

Fig. 8 illustrates the filter-agglomerator unit where the smaller water droplets and the small abrasive particles remaining after preliminary sedimentation are removed. Since the desired properties of agglomerator and filter elements are similar, a single filter element is used for both functions. Fuel entering from the top of the filter passes through the filter-agglomerator element into the sedimentation chamber in the base of the transparent bowl. Particles of solid matter are filtered out in the normal manner and are retained in the filter element. Droplets of water, forced through the pores of the filter, agglomerate and form large drops which separate from the fuel by sedimentation and accumulate in the base of the housing. The fuel, free from solid matter and water droplets, then passes upwards through the element centre tube to the outlet connection in the unit cover. The accumulated water, visible within the transparent bowl, may be drained off by unscrewing the drain plug provided.

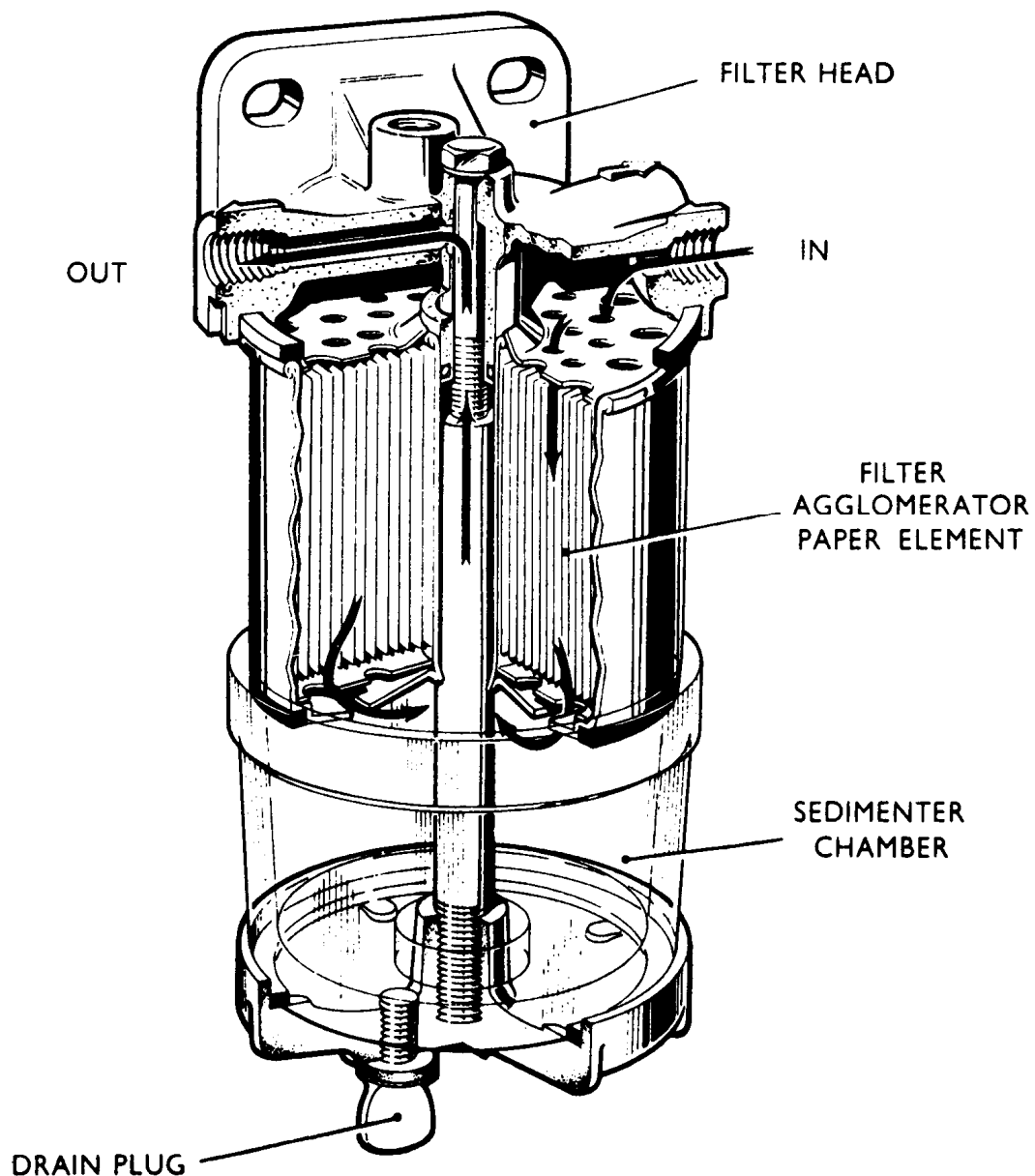


Fig. 8. Filter-Agglomerator-Sedimenter Type FAS.

## **MAINTENANCE AND SERVICING**

Absolute cleanliness is essential when carrying out periodical inspection and servicing of C.A.V. fuel filters. Most troubles with fuel injection equipment can be traced to dirt in the fuel, and it is essential when opening fuel lines to atmosphere that the line ends are sealed off to keep out dirt and grit.

The drain plug fitted to the filter bowl should be removed periodically and any impurities which have collected, drained off. The engine manufacturer's instruction manual should be consulted to ascertain the periods recommended for this draining operation.

Filter choking is usually due to waxy deposits from the fuel. If choking occurs in an unreasonably short time this may be caused by a contaminated fuel supply. If the source of this contamination is in the engine fuel system we recommend that the fuel tank and supply lines are cleaned before continued operation.

