

LUBRICATION

OIL LEVEL CHECKING AND CHANGING

ENGINE

The oil level is checked with the dipstick, see Fig. 1-15.

With a new or reconditioned engine, the oil should be changed after the first 2 500 km (1 500 miles). Thereafter the oil should be changed every 10 000 km (6 000 miles), or at least twice a year, whichever comes first.

The oil should be drained immediately after the car has been driven and while the engine is still warm. To drain the oil, remove the oil drain plug, see Fig. 1-1. When the engine has been emptied of oil, check the washer and screw the plug tightly into position again. Oil is added through the rocker arm casing after removing the filler cap.

Oil with grade designation API "For Service SD, SE and CC" is used for the engine. The previous designation "For Service MS" can also be used. Concerning viscosity, select a multigrade oil according to the following table:

Temperature range	Viscosity
SUMMER (above $-12^{\circ}\text{C} = +10^{\circ}\text{F}$)	20 W-40 or 20 W-50
WINTER (below $-12^{\circ}\text{C} = +10^{\circ}\text{F}$)	10 W-30

At very low temperatures (below $-18^{\circ}\text{C} = 0^{\circ}\text{F}$) or when cold-starting difficulties are anticipated, multigrade oil SAE 5 W-20 is recommended. This oil

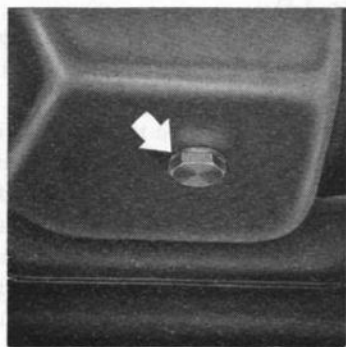


Fig. 1-1. Drain plug on sump

should not be used when the temperature is continuously above 0°C (32°F).

The quantity of oil changed is 3.25 dm^3 (5.7 Imp. pints=6.9 US pints). When the oil filter included, the corresponding quantity is 3.75 dm^3 (6.6 Imp. pints=7.9 US pints.)

Carburetors

Each time the oil in the engine is changed, check the oil level in the center spindle of the carburetors to see that it is about 6 mm ($1/4''$) from the top of the spindle. If it is not, fill up with ATF oil.

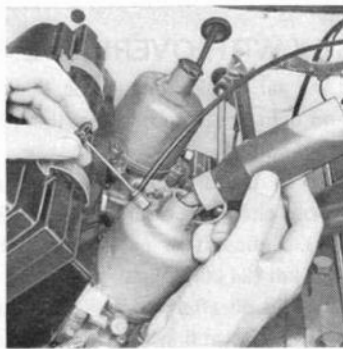


Fig. 1-2. Checking center spindle oil level

GEARBOX (WITHOUT OVERDRIVE)

To check the oil level in the gearbox, remove the filler plug (1, Fig. 1-3) and see whether the oil reaches up to the plug hole.

In the case of a new or reconditioned gearbox, the oil should be changed and the gearbox flushed out after the first 2 500 km (1 500 miles). The oil should be subsequently changed after every 40 000 km (24 000 miles).

The oil should be drained off immediately after the car has been driven and while the oil is still warm. When draining the oil, remove the plugs marked 1 and 2 in Fig. 1-3.

Fill up with new oil after the drain plug (2) has been screwed tightly back into position. The oil should reach up to the filler hole (1). Screw the filler plug tightly back into position.

Gear oil SAE 80 is used for the gearbox all the year round. As an alternative, engine oil, with vis-

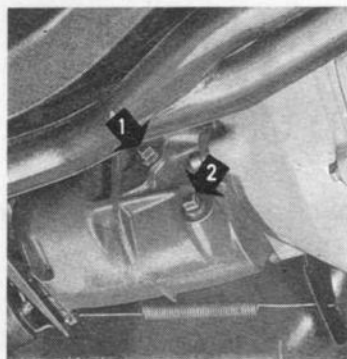


Fig. 1-3. Gearbox

1. Filler plug 2. Drain plug

cosity SAE 30, can be used all the year round. The quantity of oil changed is 0.75 dm^3 (1.3 Imp. pints=1.6 US pints).

