

## CONTENTS

	Page
Lubricating points .....	2
Lubrication chart .....	3
Lubricating instructions .....	4
General .....	4
Lubricate every 1,500 km. (1.000 miles) .....	4
Lubricate every 3,000 km. (2.000 miles) .....	4
Lubricate every 12,000 km. (8.000 miles) .....	5
Lubricate every 48,000 km. (32.000 miles) .....	6
Other lubricating points .....	7

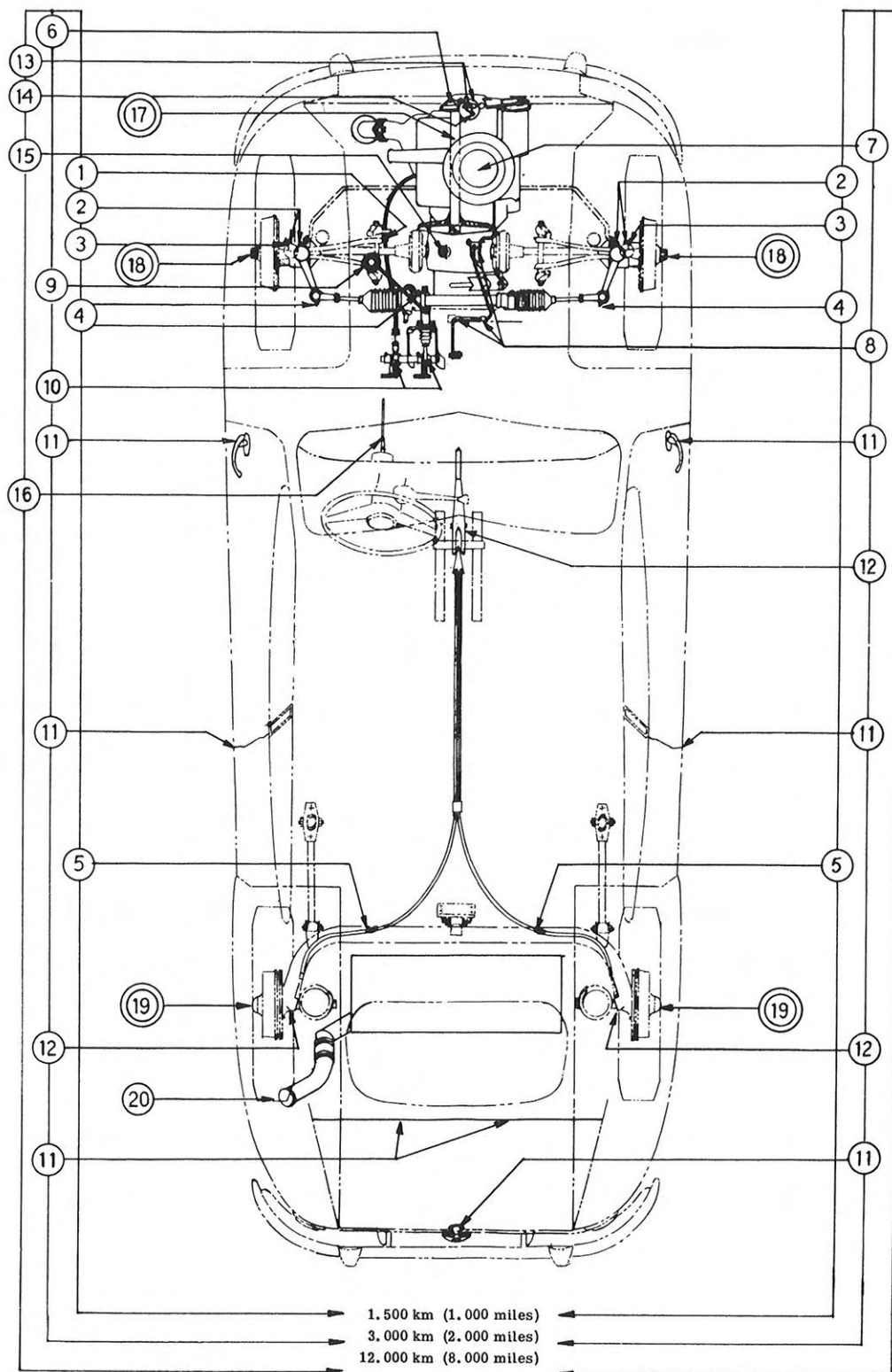


Fig. 1 Lubricating points  
Number refers to Lubrication Chart

## LUBRICATION CHART

Lubrication intervals Every:			Pos No. in Fig. 1	Lubricating points	Num- ber	Lubricant	Method
1.500 km (1.000 miles)	3.000 km (2.000 miles)	12.000 km (8.000 miles)					
X			1	Clutch cable	1	1) Universal or chassis grease	Pressure gun
X			2	Upper & lower ball joints, L.H. & R.H.	4	"	"
X			3	Outer universal joints, L.H. & R.H.	2	"	"
X			4	Steering gear	3	"	"
X			5	Handbrake cable	2	"	"
-	X		6	Distributor gear	1	"	"
-	X <sup>2</sup>		7	Air cleaner	1	SAE 10	Dip
-	X		8	Accelerator	5	Lub. oil	Oil-can
-	X		9	Brake system	1	Lockheed No. 33 <sup>3</sup>	Fill
-	X		10	Pedals	3	Lub. oil	Oil-can
-	X		11	Hinges and locks	9	"	"
-	X		12	Handbrake pivots	3	"	"
-	-	X	13	Distributor shaft	2	"	"
-	-	X	14	Distributor breaker cams	1	Bosch grease Ft 1 v 4	Grease felt
-	-	X <sup>4</sup>	15	Transmission	1	SAE 90 EP <sup>5</sup>	Fill
-	-	X	16	Speedometer cable	1	SAE 10	Oil-can
Abt 48.000 km. 32.000 miles			17	Fan shaft bearings	2	Universal or ball-bearing	Pack
" " "			18	Front wheel bearings	2	"	"
" " "			19	Rear wheel bearings	2	"	"
When filling tank			20	Engine	1	SAE 40. two- stroke oil or SAE 30	Mix 4% in fuel

1. Or cold-resistant grease
2. Or every 4 months
3. Or other high-grade brake fluid, SAE 70 R 1
4. First oil change at 3.500 - 3.000 km. (1.000 miles)  
then check every 3.000 km (1.000 miles)
5. At very low temperatures, SAE 80 EP transmission  
oil can be used.

## LUBRICATION INSTRUCTIONS

### General

The life of the car depends very much on how it is lubricated. Correct lubrication ensures smooth, quiet operation and prevents abnormal wear of moving parts. Every lubrication point should therefore be lubricated at regular intervals and with the correct lubricant which is recommended in the Lubrication Chart.

