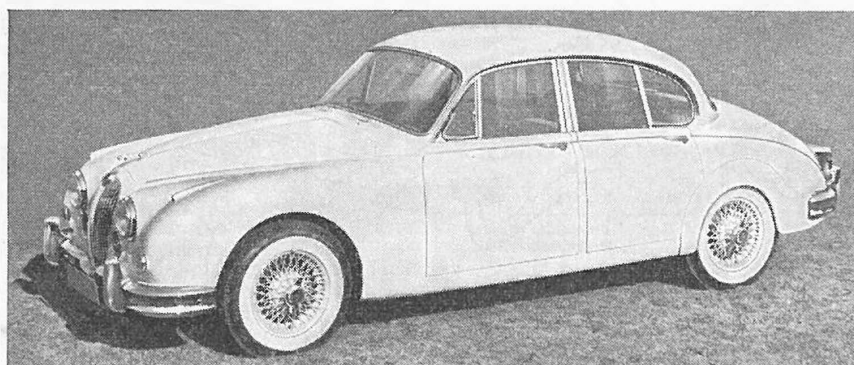


JAGUAR 3.8-LITRE

Manufacturers : Jaguar Cars, Ltd., Coventry

All rights reserved. This Service Data Sheet is compiled by the technical staff of MOTOR TRADER, and is checked by the vehicle manufacturers. It is the copyright of this journal, and may not be reproduced, in whole or part, without permission.



DISTINGUISHING FEATURES. Classic lines are retained in a modified form. Screen and door pillars are now more slender and half-spats are fitted to rear wheels on all Mk. II cars.

INTRODUCED at the Earl's Court Motor Show of 1959 the Mk. II range comprises three vehicles basically, viz. the 2.4-, 3.4- and 3.8-litre models. These cars are very similar in general construction and design and differ in respect of engine size and type of equipment fitted. This article will deal with the largest of the three, the 3.8-litre. The well-known six-cylinder overhead camshaft engine is retained and this is available in various stages of tune. Compression ratio options are 7.0:1, 8.0:1 and 9.0:1. Dunlop disc brakes are standard equipment and these operate on all four wheels. These have been detailed in a separate article, and readers are referred to Service Supplement No. 310/C44 for full operational and constructional details.

Transmission is taken through an hydraulically-operated single dry plate clutch, and synchromesh gearbox to the hypoid bevel drive of the semi-floating Salisbury 4HA rear axle. The Thornton Powr-Lok differential is incorporated in this latter component and it is illustrated on p. vi.

Overdrive is available as an optional fitment, as is also automatic transmission. In the former case, this equipment is of Laycock-de Normanville pattern and has been fully described in Service Supplement 226/C1. In the latter case this equipment is of Borg-Warner manufacture and has been the subject of the following Service Supplement Sheets: 260/C19, 272/C25, 344/C59. The accompanying Service Supplement (Pt. IV of the series) deals with dismantling operations on this transmission.

Cars are identified by chassis and engine serials. These are to be found stamped on a plate which is attached to the engine side of the dash panel, beneath the bonnet. Chassis numbers are stamped on top of the nearside frame member above the rear engine mounting bracket. Engine numbers are prefixed LA and suffixed /7, /8, and /9, indicating compression ratio.

Few special tools are required for service to the car, but those considered essential are listed on p. iii. The template for use in timing the camshafts will be found in the car toolkit. Threads and hexagons are in the main of S.A.E. pattern and form, but certain proprietary equipment may be found to have threaded parts of British Standard Form.

ENGINE

Mounting

At front, cylindrical rubber blocks bonded to studded plates at each end, bolted to brackets on either side of

the crankcase and to chassis brackets.

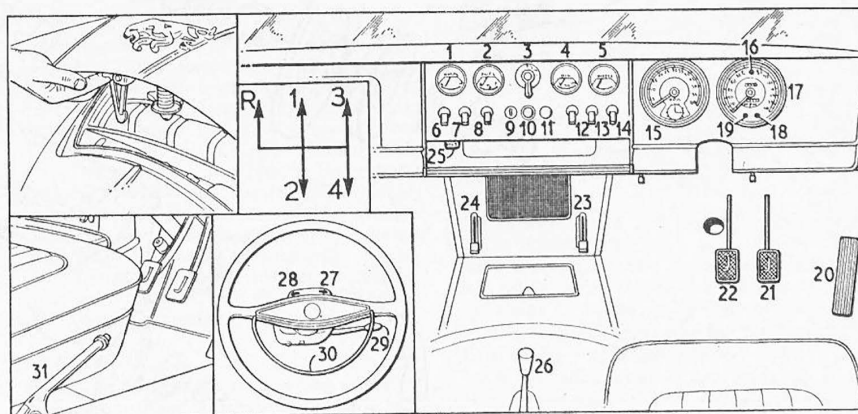
At rear, engine/gearbox unit is supported by spring-loaded "T" piece bolted up to lugs on gearbox extension casing, shank of "T" piece passes through coil spring and is located and cushioned in rubber bush pressed into channel section support bolted to body floor. Packing blocks fit between flange of channel support and stiffening plates are inserted under heads of mounting bolts.

Removal

Engine and gearbox are best removed as assembly after removal of front suspension of car. Work should be carried out over pit with lifting tackle, or a ramp, when in either case engine/gearbox may be withdrawn from below.

