



# INSTALLATION INSTRUCTIONS



# *KW automotive*

**685 10 314**

**INSTALLATION INSTRUCTIONS**

**Cancellation kit**

# Installation Instructions

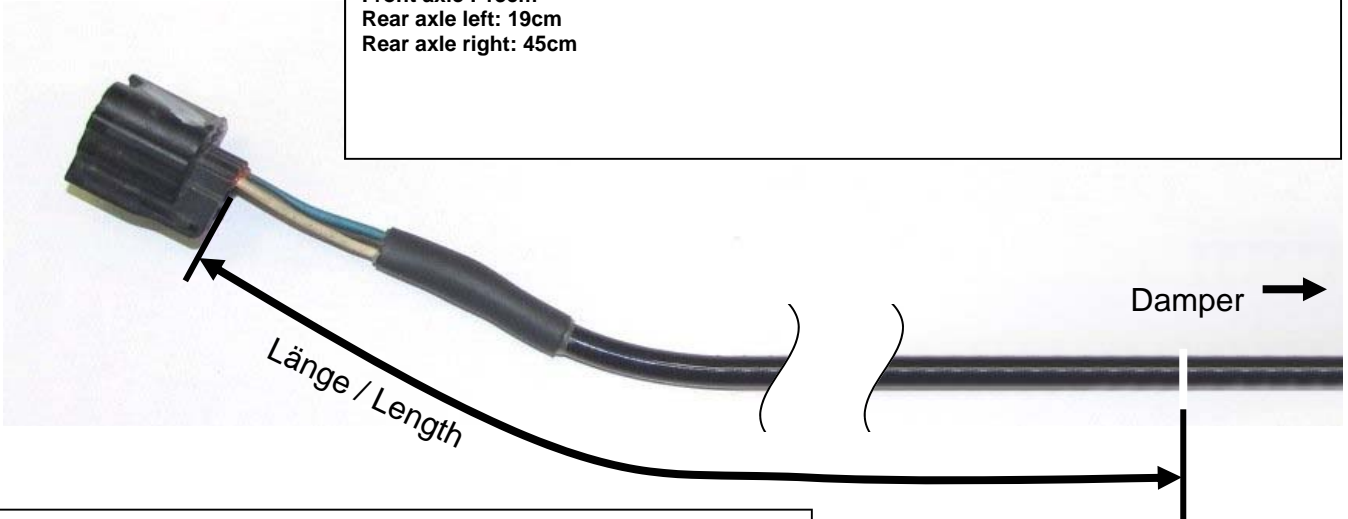
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Instruction No.

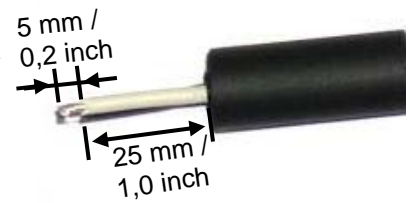
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## Preparation:

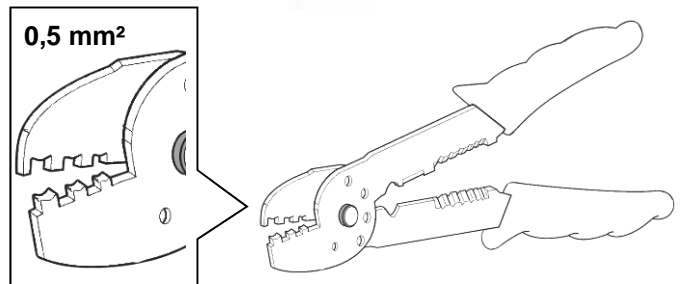
1. Cut off of the standard damper control cable. The following lengths are required.  
**Front axle : 13cm**  
**Rear axle left: 19cm**  
**Rear axle right: 45cm**



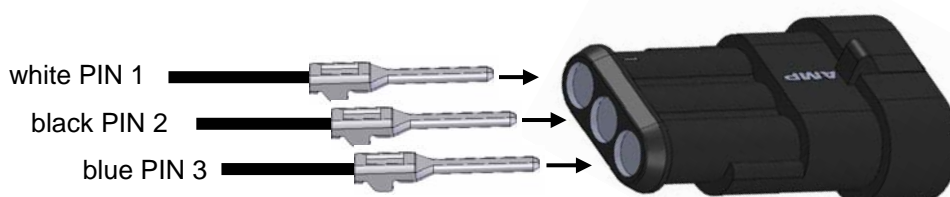
2. Remove 25 mm / 1,0 inch of the cable insulation and 4-5 mm / 0,16 - 0,2 inch of the wire insulation. Insert the lead seal.



