

# Air Intake Silencer and Fuel Feed Pump

Job No.
09-5

## A. Air Intake Silencer

The air intake silencer cleans the inlet air for the engine and muffles the intake noises. We distinguish between the following types of air intake silencers:

- I. Dry air filters with replaceable paper element (micronic or pico element).
- II. Wet air filters with oil-wetted cartridge elements (steel mesh or rubberized coir in the filter top).
- III. Oilbath air filters with oil-wetted cartridge elements (steel mesh or rubberized coir in the filter top) and a certain amount of oil in the filter base (design for tropical countries).

Careful servicing of the air intake silencer is of particular importance for engine performance and engine service life. Clogged air-intake silencers reduce engine performance, increase fuel consumption, and increase the wear and tear of pistons and cylinders.

When reassembling the filters make sure that the seals are properly seated. Swollen or deformed seals should always be replaced.

### I. Dry Air Filters

Models 180 a, 180 b, 220 S, and 220 SE have a dry air filter with paper insert like Model 190 (Fig. 09-5/1).

This paper element (micronic or pico element) must be cleaned after every 6000 km by lightly tapping it on an even surface and by blowing it out at an angle from the outside and from the inside with compressed air at a minimum pressure of 5 atm. (Fig. 09-5/2). The filter housing top and base must also be cleaned to remove the dust that has accumulated.

After a mileage of 48 000 km the paper element must be replaced.

If the car is driven mainly or regularly in dusty country the element must be cleaned at more frequent intervals and must be replaced after a shorter mileage.

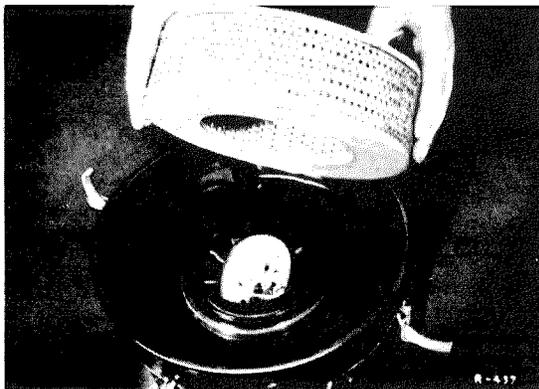


Fig. 09-5/1

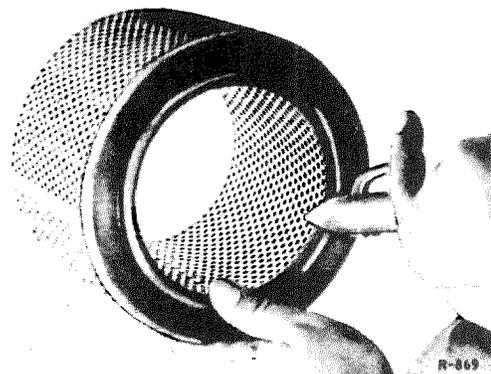


Fig. 09-5/2

When installing the filter housing top, check whether the seal is properly seated in the filter housing top and base. Swollen or deformed seals should always be replaced.

If on Models 180 a and 180 b the air-intake silencer was removed for cleaning purposes, make sure when placing it in position on the carburetor – as described for Model 190 – that the rubber sleeve is not jammed between carburetor and filter housing. On Model 220 S the filter housing is fastened to the carburetor by means of snap catches. Make sure that the air-intake silencer is properly seated and that the snap catches fit tightly.

On Models 180 a and 180 b the filter top can be installed in two positions, i. e. in the summer position (Fig. 09-5/3) and in the winter position (Fig. 09-5/4). These two positions are marked on the filter top by direction arrows and inscriptions. In the summer position the engine draws in clean air from in front of the engine and in the winter position it draws in hot air from the engine compartment. This prevents icing up of the carburetor nozzle system at very low temperatures.

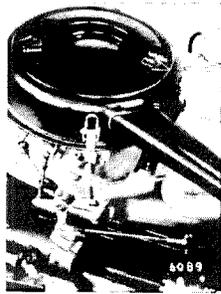


Fig. 09-5/3

Summer position



Fig. 09-5/4

Winter position

**Note:** On Models 180 a and 190 the diameter of the connecting branch for the air vent line of the engine ventilating system has been reduced from 5.5 mm to 4.5 mm  $\phi$ . If increased oil deposits are found on the paper element in the case of older cars, this condition should be remedied by subsequently pressing a nozzle into the connecting branch. This nozzle with a diameter of 4.5 mm, an outside diameter of 13.5 mm and a length of 10 mm should be made of aluminum. It has proved advisable to give the outside diameter of the nozzle a slightly conical shape in order to obtain proper seating. The paper filter element should be replaced at the same time.

## II. Wet Air Filter

Models 190 SL, 220 a, and 219 are equipped with a wet air filter. In this type of filter the filtering action is produced by the oil-wetted cartridge installed in the filter top (Fig. 09-5/5).

