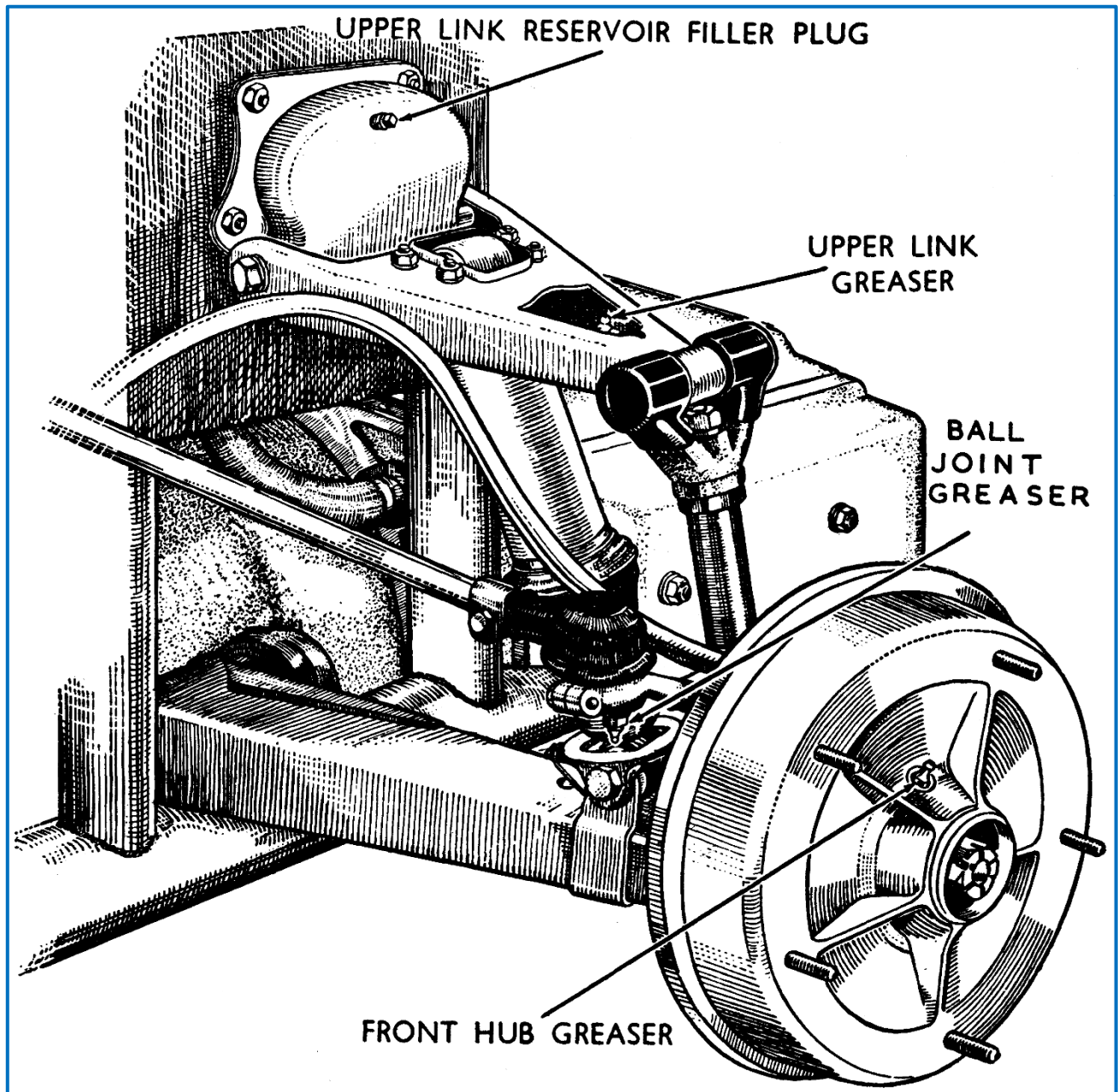


# TECHNICAL NOTES SERIES

## JOWETT JUPITER – SA & SC



*Jowett Jupiter RHS Steering (with hydro-mechanical braking) – from the Owner's Handbook.*

### PART XXXIII – STEERING SET UP

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*Compiled by – Mike Allfrey – September, 2013.  
Revised – April, 2017.*

# SETTING UP THE JUPITER SUSPENSION AND STEERING GEOMETRY

## Introduction

The set up of the Jupiter's steering geometry is different from that used for the Javelin. Basically, both models have a similar result. However, the geometry for the Jupiter is slightly different, because the steering arms are actuated from the rear of the king-pin's centre line. For the Javelin the actuation of the arms is forward of the king-pin's centre line. This is important to remember at all times when setting and adjusting the car's steering and suspension geometry.