Jack up front suspension cross-member

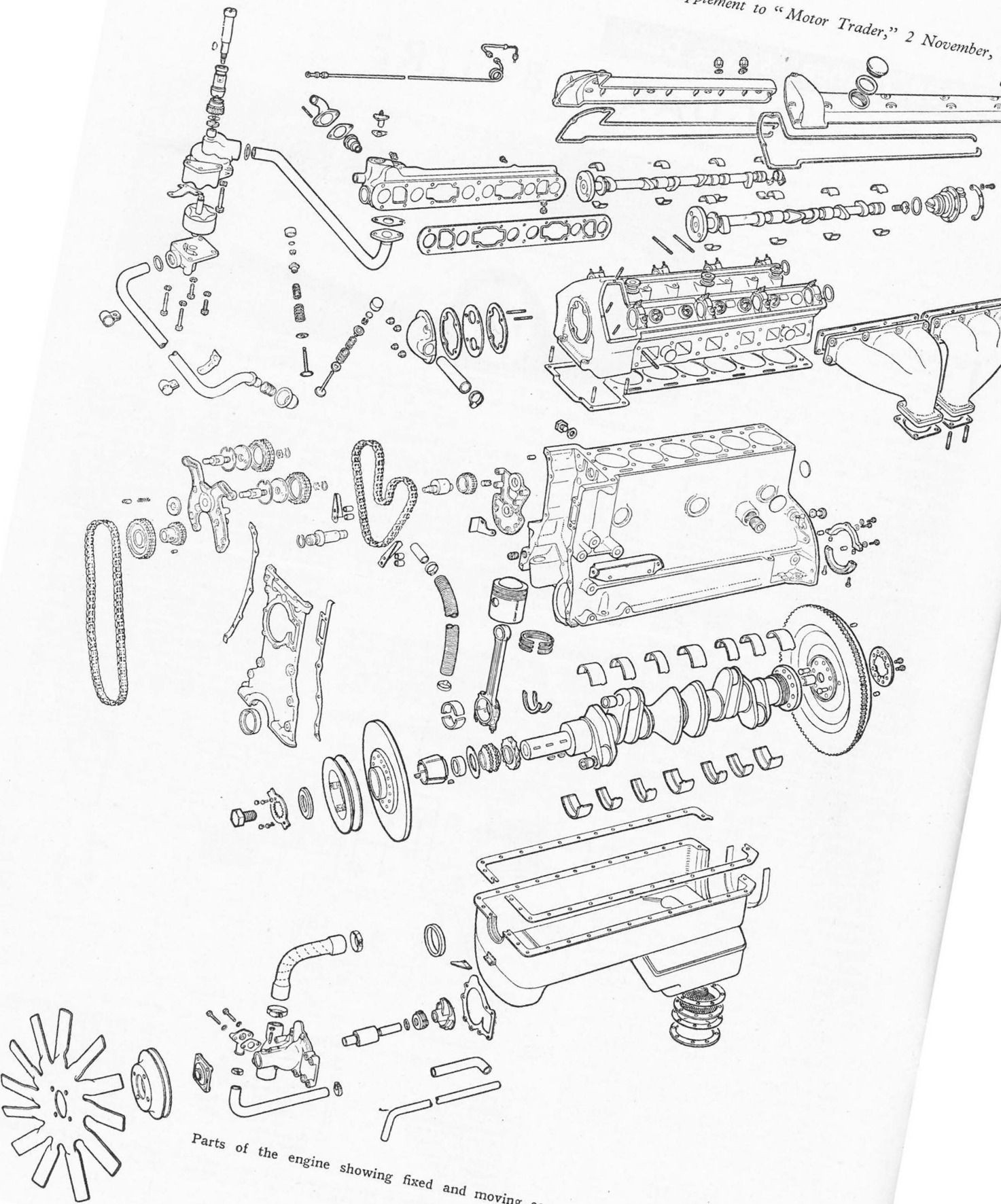
and remove road wheels. Support weight of car at front jacking points on blocks not less than 14½ in high. Leave jack in position. Remove four securing nuts between suspension member and rear mounting, and four nuts and bolts to front mounting brackets. Disconnect anti-roll bar mountings from underframe. Undo brake hoses at body brackets; remove clamp bolt from steering column universal joint. Lower suspension cross-member assembly on jack, draw forward and out, clear of car. Disconnect battery, drain radiator and remove bonnet after marking hinges to facilitate replacement. Take off air cleaner and bracket; remove dipstick, breather pipe, top and bottom water hoses and dynamo. Remove two setscrews each side, two nuts underneath and four nuts securing fan cowl, and take out radiator matrix followed by cowl. Disconnect all



INSTRUMENTS, CONTROLS, GEAR POSITIONS AND BONNET LOCK.

- | | | |
|----------------------------|------------------------------|--|
| 1. Ammeter | 12. Map light switch | 23. Heater distribution control |
| 2. Fuel gauge | 13. Screenwiper switch | 24. Heater temperature control |
| 3. Lighting switch | 14. Screenwasher switch | 25. Vent control |
| 4. Oil pressure gauge | 15. Engine r.p.m. indicator | 26. Gearlever |
| 5. Water temperature gauge | 16. Main beam warning lamp | 27. Direction indicator (R/H) |
| 6. Interior light switch | 17. Speedometer | 28. Direction indicator (L/H) |
| 7. Panel light switch | 18. Fuel level warning light | 29. Direction indicator switch (lift for headlamp flash) |
| 8. Heater fan switch | 19. Ignition warning light | 30. Horn ring |
| 9. Ignition switch | 20. Accelerator | 31. Handbrake |
| 10. Cigar lighter | 21. Brake pedal | |
| 11. Starter button | 22. Clutch pedal | |

Insets upper left show method of releasing bonnet safety catch, and operative positions of centre gearlever; below left: handbrake position and siting of steering column mounted controls.



Parts of the engine showing fixed and moving components.

GENERAL DATA				
Wheelbase	...	8ft 11 $\frac{1}{2}$ in		
Track: front	...	4ft 7in*		
rear	...	4ft 5 $\frac{1}{2}$ in*		
Turning circle	...	33ft 6in		
Ground clearance	...	7in		
Tyre size: front	...	6.00/6.40 x 15		
rear	...			
Overall length	...	15ft 0 $\frac{1}{2}$ in		
Overall width	...	5ft 6 $\frac{1}{2}$ in		
Overall height	...	4ft 9 $\frac{1}{2}$ in		
Weight (dry)	...	27 $\frac{1}{2}$ cwt		
Net weight	...	—		
*Plus $\frac{1}{2}$ in for wire wheels.				
SPECIAL SERVICE TOOLS				
Hub puller (5 stud hub)	...	J.1 (A)		
Top timing chain adjusting tool	...	J.2		
Overdrive drain plug spanner	...	J.3		
Gearbox rear oil seal removing adaptor	...	J.4		
Gearbox rear oil seal removing adaptor	...	J.5		
Note: Applicable to standard gearbox only and used in conjunction with 7657 oil seal removing tool.				
Front suspension coil spring compressor	...	J.6		
Hub puller (centre lock wire wheel type)	...	J.7		
Engine lifting plate	...	J.8		
Valve spring compressor	...	J.6118		
Oil seal remover (for use with J.4 and J.5)	...	7657		
NUT TIGHTENING TORQUE DATA				
		lb/ft		
Flywheel bolts	...	67		
Con rod nuts	...	37		
Main bearing nuts	...	83		
Cylinder head nuts	...	54		
Camshaft bearings	...	15		
BALL AND ROLLER BEARING DATA				
	Part No.	Int. dia., Ext. dia., Width (in or mm)	Type	
ENGINE				
Water pump	C.8167			
GEARBOX				
Constant mesh pinion	C.1838	40mm 90mm	B	
Mainshaft	C.1845	1 $\frac{1}{2}$ in 3 $\frac{1}{2}$ in	B	
FRONT AXLE				
Front hub (inner)	C.15351 (L.M. 67000/1)		TR	
Timken	C.15352 (L.M. 11900/1)		TR	

pipes, wires, leads and controls to engine, and exhaust pipes at silencer clamp, removing silencer and tail pipe, leaving down pipe in position. Remove locknut securing nut and washer from engine stabilizer at rear of cylinder head. Take off two setscrews from front engine mounting rubbers.

Remove gear lever knob and grommet, disconnect earth strap on clutch bell-housing. Undo handbrake at operating link fulcrum pin. Remove propeller shaft complete and undo speedometer drive cable.

Sling engine (if plate is used under cylinder head nuts use 2nd and 3rd pair of studs from rear). Remove front engine mounting brackets from underframe members, take off eight setscrews from rear engine mounting member at rear of gearbox or overdrive. With slings in position and weight of unit evenly distributed, lowering engine as far left as possible. When refitting ensure that suspension is assembled so that brake discs are in straight ahead position and that the steering wheel spokes are in quarter to three position with centre motif of horn push upright. Bleed hydraulic systems after unit is completely refitted.

Crankshaft

Seven main bearings. Thin wall, steel-backed, white metal-lined shells located by tabs. End float controlled by half thrust washers located in either side of centre bearing cap. No hand fitting permissible. Bearing shells Nos. 1, 4 and 7 are interchangeable, as are Nos. 2, 3, 5 and 6. It is possible to change all main bearing shells without removal of crankshaft but this should only be done in direct emergency. Thrust half-washers can be changed by removal of centre cap.