Paper elements cannot be cleaned and when choked must be discarded.

In view of the widely differing conditions of operation which have to be catered for, precise instructions for servicing intervals cannot be stated for paper elements, and operators are advised to follow in the first place the recommendations laid down in the engine manufacturer's instruction book.

The period at which it will be found necessary to change the filter element will vary according to the type of fuel used, bulk storage installation, settling or pre-filtering before filling the vehicle tank and the local conditions under which the engine concerned is working. This may easily be as short as three months or as long as twelve, but it is not expected that it will be outside this period although exceptional circumstances may make it so. In view of the possibility of premature choking by unusually waxy fuel, we suggest that a spare element is carried in the tool box until a suitable servicing interval can be determined.

Draining off accumulated water, sludge and solid matter from the bases of the Filtrap units may be done at any convenient interval when the water or sludge level visible inside the transparent bases rises to a pre-determined point. On no account should the water level be allowed to rise to the top of the transparent section in either the S.S. unit or the F.A.S. unit.

Ideally, bulk storage of fuel should be so arranged that each delivery of fuel is allowed to stand for a few days before use. This will allow a large proportion of the solids which are suspended in the fuel to settle to the bottom of the tank, and this sedimentation is an important factor in prolonging the service life of the filter element.

If the fuel injection equipment is to function efficiently interference with fuel filters should be forbidden and filters should be disturbed as little as possible.

## F.A.S. UNIT

In the following text the numbers in brackets refer to Fig. 12.

