

# SERVICE MANUAL

TRUCKS

**L 385**

*Export Service Department*

AKTIEBOLAGET

**VOLVO**

GÖTEBORG, SWEDEN

# PART 12

## LUBRICATION

### Instructions concerning oil changes

#### Engine

Change the oil when the engine is warm. Drain off the old oil by removing the drain plug, Fig. 12—1.

Replace and tighten the drain plug and then add oil through the filler hole on the rocker arm cover. There is a filter in the filler hole and this should be cleaned in white spirit after every 10.000 km (6000 miles). Every time the oil is changed, impurities should be removed from the lubricating oil filter through the drain hole in the bottom of the filter, see Fig. 12—2. Remove and clean the lubricating oil filter thoroughly with white spirit after every 20.000 km (12.000 miles).

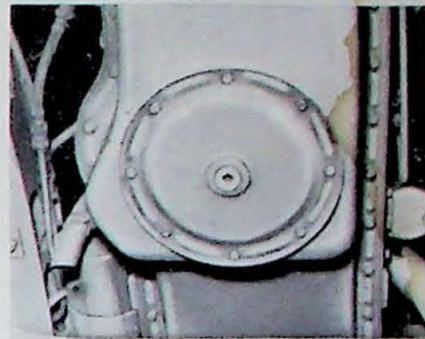
Each time the oil is changed, about 2 dl. (1/2 U.S.pint) of oil of the same type being used in the engine should be added to the fuel injection pump. This should be done even if oil runs out through the hole.

#### Transmission

Change the oil shortly after the truck has been driven when the transmission oil is warm. Remove the plug (1 and 3, Fig. 12—3) and drain off the old oil.

Now and then, or every other time the oil is changed, flushing oil should be used. This is added through the filler hole after the drain plug has been replaced. Let the engine run for 1 minute or so with one of the gears engaged and one of the rear wheels jacked up. Then stop the engine, lower the rear wheel and drain off the flushing oil.

Screw the drain plug firmly into position and then add the new oil. The oil level should be up to the filler hole. Tighten the filler plug (2, Fig. 12—3).



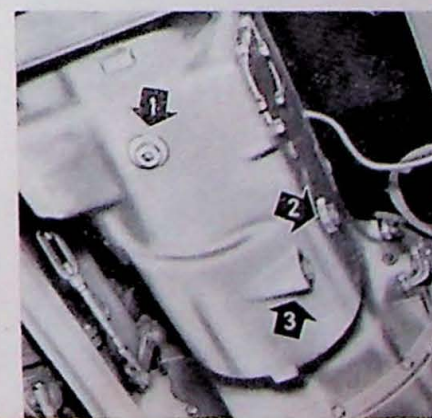
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Fig. 12—1.



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Fig. 12—2.



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Fig. 12—3.



Fig. 12—4.

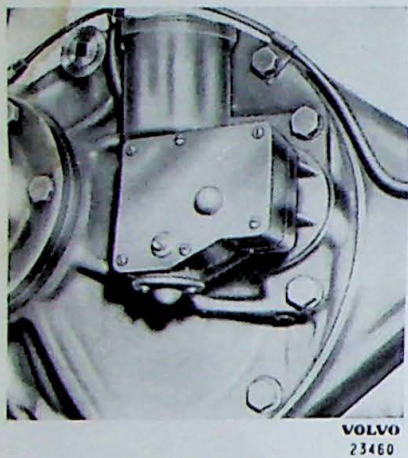


Fig. 12—5.

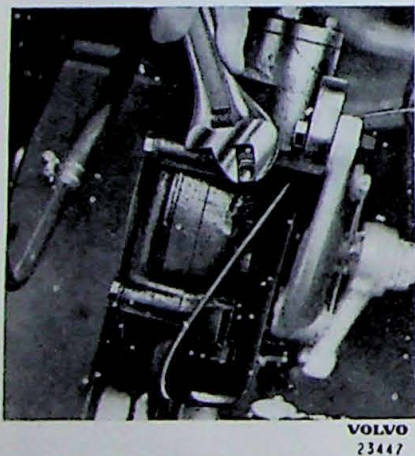


Fig. 12—6.

## Differential

Change the oil shortly after the truck has been driven when the oil in the differential is warm. Remove the drain plug (Fig. 12—4) and drain off the oil.

