

*(To be inserted in Bentley Mk. VI Handbook, No. X, to face page 26.)*

### **FAULTY IGNITION CONDENSER.**

In cases where the engine misfires or fails to start, and that this condition is obviously not due to petrol starvation, it is possible that the ignition condenser is at fault.

In such circumstances as the above, it is recommended that the condenser mounted below the ignition distributor, see Fig. 39, page 91, should be removed and replaced by a new one.

BENTLEY MOTORS (1931) LIMITED,  
LONDON.

When fitting these special chains, it is *essential* to commence by fastening the one hook on the inside of the wheel and always to take up the adjustment on the outside, where two fastening clips are provided. The tensioning springs which are supplied to go on the outside of the wheel must always be fitted.

## CHAPTER II

# Periodic Lubrication and Attention

### LUBRICANTS RECOMMENDED

#### Engine and Gearbox.

For normal operation of the car under Temperate climatic conditions, Bentley Motors (1931) Ltd. recommend a first quality oil of viscosity S.A.E. 20 for the engine, for all the year round use. But, if conditions permit of long journeys of maintained high speeds, a heavier duty oil of S.A.E. 30 grade would provide better oil mileages. Also, it would be advantageous to use an S.A.E. 30 grade oil where the car is normally operated under Tropical climatic conditions.

On the other hand, under extreme Winter conditions of sub-zero temperatures, the use of a lighter grade oil of S.A.E. 10 viscosity would provide easier starting and satisfactory lubrication.

The oil for the gearbox should be a first quality oil of viscosity S.A.E. 30, which is suitable for all driving conditions.

The following oils are recommended:—

			“A”	“B”
			Engine.	Gearbox.
Price's	...	...	Energol 20.	Energol 30.
Wakefield's	...	...	Castrolite	X.L.
Shell	...	...	Single, or X.100-20.	Double, or X.100-30.

Equivalent oils to the above are also marketed by: Sternal Ltd., Alexander Duckham & Co. Ltd., Anglo-American Oil Co. Ltd., Gulf Oil (Great Britain) Ltd., and Dalton & Co. Ltd.

In the instructions which follow, reference is made to Oil “A” or “B” as above, i.e. viscosity 20 or 30.

#### Rear Axle.

Wakefield's Special Castrol Hi-press S.C. (If this is unobtainable, use a first quality Hypoid oil. Do **not** mix these oils; drain and refill.)

#### Carburettor Air Valve Damper.

Viscosity 10 oil, any of the following may be used:—

Price's	...	...	...	...	U.C.L.
Wakefield's	...	...	...	...	Oilit.
Shell	...	...	...	...	Donax A.I.

**Steering Box—Chassis Oil Pump—Starter Motor Gears.**

Viscosity 30 oil, as under "B".

**Hydraulic Shock Dampers.**

Viscosity 20 oil, as under "A".

**Propeller Shaft—Contact Breaker Cam.**

Vacuum Mobilgrease No. 2.

**Distributor Grease Cup.**

High Melting Point Grease.

**Hydraulic Brake Fluid.**

Lockheed Brake Fluid—Orange.

**CAPACITIES**

Engine ...	...	...	...	...	...	16 pints approx.
Gearbox	...	...	...	...	...	6 pints ,,
Rear Axle	...	...	...	...	...	1 $\frac{3}{4}$ pints ,,
Chassis Oil Pump	...	...	...	...	...	2 pints ,,
Cooling System	...	...	...	...	...	3 $\frac{3}{4}$ gallons ,,
Fuel Tank	...	...	...	...	...	18 gallons ,,

**GENERAL**

In addition to the points supplied with oil by the centralised system, there are others which, for various reasons, cannot be fed in this way and must, therefore, be lubricated by hand.

In the notes which follow, these points are classified as far as possible under mileages, or according to the usage of the car.

It is important that careful attention should be given to their lubrication so as to reduce wear and eliminate mysterious squeaks and rattles.

Further notes are included covering the periodic operations and adjustments which are necessary.

## Points for Regular Attention according to Use of Car

### FREQUENTLY, OR DAILY IF LONG JOURNEYS ARE CARRIED OUT

#### 1.—Engine Oil.

Inspect oil level on dipstick or electric gauge **when engine is not running**, and top up as necessary with correct oil. Do not run engine with oil level down to "Min." mark. (See page 41.)