This filter must be cleaned after every 6000 km when the car is being serviced.

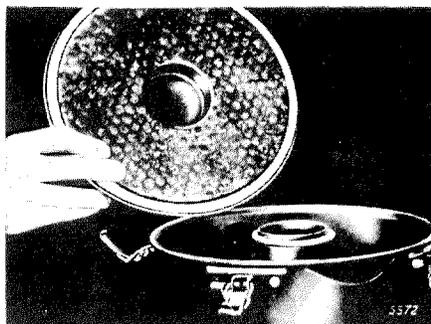


Fig. 09-5/5

The wet air filter can only be effective if the coir element is cleaned at regular intervals and if it is always oiled. If these well-known servicing instructions are neglected, the intake air can pass the filter without actually being cleaned at all and there is a danger that the abrasive effect of the dust particles will cause premature wear of the cylinder walls.

The servicing instructions are intended for **normal** conditions. It goes without saying, therefore, that both lubricating and cleaning should be carried out at more frequent intervals if the car is regularly exposed to a great deal of dust.

The element of the wet air filter should be washed in clean gasoline, Tri, P 3, kerosene or diesel fuel and should then be blown out with compressed air. In the case of Models 220 a and 219 the filter element should then be **evenly soaked** in about 120 cc and in the case of Model 190 SL in about 60 cc engine oil which can be sprayed on, poured on or applied by immersion. The filter cover should only be screwed on when the oil has fully penetrated into the filter element.

On Models 220 a and 219 make sure when installing the filter top and when tightening the snap catches that the air filter supports are positioned in the mounting ring of the filter base.

If, in the case of Models 220 a and 219, the air-intake silencer was removed from the carburetor for cleaning purposes, make sure when reinstalling it that the rubber sleeve is not jammed between the air intake silencer and the carburetor.

On Model 190 SL the air-intake silencer is screwed to the cowl; it is not necessary to remove the filter base for cleaning purposes.

### III. Oil Bath Air Filter

The engines of Models 190 SL, 220 a and 219 can be equipped with an oilbath air filter as optional equipment.

The filtering effect of oilbath filters is produced by the cartridge in the filter top and in addition by the oil thrown up by the air stream in the filter base (Fig. 09-5/6).

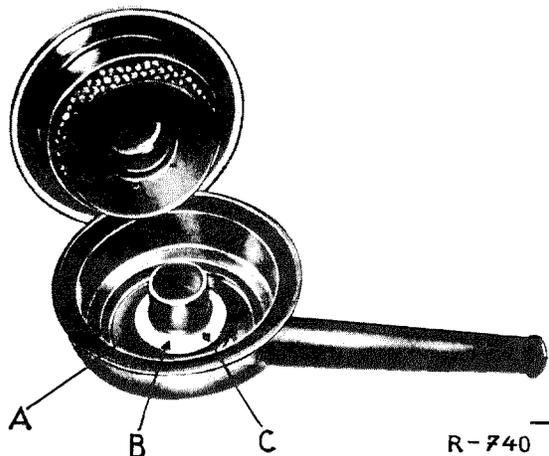


Fig. 09-5/6

Oilbath air filter  
for Models 220 a and 219

A = Oil reservoir  
B = Maximum oil level  
C = Standard oil level

It is impossible to give general instructions about intervals between oil replacement and filter cleaning since this depends to a large extent on local dust conditions. As a matter of principle the oil in the oil reservoir (A) of oilbath air filters should be replaced and the filter top cleaned when the oil begins to become dark and thick with the dust removed from the air. In the case of cars driven exclusively on very dusty roads or in tropical countries this may be necessary after a few weeks or even after a few days. In order to ensure that the oil is replaced whenever required, it is advisable **to check the oilbath daily when the car is driven on very dusty roads**, whereas a weekly check will be found sufficient under ordinary circumstances. In order to check the oil loosen the snap catches and remove the cover together with the filter element.

**Please note: Fill up engine oil only up to the mark "Normal-Ölstand" (standard oil level) (C) and never beyond it.** When the oil has been topped up, install the cover together with the filter element and clamp it down by means of the snap catches.

**Caution: Under normal circumstances there is no need to top up with oil since properly proportioned and properly serviced filters do not lose oil! The oil level must not be checked with the engine hot, i. e. not until at least one hour after switching off the engine.** The oil level can only be checked properly when the oil has run back unto the oil reservoir (A) from the filter element.

## **B. Disassembly and Repair of Fuel Feed Pump**

On Models 180 a, 180 b, 190 SL, 220 a, 219, and 220 S the checking and repair procedures for the fuel feed pump are the same as described for Model 190. The fuel feed pump, the jointing flange with tappet, the insulating flange and the gaskets are the same on all models and are interchangeable. The pump capacity is the same as given in the Workshop Manual for Model 190.

Model 220 SE has an electric fuel feed pump (see Workshop Manual Passenger Cars as from August 1959, Job Nos 00-15 and 07-10).