3. Install the supplied pin contact with a correct tool.



4. Insert the completed wire into the connector until to the lock.  
Pinposition: **Cable color white = pin 1**  
**Cable color black = pin 2**  
**Cable color blue = pin 3**



## Installation Instructions

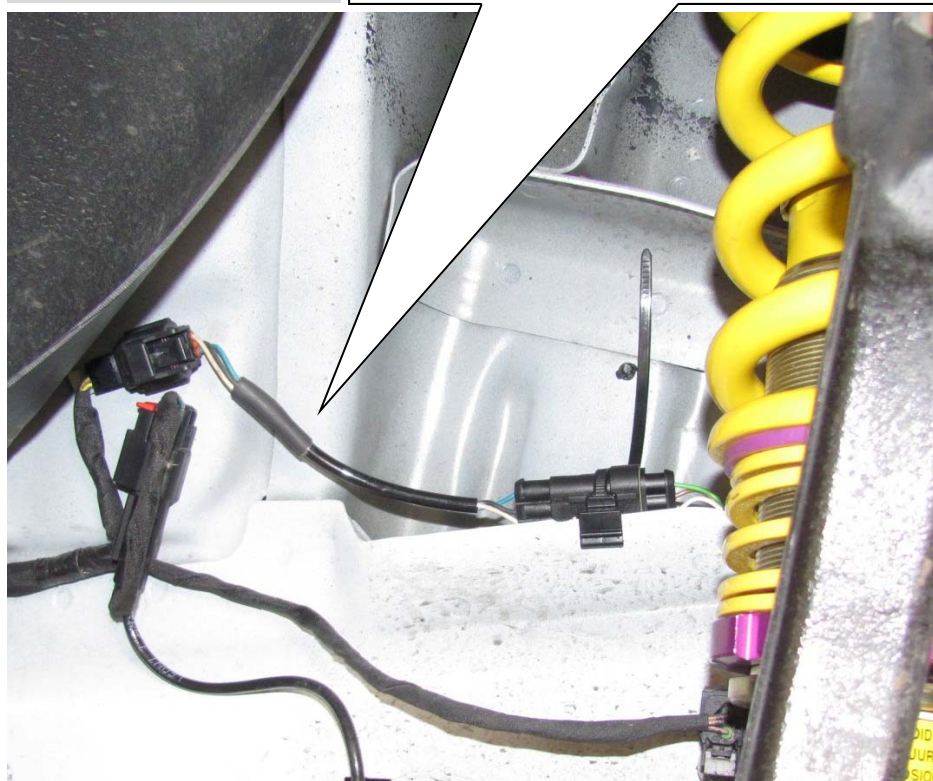
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### Front axle:

Connect the adapte cable on the vehicle harness and on the cancellation kit.



Fix the cancellation kit and the adapter cable with the supplied edge clips on the chassis edge.  
Insert the standard connector into the electronic component connector until it locks.

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**Rear axle:**

Fix the cancellation kit and the adapter cable with the supplied edge clips on the chassis edge.  
Insert the standard connector into the electronic component connector until it locks.

Connect the adapte cable on the vehicle harness and on the cancellation kit.