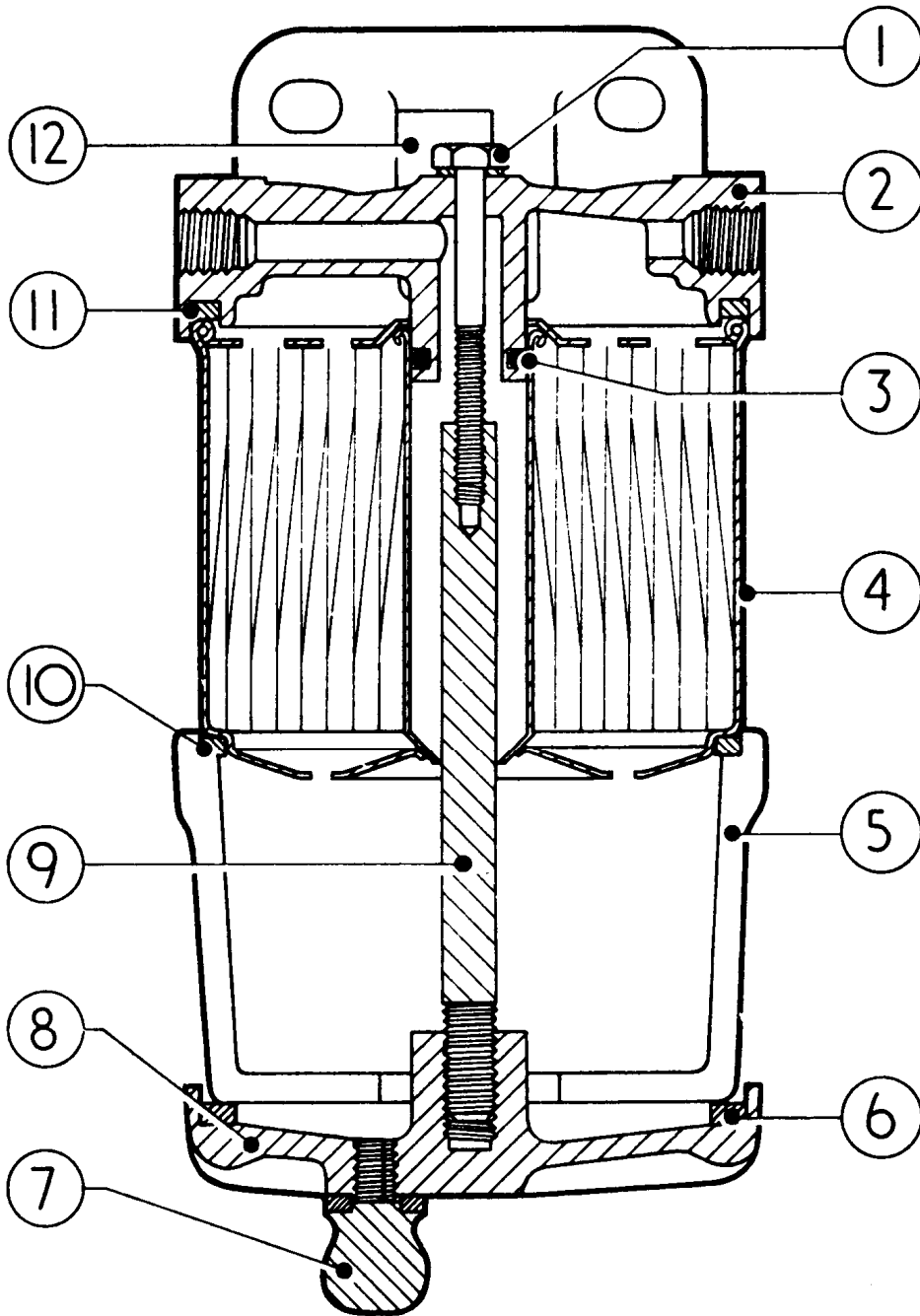
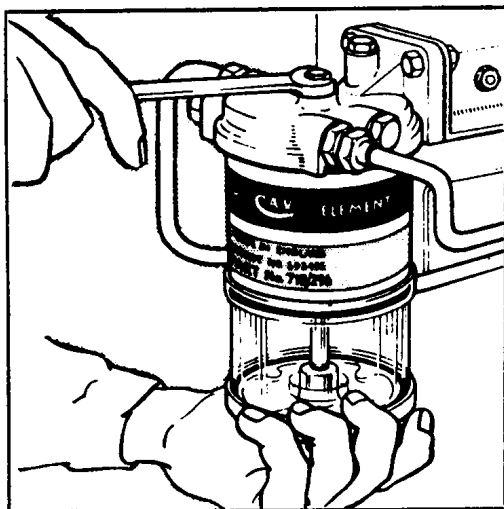
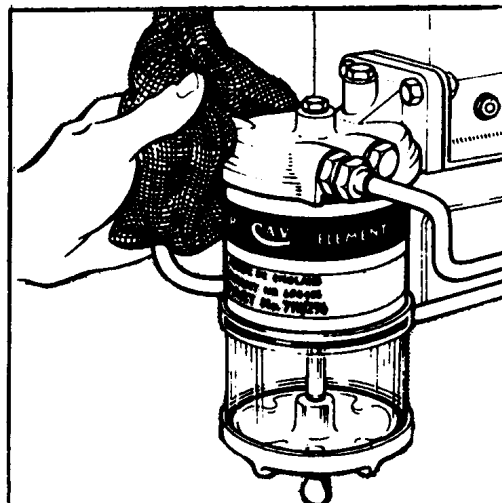