Now and then or every other time the oil is changed, flushing oil should be used. This is added through the filler hole after the drain plug has been screwed back into position. Jack up one of the rear wheels, engage one of the gears and let the engine run for 1 minute or so before draining off the flushing oil.

Replace the drain plug and then add the new oil. It should reach up to the filler hole. Screw in the filler plug.

If the truck is fitted with a two-speed rear axle, oil is added until the oil level is up to the edge of the filler hole as mentioned above. Then an additional 1/2 liter (1 U. S. pint) of oil is added through the second filler hole in the top of the rear axle housing.

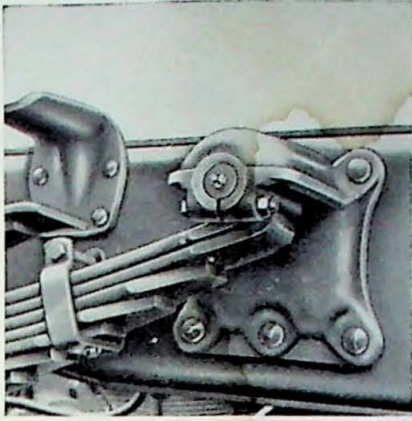
The housing for the operating mechanism on the two-speed rear axle should contain SAE 10 oil engine. Top up when required to the edge of the filler hole. See Fig. 12—5. When air temperatures are below  $-15^{\circ}\text{C}$  ( $5^{\circ}\text{F}$ ), use a mixture of one part kerosene mixed with three parts engine oil.

## Steering Mechanism

The oil in the steering mechanism does not usually need to be changed. When oil change is necessary, however, the old oil is drained off by removing the plug at the bottom on the front side of the steering mechanism. New oil is added through the filler hole after the plug has been removed, Fig. 12—6. Check that the oil level is up to the filler hole in the steering mechanism.

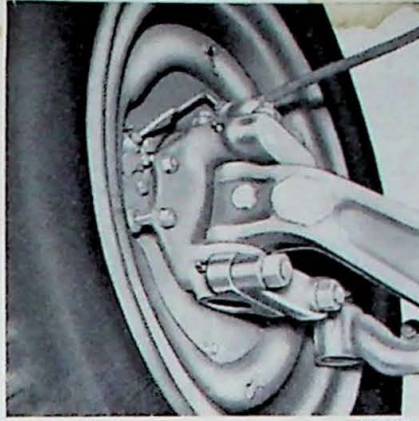
# ALLROUND LUBRICATION

## 2500 km (1500 miles)



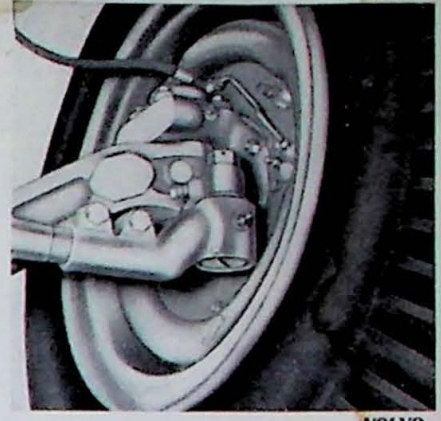
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Fig. 12-7. Spring hangers.



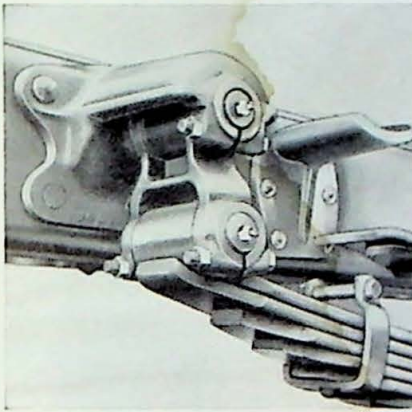
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Fig. 12-8. King pin, upper and lower. Use heat-resistant bearing grease for upper bearing.



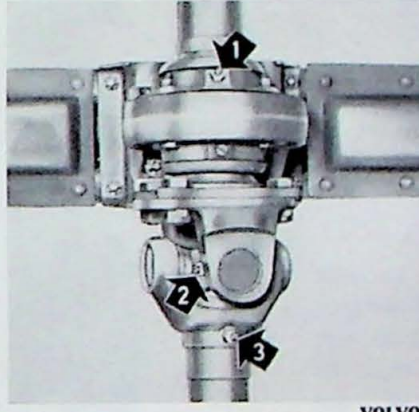
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Fig. 12-9. Tie rod.