Flywheel, with integral starter ring gear, spigoted on rear flange of crankshaft, retained by 10 setscrews and located by two dowels. Flywheel can be refitted 180 deg. from original setting, but should be fitted with T.D.C. mark set correctly to preserve balance of assembly. Oil impregnated bronze spigot bearing bush pressed into end of crankshaft.

Oil pump and distributor drive gear (longer boss to rear), timing sprocket (either way), oil thrower, distance-piece and split tapered collet carrying fan pulley hub are keyed on front end of crankshaft with three Woodruff keys, and retained by setscrew and large washer which bears on pulley hub to which bonded rubber torsional vibration damper is riveted. Hub is keyed on tapered collet with Woodruff key. Pulley spigoted and bolted to hub.

Circular oil seal, half in timing cover and half in sump, bears on distance-piece behind pulley. Split oil collector housing fits around oil return thread on rear end of crankshaft. Lower half, on which cork strip sealing rear of sump fits, bolted to upper half by two Allen head setscrews with hollow dowels. Upper half dowelled and bolted to crankcase.

Connecting Rods

"H"-section stampings, horizontally split big-end bearings, thin-wall steel-backed, lead-indium-lined shells located by tabs in caps, no hand fitting permissible.

Small ends bronze bushed for fully floating gudgeon pins.

Pistons

Brico semi-split skirt aluminium alloy. Gudgeon pins located by spring rings. Top compression ring chromium plated. Pistons should be fitted with cylinder bore number stamped on crown towards rear with split to non-thrust (near) side. Note that Jaguar practice is to number cylinders from rear to front. Where reference is made in this article to cylinder numbers, our usual practice of numbering from front to rear is maintained.

Con. rods will pass through bores, but bolts may have to be extracted. Remove and assemble through top.

Camshafts

Duplex endless roller chain drive in two stages. First stage drives double idler sprocket and has Renold hydraulic tensioner on offside, nylon rubbing block fitted to early cars, and rubber blocks on latest models on near side. Second stage passes round idler sprocket, both camshaft sprockets and below small tensioner sprocket on eccentric hub.

Complete assembly of timing chain sprockets and brackets can be removed after removal of engine unit.

Each camshaft runs in four split steel-backed white metal-lined shells, located

ENGINE DATA				
General	...	...	...	...
Type	...	...	...	o.h.c.
No. of cylinders	...	...	...	6
Bore x stroke: mm	...	...	...	87 x 106 mm
in	...	...	...	3.425 x 4.1732
Capacity: cc.	...	...	...	3781
cu in	...	...	...	230.6
R.A.C. rated h.p.	...	...	...	28.15
Max. b.h.p. at r.p.m.	...	...	...	220 at 5,500 r.p.m.
Max. torque at r.p.m.	...	...	...	240 at 3,000 r.p.m.
Compression ratio	...	...	...	7:1, 8:1 or 9:1
CRANKSHAFT AND CON RODS				
	Main Bearings		Crankpins	
Diameter	2.75in		2.086in	
	No. 1	Nos. 2, 3, 5, 6	No. 4	No. 7
Length (in)	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$
Running clearance: main bearings	...	...	...	.0015-.003in
big ends	...	...	...	.0023-.0039in
End float: main bearings	...	...	...	.004-.006in
big ends	...	...	...	.006-.008in
Undersizes	...	...	...	.020, .030, .040in
Con rod centres	...	...	...	7 $\frac{1}{2}$ in
No. of teeth on starter ring gear/pinion	...	...	...	104/10
PISTONS AND RINGS				
Clearance (skirt)	...	...	...	.0011-.0017in
Oversizes	...	...	...	.010, .020, .030in
Weight without rings or pin (8:1 and 9:1 CR)	...	...	...	1 lb 14 oz 13 dr
Gudgeon pin: diameter	...	...	...	.8751-.8749in
fit in piston: finger push fit	...	...	...	
fit in con. rod: double thumb push	...	...	...	at 68°F.
	Compression		Oil Control	
No. of rings	...	2	...	1
Gap	...	.015-.020in	...	.011-.016in
Side clearance in grooves	...	.001-.003in	...	.001-.003in
Width of rings	...	.0777-.0787in	...	.155-.156in
CAMSHAFT				
Bearing journal: diameter	...	...	...	1.000in $\pm$.0005in
	...	...	...	.001in
Bearing clearance	...	...	...	.0005-.002in
End float	...	...	...	.0045-.008in
Cam lift	...	...	...	$\frac{1}{2}$ in
Timing chain: pitch	...	...	...	$\frac{1}{2}$ in
no. of links (upper)	...	...	...	100
(lower)	...	...	...	82
VALVES				
	Inlet	Exhaust		
Head diameter	1 $\frac{1}{2}$ in	1 $\frac{1}{2}$ in		
Stem diameter	$\frac{7}{16}$ in	$\frac{7}{16}$ in		
Face-angle	45°	45°		
	Inner	Outer		
Spring length: free	1.656in	1.935in		
fitted	17/32in	15/16in		
spring rate	69.3lb/in	77.4lb/in		

by dowels. Oil fed through drillings in head to rear bearings, and through hollow shafts to other bearings. End float of camshaft controlled by front bearing between sprocket and flange on shaft.

When removing head for top overhaul, first slacken chain tensioner, then detach each sprocket and slide it inwards along slot, securing it with elastic band on boss.

Before refitting cylinder head, it is important to observe procedure, as follows to avoid fouling of inlet and exhaust valves or valves with pistons, in addition to noting that the engine should not be rotated with camshaft sprockets removed.

Position camshafts, using valve timing gauge provided in tool kit. Key of gauge locates in keyways of camshaft and bottom face of gauge with camshaft cover face in cylinder head. Turn crankshaft to

T.D.C. No. 1 firing (flywheel mark visible through aperture in base of bell-housing). Check rotor arm position in distributor, refit cylinder head and connect timing chains.

Valves and Tappets

Overhead, set at 70 deg, included angle. Not interchangeable, inlet larger than exhaust. Split cone cotter fixing, double springs with seats between springs and head.

Valve guides plain, no shoulder, non-interchangeable. Press in until outer end of guide projects $\frac{1}{8}$ in from spring seat, after total immersion of cylinder head in boiling water for 30 mins.

Valve seat inserts for inlet and exhaust shrunk into light alloy head.

Plain cylindrical tappets fit over valves and slide in guides shrunk into head. Adjust clearance between cam and valve by pad on top of valve stem. Pads are available in thicknesses ranging from .085in to .110in in .001in steps. Pads are identified by etched letter A to Z, A being thinnest. Camshafts must be removed for tappet adjustment.

For removal of valve seat inserts or tappet guides, light alloy head must be heated in oven or muffle for one hour from cold at a temperature of 300 deg F, when new parts should press in easily.

Lubrication

Hobourn-Eaton eccentric rotor pump fitted, with pressure relief valve situated in filter head. Skew drive gear retained on shaft (Woodruff key) by nut. Shaft runs in bronze bush pressed into housing on front of crankcase. Upper end of shaft has offset slot for distributor drive.

