

Motor Trader

SERVICE DATA NO. 414

TRIUMPH SPITFIRE

Manufacturer: Standard-Triumph International, Coventry.

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DISTINGUISHING FEATURES. Identified from almost any standpoint, the car is an aerodynamically styled two-door sports model. Headlamps are recessed into front wings and separate side-lamps and flasher signals are fitted

INTRODUCED at the London Motor Show at Earls Court last year, the Spitfire model is an Italian styled "small" sports car. The body is an all-welded unit, which is mounted on a separate chassis, and this chassis is broadly similar to that employed for the Herald 1200 cars.

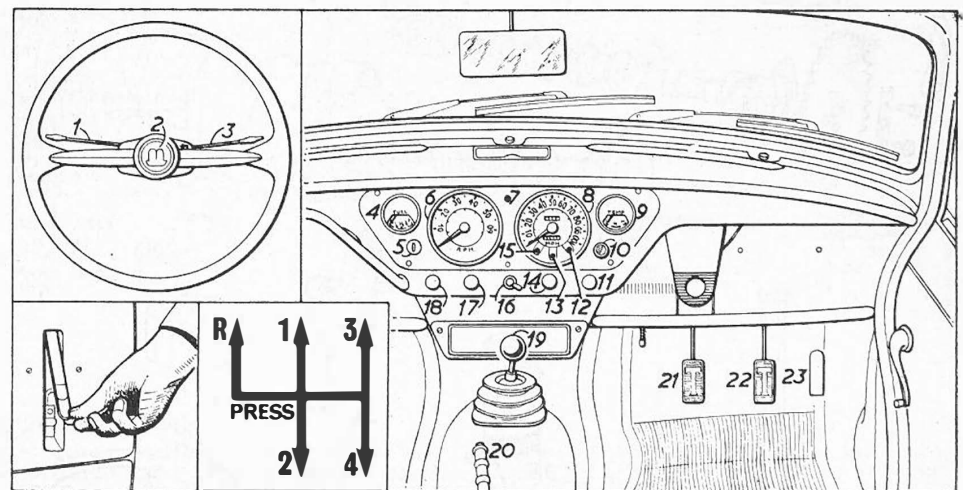
Mechanical components used bear similarity also to those used on other cars in the Standard-Triumph range, and their use endorses the manufacturers' policy of parts and unit standardization throughout their product range. The engine has twin carburetors and a standard compression ratio of 9:1. In this state, power output is 63 b.h.p. at 5,750 r.p.m. Transmission of the drive is taken through a single dry plate hydraulically actuated clutch to the four-speed synchromesh gearbox and from that point by a short propeller shaft to the hypoid bevel final drive unit in the rear axle. Drive to the rear road wheels is transmitted by short drive shafts, universally jointed at each end and which replace the half-shaft arrangement of a conventional axle. This design allows independent suspension of the rear wheels, and independent suspension of the front wheels is also provided by coil spring and wishbone links assemblies. Spring damping is obtained by the use of telescopic shock absorbers front and rear. At the front, these units are mounted between the inner ends of the upper links and the outer ends of the lower links. At the rear, the shock absorber units are used to control radial movement of the wheel assemblies about the rear axle, and axial location is achieved in two ways, through the transverse semi-elliptic leaf spring mountings at either side of the chassis and by short radius rods mounted between plates on the body floor and the spring shackles.

Vehicles are numbered in serial by Commission and unit numbers. The Commission number is to be found on the left-hand scuttle side panel. This is visible on lifting

the bonnet. The engine number is stamped on a boss on the left-hand side of the cylinder block. The gearbox number is stamped on the right-hand side of the clutch housing flange, and the rear axle number is to be found stamped on the hypoid housing flange. It is essential to quote the Commission number when referring to the manufacturers, or

when ordering spare parts.

Special tools for use in repair and overhaul work are made and marketed by V. L. Churchill & Co., Ltd., Great South West Road, Bedford, Nr. Feltham, Middx., and they are approved by the vehicle manufacturers. Threads and hexagons are, in the main, of the Unified thread pattern and form.