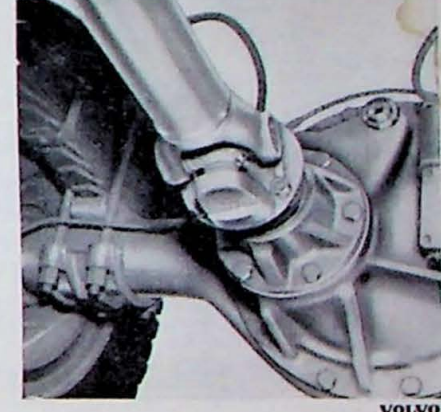
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Fig. 12-10. Spring shackle.



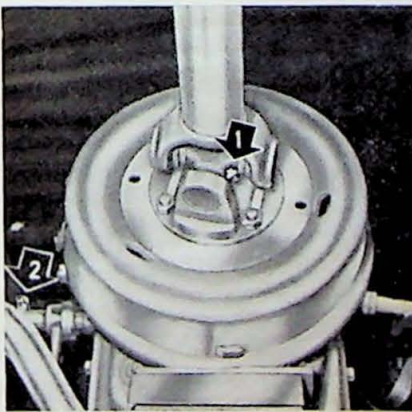
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Fig. 12-11. Propeller shaft center bearing (1). Center universal joint (2). Slip joint (3). Use heat-resistant bearing grease for upper bearing.



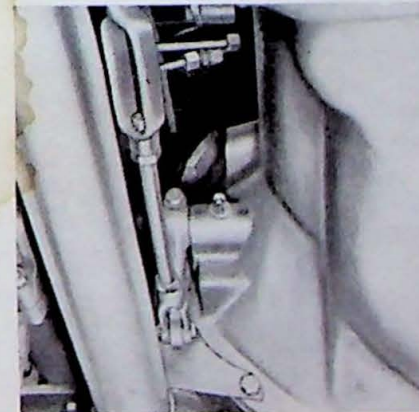
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Fig. 12-12. Rear universal joint.



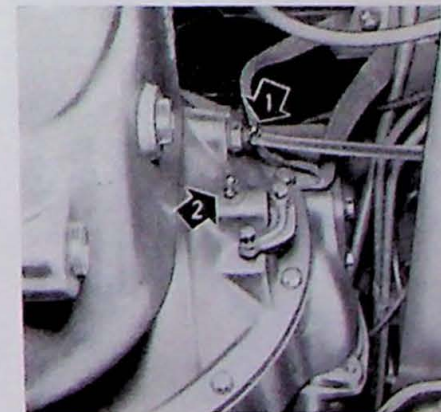
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Fig. 12-13. Forward universal joint. (1). Clutch control intermediary shaft (2).



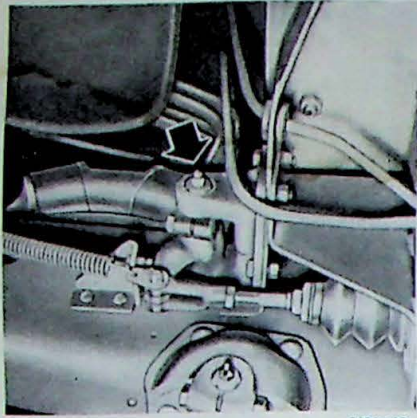
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Fig. 12-14. Clutch shaft, left.



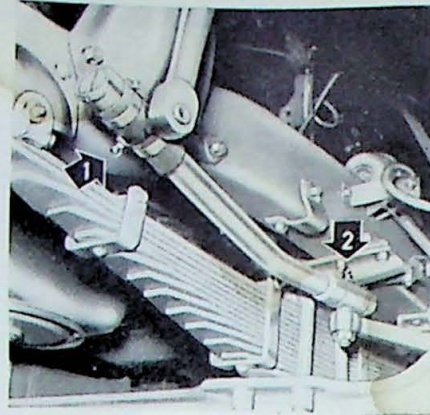
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Fig. 12-15. Clutch shaft, right (2).



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Fig. 12-16. Pedal shaft.



