

"TRADER" SERVICE DATA No. 155

M.G. Midget Series TC

Manufacturers: M.G. Car Co., Ltd., Abingdon-on-Thames.

PRODUCTION of this series started in November, 1945. It is the current version of a long line of Midgets going back to 1929, when an overhead camshaft engine of 847 c.c. capacity was fitted. The present type of engine, with push rod-operated overhead valves, was adopted for the TA series, introduced in July, 1936, when the capacity was 1,292 c.c. For the TB series, which was current from April to September, 1939, the bore was increased and the stroke reduced, making the capacity 1,250 c.c.

Differences between the TB and TC series concern the body, which has been widened; the battery, which is now mounted on the engine side of the dash; and the springs, which are shackled at the rear ends instead of being carried in trunnions.

Chassis numbers, prefixed TC, are serial numbers starting from 0251. They are stamped on the nearside chassis frame member immediately behind the front dumb iron. Engine

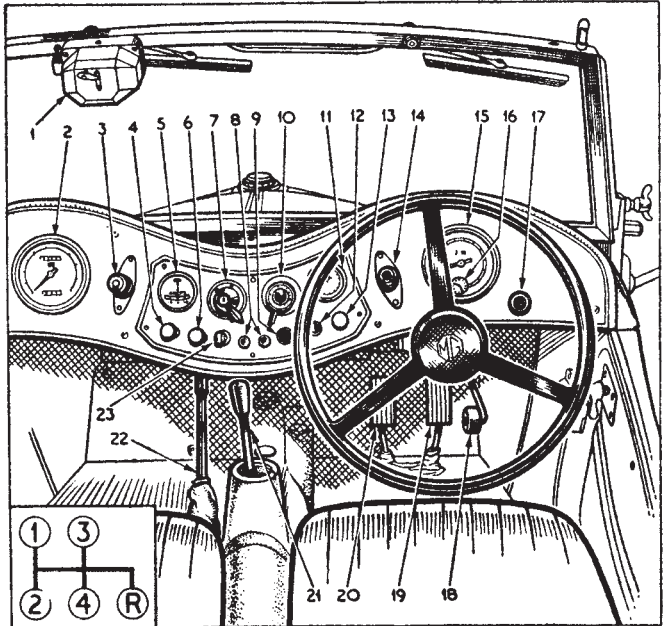
**NEW
SERIES
No. 30**

Articles in this series are written by the Technical Staff of "The Motor Trader" and checked by the service managers of the vehicle manufacturers or importers.

Next article—
STANDARD VANGUARD

Instruments and controls:

1. Screenwiper switch
2. Speedometer
3. Map reading lamp and switch
4. Starter switch
5. Ammeter
6. Choke control
7. Lighting and ignition switch
8. Inspection lamp sockets
9. Ignition warning light
10. Horn push and dipper switch
11. Oil pressure gauge
12. Panel lamp switch
13. Hand throttle control
14. 30 m.p.h. warning light
15. Rev. counter
16. Clock
17. Fuel warning light
18. Accelerator pedal
19. Brake pedal
20. Clutch pedal
21. Gear lever
22. Handbrake lever
23. Fog lamp switch



serial numbers start from 883, and are prefixed with the engine type letters XPAG. They are stamped on a disc fixed to the flywheel housing on the near side. Both numbers are stamped on a plate on the side of the toolbox.

Apart from a change in the type of control box, from RF 91 to RF 95, there have been no modifications affecting service.

Although nearly all service operations can be carried out with standard workshop tools, a number of special tools have been designed by the makers to facilitate certain operations. They can either be obtained from the M.G. Car Co. or made up from drawings supplied by the company. A

list of these tools is given on this page.

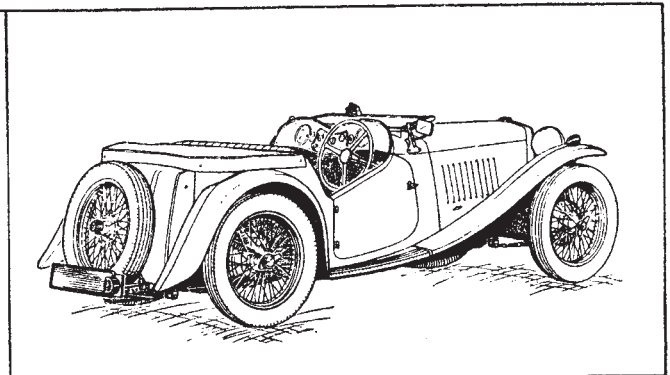
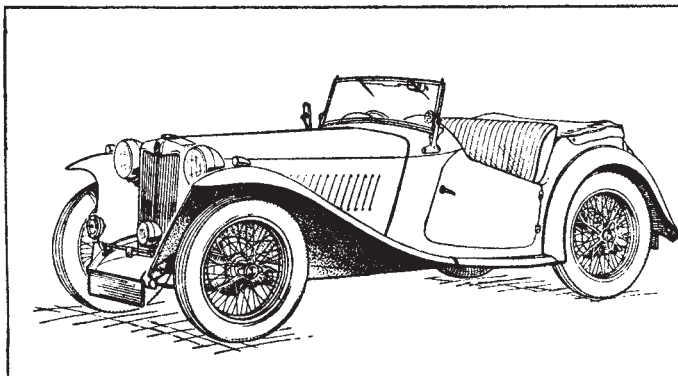
All threads on the engine and gearbox are metric. Those on the rest of the car are B.S.F. The hexagons of all nuts and bolts are Whitworth.

ENGINE DATA

Type	XPAG
No. of cylinders	4
Bore x stroke : mm	66.5 x 90
in	2.61 x 3.54
Capacity : c.c. in	1250
cu. in	76.3
R.A.C. rated h.p.	10.9
Max. b.h.p. at r.p.m.	54.4 at 5200
Max. torque (lb/in) at r.p.m.	765 at 2600
Compression ratio	7.25-7.5 : 1
Compression pressure (cranking speed)	90 lb sq.in.
Firing order	1 3 4 2
Tappet clearance (both, hot)	.019in

SPECIAL TOOLS

Push rod removing tool	T 59
Drop arm puller	T 60
Hub puller	T 61
King pin extractor	T 62
Universal pulley puller	T 63
Rear hub nut spanner	T 64
Valve guide fitting tool	T 68
Flywheel puller	T 69
Differential locknut spanner	T 76
Gudgeon pin end pads (for vice)	T 79
Synchromesh assembly tool	T 83
Crankshaft pulley and sprocket puller	T 93
Clutch alignment bar	T 124



DISTINGUISHING FEATURES—Only outward difference between TB and TC series is that current models have shackled springs. On previous models springs slid in trunnion blocks. Battery is now under bonnet.