GEARBOX WITH OVERDRIVE

To check the oil level, remove the filler plug (1, Fig. 1-3) and then check to see that the oil reaches up to the plug hole.

In the case of a new or reconditioned gearbox, the oil should be changed after the first 2500 km (1500 miles). Subsequent oil changes should be every 40000 km (24000 miles).

Drain off the old oil after the car has been driven and while the oil is still warm. Observe due care since the hot oil can scald. To empty the oil, remove the plugs (1 and 2, Fig. 1-3) and the cover (Fig. 1-4). Also clean the oil filters, see Group 43 B. Re-fit the drain plugs and bolt on the cover securely. Fill with new oil. Fill slowly to enable the oil to run over into the overdrive. The oil should be up to the filler hole (1, Fig. 1-3). Screw tight the filler plug. Engine oil with viscosity SAE 30 is used all

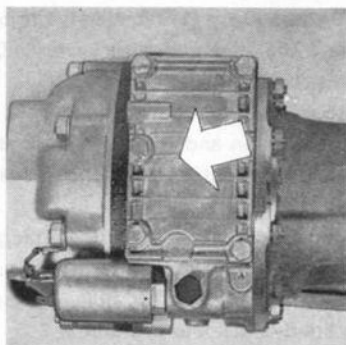


Fig. 1-4. Overdrive

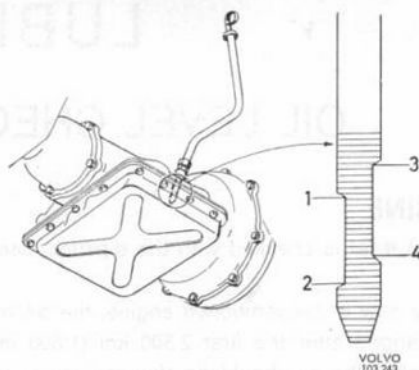


Fig. 1-5. Checking oil level

1. Max. oil level, cold transmission
2. Min. oil level, cold transmission
3. Max. oil level, warm transmission
4. Min. oil level, warm transmission

the year round for gearboxes with overdrive. As an alternative, multigrade oil SAE 20 W-40 can be used. The oil change quantity is 1.6 dm^3 (2.8 Imp. pints=3.4 US pints).

AUTOMATIC TRANSMISSION

Normally the oil in the automatic transmission only needs to be changed when the transmission is reconditioned. The oil level, on the other hand, should be checked after every 10000 km (6000 miles).

When about to carry out the oil level check, make sure that the vehicle is on level ground. Move the selector lever to position "P" and let the engine run at idle. The filler pipe with dipstick is located in front of the bulkhead on the right-hand side of the engine. Wipe off the dipstick with a cloth or piece of paper. Do not use waste or fluffy rags. Insert the dipstick, pull it up and check the oil level, see Fig. 1-5. **Note that there are different levels for a warm and cold transmission.** For a warm transmission, which is the case after driving about 8—10 km (5—7 miles) the upper section applies (3 and 4, Fig. 1-5).

The lower section (1 and 2, Fig. 1-5) applies to a cold transmission. The text on the dipstick will also remind you of this.

If necessary, fill with oil up to the "Max" mark. Do not go above this mark, as this can cause the transmission to eventually overheat. The difference between the "Min" and "Max" marks is about 0.5 dm^3 (1 pint). For topping-up, use Automatic Transmission Fluid, ATF, Type F, that is, a fluid meeting Ford specification M2C 33F. Frequent filling up of the transmission indicates leakage which must be put right immediately.

