Motor Trader SERVICE DATA No. 495

Triumph Stag

Manufacturers: Standard-Triumph International, Coventry

Of completely new design, the Stag is easily recognised from any standpoint

FIRST V-8 engined car to be produced by Standard-Triumph, the Stag was introduced in June of this year as a two-door, 2+2 seater of new design. Apart from the engine, which must be regarded as the mechanical component highlight of this model, the remainder of the major components, ie., transmission, suspension steering etc. are largely derived from the existing units which are fitted to the 2000 and 2500PI cars.

To obtain the necessary rigidity in the unitary construction which has been applied to this vehicle, a superstructure has been added and integrated with the rear pillars and the windscreen frame. Double box section sills are also used and a detachable hardtop is available as an initial purchase option.

The engine is a compact 90deg V-8 unit, considerably oversquare with cylinder bore diameter of 86mm and crankshaft stroke of 64.5mm. Hence the stroke/bore ratio of .75:1 is relatively low and the mean piston speed at 5,500rpm at which peak power occurs is only 2,330ft/min. Swept volume capacity of the engine is just under three litres at 2,997cc. Twin side draught Stromberg CDS carburettors are fitted in the "V" angle of the cylinder blocks and an alternator is standard equipment. The cooling fan is of the Holset viscous coupling pattern and the use of this device reduces both noise and power loss at the higher engine speeds.

Transmission of the drive is taken through a single dry plate diaphragm clutch to a four-speed all-synchromesh gearbox and from the output shaft of the gearbox via a single stage propeller shaft to the hypoid bevel reduction gear contained within the axle casing.

Suspension is all-round independent. At the front it is effected through Macpherson struts with leading radius arms and combined coil springs and concentric shock absorbers. An anti-roll bar is fitted. At the rear, the suspension is of the semi-trailing arm pattern. In this arrangement, coil springs are controlled by direct-acting hydraulic shock absorbers. The rear suspension is constructed and mounted to the car as an assembly mounted on its own sub-frame.

Braking is by a disc/drum layout and there is servo assistance; the rear drums containing brakes of the leading and trailing shoe pattern.

As is customary with Triumph vehicles, the Stag is identified by Commission and unit numbers. The Commission, paint and trim codes are located upon a plate attached to the bodywork, which is clearly visible on the L.H. "B" post.

Threads and hexagons are, in the main, of the Unified thread series, pattern and form.

Special tools for use in repair and overhaul work are made and marketed by V. L. Churchill & Co. Ltd., London Road, Daventry, Northants. They are marketed through the Triumph dealer network.

ENGINE

Mounting

At front, bonded rubber blocks are bolted up to and sandwiched between abutment brackets bolted to each side of crankcase casting and feet attached to chassis frame. At rear, tailcasing of gearbox is flange bolted to detachable cross member by two bolts. Cross member is, in turn, attached to underside of chassis by two nuts and bolts. Tighten all nuts and bolts fully and note position and locations of nylon spacers and large plain washers fitted to rear mounting cross member.

Removal

Vehicle manufacturers recommend that engine and gearbox/transmission should be removed from vehicle as a unit, and to do this vehicle should be positioned under a hoist and preferably over a pit or ramp. Alternatively, high stands will be required.

Isolate battery, drain coolant (one tap on radiator matrix, two taps on block). Disconnect top and bottom water hoses also water pump and bypass pipe at rubber/metal pipe connection. Take out radiator, two bolts at top and two nuts at bottom, complete with overflow bottle. NB. Lower fan guard will be released with radiator nuts. Remove centre bolt from fan pulley and lift off fan complete with Torquatrol unit. Undo feed pipes from steering rack and pump and allow system to drain. Plug all ports to prevent ingress of dirt. Remove earth strap from alternator mounting bracket and disconnect and remove all pipes, wires and controls to and from engine and ancillary units. Take off screenwasher bottle.

Raise vehicle front by approx. 18in, and if vehicle is not on a ramp, place stands below frame outriggers to rear of front wheels. Drain engine and gearbox/auto. transmission fluid and with auto. trans. models remove dipstick tube to facilitate draining. Remove oil filter. Remove front exhaust pipes and silencers. On auto. trans. models, disconnect selector control linkage (one clip) and remove oil cooler pipes at box and cooler plus clip to frame. Undo speedo cable and collect spacer. Lift one rear wheel on jack and remove draw out propeller shaft; plug rear of gearbox to prevent ingress of dirt and lower road wheel. Place trolley jack under gearbox mounting and take weight of this unit. Attach lifting sling to front lifting eyes on engine. Take bolts out of front engine mountings (chassis mounting points) and remove bolts securing gearbox mounting cross-member to frame collecting spacers and large plain washers. Raise engine at front to lift sump clear of cross-member. Manoeuvre engine forward while lowering gearbox then carefully raise engine and lower gearbox until engine/gearbox is almost vertically suspended from front lifting brackets. Lift unit up and out of vehicle.

Take off bonnet after releasing three bolts each side, plus stay.

Refitting is a reversal of removal process, taking care to renew locking devices and all nuts, bolts etc which may be defective and unsuitable for re-use.

Crankshaft

Five main bearings, each retained in block by cast iron caps and two $\frac{7}{16}$in bolts. Vandervell VP5 steel-backed shells, copper-lead, indium flashed located by tabs in block and caps. No hand fitting permissible. Shells may be removed and replaced with engine in position in chassis, but only in emergency. Axial location of crankshaft controlled by split thrust washers fitted either side of centre bearing. Oversize sets of washers available.

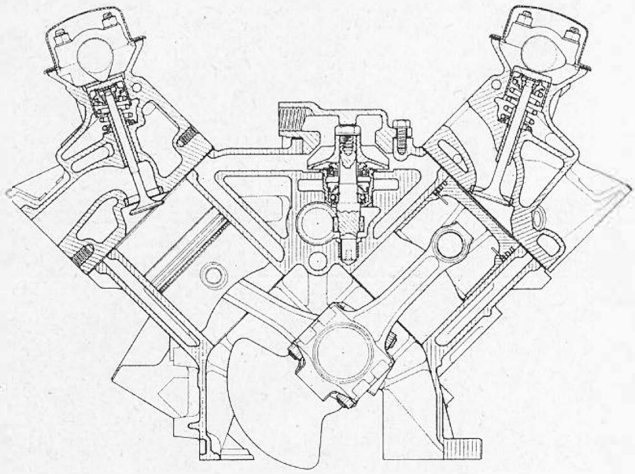
Flywheel fitted with shrunk-on ring gear, spigoted on rear flange of crankshaft, retained by four $\frac{3}{8}$in bolts and dowel located. Spigot bush in crankshaft boss. Camshafts drive sprockets and Holset viscous coupling fan and inertia type vibration damper keyed to front end of shaft by Woodruff keys and retained by co-axial bolt.

