

SECTION P

LUBRICATION

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Section No. P.3	Rear axle lubrication.	Section No. P.9	Dynamo lubrication.
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USE CORRECT LUBRICANTS

Correct lubrication of any piece of mechanism is of paramount importance, and in no instance is it of greater importance than in the correct choice of lubricant for a motorcar engine. Automobile engines have different characteristics, such as operating temperatures, oiling systems, size of oilways, clearances and similar technicalities, and the use of the correct oil is therefore essential.

Section P.1

ENGINE LUBRICATION A

New engines should have their oil drained after the first 500 miles (800 km.) and then be refilled with fresh oil. Subsequently the oil should be changed at intervals of 3,000 miles (5000 km.).

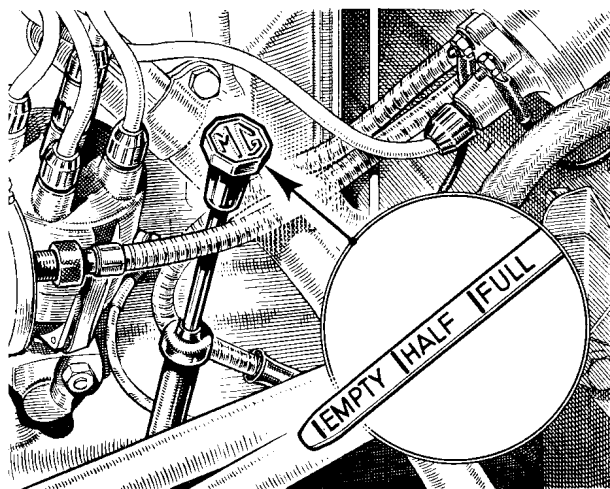


Fig. P.1.

The oil level dipstick for the engine is on the left-hand side of the cylinder block.

The engine should preferably be drained when warm and the oil is relatively fluid.

When draining the engine sump, the oil filter housing plug should also be removed to release any deposit which may have accumulated.

The oil level should be checked by the dipstick every 250 miles (400 km.) and replenished if necessary.

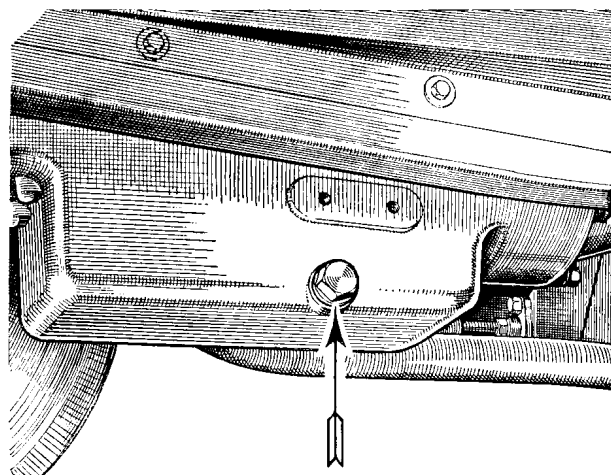


Fig. P.2.

The location of the sump drain plug (Series "TD").

