

# MIDDLEBRIDGE FRONT SUSPENSION OVERVIEW

## Vertical Links, Axles & Bearings.

Scimitars evolved with several Vertical Links, Axles & Bearing combinations. MB's were made using Reliant's final iteration but it's possible a previous owner has utilised other parts at some time so check.

Bearings, MB50: Inner. Timken L44649/L44610 (1 1/16" ID)  
 Outer. Timken LM11949/LM11910 (3/4" ID)



Two of three known axles.  
3/4" outer

Early link & last axle

Early link & mid axle

Later stub



Later stub 1" inner



Last axle 3/4inch outer.  
(MB50)



Last axle 1 1/16" inner  
(MB50)

AT LEAST Three combinations of Vertical link & Axles may be found:-



Latest Vert with early axle spacer

Late Vert with early axle

Late combo no spacer

Late combo with

(MB50)

**MB50** originally had latest VL but threaded portion found badly corroded so swapped with good condition VL from late GTC. Unfortunately the GTC VT is of the type that has a shallow bearing abutment shoulder and requires additionally a spacer/ abutment collar. With the abutment collar there is effectively no practical difference and the axle is anyway of the latest type having 1 1/16" inner bearing.

### Vertical link top bearings

Check bearings have full movement over the suspension travel. Cheap ones with limited angular travel will stress themselves and the vertical link also (cause of vertical link failure at top elbow region?).

### Front wheel hub Felt Seal

Original felt seals had a free thickness (uncompressed) of 5mm but are no longer available and suppliers currently only offer ones that are 10mm thick. Though the thicker ones are supposedly (???) OK I found the extra thickness makes it difficult/ impossible to set the wheel bearing end float accurately.

The thicker seal is compressed solid before the bearing end play is taken up which gives false impression of bearings end play setting.

QRG found old stock felt seals for MB50 which did the job perfectly.

### Shock absorbers/ springs

Description	
Middlebridge Scimita GTE Bilstein front dampers F4-B46-1281	Bilstein
Front springs 12" x 2.5" x 250lbs/inch	
Middlebridge Scimita GTE Bilstein rear dampers F4-B46-1282	
Rear springs 14" x 2.5" x 250lbs/inch	

Orig.

Bilstein

spec'n:-

MB50, June 2021, Protech Front shocks with springs 2.25" ID x 12" x 250lbs from Faulkner.

MB50, Sept 202, Spax Rear shocks and springs, G9501AS-40, 61mm ID x 300mm(448?) x 225lbs springs. Shocks could have been ½" longer (overall 18" between Crs) and still clear chassis straps.

From Reliant chassis # 6G46/18501551 (and MB's) the front shocker chassis bolt holes incorporate top hat spacer washer. Such washers are fitted inside the brackets and reduces the gap for shocker bushes from 1.25" to 1.125". Rear shocks not affected and retain 1.25" bushes. Seems no good technical reason for change to a narrower shock bush at the front (possibly due to unavailability of previous shocks and new ones only available with 1.125" bushes).

### **Suspension ride height**

Aim for lower wishbone to be parallel to the ground which, which typically gives approx 6" between underside of chassis side rails to ground.

To lower front suspension either:-

- Place spacers between wishbones and damper brackets, or
- Turn wishbones upside down, or
- Lower the spring seat ..... **take care!** In so doing the shock piston will move further into the cylinder and thus effectively reduce suspension travel before hitting the bump stop.

### **Trunnions** (Reliant Trunnion Pt. Nos:- 216820 (RH) & 216821 (LH))

Original trunnion assembly must firmly clamp trunnion between the two spacer tubes so the sleeves rotate in the bushes, bolt must not rotate in the tubes.

Many suppliers sell ill fitting bushes (too tight) and maybe wrong tube lengths too. Short tubes will clamp trunnion between wishbone arms when bolt is tightened. This imposes a high bending moment on both the vertical link and the lower wishbone arms. Avoid at all costs!

MB50, to avoid issues with poor original style seal kits has Superpro Poly bush kit (SF378-844KSS).

Having poly bushes and SS tubes the kit does not require seals etc. of the original design.

Once again we thank the owner of MB50 for yet another fantastically informative website update.

Thanks from Mick and the MESS.