

SECTION P

LUBRICATION

OF THE MORRIS MINOR (Series MM)

- Section No. P.1 Engine lubrication.
- Section No. P.2 Gearbox lubrication.
- Section No. P.3 Rear axle lubrication.
- Section No. P.4 Grease gun lubrication points.
- Section No. P.5 Carburetter piston damper lubrication.
- Section No. P.6 Distributor lubrication.
- Section No. P.7 Dynamo lubrication.
- Section No. P.8 Steering rack lubrication.
- Section No. P.9 Trafficators.

Lubrication of the items detailed in this Section should be carried out at the intervals specified in the Driver's Handbook, Passport to Service, or Maintenance Voucher Book.

The following is a list of recommended lubricants for the Morris Minor (Series MM)

A ENGINE AND AIR CLEANER								
<i>Climatic conditions</i>	Esso	Mobil	Shell	BP	Filtrate	Sternol	Duckham's	Castrol
Tropical and temperate down to 0° C. (32° F.)	Esso Extra Motor Oil 20W/30	Mobiloil A	Shell X-100 30	Energol S.A.E. 30	Filtrate Medium 30	Sternol W.W. 30	Duckham's NOL Thirty	Castrol X.L.
Extreme cold down to -12° C. (10° F.)	Esso Extra Motor Oil 20W/30	Mobiloil Arctic	Shell X-100 20W	Energol S.A.E. 20W	Filtrate Zero 20/20W	Sternol W.W. 20	Duckham's NOL Twenty	Castrolite
Arctic consistently below -12° C. (10° F.)	Esso Motor Oil 10	Mobiloil 10W	Shell Rotella 10W	Energol S.A.E. 10W	Filtrate Sub-Zero 10W	Sternol W.W. 10	Duckham's NOL Ten	Castrol Z
B GEARBOX, STEERING GEARBOX, AND REAR AXLE (HYPOID GEARS)								
All conditions down to -12° C. (10° F.)	Esso Gear Oil G.P. 90	Mobilube G.X. 90	Shell Spirax 90 E.P.	Energol S.A.E. 90 E.P.	Filtrate Hypoid Gear 90	Ambrolemum E.P. 90	Duckham's Hypoid 90	Castrol Hypoy
Arctic consistently below -12° C. (10° F.)	Esso Gear Oil G.P. 80	Mobilube G.X. 80	Shell Spirax 80 E.P.	Energol S.A.E. 80 E.P.	Filtrate Hypoid Gear 80	Ambrolemum E.P. 80	Duckham's Hypoid 80	Castrol Hypoy Light
C WHEEL HUBS, WATER PUMP BEARINGS AND PROPELLER SHAFT								
All conditions	Esso Multi-purpose Grease H	Mobilgrease M.P.	Shell Retinax A	Energrease L. 2	Filtrate Super Lithium Grease	Ambroline L.H.T.	Duckham's L.B. 10 Grease	Castrolase L.M.
D STEERING CONNECTIONS, SWIVEL PINS, CLEVIS PINS, AND LEVER FULCRUMS								
All conditions	Esso Multi-purpose Grease H	Mobilgrease M.P.	Shell Retinax A	Energrease L. 2	Filtrate Super Lithium Grease	Ambroline L.H.T.	Duckham's L.B. 10 Grease	Castrolase L.M.
E CABLES AND VITAL CONTROL JOINTS								
All conditions	Esso Multi-purpose Grease H	Mobilgrease M.P.	Shell Retinax A	Energrease L. 2	Filtrate Super Lithium Grease	Ambroline L.H.T.	Duckham's L.B. 10 Grease	Castrolase L.M.
F UTILITY LUBRICANT, S.U. CARBURETTER PISTON DAMPER, OILCAN POINTS, ETC.								
All conditions	Esso Extra Motor Oil 20W/30	Mobiloil Arctic	Shell X-100 20W	Energol S.A.E. 20W	Filtrate Zero 20/20W	Sternol W.W. 20	Duckham's NOL Twenty	Castrolite

EXTREME COLD CONDITIONS

Where a car is operated in temperatures which are consistently below -12° C. (10° F.) 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.

The recommended lubricants are indicated on page P.2. The lubricant reference letters are bracketed in the following pages.

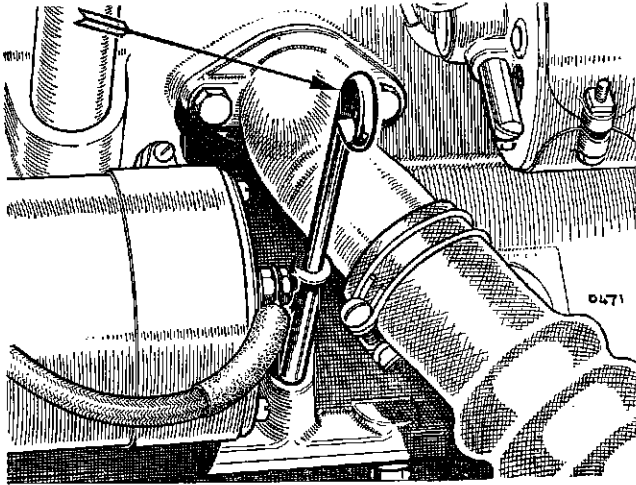


Fig. P.1

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

Section P.1

ENGINE LUBRICATION (A)

Change the oil at the specified intervals.

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

The oil level should be checked with the dipstick and replenished if necessary. The level should never be allowed to fall below the 'LOW' mark.

