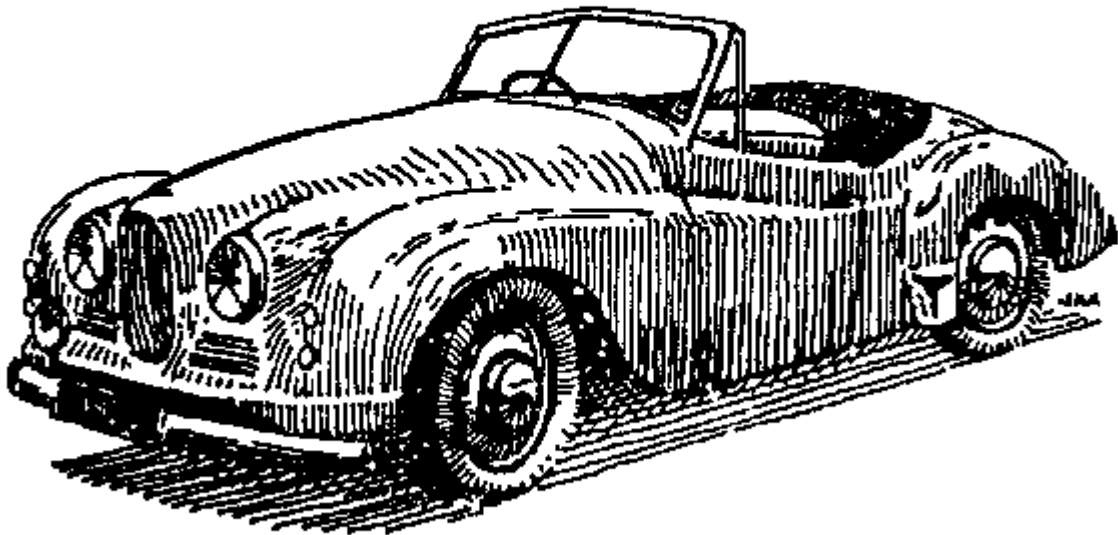




The Jowett Car Club

The Jupiter

Technical Information for The Jupiter





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ENGINEERING CHANGES - JUPITER

Modification	Approximate Introduction Points
Four-wheel hydraulic brakes replaced	EO/SA/September 1950
Salisbury 3HA rear axle, replaced 2HA type	EO/SA/September 1950
Serrated mating faces provided on connecting rods and caps	EO/SA/September 1950
Hydraulic tappets replaced by solid tappets and new camshaft introduced.	EO/SA/November 1950
New throttle rod and cylinder head gasket	
Centre support tube introduced	EI/SA/270
Thicker gearbox extension bearing Locating, washers	
Adopted to give greater strength	EI/SA/284
Hole deleted from rod half of connecting rod bearings (upper shell)	E1/SA/423
Petrol pump location changed from scuttle to	
chassis amidships, and petrol pump type changed to S.U. PP 36 L	EI/SA/439
Oil return pipe from relief valve added to oil pump	EI/SA/480
Camshaft boss and sprocket modified for finer valve timing adjustment.	E1/SA/481
Shorter oil filler tube introduced to provide	
more clearance between tube and front grille.	EI/SA/504
Rubber waterproofing of distributor, spark plugs	
and petrol pump introduced	EI/SA/520
Fan shaft taper increased to facilitate fan removal.	E2/SA/575
Change from Vokes scuttle-mounted air cleaner	
To AC individual cleaners.	E2/SA590
Radiator-mounted oil cooler replaced by	
Oil cooler mounted on engine.	E2/SA/631
Carburettors changed from Zenith 30 VIG 5 to 30 VM	
New gearbox mainshaft, synchromesh hub and sleeve introduced	
in conjunction with modified first gear locking plunger.	E2/SA/657
Sludge release hole deleted from connecting rod cap	E2/SA/692
Radiator cooling, area increased	E2/SA/695
Lucas DKY H4A distributor replaced by DM 2 type	
with vernier adjustment.	E2/SA/717
Steering column universal joint changed to Hardy-Spicer type	E2/SA/730
Rubber-bushed front suspension introduced, and	
armstrong shock absorbers adopted.	E2/SA/865
Series III engine introduced. Oil flow through oil cooler increased.	E2/SA/882
Armstrong shock absorbers replaced by Woodhead-	
Monroe competition units.	E2/SA/921
Narrow lock-notch adopted for connecting rod bearings.	E2/SA/938
Cross-bracing added between scuttle and chassis	E2/SA/940
New crankshaft and connecting rods introduced with revised	
Tolerances for improved running clearances. Steering rack housing	
Mounted on lugs with bolts, instead of spigot.	E2/SC/942
Submerged oil pump introduced. Increased loading	
added to synchromesh rings,	E2/SC/945
Cast aluminium cylinder head gasket support and	
Liner-retaining flange (combined in one unit) introduced.	E2/SC/948



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Adjustable camshaft thrust peg provided in front timing case	E2/SC/957
Synthetic rubber cylinder liner bottom seals introduced from crankcase No 26574.	