When refitting skew gear, shaft and bush assembly, turn crankshaft to T.D.C.

1/6, and push in assembly so that, when skew gear meshes with crankshaft gear, larger segment is towards engine.

Ignition

Anti-clockwise distributor, with centrifugal and vacuum control, spigoted in crankcase on offside front, and retained by clamp plate.

When removing distributor, slacken clamp leaving clamp plate on crankcase.

Cooling System

Pump and fan. Non-adjustable bellows thermostat in front end of inlet manifold water jacket.

Adjust fan belt by swinging dynamo until there is about $\frac{1}{2}$ in movement either way on vertical run of belt.

TRANSMISSION

Clutch

Borg & Beck single dry plate, graphite thrust release bearing, hydraulic actuation through slave cylinder operated by foot pedal. Only external adjustment is by nut on rear end of pedal pull rod to give $\frac{3}{4}$ in free movement at pedal pad.

Access to clutch for service after removal of gearbox and bell-housing.

Gearbox

Four-speed, synchromesh on 2nd, 3rd and top gears. Single helical gear forms. Overdrive available as optional equipment on these cars has been fully described in Trader Service Data Supplement No. 226/C1. Automatic transmission is also fitted to this model and constructional details are to be found in Trader Service Supplements Nos. 260/C19 and 272/C25.

To Remove Gearbox

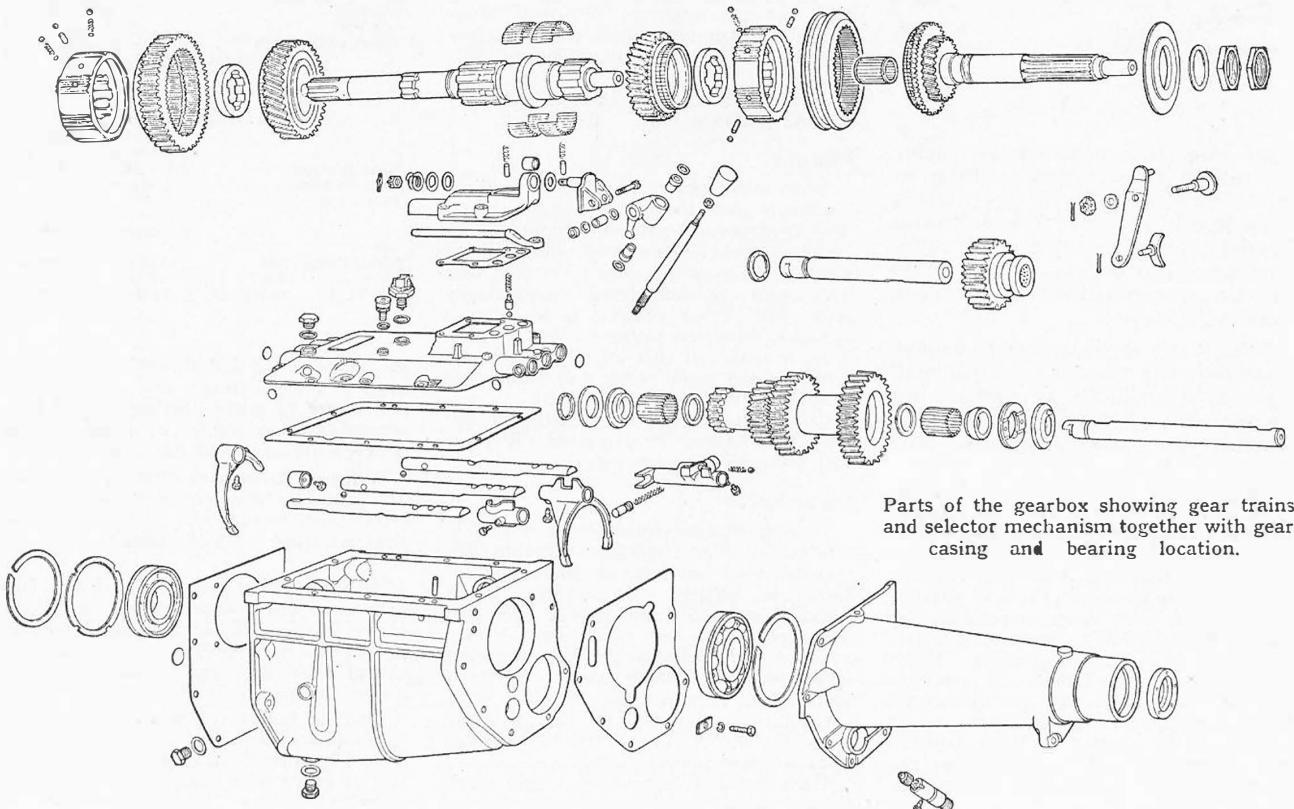
Gearbox should be removed with engine unit as detailed in engine section. It is possible to remove gearbox as a separate unit, but this procedure is not recommended as standard practice. When overdrive is fitted, it is imperative to remove engine and gearbox as complete unit to achieve access to gearbox.

To dismantle gearbox, remove top cover with remote control assembly, selector rods and forks. Engage top and 1st gears to lock box, and undo driving flange nut. Draw off flange, extract speedo drive pinion and detach rear cover with lipped oil seal complete with layshaft and reverse spindles. Draw off speedo drive gear and thick washer.

Using suitable extractor withdraw rear ball bearing from mainshaft. Remove bell-housing and front bearing cover with lipped oil seal (note copper washers under setscrew heads). Turn primary shaft so that cut-away on top gear dogs clears layshaft constant mesh gear. Tap mainshaft forward to drive out primary shaft and ball bearing, with caged roller spigot bearing. Mainshaft assembly can then be lifted out through top. Lift out layshaft cluster with needle roller bearings and thrust washers, and bushed reverse idler.

Primary shaft ball bearing retained on shaft with chip shield by nut and lock-nut.

To dismantle mainshaft assembly slide off top/3rd synchro assembly, noting interlocking plunger and ball in drilling through synchro hub. Press down plunger in shaft, locking 3rd gear splined thrust washer, releasing washer. Slide off 3rd gear with 41 needle rollers. Re-



Parts of the gearbox showing gear trains and selector mechanism together with gear casing and bearing location.

move 1st gear and synchro assembly (same as top/3rd gear, with interlocking plunger and ball). Remove 2nd gear (same as 3rd gear). When reassembling note that interlocking plunger and ball in top/3rd and 2nd synchro hubs must be opposite cutaway splines on mainshaft and in synchro sleeves.

Reverse idler spindle should not be separated from rear extension housing as rubber sealing ring recessed in spindle cannot be replaced without special thimble.

When reassembling box insert small retaining rings in layshaft needle roller recesses, and insert 29 needle rollers in each end, sticking them in with thick grease. Insert outer retaining ring in front end of shaft with large bronze thrust washer. Stick on steel thrust washer (pegged to box). Insert stepped steel washer at rear (pegged to shaft) and small bronze thrust washer. Insert reverse gear into casing. Lower cluster into box and insert thin rod to support it.

Move reverse gear and lever forward in casing. Feed in mainshaft and primary shaft assemblies, and drive in ball bearing. Lift layshaft cluster with rod and insert dummy spindle .980in in diameter, with generous chamfer on end, into layshaft so as not to disturb needle rollers. Assemble distance-piece and speedo gear on mainshaft, and offer up rear extension housing with layshaft spindle, and reverse spindle. Insert layshaft spindle, pushing out dummy spindle to front, picking up reverse gear on spindle as rear extension is pushed home. Complete assembly of box.