# INSTALLATION INSTRUCTIONS





## INSTALLATION INSTRUCTIONS

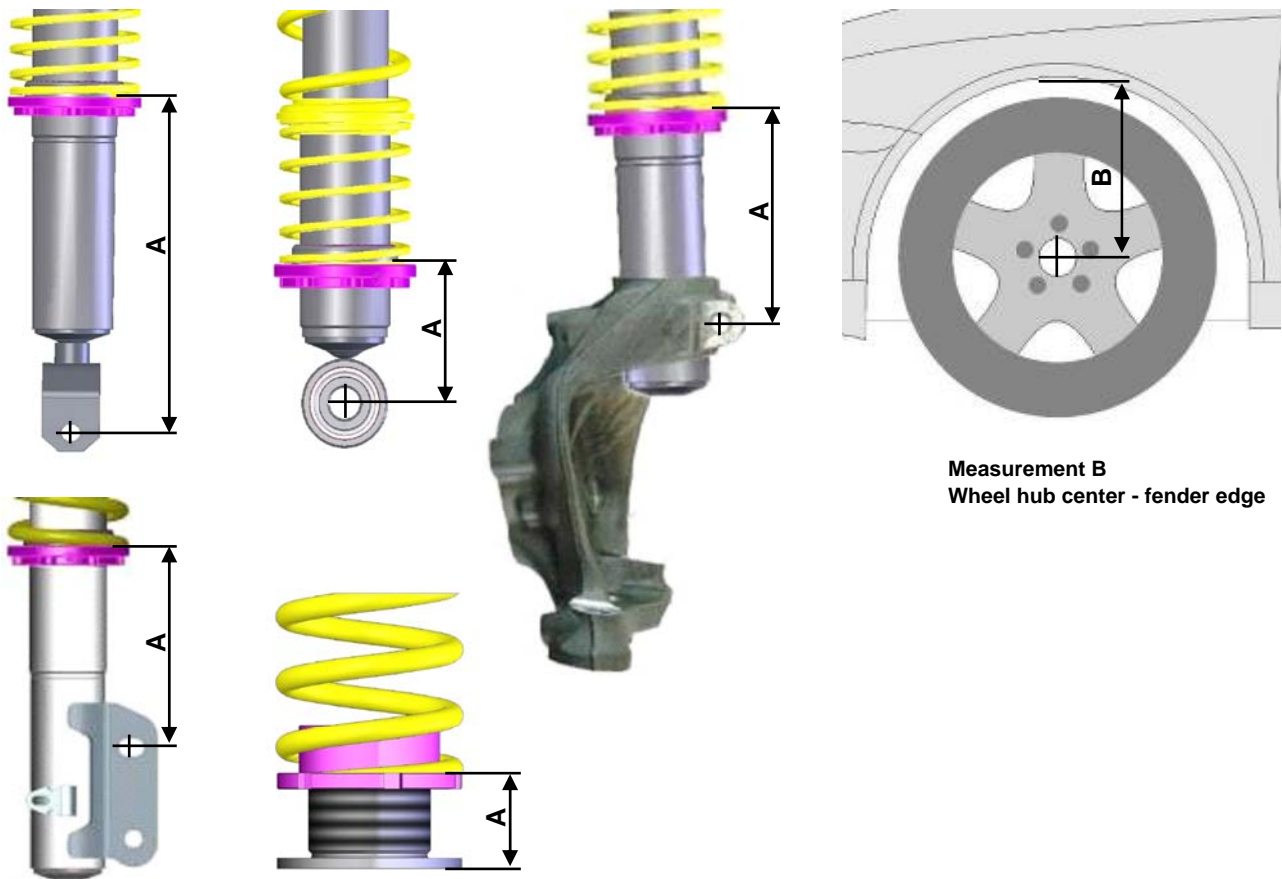
**Before you begin installation,  
please read the following carefully:**

- Ensure that 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.

Technical data	Coilover part number 3A7 28 003			
Vehicle model	Dodge Charger SRT Hellcat Dodge Challenger SRT Hellcat		max. permissible front axle load: 1293 kg	
	front axle		rear axle	
Spring signature	20-60-80 / 100-200*		2703	
Coilover strut / Shock absorber signature	272 1009		272 1108	
Approximate distance measurement A Front axle: Lower fastening screw - spring contact area Rear axle: Seating height adjustment - spring contact area or lower fastening screw - spring contact area	min:	max:	min:	max:
	375 mm / 14,8 inch	390 mm / 15,4 inch	13 mm / 0,51 inch	23 mm / 0,91 inch
Approximate measurement* B in mm / inch: wheel hub center to fender edge	min:		min:	
	365 mm / 14,4 inch		370 mm / 14,6 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 these measurements when using standard fenders.



