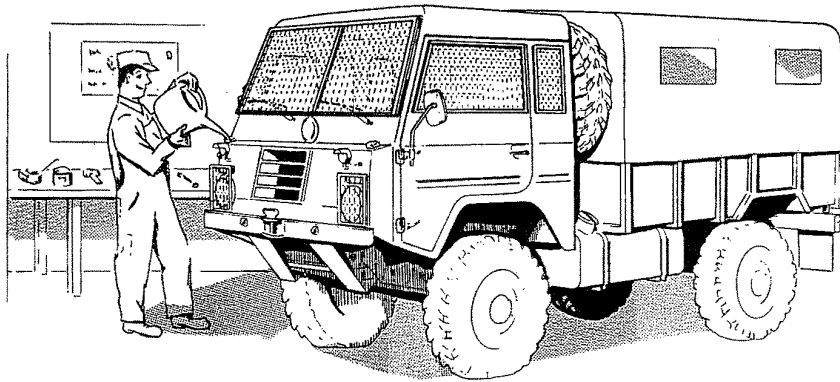


MAINTENANCE



The following chapter deals with the maintenance of the vehicle. It is divided into Daily Maintenance, Monthly Maintenance and Lubrication. The lubricating intervals are mileage-tied. The various lubricating points are also given in a lubricating chart at the end of this manual.

Avoid dirt, etc., when checking oil levels, filling with oils, and when lubricating.

Daily Maintenance

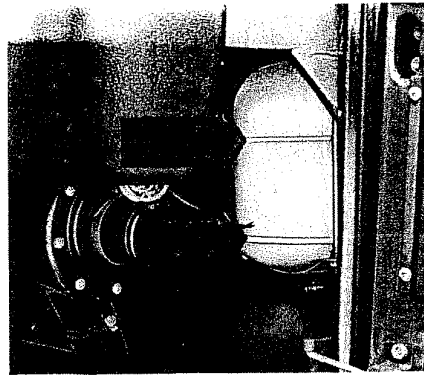
BEFORE DRIVING

1 Coolant

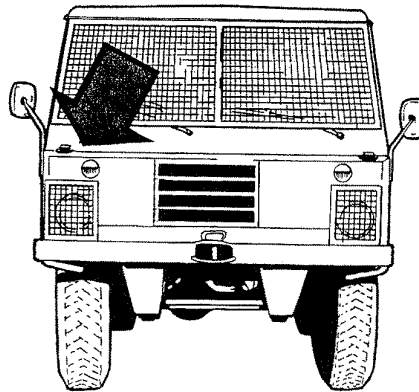
Check the coolant level in the expansion tank. It should be between the Max and Min marks.

Coolant must be added when the level has dropped to the Min mark. It is added through the filler hole at the front of the vehicle. Always use a mixture of water and rustproofing.

Top up with coolant when necessary — to Max when the engine is warm, to Min when it is cold.



Expansion tank

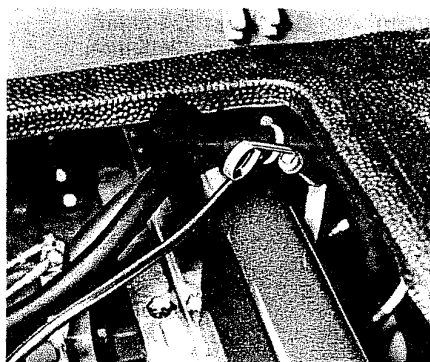


Filler hole

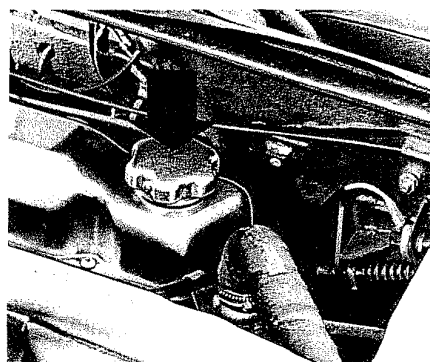
2 Oil

Check the oil level in the engine with the dipstick. Wipe the dipstick before checking with, e.g., a piece of paper or a clean cloth. The oil level should be between the Max and Min marks on the dipstick. When the level approaches the Min mark, top up with oil through the filler hole in the rocker arm cover. The distance between the Max and Min marks corresponds to about 2 litres (4 pints).

Concerning type of oil and viscosity, see lubricating chart.

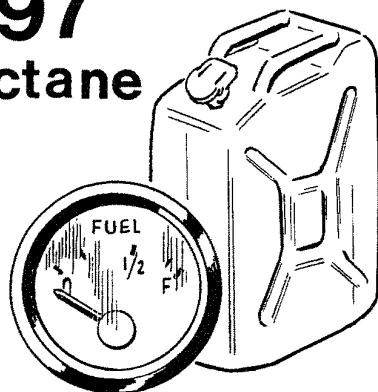


Oil dipstick



Oil filler hole

97
octane



Check petrol in the tank

3 Petrol

Check that there is sufficient petrol in the tank and that the spare petrol can is filled. Stop the engine before refuelling. Have a look at the strainer in the fuel tank filler pipe. If it is blocked, clean it before refuelling. Check that the spare petrol can contains **CORRECT FUEL**.

4 Wheels (also spare)

Check the tyre pressure according to table below. If it is low, check to make sure that the tyre valves are tight and do not leak. All the valves should have valve caps. Check the tyres for wear or damage. Remove any stones that may have fastened in the tyres. Check that the wheel rims are not damaged and that the wheel nuts are properly tightened.

