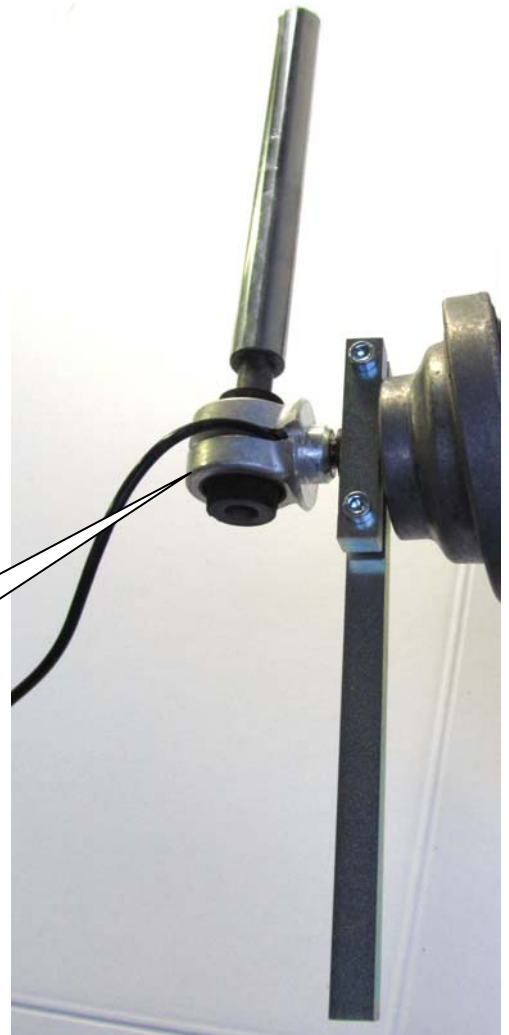
The damper can now be moved in the direction of arrow.



Mount the supplied special tool on the piston rod.



Dismantle the damper eye.



Installation Instructions

KW automotive

Instruction No.

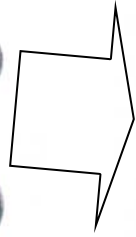
688 10 0AN

Date

09.04.2021

Rear axle:

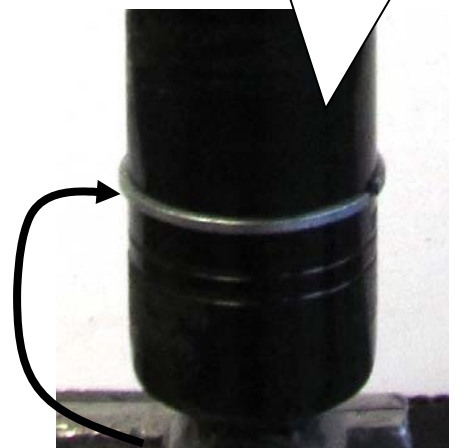
Dismantle all parts of the damper. After the disassembling clean the damper.



Remove the protection cap.



Moved then snap ring / clamping ring to the nut position.



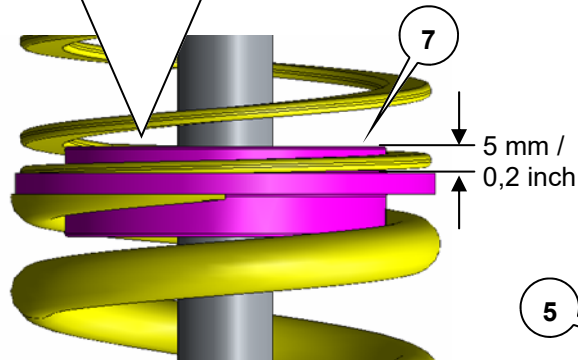
Rear axle:



Install the following part in this order:

1. Aluminium sleeve
2. The threaded sleeve with threaded ring.
3. Adapter ring
4. The standard cover cap
5. Spring 70-70-225*
6. Intermediate ring
7. Insert the bump stop with dust cover OEM supporting washer
- 8.

Mount the intermediate ring with the small collar towards to the helper spring.