When lubricating the ball joints, the car should be jacked up so that the wheels hang free. Instructions for jacking up the car are given in Chapter 1, General.

The following information supplements the Lubrication Chart where this is considered necessary.

### Lubricate every 1.500 km. (1.000 miles)

#### 1. Clutch cable

The lubricator on the cable is located in the engine compartment to the left of the engine.

#### 2. Ball joints, spring arms

When lubricating the ball joints, the front end of the car should be jacked up so that the wheels hang free. Turn the wheel outwards when lubricating ball joints and outer universal joints.

#### 3. Outer universal joints

When lubricating, make sure that the rubber bellows around the joint does not swell abnormally. If the bellows are damaged they must be replaced immediately and the universal joint should be cleaned and lubricated with new grease. The lubricators are located on the fronts of the steering knuckle housings. Jack up the front end of the car and turn the wheel outwards when lubricating.

#### 4. Steering gear and drag rod ends

The steering gear lubricator is accessible in the engine compartment under the radiator. Make sure that the rubber bellows do not swell abnormally during lubrication, and check that they are not damaged so that grease comes out. Defective rubber bellows must be replaced. It is easier to get at the drag rod lubricator behind the wheel if the

front end of the car is jacked up and the wheel turned inwards.

Note, that the gear should be greased moderately.

#### 5. Handbrake cables

The lubricators on the handbrake cables are located in the rear axle tunnel and are easier to get at the rear end of the car is jacked up.

#### NOTE

In winter, the handbrake cables and clutch cable, and possibly also the steering gear should be lubricated with cold-resistant grease so that they will maintain their qualities even at very low temperatures.