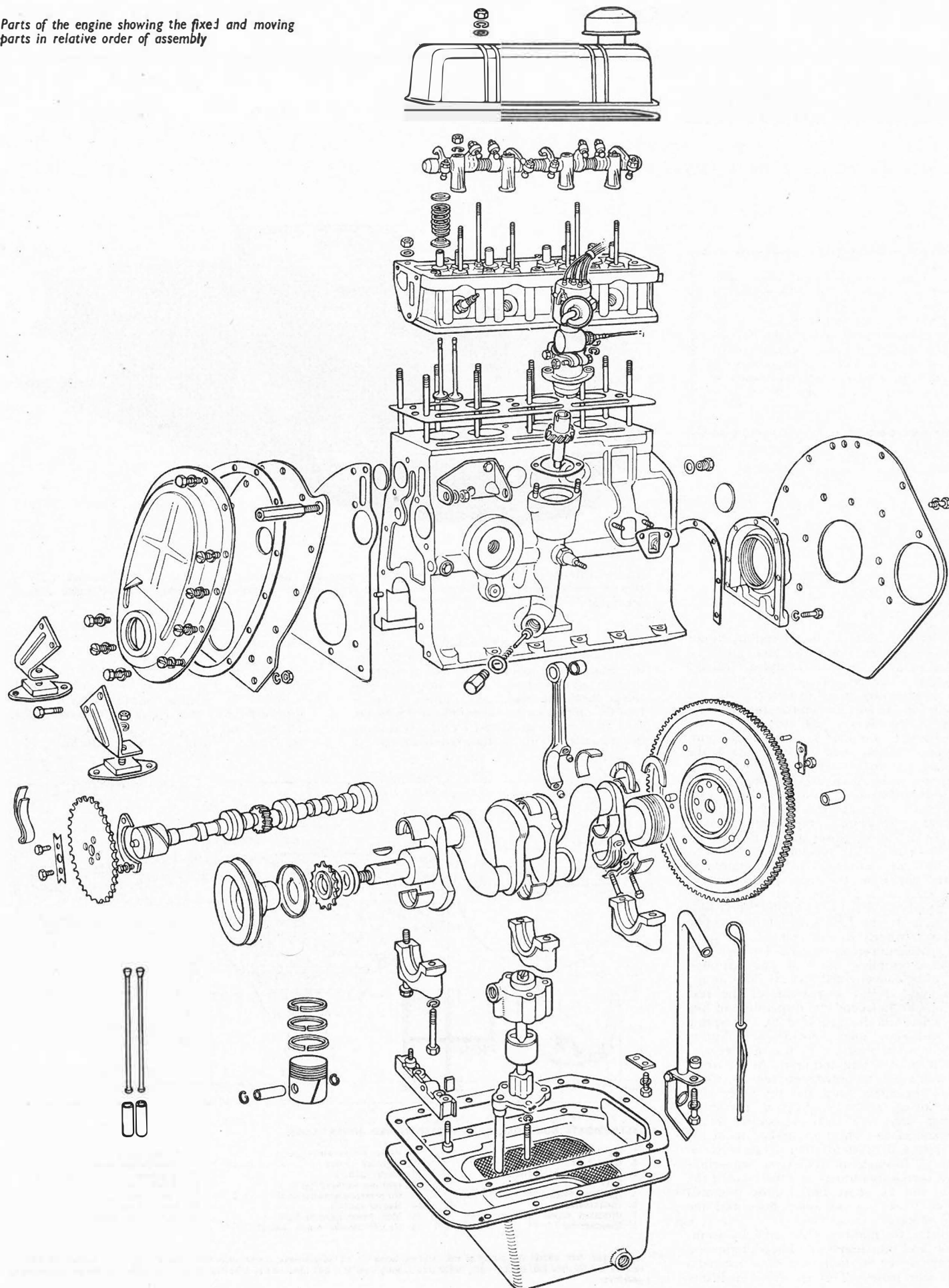


INSTRUMENTS, CONTROLS, GEAR POSITIONS AND BONNET LOCK

- | | | |
|-----------------------------------|--------------------------------|------------------------|
| 1. Light selector switch | 9. Water temperature gauge | 17. Screenwasher |
| 2. Horn push | 10. Lighting switch | 18. Screenwiper switch |
| 3. Direction signal switch | 11. Choke control | 19. Gearlever |
| 4. Fuel gauge | 12. Ignition warning light | 20. Handbrake |
| 5. Ignition switch | 13. Oil pressure warning light | 21. Clutch pedal |
| 6. Tachometer | 14. Heater control | 22. Brake pedal |
| 7. Direction signal warning light | 15. Main beam warning light | 23. Accelerator pedal |
| 8. Speedometer | 16. Heater blower motor switch | |

Inset upper left: shows the siting of the steering wheel mounted controls, lower outer left: the method of operating the bonnet release handle (one side shown only, other side exactly similar); and inner lower left: the operative positions of the centre mounted gearlever

Parts of the engine showing the fixed and moving parts in relative order of assembly



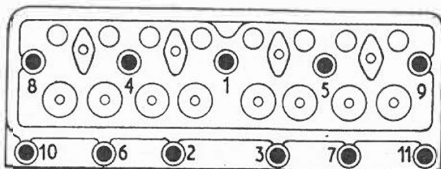


Diagram showing order of tightening cylinder head stud nuts. See also table of "Nut Tightening Torque Data"

ENGINE

Mounting

At front, bonded rubber blocks bolted up to feet on front engine plate and to extensions on chassis frame. At rear, cylindrical rubber blocks bolted up to either side of gearbox extension casing and to cradle which is centre bolted to chassis frame. Tighten all nuts and bolts fully.

Removal

Engine may be removed with or without gearbox. To remove with gearbox, remove bonnet by taking out each hinge bolt; disconnect battery, remove all pipes, wires and flexible controls to engine and gearbox. Drain coolant after removal of radiator cap. Take off top and bottom water hoses, remove radiator matrix held by bolts either side. Disconnect exhaust pipe at flange joint and at clip on clutch housing. Attach sling of lifting tackle to eye on front of dynamo adjusting link and eye at rear of cylinder head. Undo securing bolts and remove fascia support panel from inside car. Remove gearbox cover, 11 self-tapping screws—three accessible from behind engine. Undo front mounting nuts and rear mounting bracket nuts, when mounting rubbers will remain *in situ*. Disconnect propeller shaft at gearbox flange joint, remove clutch slave cylinder mounting pinch bolt. Arrange sling so that unit will assume a suitable angle and lift unit up and out of vehicle.

Engine may be removed without gearbox after removal of bellhousing bolts, starter mounting bolts and care being taken to see that gearbox is supported while engine is drawn forward to clear primary shaft splines and flywheel spigot. Replacement is reversal of above process.

Crankshaft

Three main bearings. Steel backed white metal lined shells located by tabs in block and caps. No hand fitting permissible. Shells may be removed and replaced with engine in position, but only in emergency. End float controlled by split thrust washers fitted either side of rear main bearing. Over-size sets of washers available.

Flywheel fitted with shrunk-on ring gear, spigoted on rear flange of crankshaft and retained by four $\frac{3}{8}$ in bolts and located by one dowel. Oilite spigot bush pressed into crankshaft boss. Camshaft drive sprocket and fan pulley keyed to front end of shaft with long Woodruff key, and retained by starter nut. Dished oil thrower fitted between camshaft sprocket and timing cover. Hub of fan pulley passes through lipped renewable oil seal pressed into timing cover.

Sealing strip fitted to front end of cylinder block, rear oil seal, retained on rear face of block by seven setscrews. When fitting front sealing strips, tap in wooden filler pieces and trim flush with crankcase face. Rear oil seal (aluminium alloy) has thread scrolled in inner diameter for oil return to sump and there must be .003 in clearance between scroll and crankshaft. Composition seal fitted around sump flange.

PISTONS AND RINGS		
Clearance (skirt)	.0012-.0019 in	
Oversizes	.010, .020, .030 in	
Weight without rings or pin	9 oz 8 dr \pm 3 dr.	
Gudgeon pin: diameter	.8125-.8126 in	
fit in piston	light push fit at 212° F	
fit in con. rod	.0002 in press fit at 68° F	
	Compression	Oil Control
No. of rings	2	1
Gap	.008-.013 in	.008-.013 in
Side clearance in grooves	.003-.010 in	.0007-.0027 in
Width of rings	.0787-.0777 in	.1553-.1563 in

SPECIAL TOOLS	
	Part No.
ENGINE	
Valve spring compressor	\$ 130
GEARBOX	
Extension bush remover and replacer	\$ 107
Layshaft aligning mandrel	\$ 110
Speedo drive and oil thrower removal and replacing ring (for use with Handpress S 4221A)	\$ 117
REAR AXLE	
Differential case spreader	\$ 101
Diff. bearing remover adaptors	\$ 102
Pinion bearing setting gauge	\$ 108
Pinion Preload gauge	20S M98
Oil seal remover	\$ 122
Hub bearing remover and replacer	\$ 4221A/6
Inner axle shaft bearing remover and replacer	\$ 4221A/7
Hub needle roller bearing remover and replacer	\$ 300
FRONT SUSPENSION	
Coil spring remover and replacer	\$ 4221A/S
Multi-purpose handpress	\$ 4221A
Drop arm drawer	\$ 121

