MGB EVOLUTION 3

FITTING INSTRUCTIONS

Please read these instructions carefully prior to installation, referring to your parts list.

Before Fitting:
We strongly advise when reusing any components that you carry out a full inspection to ensure they are fit for further use taking particular care to check the integrity of the cross member. The car should be on a smooth hard level surface, with handbrake on and the front of the vehicle securely supported with axle stands positioned appropriately under the chassis rails. Safe workshop practice should be followed.

Fitment of the MGB Evolution 3 front suspension will exaggerate any inadequacies present in the rear suspension. To this end we recommend that the rear leaf springs, bushes and spring pads are in good order.

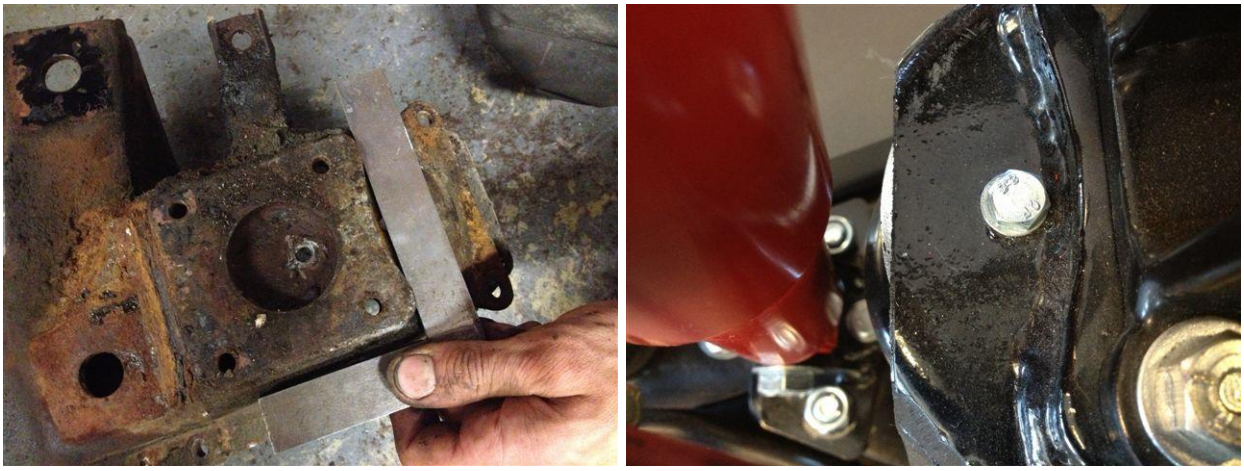
If lever arm dampers are fitted they must be in A1 working order. It is preferable that telescopic dampers are fitted on the rear of the vehicle to match those fitted to the front.

The fitment of a Panhard Rod to the rear axle will enable the rear end of the car to 'match' the EVO 3 Front End.

Recommended Additional items for EVO 3 Installation

4 x AAA1330	Wishbone Pivot Washers
8 x ACB5255	Pivot Screws
4 x GHF223	Wishbone Pivot Nyloc Nut
4 x GHF202	Wishbone Pivot Plain Nut
8 x GHF333	Spring Washers
4 x BTB410	Steering Arm Bolts
2 x BTC114	Lock Tabs for steering arms
4 x 17H7990	Pad Retaining Clips
4 x PS610241	Split Pins
2 x GHK1005	Wheel Bearings

Cross member Preparation:
In order to provide clearance for the telescopic damper the front cross member bump stop mounting should be removed. Measure 25mm from the top damper mount and mark (using a steel rule for convenience). Cut straight down, deburr the edges, radius the corners painting the bare steel to provide rust protection.



Cross member preparation

Fitting the Bump Stop Pedestal:

Remove the original spring centre and clean the top and underside areas of the cross member, treating with rust prevention as necessary. Using the contents of Packs F 1, 2, 3 fit the bump stop.