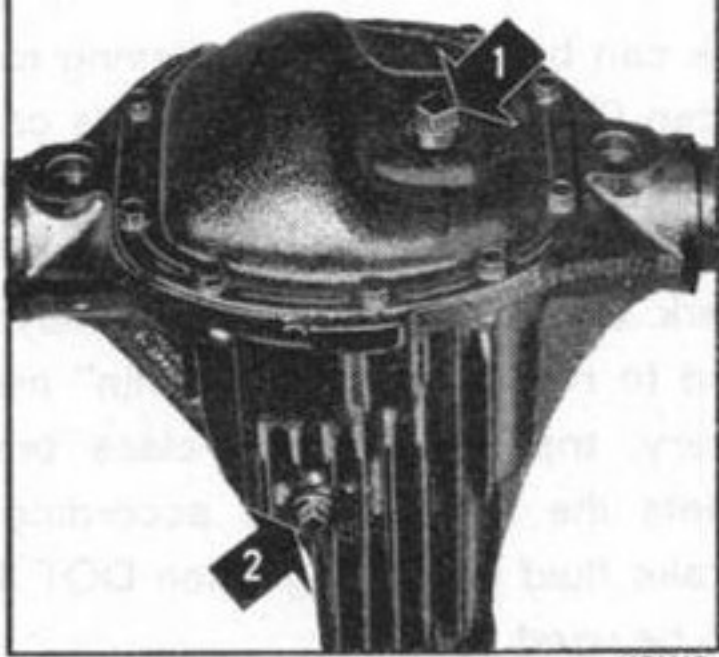


Fig. 1-6. Final drive

1. Filler plug 2. Drain plug

FINAL DRIVE

To check the oil level, remove the filler plug (1, Fig. 1-6) and then check to ensure that the oil reaches up to the hole for the plug.

With a new or reconditioned final drive, the oil should be changed after the first 2 500 km (1 500 miles). Oil changing should thereafter be carried out only when overhauling is being done.

The oil should preferably be changed immediately after the vehicle has been driven and while the oil is still warm. When draining the oil, remove the plugs marked 1 and 2 in Fig. 1-6. Clean the magnetic plug (2) well. It is of great importance for the lifetime of the final drive that particles and other impurities accumulated during the running-in are removed.

The oil should be up to the filler hole and the quantity of oil changed is about 1.3 dm³ (2.3 Imp. pints = 2.7 US pints). Oil which meets the requirements of the American Military Standard MIL-L-2105 B, SAE 90, is used as changing oil in the final drive. A final drive fitted with a limited slip is filled at the factory with a transmission fluid which meets the requirements of the American Military Standard MIL-L-2105 B provided with an additive for final drives with limited slip. For subsequent topping-up and when changing, oil is according to MIL-L-2105 B having the above-mentioned additive. The oil level should be checked and the oil changed at the same intervals and in the same way as for a final drive without a limited slip.

STEERING GEAR, MECHANICAL STEERING

To check the oil level in the steering gear, remove the filler plug (Fig. 1-7) and then check to ensure that the oil is up to the hole for the plug.

Normally it is not necessary to change the oil in the steering gear except after reconditioning. However, should the oil have to be changed for any reason, the old oil can be sucked out by using a suitable device, for example, an oil syringe, which is inserted through the filler hole. The steering gear can also be removed and emptied. Hypoid oil SAE 80 is used all the year round for the steering gear.

When empty, the steering gear can be filled with 0.25 dm³ (1/2 pint).

POWER STEERING

CHECKING OIL LEVEL

The oil level should be checked every 10 000 km (6 000 miles). First check the level with the engine stopped to check possible oil loss. The oil level