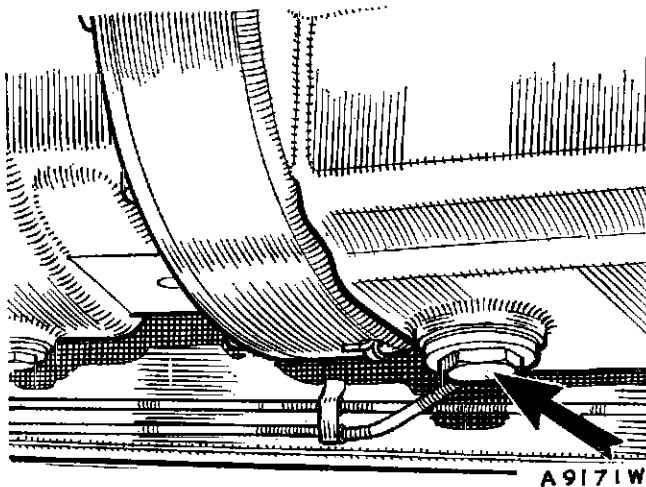


Fig. P.2

The drain plug for the engine sump is located at the rear end of the sump close to the flywheel housing

The sump capacity is given in 'GENERAL DATA'.

Later models are fitted with an external oil filter of the renewable element type. The element in these should be renewed at the specified intervals. Three makes of filter are fitted, either Fram, A.C., or Purolator. Make sure to use the right replacement element.

It is possible and quite practicable to fit a Purolator or Fram element as a replacement in an A.C. filter body, but it is NOT possible to fit an A.C. element in the Purolator or Fram body.

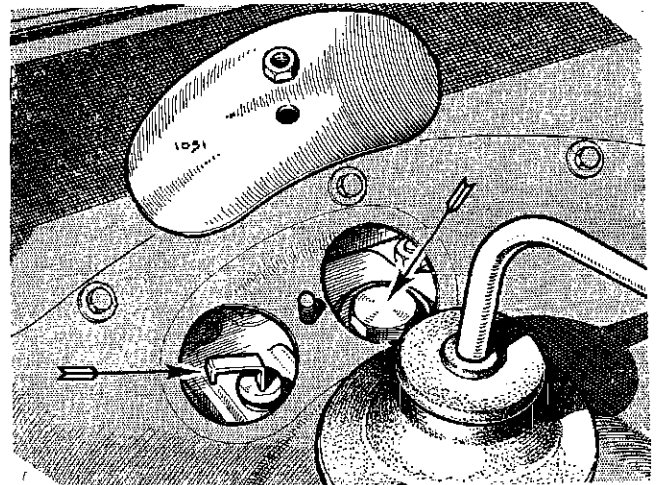


Fig. P.3

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

Section P.2

GEARBOX LUBRICATION (B)

The gearbox oil level should be checked with the dipstick at the specified intervals, and replenished if necessary.

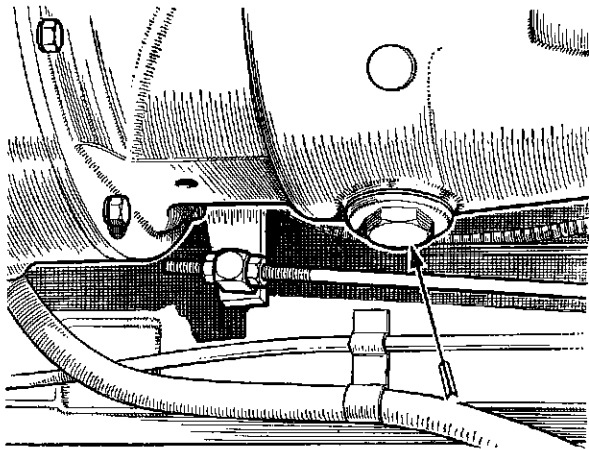
Access to the dipstick is obtained through the aperture in the left toeboard closed by the kidney-shaped cover-plate and revealed by raising the carpet.

The oil should never be allowed to fall below the 'LOW' mark.

The gearbox should be drained and refilled with fresh oil at the specified intervals.

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

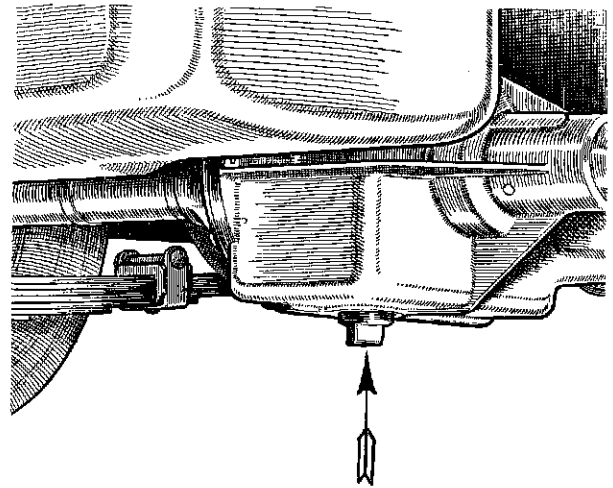
The capacity of the gearbox is given in 'GENERAL DATA'.



1002 W

Fig. P.4

The location of the gearbox drain plug



1156 W

Fig. P.6

The axle casing is provided with a drain plug

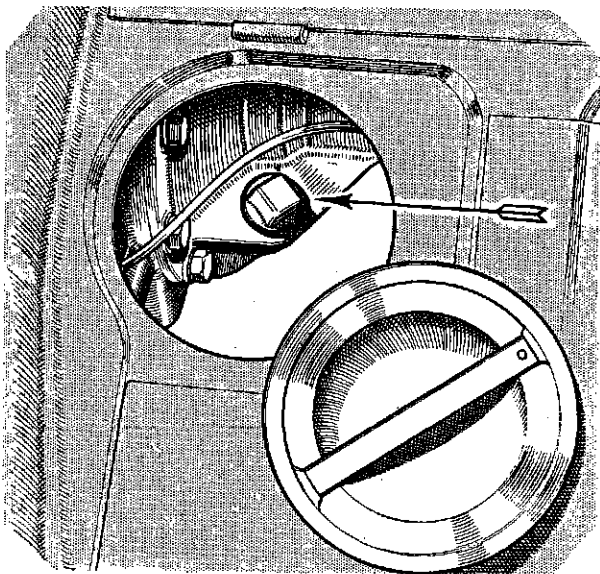
Section P.3

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.

The rear axle oil level should be checked at the specified intervals, and replenished if necessary.