#### 2.—Chassis Lubrication.

Use foot-operated pump according to mileage travelled. Depress pedal once when car is being started for the first time each day, and then once every 100 miles. Use the pump more frequently during bad weather.

Replenish reservoir as necessary, but do not overfill. Leave one inch between oil level and bottom of filler orifice.

### WEEKLY

#### 3.—Radiator Coolant.

Inspect coolant level and, if necessary, top up with the correct anti-freeze mixture to maintain the level at about one inch below the bottom of the filling orifice.

#### 4.—Tyres.

Check the tyre pressures.

These should be:—Front, 25 lbs./sq. in. } Cold.  
Rear, 30 lbs./sq. in. }

#### 5.—Distributor Grease Cup.

Give grease cup one turn; when empty, fill with the correct grease. (See page 28.)

#### 6.—Windscreen Washer.

Inspect and refill reservoir if required, leave one inch between liquid level and top of filling orifice.

### MONTHLY

#### 7.—Battery.

Check level of acid in each cell and top up with distilled water if necessary. Check more frequently when big mileages are covered or when the car is being run during hot weather.

**8.—Brakes.**

See Chapter VI for description.

To check the adjustment, rotate the adjusters in a clockwise direction until obvious resistance is felt. This resistance should be equal for all four brakes, and should the last "click" on any one adjuster require noticeably greater force to obtain, this adjuster should be turned back to the previous "click". (See page 55.)

**9.—Carburettors.**

Inspect oil level in oil reservoir of automatic air valve guide, and top up with the recommended oil. (See page 27.)

## Lubrication and Maintenance

### EVERY 5,000 MILES

**1.—Engine Oil Filter.**

Remove felt element and washers, and discard. Replace with new element and washers. See that cover joint is oil tight. (See page 38.)

**2.—Gearbox.**

Inspect oil level in the gearbox by means of dipstick. If necessary, replenish with the correct oil to level of mark on dipstick. (See page 60.)

**3.—Rear Axle.**

Inspect oil level in rear axle when warm, by removing level plug (Fig. 22), and, if necessary, top up with correct oil to level of hole. (See page 63.)

*If the correct oil is not obtainable, do not add a different oil, but if replenishment is necessary, drain off and refill with an alternative oil as directed on page 27.*

**4.—Steering Box.**

Remove plug and fill casing with correct oil to mouth plug of orifice. (See page 65.)

**5.—Ignition Governor.**

Remove the distributor cover and lift off rotor. Apply two or three drops of oil "A" to governor spindle. (See page 91.)

**6.—Contact Breakers.**

Apply one drop of oil "A" with oil-can to the pivot pin of each rocker arm. (See page 91.)

**7.—Distributor Cam.**

Apply one or two drops of oil "B" to the cam lubricator pad. (See page 91.)

**8.—Control Mechanism.**

Apply a few drops of oil "A" with oil-can to controls on steering wheel (oil hole), accelerator pedal mechanism, clutch pedal mechanism, and all other control points and bearings.

**9.—Brake Connections, etc.**

Apply liberally oil "A" with oil-can to all joints and pins of brake rods and connections, or spray with penetrating oil.

**10.—Bonnet Fasteners and Locks.**

Carefully lubricate with oil "A" bonnet fasteners and locks.

**11.—Sparking Plugs.**

Alternative plugs are Champion Type N8, or Lodge Type CLN, 14 m/m. non-detachable. Plugs should be serviced on special plug cleaning and testing machine, which should be available in all service stations. Set gaps to .025" (.635 m/m.).

**EVERY 10,000 MILES****1.—Starter Motor.**

Remove plug on side of reduction gear casing, and fill to plug orifice with oil "B". (See Fig. 42.)

**2.—Engine Oil Sump.**

When engine is warm drain crankcase and refill with oil "A" to the correct level.

**3.—Hydraulic Shock Dampers.**

Inspect oil level and add more oil if necessary.

*Use only correct oil.* (See page 28.)

**4.—Universal Joints and Propeller Shaft.**

Inject grease by means of grease-gun into lubricator located at centre of each universal joint, and also into the lubricator on the sliding joint. (See Fig. 21.)

**5.—Valve Rocker Clearances.**

Check the inlet valve rocker clearances and re-set if necessary.

This operation should be performed *when the engine is cold.*

The method of adjusting the valve rocker clearances is illustrated in Fig 3.