Propeller Shaft

Hardy-Spicer needle roller bearing universal joints. Nipples provided for lubrication. Two stage shaft on cars fitted with automatic transmission.

Rear Axle

Salisbury 4HA hypoid bevel drive, semi-floating shafts. Final drive housing integral with axle tubes, rear cover detachable.

To remove axle from car, jack up and support rear end of vehicle at suitable points under chassis frame members, disconnect brake fluid pipes, shock absorbers, brake cables rear end of propeller shaft, near torque arms, Panhard rod and rear springs. Axle unit may then be removed clear of car.

Rear axle used in this car compares in detail with that employed on Mk. VIII models, with the exception of the disc brake fitments. For all practical purposes and so far as the differential gear and half-shaft arrangement is concerned and for overhaul procedure, readers are referred to Trader Service Data No. 197, noting that the nominal distance from crown wheel centre line to pinion head is 2.625in, not 2.750in and that hub bearing end float is .003in-.005in not .006in-.008in, as stated on page v of that data sheet. For additional information readers are also referred to Service Supplement Sheet No. 298/C38 which features this axle unit.

CHASSIS

Brakes

Dunlop disc type on all four wheels. Lockheed vacuum servo-operated from footbrake pedal, handbrake operates mechanical linkage to rear wheels. Brake units comprise hub mounted disc and

braking unit rigidly attached to rear axle. Caliper unit houses a pair of brake pads and pad carriers.

Since friction pads are self adjusting adjustment and maintenance are confined to examination for wear and replacement of pads when worn to $\frac{1}{4}$ in thick.

Handbrake should only be adjusted by means of adjuster screws on rear calipers and then only to compensate for pad wear. Insert .004in feeler between pad and disc, screw in bolt until gauge is just nipped, withdraw gauge and check free rotation. If handbrake travel is still excessive, yoke at rear end of main cable may be adjusted and repositioned on its threaded rod by means of nut and securing locknut. Adjust so that there is no slack, but no cable should be in tension.

Further details of this system are contained in Service Supplement No. 310/C44. Lockheed $\frac{6}{32}$ in vacuum servo unit has no mechanical connection with master cylinder, but operates integral hydraulic boost cylinder, and is controlled through reaction valve operated by fluid pressure.

Rear Springs

Semi-elliptic cantilever type springs, secured to axle brackets on tube outer ends, and front rubber buffered ends rest on steel plates mounted on chassis frame members. Spring eyes bushed and secured to mounting brackets with through bolts and locknuts. Centre-plate bolts up around centre pad of spring to locate assembly and pair of torque arms are fitted together with adjustable Panhard rod between.

Front Suspension

Independent, coil springs with double wishbone links. Fulcrum shafts and blocks mounted and rubber bushed in inner ends of upper links; sealed ball joint with castor adjusting shims, packing piece and rebound rubber mounting block bolted up in outer ends of upper links. Camber adjusting shims are provided on machine face of fulcrum shaft blocks and shafts are retained in links by slotted nuts and split pins. Non-adjustable ball joints grease sealed, bolted up between outer ends of upper links on transverse mounting link and shank is taper fit in upper end of stub axle carrier.

Lower links are one-piece forgings; fulcrum shafts which swivel in inner ends of links and attach lower part of suspension units to front suspension cross-member are rubber bushed and bolted up each end with flat washers and slotted nuts. Outer ends of lower links attached to wheel carrier arms on taper of adjustment and built-up ball joints working in steel spacers and Railko sockets. Shims (.002-.004in) provide for adjustment on initial assembly beneath base plate which is bolted up to carrier arm by four hexagon-headed setbolts and locked with tabs. Ball joints fitted to each end of tie rods and centre section tube is left- and right-hand threaded to provide track adjustments.

Steering Gear

Burman recirculating ball type; column connected to box by universal joint. Inner column splined for steering wheel adjustment. Worm gear carried in casing in loose cup and cone ball bearings, shims provided beneath both end plates for adjustment of column end float; rocker shaft movement is adjusted by grub screw and locknut in steering box top cover.

CHASSIS DATA			
CLUTCH			
Make	...	...	Borg & Beck
Type	...	...	sdp 10A6/G
Springs: no.	...	...	12
colour	...	...	Black
free length	...	...	not quoted
Centre springs: no.	...	...	6
colour	...	...	Brown/cream
Linings: thickness	...	...	Not quoted
dia. ext.	...	...	Not quoted
dia. int.	...	...	Not quoted
GEARBOX			
Type	...	...	Synchromesh
No. of speeds	...	...	4
Final ratios: 1st	...	3.54 : 1	3.77 : 1
2nd	...	11.954	12.731
3rd	...	6.554	7.012
4th	...	4.541	4.836
Rev.	...	3.54	3.77
	...	11.954	Overdrive 2.933
			Rev. 12.731

PROPELLER SHAFT			
Make	...	...	Hardy Spicer
Type	...	...	Needle roller bearing U.J.
FINAL DRIVE			
Type	...	...	Semi-floating hypoid.
Crownwheel/bevel pinion teeth:	...	...	46/13
3.54 : 1 std.	...	...	49/13
3.77 : 1 o/d.	...	...	
BRAKES			
Type	...	...	Dunlop disc
Disc diameter	...	...	11in
Front	...	...	11 $\frac{1}{2}$ in
Rear	...	...	2 $\frac{1}{2}$ in
Brake cylinder bore dia.:	...	...	1 $\frac{1}{2}$ in
Front	...	...	
Rear	...	...	
SPRINGS			
	Front	Rear	
Length (eye centres, laden)	...	...	19 $\pm \frac{1}{16}$ in
Width (or wire dia. of coils)	...	...	2 $\frac{1}{2}$ in
No. of leaves	...	...	5
Free camber (length, coil)	...	...	3.45-3.7in
Loaded camber (length, coil) at load	...	...	8 $\frac{1}{8}$ in. @ 1,865lb (static load)
			$\frac{3}{4}$ in @ 620lb
SHOCK ABSORBERS			
Make	...	...	Girling
Type	...	...	Telescopic
Service	...	...	Replacement
STEERING BOX			
Make	...	...	Burman
Type	...	...	Recirculating ball
Adjustments:	...	...	
column end float	...	...	shims
cross shaft end float	...	...	grub screw and nut
mesh	...	...	
FRONT-END SERVICE DATA			
Castor	...	...	0° $\pm \frac{1}{4}$ °
Camber	...	...	$\frac{1}{4}$ ° $\pm \frac{1}{4}$ °
King pin inclination	...	...	3 $\frac{1}{2}$ °
Toe-in	...	...	Parallel to $\frac{1}{16}$ in toe-in
No of turns lock to lock	...	...	4 $\frac{1}{2}$
Adjustments: castor	...	...	Shims
camber	...	...	
toe-in	...	...	Screwed track-rod ends

Movement of rocker shaft is transmitted to front road wheels via centre track rod, steering idler and left- and right-hand tie rods.

Shock Absorbers

Girling telescopic front and rear, no provision for topping-up or maintenance apart from checking mountings for tightness at regular specified intervals. Service replacement units are available from the makers or their agents.

