



Getting the Low Down on Coilovers

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As standard the suspension on the BMW 2002 was pretty good for its day. McPherson struts on the front and independent swinging arms on the rear with anti roll bars front and rear. This was at a time when Fords were still fitting cart springs to the rear of their cars! However things have moved on and the ride and road holding of the 02 can be improved with aftermarket suspension. How you go about it depends on what you intend to use the car for. You can stiffen and lower the suspension considerably so that it will perform superbly on a tarmac track, but it will be unbearable on the road.

Any fast road suspension will have to be a compromise between improved performance and a comfortable ride - especially on our pot holed roads!. It's best to incorporate as much adjustability as possible and then tweak the system until you get as close to what you want as possible.

The GHA coilover suspension from GAZ incorporates damper adjustment with ride height adjustment. It is available in race or 'street' versions and the 'street' version has springs that are stiffer than the standard 02 ones but not as firm as the GAZ race versions and the damper valving is more suitable for road use too.

My car already had aftermarket suspension on it, but it was an extra stiff 'boy-racer' type that made the car skip over bumps rather than absorbing them.

It also lowered the car by 50mm, which is far too much for road use, and the front strut damper-rate adjuster pins fouled the bonnet. This suspension wasn't ride height adjustable so I had addressed these problems by fitting genuine BMW spacers (originally used by BMW to compensate for variations in spring length, such was production quality back in the Seventies!) This raised the car by approx 20mm, making the final drop was just 30mm.

The car also had a tail-down attitude that was all wrong. The purpose of fitting the GAZ suspension was to rectify these problems while improving on the original set up... and this is how we did it...





First raise the front end and remove the road wheel...



Disconnect the brake hose bracket and caliper from the strut and tie it out of the way by fixing the caliper on to the track rod with a length of wire.



Remove the split pin and hub nut and remove the hub complete with brake disc



Remove brake back plate



Remove the top mount securing bolts



Fit spring compressors and compress the spring



Remove central nut from strut to release the top mount



Disconnect strut lower bolts after first removing the locking wire (if present)



Pull the strut outward at the bottom and down to remove



Carefully remove the spring compressors



Using the height adjuster collars on the new coilover, set the coil springs to the lowest setting and secure the top mount, tightening the nut securely with an air gun



Now's a good time to check the condition of the suspension mounting position on the inner wings. This one still has the original paint showing after 37 years!



Install the coilover unit...



... lining up the top mount bolts with the holes in the inner wing



Fit washers and Nylock locking bolts



Refit bottom bolts



... and secure with stainless steel locking wire. The lock-wire pliers grip the two ends of the wire; the jaws are locked and the knob is pulled to spin the pliers and twist the two ends tightly together



Refit the backing plate and hub (we fitted new bearings while it was off) and adjust the wheel bearing. Refit the caliper and hose bracket



Repeat for the other side



Adjust the ride height to approximately the mid way position as a starting point



Lower the front wheels to the ground...



... and start work on the back by unfastening the damper lower bolts



Raise the rear wheels and remove them



Remove the rear springs



and unbolt the dampers from the turrets inside the boot.



Remove the rubber mounting collar from the hole in the turret top - the GAZ unit come with new rubbers



Fit the new rubbers and install the GAZ coilovers into the turrets and secure...



...holding the centre rod steady while turning the securing nut



A rear strut brace is recommended to reinforce the rear turrets when coilover suspension is used



Use a trolley jack to raise the rear suspension until the coilover's bottom mount can be lined up with the mounting bolt



Fit the bottom end of the coilovers on to the bolt using the spacers supplied and fit the securing nut.



Adjust the ride height approximately



Fit the road wheels and lower the rear wheels to the ground



Adjust the ride height to give a very slightly nose down attitude. Check for clearance around the wheel arches



Check side to side ride height and adjust as required. Test drive and check for knocking or scraping. Adjust as required.



Have the suspension geometry checked and adjusted by laser alignment