NB: When fitting new springs some settlement will occur; please note the angle of the lower wishbones relative to the cross member and the wheel centre to wheel-arch height of the car before fitting the MGB Evolution 3 front suspension kit. Spring platforms have been included in the kit to account for spring settlement and to adjust ride height when fitting lowered springs. If required, these should be fitted between the bump stop and the sub frame. For more information refer to the adjustment note below.

Fitting the Bump Stop Pedestal

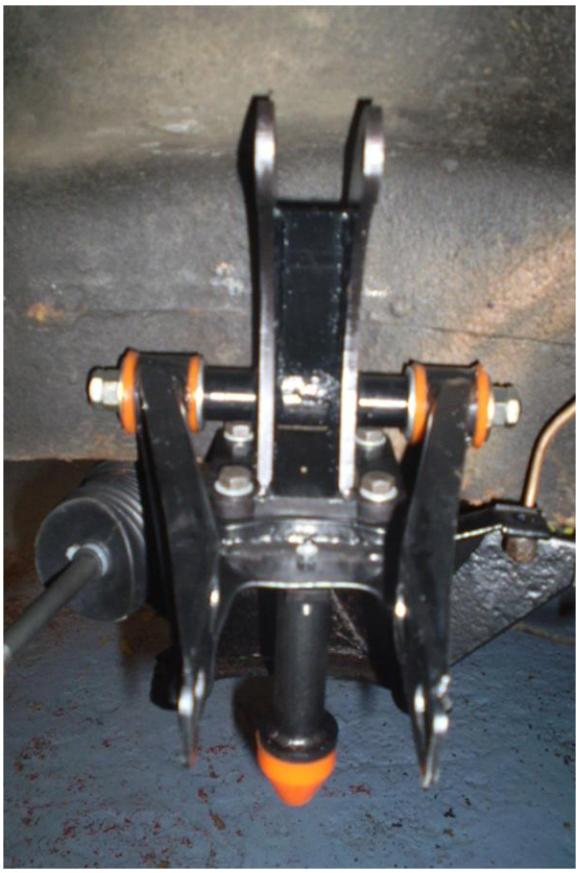
Assembling the Upper Wishbone Arms:

Poly bushes are fitted to the upper wishbone arms (E1). From pack E4 locate the two 34 mm OD washers, place on each side of the shaft, grease (from pack A1) the inside of the poly bushes and the shaft push the upper wishbone arms onto the upper damper mount shafts, securing with the two 30 OD washers with 2 off each side plain nuts. When tightening some deformation of the bush may occur on the outboard bushes but note this should be kept to a minimum.

Assembling the upper wishbone arms

Mounting the Top Mount to the Cross Member:

Having assembled the upper wishbone arms to the Top Mount (D) fit the assembly to the sub frame, new 1”x3/8 bolts with the new M10 lock washers (D1). Before securing the Top Mount (D) the bracket should be aligned carefully with the axle (the holes in the bracket are enlarged slightly to aid alignment). The studs and lock washers should only be torqued to 43 lbs ft or 60 Nm once satisfied with the alignment of the bracket.



Assembling the Lower Wishbone & Spring Pan:
Using packs A1 & A2 fit the polyurethane bushes to the lower arms using a small amount of silicon grease (in pack A1) fit crush tubes. Next fit the lower arms to the lower wishbone pivot (not supplied) noting that the front wishbone arms are handed. Look at the anti roll bar holes with the reinforcing pieces, they are rhomboid shaped. The shorter length of the rhomboid goes to the top. The rears have no reinforcing and are not handed. If suitable reuse and locate your old outer pivot washers against the outboard bushes and secure loosely with four ½" thin plain nuts supplied from pack A4.

Lower Spring pan and wishbone assembly

NB:

The Wishbone pivot has been removed from the subframe to aid assembly

Using fitting packs A3 & A4 loosely fit the spring pan to the lower wishbone arms using three M8 sets, M8 washers and M8 nyloc nuts on each assembly noting that the (bolt heads and washers should be secured to the outside of the assembly). Using the contents of pack B5 locate the Lower Ball Joint Mount (black finish) to the Lower Wishbone assembly.