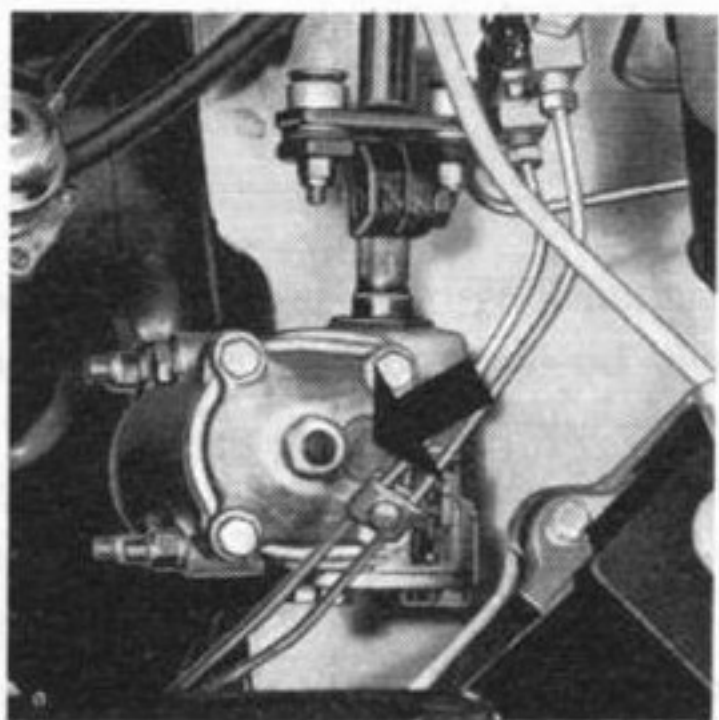


Fig. 1-7. Steering gear

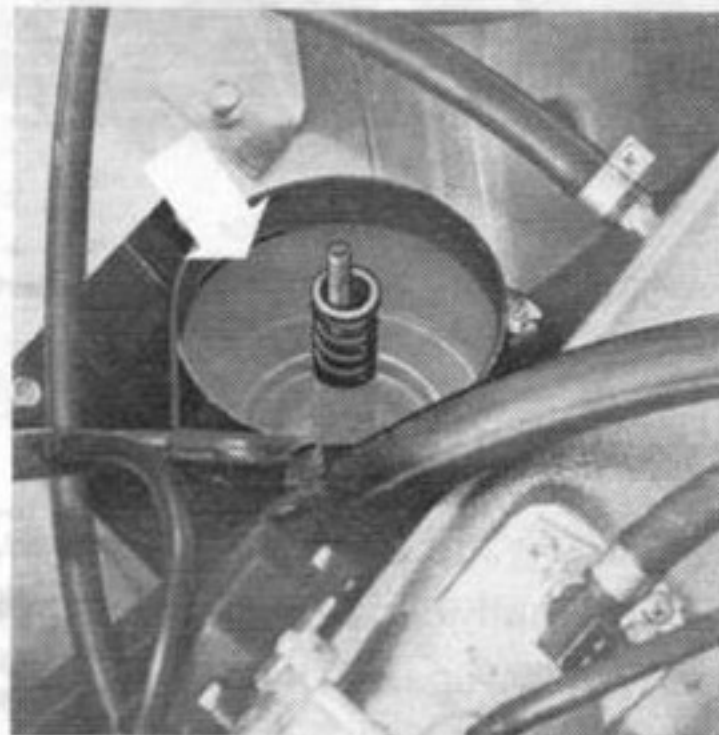


Fig. 1-8. Oil level

level mark. If the level is lower than this, fill with oil with the engine stopped to eliminate the risk of air being sucked in. Start the engine and re-check the oil level, which should now have fallen to the level mark, see Fig. 1-8. When the engine has stopped, the level should rise to about 5—10 mm (5/8") above the mark.

OIL CHANGING

Normally the oil should be changed in connection with replacement of the power steering components, see Part 6 of this Service Manual. On this occasion, the filter in the oil container should be changed.

This check can be made without having to take off the filler cap (Fig. 1-16). If the check is carried out in connection with a visit to a workshop, brake fluid should be added if the level is lower than the "Max" mark. Under no circumstances may the level be allowed to remain below the "Min" mark. If necessary, top up with first-class brake fluid which meets the requirements according to SAE J 1703. Brake fluid with designation DOT 3 or DOT 4 can also be used.

Clean the brake fluid container cap before removal and observe maximum cleanliness when filling with brake fluid. Avoid spilling any fluid onto the paintwork since this will damage it. Check to make sure that the vent hole in the cap is not blocked.