Access to the filler plug is obtained through the circular aperture in the rear seat pan closed by a dished cover with spring retainer.



1162W

Fig. P.5

The rear axle oil filler can be reached through the opening in the rear seat pan after removing its circular cover-plate

The correct level is when the oil is level with the bottom thread of the filler plug opening.

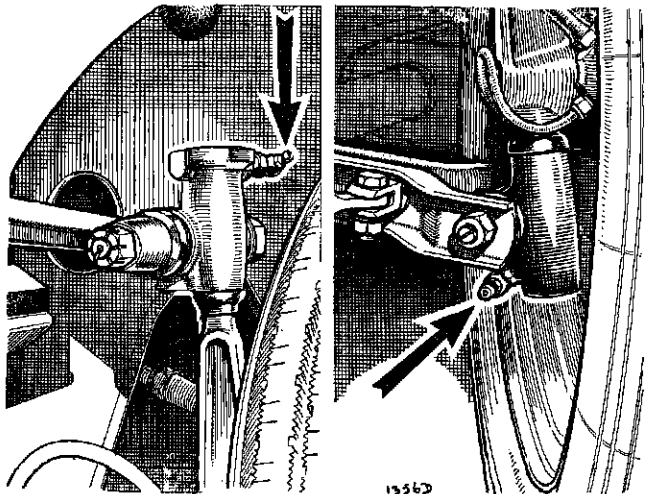
The rear axle should be drained at the specified intervals.

The capacity of the axle is given in 'GENERAL DATA'.

Section P.4

GREASE GUN LUBRICATION POINTS (D)

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



1256D

Fig. P.7

The grease nipples at the top and bottom of the steering knuckle

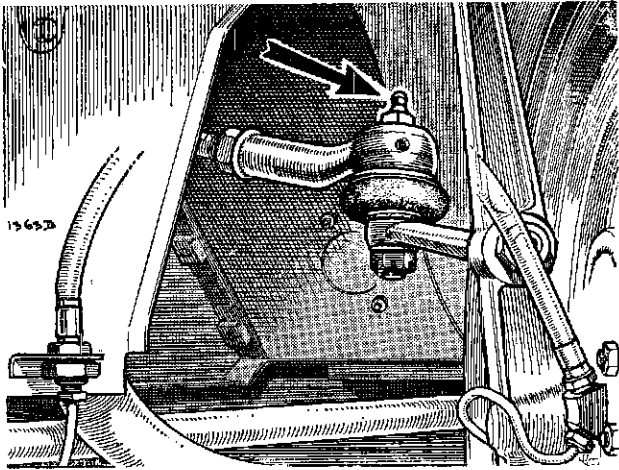


Fig. P.8

Each steering tie-rod has a grease nipple to lubricate its outer ball joint

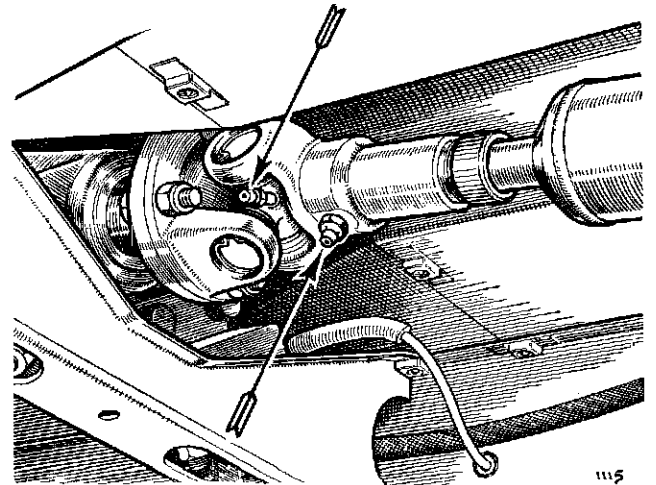


Fig. P.10

The grease nipples for the front propeller shaft universal joint and the propeller shaft sliding joint are here shown

Grease nipples are located at the following points, which should receive attention at the specified intervals:

- (1) Steering knuckles (four nipples), three or four strokes.
- (2) Steering tie-rod ball ends (two nipples), three or four strokes.
- (3) Propeller shaft universal joints (two nipples), three or four strokes.
- (4) Propeller shaft sliding joint (one nipple), three or four strokes.
- (5) Fan spindle (one nipple), two strokes (on models fitted with water pump).

Section P.5

CARBURETTER PISTON DAMPER LUBRICATION (F)

Remove the damper unit and pour oil into the hollow piston rod to within about 1/2 in. (13 mm.) of the top of the rod.