Vehicle	Front	Rear
C 303 G. S. Cargo	1.7 kp/cm ² (24 lbf/in ²)	1.7 kp/cm ² (24 lbf/in ²)
C 304 Mortar	1.9 kp/cm ² (27 lbf/in ²)	1.9 kp/cm ² (27 lbf/in ²)
Gun Tower	1.9 kp/cm ² (27 lbf/in ²)	2.4 kp/cm ² (34 lbf/in ²)
Ambulance	1.9 kp/cm ² (27 lbf/in ²)	1.7 kp/cm ² (24 lbf/in ²)
C 306 6x6 G. S. Cargo	1.9 kp/cm ² (27 lbf/in ²)	1.9 kp/cm ² (27 lbf/in ²)

5 Windows, mirrors and mudflaps

Check that:

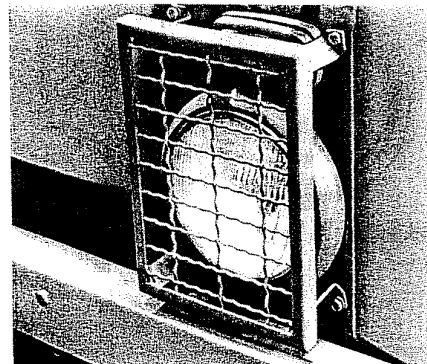
- all the windows are in good condition and are clean
- the rearview mirrors are properly adjusted
- the mudflaps are in good condition.

Lighting

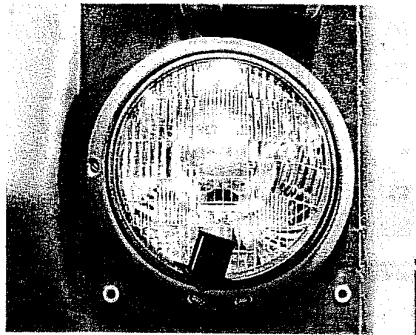
- Check that the headlight lens is clean and that the lighting is functioning properly.
- Check that the tail, stop and blackout light lens is clean and the various lights are functioning properly.

Changing bulbs

- 1 Unscrew the grille in front of the headlight.

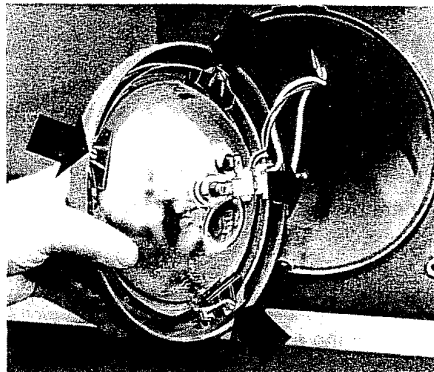


Headlight grille



Headlight rim

2 Remove the screw from the headlight rim.



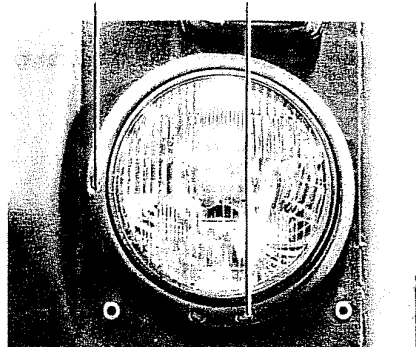
Connector and screws

3 Unscrew the three screws and lift out the lamp.

4 Disconnect the connector and change the bulb.

Change the bulbs in combined tail lights as follows: Remove the grille and screw off the lens.

Lateral adjustment screw Vertical adjustment screw



Adjuster screws

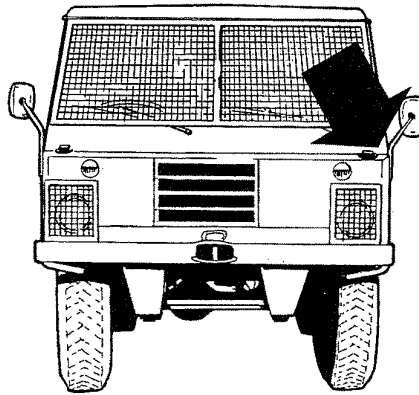
Adjusting headlights

The headlights are adjusted by means of the adjuster screws. Beams are adjusted with a beam adjusting apparatus and must be done by a mechanic.

6 Direction indicators, horn, wipers, washers

Check that:

- the direction indicators are functioning properly and are in good condition and clean.
- the horn gives an even, subdued tone.
- the windscreen wipers function and that the wiper blades are in good condition and lie well against the windscreen throughout their full sweep.
- the windscreen washers are functioning properly and that the washer container is well-filled.



Filler hole for washer container

7 Towing hitch

Check that the towing hitch is in good condition.

If a trailer is used, check that:

- it is properly hitched to the vehicle.
- the electric cables between the vehicle and trailer are properly connected to the vehicle.

8 Instrument panel, indicator/warning lights, operating switches

Check that the oil pressure warning light goes out when the engine has started.

Check the function of the alternator charging warning light. It should go out when the alternator is charging, but during driving it may give a weak light or blink. It should go out when the engine speed is increased.

9 Brakes

Check the function of the parking brake. Drive the car and test the footbrake. The brakes should brake the wheels evenly.

DURING STOPPAGES AND WHEN DRIVING

10 Instruments, etc.

Check now and again when driving that:

- the engine temperature is normal, that is between 176–194° F
- the oil pressure warning light is out
- the alternator charging warning light is out

Note! Do not exceed the recommended speeds, see gear-changing chart on page 31.

AFTER DRIVING

11 Necessary measures — cleaning, lubricating, care

After driving, carry out necessary measures such as cleaning the vehicle, also used tools and accessories.