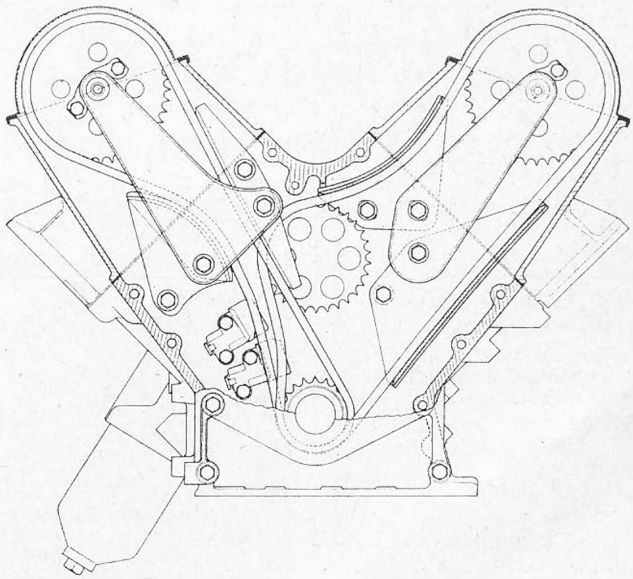
Sump sealing effected by composition gasket fitted around sump flange.

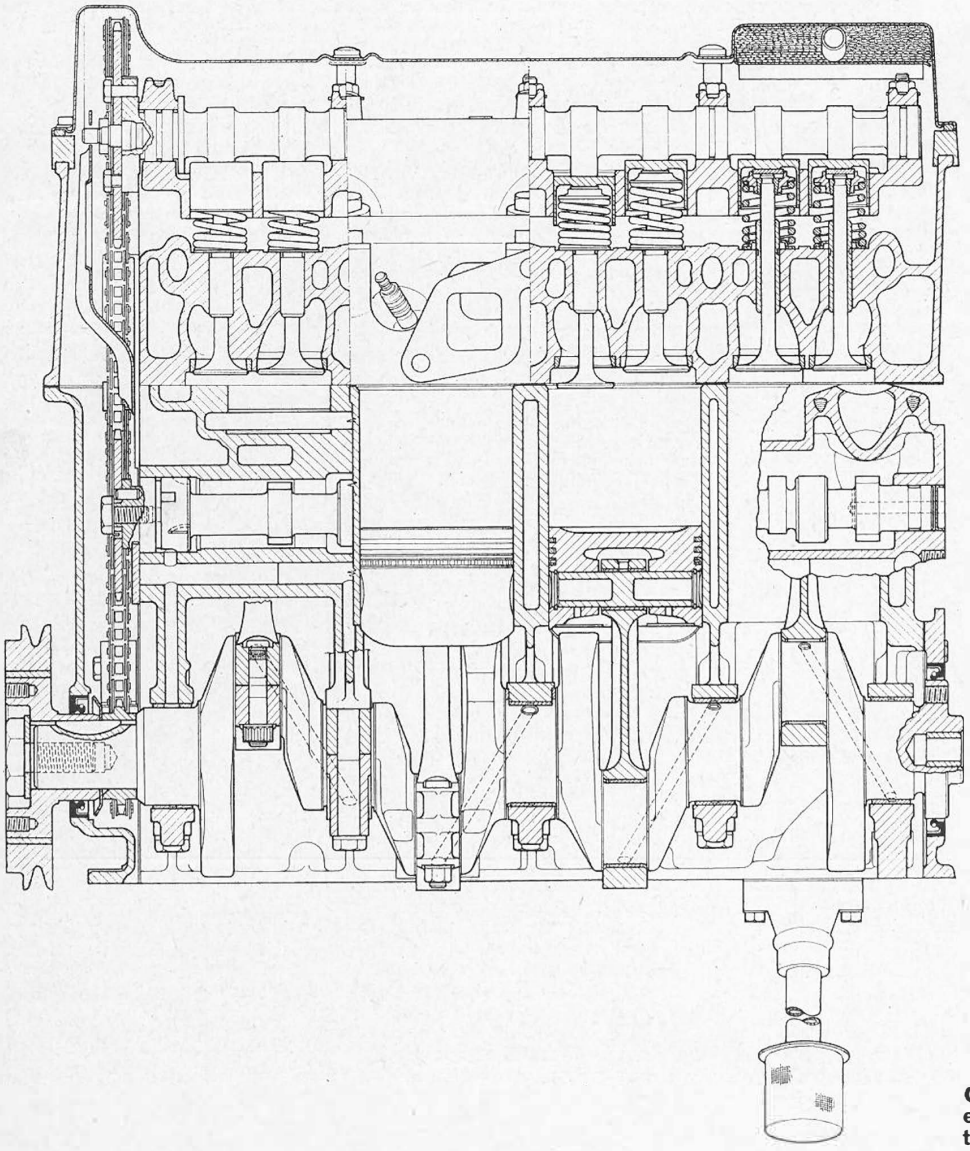
This gasket can be renewed with engine *in situ* and dismantling of suspension and steering components to achieve access.

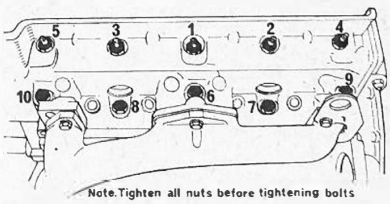
Connecting Rods

"H"-section En.8R steel forgings. Big ends thin wall steel backed copper-lead lined and indium flashed located by tabs in rods and caps. No provision for hand fitting. Big ends are split horizontally and rods and caps may be removed through cylinder bores. Big end bearing caps are retained by two $\frac{3}{8}$in dia En. 111U steel cheese-headed bolts and nuts. Bolt rotation is prevented by serrations rolled on bolt shanks beneath









Cross and long sectional views of the engine. Drawing top right shows the timing gear and drive arrangement

heads. To minimise recess sizes on con. rod shoulders, serrated nuts with 12 corners are used and when refitting, should be tightened to torque specified in table of Nut Tightening Torque Data.

Fully floating steel (En.32B) gudgeon pins are carried in Clevite VP10 bushes which are pressed in to small ends of rods and are located axially by circlips in piston bosses.

Pistons

Aluminium alloy, solid skirts, oval ground, barrelled and tapered. A shallow circular cavity is cast in each piston crown to clear valve heads and to form part of the combustion chamber.

Two grades of piston fitted, "F" and "G", identified by these letters on piston crowns. Grades vary by .0003in within "F" grade and .0005in within "G" grade and by .0011in (max) between upper and lowest limit of each grade. Two compression rings and one oil control ring all fitted above fully floating gudgeon pin. Face of upper compression ring is chromium plated and second, Napier compression ring is stepped and augments action of oil control (Perfect Circle) ring which comprises two rails with a spring interposed between them.

Remove complete rod and piston assembly through cylinder bores and fit with ring compressor when refitting piston assemblies. Triangular mark on crown denotes front of piston.

Camshafts

Two Renold single-strand roller chains with $\frac{7}{32}$in wide rollers and pitch of $\frac{3}{8}$in are each driven by a 20 tooth sprocket from crankshaft. Each drives a 40 tooth sprocket on each camshaft and that for the left-hand camshaft also drives a 30 tooth sprocket on the jackshaft. Between the axes of the crankshaft and the camshafts the dimension is 13$\frac{1}{4}$in and those of the crankshaft and the jackshaft the dimension is 5$\frac{1}{4}$in. Each driving run is straight and each chain is damped by a nitrile pad. Acting on the slack side of each chain is a Renold hydraulic tensioner and a nitrile-faced arcuate guide.