ENGINE

MOUNTING

At front feet on either side of front engine plate rest on rubber blocks on chassis frame brackets. At rear bonded rubber blocks are bolted to lugs on gearbox and to brackets on frame cross-member. Front mounting bolts are threaded on two diameters. Larger thread screws into nut moulded in mounting block. Smaller thread used for retaining rebound rubber below frame bracket. When removing engine, undo locknut at lower end of each mounting bolt, and unscrew larger sleeve nut, releasing rebound rubber and large steel washer. Bolt can then be screwed out of mounting.

When refitting front mounting, screw bolt down tight. Fit rebound rubber so that smaller diameter registers in frame bracket. Screw on sleeve nut with washer, and tighten only enough to bring starting handle dog into line with guides. Lock with locknut.

REMOVAL

Remove engine, leaving gearbox in place (if attention is needed to gearbox as well, it can be removed in unit

with engine, but this involves disturbing floorboards).

Remove bonnet. Disconnect radiator hoses, tie-rods and headlamp brackets from shell. Take off two nuts below brackets and remove radiator shell and core. Disconnect all pipes, wires and controls, and remove steering gear completely. Dismantle front mounting assemblies, take weight of engine on slings behind front plate and below flywheel housing, remove bell-housing setscrews, draw engine forward and lift out.

When reassembling note rubber washers on radiator studs above and below brackets. Studs are shouldered. Tighten nuts fully. Nuts should be left slack until bonnet is assembled, so that fit can be adjusted.

CRANKSHAFT

Three main bearings. Thick steel white metal-lined shells dowed in block and caps. End float controlled by centre bearing, flanged both sides. No hand fitting permissible. Worn shafts must be ground to standard undersizes. Bearings cannot be changed with engine in place.

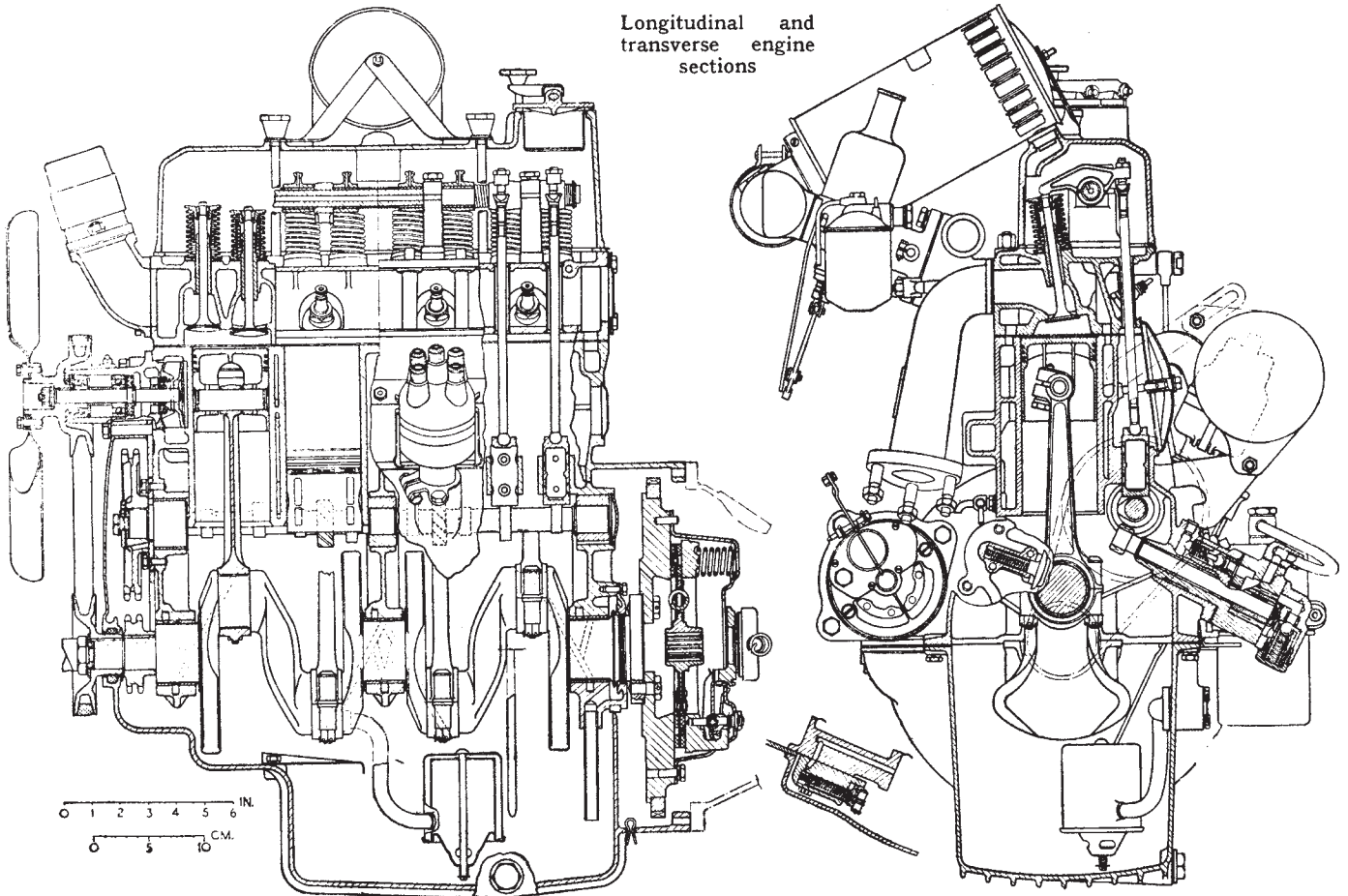
Flywheel, with shrunk-on starter ring gear, spigoted on crankshaft flange, located by two dowels and secured by four setscrews. Spigot

CRANKSHAFT AND CONNECTING ROD DATA				
	Main Bearings			Crankpins
	No. 1	No. 2	No. 3	
Diameter	52 mm	52 mm	52 mm	45 mm
Length	38 mm	38 mm	40 mm	28 mm
Running clearance :				
main bearings ... ..				.0005-.002in
big ends ... ..				.0005-.002in
End float : main bearings				.0015-.004in
big ends ... ..				.004-.006in
Undersizes ... ..				.3, .5, .75, 1.00, 1.25 mm
No. of teeth on starter ring gear/ pinion				93/10
Con. rod centres				178 mm (7.00in)

bush for clutch shaft pressed into end of crankshaft. Timing sprocket (long boss to rear) and pulley keyed on front of crankshaft with separate Woodruff keys, oil thrower between. Assembly retained by hand starter dog setscrew with shims (.005, .010, .020in thick) for positioning of handle.

Split composition oil seal located in groove in timing cover and nose of sump. When new packing is fitted, ends of both halves should stand slightly proud. Rear wall of sump fits round rear main bearing cap with cork strip in groove in cap. Ends of cork sump gasket must fit over ends of front and rear seals.

