

eurotechnik autoteile

Technical Information Manual

KYB
World Class Suspension

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Common Fitting Tips

KYB, the world's largest supplier of shock absorbers to vehicle manufacturers, shares some technical tips and advice on handling their products to maximize their quality and function.

The first chapter of this short manual teaches you the proper way to fit SHOCK ABSORBERS and COIL SPRINGS.

Shock Absorbers

1. Don't hold the piston rod with any tools (mole grips etc), as this will damage the surface of the piston rod and cause the oil seals to leak.
2. Don't put any water, oil or other liquid inside the strut housing as this may damage the cartridge. KYB cartridges are designed to be used without liquid at both high and low temperatures.
3. Don't use an impact wrench to tighten a nut onto a piston rod. This can make the torque higher than the recommended limit.
4. Use any fitting parts (nuts, spacers, washers etc) supplied with the KYB shock absorber, rather than the OE parts, as sometimes they may be a different size.
5. If the shock absorber being replaced is not the original one, but an aftermarket part from another brand, any ancillary parts (dust cover, bump stop, bushing etc) can not be re-used for KYB shock absorbers. You may need to order

OE parts.

6. Shock absorbers should always be fitted in pairs.
7. Always prime shock absorbers before fitting – fully extend and compress the unit 3 times to remove air pockets inside the shock.
8. Always ensure the vehicle is back on all 4 wheels before tightening upper mountings.





6. Worn or broken spring can damage shock absorbers and other suspension components, KYB recommends replacing shock absorbers at the same time as springs.

Why change Coil springs?

- ◆ To return the vehicle to the correct ride height
- ◆ To maintain tyre contact with the road surface
- ◆ To improve road handling
- ◆ To improve wheel alignment
- ◆ To save money by increasing shock absorber life

When should Coil springs be changed?

- ◆ When broken – always replace in axle pairs
- ◆ When fatigued (sagging) – always replace in axle pairs
- ◆ Shock absorbers should also be replaced at the same time – always replace in axle pairs

Coil Springs

1. Use an appropriate spring compressor tool when replacing coil springs. Coil springs should always be fitted in pairs, to ensure an even ride height and to ensure the vehicle doesn't pull to one side when braking.
2. Take care when compressing springs, they could cause serious injury if they come loose during installation.
3. Check spring seats, and top mountings for damage before replacing broken or worn springs.
4. After installation, check that the springs are seated correctly.
5. Check wheel alignment after installation.

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Linear

Side load

Miniblock
Spring



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Common Failure Reasons

Shock absorber failure can be grouped into 3 areas:
OIL LEAKAGE, PHYSICAL DEFECT OR NOISE.

Oil Leakage

Normally oil leakage occurs as a result of damaged oil seal or bushing. Any damage to the piston rod can affect the oil seal.



Cause and Repair from left to right:

1. **Chrome peeled off on piston rod** - Damage due to worn out parts (Dust cover, bump rubber). Replace those parts, with new parts, and replace new KYB shock absorber.
2. **Damage on surface of piston rod** - Damage by tools (plier etc) during installation of Shock Absorber). Do not hold piston rod by any tools. Replace new KYB shock absorber.
3. **Damage on one side of surface of piston rod** - Unsatisfactory installation of shock absorber causes irregularity. Correct installation with the right instruction or suitable tools.

Noise

Noise can be present as either a rattle or a swish.



Cause and Repair from left to right:

1. **Circlip on a piston rod broken** - Damage due to worn out parts (Dust cover, bump rubber). Replace those parts, with new parts, and replace new KYB shock absorber.
2. **Defect of a shock absorber or parts** - Damage by tools (plier etc) during installation of Shock Absorber). Do not hold piston rod by any tools. Replace new KYB shock absorber.
3. **Noise from inside the shock absorber** - Unsatisfactory installation of shock absorber causes irregularity. Correct installation with the right instruction or suitable tools.

Physical Defect

Physical defects are bent or broken shock absorbers.



point that will cause the spring to break. The break often occurs at the top or bottom of the spring because of the higher levels of stress.



Cause and Repair from left to right:

1. **Defect on cartridge outer shell** - Pressure by frozen liquid put in the strut. Do not put any liquid in the strut housing.
2. **Thread broken off at the top of piston rod** - Tightened with impact wrench. Do not use any power tools.
3. **Thread of eye-ring broken or bent piston rod** - Wrong Installation of shock absorbers and equivalent parts. Confirm KYB Instruction Sheet and Car Manufacturer Manual, and Replace Wrong parts or procedure.



Coil spring failure is mainly caused by corrosion. If the epoxy power coating on the spring is damaged during installation, by stone chipping or friction caused by metal to metal contact with spring seats, exposed metal will start to rust (this can be very rapid in cold / wet climates).

Because of the high stress levels involved during compression and recoil, any rust will be a weak

