



Vehicle Handling Solutions

Fitting Instructions for MGTF VHS Damper Kit (issue 11)

WARNING: THESE DAMPERS ARE HIGHLY PRESSURISED. DO NOT ATTEMPT TO DISMANTLE.

Please take time to read and fully understand these instructions before proceeding with fitting. If you are unsure of your ability or lack the equipment necessary to carry out the fitting please take your car to a competent mechanic. If you have any questions after reading the instructions you can contact VHS via our web site, www.vehiclehandlingsolutions.com . We would be interested in your feedback or how we may be of service.

Kit contents: - Front damper × 2 (24-335393), Rear damper × 2 (24-335309), spring aid and plate washer × 4, dust cover and collar × 4, dust cover spacing washer × 4. Nyloc top mount nut × 4.

Tools and equipment required: -

- 1 A firm level surface upon which to work.
- 2 Trolley jack and stands or use a wheel free vehicle lift if available.
- 3 Torque wrench with a capacity of 100 Nm (min)
- 4 Spring compressor.
- 5 Sockets and spanners in the following A/F sizes, 8, 10, 13, 14, 15, and 19 mm.
- 6 Allen key 5mm.

The following part numbers, stamped on the original dampers below the lower spring seat will identify your suspension type: -

	Standard	Sport
Front	RND 000270	RND 000700
Rear	RPD 000251	RPD 000261

For optimum comfort we recommend your vehicle should be set at standard ride height.

Front and rear Dampers: -	Damper lower fixing to upper wishbone	100 Nm
	Damper rod lock nut	25 Nm
	Damper top mount nut	45 Nm
	Rear anti roll bar to link	45 Nm
	Road wheel nuts	70 Nm

Please refer to the handbook for torques related to any other original equipment fixings removed during the installation of this kit.

Take sensible precautions when working; never work under the car when supported only by a jack.

Front

Removal

With the car on a flat level surface, using a suitable jack lift the car up and place on axle stands. Ensure the car is supported evenly and is stable. Remove all road wheels.



Open the bonnet and remove the top mount nuts and washers (fig 1) from the dampers noting the washers are dished side up. To access the left hand damper top, undo the fuse box and move to one side.

Remove the lower fixing to the suspension, upper arm (fig 2) and withdraw the damper assembly from inside the wheel arch.

Move fuse box to one side to access top mount fixing on left hand side.

Note the orientation of the damper top location rubbers (two off for each damper, concave faces towards each other) and spring seat location rubber. These parts will be stuck to the damper top or in the sub frame, recover as necessary.

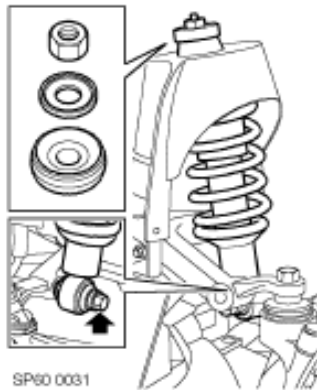


Fig 1

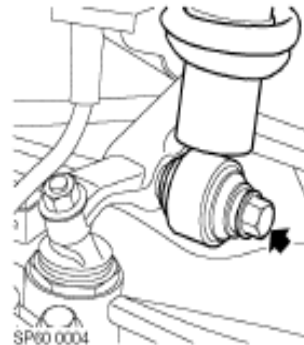


Fig 2

Using an appropriate spring compressor, compress the spring and remove the damper rod lock nut. Disassemble the unit noting the order and orientation of the parts (fig 3).

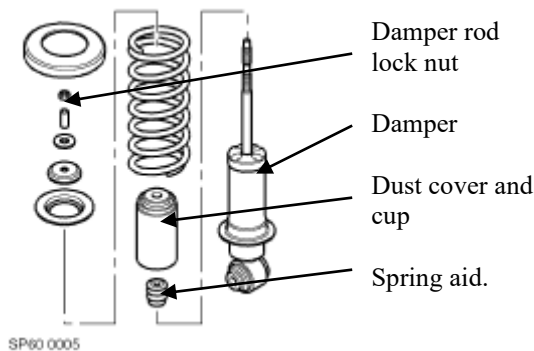


Fig 3.

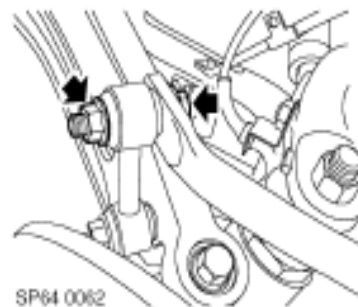


Fig 4

Re-assembly

Your new VHS developed damper has alternative lower spring seat positions by means of which alternative vehicle ride heights are achievable. As delivered the spring seat is in the highest position and this will result in all vehicles being at standard ride height even if your vehicle previously had sport suspension fitted. This ride height will give the most comfortable ride quality.

If you wish to alter the ride height of the vehicle you can do so as follows.

Slide the lower spring seat up the damper body until the spring seat locating wire ring clip can be seen fitted into the upper of three grooves in the damper body. The grooves are positioned such that moving the seat location wire clip to the next lower groove will lower the ride height of the vehicle by approximately 10mm. Therefore, to achieve the ride height of a *TF* sport, fit the seat retaining wire clip into the second groove down. When moving the wire clip to a new groove please ensure that the clip fits down fully into its groove and that the seat counter-bore fits over the clip easily.