At rear of crankshaft oil return thread works in split collector housing,



Longitudinal and transverse engine sections

lower half cast in sump, upper half doweled and bolted to crankcase. Ends of housing must butt together, and should be coated with jointing compound when sump is refitted.

CONNECTING RODS

Big ends thin wall steel-back white metal-lined shells located by tabs. No hand fitting permissible.

Gudgeon pins cotter-clamped in small ends.

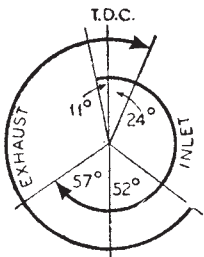
PISTON DATA		
Clearance ... ..	.0022-.0028in	
Oversizes	see text	
Weight (with rings and pin)	12 3/4 oz.	
Gudgeon pin : diameter	18 mm	
Compression height	Two-thumb push 45 mm	
	Compression	Oil Control
No. of rings	2	1
Gap ... ..	.006-.010 in	.006-.010 in
Side clearance in groove	.001-.002 in	.001-.002 in
Width of rings	.0885in (2.25 mm)	.1575in (4 mm)

PISTONS

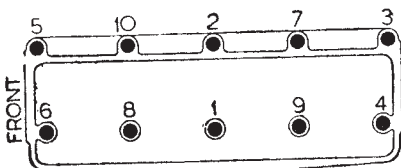
Aerolite aluminium alloy, oval skirt.

Big ends will not pass through cylinder bores. Remove assembly downwards to offside of crankshaft. When reassembling see that small end pinch-bolts are towards offside.

Replacement pistons are supplied in five ranges of sizes, stamped A, C, D, E and F. A is standard size, C .5 mm oversize, D .75 mm oversize, E 1.0 mm oversize, and F 1.25 mm oversize. In each range, in addition to nominal sizes (marked "OK"), there are oversizes of .020 and .040 mm. Sizes refer to cylinder bores to which pistons should be fitted. For example, AOK=nominal standard size (66.50 mm). A+.02=66.50+.02 mm. C+.02=66.50+.50+.02 mm. DOK=66.50+.75 mm, and so on. Bore sizes are stamped on bore and piston.



Left : Valve timing diagram. Below : diagram showing order of tightening of cylinder head nuts



Piston and bore markings must correspond.

CAMSHAFT

Duplex roller endless chain drive, with spring-loaded, oil-damped slipper tensioner. Oil fed through drilling in tensioner body from main bearing to back of plunger. Spring details: Free length 71 mm. Loaded length 48 mm at 1 1/4 lb load.

Camshaft sprocket keyed on shaft with Woodruff key and retained by setscrew in end of shaft. To remove chain detach tensioner assembly and draw off both sprockets together.

Camshaft runs in three white metal bushes. Centre bush split. Front bush pressed into crankcase. Centre and rear bushes located by setscrew from outside. End float controlled by thrust plate trapped between sprocket and shoulder on shaft, and bolted to crankcase. If bearings are renewed, centre and rear bearings can be pushed in, but front bush must be pressed in and located in slot with punch, and then line-bored or reamed.

Camshaft can be removed with engine in place, but front mounting must be removed and engine raised slightly so that oil pump can be withdrawn. Remove radiator, sump, timing cover, chain and sprockets, oil pump, distributor, rocker gear, push rods, and tappets. Detach thrust plate and take out bearing locating setscrews. Shaft can then be drawn out to front, bringing centre bearing with it. Take out centre bearing when shaft is half out.

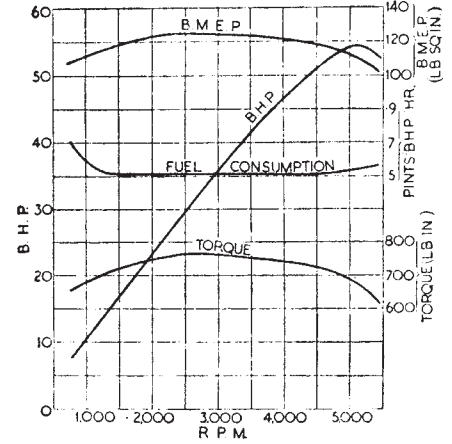
CAMSHAFT DATA			
	No. 1	No. 2	No. 3
Bearing journal : diameter	41mm	23mm	23mm
length	29mm	25mm	29mm
Bearing clearance	.0015-.004in		
End float	.005-.013in		
Timing chain : pitch	3/8in		
no. of pitches	60		

When reassembling, insert shaft and assemble centre bearing on journal (noting dowels between halves) so that locating hole lines up with setscrew.

When reassembling timing chain, assemble sprockets in chain so that bright links on chain correspond with T-marks on sprockets, and shorter run of chain between bright links is towards top of engine. Turn crankshaft and camshaft keys to correspond and fit chain and sprocket assembly.

VALVES

Overhead, not interchangeable, inlet larger than exhaust. Split cone



cotter fixing, double springs. Spring cup fits over valve guide between springs and head, and shroud fits inside inner spring under collar. Synthetic rubber sealing ring fits over valve stem inside collar and below cotters.

Valve guides not shouldered. Fit with smaller outside diameter at top, and press in until guide projects 24 mm above face of head. Inlet guides longer than exhaust.

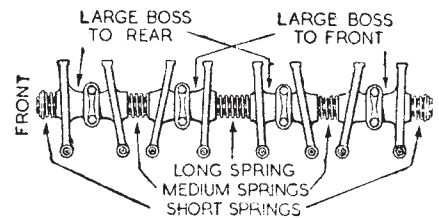
VALVE DATA		
	Inlet	Exhaust
Head diameter	33mm	31mm
Stem diameter	8mm	8mm
Face angle	30 deg	30 deg
	Inner	Outer
Spring length : free	2.565in	2.927in
fitted	1.438in	1.532in
at load	43lb	80lb

TAPPETS AND ROCKERS

Barrel tappets sliding directly in crankcase. Can be extracted upwards with push-rods out.

Rocker shaft carried on four identical pillars. Shaft located by round washers in slots on Nos. 2 and 3 brackets, engaging in keyways in shaft. Rocker oil feed holes are at top, single oil feed hole at bottom in rear pillar. Slots in Nos. 1 and 4 brackets are occupied by D-washers.

Rockers are bushed, and are of four types. Assemble as shown in diagram. Two rockers are practically square, but offset to right and left-hand on bosses. Other two are considerably



offset, one each way. Three sizes of spacing spring.

Push rods cannot be extracted until rocker assembly is removed.

LUBRICATION

"Dry" gear pump spigoted and bolted to nearside of crankcase, and driven by skew gear from camshaft.

To remove pump slacken radiator hose connections and disconnect front engine mounting. Raise front of engine slightly and draw pump out.