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Fig. 12-17. Drag link, front (1) and rear (2) lubricators.

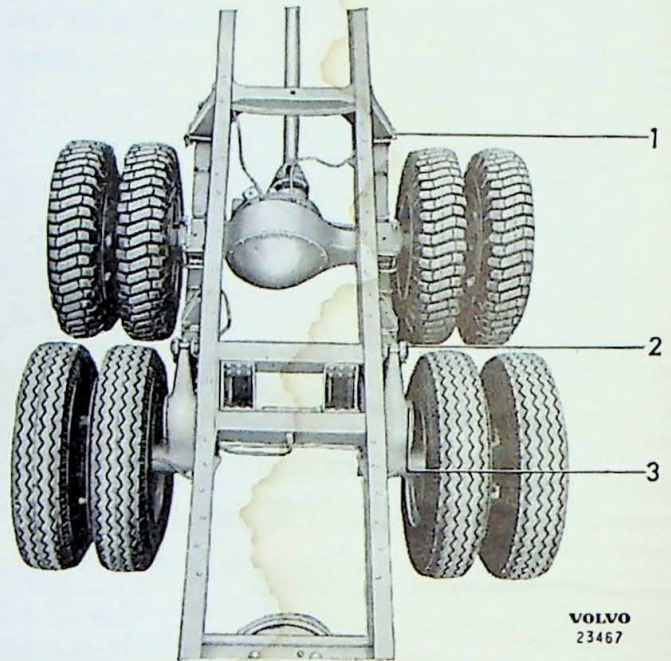
### Variations on models L 38525-27

Fig. 12-18.

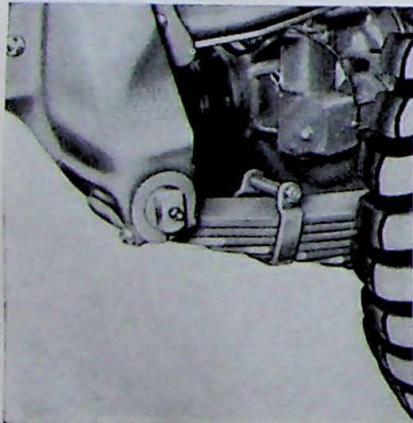
1. See Fig. 12-19.

2. See Fig. 12-20.

3. See Fig. 12-21.

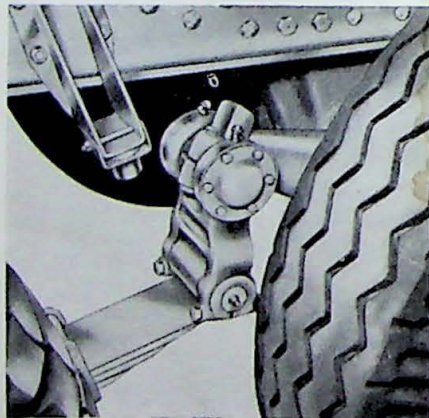


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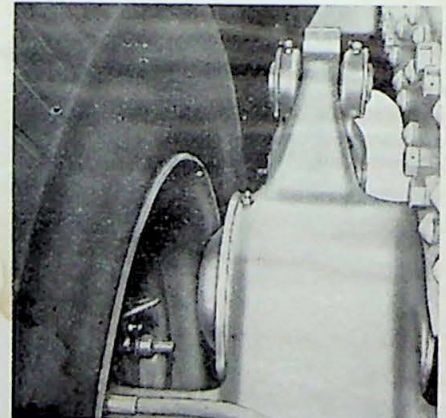
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Fig. 12-19. Front spring hangers.



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Fig. 12-20. Rear spring hangers.



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Fig. 12-21. Lubricator for balance arm.

## Additional lubrication after every 5000 km (3000 miles)

Steering gear: Check oil level. See Page 12—2 Steering Gear.

Brake fluid container: Check oil level. See Page 12—6 Brakes.

## Additional lubrication after every 10000 km (6000 miles)

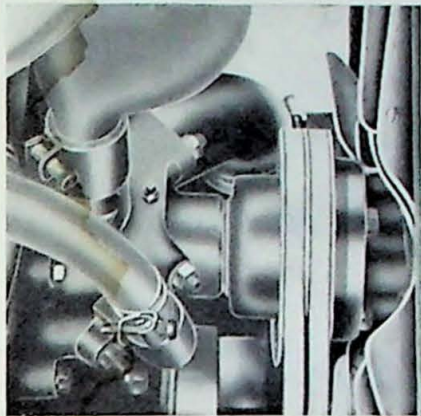


Fig. 12—22. Cooling water pump.