ADDITIONAL LAMP DATA			BULB		
Component	Model	Part No.	Lucas No.	Wattage	Cap
Headlamp, Export France ...	F700EF	51886	—	—	—
Headlamp, Export France (later) ...	F700EF	58231	411	45/40	U.E.C.
Headlamp, Export Norway, Sweden and Germany ...	F700	51792	350	35/35	B.P.F.
Headlamp, Export Sweden (later) ...	F700	58450	410	45/40	U.E.C.
Headlamp, Export Italy ...	F700	58230	410	45/60	U.E.C.
Headlamp, Export U.S.A. ...	F700	58493	—	—	—
Foglamp Export France ...	5WFT	55233	—	—	—
Embellisher ...	—	54520672	—	—	—
Front flasher (Export U.S.A.) ...	563	52480	382	21	S.C.C.
Stop, tail, flasher and reflex reflector (R. Hand) ...	627	53727	382 (F)	21	S.C.C.
Stop, tail, flasher and reflex reflector Export U.S.A. (L. Hand) ...	627	53757	380 (S.T.)	6/21	S.B.C.
Stop, tail, flasher and reflex reflector Export U.S.A. (R. Hand) ...	627	53758	—	—	—
Number plate boot and reverse (Export France) ...	512	53557	382 (R.)	21	S.C.C.
Direction Indicator switch (later) ...	378A	34314	222 (N.P. & B.)	4	M.C.C.
Brake fluid level indicator warning lamp (later) ...	WL3	38091	987	2.2	M.E.S.

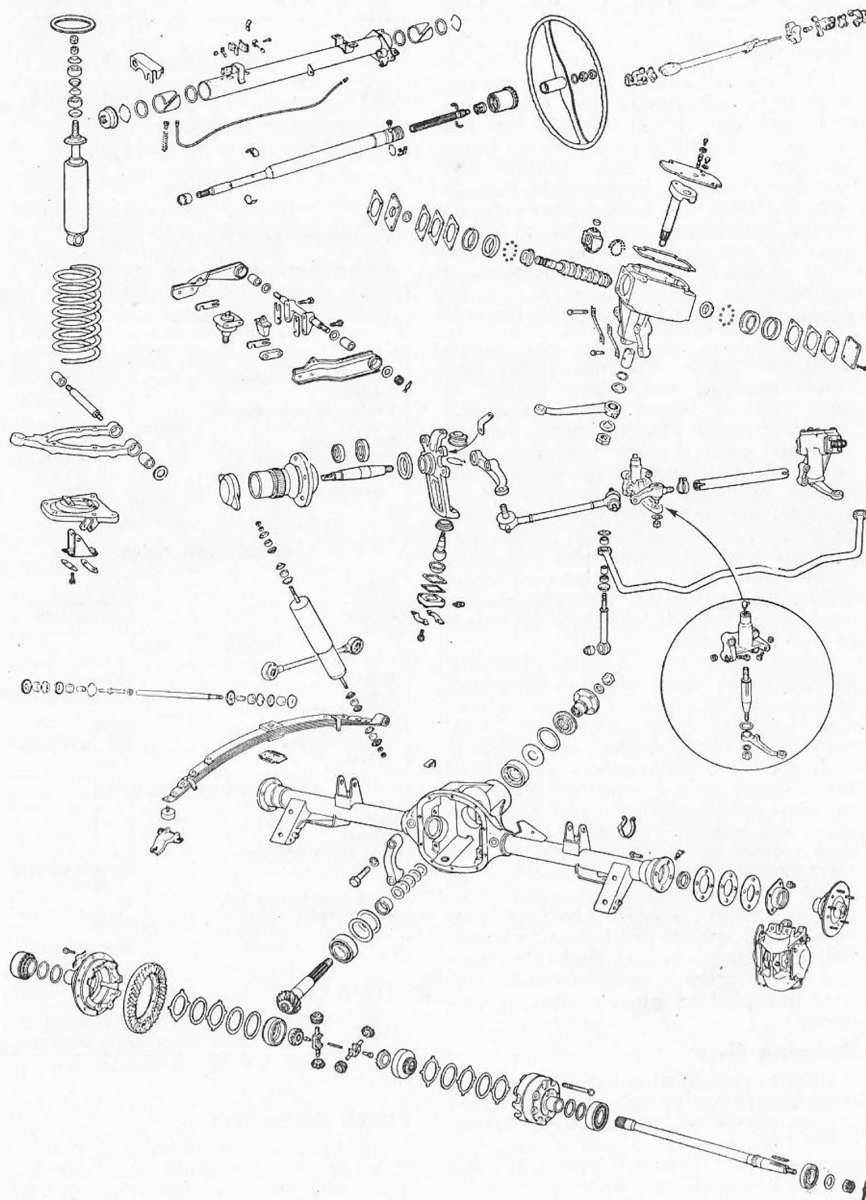
SUNDRY EQUIPMENT		
Mirror ...	608	62564
Junction Box ...	4J	78264
Screen Jet ...	2SJ	077011
SWITCHES		
Ignition/starter ...	545	31962
Starter ...	885	31967
Starter solenoid ...	ST950	76411
Lighting ...	PR87	31982
*Direction indicator ...	378A	31964
Dip ...	F822-1	31284
Reverse lamp ...	SS10-1	31077
Stop light ...	HL2	31082
Panel light ...	578A	31969
Wiper ...	79SA	31966
Steering column control ...	002	33550
Slip ring ...	CRS1	38271
(served by Jaguar)		
Heater ...	578A	31960
Handbrake ...	12SA	31504

*See below.

SWITCHES	Model	Part No.
Screen Jet ...	65SA	31984

TRANSMISSION UNITS

Laycock-de Normandie ...		
Control switch ...	52SA	31965
Transmission gear solenoid ...	11S	76515
Rotary throttle switch ...	12SA	31504
Interruption switch ...	SS10-1	31077
Relay ...	SB40	33174
Borg-Warner		
Gear holding solenoid ...	118	76516
Starting motor ...	M45G	26097
Brake line valve solenoid ...	BVS1	76502
Hydraulic pressure switch ...	HPS1	31393
Inhibitor switch ...	55SA	31972
Interrupter (starting motor) switch ...	8810-1	31077
Throttle switch ...	TOS1	31931
Nacelle, upper ...	—	54360427
Cover lower ...	—	54360363
Nacelle, upper (when Borg-Warner transmission fitted) ...	—	54360425
Cover, lower ...	—	54360420
Nacelle, upper (when Laycock overdrive fitted) ...	—	54360426
Cover, lower ...	—	54360419



Parts of the front suspension, steering gear and linkages and the rear suspension with the rear axle unit. Note that the wire wheel front hubs are shown, and below, are details of the rear axle assembly which contains the Thornton Powr Lok differential unit. Disc brake caliper arrangements are shown beside their respective hubs.