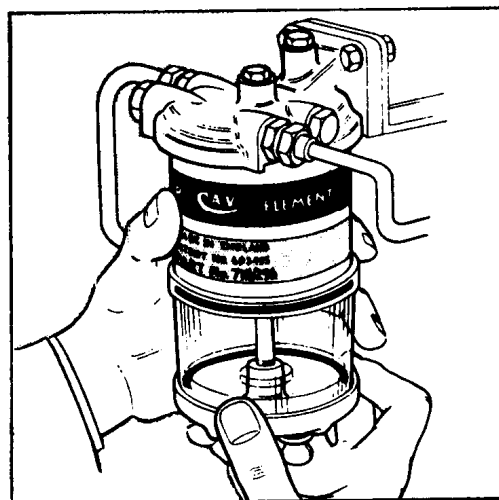
Fig. 12. Agglomerator, Type F.A.S. in section.

1. Clean off all external dirt from the unit before attempting to service. Unscrew the thumb-screw in the base and drain off accumulated water and sludge.

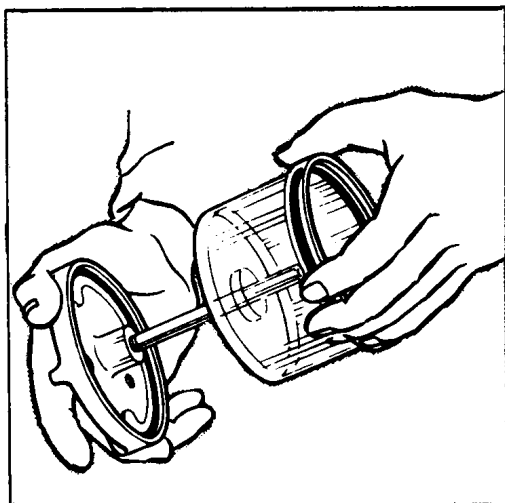


2. Unscrew the centre bolt (1) and at the same time hold the base of the unit to prevent it rotating.

3. Release the filter element (4) complete with glass bowl (5) and base (8) by pulling the element downwards and at the same time turning it slightly so that it comes free from the internal "O" ring (3).

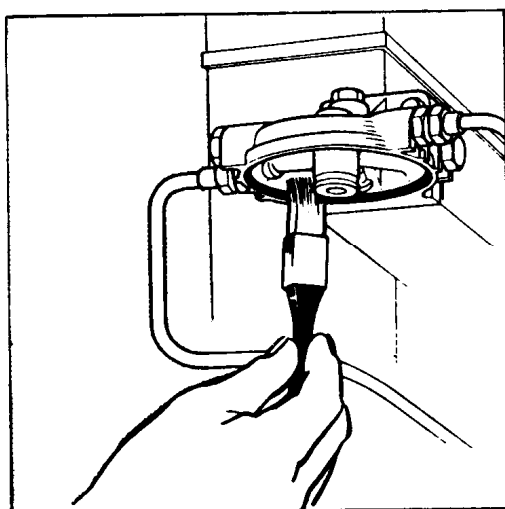
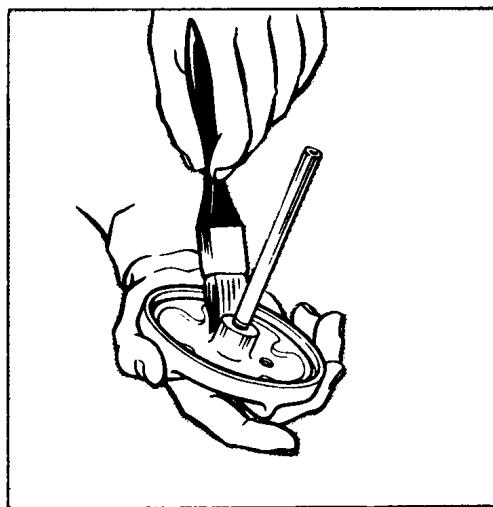


