Service Information

CDC - Continuous Damping Control system

DANGER

Injury hazard
Do not take shock absorbers or their components apart.
High-pressure conditions inside.

DANGER

Malfunctions
These can lead to serious injury
It is not permissible to modify the components or to combine them with other suspension springs.

Correct usage

SACHS CDC shock absorbers may only be installed in vehicles for which they have been authorized.

Only suitable special tools may be used to tighten the attachment nuts on the piston rods. Do not use impact wrenches under any circumstances. It is essential to prevent damage to the piston rod – never use pliers to hold or secure it.

Do not modify the shock absorbers. This can cause additional hazards that the shock absorbers are not designed to handle.

The information contained in this Installation Guide should be carefully observed.

Installation Guide

CDC - Continuous Damping Control

The CDC electronic damping system continuously monitors influences on the vehicle such as road conditions, load conditions, vehicle speed, and driver actions.

The on-board sensor system detects changes.

The electronic control unit (3) uses these data to determine the optimum damping requirements.

The damping force is adjusted within milliseconds via a proportional valve.

The damping forces for each wheel are regulated individually depending on the relative direction of the wheel to the vehicle body.

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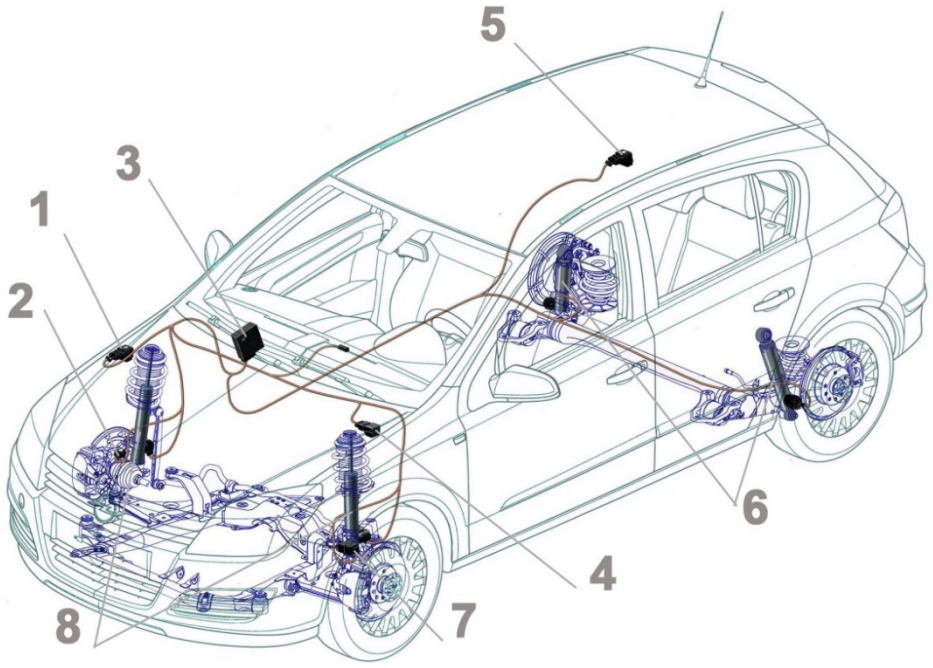

Fig. 1:

1 Body sensor, front right
2 Sensor, suspension strut right (wheel acceleration)
3 CDC control unit
4 Body sensor, front left (vehicle acceleration)
5 Body sensor, rear (vehicle acceleration)
6 CDC shock absorbers, rear
7 Sensor, suspension strut left (wheel acceleration)
8 CDC suspension struts, front

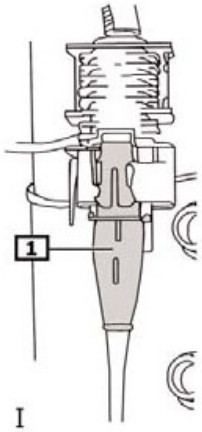

Fig. 2:

1 Plug

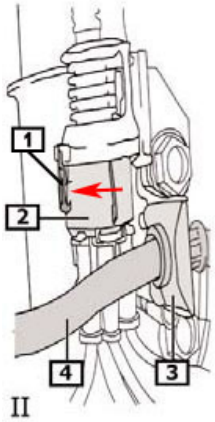

Fig. 3:

1 Primary locking mechanism
2 Secondary locking mechanism
3 Retaining clamp(s)
4 Brake hose

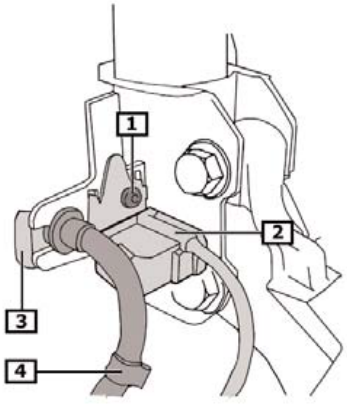

Fig. 4:

1 Screw(s)
2 CDC sensor
3 Retaining clamp(s)
4 Brake hose

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NOTICE

Shock absorbers with the CDC variable damping system cannot be retrofitted.
Always replace shock absorbers in pairs.