TUNE-UP DATA

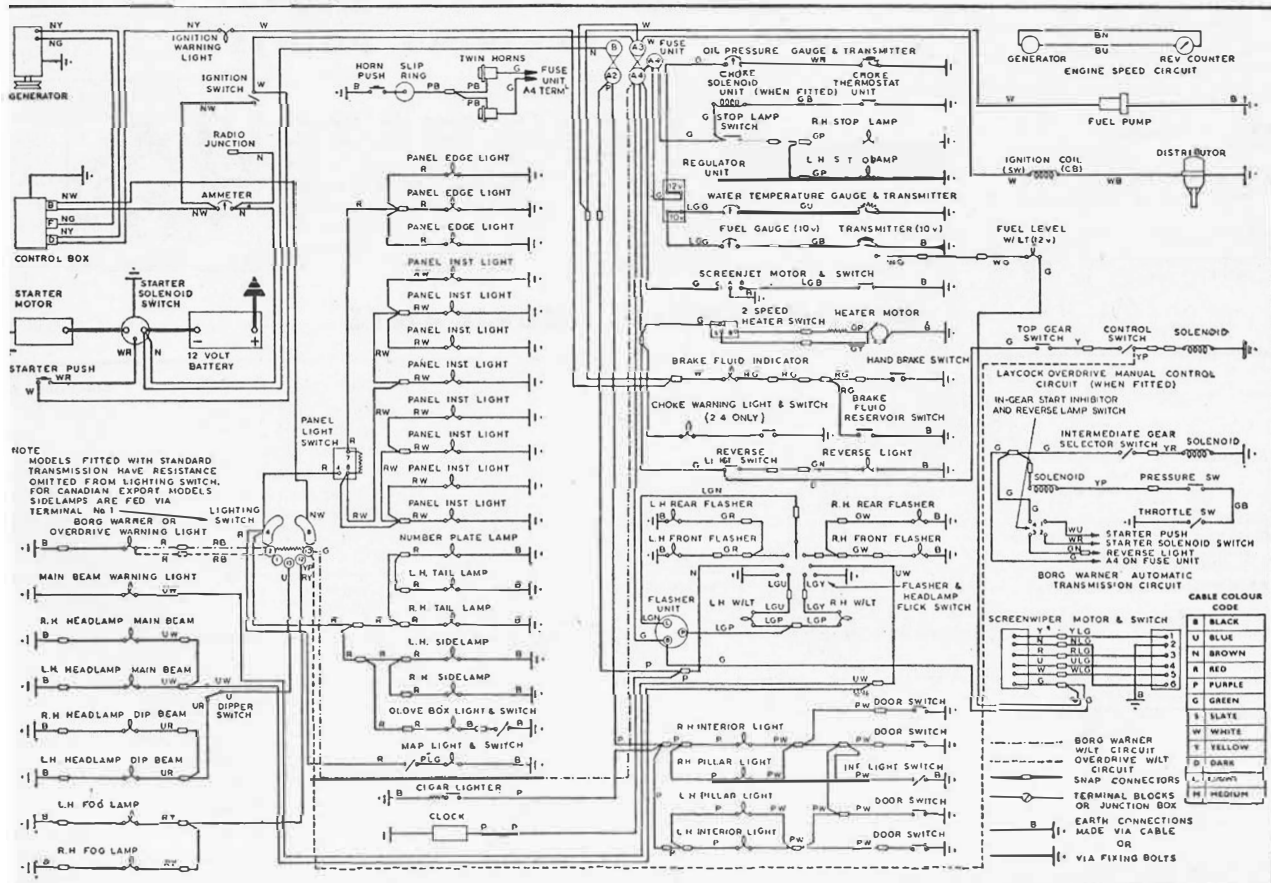
ring order ...	153624	9 to 1 comp. ratio	10° B.T.D.C.	5° B.T.D.C.
ppet clearance (hot, cold):				
inlet ...	.004in	Plugs: make	Champion	
exhaust ...	.006in	type	N.5	
ive timing: inlet opens	15° B.T.D.C.	size	14mm	
inlet closes	57° A.B.D.C.	gap	.025in	
exhaust opens	57° B.B.D.C.	Carburettor: make	S.U.	
exhaust closes	15° A.T.D.C.	type	H.D.6.	
andard ignition timing	Scale on crank-	Fuel level		
ication of timing mark	shaft damper,	Economy spring		
	pointer on sump	A.C.		
Oil bath Air Cleaner	Paper Air Cleaner	Air cleaner: make	Cooper	
		type	Paper element	
to 1 comp. ratio	T.D.C.	Fuel pump: make	S.U.	
to 1 comp. ratio	4° B.T.D.C.	type	AUA 52	
	7° B.T.D.C.	pressure		