Shaft for each head runs in five $\frac{3}{4}$in long bearings machined in cylinder head direct and LM4 aluminium alloy diecast caps, each of which is retained by two $\frac{5}{16}$in steel studs and nuts. Axial location of each camshaft is effected by the front bearing cap, one end of which bears against a flange on the camshaft and the other against a shoulder machined on it.

Cylinder head may be removed without disturbing the valve timing. A nut is screwed on the threaded end of a stepped steel pin that is a push fit in axial holes in the front end of the camshaft and the driven sprocket. This nut secures the pin in a hole in the upper end of a pressed steel bracket, the lower end of which is bolted to the cylinder block.

The bracket is deflected by the tightening of the nut and acts as a spring so that when two $\frac{1}{4}$in dia screws that secure the sprocket to the camshaft are removed, the bracket straightens and withdraws the pin from the hole in the camshaft. This causes the shoulder on the pin to swing the sprocket clear.

A steel jackshaft of $\frac{3}{4}$in nominal diameter is carried in two bearings machined in a tunnel cored in the block between the banks of cylinders and is driven at $\frac{2}{3}$ crankshaft speed by roller chain for left-hand camshaft. Two spiral gears are machined on the shaft, one drives a vertical spindle for water pump impeller at crankshaft speed and the other a laterally inclined spindle at $\frac{1}{2}$ crankshaft speed for oil pump and ignition distributor.

Note: when refitting components, check jackshaft gear for run-out which if present in reassembled engine will cause noise and chain wear. When fitting inner crankshaft gear use shims to align it with jackshaft gear. After alignment check has been made, take off crankshaft gear and refit it with Woodruff keys *in situ*. Fit inner chain tensioner and restrictor plate using a cardboard spacer to prevent actuation of rachet mechanism.

Align jackshaft gear with line slightly tilted down to LH bank and dowel to LH bank No. 2 cylinder TDC. Fit LH bank chain guides, chain (longer chain), camshaft drive gear and support bracket. Do not tighten bolts on curved tensioner or support bracket at this stage. Use spigot and camshaft bearing nut to hold gear to support bracket. Fit one stud at either end of cylinder block to locate cylinder head and gasket. Cylinder head studs should be fitted to the full depth of threads, finger tight only. Fit cylinder head gasket and after ensuring that camshaft is correctly aligned, ie. line on camshaft flange in line with groove in No. 1 camshaft bearing, fit cylinder head.

On no account must crankshaft or camshaft be turned with the heads fitted and the camshaft gear not connected to the camshaft or mis-timed valves will be fouled by piston crowns. Cylinder studs, nuts, washers and remaining bolts should be fitted and tightened in correct sequence. Failure to observe this will result in distorted heads. Camshaft gear must be aligned to camshaft by disconnecting gear from support bracket and moving it round, one tooth at a time within the chain until bolt holes are aligned. Do not move jackshaft gear. Fit top camshaft bolt and lockplate, positioning lockplate to line up with bolt holes, then tighten top bolt and tab over. Centralise boss on camshaft within spigot within hole in support bracket, which should run freely in bracket without touching; tighten lower bolt in support bracket. With a .040in. feeler establish correct clearance between shoe and body of chain tensioner apply pressure to curved chain guide and tighten bolts. Remove feeler gauge and check that chain is located squarely on pads of chain guides.

Fit outer chain tensioner, keeper and spacer using cardboard spacer to prevent actuation of ratchet mechanism. Fit right-hand bank chain, camshaft gear, chain guides and support bracket together with bolt spacers. Do not tighten bolts on curved guide or support bracket at this stage and after fitting manifolds and repeating timing gear assembly sequence for other bank, fit oil thrower to crankshaft, three timing cover gaskets and timing cover, locating it on two dowels.

Valves

Overhead, non interchangeable, inlet larger than exhaust. Single springs, split cone cotter fixings. Fit with close coils to head. Valve guides plain, pressed in from top of head until guide projects $\frac{3}{4}$in from top face of head. Inserts pressed in, when required. Ream guides to 5/16in after fitting.

ENGINE DATA

Type	V-8
No. of cylinders	8
Bore x stroke: mm	86 x 64.5
in	3.385 x 2.329
Capacity: cc	2997
cu in	182.9
Max. bhp at rpm	145-5500
Max. torque (lb.ft) at rpm	170-3500
Compression ratio	8.8:1

VALVES

	Inlet	Exhaust
Head diameter	1.44in	1.28in
Stem diameter	.311in	.3103in
Face-angle	45°	45°
Spring length: free	1.60in	
solid	1.031in	
rate fitted	296.5lbf/in	
No. working coils	3 3/4	

PISTONS AND RINGS

Clearance (skirt)		.0015-.0025in*
Oversizes		.020, .030, .040in
Weight		1lb 2oz 2dr
Gudgeon pin: diameter OD		.8120in
fit in piston		fully floating
fit in con. rod		fully floating
	Compression	Oil Control
No. of rings	2	1
Gap	.013-.018in	.015-.055in
Side clearance in grooves: top	.0015-.0035in	0.157-0.158in
Side clearance in grooves: 2nd	.0025-.0125in	
Width of rings: top	.0777-.0787in	3-part ring
Width of rings: 2nd	.1171-.1181in	

*F grade bore

NUT TIGHTENING TORQUE DATA

	Bolt size	lb. ft.
ENGINE		
Cyl. head attachment	7/16UNC	50-60
Exhaust manifold attachment (outer 4 sets)	3/8UNC	16-20
(inner 2 sets)	3/8UNC	26-32
Inlet manifold attachment	5/16UNC	16-20
TRANSMISSION		
Propeller shaft attachment	3/8UNF	26-32
FRONT SUSPENSION		
Ball joint to vertical link	1/2UNF	38-45
Caliper to vertical link	7/16UNF	50-65
Damper unit & caliper to vertical link	7/16UNF	50-65
Brake disc to hub	3/8UNF	26-32
Front suspension crossmember to body	3/8UNF	26-32
Lower wishbone to crossmember	1/2UNF	60-75
Lower strut to body	1/2UNF	30-37
Lower strut to lower wishbone	7/16UNF	50-65
Stub axle to vertical link	1/2UNF	50-65
Tie rod lower to vertical link	7/16UNF	50-65
REAR SUSPENSION		
Driving flange to outer axle shaft	5/8UNF	90-110
Road wheel retaining nuts	7/16UNF	50-65
Rear sub-panel member to axle extension assy.	1/2UNF	60-75
Rear sub-panel to body	3/8UNF	26-32
Trailing arms to mounting bracket	7/16UNF	38-45
STEERING		
Mounting bracket to rack	7/16UNF	30-37
Mounting bracket to cross-member	7/16UNF	30-37