The following is a list of lubricants recommended :—

A ENGINE AND AIR CLEANER								
<i>Climatic Conditions</i>	B.P. Energol	Filtrate	Sternol	Duckham's	Castrol	Esso	Mobiloil	Shell
Tropical and Temperate down to 32° F. (0° C.)	"Energol" Motor Oil S.A.E. 30	Medium "Filtrate"	"Sternol" W.W. 30	Duckham's N.O.L. "Thirty"	"Castrol" X.L.	"Essolube" 30	Mobiloil "A"	"Shell" X—100 S.A.E. 30
Cold and extreme cold down to 0° F. (—18° C.)	"Energol" Motor Oil S.A.E. 20	Zero "Filtrate"	"Sternol" W.W. 20	Duckham's N.O.L. "Twenty"	"Castrolite"	"Essolube" 20	Mobiloil "Arctic"	"Shell" X—100 S.A.E. 20
Arctic—below 0° F. (—18° C.)	"Energol" Motor Oil S.A.E. 10	Sub-Zero "Filtrate"	"Sternol" W.W. 10	Duckham's N.O.L. "Ten"	"Castrol" Z	"Essolube" 10	Mobiloil 10W	"Shell" X—100 S.A.E. 10
B GEARBOX, STEERING GEARBOX AND REAR AXLE (HYPOID GEARS)								
Tropical and Temperate down to 10° F. (—12° C.)	"Energol" Transmission Oil E.P. S.A.E. 90	Hypoid "Filtrate" 90	"Sternol" Ambroleum E.P. 90	Duckham's Hypoid 90	"Castrol" Hypoy	"Esso" Expee Compound 90	Mobilube "G.X." 90	"Shell" Spirax 90 E.P.
Extreme cold below 10° F. (—12° C.)	"Energol" Transmission Oil E.P. S.A.E. 80	Hypoid "Filtrate" 80	"Sternol" Ambroleum E.P. 80	Duckham's Hypoid 80	"Castrol" Hypoy 80	"Esso" Expee Compound 80	Mobilube "G.X." 80	"Shell" Spirax 80 E.P.
C WHEEL HUBS AND FAN BEARINGS								
All conditions	"Energol" C.3	"Filtrate" Super Lithium Grease	"Ambroline" R.B. Grease	Duckham's H.B.B. Grease or L.B. 10 Grease	"Castrolite" Heavy	Home "Esso" Grease Export "Esso" Bearing Grease	Home Mobil Hub Grease Export Mobilgrease No. 5	"Shell" Retinax A
D STEERING CONNECTIONS, KING-PINS, PROPELLER SHAFT, CLEVIS PINS AND LEVER FULCRUMS								
All conditions	"Energol" C.1	"Filtrate" Super Lithium Grease	"Ambroline" M.M. Grease	Duckham's H.P.G. Grease or L.B. 10 Grease	"Castrolite" Medium	Home "Esso" Pressure Gun Grease Export "Esso" Chassis Lubricant	Mobilgrease No. 2 or 4	"Shell" Retinax A
E CABLES AND VITAL CONTROL JOINTS								
All conditions	"Energol" C.1	"Filtrate" Super Lithium Grease	"Ambroline" A.F. Grease	Duckham's "Keenol" K.G. 16 Grease or L.B. 10 Grease	"Castrolite" Brake Cable Grease	Home "Esso" Pressure Gun Grease Export "Esso" Chassis Lubricant	Mobilgrease No. 2 or 4	"Shell" Retinax A
F UTILITY LUBRICANT, S.U. CARBURETTER DASHPOT, OILCAN POINTS, ETC.								
All conditions	"Energol" Motor Oil S.A.E. 20	Zero "Filtrate"	"Sternol" W.W. 20	Duckham's N.O.L. "Twenty"	"Castrolite"	"Essolube" 20	Mobiloil "Arctic"	"Shell" X—100 S.A.E. 20

EXTREME COLD CONDITIONS

Where a car is operated in temperatures which are consistently below 0° F. (—18° C.) the use of an oil of lower viscosity than that recommended for normal use is desirable, and under such conditions the use of engine oil of the grades indicated in the appropriate temperature range is recommended.

Similar considerations apply in the case of the gearbox, rear axle and steering gearbox.

MIXING LUBRICANTS

Note.—It is a bad practice to mix lubricants, particularly the high-pressure types now in use for rear axles, as they differ considerably in their composition. It is therefore dangerous to replenish the axle with a different make of oil from that in use without first draining off the axle. It is also advisable to carry out a similar procedure in the case of the other components.

The level should never be allowed to fall below the "low" mark.

The sump capacity is 9 pints (5.1 litres) on early models and 10½ pints (5.96 litres) on later models.

Every 6,000 miles (10000 km.) the external filter should be replaced by a new one on early models.

The filter is of the "throw-away" type and its Part No. is MG.862/39. Care must be taken to see that the filter connections are replaced properly, and

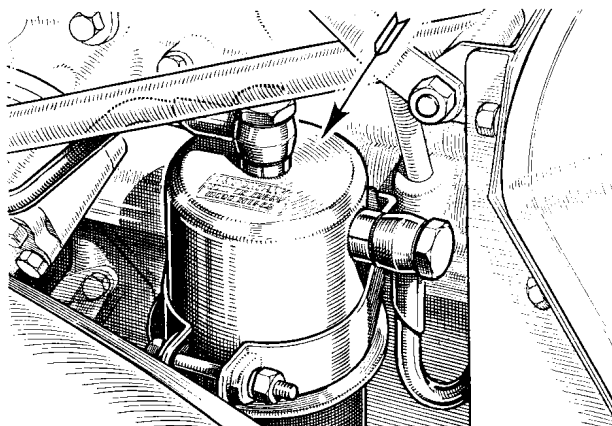


Fig. P.3.

The external filter, showing its supporting strap and oil pipe connections. Later models are fitted with a filter of the renewable element type, attached to the pump body. (See Fig. P.21.)

that there are no oil leaks. On engines previous to No. XPAG/TD/2985 an alternative filter (Part No. 24475) may be used provided that special narrow brackets (Part Nos. MG862/394 and MG862/393) are also used.

On later models, commencing at Engine No. 14224, the filter is of the renewable element type and attached directly to the pump body. In this case the element should be removed and cleaned every 3,000 miles (5000 km.) and renewed every 6,000 miles (10000 km.).

