

CHAPTER II

Periodic Lubrication and Attention

LUBRICANTS RECOMMENDED.

Engine.

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

Under extreme Winter conditions, the use of a lighter grade oil of S.A.E. 20 viscosity would provide easier starting and satisfactory lubrication.

The following oils are recommended:—

	“A”	“B”
	S.A.E. 20	S.A.E. 30
B.P.	Energol 20	Energol 30
Wakefield's	Castrolite	Castrol XL.
Shell	X.100—20	X.100—30
Vacuum	Mobiloil Arctic	Mobiloil “A”

Equivalent oils to the above are also marketed by:—Sternol Ltd., Alexander Duckham & Co. Ltd., Esso Petroleum 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.

Gearbox.

The automatic gearbox should be filled and topped up only with Automatic Transmission Fluid, Type “A”, having an Armour qualification number prefixed by AQ/ATF.

Either of the following may be used:—

Vacuum Oil Co.	Mobiloil Fluid 200	Type AQ ATF—101
Shell	Donax T.6	Type AQ ATF—103
B.P.	Energol Automatic	Type AQ ATF—261
	Transmission Fluid	
Wakefield's	Castrol T.Q.	Type AQ ATF—156
General Motors	Hydra-Matic Fluid	

Rear Axle.

Wakefield's Special Castrol Hi-press S.C. (If this is unobtainable, use a first quality Hypoid oil of viscosity S.A.E. 90. Do *not* mix these oils; drain and refill.)

Carburetter Air Valve Damper.

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

B.P.	...	...	...	...	U.C.L.
Wakefield's	...	...	...	...	Oilit.
Shell	...	...	...	...	Donax A.I.
Vacuum	...	...	...	...	Mobiloil Arctic Special.

**Steering Box—Chassis Oil Pump—Starter Motor Gears—
Contact Breaker Cam Pad.**

Viscosity 30 oil, as under "B" above.

Hydraulic Shock Dampers.

Viscosity 20 oil, as under "A" above.

Propeller Shaft—Door Hinges.

Vacuum Mobilgrease No. 2.

Distributor Grease Cup.

High Melting Point Grease.

Hydraulic Brake Fluid.

Lockheed Hydraulic Brake Fluid, S.A.E., Spec. 70 R.2.

CAPACITIES

Engine	...	...	...	...	...	16 pints Imp. approx.
Gearbox	...	...	...	...	...	20 pints Imp. „
Rear Axle	...	...	...	...	...	1 $\frac{3}{4}$ pints Imp. „
Chassis Oil Pump	...	...	...	...	...	2 pints Imp. „
Cooling System	...	...	...	...	...	32 pints Imp. „
Fuel Tank	...	...	...	...	...	18 gallons Imp. „

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.

(To be inserted in Bentley Continental Sports Handbook No. XI to face page 31.)

SPARKING PLUGS.

Owners are notified that the Lodge CLN Sparking Plug quoted as an alternative on pages 31 and 103, should no longer be used.

The only recommended Sparking Plug for use in the Bentley Continental Sports engine is the Champion N8.B.

BENTLEY MOTORS (1931) LTD.
LONDON.

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.)

(Filler cap on rocker cover.)

2.—Chassis Lubrication.

Use foot-operated pump according to mileage travelled. As it is necessary to prime the system and expel air, the first stroke of the pump may not be effective, therefore give the pedal three or four strokes every 200 miles. This will ensure adequate lubrication at remote parts of the system.

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

(Reservoir on front of dashboard, under bonnet.)

WEEKLY

3.—Radiator Coolant.

Inspect coolant level and, if necessary, top up with the correct anti-freeze mixture to maintain the level to the bottom edge of the filling orifice.

(Filler cap on header tank, under bonnet.)

4.—Tyres.

Check the tyre pressures.

These should be:—

Front—30 lb./sq. in. or 2.109 kg./sq. cm.	} Cold.
Rear—35 lb./sq. in. or 2.46 kg./sq. cm.	

Note.—It is of the utmost importance in the interests of safety that these tyre pressures are maintained.

5.—Distributor Grease Cup.

Give grease cup one turn; when empty, fill with the correct grease. (See page 30.)

6.—Windscreen Washer.

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

(Reservoir on front of dashboard, under bonnet.)

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.

(Access through trapdoor, under driver's seat.)

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 63.)

The above check should be undertaken every month or every 2,500 miles, whichever is the shorter.

9.—Gearbox.

Run the engine for three minutes and while still running inspect the fluid level in the gearbox by means of the dipstick. (See Fig. 21.) If necessary, replenish with one of the recommended Automatic Transmission Type "A" Fluids, to the level marked on the dipstick. (See page 29.)