TUNE-UP DATA

(Cylinders are numbered from front of engine and viewed from rear to identify banks)	RH: 1-3-5-7 LH: 2-4-6-8
Firing order	1-2-7-8-4-5-6-3
Tappet clearance: inlet (hot, cold)	adjusted by internal pallets—
Tappet clearance: exhaust (hot, cold)	see text
Valve timing: inlet opens	16° BTDC
inlet closes	56°ABDC
exhaust opens	56° BBDC
exhaust closes	16° ATDC
Standard ignition timing	8° BTDC
Static ignition timing	11° BTDC
Emission control models: static	11° BTDC
dynamic	5° ATDC at600 rpm
Plugs: make	Champion
type	N-9Y or N-11-Y
size	14mm x 3/4in reach
gap	.025in
Carburettor: make	Stromberg
type	175 CDS (twin)
Settings: needles	BIAQ
springs	blue
Air cleaner: make	AC
type	combined cleaner/ silencer paper element
Fuel pump: make	S.U.
type	electric (AUF 303)
pressure	2.7lb/in²

CAMSHAFT

Drive type	chain	
Adjustable pallets	.070 by .001-.114in	
	RH	LH
Timing chain: pitch	.375in	.375in
no. of links	104	106

CRANKSHAFT AND CON. RODS

	Main Bearings		Crankpins
Diameter	2 1/8in		1 3/4in
	Front, cent.	Rear	
Length	15/16in	5/8in	3/4in
Running clearance: main brngs			not quoted
between big ends			.015-.024in
End float: crankshaft			.003-.011in
big ends			.015-.024in
Undersizes			.010, .020, .030in
Con. rod centres			5 1/8in

Tappets

Chilled iron tappets are assembled in guides reamed in cylinder heads. Valve clearances are established by the selection of En.31 steel case hardened discs which are interposed between tappets and valve tips. Each cylinder head is assembled as a complete unit and consequently valve clearances are set before head installation. A special test rig has been designed and developed by STI to facilitate valve clearance setting. Direct readings of existing clearance for each valve are obtained, and in this way discs of correct thickness can immediately be selected. Shim adjustment .070 by .001 to .114in.

Lubrication

Conventional wet sump system with eccentric rotor type pump giving approx 40lb/in² at an engine speed of 1,000rpm. Oil pump is externally mounted and driven by jackshaft via, distributor drive gear and an interconnecting drive shaft.

From the sump, oil is drawn to the pump through a strainer. Oil at pressure is then fed to the full flow filter and on to the main oil gallery. The main gallery distributes oil to all moving parts and to the hydraulic chain tensioner and, via an intermittent feed from the front jackshaft bearing to the camshaft. The oil filter incorporates a safety valve which, in the event of blockage, allows unfiltered oil to bypass the filter.

The oil pump incorporates a pressure relief valve which will open at approximately 50lb/in².

TRANSMISSION

Gearbox

Four-speed, synchromesh engagement on all forward gears, control by remote centre lever.

To Remove Gearbox

Remove with engine as detailed in engine removal section. Refitting is reversal of procedure outlined on page 1 under Engine Removal.

To Dismantle Gearbox

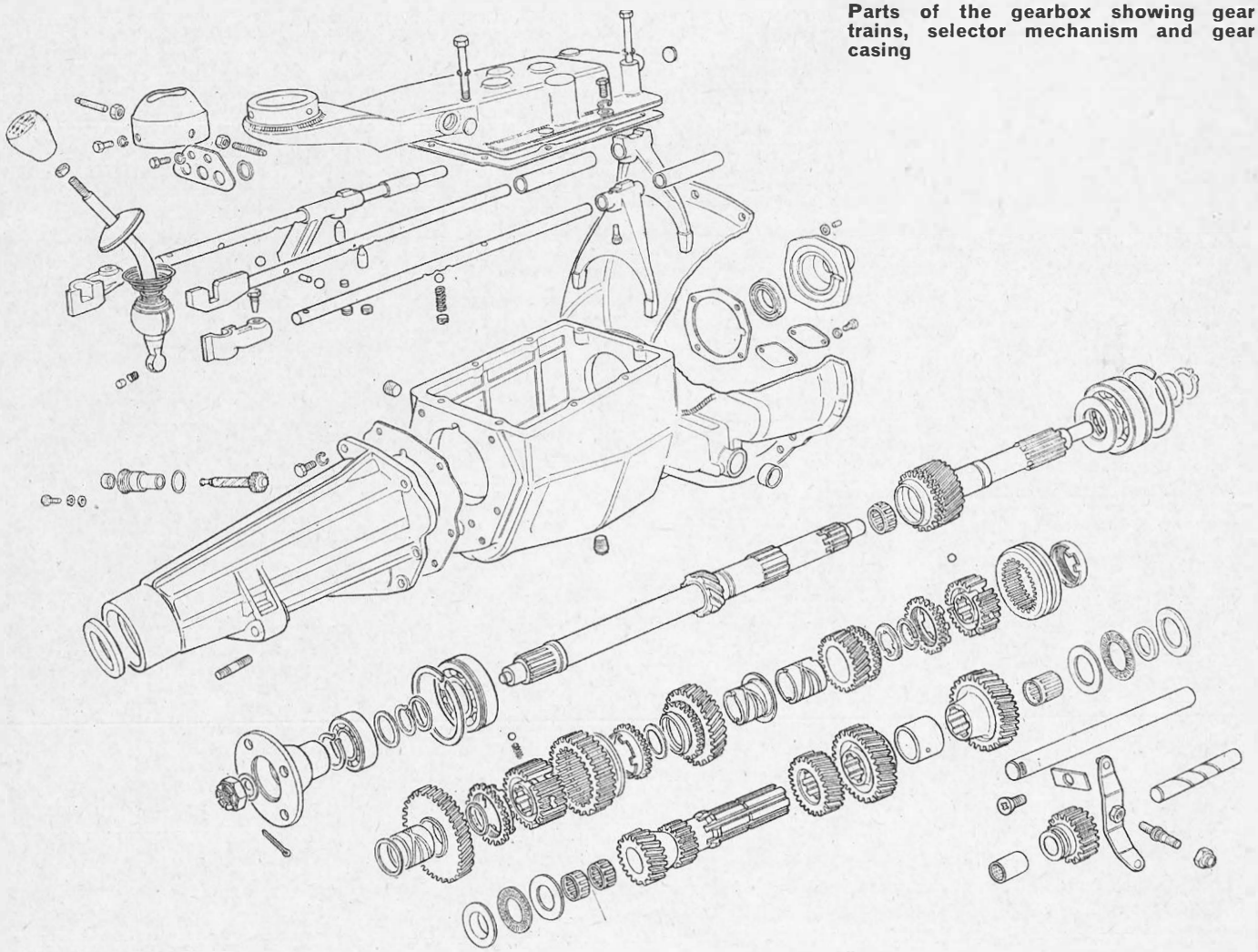
With box on bench, remove securing bolts, spring washers, top cover, and gasket. Withdraw taper bolt, cross-shaft, release bearing, sleeve and fork. Remove Wedglok bolts and washers, detach front cover and plate. Remove rear extension by extracting peg bolt and spring washer, draw out speedo drive gear assembly; remove split pin, slotted nut and plain washer and withdraw flange, remove bolts and spring washers securing extension and draw off (Churchill Tool No. 20 S/63).