Before commencing to adjust a tappet, it should be ascertained that the lower tappet operating the push rod is on the base circle of its operating cam. This is best done by turning the crankshaft by hand until the valve has opened and closed, and then cranking round half a revolution beyond this point.

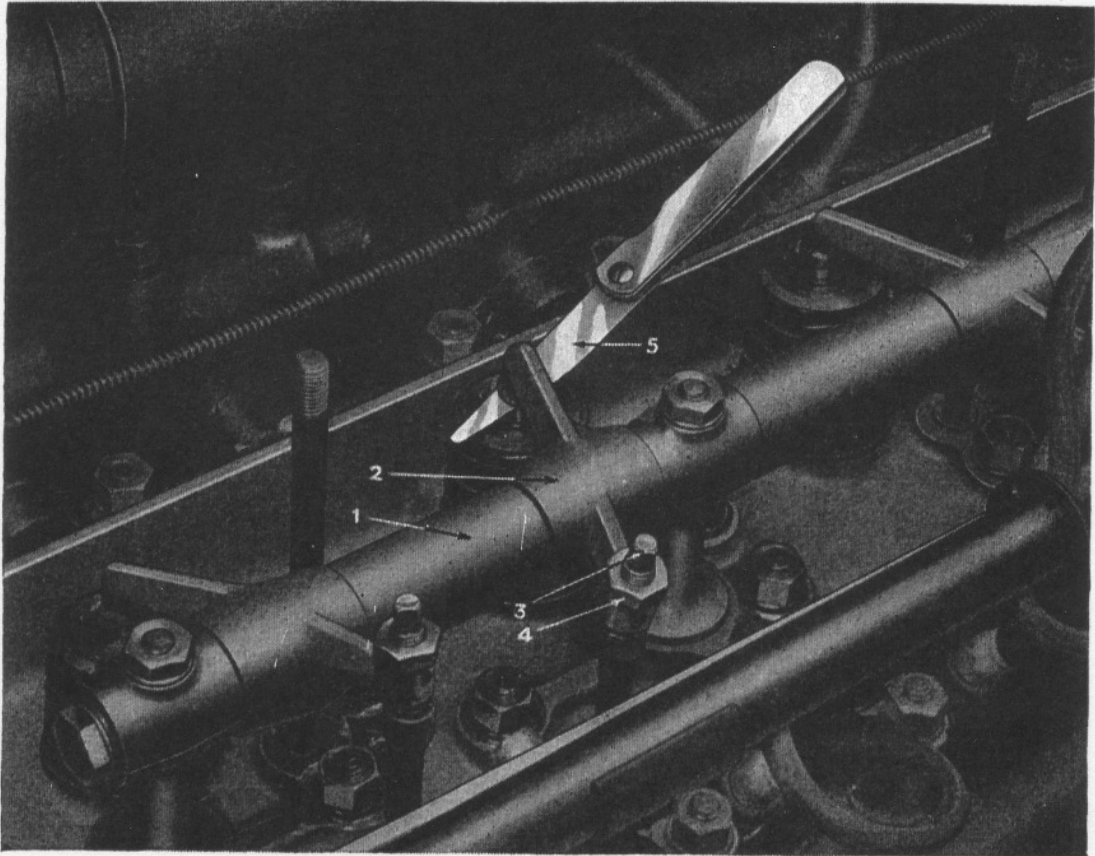


Fig. 3—ADJUSTING THE INLET VALVE ROCKER CLEARANCES.

- |                              |                  |
|------------------------------|------------------|
| 1. Rocker shaft.             | 4. Locknut.      |
| 2. Rocker.                   | 5. Feeler gauge. |
| 3. Ball ended contact screw. |                  |

The ball ended contact screw (3) is screwed into the rocker and locked with a nut (4). On releasing the nut the screw can be turned by means of the special spanner provided.

The correct clearance for the inlet rockers is .006" (.152 m/m.). A feeler gauge is provided in the tool kit, and is shown in position (5), for measuring the clearances.

As each contact screw is adjusted, its locknut should be securely tightened up.

The correct clearance for the exhaust tappets is .012" (.305 m/m.), *with the engine cold*. These should need no attention between de-carbonising periods of the engine.

## 6.—Air Cleaner.

Remove cleaner element from front end of silencer, after unscrewing the wing-nut and taking off end cover. Carefully wash element in petrol or paraffin and afterwards oil with oil "A". Drain off excess oil before re-fitting.

