

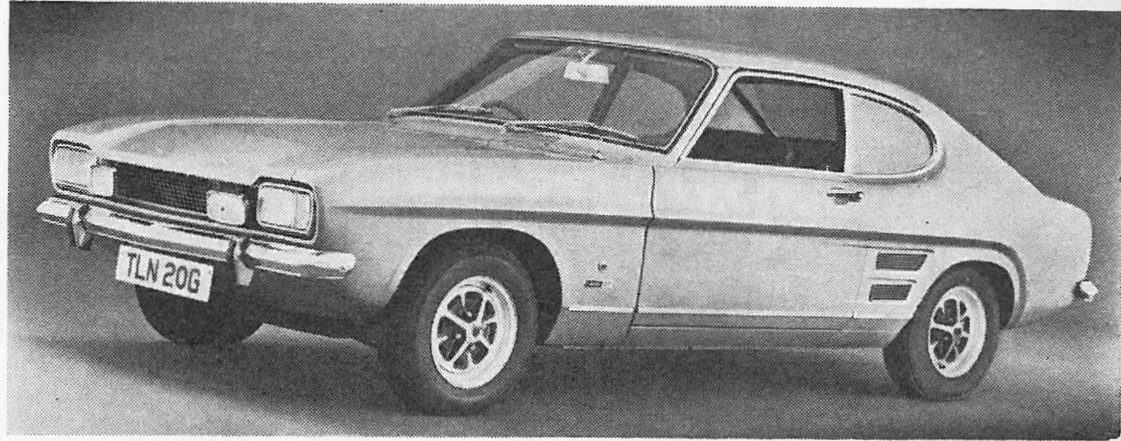
Motor Trader

SERVICE DATA No. 482

Ford Capri 1300-1600GT models inclusive

Manufacturers: Ford Motor Co., Ltd., Warley, Essex

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Model illustrated is the 1600GT

ENGINE

Mounting

Engine and gearbox assembly has a three point mounting on bonded rubber insulators. Front insulators (two) are common to all engines and are secured by self-locking nuts. Single rear insulator also is common to all engines and is secured to a pad on the gearbox extension housing. For both manual and automatic transmissions a common retainer is located beneath and in front of the insulator when fitted to the cross member. Length of cross-member varies with transmission unit fitted, the cross member with the automatic transmission being longer than that used with the manual gearbox.

Removal

Remove bonnet, disconnect battery lead and earth strap to engine and drain engine coolant. Disconnect radiator hoses and remove radiator. Remove air cleaner and disconnect heater hoses at bulkhead. Undo accelerator linkage and downshift cable (automatic transmission) from carburettor. Disconnect choke control where fitted and temperature gauge sender unit and generator leads. Undo exhaust pipe clamp bolts and disconnect exhaust pipe from manifold (on GT cars complete this operation after car has been jacked up). Disconnect all pipes and leads to and from engine. Remove inlet manifold complete with heater water control, where fitted. Also, remove exhaust manifold. Jack up front of car and fit stands. Remove sump shield. Undo lower clutch housing bolts, disconnect reinforcing bracket and remove cover. On automatic transmission cars turn engine as necessary and remove drive plate to torque converter bolts. Remove stands and jack from beneath car. Undo clutch housing to engine bolts. On automatic transmission cars slacken filler tube at gearbox. Fit lifting bracket tool No. P.6171 and support engine. Disconnect engine

mountings from front cross member. Support gearbox/automatic transmission. Pull engine unit forward off main drive gear/torque converter and lift assembly from engine compartment. Drain engine oil.

Replacement is, in the main, a reversal of dismantling procedure. Note: Coat exhaust manifold gaskets with EM-4G-14 jointing compound.

Crankshaft

Five main bearings. Thin wall steel - backed, white metal - lined shells in 1300 and steel-backed copper/lead bearings in 1600 and 1300 and 1600/GT engines. Both types are located by tabs in bearing caps. Flywheel has shrunk-on starter ring gear and is spigoted on flanged end of shaft and retained by six setscrews. Caged needle roller bearing pressed into shaft end. Crankshaft end-float controlled by split half-thrust washers positioned either side of centre main bearing, grooves to crankshaft. Oversize washers, .010in max., are available. Timing sprocket, large boss to rear, keyed on to front end of shaft by Woodruff key together with fan pulley, oil thrower between. Fan pulley retained by large hexagon-headed set bolt. Oil seal, pressed into timing cover, runs on pulley hub. Rear seal pressed into a carrier, runs on the periphery of the rear crankshaft flange. Align front seal with tool No. P.6150 and rear with P.6173 while tightening bolt.

Connecting Rods

"H"-section forgings, big-ends split horizontally are retained by bolts and located by dowels. Rods have oil squirt holes on piston non-thrust side and marked "FRONT". Big end bearing shells are thin wall, steel-backed with copper/lead, lead/bronze or aluminium/tin linings

and are located by tabs in rods and caps. Gudgeon pin bushes are steel-backed bronze type and are not available as service replacements, rods and bushes only are available as replacements. Bearing caps should always be replaced on rods from which they are dismantled, and both rods and caps are numbered to facilitate identification.

Pistons

Aluminium alloy, cut-away solid skirt, combustion bowl in crown pattern. Valve recesses are also machined on crowns of pistons of 1,300cc engine pistons. Different pistons are used on each capacity engine and for each compression ratio option.

Numbers are stamped on crowns and inside piston skirts for identity purposes, and see table of Piston Identification for further details.

Piston gudgeon pin bores are graded in manufacture and pins are interference fit, for this reason pistons and pins only are supplied as replacements. Graded pistons should be matched to similarly graded bores, and when refitting, correct clearance is established when a 7-11lb pull is required to extract feeler strip .50in wide and .002in thick (.0025in for 1300 engines) from between piston and cylinder wall, when the cylinder has been wiped dry from an oiled condition.

Two compression rings and one scraper ring fitted, all above gudgeon pin. Upper compression ring is chrome plated and tapered on periphery, lower compression ring is stepped externally on bottom face. Both rings marked "TOP" for correct replacement. Oil control rings may be fitted either way up. Pistons will not pass crank throws, but big ends will pass through bores. Remove and assemble pistons and con-rods from top.

Camshaft

Single row roller endless chain drive. Camshaft sprocket spigoted on end of shaft, dowel located and retained by setscrews and lockplate. Note: two types of camshaft used, that of the 1300 and 1600 engine bears the number "109E" cast on the shaft at the rear and white paint identified. That of the GT engine bears the number "116E" cast in similar manner on rear end of shaft, with a red identification band.