**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. The suspension regulation (when available) needs to be disabled through an authorized dealer.
8. 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 there 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)**

**Copyright**

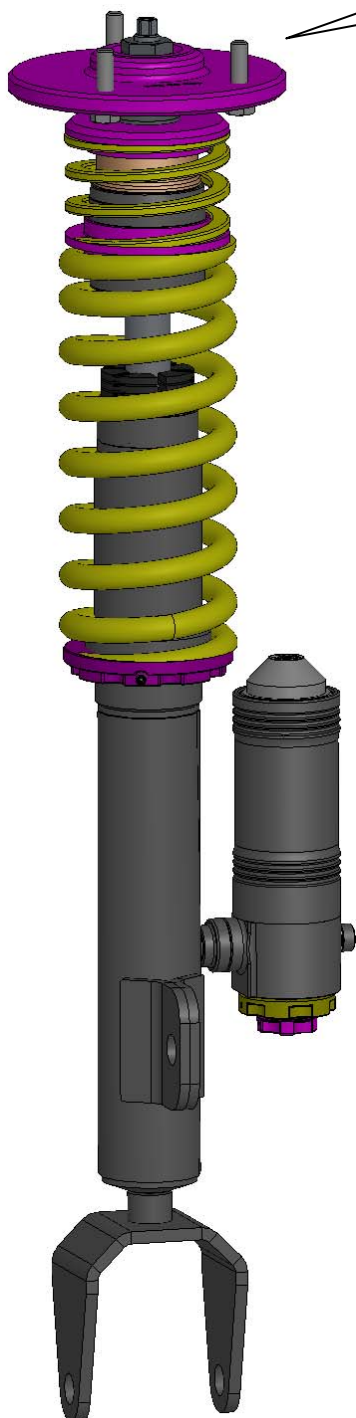
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## General Mounting Specifications:

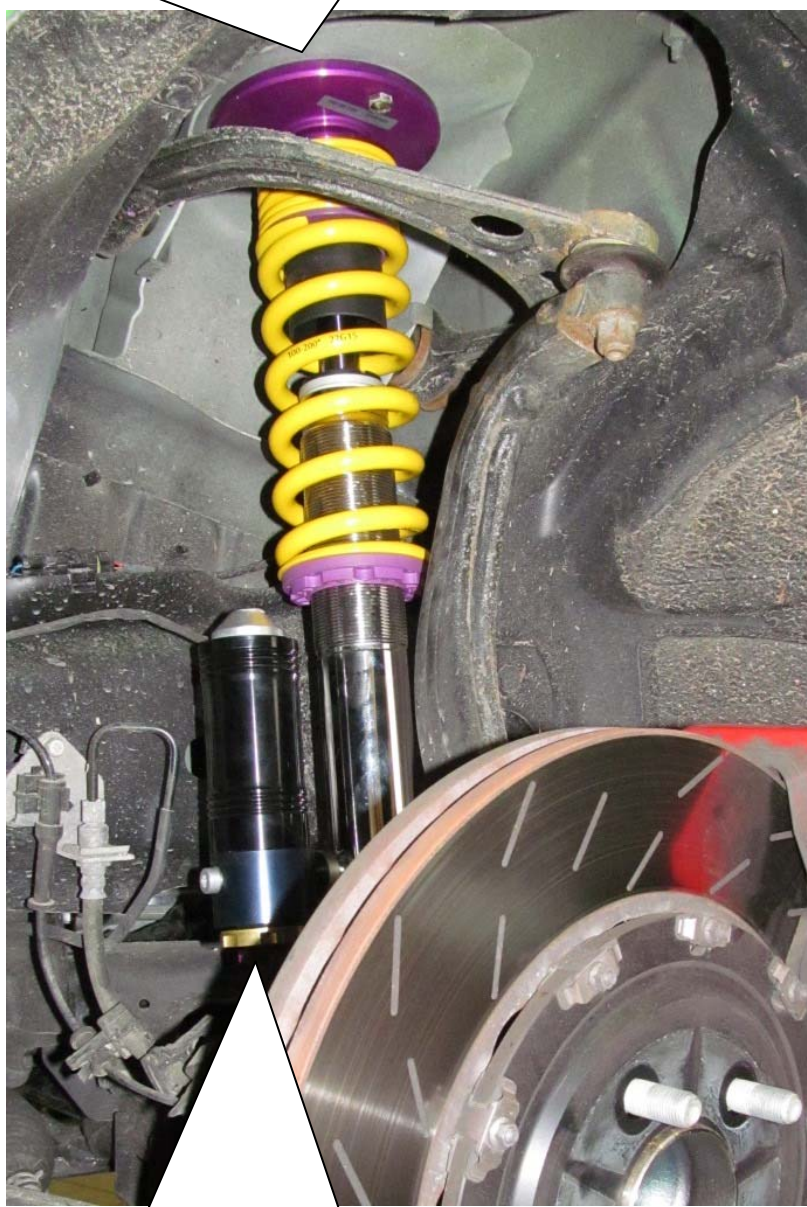
1. We recommend the use of a vehicle hoist or lift when installing the suspension.
  2. **Caution:** If the vehicle is equipped with ride height sensors, they should be removed before removal of struts or dampers, otherwise damage may occur.
  3. The struts should be removed as specified by manufacturer's 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.
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**Front axle:**