Data from 'Jowett Jupiter Register' published by the Jowett Car Club of New Zealand (Inc.) 1971/73.

FUEL SYSTEM - Ref. Maintenance manual P. 133

Service Bulletin Item No 77 - Carburettors, Zenith 30 VM - March 1952

From engine No.E2/SA 657 the Zenith 30 VIG 5 carburettors previously fitted to the Jupiter have been replaced by Zenith 30 VM type carburettors which: incorporate the following settings

27 Choke	2 5 Vent
120 Main	1.5 Needle Seat
65 Compensator	45 Slow running
120 Progression	

1 mm washer and shroud fitted to needle seat.

The carburettors are fully interchangeable with the previous type in pairs and the throttle linkage remains the same,

Service Bulletin No 78 - Air cleaners - March 1952

From engine No E2/SA.590 - the Vokes air cleaner was replaced by two A.C. type air cleaners The new type air cleaners consist of two separate units one fitted to each carburettor intake by means of a short extension tube and clips. In cases where the Vokes type air cleaners are being replaced by the later type it will be necessary to remove the electric horns and elongate the horn securing bolt holes in the horn bracket so that the horns may be adjusted to clear the air cleaner body. The AC type air cleaners should be removed and cleaned every 1000 miles or frequently if necessary.

Service Bulletin Item No. 82 -- Petrol System - March 1952

The Jupiter petrol system has been modified to incorporate a new type petrol pump and petrol filter as follows:

From Engine No EI/SA/439 a new type electric petrol pump (Type SU.PP.361,) Part No 1.53814 which gives an increased petrol flow was fitted and the position of the petrol pump was changed from the front of the dash panel to the right hand side of the chassis. From Engine No EI/SA.520 a rubber cover was fitted to the pump to prevent ingress of water and it should be carefully noted when removing and replacing the cover, that the 1/16" (1.5873 mm) breather hole should be positioned on the underside of the pump. From Engine No EI/SA.504 the three way petrol tap and reserve supply system was dispensed with and replaced by a single pipe from the petrol tank direct to the petrol pump. At the same engine number a new type petrol filter (Part No.J54436) was introduced and the position of the petrol filter was changed from the front dash panel to the right hand side of the chassis.

ENGINE - Ref Maintenance manual P 133



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Service Bulletin Item No 80 - Oil filler tube - March 1952

From Engine No E1/SA.504 a shorter type oil filler tube (Part No, 1.53705) has been introduced which gives increased clearance between the tube and the radiator grille. The new type filler tube is fully interchangeable with the previous type

Service Bulletin Item No.161 - Liner bottom seal (Rubber type) November 1953

The rubber type cylinder liner bottom seal as described in Service Bulletin Item No, 149 (see Javelin section) has been introduced as standard on the Jupiter engine after crankcase No 26573.

COOLING SYSTEM

Service Bulletin Item No 98 - Radiator - improved cooling July 1952

From Jupiter Engine No.E1/SAL.458 LHD and E2/SA 695 RHD, a new type radiator (Part No. 153728) with an increased cooling area has been introduced, The increased area necessitates an increase in height to the radiator, the Top Engine Shield (Part No. 56104) is discontinued. The new type radiator is interchangeable with the previous type of R & LH drive models.

Radiator Mounting Bolts

To facilitate removal and replacement of the radiator the mounting bolts should be modified to make them captive. This may be done either by brazing the bolt heads under the mounting plate, or by making up a ¼ in. plate drilled and tapped to take the bolts. These are passed through the mounting bracket from below and screwed through the plate. The rubber-mounting pad can then be pushed over the threaded ends and the radiator mounted without the need to hold the bolt heads.

SUSPENSION

Shearing of front Spring Arm Trunnion Studs

After years of use, and sometimes of neglect, the nuts holding the spring arm trunnion to the chassis may loosen, causing the studs to wear, and finally to break. The point of fracture is usually on the trunnion side leaving little or no stud projecting for an extractor to be used. The metal used is particularly tough and attempts to drill out the fragment of stud from the trunnion are usually futile.