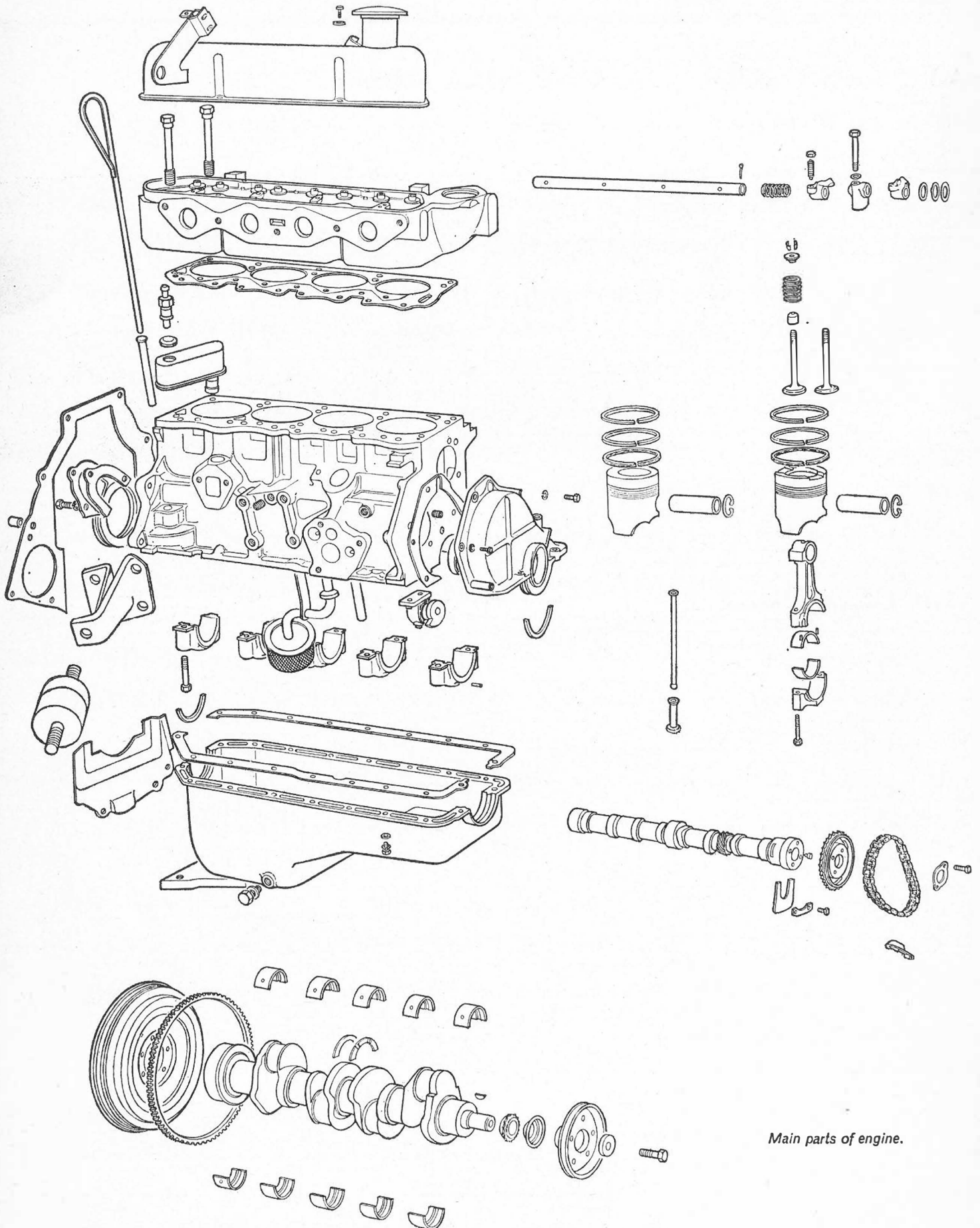
Camshaft sprocket may be removed with chain; thrust plate is trapped in groove between front bearing journal and spigot and is retained by two bolts and lockplate.

Camshaft runs in three steel-backed white-metal lined bushes. (.020in o/s on dia. available) pressed into housings in cylinder blocks. When renewing bushes ensure that oil holes are in line with centres, no hand fitting required. Valve timing marks on sprockets should be in line with centres when refitting; no fine adjustment for timing. Chain tensioner fitted consists of rubber rubbing block bonded to spring blade tensioner arm located and pressure controlled by spring loaded eccentric tensioner cam. To dismantle when removing timing chain, remove two mounting bolts and take off bracket, when arm may be detached from pivot pin.

Valves

Overhead, in line, non interchangeable, inlet larger than exhaust. Split cone cotter fixings, single springs. Umbrella oil seals fit around valve stems.

Valve guides plain, integral with head. Provision is made for reaming out .003 and .015in to accommodate valves with stems oversize to these dimensions in service. After reaming, valve seats must be re-cut.



Main parts of engine.

Tappets and Rockers

Plain mushroom tappets working directly in crankcase. Remove camshaft to extract.

Rockers, all unbrushed and handed, work on hollow shaft supported in four pillars, secured and located on cylinder head by hexagon headed setbolts. Oil feed to shaft is through head drillings to No. 1 (front) rocker pillar, radial holes drilled in rocker shaft for oil. Rockers are assembled each side of pillars separating springs between.

Adjuster screws fit in rocker ends, secured by lock-nuts and lower ends of screws are ball-shaped for location in upper cup ends of pushrods. End rockers are retained against pillars by split pins and each has two thrust washers with a crimped spring washer interposed. Pushrods may be removed singly after adjustment has been slackened right off, but better to remove rocker shaft complete for pushrod removal.

Lubrication

Gear driven eccentric bi-rotor sliding vane type pump externally flange mounted to engine crankcase.

External oil filter element housing bolted to flange integral with pump body. Non-adjustable plunger and spring relief valve fitted in pump/filter housing. Valve set to blow off at 35-40lb/sq in and warning light indicates at pressure below 5-7lb/sq in.

Cooling

Pump, fan and thermosyphon. Thermostat located in forward portion of cylinder head casting.

Pump driven by belt from crankshaft pulley, adjust generator link so that there is $\frac{1}{2}$ in play in longest run of belt.

TRANSMISSION

Clutch

Single dry plate diaphragm spring clutch cable operated by pendant pedal. Release ball bearing race sealed type carried in dished plate with pivot bolt on inner face of bell housing.

Provision for cable adjustment by threaded sleeve at cable end mounted on clutch housing. Pedal free play

i.e. clutch adjustment should be $\frac{1}{2}$ - $\frac{3}{4}$ in. It can be removed after gearbox removal (see gearbox section). Size is $7\frac{1}{2}$ in diameter and 1600GT models have a stronger diaphragm spring.

Gearbox

All synchromesh, (blocker ring) four forward speeds, one reverse.

Selection is by remote-control floor-mounted lever, linked to selector rail which has, pinned to it, a selector lever, which engages with appropriate selector forks. For engagement of reverse gear the selector lever first has to be depressed against a spring.

Gearbox Removal

Open bonnet and disconnect battery. Undo throttle linkage at carburettor. On GT models, remove centre console after taking out cross-headed securing screws. On GT and de-luxe models, bend up lock tab and unscrew plastic dome nut. Take off gear lever.

Jack up car and fit stands all round. Remove four bolts securing propeller shaft to rear axle pinion

flange after marking flanges for correct replacement. Lower rear end of propeller shaft and slide front yoke from gearbox, fit dummy yoke to prevent oil loss. Remove circlip and take out speedometer cable from gearbox extension housing. Undo exhaust pipe at manifold and take off bracket securing exhaust pipe to gearcasing. Displace clutch release lever gaiter and free clutch cable from lever. Take out two starter motor securing bolts and move starter motor to one side. Remove bolts securing clutch housing to engine, note that a top bolt also secures battery earth strap. Remove bolts securing lower dust cover and detach cover. Place support jack beneath rear of engine, take out four bolts securing gearbox cross-member to vehicle body. Slide gearbox rearwards while taking its weight and detach it from engine.

Remove clutch release lever and bearing, unscrew four bolts securing clutch housing to gearbox and remove it, remove cross-member centre bolt and detach it from gearbox.