It should be noted that some final assembly of suspension components takes place prior to making final adjustments. For these Notes, the task will commence with the installation of the two front spring arms.

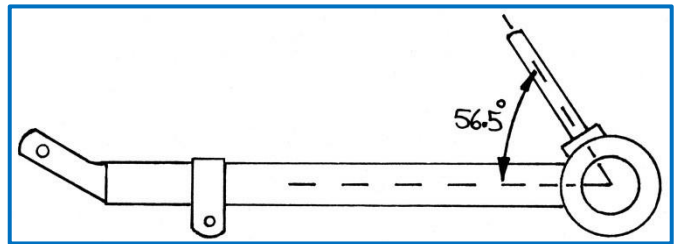
## Inspection

Prior to commencing re-assembly of the suspension components, the chassis frame should be carefully examined for cracking in the spring arm mounting areas. Should welding be required, then the torsion rods must be removed completely and stored well away from the welding process.

## Installation

It should be carefully noted that the spring arms for the Jupiter models attach to the chassis in a slightly different way. The two trunnions feature  $\frac{1}{2}$ " diameter stud shanks and are secured with  $\frac{1}{2}$ " BSF self-locking nuts. The shanks pass through the main chassis tubes, and are located by two steel thimbles, inserted into the chassis distance tube, for each trunnion stud. The angle between the stud shanks' centreline and the centreline of the spring arm is  $56.5^\circ$ , as shown in *Figure 1*.

*Right: Figure 1. Sketch of front spring arm and anchoring stud angle.*



To re-assemble, give extra special attention to the following points:

1. Drive or chisel off the bush at the rear of the trunnion and press on the replacement, with the flanged end towards the front. The spring arm trunnion bushes should be replaced in pairs on the spring arm.
2. Install the spring arms and fully tighten the new Nyloc nuts.
3. Before installing the spring arm rebound stop rubber cushions, install the torsion bars.

## Other Components' Installation

1. The swivel pin and its distance tube must be settled correctly in the outer end of the spring arm, so that the suspension movement is free. Shim adjustment is provided.
2. The swivel pin bolt should be installed with its head facing the rear. It should be tightened down so that maximum steering lock is achieved when the brake back plate bolt head contacts it.
3. Shock absorber bushes and thimbles should be examined for wear and replaced if necessary.
4. Prior to adjusting the torsion rod, jack up the spring arm and replace the rebound buffer.
5. Set the chassis ground clearance.
6. Retighten the hardware after 500 miles have been covered.

On later type front suspension, the above instructions generally apply. Rubber bushes are fitted at the base of the swivel pin and are firmly clamped in place (refer to Service Item Nos. 96 and 140).

## Front Torsion Rod Adjustment

The following method should be adopted for setting the chassis height (ground clearance), by adjusting the torsion rod tension.

Stand the car on level floor, and measure the distance from the underside of each frameside to the floor. The measurements should be taken at the front of the gearbox cross member.

Set the tyre pressures to 26 psi (180 kPa).

Jack up the car, using a trolley jack under the centre of the gearbox cross member, until the wheels are just clear of the ground.

It is important that a wooden protection pad should be placed on the jack's lifting pad, to protect the frame cross member. Slack-off the location plates at the rear end of the torsion rods, and slack back the lock nuts on the adjuster.

Lubricate the adjuster long-thread bolt, its spigot, the pad in its trunnion, the adjuster arm in its bracket and the threaded trunnion in the arm. If these components are not free to move and are not lubricated, there will be excessive strain imposed upon them while the adjustment is made. Such loadings can cause wear at the long-thread bolt spigot.

Reset the adjuster as necessary, in relation to the measurements previously taken, to obtain a ground clearance of  $9\frac{3}{4}$ " – 10" (248 – 254 mm) at each end of the gearbox cross member. Lower the car to the ground and bounce on its suspension and check the measurements again. Jack up and make the final adjustments if necessary. Retighten the torsion rod end plates and tighten the adjuster bolt lock nut.

In isolated cases it may be found that the specified dimension for ground clearance cannot be obtained due to excessive wear on the adjusting bolt spigot or thread. This is normally caused by adjusting with the weight of the car on the road wheels, and it will be necessary to either build up the spigot or replace the bolt. It should be noted that no wear takes place once the adjusting bolt is in position.

*Mike Allfrey.*

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