A method which has been used successfully by some members is to replace the whole spring arm with one whose studs have been changed to lengths of high tensile bolts ('UNBRAKO') These bolts should be threaded at both ends, itself a fairly laborious operation, and can then be used as studs.

Periodic checks on the tightness of the nuts should obviate this modification.

STEERING - Ref maintenance manual p 137

A Rack and Pinion is fitted to the Jupiter, which is a very strong unit. Nearly all Jupiters suffer from wear in the Jowett made universal joint giving rise to free play at the steering wheel.

First of all, check at which point in the steering the wear is most obvious by watching closely while someone turns the steering wheel. Wear in the steering column end fork and centre block of the



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universal joint will be obvious if the pinion shaft fork moves up and down, i.e. towards the steering column, then the thrust bearing in the pinion shaft is faulty.

Sometimes this play is caused by the " pins shearing thus allowing the 1/2 pins in the centre block of the joint to move. If these 1/2 pins are re-pegged with new " pins some of the slack may be taken up.

If there is no appreciable movement in the joint or the pinion shaft but slackness is still evident in the steering i.e. the steering wheel moves without moving the road wheels then wear must be in the pinion shaft or rack itself. This must be checked with the wheels in the straight ahead position as normally only one or two teeth in the pinion shaft show signs of wear.

Finally if the "rubber boots" on each end of the rack have allowed water mud etc ' to enter, severe wear can occur in the rack housing, mainly on the nearside, i.e. end furthest from the pinion shaft. Check this by pulling and pushing in a horizontal plane with the track rod disconnected from the steering arm.

If, during checking These points, the universal joint is found to be faulty replacement parts of the original type are virtually unobtainable but conversion kits using Hardy Spicer universal joints are available through the Jowett spares suppliers and this is a worthwhile modification as these Hardy Spicer universal joints do not give any trouble if properly greased.

The conversion can be done by using a Jaguar steering universal joint and involves changing the end of the steering column and machining the fork on the pinion shaft to take the different universal joint after which it should be electrically welded in position.

BODY & CHASSIS - Ref. maintenance manual P. 118

The hinge boxes for the bonnet are rather weak pressings for their use. These should be checked regularly to see whether they have fractured along the bend where they bolt up to the scuttle. After welding (gas) up the fractures, also weld in a small gusset on each side between the boltholes on each hinge box to prevent any lateral flexing as shown in Fig.6. The gussets were cut out of 1/16" sheet steel in a triangle 1/2 by 1".

Service Bulletin Item No.110 - Improved body mounting - September 1952

An improved body mounting has now been introduced to eliminate the possibility of movement between the body frame assembly and the chassis. In cases where complaints are received of steering kick, coupled with front end vibrations, it will be necessary to incorporate the following modifications and fit the parts as described below.

1. Remove the Bonnet and front wing assembly, windscreen wiper motor, starter solenoid and horn relay on RHD models, wiper motor on LHD models and the four silent-bloc bushes of the front and centre body mountings. Where the Vokes type air cleaner is fitted on the dash panel, it will be necessary to remove it and fit the two independent air cleaners
2. Place a 1/2" (12.7 mm) flat washer, outside dia. 1 1/2 (38.099 mm) x 3/32" (2.381 mm) thick (see A Fig 1.) in to the existing holes in the Body Support Bracket assemblies on the chassis to centralise the mounting bolts in the brackets. It will be found necessary to provide a slight chamfer on the outside edge of the washers to ensure a flush fit in the holes in the Body Support Brackets,



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which are slightly tapered.

3. Cut four hardwood blocks B (See Fig 1) 3" (76.199 mm) x 3" (76.199 mm) x 7/8" (22.225 mm) and drill a 1/2 dia. (12.7 mm) hole in the centre of each. Fit the blocks in place of the silent bloc bushes, ensuring that the grain of the wood is at right angles to the chassis frame (See Fig.1).

4. Fit 1/2 (12.7 mm) x 2" (50.799 mm) body mounting bolts with 1" (12.7 mm) flat washers 2" (50.799 mm) outside dia x 3/32" (2.381 mm) thick beneath the head of each bolt and fit 1/2 (12.7 mm) Oddie nuts together with washers of the previous dimensions (see C Fig. 1.)

NOTE: The nuts must not be tightened at this stage.

5. Utilize the material shown in (Fig 2) i.e. 2 U Bolts D. 2 hardwood packing pieces E. 4 stiffener plates F. Fit the parts as shown in (Fig 3) to the rear struts and dash panel, placing stiffener plates F at each side of the dash panel. Fully tighten down the nuts.