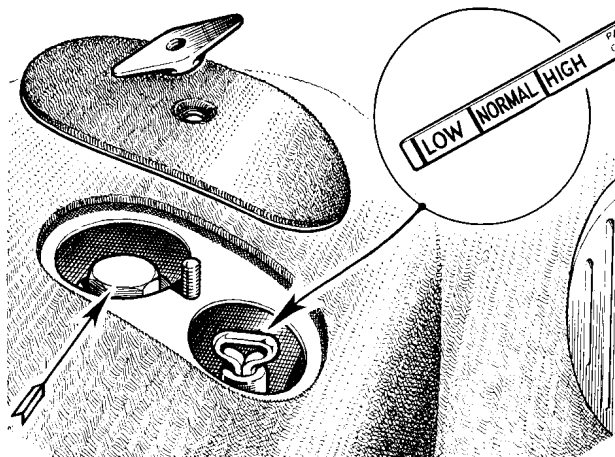


Fig. P.4.

The gearbox oil filler and dipstick are accessible through the aperture in the toeboard.

Section P.2

GEARBOX LUBRICATION B

The gearbox oil level should be checked by the dipstick every 1,000 miles (1600 km.) and replenished if necessary.

Access to the dipstick is obtained through the aperture in the gearbox cover-plate toeboard, closed by a rubber plug and revealed by raising the carpet.

The oil should be maintained at the "normal" mark and should never be allowed to fall below the "low" mark.

The gearbox should be drained and refilled with fresh oil to Ref. B after the first 500 miles (800 km.)

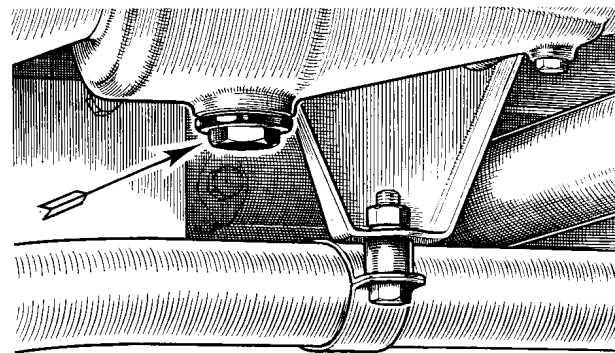


Fig. P.5.

The location of the gearbox drain plug.

with a new car and subsequently every 6,000 miles (10000 km.).

A drain plug is provided in the base of the box.

The capacity of the gearbox is 1¼ pints (.71 litre).

Section P.3

REAR AXLE LUBRICATION B

It is important that only Hypoid oils of the approved grades be used in the rear axle if damage to the gears is to be avoided.

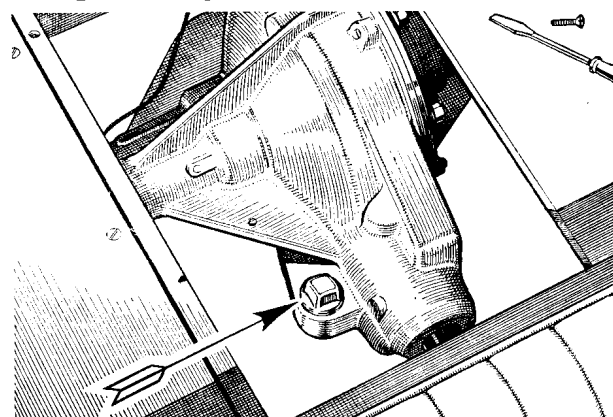


Fig. P.6.

The rear axle oil filler can be reached through the opening in the rear seat pan.

Only the oils recommended on page P.2 should be employed and the mixing of oils of different makes should be avoided as the additives employed by different makers differ considerably.

The rear axle oil level should be checked every 1,000 miles (1600 km.) and replenished if necessary.

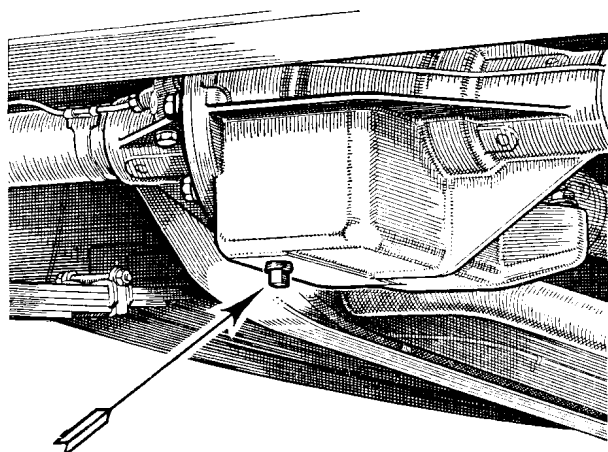


Fig. P.7.
The rear axle oil drain plug.