Integral drive housing bushed for drive shaft. Skew gear integral with shaft. Driving gear keyed on shaft with Woodruff key and retained by spring ring. To dismantle detach cover and extract spring ring. Tap face of pump body on wooden block to dislodge gear, and extract key. If shaft is pushed out through gear, key will damage bush. Driven gear spindle pressed into crankcase. End tapped for drawbolt (8 mm thread).

RELIEF VALVE SPRING DATA		
	Main Relief Valve	Filter Bypass Valve
Free length ...	37.5mm	58.5mm
Loaded length at load ...	27.0mm 7lb	18.5mm 5lb

Oil drawn through gauze intake strainer and through drillings in sump and crankcase, delivered through full-flow pressure filter to gallery in crankcase. Filter bypass valve located in crankcase behind oil pump. Spring, cage and ball retained by seating, pressed into crankcase. Seating tapped for 8 mm drawbolt.

Non-adjustable relief valve ball, spring and guide retained in underside of pump cover by plug. Normal oil pressure 50-70 lb.

If suction passages are emptied, or pump dismantled, prime pump through delivery pipe connection.

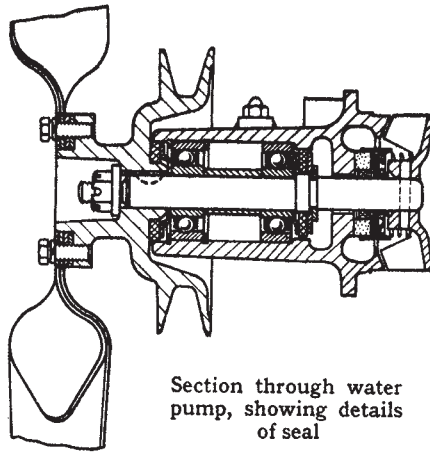
IGNITION DATA	
(All degrees on flywheel rotation)	
Advance range : centrifugal ...	28-32 deg
Advance starts (crank r.p.m.) ...	460-800
Max. advance (crank r.p.m.) ...	4400
Firing point ...	T.D.C.
Contact breaker gap ...	.012in
Plugs : make ...	Champion
type ...	L10S
size ...	14mm
gap ...	.020-.022in

IGNITION

Lucas coil. Distributor with centrifugal advance spigoted in crankcase on nearside and retained by clamp plate. Skew driven gear pinned to distributor shaft, driven from camshaft.

COOLING SYSTEM

Pump, fan, non-adjustable bellows thermostat in housing bolted to elbow

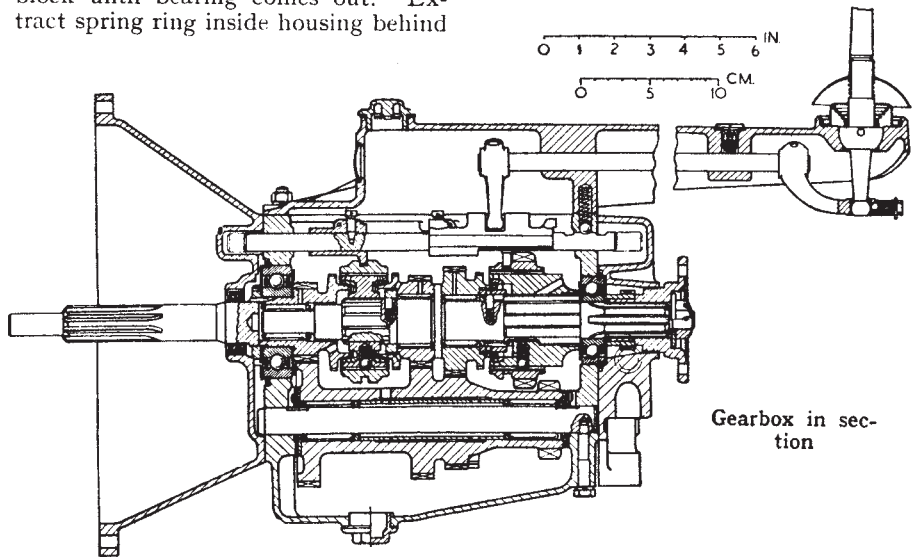


Section through water pump, showing details of seal

on front of cylinder head. Pump has spring-loaded rubber and carbon seal.

Radiator must be removed before pump can be detached.

To dismantle pump tap out taper pin and draw off impeller with spring, rubber seal and carbon disc. Do not lose disc driving peg, loose in shaft. Extract split pin with long-nosed pliers, undo pulley nut and draw off pulley (Woodruff key) with felt seal and retainer. Extract spring ring locating outer race of front ball bearing, and tap end of shaft on wooden block until bearing comes out. Extract spring ring inside housing behind



Gearbox in section

front bearing, and draw out shaft with rear ball bearing and felt seal between retainers, located by spring ring on shaft. On reassembling note that rearmost (flat) retainer has tongue

FUEL SYSTEM DATA		
Carburettors : make ...	...	S.U. (two)
type ...	...	H2
Carb. needle : standard ...	...	ES
rich ...	...	EM
weak ...	...	AP
Fuel pump : make ...	...	S.U.
type ...	...	L
Air cleaner : make ...	...	AC, dry
type ...	...	1573577

TRANSMISSION DATA	
Clutch : make ...	Borg & Beck
type ...	7 1/2 AG-G
Clutch springs : colour ...	red
no. ...	6
free length ...	1.93in
Clutch centre springs : colour ...	3 blue
3 black	
Clutch linings : thickness ...	3/16in
dia. ext. ...	7 1/2in
dia. int. ...	4 1/2in
No. of speeds ...	4
Final ratios : 1st ...	17.32
2nd ...	10.00
3rd ...	6.93
Top ...	5.125
Rev. ...	17.32
Crown wheel/bevel pinion teeth ...	41/8

engaging in keyway in shaft. Outer edge of dished retainer fits against felt. Ball bearings are interchangeable.

Adjust fan belt by swinging dynamo until there is about 1/2in movement either way on long run of belt.

TRANSMISSION

CLUTCH

Borg & Beck single dry plate. Graphite thrust release bearing.

Only external adjustments are for free movement and pedal travel. Adjust to give 1in free movement at

pedal pad by nut and locknut on front end of chain at operating lever. Adjust setscrew and locknut at other end of lever to give pedal a total travel of 4in.

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

GEARBOX

Four-speed, synchromesh on 2nd, 3rd and top gears.

To remove gearbox remove in unit with engine. Remove seat, carpets and rubber gearbox cowl. Detach gearbox top cover with remote control.

Disconnect speedo drive. Take weight of gearbox on jack and detach rear mountings from gearbox. Unscrew propeller shaft sliding spline sealing collar so that splined shaft can be withdrawn. Mark splines for refitting. Carry out engine removal operations and draw out complete unit forwards and upwards. No need to remove floorboards.

To dismantle gearbox detach clutch release bearing from fork, and remove bell-housing from gearbox. Pick out two steel washers in bearing register. Detach top cover with remote control.