Do not force too much grease into the bearing. Add new heat-resistant bearing grease each time the engine is reconditioned.

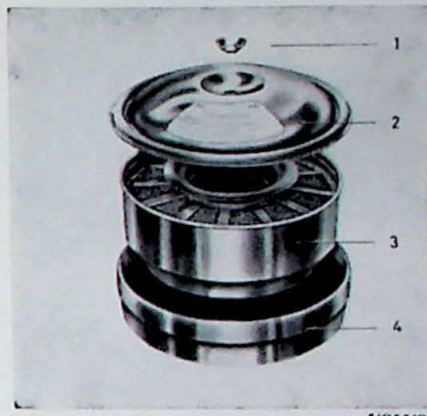


Fig. 12—23. Air cleaner.

1. Butterfly nut.
2. Cover.
3. Filter element.
4. Oil container.

Remove the air cleaner from the engine, disassemble it and empty out the old oil. Clean it in white spirit, then add new oil of the same type being used in the engine. Assemble and fit the air cleaner.

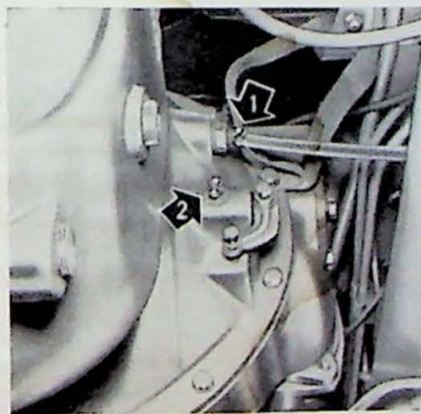


Fig. 12—24. Clutch release bearing (1).

Check now and then through the clutch inspection cover that the lubricating hose is in good condition. Use heat-resistant bearing grease.

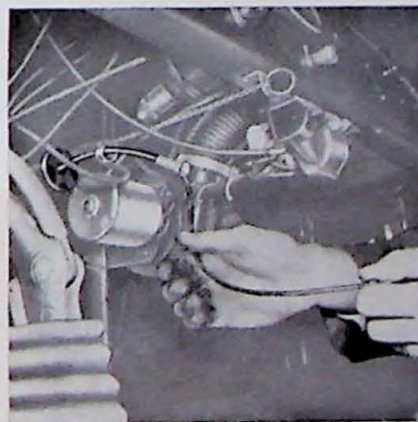
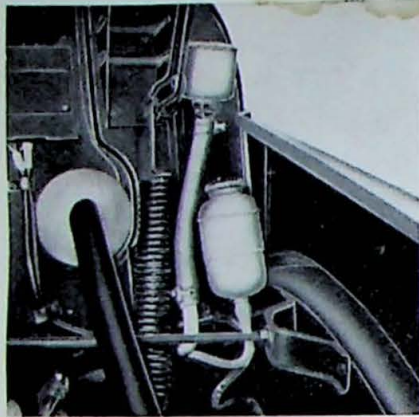


Fig. 12—25. Speedometer drive cable.

Disconnect at upper end and pull out about half-way. Lubricate with graphite grease.

# LUBRICATION OF THE BRAKE SYSTEM

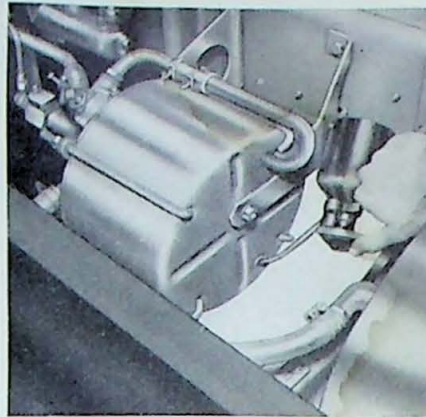
## Vacuum-hydraulic brakes



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Fig. 12—26. Upper container — air cleaner. Lower container — brake fluid container.