Insert Phillips screwdriver and remove layshaft securing screw and retaining plate. Withdraw shaft, and reverse pinion shaft. With Tool No. S4235A extract primary shaft from box, after which, remove locating circlips and spacer washer. To draw off race use Tool No. S4221-2 and if necessary extract spigot needle roller bearing. Detach mainshaft rear race (Tool No. S4221 A/15), and manoeuvre shaft assembly out of box, lift out layshaft cluster and reverse pinion. Remove laygear from hub, if necessary, and needle bearings from hub bore. With Tool. No. 20 SM69 remove securing circlip from mainshaft (3rd speed gear) and draw off gears and components. Remove 1st/2nd and 3rd/4th synchro inner hubs from outer sleeves, preserve springs and balls.

To Re-assemble Gearbox

Reverse dismantling procedure noting following points: Layshaft: when assembling, use stepped drift and fit new needle roller bearing (lettered face outwards) into each end of hub. Refit gears to shaft in reverse order of dismantling. Stick on thrust washers with thick grease, lower cluster into box and fit layshaft. Check end-float which should be .007-.012in. Reduce excessive end float by selective use of thrust washers and distance pieces. End float of mainshaft gears on bushes should be .004-.006in. Fit new bush to increase float, reduce bush length to decrease float. Overall end float of mainshaft with gears and bushes assembled may be .003-.009in, obtain minimum end-float by selective use of thrust washers. Following thrust washers available (coloured for identification), in sizes: .120-.118in—self finish; .123-.221in—green; .126-.142in—blue; .129-.127in—orange. Check end-float of 1st speed gear to be .003-.009in.

When re-assembling synchro units fit synchro springs, shims and balls to hubs, together with outer sleeves. Axial release load should be 3rd/4th:



Parts of the gearbox showing gear trains, selector mechanism and gear casing

GENERAL DATA	
Wheelbase	8ft 4in
Track: front	4ft 4 1/2in
rear	4ft 4.875in
Turning circle	34ft lin
Ground clearance	4in
Tyre size Michelin	XAS 185 HR-14
Tyre size Goodyear	G800 185/70 HR-14
Overall length	14ft 5 3/4in
Overall width	5ft 3 1/2in
Overall height (unladen) approx	4ft 0in
Weight (approx: basic kerb)	2807lb

CHASSIS DATA	
Clutch	
Make	Borg & Beck
Type	diaphragm
Diameter	9in
Flywheel/face cover	2.05in
Max. travel	.290in
Centre springs: no.	6
colour	white/lt. green
Linings: thickness (under 90lb load)	.290in
dia. ext.	8.0in
dia. int.	5.75in

GEARBOX	
Type	synchromesh
No. of forward speeds	4
Gear ratios: 1st	2.995:1
2nd	2.10:1
3rd	1.386:1
4th	1.00:1
Rev.	3.369:1

SUSPENSION SERVICE DATA	Front	Rear
Castor } static laden	2 1/2°	—
Camber }	1/4° neg	1 1/2° neg
Track	52.5in	52.88in
Toe-in	1/16-1/8in	0-1/16in

SHOCK ABSORBERS	
Type	Telescopic front & rear
Service	replacement

STEERING BOX	
Make	Alford & Alder (Pow-a-rack)
Type	rack & pinion
Adjustments:	
column end float	shims
cross shaft end float	shims
mesh	shims under damper pad

FILL-UP DATA	Pints	Litres
Engine sump	8*	4·5
Gearbox	2.25	1.3
Automatic transmission	11.5	6.5
Rear axle	2	1.1
Cooling system + heater	18.5	10.5
Fuel tank	14 gall	63.5
Tyre pressures: front	26lb/in²	1.82kg/cm²
rear	30lb/in²	1.82kg/cm²

* Plus 1pt for filter

SPRINGS	Front	Rear
Wire dia.	0.49in	.505 ± .002in
Mean coil dia.	4.62in	3.25 ± .020in
No. of working coils	6 1/2	10 1/2
Rate (mean for 1in deflection each side of test length)	129.5lb/in	260lb/in
Free length	13.23in	12.38in
Fitted length (test length)	6.63 ± 3/32in	7.45 ± .090in
Fitted load (test load)	855lb	1280lb
"Out of square" tolerance/ft. length	.19in	.19in

BRAKES	Front	Rear
Type	disc	drum
Drum diameter	—	9in
Drum width	—	2.25in
Disc diameter	10.625in	—
Min. pad thickness	1/8in	—
Friction material	DON 225FG	DON 202GG

PROPELLER SHAFT	
Type	needle roller brg UJ

FINAL DRIVE	
Type	hypoid bevel
Crownwheel/bevel pinion teeth	37/10

—19-21lb; 2nd/1st:—25-27lb. Add or decrease shims beneath synchro hub springs to achieve release load figures within these tolerances. Assemble mainshaft components on shaft and install in box, assemble primary shaft and ball-bearing; note, circlip groove to front. And replace front cover. Refit layshaft, using tapered pilot bar followed by layshaft; refit keeper plate, etc., and refit rear extension housing and speedo drive gear components; insert selector forks, and, finally, refit top cover, complete with selector shaft mechanism.

Rear Axle

Hypoid bevel swing axle. Final drive unit is bolted up to carrier, which is, in turn, bolted up to body. Pinion shaft housing is carried at apex of "V"-shaped channel section axle/suspension unit mounting member. Outer extremities of member carry mounting plates, rubber insulation buffers and centre bolt for attachment to body. Drive is transmitted to road wheels through short universally jointed drive shafts, coupled to driving flanges either side of differential casing. Hubs, keyed to outer tapered ends of drive shafts, run on ball bearings at outer ends, and needle roller races at inner ends. Four-stud hub flanges have lipped oil seal behind, and hubs are retained by ⅝in slotted nut. Outer ends of drive shafts and hubs are carried by wishbone type aluminium alloy castings, inner ends are bushed and pivot on hardened steel bolts. Pivot carriers are bolted up to rear side of either arm of mounting member.

To remove axle assembly, jack up rear of car and lower on to stands, drain brake fluid system, disconnect primary cable from compensator stirrup, and brake hoses from steel pipes, also release them from the trailing arms. Lower car on to ground, and remove nuts, locknuts and rubber buffers from lower end of dampers. Jack up rear of vehicle until road wheels are clear of ground and remove road wheels. Take off suspension springs. Disconnect exhaust tail pipe mounting rubber, release pipe clip at front of cross-member. Withdraw tail pipe to rear. Disconnect propeller shaft. With trolley jack supporting axle casing, remove nuts and rubber buffers at rear cross-member extremities, and nuts and rubber buffers either side of rear passengers' footwell (front cross-member). With suitable assistance, axle/suspension units should be steadied while being lowered to ground on jack. Refitting is a reversal of this procedure. Note: Bleed brake system on refitting.

Differential unit is similar to that described in Service Data No. 393, to which readers are referred for further details. Differential assemblies are available as replacement units and should be used unless the complete range of special tools and gauges is available and facilities exist for comprehensive axle overhaul.

CHASSIS

Brakes

Hydraulic disc/drum layout (front/rear), incorporating remote servo unit.

Disc brakes take the form of two segmental pads, hydraulically operated and housed in cast iron framework, which work on steel plates bolted up to wheel hubs. Linings for the disc brakes are bonded to steel plates which are carried direct in brake housing. Each is easily accessible for replacement or wear checks to be made. To replace lining pads, remove retaining clips and pins. Remove pads and shim plates. Fit plates with arrow in D.O.R. of wheels.