Draw off driving flange with speedo drive gear, and remove rear cover with speedo drive pinion, and mounting plate.

Remove setscrews from forks and stops, and drive out each rod to rear, catching selector balls and interlock balls as they are released.

Make up dummy layshaft spindle with $\frac{3}{4}$ in dia. rod $7\frac{1}{8}$ in long. With this tap layshaft out to rear after removing setscrew from lower rear corner of box.

Drive out primary shaft with ball bearing by tapping rear end of mainshaft. Extract needle roller spigot bearing. Drive mainshaft back until rear bearing is clear of box and can be drawn off. Lift out mainshaft assembly through top of box, guiding front end past cut-away in box. Lift out layshaft cluster. Detach reverse gear rocking lever from side of box, and take out $\frac{1}{8}$ in and $\frac{1}{4}$ in setscrews which retain reverse fork slider rod and reverse gear spindle, and draw out rod and spindle to rear. Remove fork and bushed reverse gear.

To dismantle mainshaft assembly slide off synchronesh assemblies. Third gear is located on shaft by splined locking washer, locked by spring-loaded plunger. Depress plunger (exposed by slot in washer) and turn washer until male splines are in line with female splines in shaft, and slide washer off. Slide off gear and catch needle rollers.

Second gear is located by splined collar locked by spring-loaded plunger, with split thrust washer behind. Depress plunger with thin wire through holes in synchro cone and collar, turn collar and slide off. Extract split washer and slide off gear.

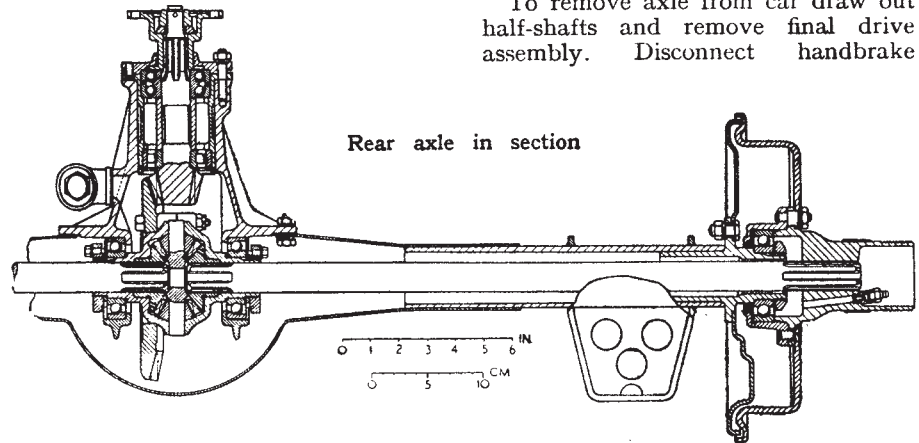
To reassemble gearbox assemble reverse gear (fork grooves to front) fork and slider rod, fitting setscrews to retain them. Assemble rocking lever.

Insert long distance-piece in layshaft cluster, with small thrust washers at each end. Smear thick grease inside bores and insert dummy layshaft spindle. Feed in 15 needle rollers at each end, followed by stepped thrust collars (large diameter inwards). Place large plain thrust washer on front end, followed by pegged washer. Smaller

thrust washer goes on rear end with slotted washer. Lower assembly into box.

Reassemble mainshaft by inserting spring and plunger in front end of shaft and assembling 3rd gear with 36 needle rollers. Slide on splined thrust washer, depress plunger through hole in gear, push washer home and turn to lock. Assemble 2nd gear with 22 needle rollers after inserting plunger and spring. Place split thrust washer against gear so that tab is in line with plunger. Slide on collar, making sure that slots are in line with tabs on split washer. Depress plunger through hole in cone; push collar home and turn, listening for click as plunger registers. Slide on synchro assemblies.

Place mainshaft in box through top opening and assemble dished oil thrower washer (inner edge to bearing) and rear bearing on rear of shaft, with circlip on outer race to rear. Tap bearing home. Assemble front bear-



ing with dished oil thrower washer (inner edge to bearing) on primary shaft and tighten nut (left-hand thread). Using a length of $\frac{5}{8}$ in dia. bar as a guide, assemble 13 needle rollers in spigot bearing, retaining them with thick grease. Assemble primary shaft in box and tap home.

Lift layshaft cluster carefully so that thrust washers are not displaced, and gently tap in layshaft spindle.

Insert selector rods, starting with reverse (nearside) rod, which has steady fork and selector jaw. Before inserting top and 3rd gear rod (centre) tilt box to near side and insert interlock ball in cross-drilling in rear wall. Insert second interlock ball before 1st and 2nd gear rod.

Before fitting rear cover and mounting plate check end float of speedo drive pinion, which should be .002in. Excessive float may cause oil pumping up cable. If no float is present, file end of bearing. Where rear cover fits over oil return thread on driving flange there should be .003-.005in clearance. Burrs or paint should be cleaned off. Flat and dished washers fit between rear cover and bearing.

Flat washer goes next to bearing and dished washer with inner edge towards flat washer. Assemble bell-housing with same arrangement of bearing washers.

PROPELLER SHAFT

Hardy Spicer needle roller bearing universal joints. Nipples for lubrication of joints.

To remove propeller shaft, take out seat, carpets, gearbox rubber cowl and floorboards on both sides. Tunnel can then be removed. Detach gearbox top cover with remote control for access to front universal joint. Mark flanges at both ends of shaft for refitting before disconnecting. Lift shaft out upwards.

REAR AXLE

Three-quarter floating shafts, spiral bevel final drive. Rear cover integral with banjo casing.

To remove axle from car draw out half-shafts and remove final drive assembly. Disconnect handbrake

cables from cross-shaft, disconnect cable lubrication pipes and detach cable supports. Disconnect axle brake fluid pipes from T-piece, and detach T-piece from banjo casing (do not try to disconnect hose from T-piece while T-piece is fixed to axle). Undo axle pipe clips on one side and remove backplate assembly with cable and pipe after drawing off bearing and housing. Detach check straps and spring bolts, and disconnect shock absorber links. Axle casing can then be drawn out through side.

Axle shafts (interchangeable) splined at both ends. Hubs (not interchangeable, left-hand thread on offside) pressed on to outer ends, spigoted and flange-bolted to bearing housings. Ball bearings retained on ends of axle tube by nuts with tabwashers (left-hand thread on nearside). Lipped leather oil seal behind bearing in each hub, lip towards bearing.

Bevel pinion shaft carried in ball outer bearing and roller inner bearing in housing spigoted and flange-bolted to final drive housing. Inner races of

bearings, with distance-piece between, locked up by driving flange nut. Outer race of roller bearing retained in housing by spring ring. Outer race of ball bearing retained by cover, which is attached to housing flange by two countersunk screws inserted from behind.