With the seat in the desired position slide the new spring aid over and well down the damper rod, tapered end downwards, followed by the spring aid backing washer which must also slide well down the damper rod and must not be caught on the shoulder near the top of the rod. Next, put the spring in place followed by the dust cover, 14mm diameter washer and then the top spring seat. Now use the spring compressor to preload the spring before fitting the spring seat retainer, spacer washer, spacer tube and damper rod nut (torque to 25Nm) before carefully releasing the spring compressor.

Note: - The spring compressor is only necessary for the front units. There is sufficient length of thread on the rear units to unload the spring safely.

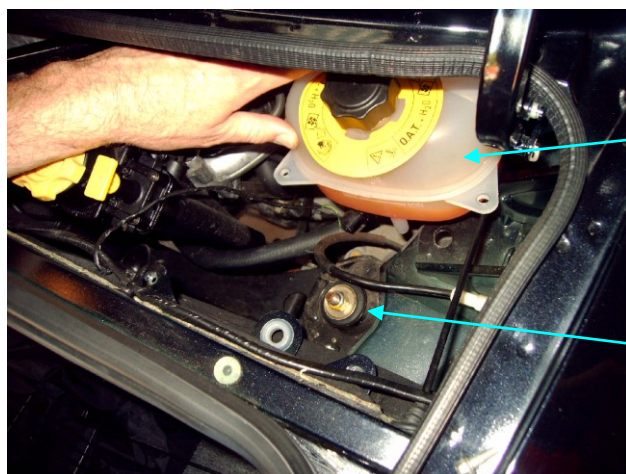
Refit the rubber spring seat isolator and one of the damper top locating rubbers after which the assembly can be refitted to the vehicle in the reverse order as removal but observing the following points: -

The damper top fixing nut should be tightened to 45Nm and the ball joint spigot must be engaged fully into the counter-bore of the top arm before fitting the lower fixing bolt (torque to 100Nm). When refitting the road wheels, torque nuts to 70Nm.

Rear

Removal

Open the boot and remove the engine access grill. Release and move to one side the coolant header tank (right side) and the engine ECU (left side). Remove the damper top nuts and washers.



Release the coolant header tank (2 fixings) and move to one side.

Moving the header tank over allows access to the top mount fixing. Repeat on the left hand side for the engine ECU

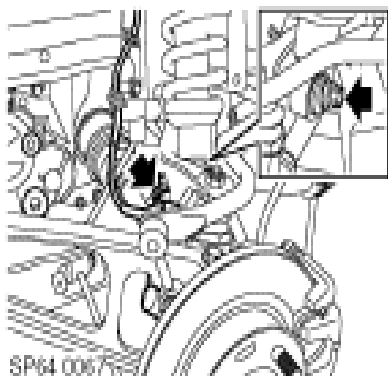


Fig 5

Note: - The peg on top of the rear unit must be fitted, facing to the rear. When re-assembling align the lower damper bush with the peg.

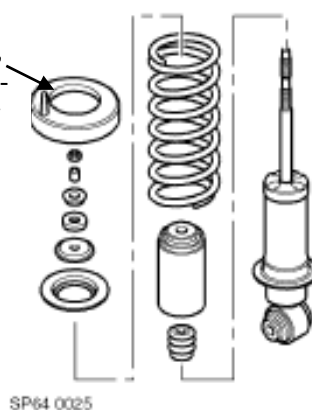


Fig 6

Remove the anti roll bar fixing (fig 4) and swing the roll bar up. Remove the damper lower fixings (fig 5) and withdraw the damper assemblies.

With the anti roll bar raised the damper assembly can be removed by passing it down behind the hub until the top is visible in the wheel arch. Then lift the unit out through the arch, passing it over the hub.

Note: - Some early cars have a 90mm x 5mm spacer ring fitted between the top of the rear spring and the spring retaining plate. Do not use this spacer with the Bilstein units.

The kit replaces the damper, spring aid, dust cover and cup. Disassemble the unit as before (making careful note of the orientation of the parts and the order in which they are removed fig 6) and rebuild using the kit components.

Re-assembly

If you wish to alter the ride height of the vehicle follow the instructions in the front damper section. It is important that both front and rear suspensions are set at the same height i.e.: - All the units must be set to top, middle or bottom, height adjustment positions, as a set, to ensure the correct pitch attitude of the vehicle.

Rebuild the unit and refit to the vehicle is the reverse of the removal process using the fixing torques quoted at the top of page 1.



Important Notes

After carrying out work of this type on your vehicle it is strongly recommended that you have the wheel alignment checked. If you have used the facility of this kit to change the ride height of your vehicle it is essential that the wheel alignment is adjusted, as it may be outside the manufacturers recommended tolerance and unusual tyre wear will result.

We have noticed that the original dampers have suffered from surface corrosion of the exposed damper rod thread, ABOVE the securing nut (inside the car, front and rear). This can make them more difficult to remove.

As a precaution for the future (should you ever wish to remove the VHS Ltd Bilstein dampers), we recommend that 'Waxoyl' or similar corrosion protection is applied to this thread AFTER completion of the fitting process.

It is vital that the front and rear dampers are correctly identified before fitting to your vehicle.

24-335393 is a **FRONT** unit.

24-335309 is a **REAR** unit.

The photograph below shows the correct order and orientation of each component. If in doubt, please contact us to check via e mail or telephone.

Contact details can be found at www.vehiclehandlingsolutions.com .



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