It should be noted that if the car is being run under particularly dusty conditions, the element may need cleaning more frequently. (See page 51.)



**7.—Doors.**

Oil lock bolts and hinges with oil "A". (See page 107.)

**8.—Hydraulic Master Cylinder.**

Remove the filler plug (1), Fig. 18, and check the fluid level, top up if necessary with the recommended fluid (see page 28) so as to maintain the level at one inch below the filler cap.

**9.—Dynamo.**

Inspect brushes for wear; to do this, unscrew securing screws and remove cover to expose brushes. (See page 84.)

If renewal is necessary, remove dynamo, clean out dust and refit new brushes, making sure that they are bedding correctly on the commutator. Refit dynamo.

**EVERY 20,000 MILES****1.—Gearbox.**

Drain out all the oil, by removing the drain plug, and refill with oil "B", up to the mark on the dipstick. (See page 60.)

This operation is more easily performed when the gearbox is warm.

**2.—Fuel Filters.**

Remove and clean gauzes of rear filter, located on cross-member of frame in front of main tank. Drain and clean filter sump. (See page 45.)

Also, remove and clean gauze filter on fuel inlet to carburetter float chamber, taking care, first, to see that the ignition is switched off, and fuel pumps are therefore inoperative. (See page 45.)

**3.—Fuel Tank.**

*Release*—but do not remove—drain plug at bottom of main tank to allow any accumulated water to escape. (See page 45.)

**4.—Rear Axle.**

Drain axle when warm, and refill. Approximately  $1\frac{3}{4}$  pints of oil will be required.

*None but the recommended oil should be used*, and this should be warmed before inserting.

**5.—Chassis Lubrication System.**

Remove and discard felt strainer pad, located at base of chassis oil pump. (See page 36.) Replace with new pad.