To dismantle bevel pinion assembly remove four nuts and draw out bearing housing complete. Draw off driving flange, take out countersunk screws and detach cover, which has oil return thread inside driving flange hole. Bevel pinion shaft can then be pushed out with ball bearing and rollers and inner race of roller bearing. No adjustment for bearings.

Bevel pinion mesh adjusted by shims behind housing flange (.002, .003, .005 and .010in thicknesses available). Use .017in shims as starting point for adjustment.

Crown wheel spigoted on split differential cage and retained by cage bolts. Differential bevel gears and pinions run directly in cage.

Differential assembly carried in semi-thrust ball bearings in split housings. Bearings and mesh adjusted by large hexagon nuts on differential cage extensions, working against inner races of bearings. Serrated washers between nuts and bearings for locking screws passing through nuts.

Adjust bearings until there is no play and no drag, then tighten nut one serration on locking washer to preload bearings. Move both adjusting nuts equally after bearing adjustment to adjust mesh until backlash, measured tangentially on crown wheel teeth, is .007-.010in.

CHASSIS

BRAKES

Lockheed hydraulic. Handbrake operates rear brakes by cables in conduits. Fluid reservoir integral with master cylinder.

BRAKE DATA	
	Front and rear
Drum diameter	9in
Lining : length	8½in
width	1½in
thickness	⅞in
No. of rivets per lining	8

Snail cam shoe adjustment. Turn adjusting nuts away from centre of backplate until shoe binds on drum, and back off until drum is just free. Handbrake lever is "fly-off" type (press knob to lock). Adjust by large wing-nut at base of lever. Adjust for compensation by nuts on ends of cables at cross-shaft levers.

SPRING DATA		
	Front	Rear
Length (laden centres)	26½in *	36½in†
Width	1½in	1½in
No. of leaves	6	9 (inc. 2 rebound)
Free camber	1.85in	1.687in
Loaded camber	nil	nil
A† load	500-520 lb.	385 lb.

*Front spring centrebolts offset to front (12½in front, 14½in rear)
†Rear spring centrebolts offset to rear (18½in front, 18in rear)

SPRINGS

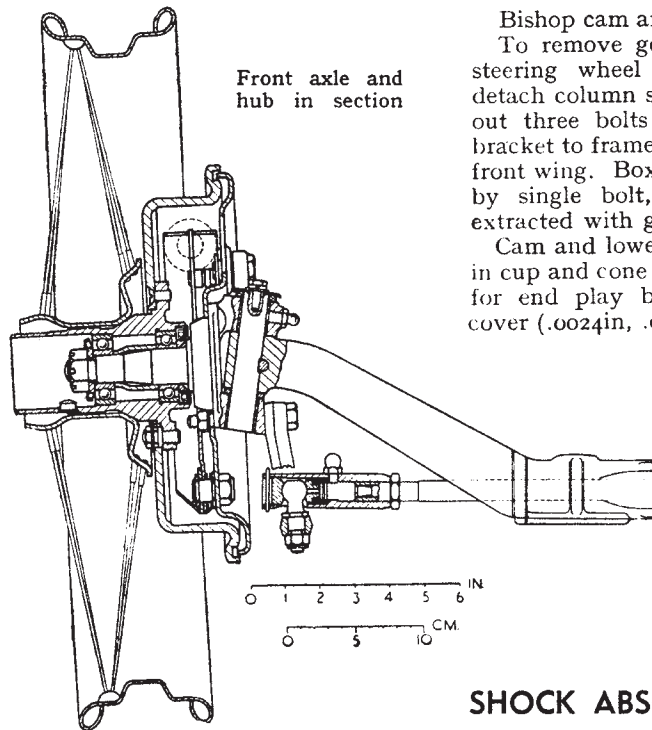
Semi-elliptic front and rear. Front centrebolts offset to front, rear to rear. Front spring anchor bolts work in plain unbushed spring eyes. Loose rubber shackle bushes. Shouldered bolts, tighten fully.

Rear springs have Silentbloc anchor bushes, loose rubber bushes for shackles. Note that shackle bushes on hangers are separated by fibre washers.

When assembling loose rubber bushes take care that they are central so that, when fully tightened, they are squeezed out equally on both sides.

FRONT AXLE

Reverse Elliot. Plain king pins cottered in beam. Plain bushes in stub axles, bronze thrust washers below



Front axle and hub in section

way after removal of brake backplate.

Hubs run on ball bearings with distance-piece between inner races. Lipped oil seal in back of each hub bears on distance collar behind inner bearing. Hub bearings retained on stub axles by castellated nuts with perforated dished washers behind (edge outwards). Access to split pin through hole in side of hub closed by plug. Tighten hub nuts fully.

Steering ball joints on track rod are screwed end plug type, sockets screwed left- and right-hand and locked by locknuts. Order of assembly is: spring, ball seat (stepped), ball pin, screwed plug. Ball joint on axle steering arm end of transverse drag link is interchangeable with left-hand threaded track rod joint, but joint at drop arm end of drag link is other way round (identified by longer slot for ball pin). Order of assembly: ball seat, ball pin, ball seat, spring, screwed plug.

STEERING DATA	
Castor : early	8° (3° on beam, 5° on chassis)
later*	5½°
Camber	3°
King pin inclination	7½°
Toe-in	½in
No. of turns lock to lock	1½

*From early 1948 2½° taper plates fitted to reduce castor angle.

STEERING GEAR

Bishop cam and lever.

To remove gear from car draw off steering wheel and drop arm, and detach column support bracket. Take out three bolts holding steering box bracket to frame, and lift gear out over front wing. Box is attached to bracket by single bolt, but this cannot be extracted with gear in place.

Cam and lower end of column carried in cup and cone ball bearings. Adjust for end play by shims under lower cover (.0024in, .005in and .010in shims available). Felt bush supports upper end of column.

End play in lever shaft, and mesh of peg in cam, adjusted by shims under top cover (same thicknesses as end cover shims).

SHOCK ABSORBERS

Luvax Girling piston type, non-adjustable. Top up in place. Access to rear shock absorbers by lifting floor behind seat.