The surface of the oil should be kept level with the bottom thread of the filler plug opening.

Access to the filler plug is obtained through the panel in the rear floor which can be removed after releasing the series of screws which retain it in position.

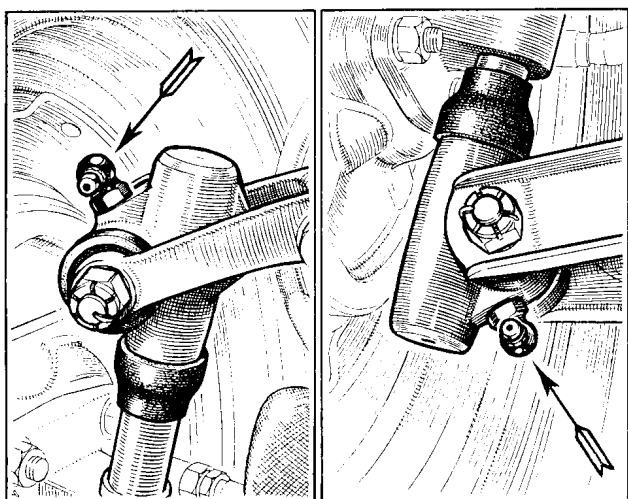


Fig. P.8.
The grease nipples at the top and bottom steering knuckles.

The rear axle should be drained, through the plug provided, after the first 500 miles (800 km.) with a new car and subsequently every 6,000 miles (10000 km.).

The capacity of the axle is $2\frac{1}{4}$ pints (1.3 litres).

Section P.4

GREASE GUN LUBRICATION POINTS

Extensive use of oil-less bearings has reduced the number of points requiring attention with the grease gun to a minimum.

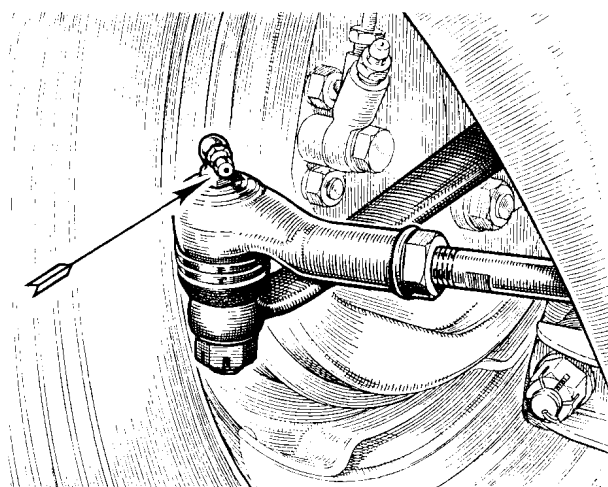


Fig. P.9.
The grease nipple for the steering tie-rod ball joints.

Grease nipples are located at the following points, which should receive attention at the intervals indicated, with the grease gun filled with grease to Ref. D (page P.2) :—

1. Steering knuckles (four nipples), every 500 miles (800 km.) three or four strokes.
2. Steering tie-rod ball ends (two nipples), every 500 miles (800 km.) three or four strokes.
3. Propeller shaft universal joints (two nipples), every 1,000 miles (1600 km.) three or four strokes.

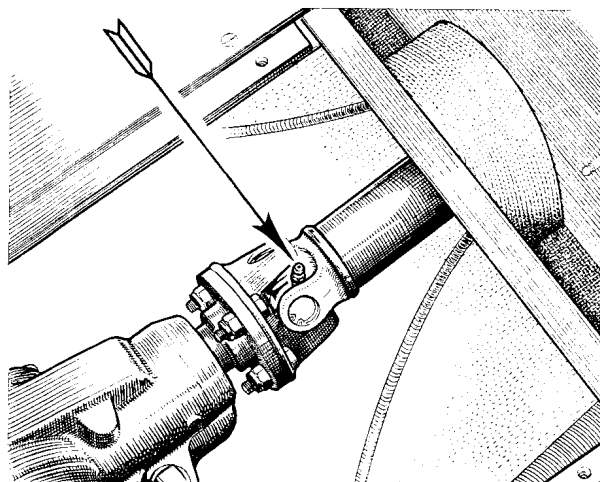


Fig. P.10.
The grease nipple on the rear universal joint spider.

4. Propeller shaft sliding joint (one nipple), every 1,000 miles (1600 km.) three or four strokes.
5. Revolution counter drive gearbox (one nipple), every 6,000 miles (10000 km.) two strokes.