NUT TIGHTENING TORQUE DATA		
	Bolt size (in)	lb. ft.
ENGINE		
Main bearing caps	$\frac{7}{8}$	55-60
Cylinder head studs	$\frac{1}{2}$	38-42
Flywheel	$\frac{1}{2}$	42-46
Con-rod bolts	$\frac{1}{2}$	42-46
GEARBOX		
Clutch cylinder attachment	$\frac{3}{8}$	14-16
Clutch fork attachment	$\frac{1}{2}$	14-16
FRONT SUSPENSION		
Stub axle to vertical link	$\frac{1}{2}$	55-60
Tie rod ends	$\frac{1}{2}$	26-28
Suspension mounting to sub-frame	$\frac{1}{2}$	28-30
REAR AXLE		
Bearing caps	$\frac{1}{2}$	32-34
Crownwheel attachment	$\frac{1}{2}$	22-24
Pinion flange	$\frac{1}{2}$	60-80
Hubs	$\frac{1}{2}$	110

Connecting Rods

H-section stamping. Big ends thin wall steel backed white metal-lined shells located by tabs in rod and cap. No provision for hand fitting, rod split diagonally for removal through bores and cap dowel located on rod. Clevite split small end bush pressed in. Fully floating gudgeon pin located by circlips in piston. Fit with short shoulder of big end to camshaft side. Tighten bolts to torque figure specified.

Pistons

Aluminium alloy, flat topped split skirt. Pistons graded into three sizes of standard dimensions, "F," "G" and "H," identified by one of these letters stamped on the piston

GENERAL DATA	
Wheelbase	6ft 11in
Track: front	4ft 1in
rear	4ft 0in
Turning circle	24ft 0in
Ground clearance	5in
Tyre size: front	5.20-13 (4-ply) Tubeless
rear	12ft 1in
Overall length	4ft 9in
Overall width	3ft 11 $\frac{1}{2}$ in
Overall height (with hood—unladen)	13 $\frac{1}{2}$ cwt
Weight (dry)	

ENGINE DATA	
General	
Type	ohv
No. of cylinders	4
Bore \times stroke: mm	69.3 \times 76
in	2.728 \times 2.992
Capacity: c.c.	1147
cu in	70
Max. b.h.p. at r.p.m.	63—5,750
Compression ratio	9 : 1 or 7.5 : 1

CRANKSHAFT AND CON. RODS		
Diameter	Main Bearings	Crankpins
	2.001-2.005 in	1.625-1.6255 in
Length	Front & Inter	Rear
	.995-1.005 in	1.2995-1.2975 in
Running clearance: main bearings	.0005-.0032 in	
big ends	.0005-.002 in	
End float: main bearings	.004-.011 in	
big ends	.008-.011 in	
Undersizes	.010, .020, .030, .040 in	
No. of teeth on starter ring gear pinion	117/9	

VALVES		
	Inlet	Exhaust
Head diameter	1.245-1.241 in	1.152-1.148 in
Stem diameter	.311-.310 in	.309-.308 in
Face-angle	45°	45°
Spring length: fitted at load	1.07 in	
	117 lb	

CAMSHAFT	
Bearing journal: diameter	1.8402-1.8407 in
Bearing clearance	.0026-.0046 in
End float	.004-.008 in
Timing chain: pitch	.375 in
No. of links	62

crown. Grades of piston are matched with grade of cylinder bore by selective assembly. Bore size increased in .0004 in steps on "F," "G" and "H" size markings respectively. Identification mark of bore grade stamped on casting adjacent to bore in cylinder block.

Two parallel faced compression rings and one slotted oil control ring are fitted above fully floating gudgeon pin.

Remove rod and piston assembly complete through bore; fit with split skirt of piston to non thrust (camshaft) side of engine. When renewing gudgeon pin bushes, they should be broached to .938-.937 in. Fit of pin is selective and should be tight push fit at room temperature.

Camshaft

Single row endless roller chain drive with spring tensioner. Shaft runs in machined bores in cylinder block casting. End thrust is taken and location is effected by "C"-plate fitted to front engine bearer plate, and retained by two setscrews. Driven wheel retained by two setbolts on camshaft end boss. Provision made for adjustment of chain wheel to give $\frac{1}{4}$ tooth variations in valve timing.

Valves

Overhead, non-interchangeable, inlet larger than exhaust. Springs secured by split cone collets. Fit springs with close coils to cylinder head. Valve guides plain, no shoulder, press in from top until guide projects $\frac{1}{8}$ in from top of cylinder head. Inserts shrunk in when required.

Tappets and Rockers

Plain barrel tappets sliding directly in crankcase. Tappets may be removed with long-nosed pliers after removal of cylinder head. Rockers are offset left- and right-handed in pairs, drilled for lubrication and run direct on hollow shaft. Each pair operates either side of rocker post and intermediary rockers are separated by long coil springs. Oil fed from gallery is metered by grooved camshaft rear bearing and delivered via head drillings to rear rocker pedestal, and thence to shaft and individual rockers. Tappet clearance must be set to .0165 for timing and .010 in (cold) for normal running.

Lubrication

Hobourn-Eaton eccentric double rotor type pump, spigoted and flange bolted in sump. Centre rotor driven by shaft pressed

into rotor and pegged in position. Upper end of rotor drive shaft engages with tongue on distributor shaft. Three long bolts attach pump body to cylinder block. Pump may be removed with engine in position. Oil pressure warning light provided on dashboard and cuts out at an oil pressure of 7 lb/sq in. Normal running pressure 65-70 lb/sq in. Full flow filter fitted.

Non-adjustable spring loaded release valve housed on near side of crankcase.

Ignition

Coil, distributor incorporates auto and centrifugal advance mechanism. Distributor drive is taken from camshaft and helical gear at upper end has an offset slot for location of dogs on distributor drive shaft. When timing after reassembly of oil pump and drive gears, correct position of distributor drive gear is obtained when smaller "half moon" formed by slot in gear is uppermost and slot is in direct line with centre hole of oil filter boss, and engine is set for T.D.C. No. 1 cylinder firing.

Cooling System

Pump and fan. Non-adjustable bellows thermostat retained in outlet port of pump body by outlet elbow. Fan belt adjustment provided by swinging dynamo unit. Correctly adjusted belt has $\frac{3}{8}$ in play in longest run.

TRANSMISSION

Clutch

Borg and Beck single dry plate, hydraulically operated through sealed ball race release bearing. Actuating cylinder mounted to bulkhead and connected to slave cylinder, mounted on bellhousing, by pressure hose.

Access to clutch unit for service after removal of gearbox.