(Access: Remove rubber bung in floor in front of front passenger's seat.)

10.—Carburettors.

Inspect oil level in oil reservoir of automatic air valve guide, and top up with the recommended oil. (See page 30.)

11.—Oil Bath Air Cleaner.

Every 1,000 miles, the oil container and the filler element should be removed by unscrewing the long bolt which passes through the top of the silencer.

The oil container should be emptied and carefully cleaned, the filter element being thoroughly washed in petrol and allowed to dry.

Replace the element and refill the oil container with oil "A" to the indicated level, and refix in position.

NOTE.—The cleaner should be serviced at more frequent intervals if the car is being operated under very dusty conditions. (See page 55.)

Lubrication and Maintenance

EVERY 5,000 MILES

1.—Engine Oil Filter.

Remove felt element and washers, and discard. Replace with new element and washers. Refill bowl with oil, re-assemble and check that cover joint is oil tight. (See page 42.)

(Filter on right-hand side of engine crankcase.)

2.—Engine Oil Sump.

When engine is warm drain crankcase and refill with a recommended oil to the correct level.

3.—Rear Axle.

Inspect oil level in rear axle when warm by removing level plug (Fig. 24), and, if necessary, top up with correct oil to level of hole. (See page 69.)

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 30.

4.—Steering Box.

Remove plug and fill casing with correct oil to mouth plug of orifice. (See page 71.)

5.—Ignition Governor.

Remove the distributor cover and lift off rotor. Apply two or three drops of oil "A" to governor spindle. (See page 97.)

6.—Contact Breakers.

Apply one drop of oil "A" with oil-can to the pivot pin of each rocker arm. (See page 97.)

7.—Distributor Cam.

Apply one or two drops of oil "B" to the cam lubricator pad. (See page 97.)

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.

The sparking plugs are Champion Type N8B, 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 from front cover of reduction gear casing, and fill to plug orifice with oil "B".

2.—Dynamo.

Inspect brushes for wear; to do this, unscrew securing screws and remove cover to expose brushes. (See page 90.)

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 90.)

3.—Hydraulic Shock Dampers.

Inspect oil level and add more oil if necessary.

Use only correct oil. (See page 30.)