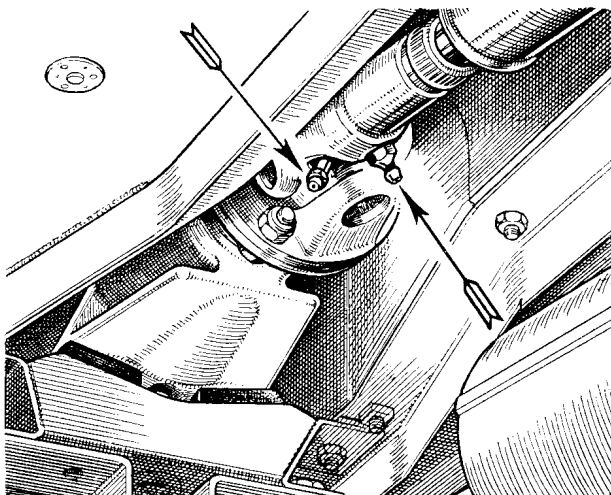


Fig. P.11.

The greasers for the front universal joint and sliding joint of the propeller shaft are indicated by the right-hand and left-hand arrows respectively.

6. Foot control pedal shaft (one nipple), every 500 miles (800 km.) three or four strokes (left-hand-drive models only).

The grease gun should be filled with grease to Ref. C (page P.2) when attending to the following items :—

7. Fan spindle (one nipple), every 1,000 miles (1600 km.) two strokes.
8. Front wheel hubs (two nipples), every 6,000 miles (10000 km.) one stroke (early models).

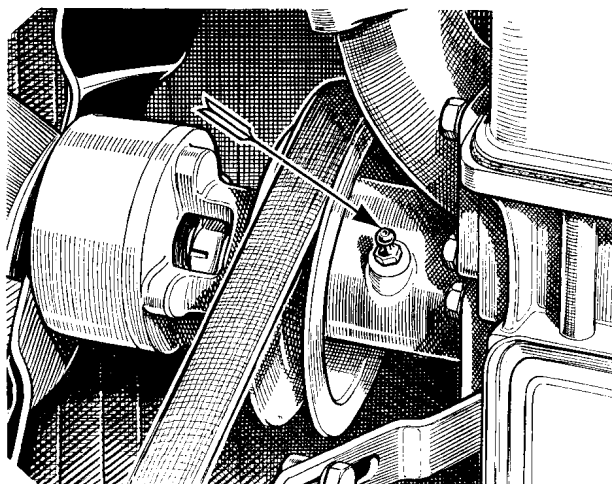


Fig. P.12.

The grease nipple for the fan spindle.

Later models are fitted with grease retaining caps which must carefully be removed, replenished with grease to Ref. C, and replaced.

Be sure to use the correct grease for each purpose (see page P.2).

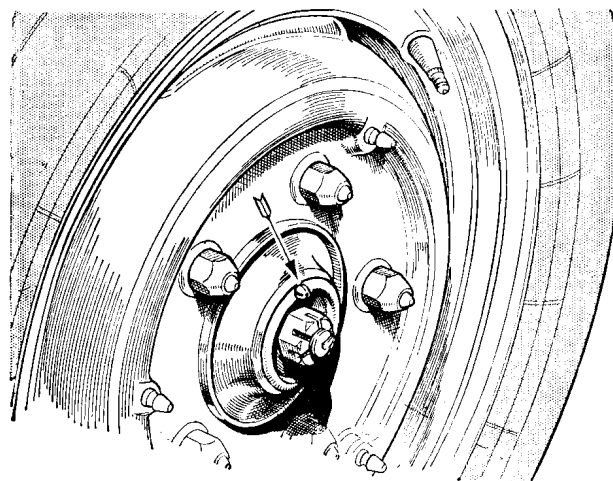


Fig. P.13.

The grease nipple for the front wheel hub is revealed when the wheel disc is removed. The early type is shown. Later hubs are fitted with a grease cap which must be carefully removed, replenished with grease and replaced.

Section P.5

CARBURETTER DASHPOT (Series "TD")

Every 1,000 miles (1600 km.) the brass caps of the carburetter suction chambers should be unscrewed and withdrawn sufficiently to enable the dashpot chambers to be replenished with engine oil to Ref. F (page P.2). There is no dashpot on the carburetters of the Series "TF" models.