LUBRICATION

DISTRIBUTOR

Lubricate the distributor after every 10 000 km (6 000 miles). The distributor shaft is lubricated by filling the oil cup (3, Fig. 1-9) with engine oil. After filling, close the cup. The contact surface of the cam (2) is lubricated with a thin coating of grease, Bosch Ft 1 v 4, or corresponding grease. The ignition advance mechanism is lubricated by pouring 2—3 drops of light engine oil (SAE 10 W) on the wick (1) in the distributor shaft.



Fig. 1-9. Distributor

1. Lubricating wick 2. Cam disc 3. Oil cup

BALL JOINTS

The upper and lower ball joints of the front end together with the ball joints of the tie rod and steering rod are plastic-lined. Therefore, they do not require lubricating and thus have no grease nipples. As the sealing is extremely important with regard

to the service life of these ball joints, the rubber seals should be checked every 20 000 km (12 000 miles) to ensure that they are not damaged. If cracked or damaged, they should be replaced, see Part 6. When being fitted, the rubber seals should be filled with multipurpose grease (universal grease).

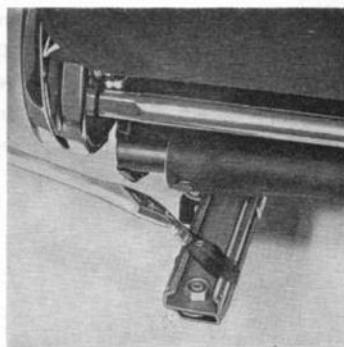


Fig. 1-10. Lubricating slide rails

BODY

To avoid squeaking and unnecessary wear, the body should be lubricated as described in the lubricating schedule on next page. Nos. 2, 7, 9 and 10 of the schedule concern lubrication approx. every 10 000 km (6 000 miles) and other parts of the body about once a year. Moreover, during winter the door handles and trunk lid lock should be lubricated with a suitable lock oil which would prevent them from freezing up.

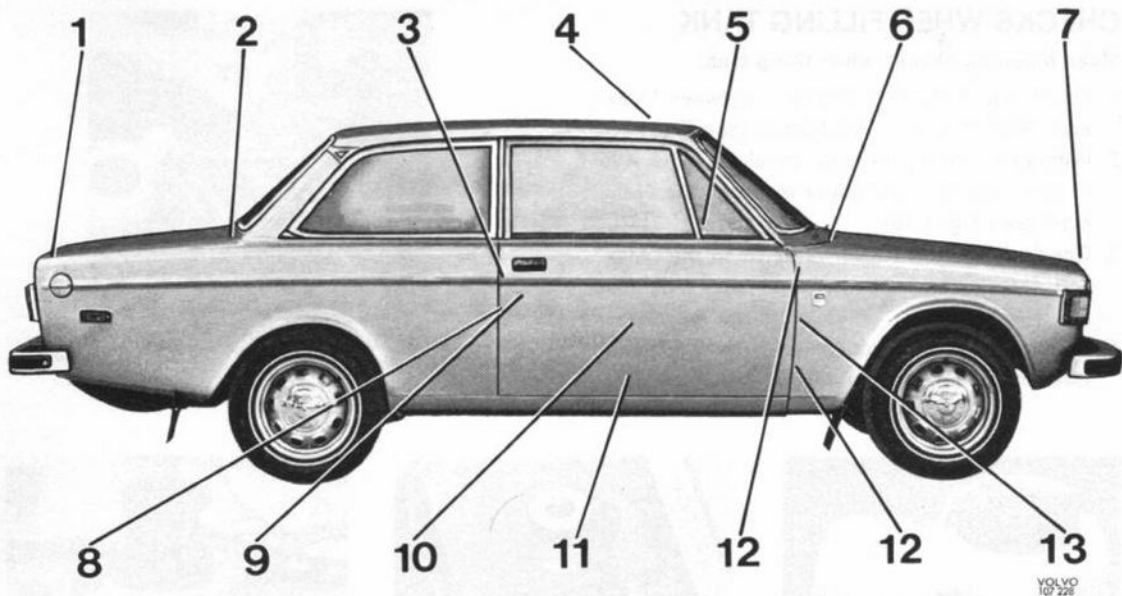
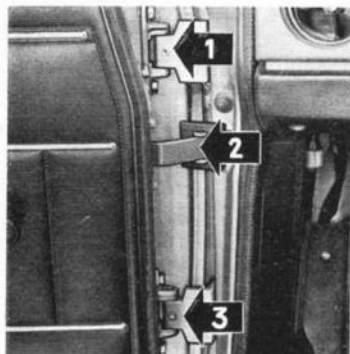