Remove flywheel dust cover securing bolts. **Support front of engine and**

| SPECIAL TOOLS | |
|---|---------------|
| | Part No. |
| ENGINE | |
| Cylinder head locating studs | P4063 |
| Camshaft tool (main) (adaptor) | P6031 |
| Crankshaft sprocket replacer | P6031-3 |
| Drain plug wrench | CP 6032A or B |
| Engine stand bracket for 200A or B engine stand | P6064 |
| Cylinder head bolt socket | P6107 |
| | P6129 |
| GEARBOX AND TRANSMISSION | |
| Mainshaft brg and hub replacer | P4000-31A |
| Gearbox bracket (for engine stand) | P7089 |
| Clutch clearance setting gauge | P7157 |
| Bench cradle (for auto trans) | CBW35B |
| Flywheel brg remover adaptor | CP 7600-7 |
| REAR AXLE | |
| Rear hub & axle shaft remover (adaptor) | CP 3072-4A |
| Differential bearing cone remover (adaptor) | P4000-27A |
| Pinion bearing cone remover/replacer | P4000-28 |
| Diff bearing pre-load gauge | P4009 |

| PISTONS AND RINGS (dimensions in inches) | | |
|--|--|-------------|
| Clearance* 1300cc (Piston/bore) 1600cc | .0019-.0025 .0013-.0019 | |
| Oversizes | .0025, .015, .030 | |
| Gudgeon pin: diameter fit in piston | .8119-.8123 .0001-.0003 (interf) | |
| fit in con. rod | .0001-.0003 (clear) | |
| | Compression | Oil Control |
| No. of rings | 2 | 1 |
| Gap | .009-.014 | .009-.014 |
| Side clearance in grooves | .0016-.0036 | .0018-.0038 |
| Width of rings | .077-.078 | .155-.156 |
| * With test pull of 7-11lb on .002in feeler strip $\frac{1}{2}$ in wide. | | |

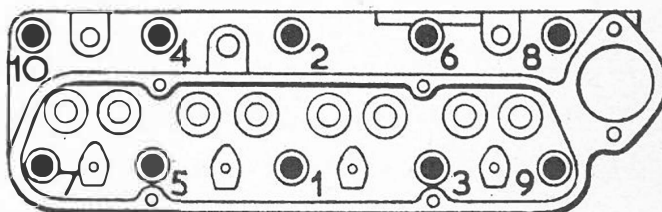
| CRANKSHAFT AND CON. RODS (Dimensions in inches) | | | | |
|--|--------------------------|-------------|--------------|--------------------------|
| Diameter | Main Bearings | | | Crankpins |
| | Front | Centre | Rear. | |
| | 2.1253-2.1257* (Blue) | | | 1.9368-1.9376 |
| Length | 1.219-1.239 | 1.247-1.249 | 1.308-1.318† | 1.062-1.066 |
| Running clearance: main bearings big ends | | | | .0005-.002 .0005-.002 |
| End float: crankshaft big ends | | | | .003-.011 .004-.010 |
| Undersizes (crankshaft) | | | | .010, .020, .030 |
| Con rod centres 1300cc | | | | 4.132-4.135 |
| 1600cc | | | | 4.926-4.929 |
| * Red 2.1257-2.1261in, Green 2.1153-2.1157in, Yellow 2.1157-2.1161in. † Intermediates: 1.273-1.283in. | | | | |

| TUNE-UP DATA | | |
|------------------------------------|--|--|
| Firing order | 1,2,4,3 | |
| | 1300-1600 | GTs |
| Tappet clearance (hot) | | |
| inlet | .010in | .012in |
| exhaust | .017in | .022in |
| Valve timing: | | |
| inlet opens | 17°BTDC | 27°BTDC |
| inlet closes | 51°ABDC | 65°ABDC |
| exhaust opens | 51°BBDC | 65°BBDC |
| exhaust closes | 17°ATDC | 27°ATDC |
| Standard ignition timing | timing chain sprockets | |
| Location of timing mark | .025in | |
| Contact breaker gap | Autolite | |
| Plugs: make | AG22 | |
| type | 14mm | |
| size | .023in | |
| gap | | |
| Carburettor: make | 1300-1600 | GTs |
| | Autolite single venturi d/draught (see separate table) | Weber dual barrel d/draught (see separate table) |
| type | | |
| Air cleaner: type | paper element | |
| Fuel pump: type | mech. | |
| pressure | 3½-5psi | |
| CAMSHAFT (Dimensions in inches) | | |
| Drive type | chain | |
| Bearing journal: | | |
| diameter | 1.5597-1.5605 | |
| length: front and rear | .79 | |
| centre | .68 | |
| Bearing clearance | .001-.0023 | |
| End float | .0025-.0075 | |
| Timing chain: pitch | .375in | |
| no. of links | 46 | |

| NUT TIGHTENING TORQUE DATA | |
|---|-------|
| | lb.ft |
| ENGINE | |
| Cylinder head stud nuts | 65-70 |
| Main brg. caps | 65-70 |
| Con. rod big ends | 30-35 |
| Flywheel bolts (bi-hexagonal) (hexagonal) | 50-55 |
| | 50-54 |
| CLUTCH AND GEARBOX | |
| Clutch pressure plate to flywheel | 12-15 |
| Clutch housing to transmission case | 40-45 |
| Transmission case drain and filler plugs | 25-30 |
| REAR AXLE | |
| Crown wheel/diff case | 50-55 |
| Diff carrier/axle housing | 15-18 |
| Diff brg. cap bolts | 45-50 |
| FRONT SUSPENSION | |
| Suspension unit upper mtg. bolts | 15-18 |
| Track control arm ball stud nut | 30-35 |

| GENERAL DATA | | |
|--|----------------|-------------|
| Wheelbase | 8ft 4.8in | |
| Track: front | 4ft 5in | |
| rear | 4ft 4in | |
| Turning circle | 32ft | |
| Ground clearance | 4.5in | |
| | * | ** |
| Tyre size | 6.00-13 C/P | 165x13 r |
| Overall length | 13ft 11.8in | |
| Overall width | 5ft 4.8in | |
| Overall height | 4ft 2.7in | |
| Weights | | |
| 1300 | 1,931lb | |
| 1300GT | 1,959lb | |
| 1600 | 1,968lb | |
| 1600GT | 1,995lb | |
| * 1300 and 1600, cross ply; ** 1300GT and 1600GT, radial ply | | |

ORDER OF CYLINDER HEAD STUD NUT TIGHTENING



See table of "Nut Tightening Torque Data" above

then remove four bolts on engine rear crossmember which supports gearbox. Remove two remaining engine to clutch housing bolts. Lower jack supporting engine and remove gearbox. Remove crossmember centre bolt and detach crossmember from gearbox.

Selector Mechanism Removal

Using gearbox mounting bracket, tool No. P.7089, mount gearbox on engine stand. Remove bolts securing top cover plate to gearbox. Lift off plate. Using suitable drift, knock out blanking plug from rear of extension housing. Remove plunger screw from side of gearbox case then remove spring pin securing selector boss to rail. Withdraw selector rail rearward. Lift out selector forks and lever. If necessary, remove plunger and spring from bore.

Extension Housing and Mainshaft Removal

Remove four bolts securing extension housing to gearbox casing and then, using a hide mallet, tap extension housing slightly rearwards until possible to rotate it so that layshaft aligns with cutaway in extension housing flange. Tap layshaft rearwards until it is just clear of front of gearbox case. Push layshaft out using a dummy, tool No. P.7113. Laygear now will drop to bottom of gearbox. Remove extension housing and mainshaft assembly. It is necessary to push 3rd/top synchroniser sleeve slightly forward to give clearance between it and cluster gear.

3rd Top Synchroniser. To dismantle; lift off top gear blocker ring from main drive gear side of 3rd/top synchroniser assembly. Remove and discard circlip from forward end of mainshaft. Locate split rings, tool No. P.4090-9, around rear face of third gear and in the base plate (tool No. 370) of a press. Press mainshaft out of 3rd/top synchroniser assembly, and 3rd gear, while extension housing and mainshaft is being supported. Dismantle synchroniser assembly by pulling sleeve off hub and withdrawing blocker bars and springs.

1st/2nd Synchroniser. To dismantle: Withdraw speedometer gear after removing plug in extension housing. Remove circlip securing mainshaft rear bearing to extension housing. Tap mainshaft assembly out of extension housing. Position split adaptors, P.4090-7a, behind 1st gear and place assembly in press base plate, 370. Press 1st gear, spacer (or oil slinger), mainshaft bearing, circlip and speedometer drive gear of mainshaft. Remove circlip securing 1st and 2nd synchroniser to mainshaft. Position split adaptors, P.4090-9, behind 2nd gear and fit assembly in press base plate, 370. Press 2nd gear and 1st and 2nd synchroniser assembly, complete with blocker rings, off mainshaft. Dismantle synchroniser assembly.