Removal: Suspension strut on front axle

1. Jack up vehicle.
2. Remove wheels.
3. **Fig. 2** Vehicle without brake lining wear indicator: Disconnect plug (1).
4. **Fig. 3** Vehicle with brake lining wear indicator: Disconnect plug (2):
   Push primary locking mechanism (1) down, turn secondary locking mechanism (2) in the direction indicated by the arrow, pull out cable plugs.
5. Unclip cable set from suspension strut.
6. **Fig. 4** Remove retaining clamp (3).
7. Detach brake hose (4) from bracket.
8. Remove screw (1).
9. Remove CDC sensor (2) with bracket.
10. Support wheel carrier with jack.
11. **Fig. 5** Unscrew bolt (1).
12. Detach coupling rod (2) from suspension strut.
13. Remove screws (3).
14. Tilt steering knuckle outwards.
15. **Fig. 6** Hold suspension strut securely with a pin wrench. Remove lock ring (2).

NOTICE

Removal destroys the lock ring – it must be replaced.

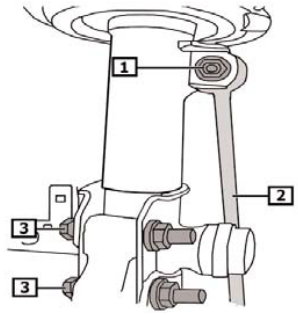

Fig. 5:

1 Bolt
2 Coupling rod
3 Screw(s)

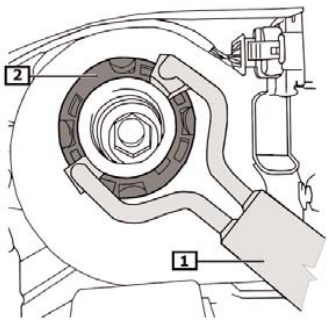

Fig. 6:

1 Pin wrench
2 Lock ring

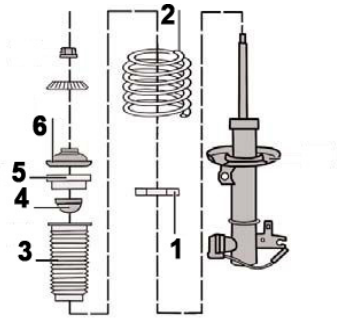

Fig. 7:

1 Rubber washer
2 Spring
3 Dust cap(s)
4 Spring stop
5 Upper spring seat
6 Support bearing

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NOTICE

After fitting the axle with the complete CDC system, do a function check:

- Turn on the ignition.
- **Fig. 9** The IDS+ (1) indicator lamp will go off after 10 seconds.
- The indicator lamp will remain on if there is a fault in the system.
- The CDC system is self-diagnosing, but only for electrical malfunctions.

A diagnostic unit is needed to identify and locate faults in sensors, valves, and the CAN system.

Removal: Suspension spring add-on parts

1. **Fig. 7** Clamp the suspension strut in a suitable holding device and apply spring tensioner.
2. Carefully pretension spring until the upper spring cap can be freely moved.
3. Use special tool to unscrew piston rod bolt.
4. Remove the suspension strut's original add-on parts (1 - 6); they will be reused.

Installation: CDC suspension strut

1. Clamp suspension strut in a suitable holding device.
2. The suspension struts come with a plug connection and new piston rod nut.
3. Unscrew piston rod nut.
4. **Fig. 7** Position original suspension spring with add-on parts (1 - 6).

Fig. 8:

1 Variable proportional valve

2 Plug connection

Fig. 9:

1 Indicator lamp

- Use special tool to tighten piston rod nut (60 Nm).
- To install the CDC suspension strut, follow the same steps as for removal, but in the reverse order.

Removal: CDC shock absorber on rear axle

1. Remove wheels.
2. Support rear axle with jack.
3. **Fig. 8** Unplug the proportional valve's cable set from the sensor system.
4. Remove upper and lower shock absorber attachments.
5. Remove shock absorber.

Installation: CDC damper on rear axle

1. First tighten the upper CDC shock absorber attachment (90 Nm), then screw the lower attachment on only lightly.
2. Connect the proportional valve's cable set to the sensor system.
3. **Fig. 9** Do a function check as described above for the front axle.
4. Lower vehicle and remove jack.
5. Tighten wheels (110 Nm).

NOTICE

In order to prevent trapped stresses in the shock absorbers piston rod, tighten the lower attachment screws (110 Nm) only after the vehicle is standing on its wheels.

Finally, check the wheel geometry and adjust if needed.

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