Adjustment of front hub bearings is critical, due to rotational plane of friction discs, excessive clearance in hub bearings showing up as "rock" of discs. To permit fine adjustment of hubs, two holes are drilled in stub axle thread which allows hub nut adjustment of half-a-flat, do not pre-load bearings.

Leading and trailing shoes on rear wheels, with floating cylinder incorporating bisector unit for cable operation through handbrake.

Rear brakes have wedge bisector-expanders. Square adjuster on backplates. Turn each clockwise until brakes bind then back-off until drum rotates freely (one or two clicks).

Front Suspension

Independent, Macpherson strut type with leading radius arms, combined coil spring and telescopic damper units. Pivots are rubber bushed and spring mountings are rubber insulated. Ball joint swivels are made of special wear resistant material.

Suspension units are sealed on initial assembly and apart from provision of minor adjustments for steering geometry, it is not recommended that these special suspension units be dismantled. Unit replacements are available and these should be used if and when suspension faults should be traced to this source.

Removal

With wheels removed and front of car on stands fit spring hooks over as many coils of each spring as possible and fasten safety strap. Take out pinchbolt and remove 3 nuts from top of each spring turret. Drain brake hydraulics and disconnect front brake pipes from four way connector. Remove nut, plain washer and rubber abutment from rear end of stay. Support cross-member at its centre and remove 8 bolts which fix it to body. Move assembly forwards to release steering and stays before lowering suspension to floor.

Rear Suspension

Semi-trailing arms, cast in an alloy material, incorporate lugs behind drive shafts for the telescopic shock absorbers. Coil springs are used.

Spring Removal

With wheels removed and rear of vehicle on stands raise suspension arm with jack under spring well. Uncouple drive shaft and disconnect shock absorbers from suspension arm. Taking care to avoid straining the brake hose, lower arm until spring is just free. Do not disconnect any part of the hydraulic system. Repeat process for other side.

Suspension Arm Removal

After removal of spring, drain brake system and disconnect brake hose and handbrake cable from backplate. Support suspension arm with a jack under the spring well and disconnect the damper. Release suspension arm by removing 4 bolts, noting number and location of shims removed.

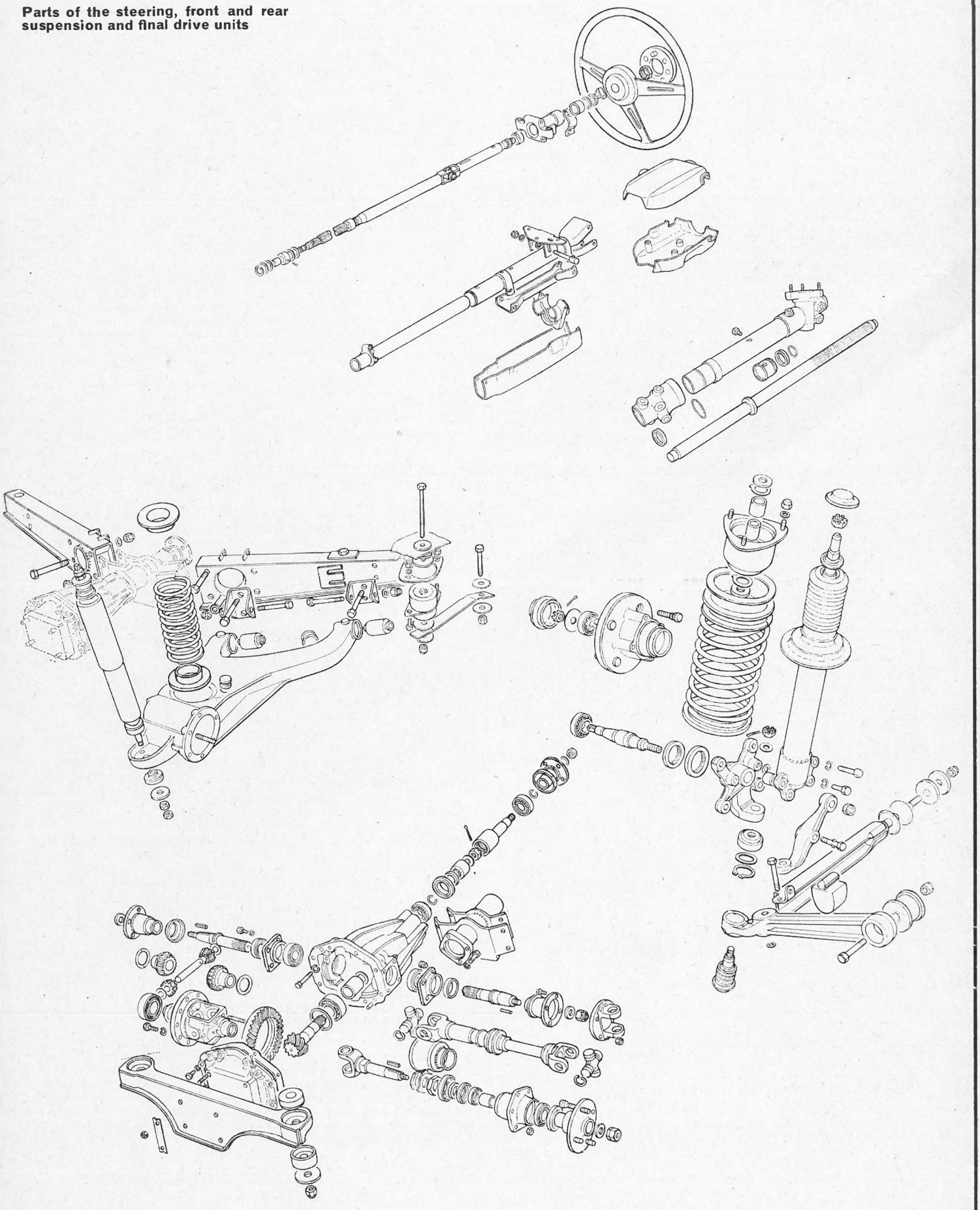
Steering

Rack and pinion. Outer ends of rack connected to each stub axle by short track rods. Adwest power steering assistance. Column universally jointed and provision for mesh adjustment is made by shims under damper pad flange nut. Provision for adjustment of end float of rack is made by insertion or removal of shims under pinion end plate cover.

Shock Absorbers

Telescopic units fitted to front and rear of car. Replacement units available.

Parts of the steering, front and rear suspension and final drive units



ELECTRICAL EQUIPMENT

LUCAS EQUIPMENT

Part numbers quoted are basic equipment for right-hand drive vehicles. Variations may be found according to the Country in which the vehicle is used.