Supplied coilover strut with clubsport top mount.



Tightening torque for the top fixing points is 25 Nm (18 ft-lb). The strut unit has to be installed according to manufacturers recommended settings regarding tightening torque and fixing specifications.



On damper versions with separate reservoirs, mount the reservoir facing to the front of the vehicle as shown on the picture.

**Rear axle:**

Supplied coilover strut with top mount.

Tightening torque for the piston rod nut is 25 Nm (18 ft-lb). The damper unit has to be installed according to manufacturers recommended settings regarding tightening torque and fixing specifications.



On damper versions with separate reservoirs, mount the reservoir facing to the rear of the vehicle as shown on the picture.

**Rear axle:**

Mount the rear axle adjustment between spring and chassis. Remove the original spring supporting disc. You have to remove the rear axle adjustment to correct (screw up the threaded ring) the car height.

Use the original spring support at the bottom end of the spring.



# SETUP MANUAL



# KW automotive

## Set Up Manual KW V4

No. 685 79 401

Our 3-way adjustable competition shock absorber is based on the KW twin tube damping system, and features independent bump and rebound adjustment. Depending on the sealing and the adjusting system of the individual kit, our systems may be filled with pressures of 3 to 8 bars, or without any pressure at all.

### Rebound:

The rebound setting can be adjusted at the upper end of the piston rod via an adjustment wheel.

There are 2 different versions regarding the setting of the rebound. In version 1 the adjustment wheel will be put on the upper end of the piston rod. In version 2 the adjustment wheel is already mounted on the piston rod.

In both versions, the adjustment will be done based on closed status (max. hard). The closed status is reached when the adjustment wheel is completely turned to hard (+). ("0" on the adjustable wheel).

The effective adjustment range is 0 – 16 clicks open.