Gearbox

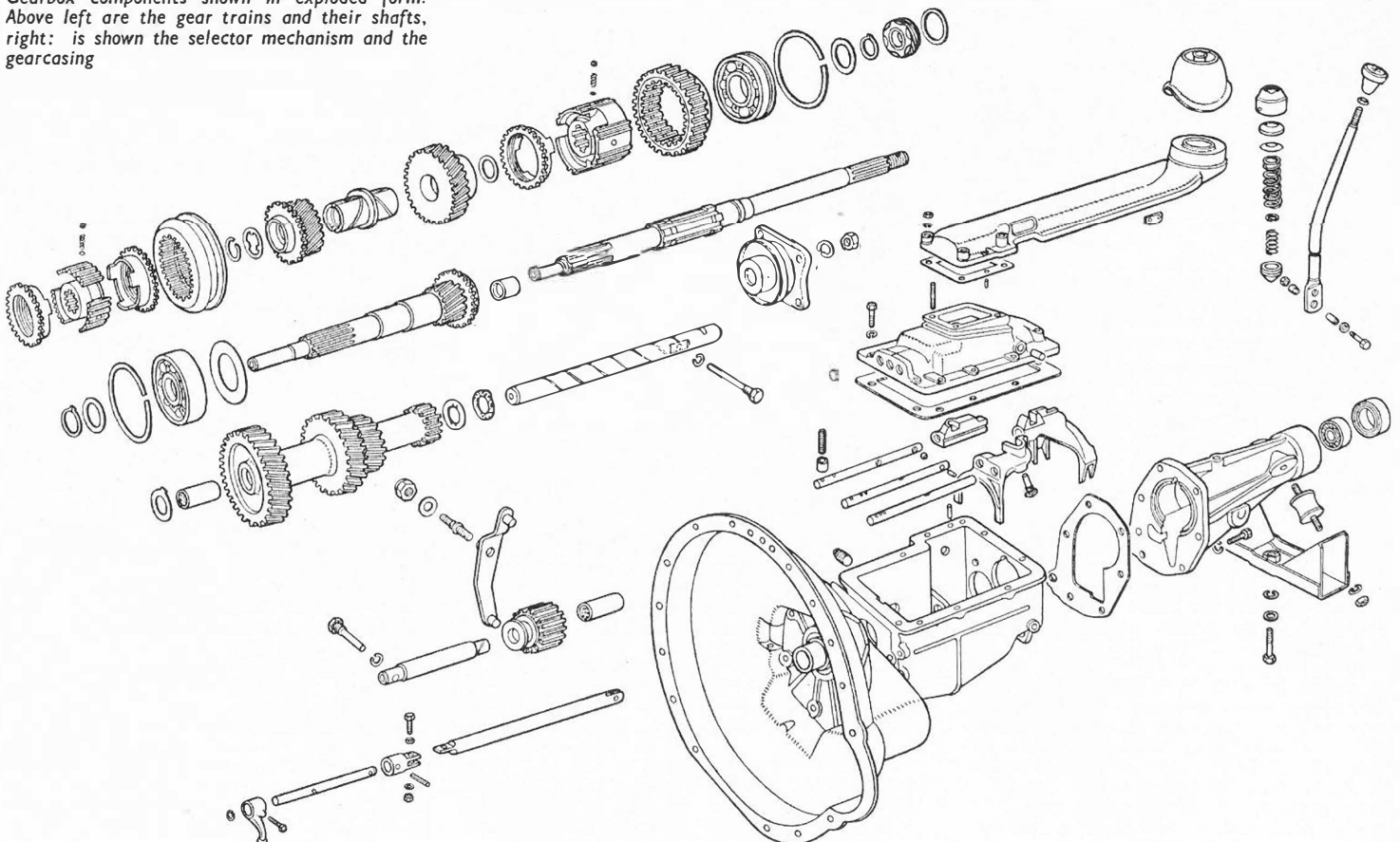
Four-speed, synchromesh engagement on second, third and top gears. Centre, remote control lever operating through selector mechanism in gearbox.

Removal

Proceed as detailed in engine section, for removal with power unit. To remove gearbox by itself, take out floor coverings and take off cover. Disconnect front end of propeller shaft, remove speedometer cable and undo clutch operating cylinder, retaining pinch bolt, detach slave cylinder, tying up out of way. Remove heater box, two bolts, place a suitable jack or support under engine. Remove bellhousing bolts, release starter motor mounting bolts. Disconnect engine/gearbox rear mounting, cradle may also be removed if required. Raise rear of engine slightly, draw gearbox back and manoeuvre up and out into car.

To dismantle gearbox, remove nut retaining shaft flange and six setscrews and two bolts securing cover assembly and take off cover and gasket. Take off clutch actuating mechanism from gearbox and companion flange from the rear, withdraw six setscrews and one long bolt securing tail extension housing to main gearbox. Detach extension, remove speedometer cable attachment union, withdraw drive shaft and nylon driven gear. Eject reverse idler pinion rearwards. Remove locking pin and reverse pinion idler shaft, and remove operating lever with pivot pin. Take off clutch housing. Remove layshaft locking pin and drive out layshaft to rear. Extract primary shaft together with

Gearbox components shown in exploded form. Above left are the gear trains and their shafts, right: is shown the selector mechanism and the gearcasing



ball race, using special tool No. 20SM66B. Drift out mainshaft to rear until rear bearing is clear of housing and tip up shaft to extract third and top synchromesh unit and third speed synchromesh cup. Note: longer boss on hub faces forward. Extract circlip securing third speed mainshaft gear and withdraw mainshaft rearwards, taking off mainshaft gear cluster. Note: In removing mainshaft gears it is possible that three loading balls and springs in second speed synchro. sleeve will become displaced when second gear is engaged and not restrained by fork. Take out rear layshaft thrust washer, and remove layshaft.

To dismantle top and third or second speed synchromesh units, press inner splined hubs out of outer members, taking care to catch balls and springs as they are released. To dismantle main shaft assembly, remove large circlip from annular groove in mainshaft ball race, press off speedometer driving gear and remove ball race locating circlip, which also releases washer. Place shaft under press and remove ball race.

To reassemble gearbox, reverse process of dismantling, taking care to replace and renew all gaskets, jointing material. Overall end float of main shaft gears on bushes is specified as .002in-.006in and lower limit is permissible allowing for an overall float on gear cluster of .004-.012in. If new laygear is fitted end float should be checked between floating washer and stationary thrust washer at .0015-.0125in. If end float is excessive, thrust washer should be selected from top end of these limits.

Rear Axle

Hypoid bevel swing axle. Drive is transmitted to rear road wheels via short universally jointed drive shafts. Final drive housing is rubber mounted and through bolted to chassis frame at four points. To remove differential casing jack up vertical links either side, undo drive shaft flanges and main propeller shaft rear flange; lower jacks under suspension to release spring pressure. Remove exhaust pipe and silencer from car. Disconnect hydraulic and brake connections. Remove panel from floor inside car and undo six nuts on rear spring retaining plate, and remove plate. Undo forward mounting plate nuts securing plate to lugs on chassis frame. Remove rear attachment nuts and bolts passing through rubber bushed lugs on rear of differential casing. Unit may then be lowered out for bench service.