### Lubricate every 3.000 km. (2.000 miles)

#### 6. Distributor gear

The lubricator is located on the left-hand side of the engine immediately behind the crankshaft pulley. Remove the old grease which comes out through the plastic hose during lubrication.

#### 7. Air cleaner

The filter, which is combined with the cover of the intake muffler, should be cleaned in kerosene. If compressed air is available, the filter should also be blown clean, after which it should be dipped in oil, SAE 10. Allow superfluous oil to drain off and wipe the cover clean before installing the filter. Wipe the inside of the intake muffler and check that the felt and rubber rings which seal against the cover and filter are undamaged. In summer, when the car is used on very dusty roads, the filter should be cleaned and oiled more frequently, say every 1.500 km. (1.000 miles).

#### 8. Accelerator

If the rubber roller bearing is noisy, remove roller and grease the bolt moderately.

#### 9. Brake system

The brake fluid container should always be kept well filled. Check the level in the container every 3.000 km. (2.000 miles) and when bleeding the hydraulic system. At the same time, make sure

that the holes in the cover are not clogged. Follow the recommendations in the Lubrication Chart regarding brake fluid.

#### 10. Pedals

Lubricate the brake and clutch pedals at the two holes in the pedals and at the pivot for the master cylinder push rod.

#### 11. Hinges and locks

The nine lubricating points are:

Four door hinges, two door locks, two hinges and one lock for trunk lid. Lock cylinders should be lubricated with a cold-resistant lubricant.

#### 12. Handbrake pivots

one inside each rear wheel brake shield.

### Lubricate every 12.000 km. (8.000 miles)

#### 13. Distributor shaft

is lubricated by means of the lubricator on front of distributor body, but a felt in the shaft end under the rotor should also be impregnated with oil.

#### 14. Distributor breaker cams

The operation and life of the distributor depends on the care with which the lubrication instructions are followed. When the distributor is reconditioned (which should be done by an approved workshop), it should be lubricated as follows.

All lubrication of the distributor should be done sparingly.

Lubricating point	Method	Grease Bosch
Breaker arm	Coat	Ft 1 v 4
Breaker arm bearing	Grease bearing pin	Ft 1 v 8
Breaker arm guide shoe	Grease sides of guide shoe	Ft 1 v 4
Breaker arm spring	Coat	Ft 1 v 4
Breaker cams	Rub grease into felt	Ft 1 v 4
Spring for lubr. felt	Coat	Ft 1 v 4
Camshaft bearing	Grease	Ft 1 v 8
Slot of eccentric screw	Grease	Ft 1 v 4
Advance unit	Coat all surfaces and grease bearings, springs and spring attachments	Ft 1 v 4

#### 15. Transmission

The transmission has one filler and one drain plug. Check oil level every 3.000 km. (2.000 miles) by unscrewing level plug and inserting a wire through the hole. If the oil level is lower than 5 mm. (0.2 in.) below the hole, add oil until it comes out through the level opening.

Note: Never mix different types of oil.

The transmission oil should be changed for the first time after 2.500-3.000 km. (1.800-2.000 miles). Afterwards, the transmission should be filled with new oil after every 12.000 km. (8.000 miles) or every fall and spring. SAE 80 EP trans-

mission oil can be used in winter.

Run the car for 15-20 min. before draining off the old oil. Flush the transmission and fill with new oil until it comes up to the level opening. The total capacity of transmission is about 2 litres (1/2 U.S. gall.)

#### 16. Speedometer cable

Loosen the cable sheath inside the speedometer and drop a moderate amount of oil into the sheath. Then screw on the sheath and wipe it off to prevent oil stains on clothes.

## Lubricate every 48.000 km. (32.000 miles) or during reconditioning

### 17. Fan shaft bearings

The fan shaft bearings should be packed with grease during reconditioning of engine when the parts are dismantled and inspected. If only the fan shaft stand is to be removed for lubrication, proceed as follows:

1. Remove V-belt after releasing its tension by unscrewing the generator adjustment and attachment screws.
2. Remove the fan shaft stand, which is attached to the cylinder head by four bolts.
3. Remove the nuts and spring washers from the ends of the shaft. Remove pulley and fan and collect the woodruff keys.
4. Check ball bearings for play or binding.
  - a. If a bearing is to be changed, the retainers and seal washers in both ends of the tube must be removed and the shaft be pressed out towards the pulley end. Before assembling, pack the bearings with grease and remove old grease from inside the tube.
  - b. If no part is to be replaced, fill the space between shaft and seal ring with grease, pressing it in with the fan or pulley hub. Note that the woodruff key must be in place. This procedure can be repeated a few times to ensure a satisfactory lubrication.
5. Fit fan and pulley and tighten the nuts. Don't forget the spring washers and woodruff keys.
6. Install the stand, fit the V-belt and adjust its tension. See Chapter 2, "Engine".