GENERAL DATA		
Wheelbase	...	7ft 10in
Track (front and rear)	...	3ft 9in
Turning circle	...	37ft 0in
Ground clearance	...	6in
Weight (dry)	...	15½ cwt
Tyre size	...	4.50-19
Overall length	...	11ft 7½in
Overall width	...	4ft 8in
Overall height	...	4ft 5in

BODY MOUNTING

Four bolts to frame brackets, one on each side at base of front and rear door pillars. Bolts to dash assembly. To remove body take out seats, carpets, gearbox rubber cowl and floor-

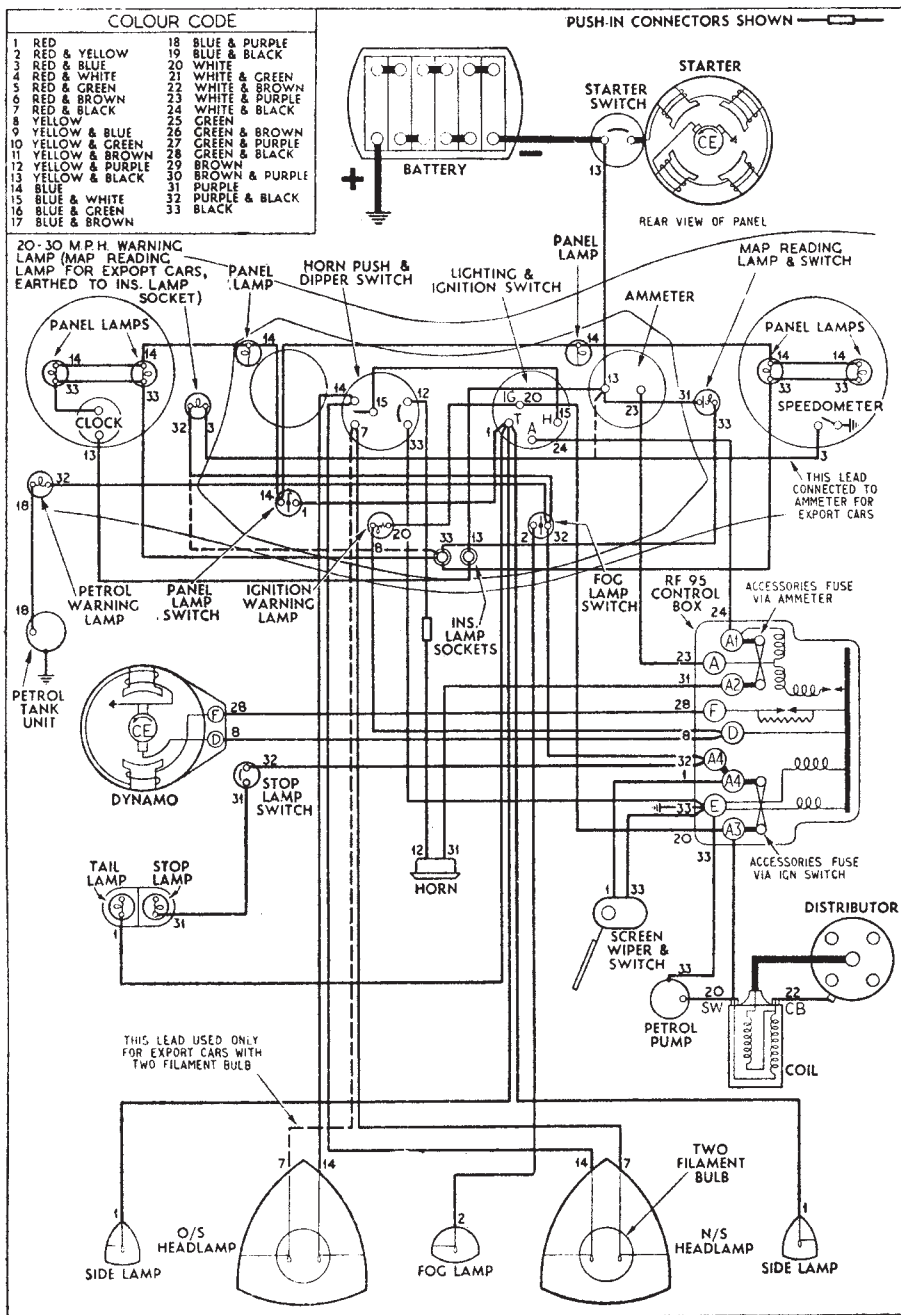
boards. Detach baffle board below dash, disconnect oil gauge pipe and detach instrument panel from body. Remove petrol tank (straps to chassis frame) and detach front wings from running boards. Take out four body bolts and bolts round dash. Body can then be lifted off.

Instruments can be reached from below, but easier to detach panel complete. Switch panel can be detached separately (four nuts behind).

TOWING ATTACHMENT

Bar for towing eye (light trailers only) has been designed by M.G. Car Co., and can be made up to order.

M.G. MIDGET, TC SERIES, WIRING DIAGRAM

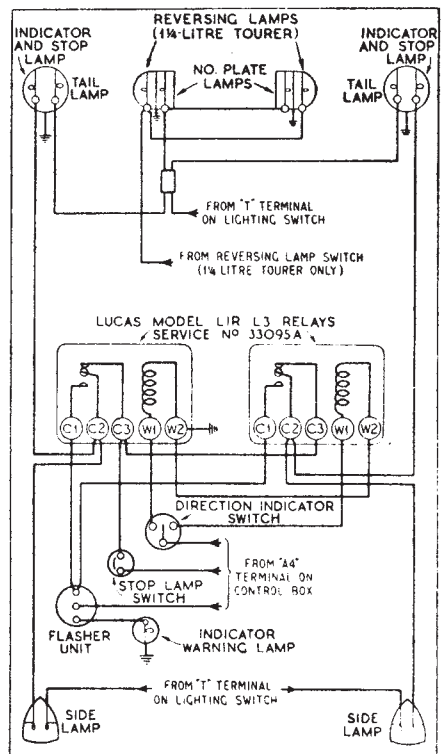


ELECTRICAL DATA Lucas Equipment.		
	Model	Service No.
Dynamo	C45YV	228334
Starter	M418G	253778
Lighting and ignition switch	PLG6	34018
Control box	RF95	37057
Battery	8TXW9A	—
Distributor	DKY4A	40048B
Coil	Q12	45020A
Headlamps : nearside	MBD140	50291A
Headlamps : offside	MBD140	50102A
Side lamps	1130	523529
Rear lamp unit	ST51	524754
Fog lamp : either	FT27	532822
or	SFT462	55063A
Trafficators	SF34J	54018A
Screenwiper	SW4	734655
Horn	HF1234	70038A

BULBS			
	Volt- age	Watt- age	Lucas No.
Headlamps : nearside (Home) both (export)	12	36/36	52
Offside (Home only)	12	36	54
Fog lamp : SFT27	12	36	2
Fog lamp : SFT462	12	36	162
Side, tail, stop, map and 30 m.p.h. lamps	12	6	207
Panel lamps	12	2.4	987
Ignition warning lamp	2.5	.5	970