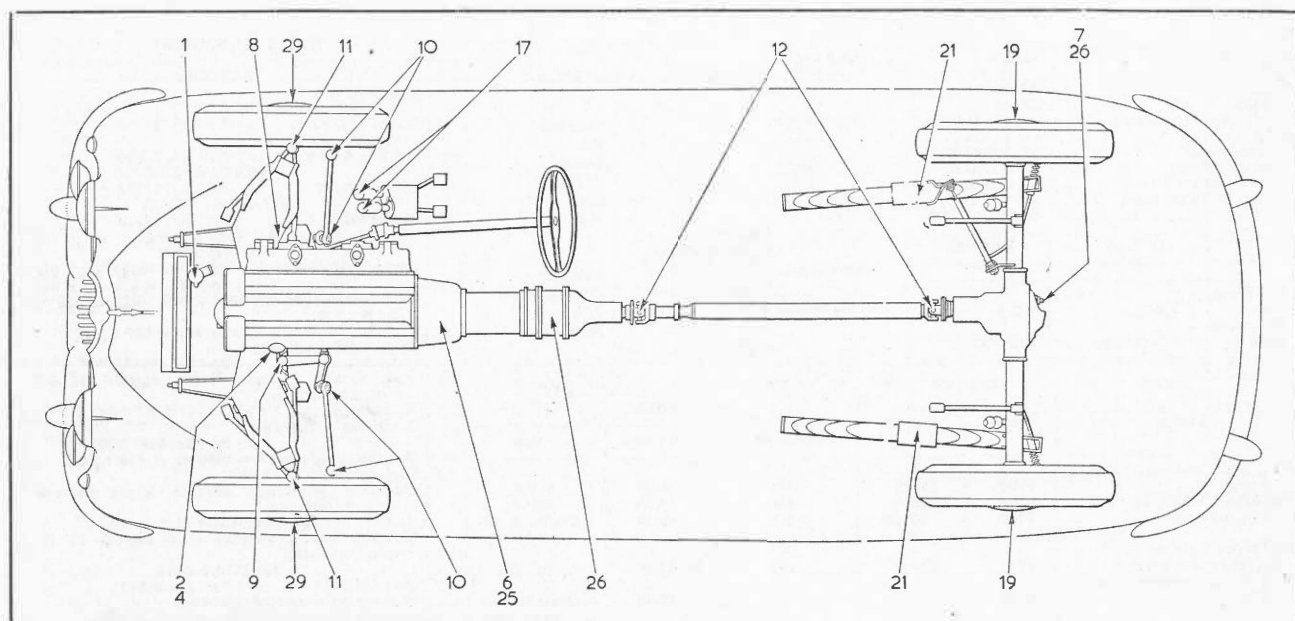
LUCAS EQUIPMENT

Model BV11A	BATTERY
Model C45PVS-6	GENERATOR
(When power steering fitted) C45PV-6	Part No. 22496
Model RB310	Part No. 22528
Model M45G	CONTROL BOX
Drive "S" Type inboard.	Part No. 37297
Model DMBZ6A	STARTING MOTOR
Part No. 40640 (8:1 CR)	Part No. 26140
Part No. 40665 (9:1 CR)	DISTRIBUTOR
Max. centrifugal advance (crank degrees) 38° at 6,800 r.p.m.	
Part No. 40640. No advance below 500 r.p.m.	
Centrifugal advance springs	Part No. 425183
Max. vacuum advance (crank degrees) 12°-16° with 25in Hg.	
No advance below 5in Hg.	
Centrifugal advance springs	Part No. 54411290
Centrifugal advance commences at 450 r.p.m.	
Part No. 40665 (9:1 CR)	
Maximum centrifugal advance (crank degrees) 26° at 4,000 r.p.m.	
Vacuum advance commences at 2½in Hg.	
Maximum vacuum advance (crank degrees) 14°-18° with 15in Hg.	
Model HA12	IGNITION COIL
Part No. 45067	
Primary resistance 3.0-3.5 ohms.	
Running current at 1,000 r.p.m. 1.0 amp.	
Model DR3	WINDSCREEN WIPER
Part No. 75310 (R.H.D.)	
Part No. 75311 (L.H.D.)	
NORN(S)	
Model HF1748	Part No(s) 70071 (high note)
Type: High frequency. (per horn)	Part No(s) 70063 (low note)
Current consumption 4 amp.	
Model FL5	FLASHER UNIT
Part No. 35010 (later)	
Model SF6.	FUSE UNIT
Fuse ratings 50 amp. 50amp.	

Lamps	Model	Part No.	Lucas No.	Wattage	Cap
lead home and export R.H.D. dip left	F700	58225	404	60/36	B.P.F.
ad export, L.H.D. dip right	F700	58226	406	60/36	B.P.F.
ad export Austria	F700	58634	410	45/40	Unified European cap
ad export Europe (except countries stated)	F700	51738	370	45/40	B.P.F.
ad except countries stated (later)	F700	58230	410	45/40	Unified European cap
og	5WFT	55232	—	—	—
ing range driving side	490	52474	222	4	M.C.C.
le/flasher (export Switzerland)	563	52498	380	6/21	8.B.C.
ront Flasher	563	52479	382	21	8.C.C.
top tail and rear flasher (L.H.)	627	53726	{ 382 (flasher)	21	S.C.C.
			{ 380 (stop/tail)	6/21	8.B.C.
umber plate, boot and reverse	512	53453	{ 382 (reverse)	21	8.C.C.
			{ 222 (N.P. & B)	4	M.C.C.
ap	481	52477	989	6	M.C.C.
inition warning (bulb holder)	—	863511	987	2.2	M.E.S.
ain beam warning (bulb holder)	—	863511	987	2.2	M.E.S.
rol warning (bulb holder)	—	863511	987	2.2	M.E.S.
ake fluid level indicator	WL3	38075	987	2.2	M.E.S.

See below.





KEY TO MAINTENANCE DIAGRAM

DAILY

1. Radiator } check and top up
2. Engine sump }

EVERY 2,500 MILES

3. *Battery—check electrolytic level and top up
4. Engine sump—drain and refill
5. *Oil filter element—clean
6. Gearbox }
7. Rear axle } check and top up
8. Steering box }
9. Steering idler box } oil gun
10. Steering tie rod and track rod ball joints }
11. King pins }
12. Propeller shaft universal joints } grease gun
13. *Propeller shaft splines (O/D and Auto. models only) }

14. *Spark plug—clean and reset
15. *Carburettor piston dampers—oil
16. Distributor—oil shaft bearing, auto advance, contact breaker pivot, smear cam with grease
17. Brake and clutch master cylinder reservoirs—check and top up

EVERY 5,000 MILES

18. *Carburettor filters—clean
19. Rear wheel bearings—grease gun
20. *Oil filter element—renew
21. Rear road springs—spray with penetrating oil
22. *Air cleaner—clean and re-oil
23. *Brake servo air cleaner—clean
24. Door hinges, seat runners, handbrake ratchet, catches, etc.—oil can

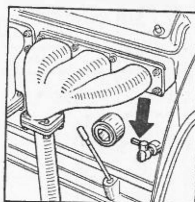
EVERY 10,000 MILES

25. Gearbox (and o/d if fitted) } drain and
26. Rear axle } refill
27. *Overdrive oil pump filter (if fitted)—clean
28. *Engine sump strainer—clean
29. Front wheel hub bearings—dismantle clean and repack with h.m.p. grease
30. *Petrol pump filter—clean
31. *Chassis and body nuts—check for tightness
32. *Auto. transmission (if fitted)—drain and refill
33. *Air cleaner (later cars)—change paper element.
N.B. Check level of fluid in Automatic transmission every 1,250 miles.
*Not shown on diagram.

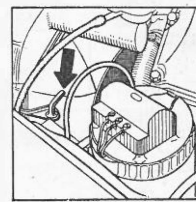
FILL-UP DATA

Engine sump ...	11 pints
Gearbox ...	2½ pints
Rear axle ...	2½ pints
Cooling system (including heater) ...	22 pints
Fuel tank ...	12 galls.
Tyre pressures: front ...	25 lb/sq in
rear ...	22 lb/sq in

DRAINING POINTS



Left shows the cylinder block drain tap, at the rear and adjacent to the dipstick. Right: shows the radiator matrix drain tap, and the remote control lever is arrowed.



RECOMMENDED LUBRICANTS

	S.A.E. No.	Mobil	Wakefield	Shell	Esso	B.P.	Duckham's
Above 90°F	40	Mobiloil AF	Castrol XXL	X-100 40	Extra Motor Oil 40/50	Energol 40	NOL 40
Engine ... 32° to 90° F	30	Mobiloil A	Castrol XL	X-100 30	Extra Motor Oil 20W/30	Energol 30	NOL 30
Below 32° F	20	Mobiloil Arctic	Castrolite	X-100 20/20 W		Energol 20	NOL 20
Gearbox, Carburettor dashpot, Distributor, Oil can	30	Mobiloil A	Castrol XL	X-100 30		Energol 30	NOL 30
Automatic Transmission	(AQ-ATF) type "A"	Mobil Fluid 200	Castrol TQ ATF Grade "A"	Donax T6	Automatic Fluid 55	ATF Type "A"	Nolmatic
Rear axle	Hypoid 90	Mobilube GX 90	Castrol Hypoy	Spirax 90 EP	Expee Compound 90	Energol EP 90	Hypoid 90
Propeller shaft, U.J.'s	140	Mobilube C 140	Castrol D	Spirax 140 EP	Gear Oil 140	Energol 140	NOL EP 140
Chassis nipples (except propeller shaft needle roller)	—	Mobilgrease MP	Castrolase Medium or WB	Retinax A	Grease or High Temp. Grease	Energol L2	LB 10 Grease or H.P.G.
Wheel hubs and distributor cam	—	Mobilgrease	Castrolase WB	Retinax A	High Temp. Grease	Energol L2	LB 10 Grease
Upper cylinder lubricant	—	Upperlube	Castrollo	Donax U or U.C.L.	U.C.L.	Energol U.C.L.	Adcoild Liquid
Brake fluid reservoir	—		Wakefield Crimson fluid				