The air cleaner should be cleaned and slightly lubricated with light engine oil after every 10000 km (6000 miles). The brake fluid container should be almost full of brake fluid. Check the brake fluid level after at least every 5000 km (3000 miles).

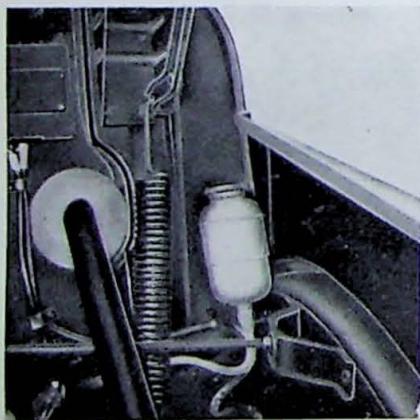


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Fig. 12—27. Hydrovac.

Top up after every 20000 km (12000 miles) with Bendix Vacuum Cylinder Oil. Add oil until it starts to run out through the lubricating hole. While this is being done, the foot brake should be released and the engine should be switched off.

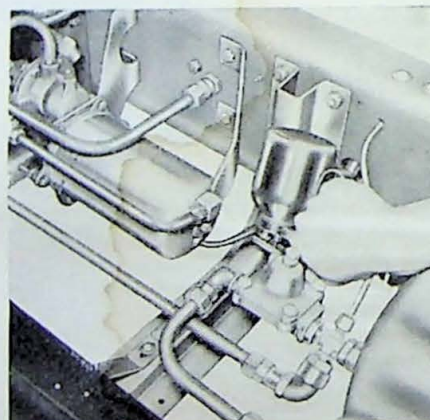
## Compressed air-hydraulic brakes



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Fig. 12—28. Brake fluid container.

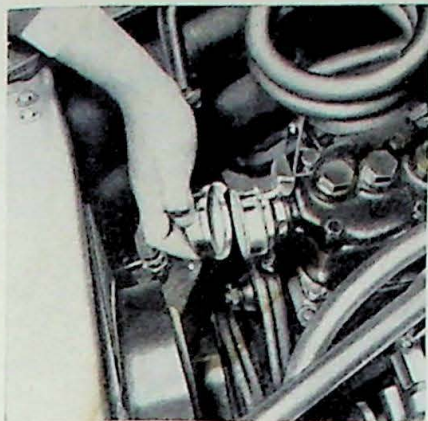
The container should be almost full of brake fluid. Check the brake fluid level after at least every 5000 km (3000 miles).



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Fig. 12—29. Airpak.

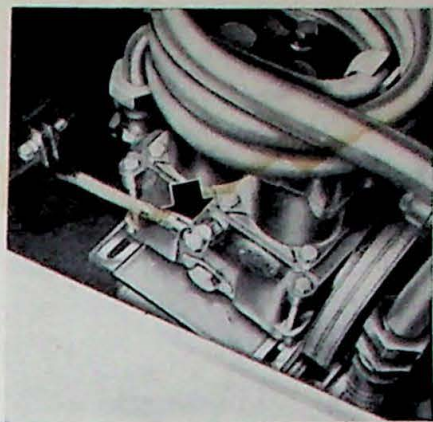
Add Bendix Vacuum Cylinder Oil after every 20000 km (12000 miles) Top up until oil begins to run out through the lubricating hole. When this is done the foot brake should be released and the engine should be switched off.



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Fig. 12—30. Compressor air filter.

Clean the filter after every 10000 km (6000 miles) using - white spirit. Moisten the filter with light oil after cleaning.