Hubs keyed to outer tapered ends of drive shafts (interchangeable) run on ball bearings at outer ends and on needle roller races at inner ends. Four stud hub flanges have lipped oil seal behind and hubs are retained by $\frac{1}{2}$ in nut. Tighten to torque figure specified in data tables when reassembling. Drive shaft may be removed with extractor after removal of brake drum, shoes and back plate.

Bevel pinion runs in taper roller bearings, outer races pressed into final drive housing. Shims provided to govern depth of mesh of pinion with crown wheel. When assembling, pinion bearing preload without oil seal should be 12-16 lb. in; and on final assembly pinion nut should be locked up to 70 lb. ft torque. Note: addition or subtraction of a shim of .001in thickness makes a difference of approximately 4 lb. in to torque readings. Crown wheel spigoted and bolted to one-piece differential gear carrier. Bearing caps, numbered, are dowel located on housing and differential assembly runs in taper roller bearing. When reassembling differential gear, check "run-out" with dial gauge. This should not exceed .003in. Differential side bevel gears run directly in cage and planet pinions have spherical washers. Shims between differential cage and outer faces of bearings provide mesh adjustment. Adjust to give backlash of .004-.006in. When replacing assembly in housing, use a case spreader ensuring that bearing caps are in their cor-

FRONT-END SERVICE DATA	
Castor	4° pos
Camber	2° pos
King pin inclination	6 $\frac{1}{2}$ °
Toe-in	parallel- $\frac{1}{16}$ in toe-in
No. of turns lock to lock	3 $\frac{1}{2}$
Adjustments: castor } camber } toe-in }	shims on lower ends of wishbones screwed tie rod ends

STEERING BOX	
Make	Alford & Alder
Type	rack and pinion
Adjustments: column end float } cross shaft end float } mesh }	shims shims under plunger screwhead

rect positions and tighten bolts to correct torque loading of 32-46 lb. ft.

CHASSIS

Brakes

Girling hydraulic. Disc brakes at front, drum brakes at rear. Pedal operates front and rear brakes hydraulically but handbrake operates at rear wheels only, by mechanical expanders in rear wheel cylinder housings.

Front brakes are self-adjusting, pads should be replaced when worn to minimum thickness of approx. $\frac{1}{8}$ in. To renew pads, jack-up car and remove road wheels, remove pad retainer bolt spring clips retainer pins and take out pads. Push piston back to cylinder extremities, fit new pads and replace retainers and spring clips.

Adjustment of rear brakes is provided by square ended adjusters on brake back plates, one per drum. With handbrake released, turn each adjuster until resistance is felt and back off one notch. Depress brake pedal sharply to check that shoes are fully centralized in drums. Adjustment of brakes as described automatically adjusts handbrake, and resetting of cables is not advised as a general practice. Operating rod is threaded and has clevis and yoke ends providing adjustment to compensate for cable stretch.

Rear Spring

Transverse semi-elliptic leaf type, centre mounted on top face of differential unit, retained by six studs and nuts and top plate. Spring centre through bolt is spigoted and located in machined face of differential housing. Metalastik bushes pressed into spring eyes. Outer ends of radius rods mounted on outrigger chassis members are plain rubber bushed.

Front Suspension

Independent coil springs and double wishbone links. Upper wishbone ball jointed at outer ends and rubber bushed at inner ends. Lower wishbone nylon bushed at outer ends, rubber bushed at inner ends. Complete suspension units are handed and not interchangeable. Units are bolted up to chassis frame brackets and may be removed complete for service on the bench, or systematically dismantled for individual part service.

Upper end of each vertical link terminates in ball pin working in a sealed ball socket bolted between both arms of upper wishbone. Lower end of each vertical link is threaded and works in bronze swivel housing. Securing bolt passes through outer ends of lower fulcrum, steel sleeve and phosphor-bronze trunnion; nylon bushed either side and locked up with Nyloc nut and plain washer.

To remove suspension unit complete, jack up chassis at specified jacking points. Undo

BALL AND ROLLER BEARING DATA			
	Int. dia., Ext. dia., Width (in. or mm)		Type
Note.—Upper limits only quoted.			
GEARBOX			
Mainshaft (front)	1.0002 × 2.4995 × .750in		B
(centre)	1.0002 × 2.4995 × .750in		B
(rear)	.7502 × 1.8742 × .5625in		B
REAR AXLE			
Hubs	1.0002 × 2.2497 × .625in		B
Diff. housing	1.2506 × 2.4416 × .7525in		TR
Pinion head	1.0006 × 2.6881 × .8676in		TR
Pinion tail	.7506 × 2.1256 × .8575in		TR
FRONT SUSPENSION			
Hubs (inner)	1.0006 × 2.0006 × .557in		TR
(outer)	.6255 × 1.6256 × .578in		TR