**Never apply force to the adjusting mechanism of the shock absorber. As soon as you reach the end of the adjustment range, you will recognize a certain resistance. Stop turning to avoid damage to the bottom valve.**

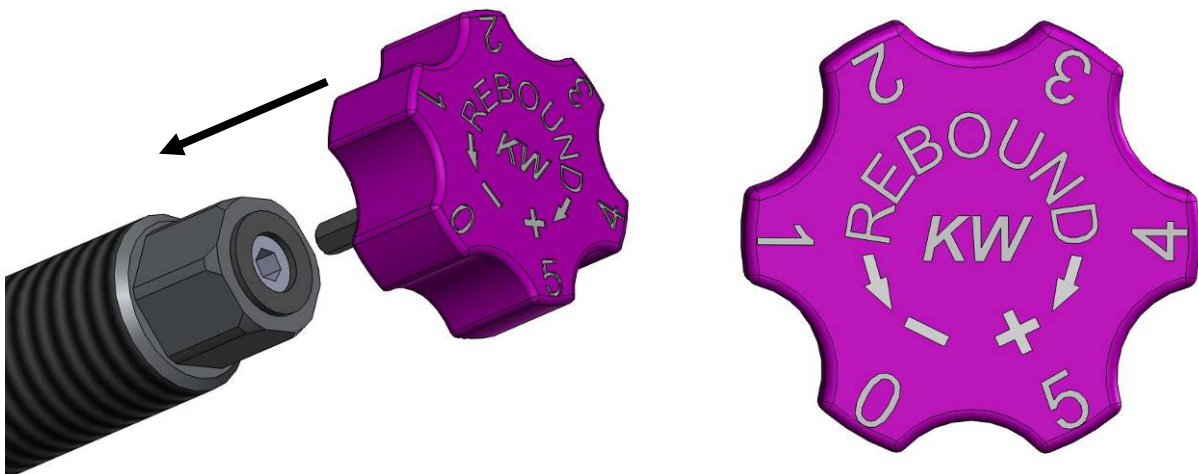
### Impact of the rebound

Little rebound power improve driving comfort during slow driving, but reduce stability and control accuracy while fast driving, especially with appropriate adjustment.

High rebound power improve the handling at the front axle, but possibly reduce the grip. The driving comfort will be extremely limited. In no case you should drive with one axle hard and one axle soft.

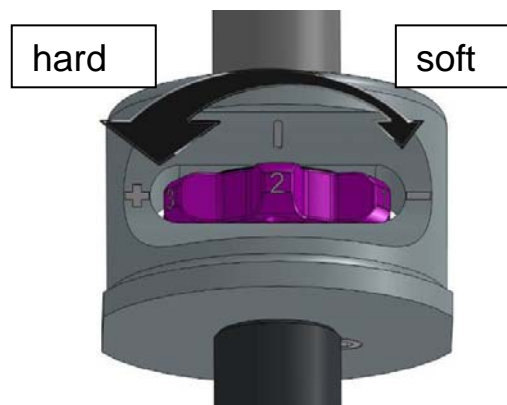
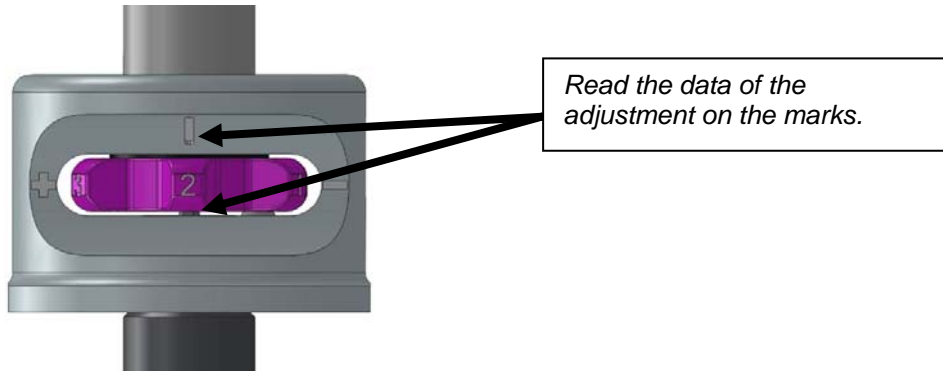
### Version 1 (Adjustment wheel for clipping on):

The adjustment wheel has to be put on the piston rod. With clockwise rotation of the adjustment wheel the rebound damping will become harder. With anti-clockwise rotation the rebound damping will become softer. The click directions are labeled with "+" (harder) and "-" (softer) on the adjustment wheel.