Main drive gear. To dismantle: Remove spigot bearing from recess in end of main drive gear. Tap main drive gear and bearing assembly out through front of gearbox. Remove and discard circlips from main drive gear and bearing. With split rings,

P.4090-3a, located round the bearings, press bearing off main drive gear. Use 370 base plate to position split rings in press.

Layshaft Gear. To dismantle: With layshaft gear two thrust washers removed from gearbox. In both ends of this shaft are 21 needle roller bearings retained by a washer on each side of each set of rollers; remove these.

Reverse Idler Gear. To remove, screw idler shaft remover, tool No. P.7043, into idler shaft. Screw slide hammer, tool No. P.3072, on to idler shaft remover.

Reverse Selector Relay. To remove, take off spring clip securing selector relay lever to pivot pin.

To assemble Gearbox

Installing Selector Mechanism

Position selector forks in synchroniser sleeves. Grease selector rail oil seal in rear of gearbox casing and slide it through extension housing, through 1st/2nd selector fork, position selector lever on rail, then slide rail through 3rd/top selector fork. Push rail forwards until plunger hole is in line with neutral notch. **Do not damage oil seal.** Assemble plunger and spring to their bore and fit securing screw using sealer. Fit spring pin to retain selector lever to rail.

Apply sealer to blanking plug and tap it into aperture in extension housing behind selector rail. Fit new gasket (using sealing compound) to top of gearbox. Refit cover plate.

Installing Extension Housing and Mainshaft

Fit new oil seal to selector rail aperture. Thread cord under cluster to facilitate lifting into position. Fit new gasket to extension housing (use jointing compound).

Slide extension housing and mainshaft into position after pulling 3rd/top synchroniser sleeve forward to clear cluster gear. Ensure top gear blocker ring locates correctly. Align cutaway on extension housing with layshaft aperture in rear face of gearbox. Lift laygear into mesh with mainshaft (using cord as detailed at beginning of this section). Make sure that thrust washer "ears" are correctly located on each side of bosses at end of gearbox case. **Check:** Laygear bore aligns with layshaft apertures. Push dummy layshaft home by inserting layshaft from rear. Finally, tap layshaft into place (use a hide or copper mallet). Lug on rear end of layshaft must be horizontal and must protrude slightly so that it locates in recess in front of extension housing. Rotate extension housing so that bolt holes align.

To Reassemble 3rd/top Synchroniser

Slide synchroniser over hub and locate a blocker bar in each of the three slots in hub. **Note:** If a new synchroniser unit is being installed, slide sleeve off the hub and clean all traces of preservative from hub, sleeve, blocker bars and springs. Lightly oil them. Install a blocker bar spring to run round, clockwise or anti-clockwise, inside synchroniser sleeve beneath blocker bars. Tagged end of spring must be located in U section of a blocker bar. Fit other spring to opposite face of synchroniser unit ensuring that spring tag locates in same blocker bar as spring just fitted and runs in contra rotational direction. View direct on to one side of synchroniser assembly and note direction of spring. Also, view direct on to other side of synchroniser assembly—direction of spring should be same as first spring.

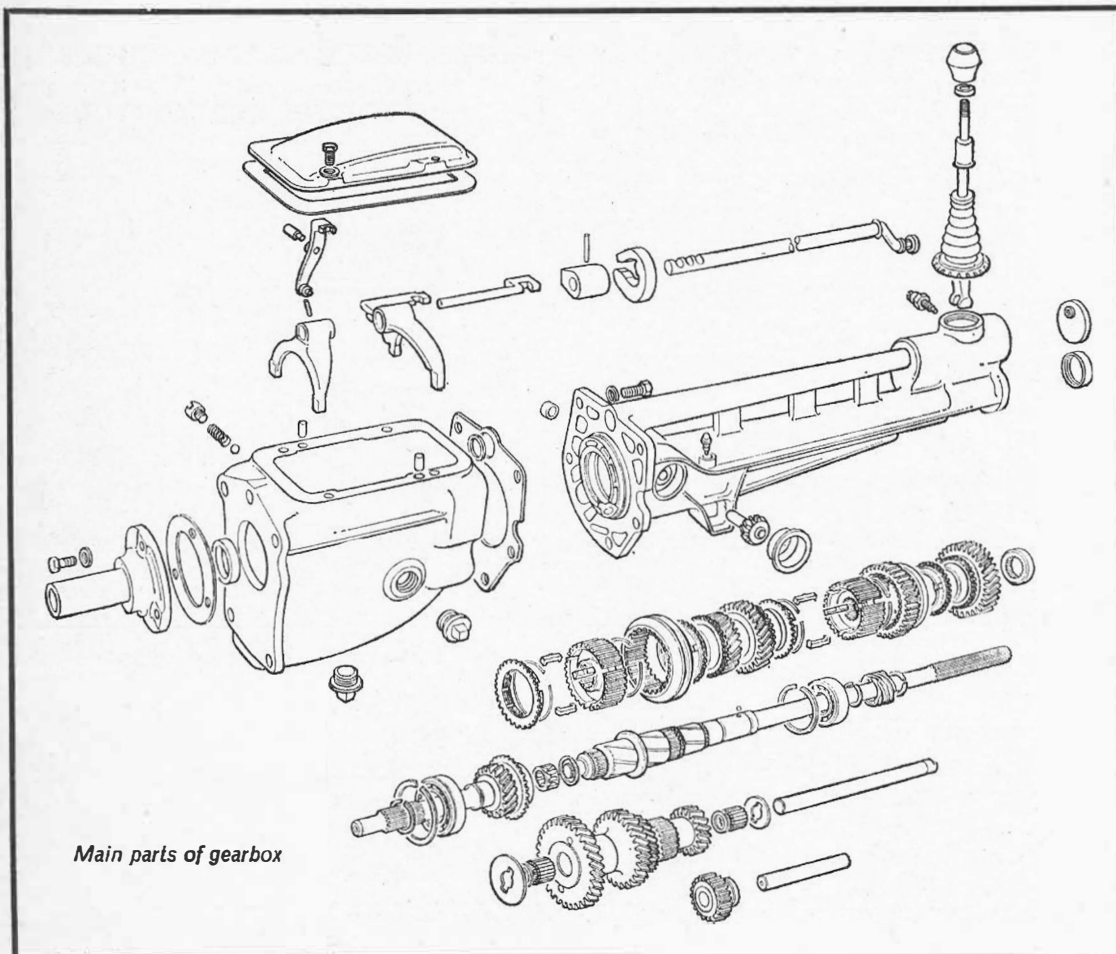
Position 3rd gear on mainshaft so that dog teeth face forward. Assemble blocker ring on 3rd gear cone. Position synchroniser assembly on mainshaft with boss forward. Locate replacer adaptor P.4090-7b so that it abuts the boss on synchroniser hub.

Press synchroniser assembly on to mainshaft as far as possible. Secure 3rd/4th synchroniser to mainshaft with new circlip. Before fitting the mainshaft and extension housing assembly to gearbox locate top gear blocker ring on main drive cone.

Reassembly of 1st/2nd Synchroniser

Assemble 2nd gear to mainshaft so that cone and dog teeth are rearwards. Slide synchroniser sleeve over hub and locate a blocker bar in each of the three slots in hub. If new hub is being used slide sleeve off and clean away all traces of preservative from components and lightly oil them.