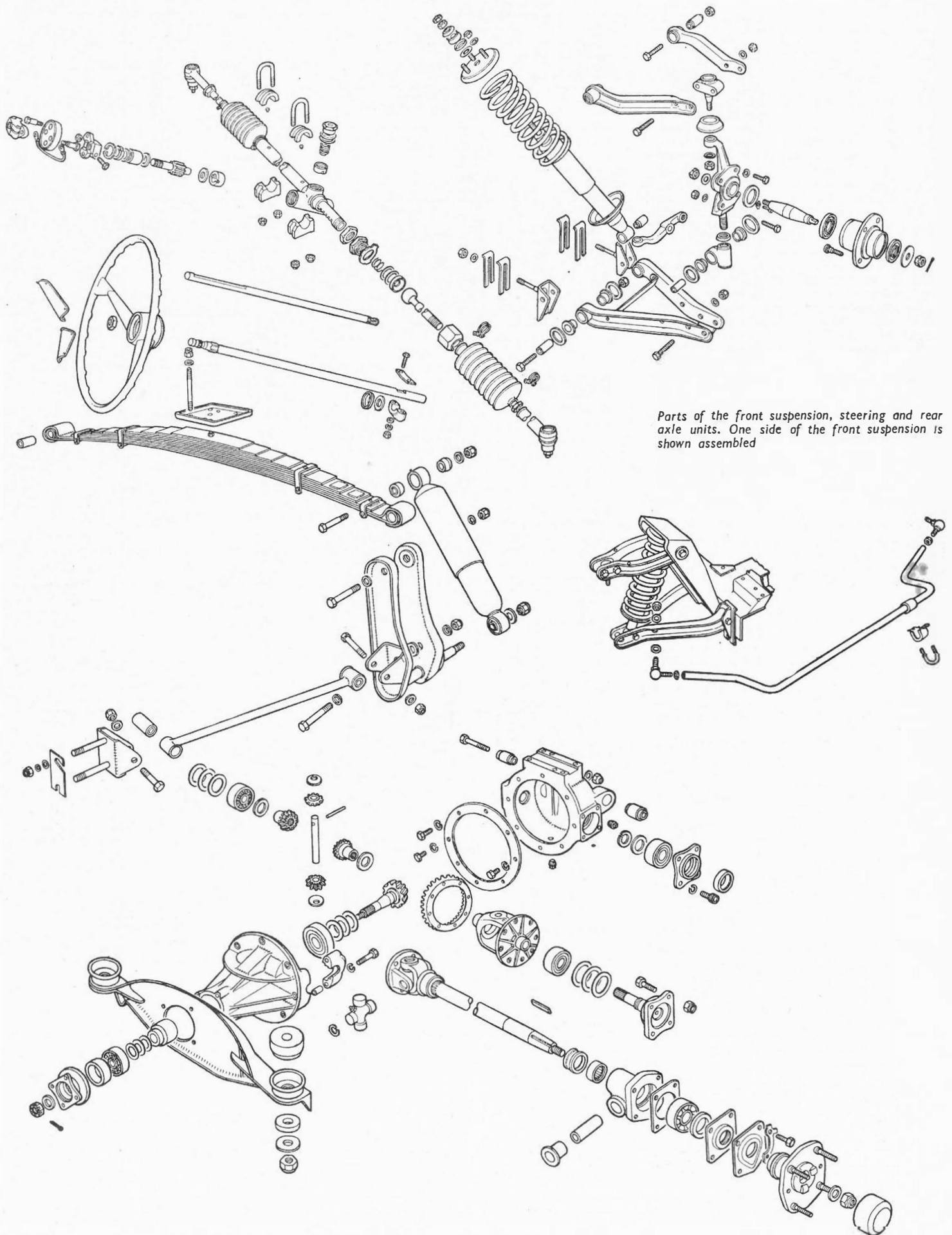
GEARBOX	
Type	synchromesh
No. of forward speeds	4
Final ratios: 1st	15.40 : 1
2nd	8.87 : 1
3rd	5.73 : 1
4th	4.11 : 1
Rev.	15.40 : 1
FINAL DRIVE	
Type	hypoid bevel
Crownwheel/bevel pinion teeth ratio	4.10 : 1

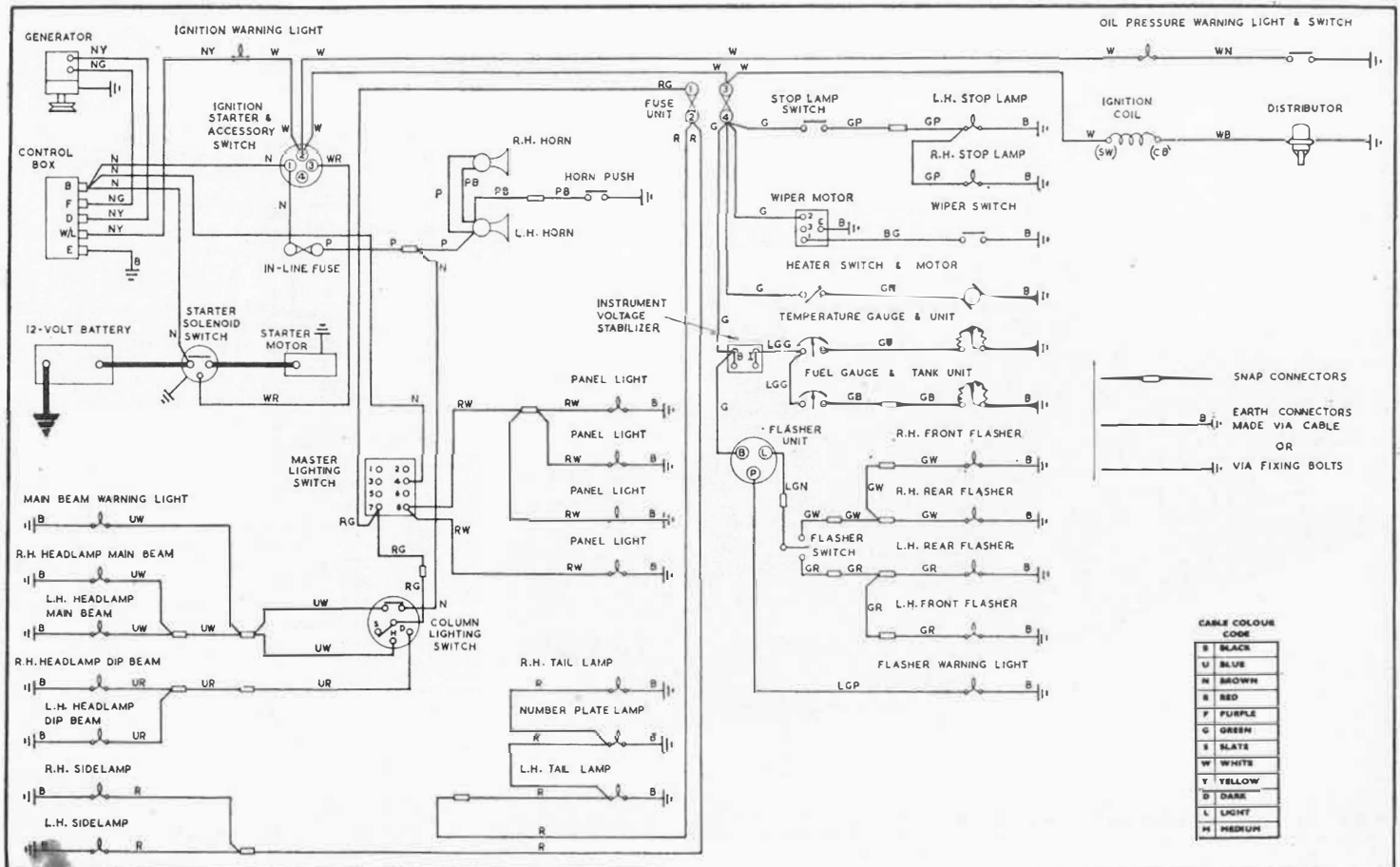
CHASSIS DATA	
Clutch	
Make	Borg & Beck
Type	sdp
Springs: no. } colour }	3—dk. blue
free length }	6—red
Centre springs: no. } colour }	not quoted
Linnings: thickness	4 white/t. green
dia. ext.	.125in
dia. int.	6.25in
	4.255in

BRAKES		
Type	Girling hydraulic	
	Front (disc)	Rear (drum)
Drum or disc diameter	9in	7in
Max. run-out of disc	.004in	—
Lining: length	—	6 $\frac{3}{8}$ in
width	—	1 $\frac{1}{2}$ in
thickness	—	$\frac{1}{8}$ in
material	Don 55	Ferodo MS1

SHOCK ABSORBERS	
Make	Armstrong
Type	Telescopic
Service	Replacement

SPRINGS		
	Front*	Rear
Length (eye centres, laden)	—	40.88-41.13in
Width	—	1.75in
Colour identity	green strip of paint	—
No. of leaves	—	7
Free camber (length, coil)	12.59in	1.03-1.29in
Loaded camber (length, coil) at load	7.80 ± .09in at 718lb	1.53in neg ± .13in at 1,420 lb.
*Alternative spring, marked with blue paint: Free length: 12.21in, length at load: 7.42in ± .09in at 718lb.		