Fig. 1-11. Lubricating points on body

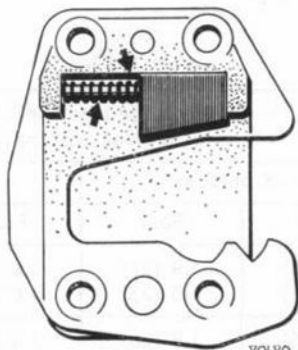
No. Lubricating point	Lubricant	No. Lubricating point	Lubricant
1 Trunk lid lock	Oil	8 Striker plate	See Fig. 1-13
Keyholes	Lock oil	9 Keyholes	Lock oil
2 Trunk lid hinges	Oil	10 Window winders	Oil and grease
3 Outer sliding surface of door lock	Paraffin wax	11 Front seat runners and catches	Paraffin wax and oil
4 Sun roof wind deflector	Oil	12 Door hinges	Grease
5 Ventilation window catch and hinges	Oil	13 Door stops	Paraffin wax
6 Hood hinges	Oil	Locks	Silicon grease
7 Hood catch	Paraffin wax	(Accessible after door upholstery panels have been removed.)	



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Fig. 1-12. Hinges

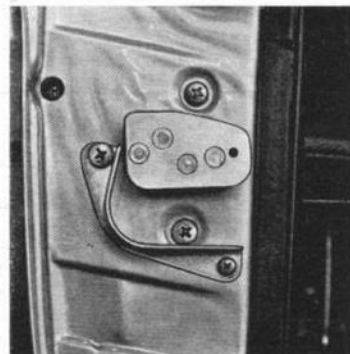
1. and 3. Hinges 2. Door stop



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Fig. 1-13. Striker plate

Inner sliding surfaces, spring and pin lubricated with molybdenum disulphide grease



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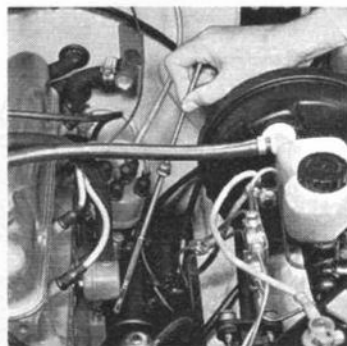
Fig. 1-14. Door lock with guide plate

Apply paraffin wax

CHECKS WHEN FILLING TANK

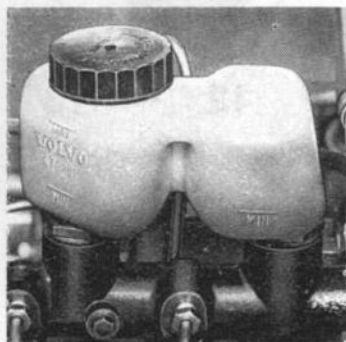
Make following checks when filling tank:

1. Check that oil level in engine is between "Max" and "Min" marks on the dipstick (see Fig. 1-15).
2. Without removing the cap, check that the level in the brake fluid container is above the "Min" mark (see Fig. 1-16).
3. Check that coolant level is between the "Max" and "Min" marks on the expansion tank (see Fig. 1-17).
4. Check that the fluid container for the windscreen washer is filled (see Fig. 1-18).