Install a blocker bar spring to run around, clockwise or anti-clockwise, inside synchroniser sleeve beneath blocker bars. Tagged end of spring must locate in U section of a blocker bar. Fit other spring to opposite face



of synchroniser unit ensuring that spring tag locates in the same blocker bar as spring just fitted and runs in contra rotational direction. View direct on to one side of the synchroniser assembly and note the direction of the spring. View direct on to other side of synchroniser assembly—direction of rotation of the spring should be the same as for first spring. Assemble blocker ring to cone on 2nd gear. Fit synchroniser sleeve with reverse teeth on sleeve forwards. Locate replacer P.4090-7b on synchroniser hub. Locate in press base plate 370 so that replacer fits into split rings.

Press synchroniser assembly on to mainshaft as far as possible. Secure in position with a circlip; (non-selective). Assemble a blocker ring to the 1st gear side of 1st/2nd synchro-assembly on mainshaft. Fit 1st cone side forwards to mainshaft. Position spacer (or oil slinger) on mainshaft so that the larger diameter is adjacent to 1st speed gear.

Assembly master spacer, P.7154 to mainshaft bearing recess in the extension housing. Select circlip that will obviate bearing recess end-float. Measure width of bearing and if this dimension differs from that marked on spacer select a circlip as follows:—
Dimension on spacer—.6683
Thickness of main shaft brg.—.6660

.0023

Therefore required circlip must be .0023in thicker than circlip selected when using spacer. Position selected circlip loosely on mainshaft adjacent to spacer (or oil slinger). Locate replacer P.4000-31a on bearing so that recessed side abuts inner race. With split rings, P.4090-6, in press base plate, 370, locate bearing and replacer so that they will fit into split rings. Press bearing into position on mainshaft. Using thickest circlip which fits groove, secure bearing to mainshaft. Replace speedometer drive locating gear with ball bearing, fit new circlip. Heat front end of extension housing prior to refitting. **DO NOT USE WELDING TORCH.** Fit circlip to secure mainshaft bearing to extension housing. Refit speedometer driven gear and new plug.

Rear Axle

Semi-floating shafts, hypoid bevel drive. Final drive unit removable.

To remove rear axle unit complete, jack up vehicle, placing supports under frame side members in front of rear springs. Remove wheels, support axle, disconnect drive shaft, handbrake cables, shock absorbers and brake pipes. Remove spring clips, nuts and plates. Draw out of axle unit. When refitting tighten spring clip nuts to 20-25lb.ft.

Half shafts are interchangeable and have outer end flanges on which hub bearing housings, carrying wheel studs, register.

Inner ends are splined in differential side bevel.

Hubs run on ball bearing pressed into housings, with lipped oil seals behind. Bearing retained on axle tube ends by ring nuts and tab washers. Bevel pinion shaft runs in taper roller bearings, outer races pressed into final drive housing. Distance piece between inner races, which are nipped up by driving flange nut. Flange hub passes through lipped oil seal in housing. Bearings adjusted to give 13-19lb in pre-load with oil seal fitted with new bearings, by selective distance pieces, available in 10 lengths in .002in steps from 2.004/2.005 to 2.022/2.023. N.B. 6½-9½lb.in preload with original bearings and oil seal drag.

Pinion mesh adjustment by shims between pinion and inner race of rear bearing. Shims available in 30 thicknesses, .010in steps from .1304 to .1453in.

Crown wheel spigoted on one-piece differential cage and retained by eight self-locking setscrews. Differential side bevel gears have flat thrust washers behind, plant bevel pinions have spherical thrust washers.

Differential assembly is carried in with ring-nuts for bearing and mesh adjustment. Bearing caps have hollow

dowels. Tighten ring-nuts to spread bearing housings .005 to .007in then turn both ring-nuts equally to adjust mesh for .005 to .007in backlash.

CHASSIS

Suspension

Front: Independent, MacPherson strut pattern, coil springs around telescopic shock absorbers. Lateral movement controlled by track arm and fore and alternate movement by the stabiliser bar.

Mounting points are rubber insulated. Camber, castor and king-pin inclination angles are set in manufacture and are not adjustable

Rear: Semi-elliptic leaf spring with axle asymmetrically mounted. Telescopic shock absorbers are fitted. All mounts to body use rubber bushes.

Two radius arms are fitted to all models.

Steering

Rack and pinion, Burman manufacture. Rack travel, lock to lock, is 5.62in. There is adjustment for rack damper and pinion bearing preload, both by shims. Note: The pinion shim pack is on the underside.

CHASSIS DATA

| | |
|---------------------|---------------------------------|
| Clutch: type | sdp. dia. spring cable operated |
| Lining OD | 7.5in |
| Lining ID | 5.36in |
| Total friction area | 43.2sq.in |

STEERING BOX

| | |
|---|-----------------|
| Type | Rack and pinion |
| Adjustments: pinion brg pre-load rack damper | shims |

FRONT-END SERVICE DATA

| | Std* | h/d* |
|---|----------------------------------|--------|
| Castor | 1° 13' | 1° 26' |
| Camber | 0° 40' | 1° 30' |
| King pin inclination | 7° 20' | 6° 30' |
| Toe-in (service setting) | .09-.15in | |
| No. of turns lock to lock | 3½ | |
| Adjustments: castor camber toe-in | nil screwed track rod ends | |

* All ± 0° 30'

SPRINGS (1300 only) (Dimensions in inches)

| Type Identification Part No. | Front | | Rear |
|--|--------------|---|---------------------------|
| | Std. | H/D | |
| coil green 3038E- 5310E 5701b 100lb/in | 5.31 .426 | coil yellow 3038E- 5310F 5701b 100lb/in | ½ ell 69EB- 5560CB† |
| Load (mean) | — | — | — |
| Rate | — | — | — |
| Dia. of coils (mean) | — | — | — |
| Wire dia. | — | — | — |
| Spring length (between eye centres) | — | — | 47 |
| Width of leaves | — | — | 2 |
| No. of leaves | — | — | 3 |

† Heavy duty springs 69EB-5560DB, colour code green/red

FINAL DRIVE

| | |
|-------------------------------|--------------|
| Type | hypoid bevel |
| Crownwheel/bevel pinion teeth | 33/8* |
| 1300 std, 1300GT, 1600/opt | |

* 1300 opt—40/9. 1600 std—35/9. 1600GT—34/9

GEARBOX

| Type No. of forward speeds | all-synchromesh | | |
|-------------------------------|-----------------|--------|--------|
| | 1300. & 1300GT | 1600 | 1600GT |
| Final ratios: 1st | 4.615 | 13.776 | 11.225 |
| 2nd | 9.883 | 9.318 | 7.592 |
| 3rd | 5.824 | 5.493 | 5.277 |
| 4th | 4.125 | 3.889 | 3.777 |
| Rev. | 16.347 | 15.411 | 12.555 |

BRAKES (Dimensions in inches)

| Type | 1300 | 1300GT, 1600 1600GT |
|------------------------|------------|---------------------|
| | disc, drum | disc, drum |
| Drum diameter & width | 8 x 1½ | 9 x 1½ |
| Disc diameter | 9.59 | 9.625 |
| Disc run-out (max) | .0035 | 0.035 |
| Pad colour coding | Green-red | red-red |
| Cylinder bore diameter | 1.892 | 2.125 |

SHOCK ABSORBERS

| | |
|---------|-------------|
| Type | telescopic |
| Service | Replacement |

PROPELLER SHAFT

| | |
|------|--|
| Type | tubular one-piece (manual) two piece (auto) |
|------|--|