After the vehicle underbody has been thoroughly sprayed with water, lubricate the steering rods, auxiliary steering arm and propeller shafts.

12 Cross-country or on water

After the vehicle has been used for cross-country driving or operating on water, check vital parts of the underbody, such as the front shaft, steering rods, steering link and brake lines. Test the brakes.

Note! Remember that a faulty steering or brake system could be a traffic safety risk.

13 Faults and damage

Discovered faults should be remedied immediately if possible. Replace burnt fuses, defective bulbs, etc.

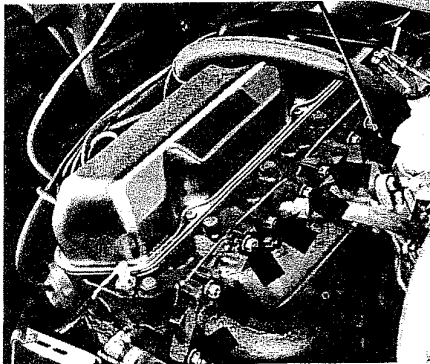
Monthly Maintenance

ENGINE

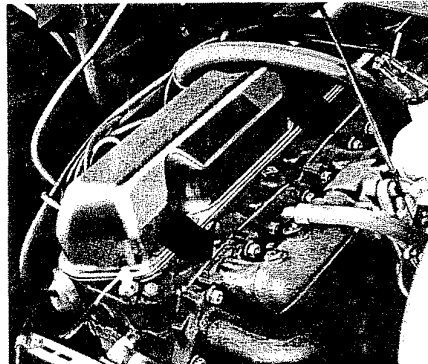
1 Intake manifold, exhaust manifold, exhaust pipe, silencer and tail pipe

Run the engine at approx. 3000 rev/min and check that:

- the retaining nuts on the intake and exhaust manifolds are secure and that the manifolds are in good condition
- the exhaust pipe, silencer and tail pipe are mounted securely
- there is no leakage at gaskets, joints and connections.



Retaining nuts



Gasket

Engine (run warm)

Listen to the engine at different speeds and also when it is idling. Noises such as valve knocking, etc., must not occur.

Any adjustment work here should be done by a mechanic.

Important! Leaking exhaust gases are dangerous.

2 Radiator, cap, hoses, pipes

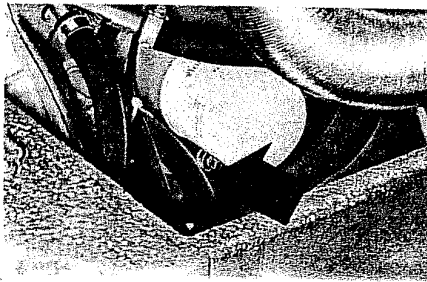
Check that:

- the radiator does not leak
- the cooling system hoses, pipes, connections and unions are not leaking
- the cooling system hoses are not cracked, scuffed or damaged by heating or oil.

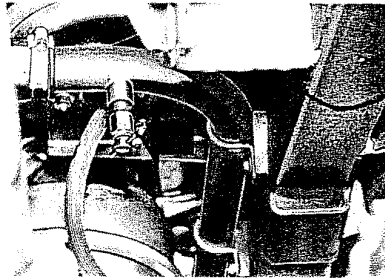
Changing the coolant

Normally the coolant retains its properties for about two years. After that time it should be changed, preferably in the autumn. Clean the cooling system in connection with the change. Empty the cooling system as follows:

- 1 Remove the drain plug on the oil cooler
- 2 Open the drain cock on the lower radiator pipe.



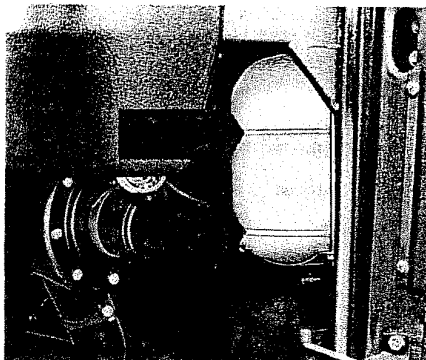
Drain plug on oil cooler



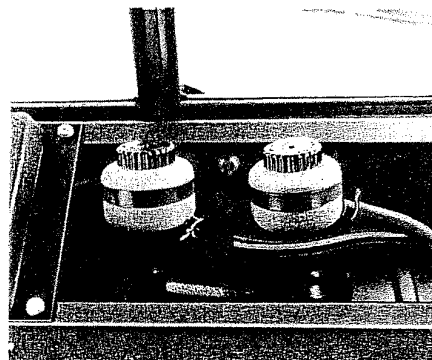
Drain cock on radiator pipe

Flush the system throughout with clean water before filling it with coolant. Fill with coolant as follows:

- 1 Fill the radiator with coolant and fit the radiator cap. Use a mixture of water and rustproofing throughout the year.
- 2 Fill the expansion tank to the Max level.
- 3 Run the engine warm and check the level in the expansion tank. Top up if necessary.