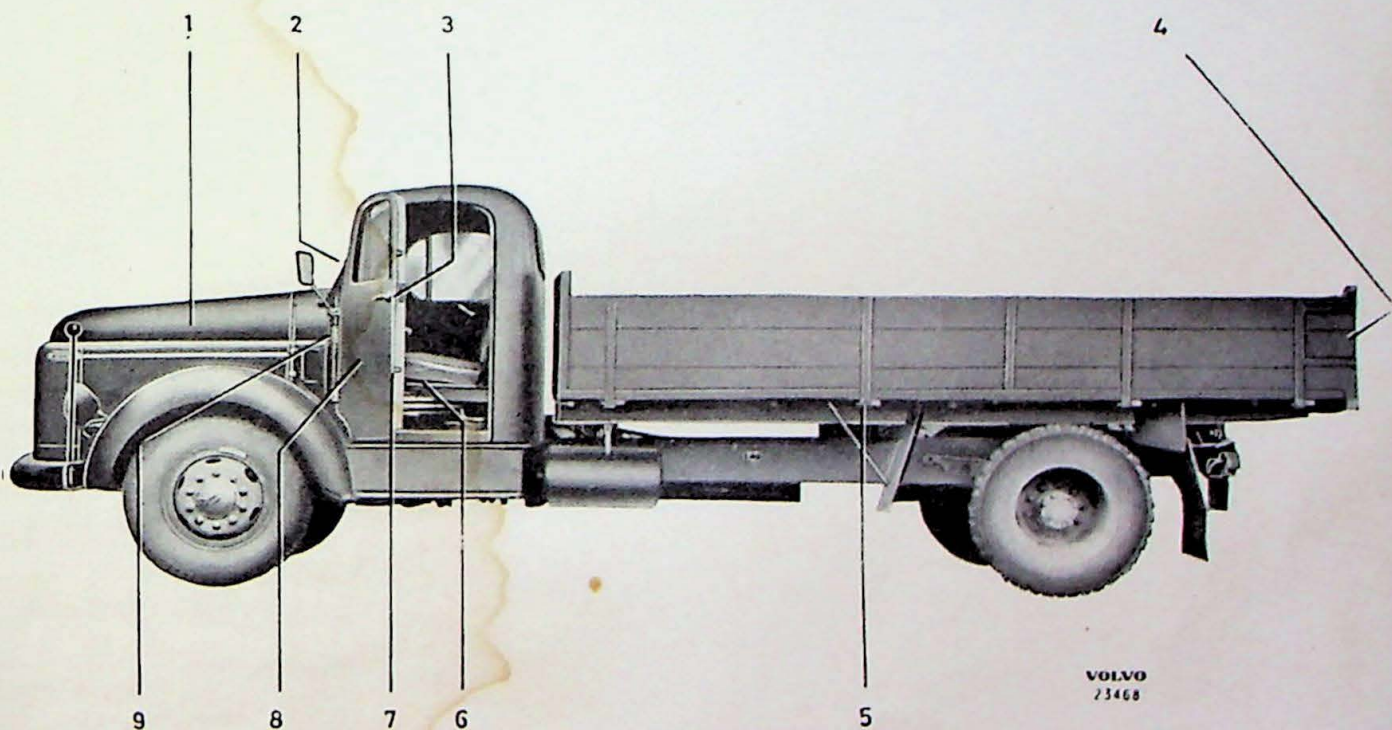
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Fig. 12—31. Oil inlet valve.

Remove and clean the compressor oil inlet valve after every 20000 km (12000 miles).

## BODY LUBRICATION

In order to avoid squeaking in doors, hood, seats and platform, the points marked with arrows should be lubricated after every 10000 km (6000 miles) with light engine oil. The surfaces on the door latches, lock assembly and striker plates should be lubricated with paraffin.



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Fig. 12—32.

1. Hood hinges and catch.
2. Windshield wiper arm attachments.
3. Door lock mechanism units.
4. Catches on platform uprights.
5. Hinges on platform uprights.
6. Seat adjuster rails and catches.
7. Surfaces on door lock mechanism units, dovetails and striker plates. Lubricate with paraffin.
8. Lock with drag link, window lifts and adjuster (Accessible after inside door panel has been removed. Lubricate only after each 20000 km (12000 miles) or once a year).
9. Door hinges.

# LUBRICATION CHART L 385

See note	Lubricate after every		
	6000 miles 10000 km	3000 miles 5000 km	1500 miles 2500 km
Spring hanger Fig. 12-7.			
Drag link Fig. 12-17.			
Steering gear See Page 12-2.			
Fuel injection pump See Page 12-1.			
Drag link Fig. 12-17.			
Front wheel bearings See Note 2.			
King pin, upper Fig. 12-8.			
King pin, lower Fig. 12-8.			
Tie rod Fig. 12-9.			
Spring shackle Fig. 12-10.			
Pedal shaft Fig. 12-16.			
Master cylinder See Page 12-6.			
Clutch shaft Fig. 12-14 and Fig. 12-15.			
Servo-brake cylinder See Page 12-6.			
Clutch control intermediary shaft Fig. 12-13.			
Forward universal joint Fig. 12-13.			
Spring hanger Fig. 12-7.			
Two-speed rear axle See Page 12-2.			
Rear wheel bearings See Note 2.			
Differential See Note 4.			
Differential See Page 12-2.			
Spring shackle Fig. 12-10.			