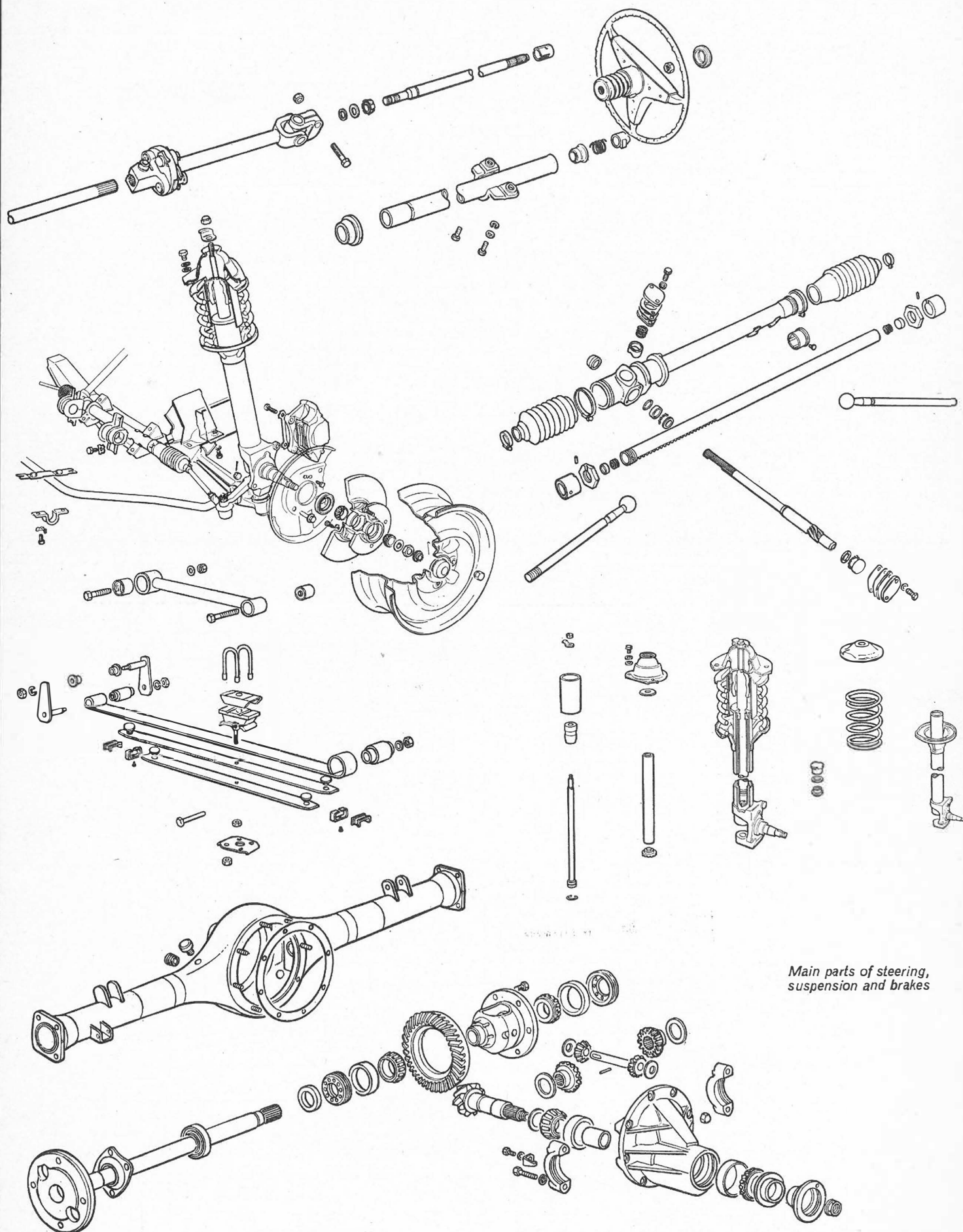
VALVES (Dimensions in inches)

| | Inlet | | Exhaust |
|------------------------------------|-------------|--------------------------|-------------|
| | 1300 | 1600 & GT | |
| Head diameter | 1.405-1.415 | 1.497-1.507 | 1.240-1.250 |
| Stem diameter | .3095-.3105 | | .3086-.3096 |
| Face angle | | 45 deg | 45 deg |
| Overall length | 4.377 | 4.277 | 4.355* |
| Spring length: free fitted at load | | 1.48 1.263 44-49lb | |

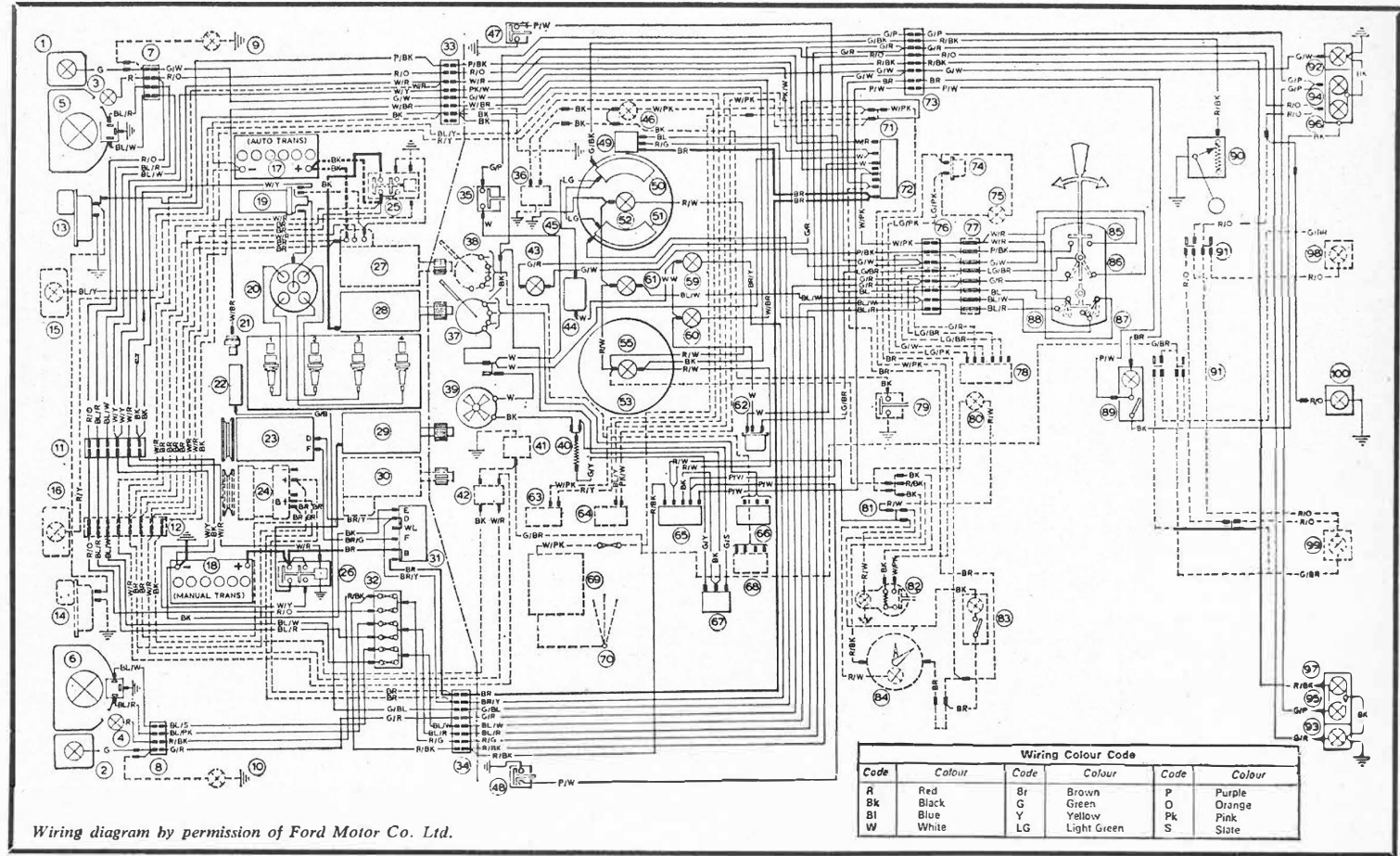
* 1600 & GT—4.265in

CARBURETTORS

| | 1300cc | 1600cc |
|------------------------------|----------------|------------------------------------|
| | C7 AH-B | C9CHE C9CH-F |
| Float setting—up | 1.12 to 1.14in | 1.14in |
| Choke plate pull down—manual | 0.14-0.16in | 0.16-c.18in |
| Throttle barrel dia. | 34mm | 36mm |
| Venturi dia. | 25mm | 28mm |
| Main jet—manual choke | 1.32mm | 1.50 mm |
| —auto. choke | | 1.47 mm |
| Weber units, dual barrel d/d | 1300GT 32-DFE | 1600GT 32-DFM-2 |
| Identification | Prim. Second | Prim. Second |
| Venturi dia. (mm) | 23 | 24 |
| Aux. vent. (mm) | 4.5 | 4.5 |
| Main jet (mm) | 125 | 150 |
| Float level (mm) | 7-7.5 | 7-7.5 |
| Choke plate pull down (mm) | | |
| Choke plate opening (mm) | | 7.5-8.5 with lever backed off 10mm |