6. Tighten the four body mounting bolts.

7. Fabricate from 1" (25.4 mm) x 1/4" (6.35 mm) strip steel 2 side stays, G. and weld on two strips of the same material. Fabricate 2 cross braces H. (See Fig 4). Bend the side stays to the required shape (See Fig.3) and fit together with the cross braces as shown in (Fig.5) using 5/16" (7.937 mm) bolts. Fit 3/8" (9.525 mm) spacing washers "I" 2" (50.799 mm) outside dia. x 1/4" (6.35 mm) thick between the side stays and the dash panel assembly (See Figs. 3 & 5) and a 3/8" (9.525 mm) flat washer 2" (50.799 mm) outside dia. x 3/8" (3.175 mm) thick under the nuts beneath the dash panel.

NOTE: The holes where the cross braces and side stays overlap at the dash panel should be drilled after the cross braces and side stays have been fitted.

8. Reposition the windscreen wiper motor, starter solenoid and horn relay in the most convenient position and blank off the original mounting holes.

9. Refit the Bonnet and front Wing Assembly.

NOTE: Use of only the works scuttle bracing without the wooden body mounting blocks renders the car rigid at the scuttle but flexible throughout the body. This can seriously impair its stability, and may in time weaken the aluminium panels by causing excessive flexing. If the scuttle bracing modification is used, the recommended hardwood blocks should be used instead of rubber for mounting the body.

Budget Locks. It is important to prevent the wings from flapping. Jowetts provided budget locks at the trailing ends of the wings, but as these can be difficult or time-consuming to do up, they are often left undone. This results in excessive flexing which cracks the wings.

A modification, based on the SC Jupiter solution, is to mount conical rubber buffers on brackets inside the wings. These must register with a carefully positioned hole in the scuttle, so that when the bonnet is shut, the cones press firmly home into the holes preventing sideways movement.



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A metal-to-metal mounting could alternatively be welded on. For example a 'U' shaped piece of pipe of 1/2 in. diameter on the wing, mating with an 'M' section socket bent out of stout (16 SWG) sheet steel welded accurately to the scuttle may be used.

Bonnet Catches. Over-tightening of the bonnet catches causes the aluminium bonnet front to flex fatigue and crack. Rubber stops are provided for the front of the bonnet to rest on and these should be kept in good condition and replaced if necessary, when they cease to support the weight of the bonnet without undue tightening of the screw catches.

Fracture of Front Chassis Tubes. The front chassis tubes are prone to fracture after long use or accidental damage. The point where the tubes change from small to large diameter should be carefully examined for signs of cracking of the weld.

Various repairs can be undertaken, the simplest being to re-weld the tubes preferably by electric arc. Alternatively a piece of tube of intermediate diameter can be sleeved in between the tubes and electrically welded in place.

Without dismantling the chassis, however, it is possible to weld in flitch plates across the join to strengthen it. At least two plates should be used on each side and they should be at right angles to one another. The nearside plates should be carefully measured up before fitting, to ensure that the exhaust will not foul the chassis. This modification can be used to strengthen the join before fractures occur.

Common Rust-Traps in the Jupiter

As the Jupiter body is made largely of aluminium, the only rust-traps are in the steel parts, and of these, only the sheet steel components commonly give trouble. The points mentioned below are only meant as a guide for owners and should not be regarded as a comprehensive list.

Scuttle: The panel in the front of the scuttle which gives access to the door hinge, indicator etc, is often left off for convenience. This allows water and mud to be thrown up from the front wheels into the scuttle, causing rusting. This can be minimised by replacing the covers if they have been removed.

Sills: Door sills are made from two folded sections of sheet metal and where the wooden floor rests on the edge of the sills, water can be trapped, causing rusting,

Cross Channels and Body Mounting Brackets: These are all made from steel sheet, and are very prone to rusting, as they are not easily accessible for cleaning, and easily gather moisture and mud from the road. Some of the cross channels are 'U' sections with a cover welded over them, creating a box section of supreme rust attracting characteristics.

Wells between Rear Wings and Battery Boxes: There is a void behind the battery boxes and inside the rear wings, which is not easily accessible and readily gathers mud and moisture. The effect of rusting here is to destroy the battery box floor. When rebuilding a Jupiter it is worth spending a little time carrying the inner wing panel forwards downwards and inwards, so as to include the walls and floor of the battery boxes. Careful undersealing will prevent further damage from rust.