Expansion tank



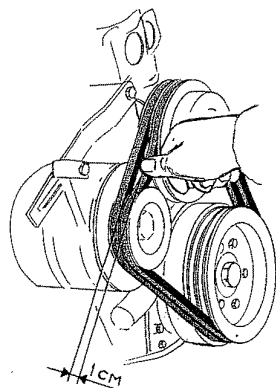
Radiator cap

3 Drive belts

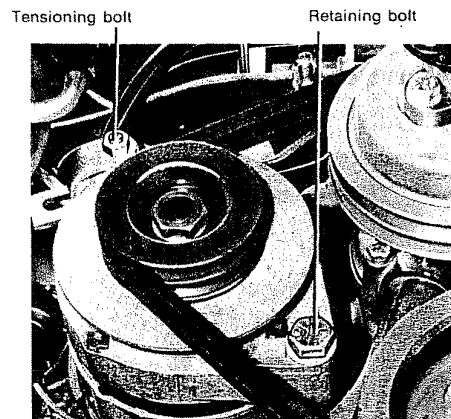
Check to make sure the drive belts are properly tensioned. They are properly tensioned when they can be depressed approx. 1 cm (3/8") under normal thumb pressure midway between the alternator and fan belt pulleys.

If necessary, tension the belts as follows:

- 1 Slacken the alternator retaining bolt.
- 2 Slacken the alternator tensioning bolt and move the alternator sufficiently to obtain proper tension on the belt.



Drive belts

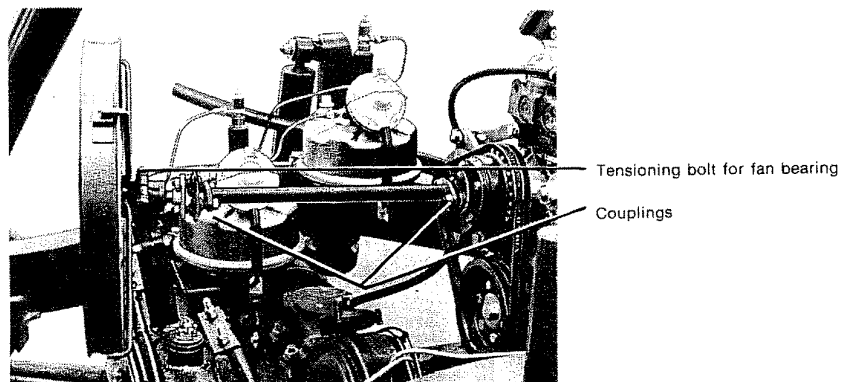


Alternator bolts

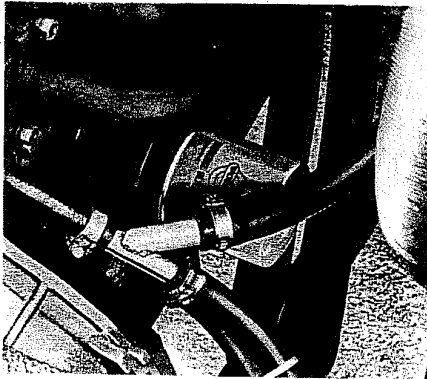
Changing belts:

- 1 Slacken the alternator tensioning bolt, and move the alternator in order to slacken the tension on the belt.
- 2 Screw apart the two couplings on the shaft between pulley and fan.
- 3 Slacken the tensioning bolt for the fan bearing and push the bearing forward so that the fan shaft and drive belts can be removed.

Important! Always change both belts at the same time.



Fan shaft

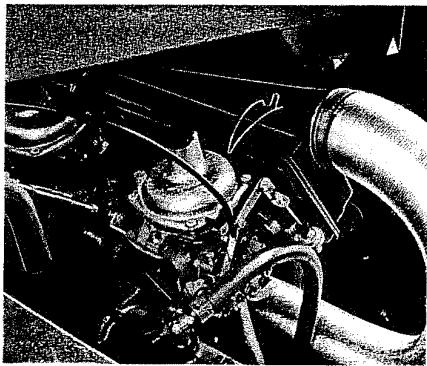


Oil filter

4 Oil filter, cooler, sump, covers, lines

Check for leakage. If necessary, first clean the part in question and adjacent areas and check for leakage with the engine running.

NOTE! Pay particular attention the gaskets on the oil filter, oil cooler and oil sump.



Air cleaner

5 Air cleaner

Make sure that the air cleaner is properly secured.

Normally the air cleaner paper insert should be changed according to the interval given in the lubricating chart.

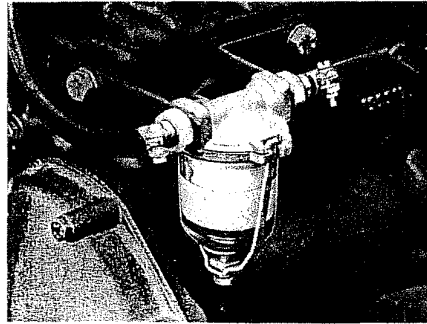
6 Fuel system

Check that:

- there is no leakage at the carburettor and pipe connections
- the nuts on the carburettor are properly tightened
- the carburettor control and control links move freely, are in good condition and are lubricated.

Fuel pump and fuel filter

Check that the fuel pump is properly mounted and that the connections are tight. Check that the fuel filter is not blocked. Clean the filter if the glass is filled with water or impurities. Do not remove the glass unless a new packing is available.



Fuel filter

Fuel tank, cap and lines

Check that the fuel tank and lines are secured properly and are tight. Leakages will cause moist spots or drops.

ELECTRICAL SYSTEM

7 Battery, cables, starter motor

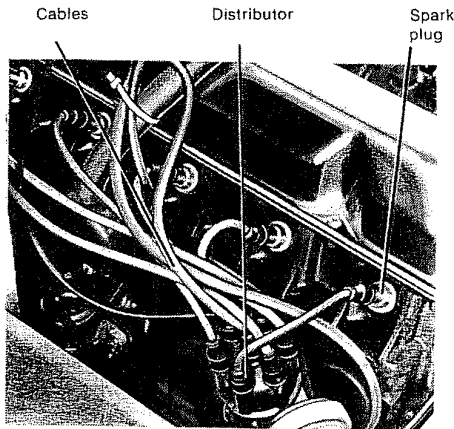
Important! First disconnect the earth cable to avoid possible short-circuiting.