**Version 2 (Integrated adjustability):**

The numbers on the adjustment wheel show current setup and facilitate the setup of the dampers. The click direction, in which the rebound becomes harder respectively softer, is marked on the adjustment header with a "+" (rebound becomes harder) and a "-" (rebound becomes softer). Numeration on the adjustment header is one sided. The numbers of the adjustment wheel can be read on site with marks at the adjustment header. The data of the adjustment wheel can be read from the marks.

**Bump:**

Adjustment of compression damping takes place at the bottom of the damper, also with the support of the adjustment wheel. The adjustment will be done based on the closed valve (max. hard). The closed valve can be reached by turning the adjustment wheel completely to hard (+).

The maximum effective adjustment is      0 – 6 clicks in lowspeed and  
                                                                  0 – 14 clicks in highspeed.

**Influence of low speed compression adjustment**

Compression adjustment has significant influence on handling and driving behaviour.

General rules are:

A harder compression adjustment on the front axle makes the car more precise and more aggressive, whereas a softer adjustment favours a more forgiving steering behaviour.

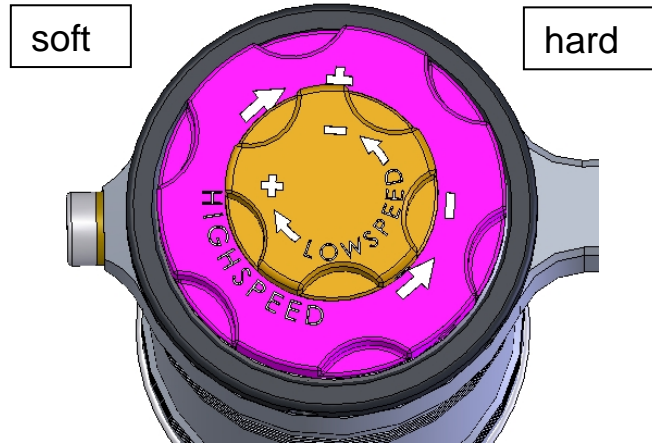
Harder compression adjustment on the rear makes the car more stable on fast direction changes and helps if it has too much tendency to over steer. On the other hand, a softer rear compression makes the rear looser and might improve the handling if the car was too tight or had too much under steer before.

However, too much compression might cause uncomfortable and loud tyre role and/or costs grip.

Due to the digressive characteristic of the high speed section in our compression valve, hard adjustments do barely affect ride comfort on hard kerbs and bumps.



**Never apply force to the adjusting mechanism of the shock absorber. As soon as you reach the end of the adjustment range, you will recognize a certain resistance. Stop turning to avoid damage to the bottom valve.**



**Delivery status**

Our dampers will be delivered always in performance setup. This basic setup was specified for your car at the front and rear axle. In case of reset the dampers into the basic setup, the values of the table are valid.

**Our recommendation performance setup for your car to start with (delivery):**

<b>Front axle</b>	Rebound:	6	Clicks open
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<b>Rear axle</b>	Rebound:	6	Clicks open
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<b>Front axle</b>	Bump low:	1	Clicks open	Bump high:	1	Clicks open
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<b>Rear axle</b>	Bump low:	2	Clicks open	Bump high:	10	Clicks open
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**Our recommendation street setup for your car with:**

<b>Front axle</b>	Rebound:	9	Clicks open
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<b>Rear axle</b>	Rebound:	9	Clicks open
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<b>Front axle</b>	Bump low:	3	Clicks open	Bump high:	8	Clicks open
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<b>Rear axle</b>	Bump low:	6	Clicks open	Bump high:	12	Clicks open
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**Example: Adjusting the basic setup rebound front axle:**

Basic setup rebound is 9 clicks open.

First the rebound needs to be turned clockwise, direction "hard" (+). Afterwards, the adjustment wheel needs to be turned anti-clockwise, direction "soft" (-) until the adjustment wheel clicks 9 times.

The adjustment wheel now shows the number 3.

The single adjustment positions are described in the following chart.

