

CHAPTER II

Periodic Lubrication and Attention

LUBRICANTS RECOMMENDED

Bentley Motors (1931) Ltd. recommend a first quality oil of viscosity S.A.E. 20 for the engine all the year round, and viscosity 30 for the gearbox.

Any of the following oils are suitable:—

				"A"	"B"
				Engine.	Gearbox.
Price's Motorine	...	...	...	E.	M.
Wakefield's Castrol	...	...	...	Castrolite.	XL.
Vacuum Mabiloil	...	...	...	Arctic.	A.
Shell	...	...	...	Single.	Double.
Duckham's Adcoidised	...	...	...	NP. "Twenty"	NP. "Thirty"
Essolube	...	...	...	20.	30.
Silvertown Speedolene	...	...	...	20.	T.
Sternol	...	...	...	WW.20.	WW.30.

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 circumstances make this unobtainable, any one of the following may be used. Do **not** mix these oils; drain and refill.)

Price's	...	...	...	Motorine Hypoid.
Wakefield's	...	...	...	Castrol Hypoy.
Vacuum	...	...	...	Mobilube GX.
Shell	...	...	...	Spirax E.P.90.
Duckham's	...	...	...	Adcol Hypoid 90.
Essolube	...	...	...	Essoleum Expee Compound 90.
Silvertown	...	...	...	Speedolene Hypoid 90.
Sternol	...	...	...	Hypoid 90.

Carburettor Air Valve Damper.

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

Price's	...	...	...	Motorine U.C.L.
Wakefield's	...	...	...	Wakefield Oilit.
Vacuum	...	...	...	Mobil Handy Oil.
Shell	...	...	...	Donax A.I.
Essolube	...	...	...	Esso Shock Absorber Light.

Steering Box—Chassis Oil Pump—Starter Motor Gears.

Viscosity 30 oil, as under "B" above.

Hydraulic Shock Dampers.

Viscosity 20 oil, as under "A" above.

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	...	...	...	...	...	1¼ pints "
Chassis Oil Pump	...	...	...	...	...	2 pints "
Cooling System	...	...	...	...	...	3¾ 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 dip-stick 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.)

MONTHLY

6.—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.

7.—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.)

8.—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.—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.)

2.—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.

3.—Steering Box.

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

4.—Ignition Governor.

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

5.—Contact Breakers.

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

6.—Distributor Cam.

Smear a trace of grease on the cam surface. (See page 91.)

7.—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.

8.—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.

9.—Bonnet Fasteners and Locks.

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

10.—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. 40.)

2.—Engine Oil Sump.

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

3.—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 fit new brushes, making sure that they are bedding correctly on the commutator. Refit dynamo. (See page 84.)

4.—Hydraulic Shock Dampers.

Inspect oil level and add more oil if necessary.

Use only correct oil. (See page 28.)

5.—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.)

6.—By-Pass Oil Filter.

Replace by-pass oil filter element, on right-hand side of engine, with a new one. See that the cover joint is oil-tight thereafter. (See page 40.)

7.—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.