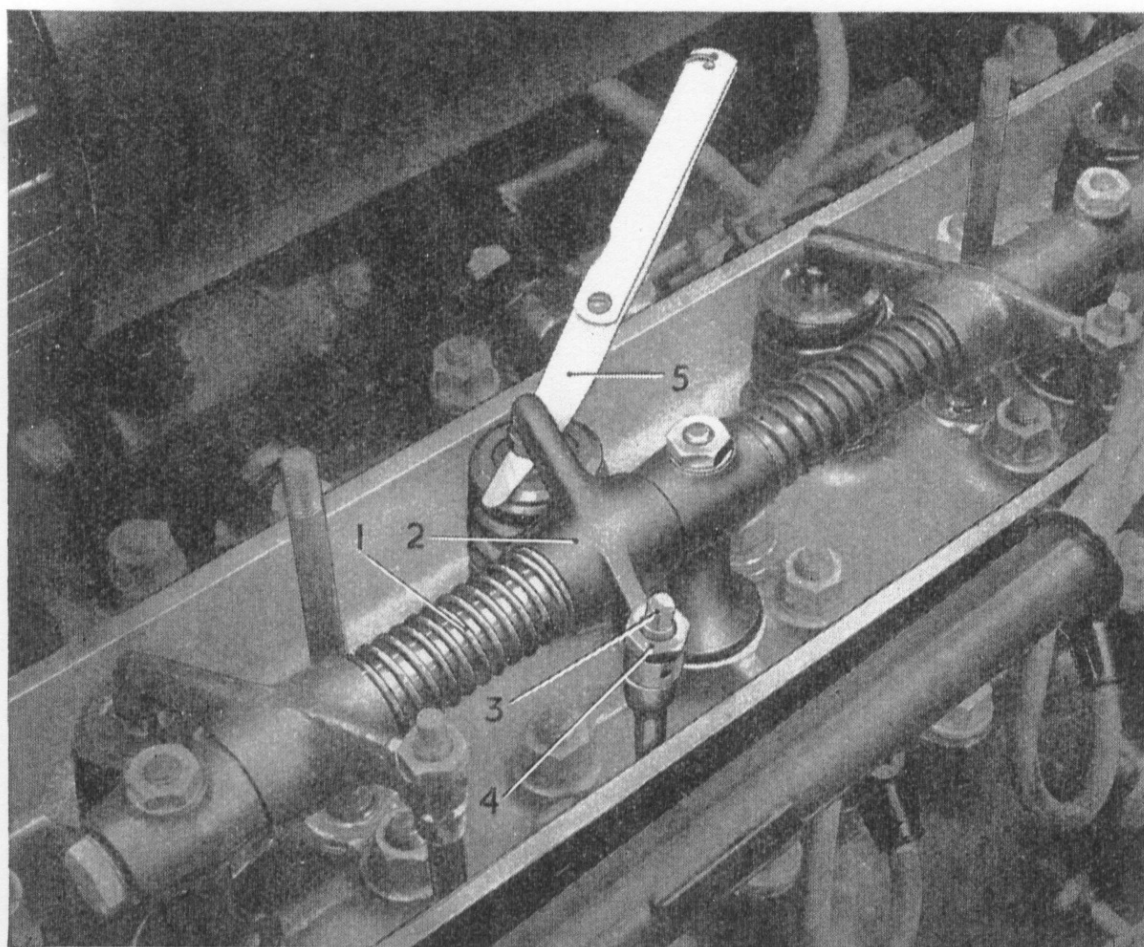


Fig. 3.—ADJUSTING THE INLET VALVE ROCKER CLEARANCES.

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

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. 23.)

5.—Valve Rocker Clearances.

Check the inlet valve rocker clearances and reset 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.

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 (Standard Type).

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

It should be noted that if the car is being run under particularly dusty conditions, the element may need cleaning more frequently. (See page 55.)

7.—Doors.

Oil lock bolts and hinges with oil "A".

8.—Hydraulic Master Cylinder.

Remove the filler plug (1), Fig. 20, and check the fluid level, top up if necessary with the recommended fluid (see page 30) so as to maintain the level at one inch below the filler cap. (Access through trapdoor to battery.)

EVERY 20,000 MILES**1.—Gearbox.**

Drain out all the fluid by removing the drain plugs from the fluid coupling casing and the gearbox sump, and refill with the correct type of fluid. (See page 29.)

Detailed instructions are given on page 67.

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 49.)

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 49.) (Access to rear filter through cover in floor of luggage boot.)

3.—Fuel Tank.

Release—but do not remove—drain plug at bottom of main tank to allow any accumulated water to escape. (See page 49.)

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 39.). Replace with new pad.

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.

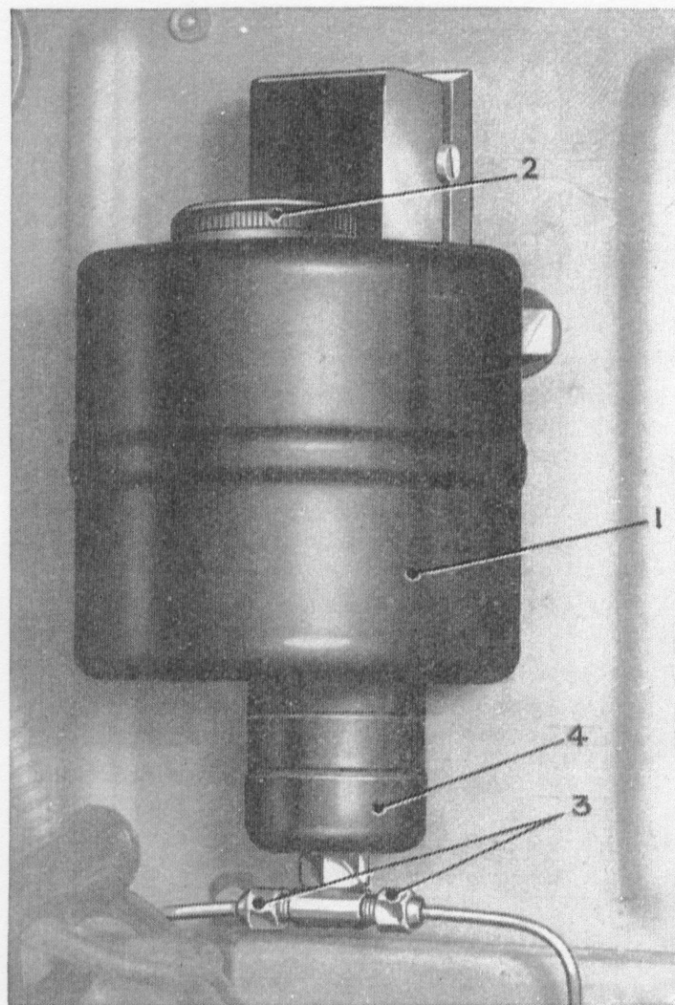


Fig. 4.—CHASSIS OIL PUMP AND RESERVOIR.

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

A diagram of the complete system is given in Fig. 5, 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.