Main parts of steering,
suspension and brakes



| | | | | | |
|--|---|------------------|-----------------|-----------------|--|
| REGULATOR | | Lucas | | Autolite | |
| Cut-in voltage Drop-off voltage Cut-out: Armature to core air gap "Follow-through" of moving contact Current regulator on-load setting | 12.6-13.4volts | | 9.25-11.25volts | | |
| | 0.035-0.045in | | 0.025-0.037in | | |
| | 0.010-0.020in | | 0.015-0.025in | | |
| | Maximum rated generator output $\pm 1\frac{1}{2}$ amps | | | | |
| Armature to core air gap | 0.045-0.049in | | 0.014-0.019in | | |
| Voltage regulator open circuit setting | 14.4-15.6volts at 20°C (68°F) | | | | |
| Armature to core air gap | 0.045-0.049in | | 0.024-0.028in | | |
| Atmospheric Temperature | Setting Voltage | Checking Voltage | | | |
| 10°C (50°F) | 14.9-15.5 | 14.5-15.8 | | | |
| 20°C (68°F) | 14.7-15.3 | 14.4-15.6 | | | |
| 30°C (86°F) | 14.5-15.1 | 14.3-15.3 | | | |
| 40°C (104°F) | 14.3-14.9 | 14.2-15.1 | | | |
| Resistance of shunt windings | { Cut-out 8.8 to 9.6ohms Voltage regulator 10.8 to 12.0ohms | | | | |
| "Swamp" resistor | { resistance measured between centre tag and base 13.25 to 14.25ohms resistance measured between tag ends before fitting 53 to 57 ohms | | | | |
| Field resistor | { either 55 to 65ohms (identification colour—Red) or 37 to 43ohms (identification colour—Yellow) | | | | |

| | | | |
|--|------------------|-----------------|-------------------|
| GENERATOR | | Standard | Cold Start |
| Type | | C-40 | C-40L |
| Speed (ratio to engine) | | | |
| —Manual transmission | | | 1.5:1 |
| —Automatic transmission | | | 1.8:1 |
| Brush length | 0.718in | | |
| Maximum charge | 22 amps. | | 25 amps. |
| Maximum output | 264 watts | | 300 watts |
| Fan belt tension (total free movement) | $\frac{1}{2}$ in | | |

| | | |
|--|--|---------------------|
| ALTERNATOR | | Lucas 15 ACR |
| Type | | |
| Speed (ratio to engine) | | 1.88:1 |
| Brush spring pressure | | 7-10oz |
| Maximum charge | | 28 amps |
| Fan belt tension (total free movement) | | in |

| | | | |
|-----------------------------|--|--|--|
| COIL | | Oil filled low voltage type for use with 1.5 ohm ballast resistor | |
| Type | | | |
| Resistance at 20°C (68°F) : | | | |
| Primary | | 3.1-3.5ohms | |
| Secondary | | 4.750-5.750ohms | |
| Output | | 30kv | |

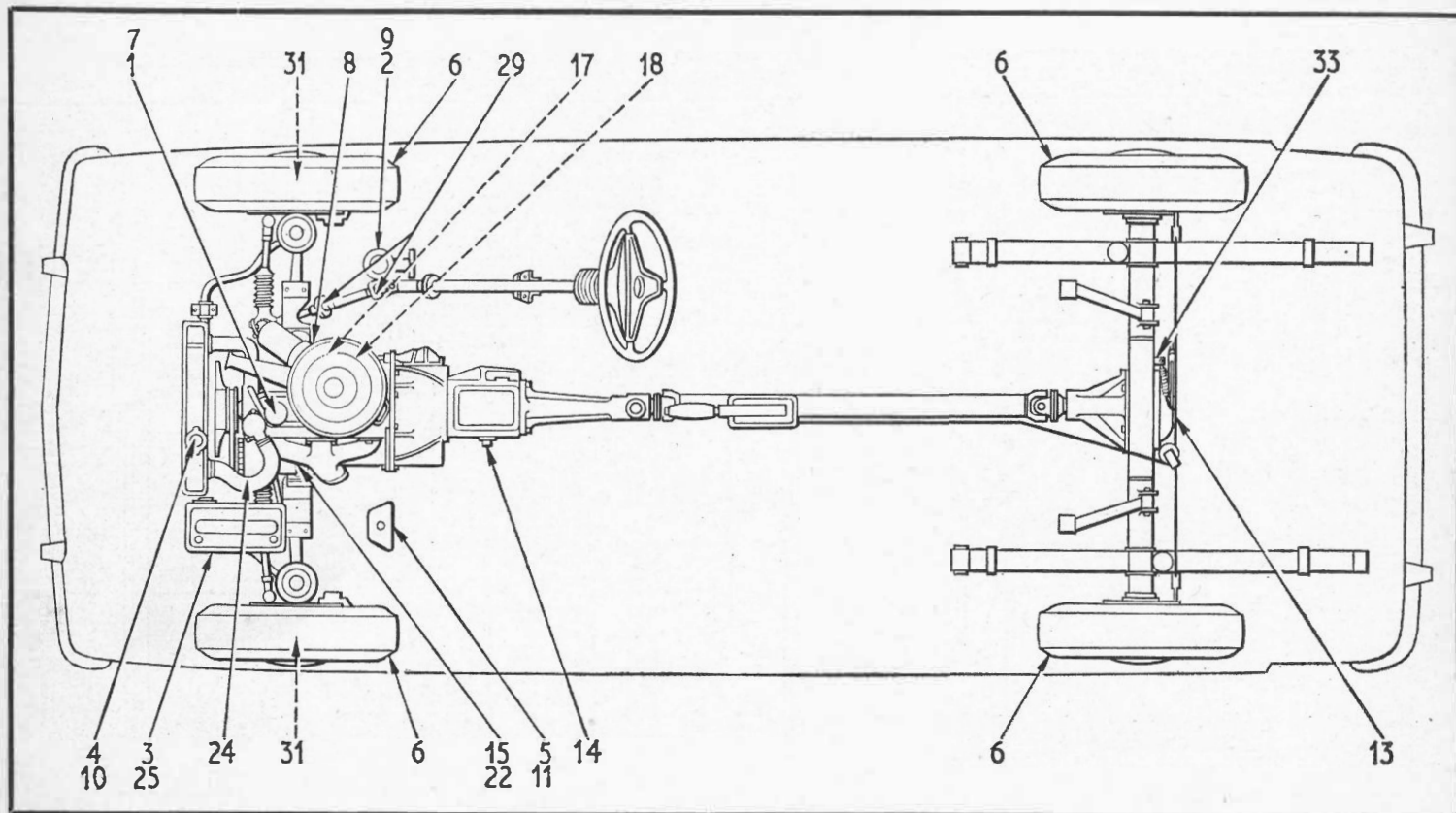
| | | | |
|--------------|----------------------|----------------------------------|------|
| HORNS | | PRE-ENGAGED STARTER MOTOR | |
| Type | | Gear ratio | 12:1 |
| Current draw | 4in 'beep' 4.5amp | Teeth on pinion | 11 |
| | | Teeth on ring gear | 132 |