- Clean the pole terminals and battery holder.
- Clean the battery with warm water and a brush (not a steel brush).
- Make sure that the cell covers are in good condition and that the breather holes are not blocked.
- Grease the pole terminals and the battery holder and make sure that the battery and the terminals are securely fitted.
- Check the electrolyte level which should be 5–10 mm (3/16–3/8") above the cell plates — top up with distilled water when necessary.
- Make sure that the starter motor is well-secured and that the starter-motor cables are tightened up and free from dirt, etc.

Visible cables

Make sure that all visible cables are tightened up, that their insulation is not damaged and that the cables themselves have not been scuffed against any sharp edge. Check particularly where the cables go through holes in the body.

For other work on the electrical system, see under the section "Changing the battery" on page 29.



Ignition coil and cables

8 Ignition coil, distributor, cables, spark plugs

- Clean spark plugs, ignition coil, distributor and cables.
- Make sure that the ignition coil is properly fitted.
- Make sure that the cables are properly connected up and that their insulation is in good condition.

POWER TRANSMISSION SYSTEM

9 Clutch with linkage system and gearboxes

Check to make sure that gears engage without grating. Check when starting off that the clutch does not grab. Check during driving to make sure that the clutch is not slipping under heavy loading.

If a noise is heard when depressing the clutch pedal, this indicates wear or damaged throw-out bearing.

If a noise is heard when the clutch pedal is released, this indicates a fault in the gearbox.

Gearboxes

Check the function of the gear lever by moving it to the various gear positions. It should be possible to engage here without difficulty and without any unusual noise.

10 Propeller shafts, universal joints, front and rear axles

- Make sure that the bolts on the flanges are securely tightened.
- Check for looseness on the universal joints and slip joints. Check this by rotating the propeller shaft in its operational direction of rotation and by jerking it up and down.
- Check that the propeller shafts are not damaged.
- Make sure that the bolting on the front and rear axles is tight.
- Check that the axles do not leak oil. With leakage, check the oil level and the plugs.
- Make sure that the retaining bolts at the wheel hub are tight.

BRAKE SYSTEM

11 Brakes

Service brakes

- Check and if necessary top up with brake fluid, see the section under "Lubrication", point 2.
- Check that brake lines and cylinders are not leaking.
- Check that the brake shoes do not slip on the brake drums when the brake pedal is released. (Check with a raised wheel or feel if any of the brake drums has become worn during driving.)

Parking brake

Check that the parking brake is functioning properly. It should not be necessary to apply the brake lever more than six notches. The parking brake should function satisfactorily at the 3rd-4th notch.

STEERING SYSTEM

12 Steering gear

- Check that the steering gear is properly secured.
- Check with the wheels pointing straight forward that there is no abnormal looseness in the steering wheel.
- Check the steering system for looseness.
- Make sure that the steering rods are not bent or deformed in any other way.

FRAME AND SPRINGS

13 Frame, springs and shock absorbers

Frame. Make sure that the frame is not cracked. Note particularly the bolting for the cross-members, the spring attachments and the towing member.

Spring leaves, spring anchorages. Check the anchorage of the springs. Make sure that none of the spring leaves is broken.

Shock absorbers. Make sure that the shock absorbers are properly tightened and do not leak oil.

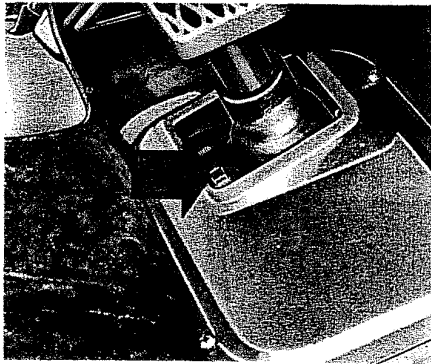
BODY

14 Personell and cargo space, floor plates, bumpers, bonnet

- Make sure that the inspection cover and roof cover are properly locked.
- Make sure that doors, locks, door stops, hinges and sealing strips are in good condition and are functioning properly.
- Make sure that the bumpers and mudflaps are fitted securely and are not damaged.
- Clean the vehicle and make sure that the driver's seat can be adjusted to all the positions and that it locks properly.
- Clean the instrument panel.

Lubrication

Lubrication is important for the maintenance of your vehicle. It should never be neglected. Before greasing and oiling the various components, make sure the lubricating nipples and filler holes are clean in order to prevent dirt, etc., accompanying the lubricant. Replace faulty nipples and plugs. Make sure you use the right lubricant for a particular lubricating point and at the interval given in the lubricating chart, see page 58.

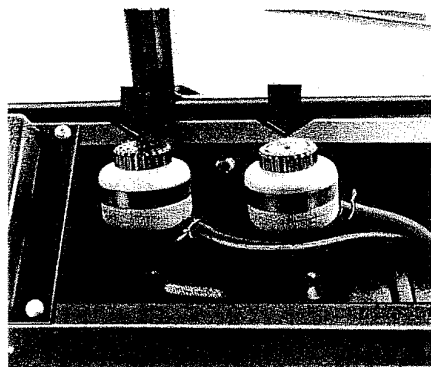


Steering gear

1 Steering gear

Check the oil level. It should be up to the filler plug. Top up if necessary. It is not necessary to change the oil other than after the steering gear has been overhauled.

Oil capacity: 0.6 litre (1 Imp. pint = 1.3 US pints).