Using the nuts and bolts marked for assembly only mount the black coloured Lower Ball Joint Mount (LBJM) to the lower wishbone assembly, with the flat surface uppermost. The LBJM trunnions fit into the holes in the lower wishbone arms, secure these with one large washer either side of the arms and plane M10 X 20mm bolts from pack B5.

Using fitting pack C1, fit the lower damper bracket to the top of the spring pan; locate the M8 bolt and plain nut at the rear hole into the spring pan, and secure finger tight. Locate the two M10x20 sets through the bottom of spring pan and into the lower damper bracket and tighten the nyloc nuts on top of the assembly to 40 Nm.

Nip up the (assembly only) M10 bolts in the trunnions and re-fit your anti-roll bar links. Now tighten up the spring pan to lower wishbone bolts, **turn by turn** ensuring that the LBJM remains on the centre line and is not skewed to one side. When this has been achieved replace the plain M10 bolts from the lower trunnions with the patch locked M10s, the 30 mm dia washers and the M10 internal tooth lock washer. Tighten each in turn to a final torque setting of 60 Nm.

Fitting the springs:

If at this point you have been assembling the cross member away from the car, re-fit the cross member assembly to the car using new mounting pads* and nyloc 1/2" nuts **before** fitting the coil springs.
**We recommend that you inspect any replacement rubber / poly cross member mounting pads for cross-sectional consistency. Variations in cross member pads may affect the ability to achieve optimal caster adjustability.*
It is imperative that you exercise caution whilst undertaking coil spring fitment. Incorrect positioning of the trolley jack can result in injury.

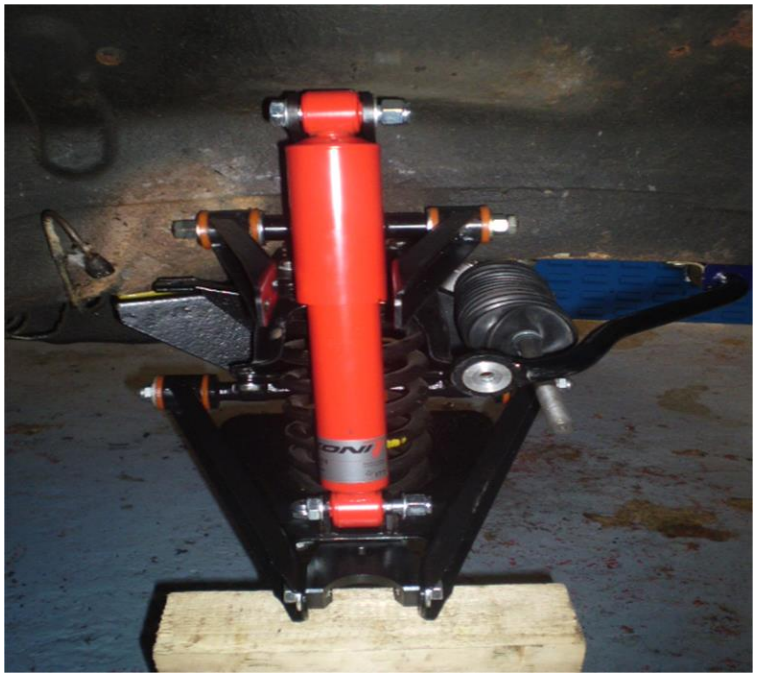
Swing the lower arm assembly downwards and place the coil spring into the top locator, next swing the lower wishbone assembly upwards to locate the coil spring into the lower spring pan recess. Whilst there are numerous coil spring fitting methods we recommend that you position a trolley jack across the car (as pictured). Place a wooden block between the jack and the LBJM and slowly raise the jack until the coil spring is secure.

Inserting the coil springs

Setting and Fitting the Dampers:
Open the box of dampers and fitting pack C2. Read the instructions supplied with the Koni dampers, noting that the dampers are supplied set at fully soft. Damper settings are a matter of personal preference; even left at their softest setting the Koni dampers are a vast improvement over the standard MGB lever arm shock absorber set up. We recommend when fitting Koni dampers in conjunction with new coil springs that the dampers are set a ½ to 1 full turn up from fully soft.
If using GAZ dampers; suggest that they are set to 5 or 6 clicks up from soft. There are 19 clicks from full soft to full hard.