**DIAGRAM**  
**CHASSIS LUBRICATION SYSTEM**

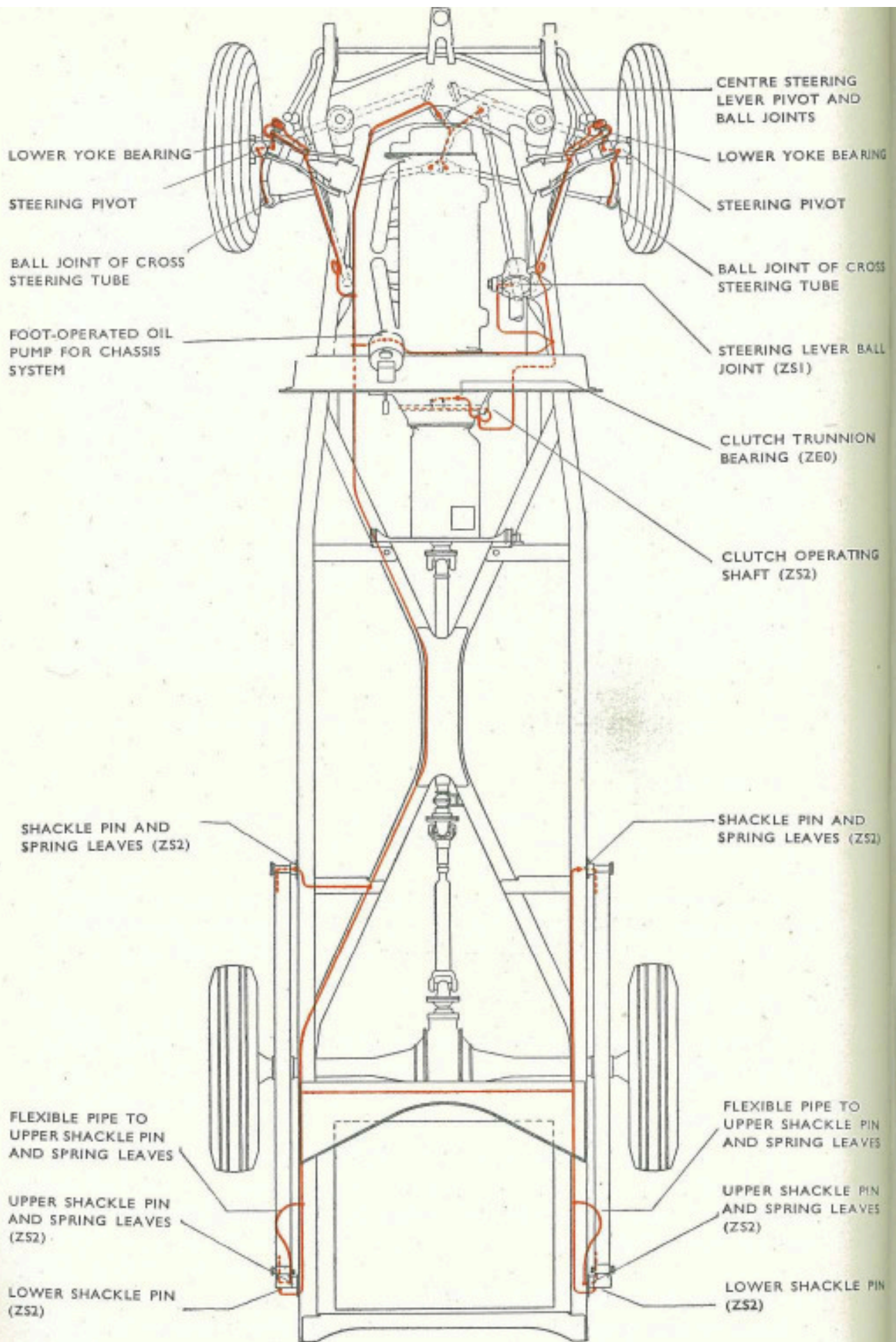


Fig. 4.—DIAGRAM OF CHASSIS LUBRICATION SYSTEM.

## CHAPTER III

**Centralised Chassis Lubrication**

*General — Foot-operated Oil Pump — Drip Plugs.*

**General.**

A foot-operated pump, with which is combined an oil reservoir, is located on the front of the dashboard, and supplies oil under pressure for chassis lubrication.

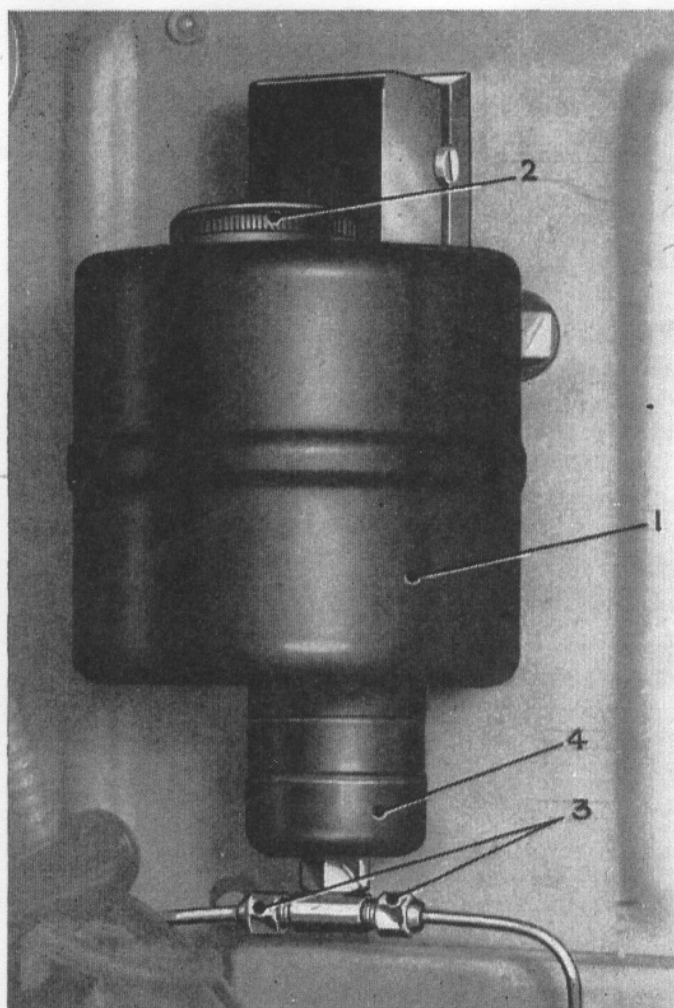


Fig. 5.—CHASSIS OIL PUMP AND RESERVOIR.

- |                |                 |
|----------------|-----------------|
| 1. Reservoir.  | 3. Pipe unions. |
| 2. Filler cap. | 4. Strainer.    |

A diagram of the complete system is given in Fig. 4, the piping being coloured red. Red discs indicate the positions of drip plugs, and the rating of each is given in parentheses against the description of the part lubricated.