Installation Instructions

KW automotive

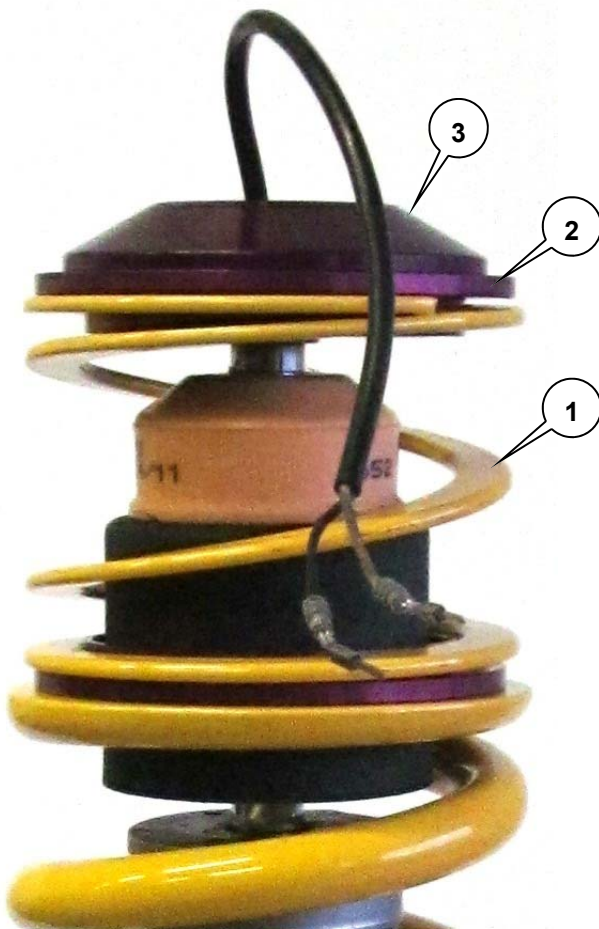
Instruction No.

688 10 0AN

Date

09.04.2021

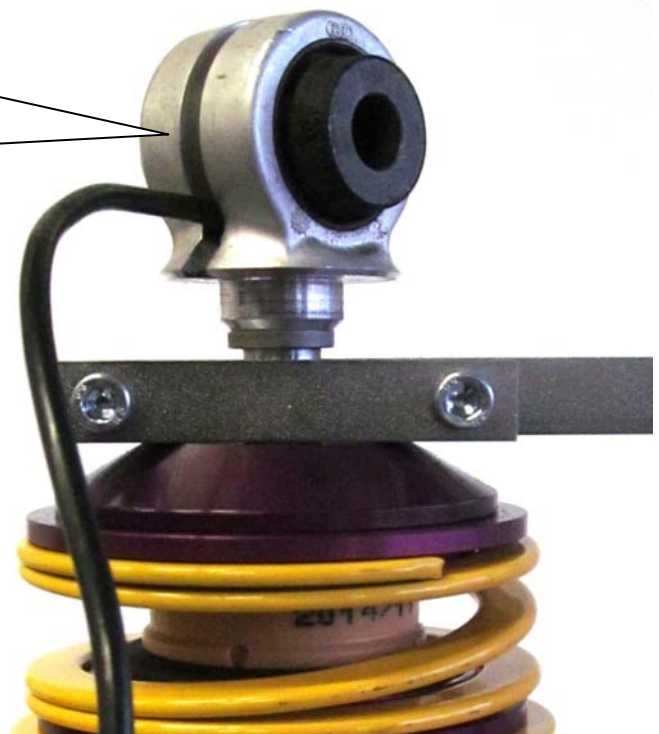
Rear axle:



Install the following part in this order:

1. Helper spring
2. Adapter ring
3. Spring perch

Install the standard damper eye with the supplied special tool. Lock the damper eye with bolt adhesive. **Tightening torque is 35 Nm (26 ft-lb).**



Installation Instructions			KW automotive	
----------------------------------	--	--	----------------------	--

Instruction No.	688 10 0AN		Date	09.04.2021
-----------------	------------	--	------	------------

Rear axle:

Pin the line of the damper again in the plug.
Note the cable color / PIN number!



Please install the strut unit to manufacturers recommended settings regarding tightening torque and fixing specifications.