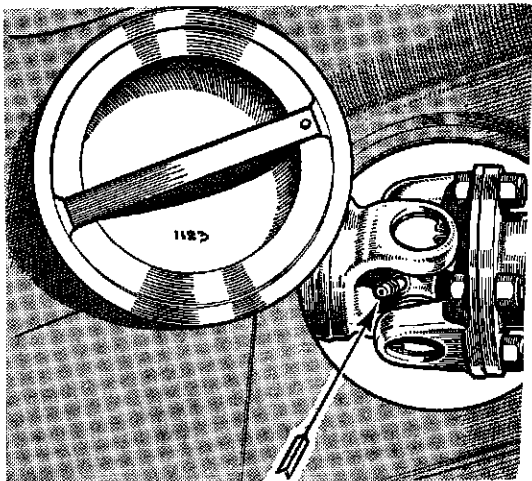


Fig. P.9

The grease nipple for the rear propeller shaft universal joint

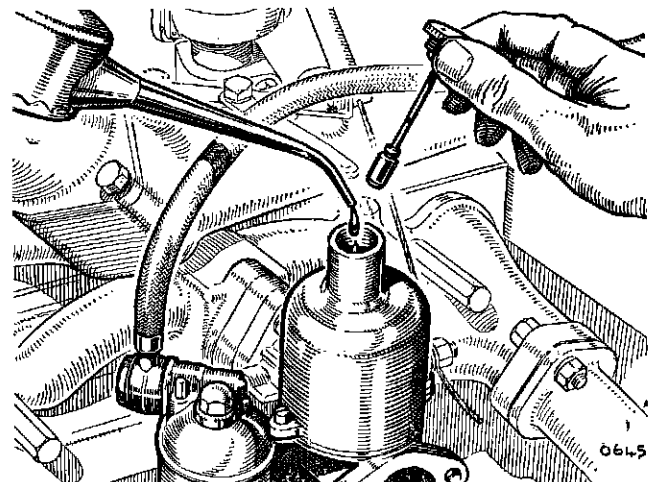


Fig. P.11

Carburetter damper lubrication

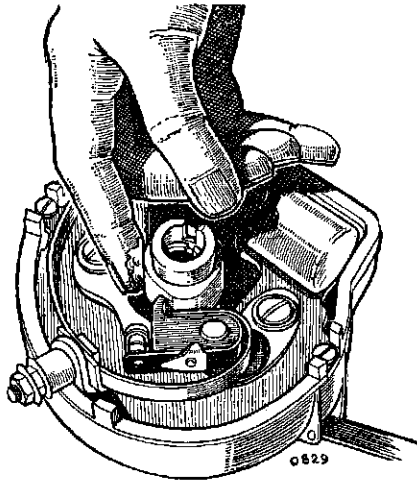


Fig. P.12

The distributor cam should be given a light smear of grease at the specified intervals

Section P.6

DISTRIBUTOR LUBRICATION (D) AND (F)

At the specified intervals the distributor cam and rocker arm pivot should be given a light smear of grease

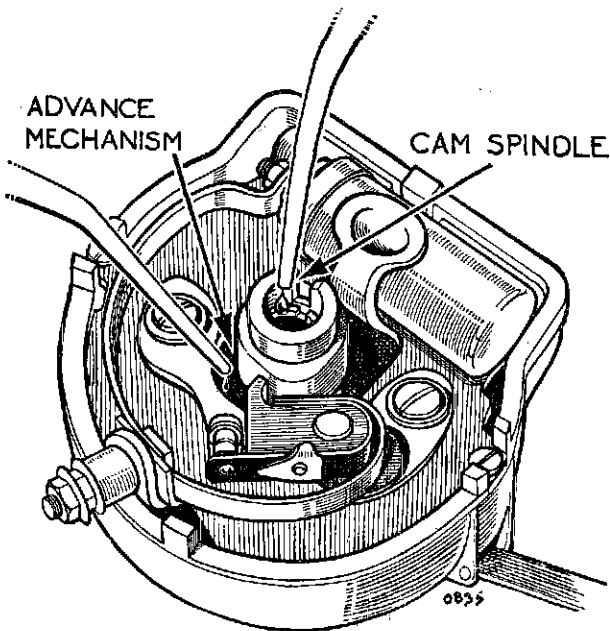


Fig. P.13

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

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

Two drops of thin engine oil should be added through the opening round the spindle to lubricate the advance mechanism.

Section P.7

DYNAMO LUBRICATION (C)

At the specified intervals the dynamo lubricator should be unscrewed, the felt pad withdrawn, and the lubricator half-filled with grease.

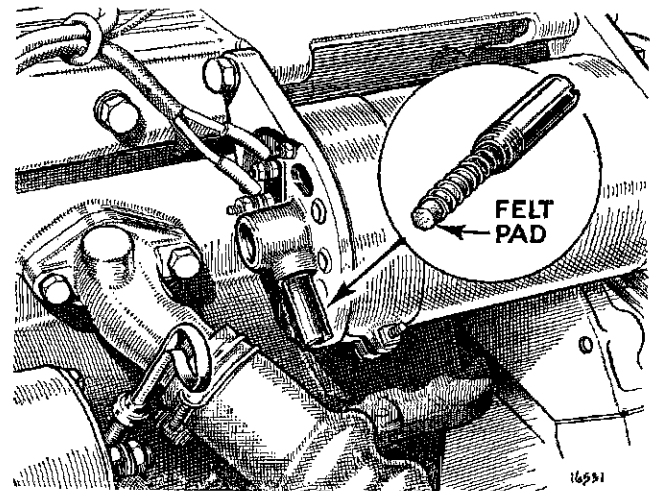


Fig. P.14

The dynamo lubricator

Section P.8

STEERING RACK LUBRICATION (B)

The steering rack is lubricated by an oil gun through a nipple provided at the opposite end to the steering pinion.

The oil from the steering rack also serves to lubricate the inner ball joints for the steering tie-rods, which are protected by rubber gaiters of the bellows type.

Care must be taken not to overlubricate the steering rack, since excess oil introduced is forced into the bellows, which may cause them to burst when the steering is turned to full lock and one of the bellows is fully contracted.

Access to the nipple is achieved by raising the floor carpet from the toeboard on the passenger side. This exposes an aperture in the toeboard, giving access to the nipple.

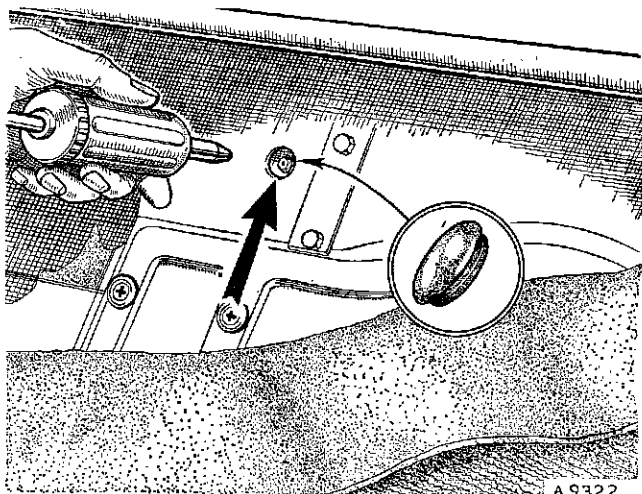


Fig. P.15

The oil gun nipple for the steering rack is accessible through the hole provided in the toeboard

Lubrication at the specified intervals is sufficient, and not more than 10 strokes of a hand-type lubricating gun should be given.