Brake fluid reservoirs

2 Brake fluid reservoirs

Check to make sure that the brake fluid reservoirs are filled with brake fluid up to about 15–20 mm (5/8") below the cap. For topping-up use the brake fluid recommended in the lubricating chart.

3 Front axle carrier

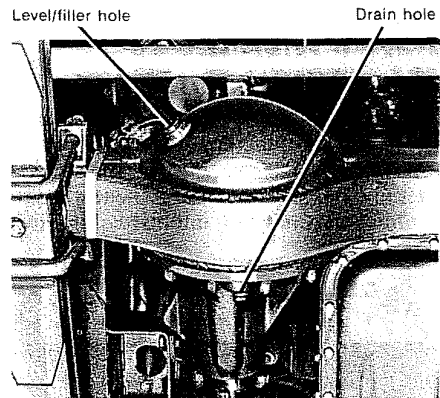
The oil should be up to the level and filler hole.

If the oil is to be changed, this should be done immediately after driving when it is still warm and viscous. Drain the old oil through the drain hole. Fill with the oil recommended in the lubricating chart.

Oil capacity: 1.50 litres (2.6 Imp. pints = 3.2 US pints).

The carrier oil-change instructions for the running-in period are to be found on page 57.

- 1 Level and filler hole
- 2 Drain hole



Front axle carrier

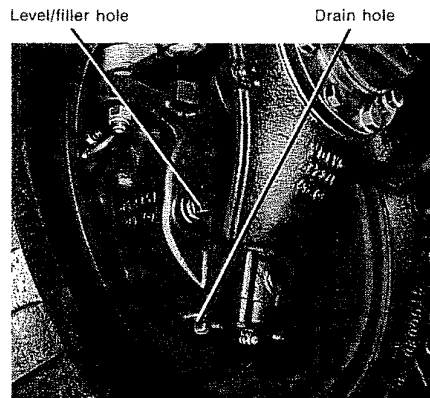
4 Front wheel carrier

Check to make sure that the oil is up to the level and filler hole.

If the oil is to be changed, this should be done immediately after driving, when it is still warm and viscous. Drain the old oil by removing the drain plug. Fill with the oil recommended in the lubricating chart.

Oil capacity: 0.30 litre (0.5 pint). The carrier oil-change instructions for the running-in period are to be found on page 57.

- 1 Level and filler hole
- 2 Drain hole



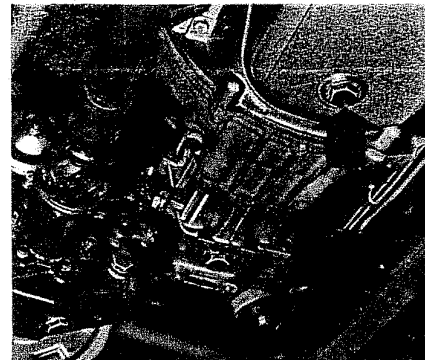
Front wheel carrier

5 Engine

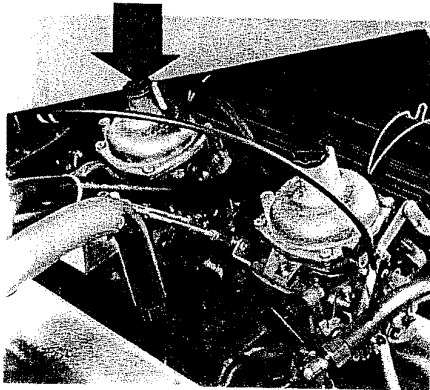
If the engine oil is to be changed, the oil should be drained immediately after driving when it is still warm and viscous. Drain the oil by removing the plug in the bottom of the engine oil sump. Fill with oil through the filler hole on the rocker arm casing.

Oil capacities: 5.2 litres (9 Imp. pints = 11 US pints) without oil filter.
5.7 litres (10 Imp. pints = 12 US pints) with oil filter

The engine oil-change instructions for the running-in period are to be found on page 57.



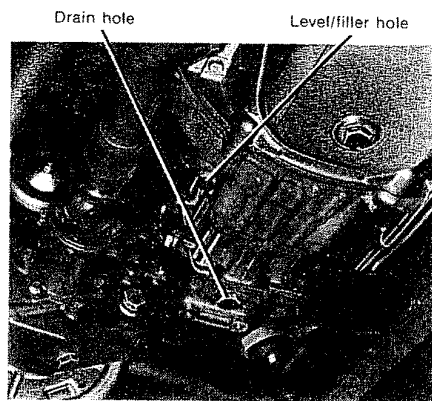
Engine drain hole



Carburetors

6 Carburetors

Check the oil level in the centre spindles of the carburetors. The level should reach up to about 6 mm (1/4") from the edge of the spindle. Fill with oil when necessary and according to the lubricating chart.



Gearbox

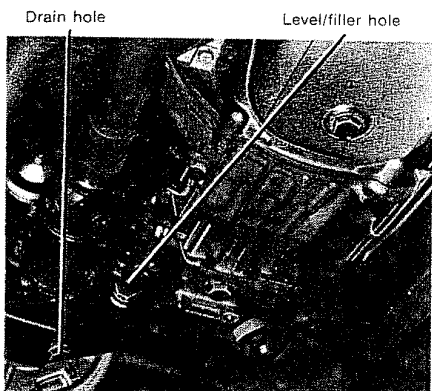
7 Gearbox

The oil should be up to the level and filler hole.

If the oil is to be changed, it should be done immediately after driving when it is still warm and viscous. Drain the oil by removing the plug. Fill with the oil recommended in the lubricating chart.