	Model	Part No.
BATTERY and STARTING MOTOR SYSTEM		
Battery	CA97	54027663
Starting Motor	M418G	25627
Solenoid Switch	15S	76826
CHARGING SYSTEM		
Generator	11AC	23521
Regulator	4TR	37423
Relay, field isolating	16RA	33294
IGNITION SYSTEM		
Distributor	35D8	41276
Max. centrifugal advance (crank degrees) 24-28		
Max. centrifugal advance (crank rev/min) 6400		
No advance below 700 (crank rev/min)		
Centrifugal advance springs (set of 2)		54421617
Max. vacuum advance (crank degrees) 12-16		
No advance below 3½ (inches of mercury)		
Ignition Coil	16C6	45232
Primary resistance (ohms) at 20°C 1.2-1.4		
Running current (amps) at 1000 rev/min 1.0		
Ballast Resistor	3BR	47170

LAMPS

	Model	Part No.	Bulb or Sealed Beam Unit		
			Lucas No.	Wattage	Cap
FRONT LAMPS					
Head (right hand & left hand)	F700				
(inner lamp, non-dip)	5¾	60160	448	55	Q/H
Head (outer lamp, dip)	5¾	60161	448	55	Q/H
Side & Flasher	830	52951(rh)	382(F)	21	S.C.C.
		52952(lh)	989(S)	6	M.B.C.
REAR LAMPS					
Stop/Tail, Flasher & Reverse	828	54603(rh)	380(S/T)	6/21	S.B.C.
		54604(lh)	382(F)	21	S.C.C.
			382(R)	21	S.C.C.
Number Plate	766	54866	207	6	S.C.C.
SUNDRY LAMPS					
Side-Repeater (flasher)	848	54823	501	5	Capless
Boot lamp	550	56125	501	5	Capless
Arm Rest Lamp	835	54629(lh)	501	5	Capless
		54630(rh)			

PANEL LAMPS	Model	Part No.	BULB Lucas No.	Wattage	Cap.
Ignition Oil Fuel Automatic Choke Main beam Flasher Handbrake Temperature	6WL	38743	280 (8 off)	1.5	L.E.S.

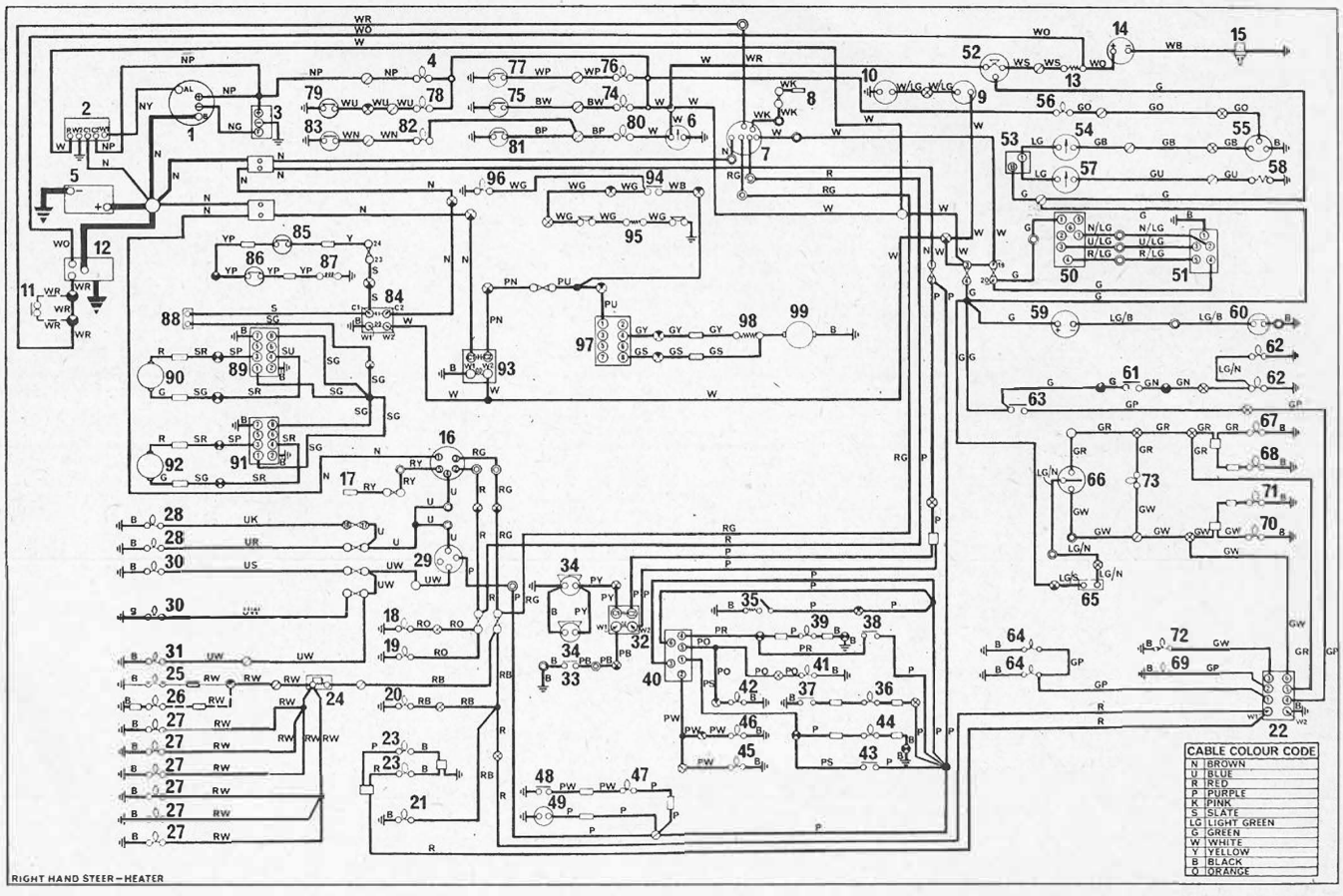
HORNS, WINDSHIELD WIPER, SUNDRY ITEMS & OVERDRIVE EQUIPMENT

	Model type & (note)	Part No.
HORN(S)		
Horn Relay	6RA	33311
WINDSHIELD WIPER		
Motor	16W	75716
Wiper blade right hand		54703746
left hand		54701324
Wiper arm right hand		54703744
left hand		54703747
Screenjet		
SUNDRY ITEMS		
Flasher unit	8FL	35049
Warning light (heated rear window)	WLI3	54361267
OVERDRIVE		
Control switch	150SA	39166
Relays:		
Dimmer	11RA	33329
Dimmer Resistor	4BR	47223
Heater/Air Conditioning	6RA	33328
Window lift	6RA	33311
Two level Signalling Relay	11RA	33329