Section P.9

TRAFFICATORS

At the specified intervals each trafficator arm should be raised and a trace of thin machine oil, such as sewing-machine or typewriter oil, applied to the catch pin between the arm and the operating mechanism. Use only

the merest trace of oil, as any excess will affect the functioning.

Remove the cover from the arm by removing the fixing screw and sliding it off the arm, and apply a drop of thin machine oil to the lubricating pad on the top of the arm.

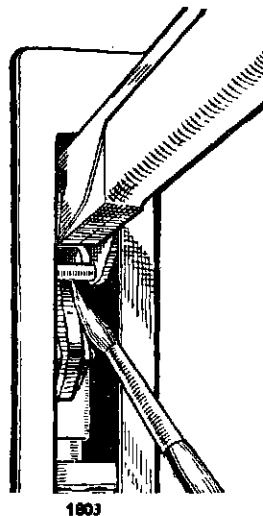
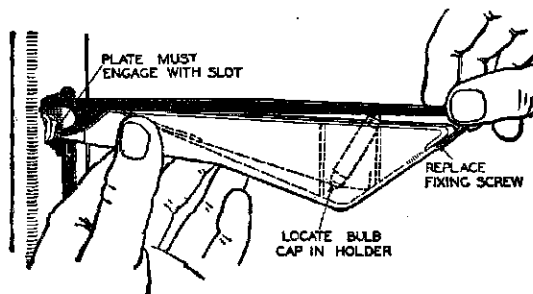


Fig. P.16 (left)

A very small quantity of oil should be applied to the trafficator catch pin occasionally by means of a small brush

Fig. P.17 (below)

The manner in which the trafficator arm cover is removed and replaced is here clearly shown



SECTION PP
LUBRICATION
OF THE MORRIS MINOR (Series II)

Section No. PP.1	Engine lubrication.
Section No. PP.2	Gearbox lubrication.
Section No. PP.3	Rear axle lubrication.
Section No. PP.4	Carburettor piston damper lubrication.
Section No. PP.5	Distributor lubrication.
Section No. PP.6	Water pump lubrication.
Section No. PP.7	Grease gun lubrication points.
Section No. PP.8	Dynamo lubrication.

Lubrication of the items detailed in this Section should be carried out at the intervals specified in the Driver's Handbook, Passport to Service, or Maintenance Voucher Book.

Lubrication items not detailed in this Section are identical on all Morris Minor models and will be found in detail in section P.

RECOMMENDED MONOGRADE LUBRICANTS

(Morris Minor [Series II] and Minor 1000)

Component	A			Gearbox	B		Water Pump and Chassis Lubrication Nipples	Oilcan and Carburetter	Upper Cylinder Lubrication
	Engine and Oil Bath Air Cleaner				Rear Axle (Hypoid Gears) and Steering Rack				
Climatic Conditions	Tropical and temperate down to 0° C. (32° F.)	Extreme cold down to -12° C. (10° F.)	Arctic consistently below -12° C. (10° F.)	All conditions	All conditions down to -12° C. (10° F.)	Arctic consistently below -12° C. (10° F.)	All conditions	All conditions	All conditions
ESSO	Esso Extra Motor Oil 20W/30	Esso Extra Motor Oil 20W/30	Esso Motor Oil 10	Esso Extra Motor Oil 20W/30	Esso Gear Oil G.P. 90	Esso Gear Oil G.P. 80	Esso Multipurpose Grease H	Esso Extra Motor Oil 20W/30	Esso Upper Cylinder Lubricant
MOBIL	Mobiloil A	Mobiloil Arctic	Mobiloil 10W	Mobiloil A	Mobilube G.X. 90	Mobilube G.X. 80	Mobilgrease M.P.	Mobiloil Arctic	Mobil Upperlube
BP	Energol S.A.E. 30	Energol S.A.E. 20W	Energol S.A.E. 10W	Energol S.A.E. 30	Energol S.A.E. 90 E.P.	Energol S.A.E. 80 E.P.	Energrease L. 2	Energol S.A.E. 20W	Energol U.C.L.
SHELL	Shell X-100 30	Shell X-100 20W	Shell Rotella 10W	Shell X-100 30	Shell Spirax 90 E.P.	Shell Spirax 80 E.P.	Shell Retinax A	Shell X-100 20W	Shell Upper Cylinder Lubricant
FILTRATE	Filtrate Medium 30	Filtrate Zero 20/20W	Filtrate Sub-Zero 10W	Filtrate Medium 30	Filtrate Hypoid Gear 90	Filtrate Hypoid Gear 80	Filtrate Super Lithium Grease	Filtrate Zero 20/20W	Filtrate Petroyle
STERNOL	Sternol W.W. 30	Sternol W.W. 20	Sternol W.W. 10	Sternol W.W. 30	Ambroleum E.P. 90	Ambroleum E.P. 80	Ambroline L.H.T.	Sternol W.W. 20	Sternol Magikoyl
DUCKHAM'S	Duckham's NOL Thirty	Duckham's NOL Twenty	Duckham's NOL Ten	Duckham's NOL Thirty	Duckham's Hypoid 90	Duckham's Hypoid 80	Duckham's L.B. 10 Grease	Duckham's NOL Twenty	Duckham's Adcooid Liquid
CASTROL	Castrol X.L.	Castrolite	Castrol Z	Castrol X.L.	Castrol Hypoy	Castrol Hypoy Light	Castrolase L.M.	Castrolite	Castrolite

RECOMMENDED MULTIGRADE LUBRICANTS

(Morris Minor [Series II] and Minor 1000)

	A and D
Components	Engine, gearbox, and carburetter
Climatic conditions	All temperatures above -18° C. (0° F.)
ESSO	Esso Extra Motor Oil 10W/30
MOBIL	Mobiloil Special 10W/30
BP	Super Visco-Static or Visco-Static
SHELL	Shell Super Motor Oil
FILTRATE	Filtrate 10W/30 Multigrade
STERNOL	Sternol W.W. Multigrade 10W/40
DUCKHAM'S	Q. 5500
CASTROL	Castrolite

Approval is also given to Duckham's Q.20-50, Esso Extra Motor Oil 20W/40, Filtrate 20W/50, Mobiloil Special 20W/40 and Castrol XL for temperatures down to -12° C. (10° F.).