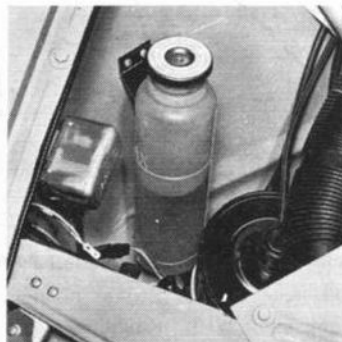
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Fig. 1-15. Oil dipstick



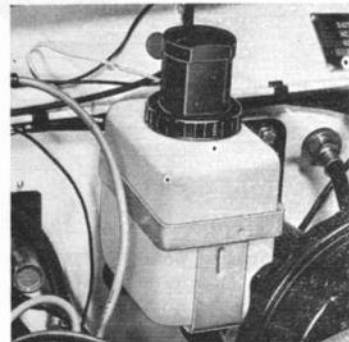
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Fig. 1-16. Brake fluid container



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Fig. 1-17. Expansion tank

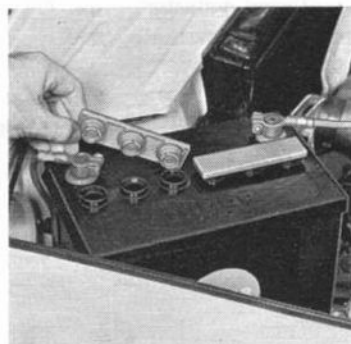


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Fig. 1-18. Fluid container

The following checks should be made every other week:

1. Check that electrolyte level in battery is about 5 mm (3/16") above the plates (see Fig. 1-19). If necessary top up with **distilled** water. Also check that the battery and battery terminals are secure.
2. Check that the tyre pressure corresponds to the following values:



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Fig. 1-19. Battery

Recommended tyre pressures

Model	Tyre size	Recommended tyre infl. pressure cold tyres, kp/cm ² (psi)				Max. permitt. inflation pressure kp/cm ² (psi)
		1—3 persons		Full load		
		Front	Rear	Front	Rear	
142, 144	165R15 C78-15 (4PR)	1.8 (26)	1.9 (27)	1.9 (27)	2.2 (32)	2.5 (36)
		1.5 (21)	1.6 (23)	1.6 (23)	2.1 (30)	2.3 (32)
145	175R15 C78-15 (8PR)	1.7 (25)	1.8 (26)	1.8 (26)	2.8 (40)	2.8 (40)
		1.5 (21)	1.8 (26)	1.6 (23)	2.7 (38)	2.8 (40)

For sustained high speed driving over 120 kmph (75 mph), cold inflation pressure must be increased

0.28 kp/cm² (4 psi), but not exceed the maximum permitted inflation pressure.

INSTRUCTIONS FOR LUBRICATING CHART

SYMBOLS



Engine oil

Grade: "For Service SD, SE and CC" (MS)
Viscosity: See page 1:1



Final drive oil

Grade: MIL-L-2105 B
Viscosity: SAE 90
Concerning lubrication for final drive with limited slip, see page 1:3



Lubricant, see respective note.



Light engine oil



Brake fluid

Grade: SAE J 1703

OIL CHANGING QUANTITIES

Engine,	
oil changing quantity	approx. 3.25 dm ³ (5.7 Imp. pints = 6.9 US pints)
including oil filter	approx. 3.75 dm ³ (6.6 Imp. pints = 7.9 US pints)
Gearbox	
without overdrive	approx. 0.75 dm ³ (1.3 Imp. pints = 1.6 US pints)
with overdrive	approx. 1.6 dm ³ (2.8 Imp. pints = 3.4 US pints)
Automatic transmission	approx. 6.4 dm ³ (11.3 Imp. pints = 13.5 US pints)
Final drive	approx. 1.3 dm ³ (2.3 Imp. pints = 2.7 US pints)
Steering gear	approx. 0.25 dm ³ (0.4 Imp. pint = 0.5 US pint)