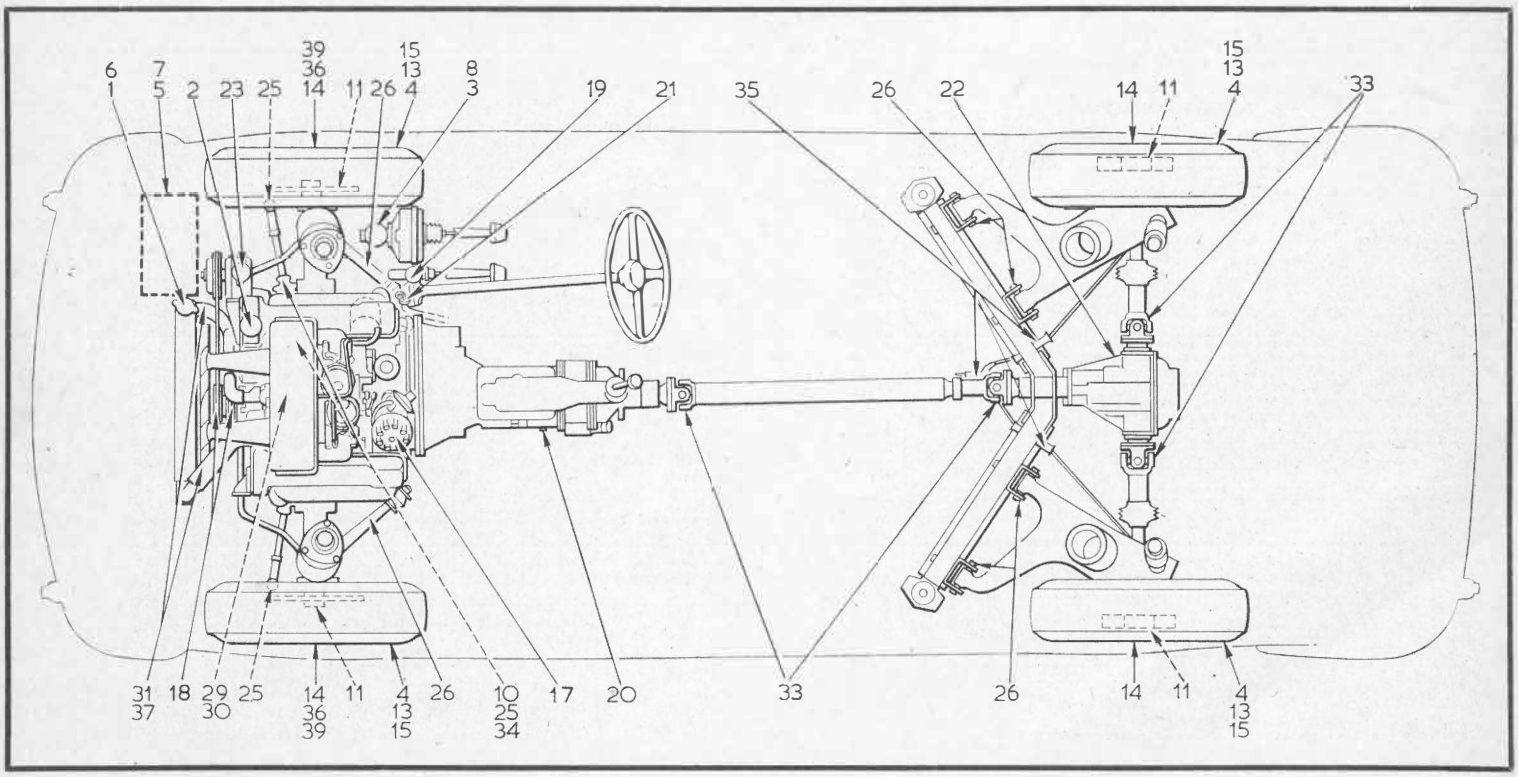
SWITCHES

	Model	Part No.
Ignition (combined with starting motor control switch)	157SA	39382
Head (Master lighting)	58SA	39258
*Headlamp-flash	119SA	39451
*Direction indicator	119SA	39451
Windshield wiper/washer	153SA	39453
Reverse	SS10	34460
Panel light	5R	78490
Heater	58SA	34477
Heater (Rear window)	PS7	31869
Courtesy light	152SA	39336
Handbrake	139SA	35624
Hazard warning	152SA	39171
Steering Column control	CC2	33671

NOTE: Switches identified by a common symbol are combined in a dual or multi-purpose switch.



Wiring diagram by courtesy of Standard-Triumph International



KEY TO MAINTENANCE DIAGRAM

WEEKLY
1. Radiator
2. Engine sump
3. Brake master cylinder

} check and top-up

EVERY TWO WEEKS
4. Tyre pressures—check

MONTHLY
5. Battery—check and top up

EVERY 3,000 MILES
6. Radiator
7. Battery
8. Brake master cylinder

} check and top up

*9. Sparking plugs—clean and reset (.025in gap)
10. Steering unit—check for backlash in ball joints and gaiter for damage
11. Brake friction material—check condition and de-dust drums.
*12. Braking system—check for damage/leakage/chafing etc
13. Front and rear wheel alignment—check
14. Road wheel securing nuts—check for tightness
15. Tyres—check pressures and for damage &/or legal suitability for continued use
*16. Electrical system—check for correct operation

EVERY 6,000 MILES (as for 3,000 miles plus following)
*17. Engine ignition timing—check and adjust
18. Alternator and compressor drive belts—renew
19. Clutch master cylinder
20. Gearbox/overdrive
21. Auto. trans. (if fitted)
22. Rear axle
23. Power steering compressor

} check and top up

*24. Clutch pressure hose and slave cylinder—check for chafing/leakage
25. Steering unit attachments, tie rods and ball joints
26. Suspension arm and attachments

} check tightness

*27. Headlamps—check alignment
*28. Door locks, hinges, catches etc—lubricate and check operation
29. Air cleaner—clean element

EVERY 12,000 MILES (as for 6,000 miles plus following)
30. Air cleaner—renew element
31. Engine water hose—check condition
*32. Exhaust system—check for leakage and condition
33. Transmission UJ coupling flanges
34. Steering unit attachment, ball joints and tie rods

} check tightness

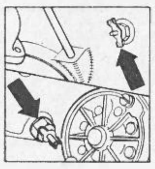
35. Handbrake cable guides—lubricate
36. Front hubs—check and adjust

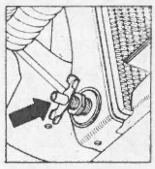
EVERY 36,000 MILES (as for 12,000 miles plus following)
37. Engine water hoses—renew
38. Braking system—overhaul
39. Front hubs—strip, clean and repack with grease

*Not shown on diagram

(See col 2 page v for "Fill-up Data")

DRAINING POINTS





Recommended Lubricants

Component	Mobil	Shell	Esso	B.P.	Castrol	Duckhams	Regent/Texaco
Engine Carburettor Dashpot Oil Can	Mobiloil Special 20W/50 or Mobiloil Super 10W/50	Super Motor Oil 100	Uniflo	Super Visco-Static 20W/50	GTX	Q20/50	Havoline Motor Oil 20W/50
Front and Rear Hubs, Brake Cables and Grease Gun	Mobilgrease MP	Retinax A	Multi-Purpose Grease H	Energrease L2	Castrol Grease LM	LB10	Marfak All-Purpose
Borg-Warner Transmission	Mobil ATF210	Donax T6	Esso Glide	ATF Type 'A'	TQF	"Q"-Matic	Texamatic Type F
Gearbox & overdrive Rear axle	Mobilube GX90	Spirax 90EP	Gear Oil GX90/140	Gear Oil SAE90EP	Castrol Hypoy	Hypoid 90	Multigear Lubricant EP90

Approved Anti-freeze Solutions:—Those meeting BSI 3152 may be used.

Clutch and Brake Fluid Reservoir:—Lockheed Super Heavy Duty Brake Fluid.

Where this proprietary brand is not available, other fluids to S.A.E.J1703 specification may be used. NB: Power steering—Use fluids as for Borg-Warner transmission.

NOTE: Similar grades of Petrofina lubricant are also recommended.

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