For temperatures below -18° C. (0° F.) use Multigrade S.A.E. 5W/20 oil.

The recommended lubricants are indicated on page PP.2. The lubricant reference letters are bracketed in the following pages.

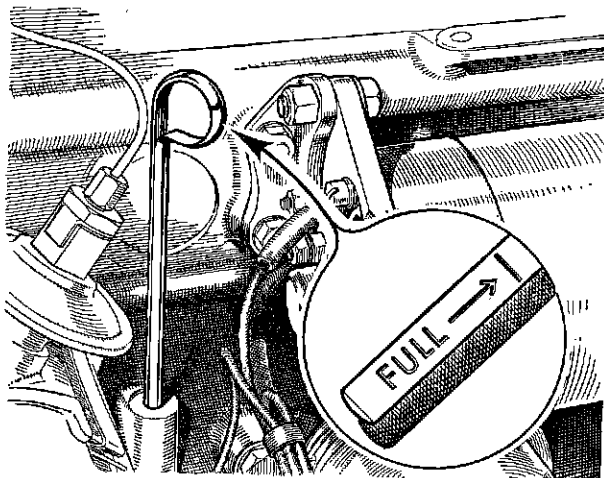


Fig. PP.1

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

Section PP.1

ENGINE LUBRICATION (A)

Change the oil at the specified intervals.

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

The oil level should be checked with the dipstick, and replenished if necessary. The level should never be allowed to fall so low that there is no indication of oil on the dipstick.

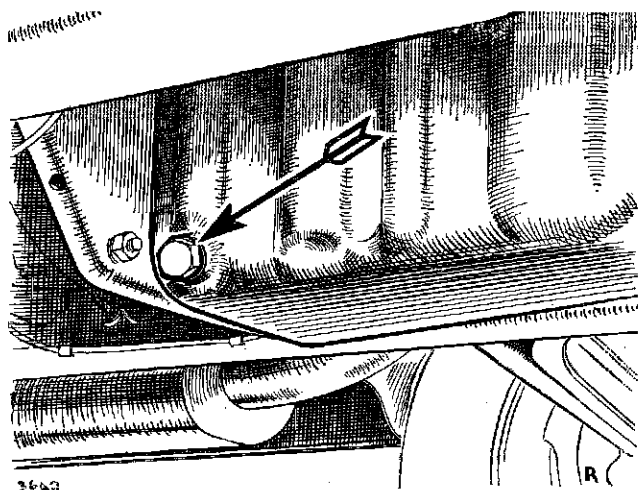


Fig. PP.2

The drain plug for the engine sump is located at the rear end of the sump on the right-hand side

The sump capacity is given in 'GENERAL DATA'.

The oil filter is of the throw-away type and is mounted at the front end of the cylinder block on the right-hand side. At the specified intervals the filter must be removed and replaced by a new one. To do this slacken the screw in the spring clip and unscrew the filter from the cylinder block by rotating it anti-clockwise. Fit a new filter and gasket, screwing the filter fully home before tightening the spring clip. Either Purolator MF6100, an AC Type SA, or a Tecalemit (Part No. 2A 523) replacement element may be used.

Section PP.2

GEARBOX LUBRICATION (A)

The gearbox oil level should be checked at the specified intervals, and replenished if necessary.

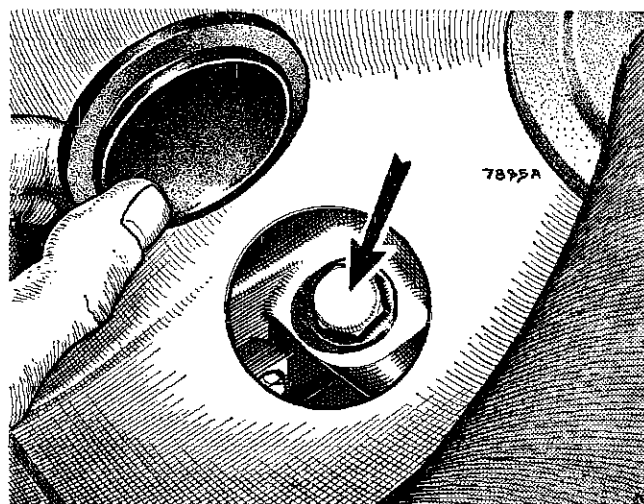


Fig. PP.3

The gearbox oil filler is accessible through the aperture in the toeboard

The filler plug, which also serves to indicate the oil level, is located beneath a rubber cover situated near the gear lever, and is accessible when the front carpet and rubber cover have been raised.

The gearbox must only be filled with engine oil to Ref. A (S.A.E. 30 grade) to the level of the filler plug.

The gearbox should be drained and filled with fresh oil at the specified intervals.

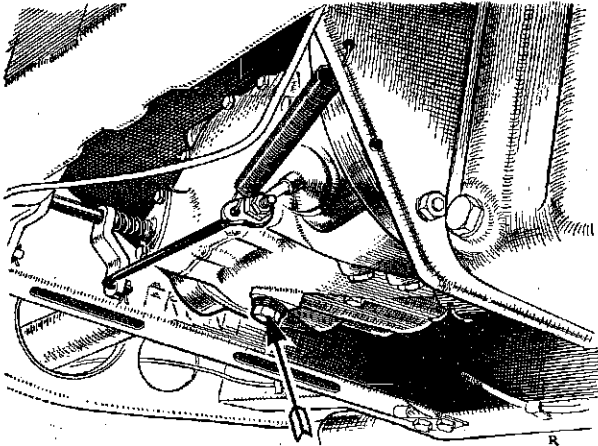


Fig. PP.4

The location of the gearbox drain plug

A drain plug is provided in the base of the gearbox. Ensure that the hollow centre of the drain plug is kept clean.