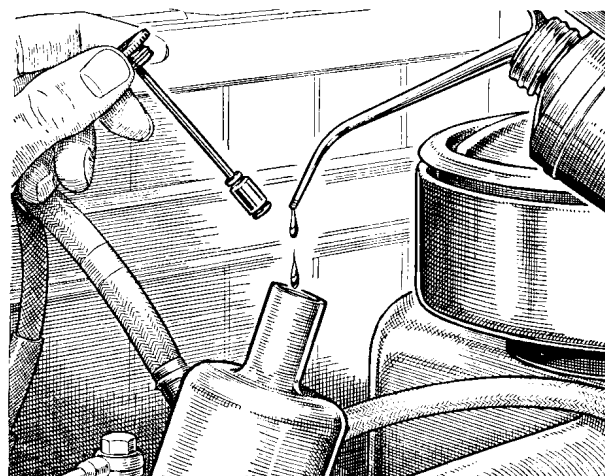


Fig. P.14.

Replenishing the carburetter piston dashpot with oil.

Section P.6

STEERING GEARBOX LUBRICATION

Every 3,000 miles (5000 km.) the grease gun should be applied to the grease nipple on the steering gearbox, giving ten strokes of the gun (hand type). It is imperative to use one of the Hypoid oils indicated on page P.2, Ref. B, in the grease gun for this purpose.

Over-oiling **must** be avoided.

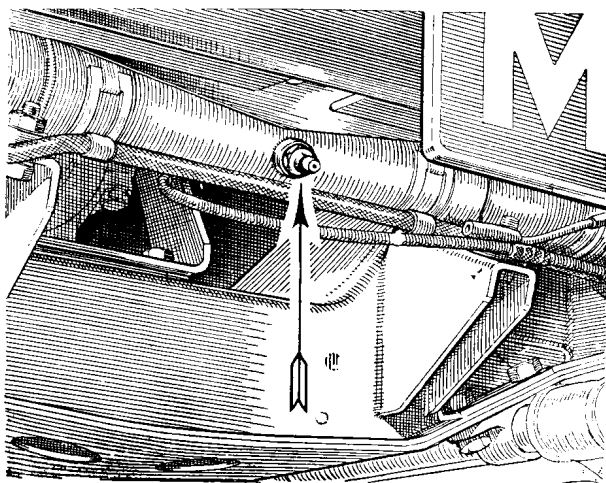


Fig. P.15.

The lubricating nipple for the steering gearbox.

Section P.7

AIR CLEANER LUBRICATION

The air cleaners fitted to "TD" models are of the oil-bath type.

Every 3,000 miles (5000 km.) overseas, or 6,000 miles (10000 km.) home, the cover should be removed by unscrewing its central fixing nut. This enables the filtering element to be lifted out and cleaned in

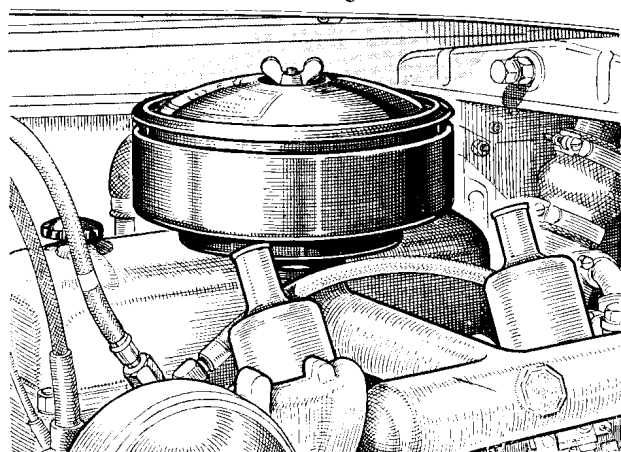


Fig. P.16.

The oil bath air cleaner.

kerosene or fuel. Allow the kerosene to drain off thoroughly and dry off the exterior of the filter element.

Examine the oil container in the base of the cleaner for sludge. If this is more than $\frac{1}{4}$ in. (6 mm.) deep, clean out the base and refill it with fresh engine oil to the level indicated on the cleaner.

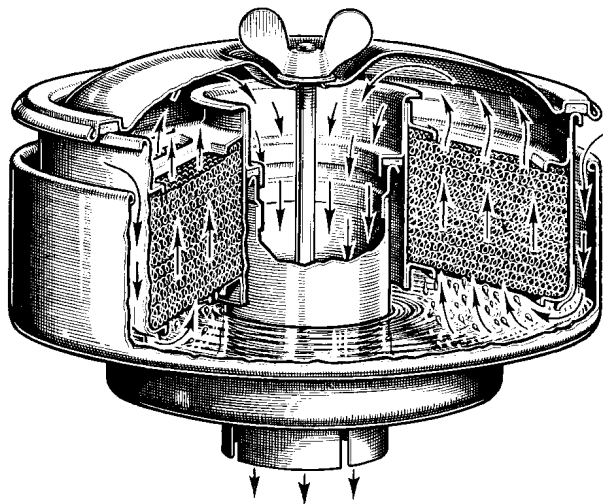


Fig. P.17.