See note	Lubricate after every		
	1500 miles 2500 km	3000 miles 5000 km	6000 miles 10000 km
Cooling water pump Fig. 12-22.			
Spring hanger Fig. 12-7.			
Engine See Page 12-1.			
Engine See Note 1.			
Air cleaner Fig. 12-23.			
Front wheel bearings See Note 2.			
King pin, upper Fig. 12-8.			
King pin, lower Fig. 12-8.			
Tie rod Fig. 12-9.			
Spring shackle Fig. 12-10.			
Clutch release bearing Fig. 12-24.			
Transmission See Note 3.			
Transmission See Page 12-1.			
Speedometer drive cable Fig. 12-25.			
Propeller shaft center bearing Fig. 12-11.			
Center universal joint with slip joint Fig. 12-11.			
Spring hanger Fig. 12-7.			
Rear universal joint Fig. 12-12.			
Rear wheel bearings See Note 2.			
Spring shackle Fig. 12-10.			

## Symbols

Engine oil	□
Transmission oil	◻
Differential oil	○
Special chassis lubricant	⌋
Special grease	△
Light engine oil (SAE 10)	⌋
Brake fluid	◇

## Engine oil

"For service DG, DS"

Below  $-20^{\circ}\text{C}$  ( $-5^{\circ}\text{F}$ ) SAE 10  
 Between  $-20^{\circ}\text{C}$  ( $-5^{\circ}\text{F}$ ) and  $0^{\circ}\text{C}$  ( $32^{\circ}\text{F}$ ) SAE 20  
 Between  $0^{\circ}\text{C}$  ( $32^{\circ}\text{F}$ ) and  $+30^{\circ}\text{C}$  ( $90^{\circ}\text{F}$ ) SAE 30  
 Above  $30^{\circ}\text{C}$  ( $90^{\circ}\text{F}$ ) SAE 40

## Transmission oil

Below  $-20^{\circ}\text{C}$  ( $-5^{\circ}\text{F}$ ) SAE 80  
 Between  $-20^{\circ}\text{C}$  ( $-5^{\circ}\text{F}$ ) and  $+30^{\circ}\text{C}$  ( $90^{\circ}\text{F}$ ) SAE 90  
 Above  $+30^{\circ}\text{C}$  ( $90^{\circ}\text{F}$ ) SAE 140

## Differential oil

Hypoid oil  
 Below  $-20^{\circ}\text{C}$  ( $-5^{\circ}\text{F}$ ) SAE 80  
 Between  $-20^{\circ}\text{C}$  ( $-5^{\circ}\text{F}$ ) and  $+30^{\circ}\text{C}$  ( $90^{\circ}\text{F}$ ) SAE 90  
 Above  $+30^{\circ}\text{C}$  ( $90^{\circ}\text{F}$ ) SAE 140

## Steering gear oil

Viscosity SAE 90

## Oil capacities

Engine	approx. 14 l. (3 $\frac{3}{4}$ U.S. gallons)
Transmission	approx. 6.5 l. (14 U.S. pints)
Differential, standard	approx. 7 l. (15 U.S. pints)
Differential, two-speed rear axle.	approx. 10 l. (21 U.S. pints)
Steering gear	approx. 1 $\frac{3}{4}$ l. (3 $\frac{3}{4}$ U.S. pints)

## Notes

- Note 1.** Change the engine oil Spring and Fall. See under the heading Engine on page 12-1.
- Note 2.** Every other year or at least every 40000 km (24000 miles) remove and clean the wheel bearings. Clean the component parts carefully in gasoline dry them and then pack with heat-resistant grease.  
 NOTE. Do not pack too much grease into the bearing since there is a risk of it seeping out onto the brake drums.
- Note 3.** Change the transmission oil Spring and Fall or at least after every 20000 km (12000 miles). See also under Transmission on page 12-1.
- Note 4.** Change the differential oil Spring and Fall or at least after every 20000 km (12000 miles). See under the heading Differential on page 12-2.