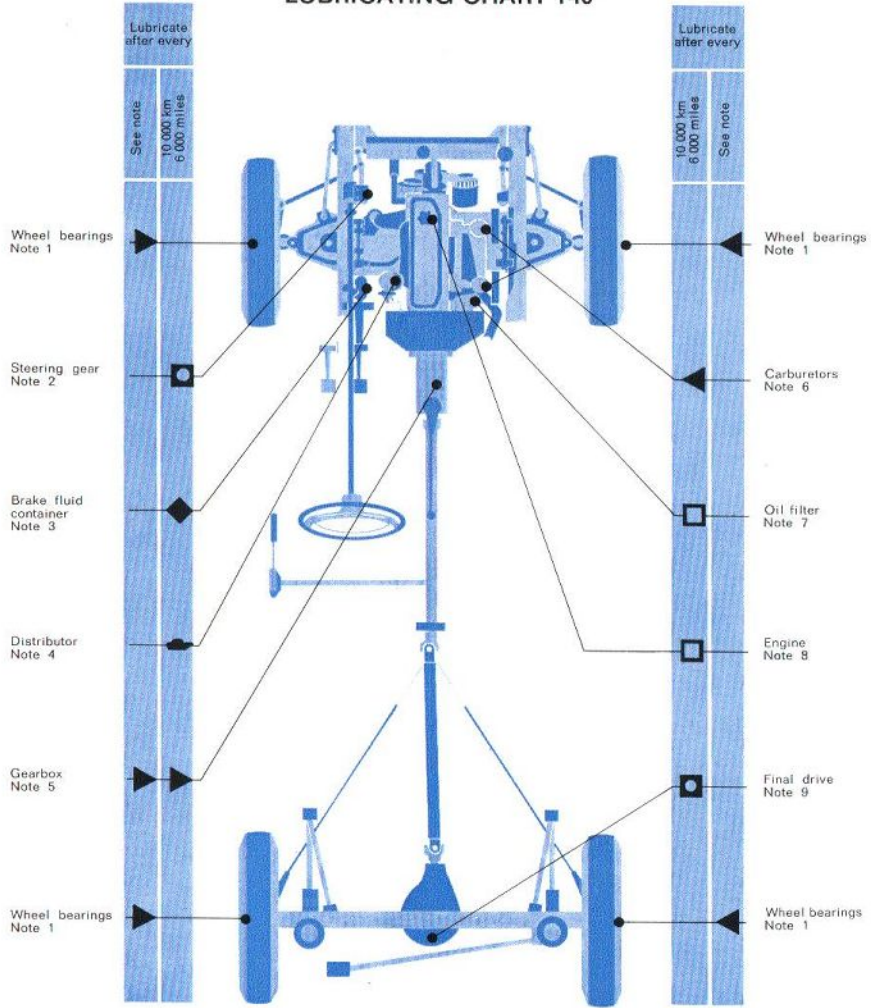
OTHER LUBRICATING POINTS

In addition to the points indicated in the lubricating chart, the chassis should be greased about once a year at all the joints for the throttle control linkage, parking brake, pedal linkages, etc. Certain checks should also be carried out when filling the tank, see page 1:6.

NOTES

- Note 1. In connection with such workshop operations involving uncovering the wheel bearings the bearings should be removed, cleaned and then lubricated with high-class durable grease according to the instructions in Groups 46 and 77 respectively. Subsequent filling or replacement of grease in addition to the above should not take place.
- Note 2. Check oil level. See page 1:3.
- Note 3. Check brake fluid level. See page 1:4.
- Note 4. Lubricate distributor in accordance with instructions on page 1:4.
- Note 5. Every 10 000 km (6 000 miles) check that the oil reaches up to filler plug. After every 40 000 km (24 000 miles) the oil should be changed (manual gearbox). NOTE. The grade of oil to be used depends on the type of gearbox, see pages 1:1 and 1:2.
- Note 6. Check oil level in the carburetors when changing the engine oil, see page 1:1.
- Note 7. Change oil filter completely according to instructions in Part 2.
- Note 8. Change oil according to instructions on page 1:1.
- Note 9. Every 10 000 km (6 000 miles) check that the oil reaches up to filler plug. Concerning lubricant for the final drive with limited slip, see page 1:3.

LUBRICATING CHART 140



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