The air cleaner partly sectioned to show its internal construction and the path taken by the incoming air.

If the accumulation of sludge is only slight it is only necessary to replenish the oil to bring it to the correct level.

When reassembling the air cleaner make sure that the cork gaskets are in good condition. Fit new ones if necessary.

The air cleaners fitted to the "TF" models are of the dry type and require no oiling. (See Fig. P.23.)

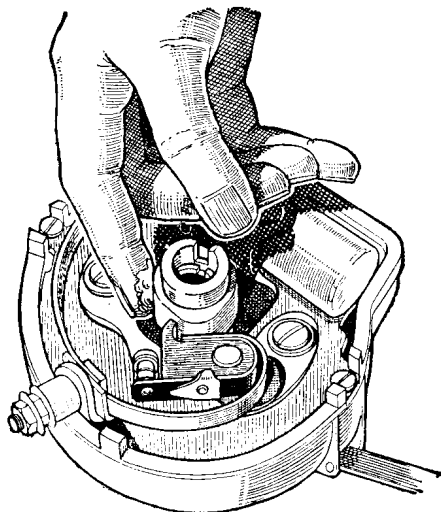


Fig. P.18.

The distributor cam should be given a slight smear of grease or engine oil every 3,000 miles (5000 km.).

Section P.8

DISTRIBUTOR LUBRICATION

Every 3,000 miles (5000 km.) the distributor cam and rocker-arm pivot should be given a slight smear of grease to Ref. D (page P.2) or engine oil.

A few drops of thin engine oil should be added to the spindle centre at the same time after removing the rotor arm.

A few drops of thin engine oil should also be added, through the oil hole provided in the distributor base, to replenish the oil well feeding the spindle and advance mechanism.

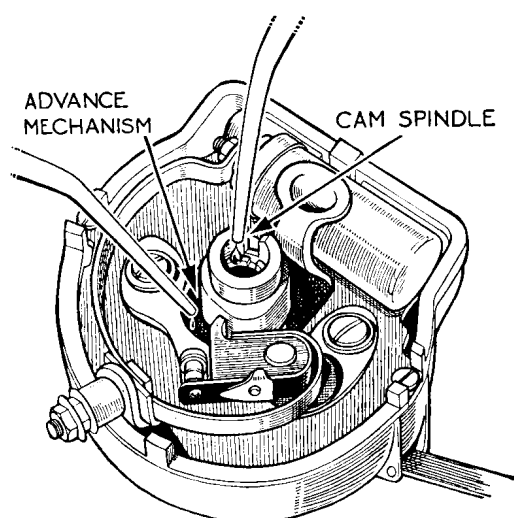


Fig. P.19.

The distributor spindle is lubricated through the special duct provided next to the cam securing screw, and the advance control mechanism through the aperture round the cam spindle.

Section P.9

DYNAMO LUBRICATION

Every 3,000 miles (5000 km.) the dynamo lubricator should be unscrewed, the felt pad withdrawn, and the lubricator replenished with grease to Ref. C.

Section P.10

FRONT WHEEL BEARINGS

Every 6,000 miles (10000 km.) the front wheel hub caps on early models should be removed and the grease gun filled with grease to Ref. C (page P.2) should be applied to the nipple on the wheel hub bearing cap, giving one stroke.

Later models are fitted with grease retaining caps which must carefully be removed, replenished with grease to Ref. C and replaced.

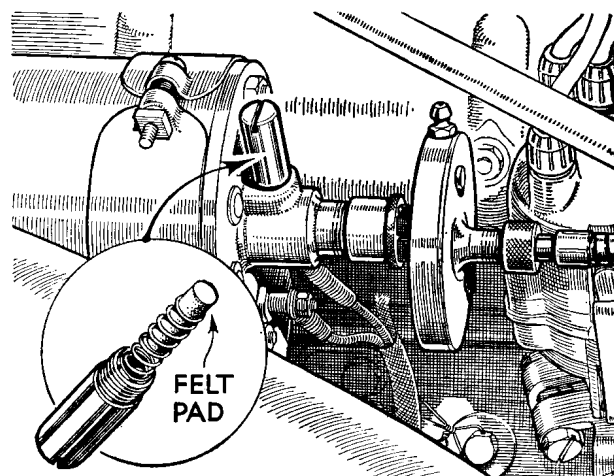


Fig. P.20.

The dynamo bearing lubrication cap must be removed and replenished with grease.

Section P.11

ENGINE OIL PICK-UP

To deal with cases of temporary loss of oil pressure on left-hand turns the oil pick-up has been moved to a central position in the engine sump, commencing at Engine No. XPAG/TD/7576.