| | | | |
|-------------------------------------|--|---------------------------------|--|
| LIGHT BULBS AND FLASHER UNIT | | 2 of 60/45 W sealed beam | |
| Headlamp | | 2 of 5W wedge base | |
| Side light | | 4 of 28W | |
| Front and Rear direction indicator | | 1 of 56W | |
| Flasher unit | | 2 of 7/28W | |
| Tail and Stop light | | 1 of 5W wedge base | |
| Licence plate | | 1 of 2W festoon | |
| Interior light | | 3 of 2.2W wedge base | |
| Warning lights { Standard | | 4 of 2.2W wedge base | |
| GT | | 8 of 2.2W wedge base | |
| Instrument panel lights { Standard | | 1.2W bayonet | |
| GT | | | |
| Clock | | | |

| | | | |
|--|--|-------------------|--|
| ELECTRICAL SYSTEM | | BATTERY | |
| Type | | Lead acid | |
| Voltage | | 12 | |
| Capacity (amp hr.): | | 38 at 20 hr. rate | |
| —Cold climate | | 57 at 20 hr. rate | |
| Plates/cell—Standard equipment | | 9 | |
| —Cold climate | | 13 | |
| Specific gravity charged | | 1.275-1.290 | |
| Low limit while discharging at 20 hr. rate | | 1.105 | |
| Electrolyte capacity: | | 2.5 Imp. pints | |
| —Standard equipment | | 6.4 Imp. pints | |
| —Cold climate | | | |

| | | | |
|------------------------------|--|---|--|
| DISTRIBUTOR | | Single pair contact breaker point | |
| Type | | Mechanically and vacuum controlled | |
| Automatic advance | | Skew gear from camshaft | |
| Drive | | Anti-clockwise from rotor end | |
| Rotation | | | |
| Identification number | | | |
| —1,300cc HC | | C7AH-A | |
| —1,300cc LC | | C7AH-B | |
| —1,300cc GT | | C7AH-C | |
| —1,600cc HC | | C7BH-A | |
| —1,600cc LC | | C7BH-B | |
| —1,600cc GT | | C7BH-C | |
| Identification colour { HC | | Red | |
| LC | | Green | |
| GT | | Blue | |
| Shaft end float | | Set with 0.015in shim | |
| Breaker arm spring tension | | 17-21oz | |
| Condenser capacitance | | 0.21-0.25microfarad | |
| Contact breaker points gap | | 0.025in | |
| Dwell angle | | 38-40 | |
| Firing order | | 1-2-4-3 | |
| High tension lead resistance | | 5,000 to 9,000 ohms/ft | |
| Initial Advance: | | | |

| | | | | |
|-------------------|--------------------------|-------------|-----------------|---------|
| Compression Ratio | Octane Number (Research) | Star Rating | Initial Advance | |
| | | | 1,300cc | 1,600cc |
| G.T. | 97 | 4 | 10° | 8° |
| HC 9:1 | 97 | 4 | 10° | 10° |
| | 94 | 3 | 6° | 6° |
| LC 8:1 | 89 | — | 10° | 10° |
| | 86 | — | 4° | 4° |



KEY TO MAINTENANCE DIAGRAM

WEEKLY

1. Engine sump
2. Brake fluid reservoir
3. Battery
4. Radiator
5. Screenwasher
6. Tyre pressures—check

} check and top up

EVERY 3,000 MILES

7. Engine sump—drain and refill
8. Engine oil filter element—renew
9. Brake fluid reservoir
10. Radiator
11. Screenwasher reservoir
- *12. Transmission fluid (auto.)
13. Rear axle fluid level
14. Manual transmission—drain and refill
15. Generator rear bearing—oil
- *16. Sparking plugs—clean and reset gaps
17. Distributor—oil shaft bearing, auto. advance mechanism, contact breaker pivot, smear cam with grease, clean and reset points, check ignition timing
18. Fuel pump—clean filter and sediment chamber
- *19. Carburettor mixture strength and idling
- *20. Valve clearances
- *21. Fan belt tension
- *22. Generator mounting bolts
- *23. Exhaust downpipe/manifold bolts

} check and top up

} check and adjust
} check and tighten to correct torque

24. Radiator hoses—inspect for leaks and damage etc.
25. Battery condition and connections
- *26. Tyre condition and legal depth of tread
- *27. Engine condition—check for water/oil leaks
- *28. Exhaust system—check for damage/leaks etc.
29. Suspension system and steering—check for wear
- *30. Torque of rear spring bolts—check
31. Front brake pads and rear linings—check pad thickness, examine rear shoes for wear and check condition of self-adjusting mechanism
- *32. Braking system—check for leaks and hose chafing
33. Handbrake cable linkage—lubricate
- *34. Door locks, catches, hinges etc.—oil can
- *35. Clutch cable adjustment—check and adjust (if necessary)

EVERY 9,000 MILES (as for 3,000 Miles noting important additions/omissions)

Omit: Items: 18 & 30

Add:

- *36. Crankcase emission valve—test and include oil filler cap
- *37. Seat belts—check for security and wear

EVERY 15,000 MILES (as for 3,000 Miles noting important additions/omissions)

Omit: Item 14

Add following:

- *38. Air cleaner element—renew

EVERY 21,000 MILES (as for 3,000 Miles noting important additions/omissions)

Omit: Items 14, 18, & 30

Add: Items 36 & 37

EVERY 27,000 MILES (as for 3,000 Miles noting important additions/omissions).

Omit: Item 14

Add following:

- *39. Front wheel bearings—strip, clean and repack with grease

*—Not shown on diagram.

FILL-UP DATA

| | Pints | Litres |
|------------------|-----------|-----------------------|
| Engine sump | 7.184 | 4.12 |
| Gearbox | 1.7 | .96 |
| Rear axle | 2 | 1.13 |
| Fuel tank | 10.5galls | 48 |
| *Tyre pressures: | | |
| front | 24psi | 1.7kg/cm ² |
| rear | 27psi | 1.9kg/cm ² |

*with two passengers and little luggage.

RECOMMENDED LUBRICANTS

| | Duckhams | Castrol | Esso | Shell | Mobil | Amoco | B.P. |
|-------------------|-----------------|-------------|--|----------------------------|--|--|-------------------------------------|
| Engine | Q5500 or Q20-50 | Castrol GTX | Extra Motor Oil 10W/30, 20W/50 or Uniflo | Super Motor Oil 101 or 100 | Mobiloil Special 20/50 or Mobiloil Super | Super Permalube 10W/30 or Permalube 20/20W or Super Permalube 20W/50 | Super Visco-static 10W/40 or 20W/50 |
| Gearbox (manual)* | NOL EP 80 | Hypoy Light | Gear Oil GP 80 | Spirax 80 EP | Mobilube GX 80 | Amoco Multi-Purpose Gear Lubricant SAE80 | Gear Oil SAE 80 EP |
| Rear Axle | Hypoid 90 | Hypoy | Gear Oil GP90/140 | Spirax 90 EP | Mobilube GX 90 | Amoco Multi-Purpose Gear Lubricant SAE90 | Gear Oil SAE 90 EP |

Approved lubricants of similar grades and SAE ratings are also manufactured by Regent Oil Co. Ltd. and Petrofina (Gt. Britain), Ltd. who are suppliers to Ford Motor Co. Ltd. as are the other companies listed above. * Automatic transmission use only Ford Fluid M-2C33F.

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