Wiring diagram by permission of Joseph Lucas Ltd.

hydraulic connections and remove track rod from steering arm and anti-roll bar from chassis. Remove also, side valance, steering unit from column and radiator stay. Detach lower wishbone arms and upper wishbone support bracket bolts from side and top side of chassis frame (five bolts in all). Spring compressor is unnecessary, since telescopic damper controls extreme movement of coil spring. If coil spring is required to be dismantled, use compressor to take load off top nuts prior to release. Imperative to observe this method, since any other is dangerous and involves personal risk. Remove locknuts, nuts and washers from around top of damper. Release spring compressor slowly and withdraw coil spring. If damper is to be removed, undo lower mounting by releasing nut and removing securing through bolt.

Hubs run on taper roller bearings. Adjust by tightening slotted nut fully against washer and unscrew one flat. Felt oil seals in retainers pressed into hubs outside inner bearings. Tie rods have sealed ball joints.

Steering Gear

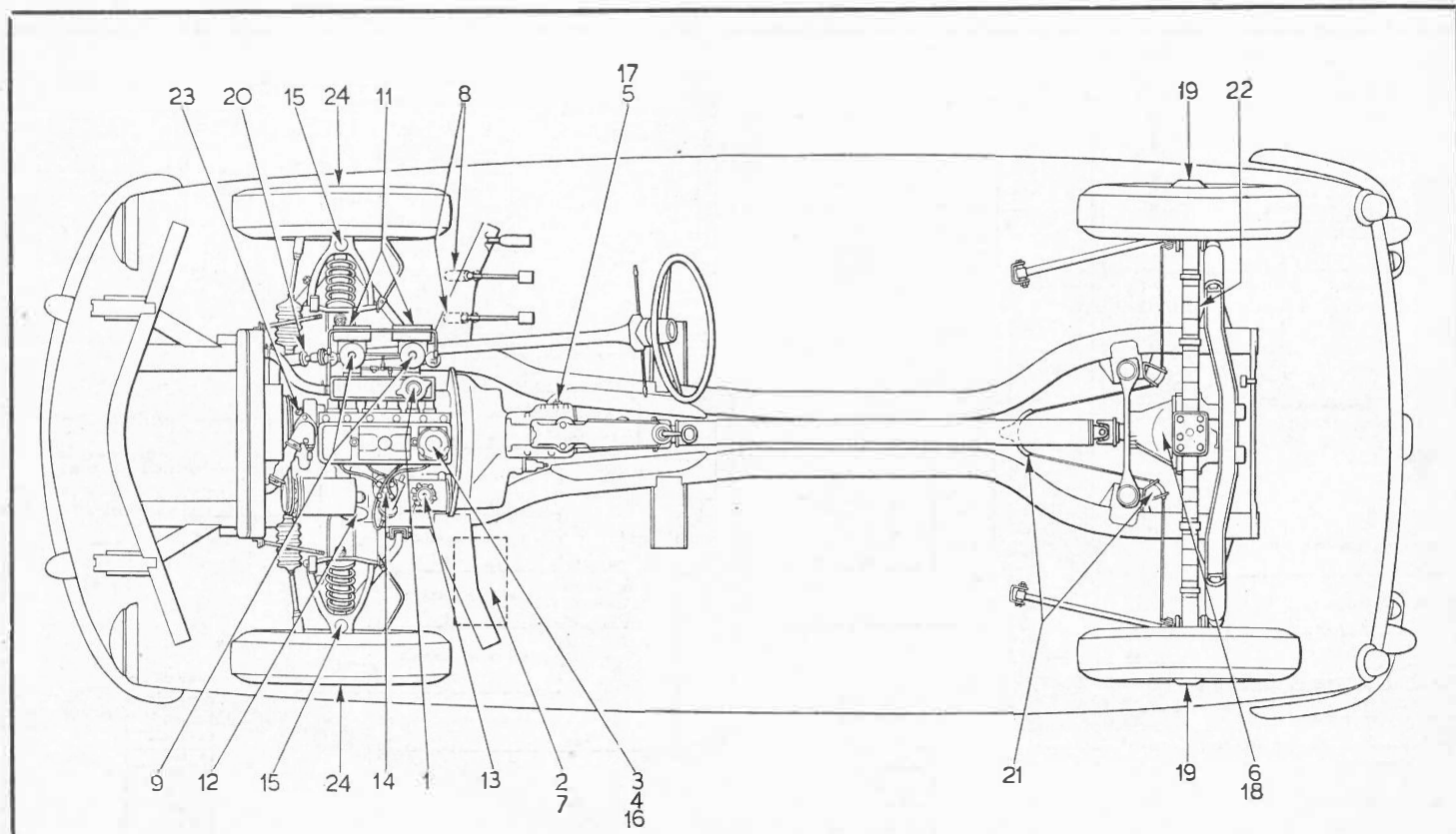
Rack and pinion. Inner ends of short track rods attached to ends of rack by adjustable ball joints covered by concertina gaiters and lubricated from steering gear.

SWITCHES	Model	Part No.
Ignition/starter	47SA	31873
Starter solenoid	S2T	76464
Lighting & Headlamp flasher (R.H.D.)	102SA	34627
" " (L.H.D.)	102SA	34628
" " (N.A.D.A.)	102SA	34629
Direction indicator	72SA	34406
Dip	21SA	31800
Panel light (N.A.D.A.)	PS7	34623
Wiper	PS7-2	34316
Steering column control	CG9	33577
Master Lighting	58SA	34477

LAMPS	Model	Part No.	BULB		
			Lucas No.	Wattage	Cap
Head, R.H.D., dip left	F700	58260	414	50/40	B.P.F. Unified European Cap
" L.H.D., dip right	F700	58263	355	42/36	
" Export Europe (except countries stated)	F700	58560	410	45/40	
" " Austria	F700	58957	410	45/40	
" " France	F700	58561	411	45/40	
" " N.A.D.A.	F700	58412	—	—	Unified European
" " Sweden	F700	58631	410	45/40	
Side	594	52608	207	6	S.C.C.
Front Flasher (Amber)	594	52609	382	21	S.C.C.
" " (Clear)	594	52610	382	21	S.C.C.
Stop tail	672	54138	380	6/21	S.B.C.
Rear Flasher	594	52337	382	21	S.C.C.
" " (N.A.D.A.)	691	54139	382	21	S.C.C.
Number plate	467.2	53093	222	4	M.C.C.
Flasher Warning	WL13	54360552	987	2.2	M.E.S.