This cancels Part No. 22399, oil suction filter assembly, which is replaced by assembly 168008 comprising oil suction pipe assembly 168010 and oil suction gauze assembly 22398 or 24294.

When carrying out the conversion, the new suction pipe assembly 168010 may be fitted, using the existing oil suction gauze 22398, or the complete assembly 168008 may be fitted.

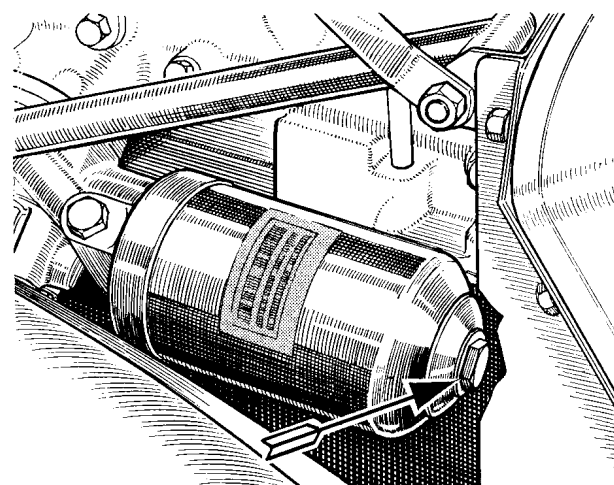


Fig. P.21.

The renewable element filter fitted to later models requires a new element every 6,000 miles (10000 km.). Access to it is obtained by unscrewing the central retaining bolt indicated by the arrow.

Section P.12

PRIMING THE ENGINE OIL PUMP

To facilitate priming of the oil pump, which is necessary after oil drainage, a priming plug was introduced on the oil pump body at Engine No. XPAG/TD2/20972.

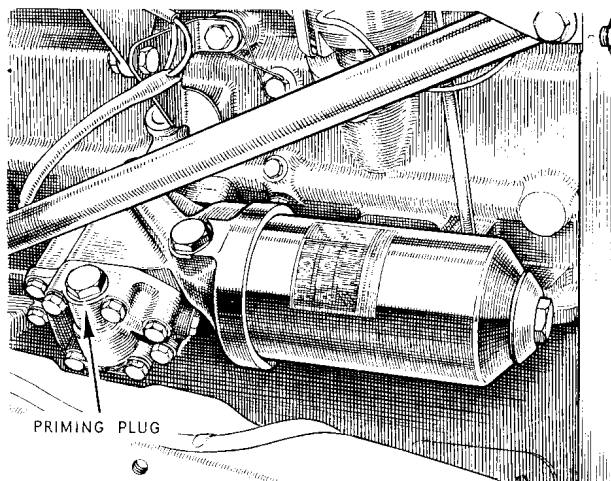


Fig. P.22.

The location of the priming plug on engines subsequent to No. XPAG/TD2/20972.

When engines so equipped are started up after an oil change or after having remained stationary for a long period, this plug should be removed and the engine run at 1,500 to 2,000 r.p.m. without load until oil appears at the plug orifice.

Using this procedure there is no actual need to prime the pump, but it must be understood that

failure to remove the plug may prevent the pump from operating due to the formation of an air lock.

The later pumps fitted from Engine No. XPAG/TF/31263 are provided with an additional air release hole in the pump body which renders the pump self-priming, and these engines require no special priming attention.

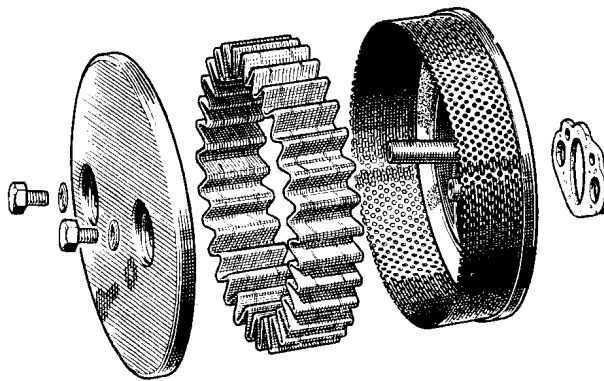


Fig. P.23.

The component parts of the dry-type air cleaners fitted to each individual carburettor of the M.G. Midget (Series "TF") cars.

It is important to remember that proper functioning of the pump is dependent on the air-tightness of the suction circuit, particularly at the joint between the pipe from the internal suction filter and the sump. The pipe is of sturdy construction, and if there is any fault in its alignment it is unlikely that it can be tightened onto its seating evenly by the relatively small retaining nuts. The pipe should carefully be set so that the joint gasket is nipped evenly over the whole area of the joint.