Oil capacity: 1.2 litres (2 Imp. pints = 2.5 US pints):

The gearbox oil-change instructions for the running-in period are to be found on page 57.



Auxiliary gearbox

8 Auxiliary gearbox

The oil level should be up to the level and filler hole.

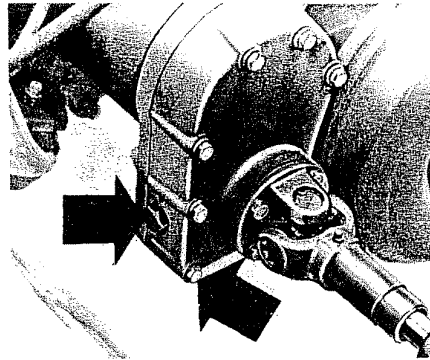
If the oil is to be changed, it should be done immediately after driving when it is still warm and viscous. Drain the oil by removing the drain plug. Fill with the oil recommended in the lubricating chart.

Oil capacity: 1.30 litres (2.3 Imp. pints = 2.7 US pints).

The auxiliary gearbox oil-change instructions for the running-in period are to be found on page 57.

9 Power take-off

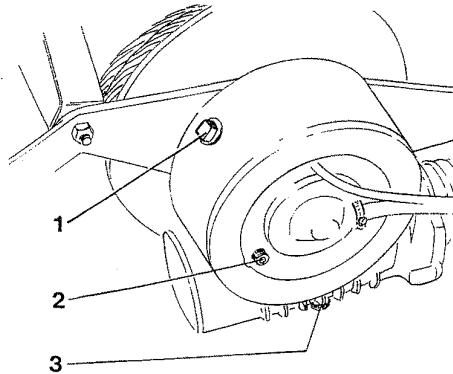
The oil should be level with the filler hole (1).
The oil is changed by removing the plug from the drain hole (2).



Power take-off

10 Winch housing

The oil should be level with the level hole (2).
The oil is changed by removing the plug from the drain hole (3). Top up by filling through the filler hole (1).

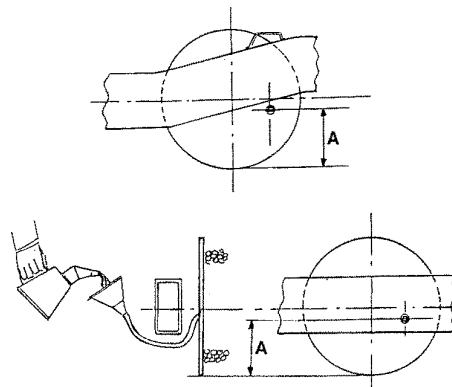


Winch housing

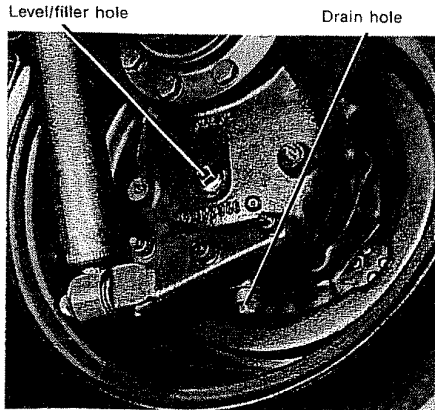
11 Planetary gear (in winding drum)

The oil should be level with the filler hole when it is turned to 122 mm (5") above the drum flange diameter, see picture. Since filling is difficult on a 3-axle vehicle due to the frame, a hose should be used, see picture. Oil is drained by turning the winding drum so that the plug is at the bottom.

A=122 mm (5")



Planetary gear



Rear wheel carrier

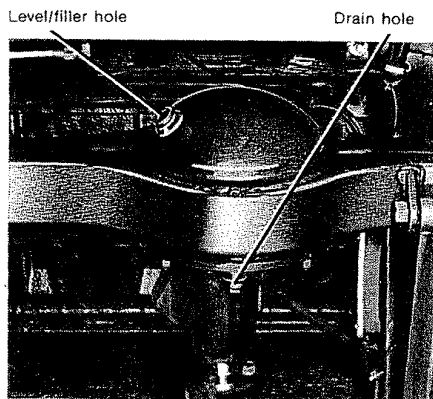
12 Rear wheel carrier

The oil level should be up to the level and filler hole.

If the oil is to be changed, it should be done immediately after driving when it is still warm and viscous. Drain the oil by removing the drain plug. Fill with the oil recommended in the lubricating chart.

Oil capacity: 0.4 litre (0.5 pint).

The carrier oil-change instructions for the running-in period are to be found on page 57.



Rear axle carrier

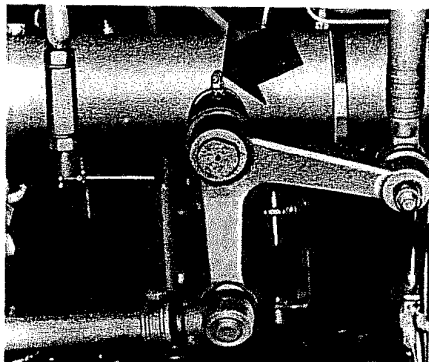
13 Rear axle carrier

The oil level should be up to the level and filler hole.

If the oil is to be changed, it should be done immediately after driving when it is still warm and viscous. Drain the oil by removing the drain plug. Fill with the oil recommended in the lubricating chart.

Oil capacity: 1.5 litre (2.6 Imp. pints = 3.2 US pints).

The carrier oil-change instructions for the running-in period are to be found on page 57.