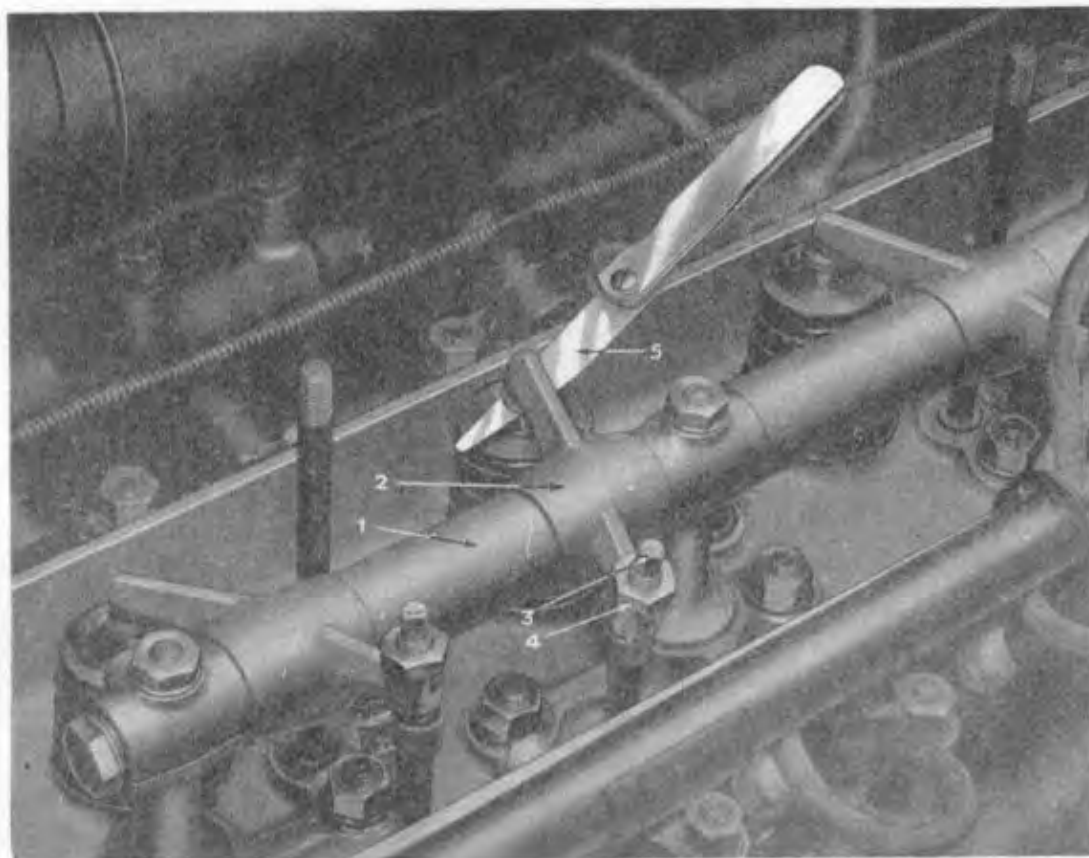


Fig. 3—ADJUSTING THE INLET VALVE ROCKER CLEARANCES.

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

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.

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.

8.—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.)

9.—Doors.

Oil lock bolts and hinges with oil "A". (See page 106.)

10.—Hydraulic Master Cylinder.

Remove the filler plug (2), Fig. 18, and check the fluid level, top up if necessary with the recommended fluid (see page 27) so as to maintain the level at one inch below the filler cap.

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 Strainers.

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

Also, remove and clean gauze strainer 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 46.)

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

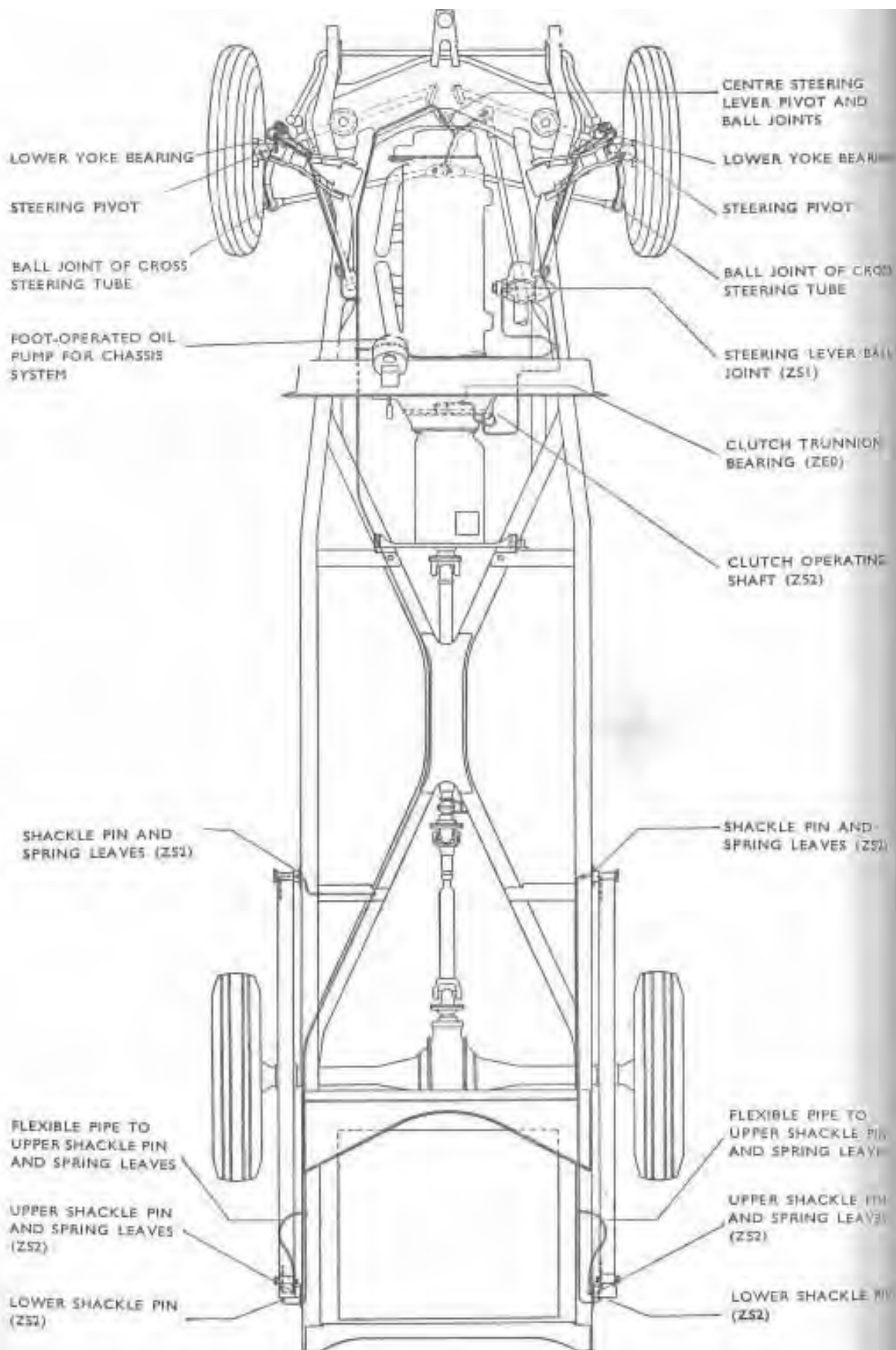


Fig. 4.—DIAGRAM OF CHASSIS LUBRICATION SYSTEM.