### 18. Front wheel bearings

Each front wheel is carried on a double ball bearing. To pack a front wheel bearing with grease, proceed as follows:

1. Make sure that the undersides of the fenders are thoroughly cleaned before starting work. Remove all dirt so that it cannot drop into the bearings.
2. Loosen the wheel bolts and unscrew the nut on the drive shaft after removing the cotter pin.

3. Jack up the car and remove the wheel.
4. Remove the wheel hub with puller Saab 92-3, see Chapter 8, Fig. 19.
5. Clean and wash all accessible parts. Remove old grease.
6. Replace any damaged parts and pay special attention to the shaft seals which must be undamaged. See Chapter 8, Fig. 17.
7. Pack grease into the ball bearing from outside. This is facilitated if the drive shaft is rotated at the same time.
8. Check that the sliding surface against the outer shaft seal is not damaged. Grease the sliding surface and fit the wheel hub. Make sure that the two woodruff keys are kept in position on the shaft and that they are not pushed away by the hub.
9. Screw on the crown nut and mount the wheel.
10. Lower the car and tighten nut and hub bolts. Tighten crown nut with a torque wrench and lock it with a cotter pin.

### 19. Rear wheel bearings

Each rear wheel is carried on two ball bearings, which must be removed for being packed with grease. Proceed as follows:

1. Jack up car and remove wheel. Clean inside of fenders and wheel housing walls from sand and dirt. Remove dust cap over crown nut with a screwdriver.
2. Remove cotter pin and unscrew the crown nut.
3. Make sure that handbrake is fully released.
4. Pull off wheel hub with puller Saab 92-3, see Chapter 7, Fig. 22.
5. Unscrew the nut in which the shaft seal is located with the tool Saab 92-19. First open nut lock with hammer and punch.
6. Press out the two bearings towards outside of wheel hub with the tool Saab 92-34, see Chapter 7, Fig. 26.
7. Clean and wash all parts thoroughly and replace any damaged one. Pay special attention to shaft seal. See Chapter 8, Fig. 18.
8. Pack ball bearings with grease.
9. Press in the larger bearing using tool Saab 92-33.



10. Tighten nut with shaft seal and lock the nut securely.

11. Fill grease into wheel hub so that the space between bearings is half filled.

Note that the space between the bearings must be only half filled with grease. If too much grease is inserted it may penetrate into the brake drum and spoil the brake linings.

12. Insert the spacer and press in the smaller bearing with tool Saab 92-34.

13. Check that the seal surface on the rear axle is undamaged, and grease it with ball bearing grease.

14. Fit the wheel hub, tighten the crown nut with a torque wrench and lock it with a cotter pin. Wedge the dust cap into position with tool 92-37.

15. Mount the wheel and lower the car. Tighten the wheel bolts.

## 20. Engine

The engine is lubricated by the fuel which is mixed with oil. The mixture ratio should be 1:25, that is 4 %. It is important that only first class oil with the correct viscosity is used. Follow the recom-

mendations in the Lubrication Chart and check that the correct mixture ratio is always used. If ready-mixed fuel is not available, the oil and gasoline must be mixed before filling it into the tank, unless the fuel tank is fitted with a built-in mixing device.

It is not recommended to use so-called premium oils, since these may cause excessive carbonizing in a two-stroke engine. Use straight mineral oil of viscosity SAE 40 or two-stroke oil but also SAE 30 may be used.

The gasoline should have a rather high octane value.

## 21. Other lubricating points

The seat rails should be lubricated with chassis grease if they are getting stiff. Wipe off all superfluous grease so that it does not spoil passengers' clothes.

The felt bushing at the gear shift rod bearing should be lubricated lightly with paraffin oil whenever it is removed.

Lock plates and plungers should be lubricated from time to time. Use paraffin wax or stearine which is not sticky.