The capacity of the gearbox is given in 'GENERAL DATA'.

Section PP.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.

The rear axle oil level should be checked at the specified intervals, and replenished if necessary.

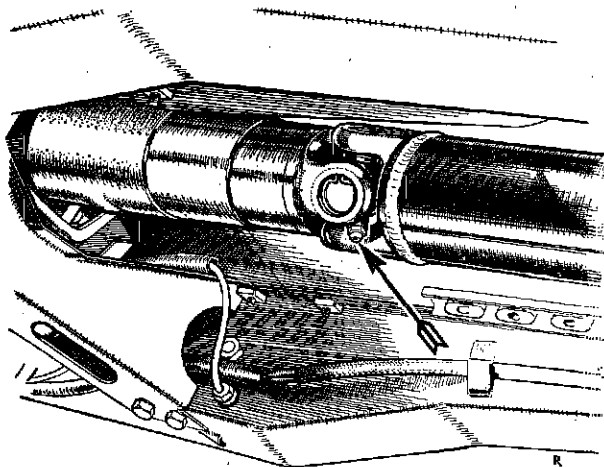


Fig. PP.5

The grease nipple for the front propeller shaft universal joint. Note that there is no nipple on the sliding joint, which is of the reverse-spline type and automatically lubricated from the gearbox

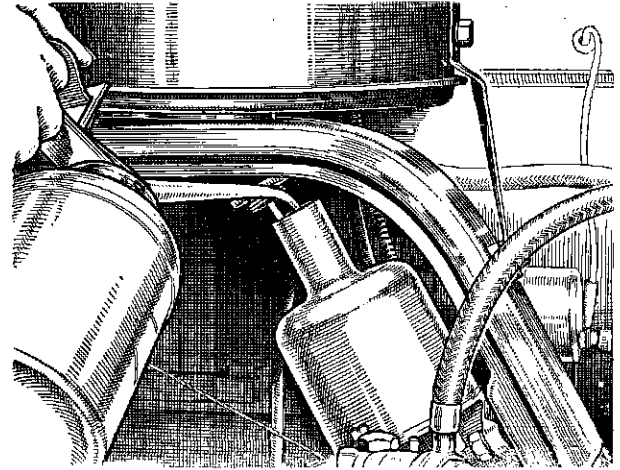


Fig. PP.6

Carburettor damper lubrication

Access to the filler and drain plugs is from underneath the rear of the car.

The rear axle capacity is given in 'GENERAL DATA'.

Section PP.4

CARBURETTER PISTON DAMPER LUBRICATION (D)

Remove the damper unit and pour oil into the hollow piston rod to within about $\frac{1}{2}$ in. (13 mm.) of the top of the rod.

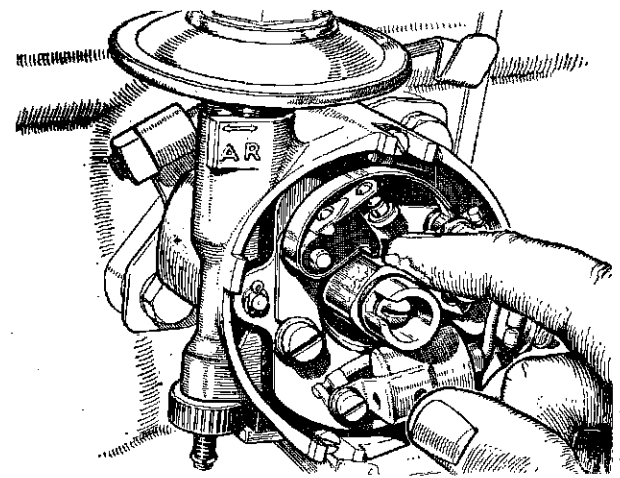


Fig. PP.7

The distributor cam should be given a light smear of grease or engine oil at the specified intervals. At the same time the rocker spindle should also be given a smear of grease or oil

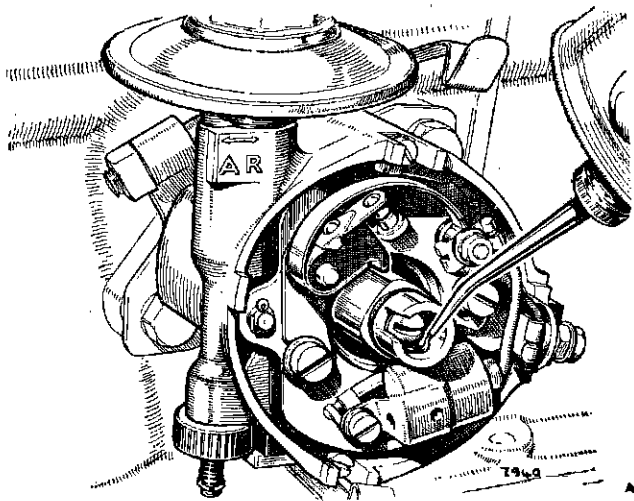


Fig. PP.8

The distributor spindle is lubricated through the special duct provided below the cam securing screw

Section PP.5

DISTRIBUTOR LUBRICATION (C & D)

At the specified intervals the distributor cam and rocker arm pivot should be given a light smear of grease or oil.

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

Two drops of thin oil should be added, through the opening round the spindle, to lubricate the advance mechanism.