Once you have set the dampers fit them to the top mount (do not fully tighten the upper damper mounting bolt until the car has been lowered onto its axle). Now slowly raise the jack ensuring that the wooden block stays firmly in place against the LBJM. Raise the jack until the lower damper mount can be engaged with the lower wishbone assembly and secure using the nut and bolts supplied. Carefully lower and remove the jack.

Fitting the Koni or the GAZ Dampers



Fitting the Ball Jointed Axle Upright:

Open Pack B6. Identify the correct upright assembly (caliper mounts should be to the rear) and locate the unit within the lower ball joint mount. Make sure the small black bush is in the rear hole of the lower joint. Loosely attach the lower mounts using the M8 x 40 and M12 x 40 bolts from Pack B6. Tighten up the lower mounting bolts M12 at 60 Nm and M8 at 40 Nm.

Ball Jointed Axle Upright (LH)

Setting the Castor:
The MGB Evolution 3 allows for castor adjustment of up to two degrees in order for the purposes of aligning the front axle. Having conducted extensive tests, we recommend a standard castor setting of 7 degrees. To achieve the standard setting fit 1 x 2mm shim and 2 x 1mm shims (Pack E3) either side of the top ball joint, and secure loosely with the nyloc nuts and washers.

Locating the Ball Jointed Upright / Axle Assembly

Setting the Camber: The MGB Evolution 3 allows up to two degrees camber adjustment. If you have access to a camber gauge then the top mount can be set, if not then centre the top mount mid way within the upper wishbone arm slots and tighten to 50 Nm.

Final Assembly: Refer to the MGB workshop manual for steering arm, hub assembly and brake fitting operations. Finally tighten the upper and lower damper mounting bolts to 60Nm. When re-assembling the hubs ensure that the original wheel bearing spacers are transferred to the new axles prior to fitting the wheel bearings. As a minimum we recommend the renewal of brake calliper lock tabs and split pans.

Please Note: For driver safety and in order to derive the full benefits of the MGB Evolution 3 suspension development we recommend that a professional four wheel alignment is carried out following installation.

Making Adjustments:
First place a jack under the lower wishbone as far outboard as possible, then raise and remove the road wheel.

- Camber: Adjustment can be made by moving the top ball joint inboard or outboard to achieve the desired camber setting.
- Castor: To reduce castor, place more of the shims to the rear of the top trunnion, conversely to increase castor place more shims in front of the ball joint.
- Damper: Koni - Remove the lower mounting bolt, and refer to the instructions supplied with the Koni dampers.
  GAZ dampers: The adjustment knob is facing the rear of the car, there are 19 clicks from soft to hard.
- Ride Height
  Slacken the top damper mounting, making a note of the shim arrangement on the upper ball joint mounting and remove the top trunnion bolts. Remove the lower damper bolt and gently lower the trolley jack until the coil spring is removed thereby exposing the pedestal. Remove the top damper bolt and the damper and remove the top mount from the sub frame. Insert the 6mm spacers as desired between the pedestal and the cross member. NB Each 6mm spacer represents an increase of the wheel centre to wheel arch height by 13mm. We recommend for optimum ride and handling characteristics that the lower wishbones arms should be parallel to the road surface when at kerb weight.

NB When making adjustments ensure they are replicated on both sides of the axle. Nyloc nuts should be used once only and the correct reassembly procedure followed. If you require additional nyloc nuts in order to carry out adjustments, please contact our spares team.

Troubleshooting:
Should you require technical assistance at any point either during assembly or whilst carrying out final adjustments please do not hesitate to contact our technical sales team, weekdays 9am to 5.30pm or Saturday 9am to 12 noon on 00 44 (0) 1954 231318 or via email sales@mgocspares.co.uk