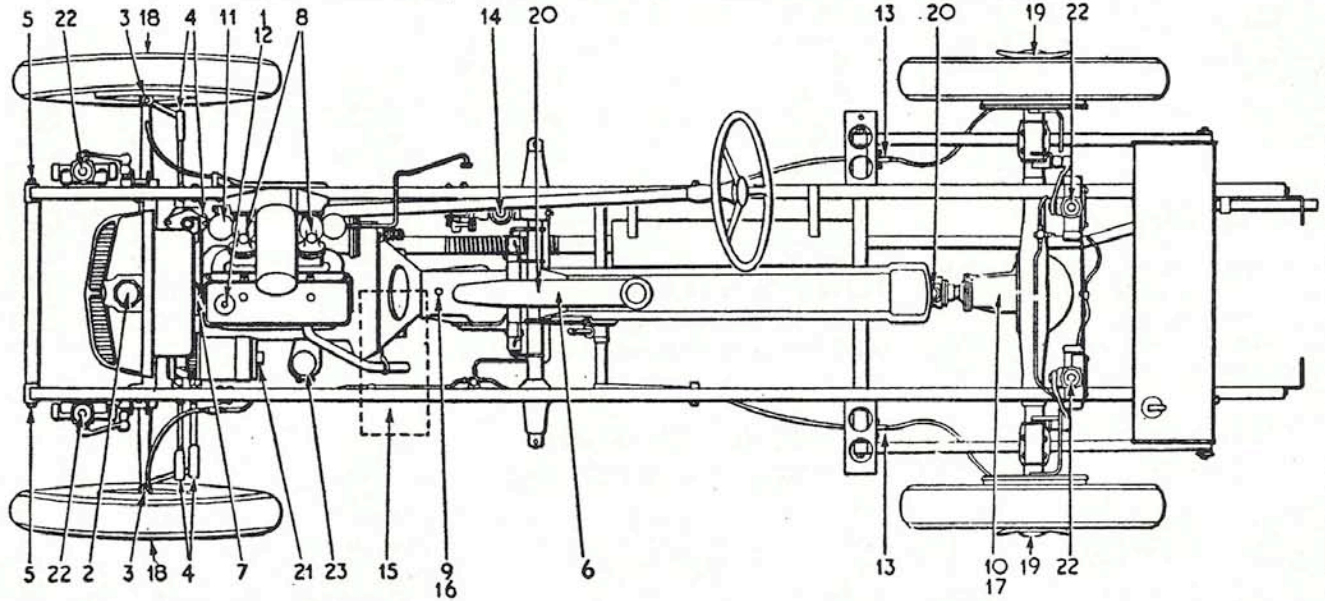
FUSES		
Accessories	FA35	35 amperes

DIAGRAM OF RELAY CIRCUIT OPERATING FLASHING DIRECTION INDICATORS FOR U.S.



In normal position of relays, indicator filaments of two filament bulbs in tail and side lamps are in circuit with stop lamp switch, giving steady light when brake is applied. Operation of direction indicator switch operates one or other of relays, putting lamps on that side in circuit with flasher unit.

M.G. MIDGET, TC SERIES, MAINTENANCE DIAGRAM



KEY TO MAINTENANCE DIAGRAM

DAILY

1. Engine sump } Top up

2. Radiator

EVERY 500 MILES

3. King pin bearings (4)
4. Steering ball joints (4)
5. Front spring anchor pins (2)
6. Propeller shaft splines (1) } Grease gun

EVERY 1,000 MILES

7. Fan bearings—Grease gun

8. Carburettor dashpots—Oil can

EVERY 2,000 MILES

9. Gearbox

10. Rear axle } Top up

11. Steering box (nipple) }

EVERY 3,000 MILES

12. Engine sump—drain and refill

13. Brake cables—grease gun

EVERY MONTH

14. Brake fluid tank } Top up

15. Battery }

EVERY 6,000 MILES

16. Gearbox } Drain and refill

17. Rear axle }

EVERY 10,000 MILES

18. Front hubs—pack with grease

19. Rear hubs (2) } Grease gun

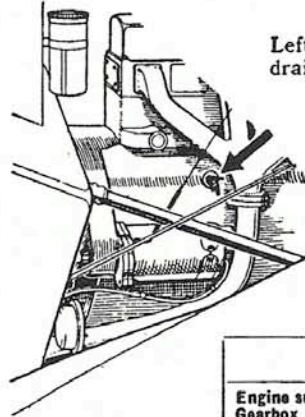
20. Propeller shaft joints (2) }

21. Rev. counter reduction gear box—Gear oil

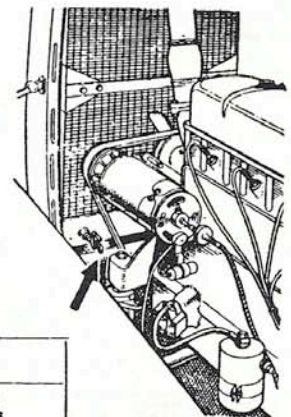
22. Shock absorbers—top up

23. Engine oil filter—renew

DRAINING POINTS



Left : cylinder block drain tap, offside front



Right : Radiator drain tap on nearside

FILL-UP DATA

Engine sump	...	9 pints
Gearbox	...	1½ pints
Rear axle	...	2 pints
Cooling system	...	14 pints
Petrol tank	...	13½ gallons
Tyre pressures : front	...	24 lb
rear	...	26 lb

LUBRICANTS

	RECOM-MENDED	APPROVED							
		Duckham's	Duckham's	Wakefield	Essolube	Filtrate	Vacuum	Price's	Shell	Sternol
Engine Summer	N.O.L. Thirty	Adcol NPXX	Castrol XL	Essolube 30	Medium Filtrate	Mobiloil A	Motorine M	Double Shell	W.W. 30
	Winter (below 32°F)	N.O.L. Twenty	Adcol NPX	Castrolite	Essolube 20	Zero Filtrate	Mobiloil Arctic	Motorine E	Single Shell	W.W. 20
Gearbox, steering box, rear axle	N.O.L. E.P. transmission oil 140	Adcol XS Press 140	Castrol Hi-press	Essoleum Expec 140 Compound	EP Filtrate	Mobiloil EP	Motorine EP	Spirax EP 140	Liquid Ambrolem EP 140
Wheel hubs, fan bearings	Adcol H.B.B. grease	Adcol H.B.B. grease	Castrolase heavy	Esso grease	Filtrate R.B. grease	Mobil hub grease	Belmoline C	Retinax R.B.	R.B. grease
Chassis nipples, propeller shaft	Laminoid Soft or Adcol H.P.G. grease	Adcol H.P.G. grease	Castrolase medium	Esso fluid grease	High pressure solidified Filtrate	Mobilgrease No. 4	Belmoline D	Retinax C	M.M. grease
Cables and control joints	ZNOL K.G. 16 grease	ZNOL K.G. 16 grease	Castrolase brake cable grease	Anti-freeze grease	Filtrate AF grease	Mobilgrease No. 4	Belmoline H	Retinax C	Anti-freeze grease
Oil can, carburettor dash-pot	N.O.L. Twenty	Adcol NPX	Castrolite	Essolube 20	Zero Filtrate	Mobiloil Arctic	Motorine E	Single Shell	W.W. 20