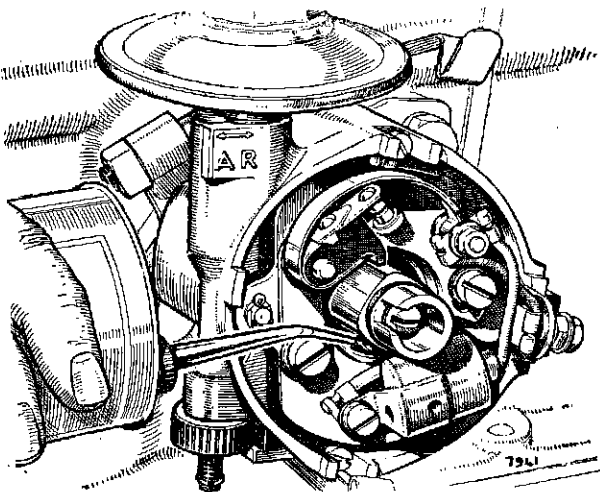


Fig. PP.9

The advance control mechanism is lubricated through the aperture round the cam spindle

Section PP.6

WATER PUMP LUBRICATION (C)

At the specified intervals remove the plug on the water pump casing and add a small quantity of grease. The greasing of the pump must be done very sparingly, otherwise grease will run past the bearings onto the face of the carbon and rubber sealing rings and impair their efficiency.

Section PP.7

GREASE GUN LUBRICATION POINTS (C)

The lubrication points requiring attention are the same as those detailed in Section P.4, with the exception that there is no grease nipple on the propeller shaft sliding joint, which is automatically lubricated from the gearbox, or on the water pump.

In addition to the points detailed in Section P.4 hand brake cables with grease nipples are fitted to all Morris Minor (Series II) cars from Car No. 361959.

At the specified intervals apply the grease gun and give three or four strokes.

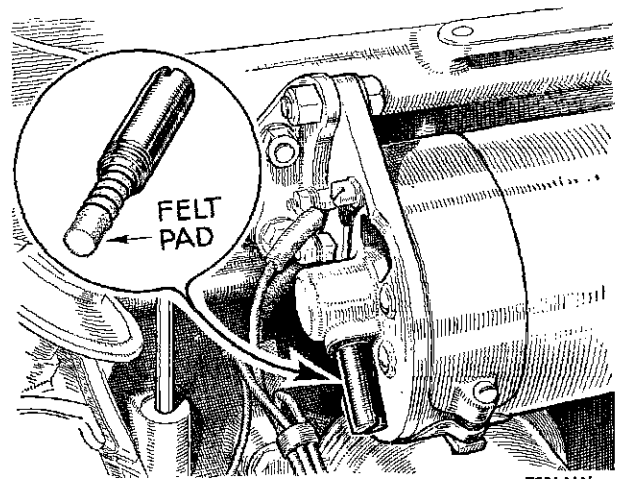


Fig. PP.10

The dynamo lubricator. Later models have an oil hole in place of the wick lubricator

Section PP.8

DYNAMO LUBRICATION (C & D)

At the specified intervals the dynamo lubricator on early models should be unscrewed, the felt pad withdrawn, and the lubricator replenished with grease. Later models have no wick lubricator and should be lubricated with a few drops of oil added to the central hole in the commutator end bearing.



SECTION PPP
LUBRICATION
OF THE MORRIS MINOR 1000

Section No. PPP.1	Engine oil filter.
Section No. PPP.2	Air cleaner lubrication (oil bath type only).
Section No. PPP.3	Flushing the engine.
Section No. PPP.4	Dynamo lubrication.
Section No. PPP.5	Engine oil level dipstick.
Section No. PPP.6	Engine oil filter warning light (later models).

Lubrication of the items detailed in this Section should be carried out at the intervals specified in the Driver's Handbook, Passport to Service, or Maintenance Voucher Book.

Lubrication items not detailed in this Section will be found in detail in Section P or Section PP.

The recommended lubricants are indicated on page PP.2. The lubricant reference letters are bracketed on this page.

Section PPP.1

ENGINE OIL FILTER

The oil filter fitted to the Minor 1000 is of the full-flow renewable-element type and the element should be renewed at the specified intervals. The filter is released by unscrewing the central bolt securing the filter to the filter head. When fitting the new element make sure that the seating washer for the filter body is in good condition and that the body is fitted securely to prevent oil leaks. Care must also be taken to ensure that the washers below the element inside the bowl are fitted correctly. The small felt washer must be positioned between the element pressure plate and the metal washer above the pressure spring. It is essential for correct oil filtration that the felt washer should be in good condition and a snug fit on the centre-securing bolt.

The sump and full-flow oil filter capacity is given in 'GENERAL DATA'.

Section PPP.2

AIR CLEANER LUBRICATION (A) (Oil Bath Type Only)

The cleaner should be cleaned and filled with new oil at the specified intervals, or more frequently if inspection shows this to be necessary.

Wash the filter element in a bowl of paraffin (kerosene), and allow it to drain and dry thoroughly.

Lift out the oil container empty the oil, and scrape out the accumulated sludge. Wash the entire oil container in paraffin (kerosene) and fill to level with engine oil. It is not necessary to re-oil the filter element; it is done automatically as soon as the engine starts up.

Make sure that the cork gasket is in good condition and reassemble the cleaner.

Section PPP.3

FLUSHING THE ENGINE

Flush the engine with a flushing oil supplied by one of the recommended manufacturers (page PP.2) at the specified intervals. This operation must be carried out prior to oil filter changing. Use approximately half the normal sump capacity and run the engine for 2½ to 3 minutes at a fast tick-over, after which special care must be taken to ensure complete drainage of the flushing oil.

Section PPP.4

DYNAMO LUBRICATION (D)

Where the later-type C40-1 dynamo is fitted inject a few drops of engine oil into the hole marked 'OIL' at the end of the rear bearing housing at the specified intervals.

Section PPP.5

ENGINE OIL LEVEL DIPSTICK

The 'FULL' marking on the engine oil level dipstick has been changed to 'MAX' and 'MIN' markings on later cars.

Section PPP.6

ENGINE OIL FILTER WARNING LIGHT (Later Models)

The engine oil filter warning light, which is incorporated in the instrument dial, is a guide to the need for more frequent oil and filter element changes. If the light comes on and continues to glow when the engine is running at or above fast idling speed, it indicates the need for a new oil filter element and an oil change; this should be done as soon as possible within a maximum of a further 300 miles (500 km.).