Pivot arm

14 Pivot arm

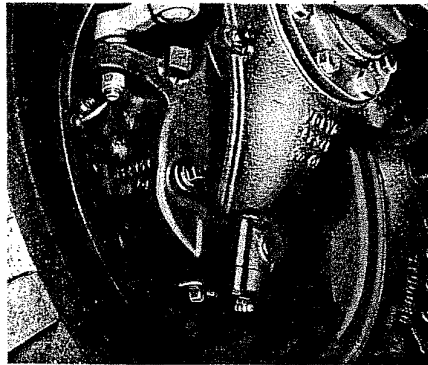
The pivot arm has a lubricating nipple.

Lubricate this nipple until grease squeezes out at the lower shaft end.

Greasing is made easier by turning the steering wheel at the same time.

15 Lower king pin joint

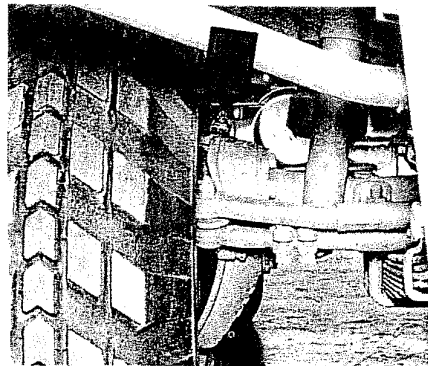
The lower king pin joint has a lubricating nipple. Lubricate this nipple until grease squeezes out.



Lower king pin joint

16 Upper king pin joint

The upper king pin joint has a lubricating nipple. Lubricate this nipple until grease squeezes out.

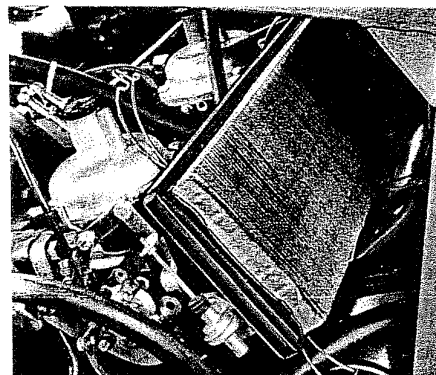


Upper king pin joint

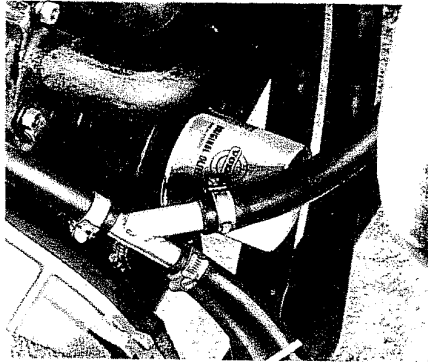
17 Air cleaner

To replace the cleaner insert undo the four clamps securing the air cleaner cover. Remove the cover and change the paper insert.

Make sure that the cover is properly secured after this operation.



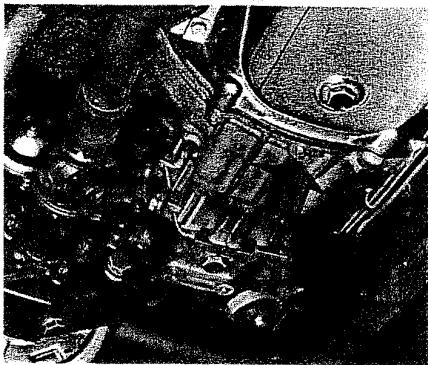
Air cleaner



Oil filter

18 Oil filter

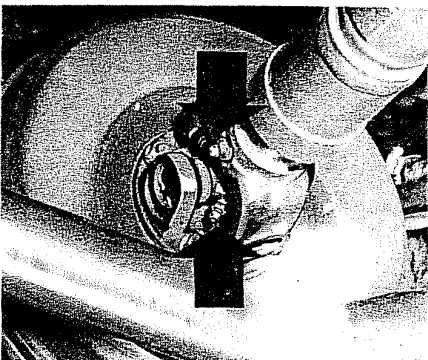
Before replacing the oil filter, clean round it to remove any dirt which could get into the lubricating system when the filter is removed. Use the special tool intended for removing the filter. Place a vessel underneath to collect the oil which runs out. Moisten the gasket on the new filter with oil. Screw on the filter tight by hand until it seals against the block. When the engine has been on for about 5 mins., check the filter for leakage.



Clutch casing

19 Clutch casing

Drain the oil in the clutch casing each time the engine oil is changed.



Propeller shaft spline joints and universal joints

20 Propeller shaft spline joints

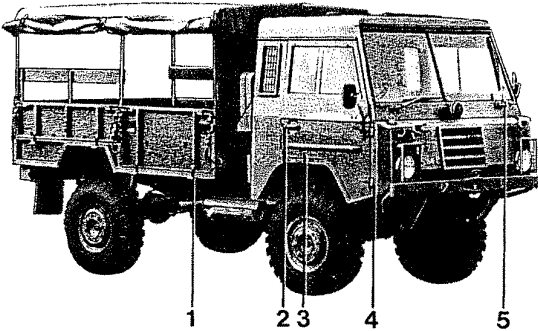
These joints have two lubricating nipples, one on each propeller shaft.

21 Universal joints

Each universal joint has four lubricating nipples. Lubricate these nipples until grease squeezes out at all the four bearing shells. If grease does not squeeze out, rotate the propeller shaft.

22 Joints, links, hinges, locks

Lubricating points	Number
1 Hinges	
2 Striker plates	2
3 Seat rails	4
4 Door hinges	4
5 Windscreen wipers, shafts	2



Joints, links, hinges, locks