ELECTRICAL EQUIPMENT DATA	
BATTERY	
Model BT7A	Part No. 22700
GENERATOR	
Model C40-1	Part No. 37344
CONTROL BOX	
Model RB340	Part No. 25079
STARTING MOTOR	
Model M35G	Part No. 25079
DISTRIBUTOR	
See additional table	
IGNITION COIL	
Model LA12	Part No. 45111
Primary resistance 3.0-3.4 ohms	
Running current at 1,000 r.p.m. 1.0 amp	
WINDSCREEN WIPER	
Model DR3A	Part No. 75450
Model 9H	Part No(s). 54068018 (L.N.) 54068019 (H.N.)
HORN(S)	
Type: Windtone	
Current consumption 3.0-3.5 amp (per horn)	
FLASHER UNIT	
Model FL5	Part No. 35011
FUSE UNIT	
Model 4FJ	
Fuse ratings 35 amp	

DISTRIBUTOR		
Part Nos.	Delco Remy 795280	Standard-Triumph 209687
DATA		
Moving contact spring tension	17-21 oz.	
Firing angle	0°-90° 180° 270°	
Closed period	36°-1°	
Open period	54°-1°	
Contact Breaker Gap.	0.015in.	
Rotation (viewed on rotor arm)	Counter clock-wise	
Centrifugal Timing Tests		
1. Set 0° at distributor speed less than 400 r.p.m.	Inches Hg.	Advance Degrees
2. Run distributor up to 2500 r.p.m. advance to be 11°-13°	2 1/2	2
3. Check at following decelerating speeds	3	3
	5	3-7
	6	5 1/2-8
	7	7-9
	8	8-10
	9	8 1/2-10 1/2
	10	9-11max.
R.P.M.	Advance Degrees	
1450	11-13	
1200	9.4-11.4	
900	7.4-9.4	
500	0-1.5	



KEY TO MAINTENANCE DIAGRAM

EVERY 250 MILES (OR WEEKLY)

1. Radiator
2. Battery
3. Engine sump

} check and top up

EVERY 6,000 MILES

4. Engine sump—drain and refill
5. Gearbox
6. Rear axle
7. Battery
8. Clutch and brake master cylinders
9. S.U. Carburettor dashpots
- *10. Door locks, catches, hinges, etc.—oil can
11. Air cleaners—clean and re-oil
12. Engine oil filter element—renew
13. Petrol pump sediment bowl—clean
14. Distributor—oil auto. advance mechanism, contact breaker pivot and shaft bearing, smear cam with grease
15. Steering swivels—remove blanking plugs from lower swivels, fit nipple and lubricate with oil
16. Engine Oil filler cap—clean and re-oil

} check and top up

EVERY 12,000 MILES (as for 6,000 miles plus following)

17. Gearbox
18. Rear axle

} drain and refill

19. Rear hubs
20. Steering unit

} Remove blanking plugs, fit nipples and lubricate with grease. N.B.—avoid excess of grease to steering unit.

21. Handbrake cable guides—grease gun
22. Rear road spring—spray with oil

EVERY 24,000 MILES (as for 12,000 miles plus following)

23. Water pump
24. Front hubs

} Remove blanking plug, fit nipple, lubricate with grease.

} lubricate with grease.

} Remove, strip down, clean and repack with grease

* Not shown on diagram.

TUNE-UP DATA

Firing order	1-3-4-2
Tappet clearance (cold): inlet	.010in
exhaust	.010in
Valve timing*: inlet opens	18° BTDC
inlet closes	58° ABDC
exhaust opens	58° BBDC
exhaust closes	18° ATDC
Standard ignition timing	13° BTDC
Location of timing mark	C/shaft pulley and pointer
Plugs: make	Lodge
type	CN7
size	14mm (in reach)
gap { high CR.	.025in
Low CR.	.030in
Carburettor: make	SU.
type	HS2 (twin)
Settings: Jet needle	AN
Air cleaner: make	AC
type	gauge
Fuel pump: make	AC
type	mech.
pressure	1½-2¼ lb/sq in

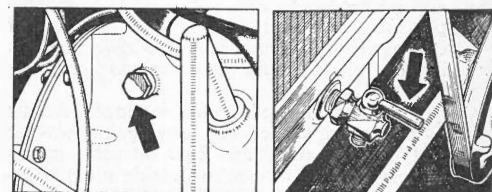
*Set at .0165in for valve timing

FILL-UP DATA

	Pints	Litres
Engine sump	7	4
Gearbox	1½	.85
Rear axle	1	.57
Cooling system (with heater)	9½	5.4
(without heater)	8½	4.8
Fuel tank	8 galls	41
Tyre pressures: front	18 lb/sq in	1.3 Kg/cm ²
rear	24 lb/sq in	1.7 Kg/cm ²

DRAINING POINTS

Left: the cylinder block drain tap point, access after removal of the hexagon headed plug. Right: radiator matrix drain tap access from above or below



RECOMMENDED LUBRICANTS

Component	Mobil	Shell	Esso	B.P.	Castrol	Duckhams'	Regent
Engine	Mobiloil Special	X-100 20/20W or X-100 Multigrade 10W/30	Extra Motor Oil 20W	Energol Motor Oil 20W or Visco-Static	Castrolite	NOL Twenty or Q5500	Havoline 20/20W or Havoline Special 10W/30
King Pin Lower Swivel, Gearbox, Rear Axle	Mobilube GX.90	Spirax 90 E.P.	Gear Oil GP.90	Energol EP.90	Hypoy	Hypoid 90	Universal Thuban 90
Front and Rear Hubs, Steering Unit, Engine Water Pump	Mobilgrease M.P.	Rotinax A	Multi-Purpose Grease H	Energol L.2	Castrol L.M.	L.B10 Grease	
Oil Can	Handy Oil	X-100 20/20W	Handy Oil	Energol Motor Oil 20W	Everyman Oil	General Purpose Oil	Havoline 20/20W

Clutch and Brake Reservoir
Wakefield Girling Brake and Clutch Fluid

Where this proprietary brand is not available, other fluids which meet the S.A.E.70 R3 specification may be used.