4. Detach and discard the element.



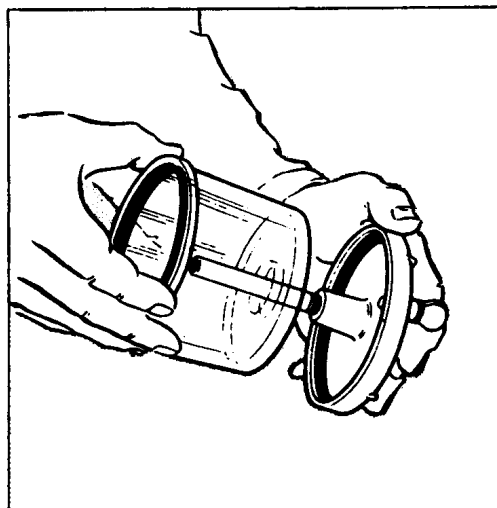
5. Separate the glass bowl (5) from the base (8). Detach and inspect the central sealing ring (10) and the lower sealing ring (6) for damage. Renew any imperfect ring.

6. Clean out the glass bowl and base. Complete the cleaning by rinsing with clean fuel oil.

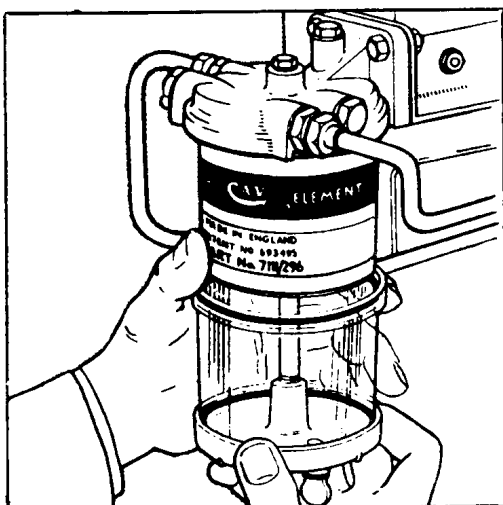
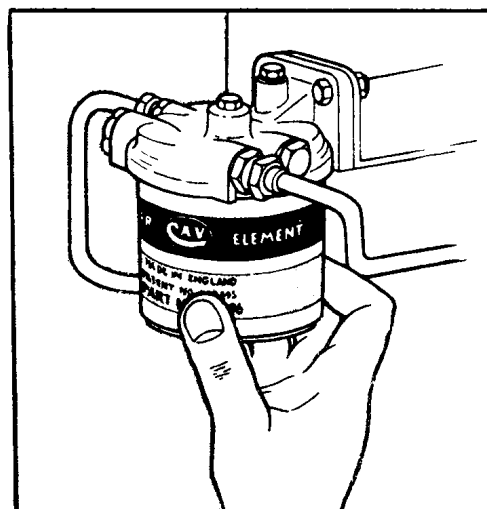


7. Clean the unit head and inspect the upper sealing ring (11) and "O" ring (3) for damage. Renew any imperfect sealing ring. Replacement sealing rings may be obtained from the suppliers of the filter element.

8. Assemble the base (8) and the glass bowl (5) after ensuring that the central (10) and lower (6) sealing rings are correctly positioned.



9. Check that the upper sealing ring (11) and the "O" ring (3) are correctly positioned in the head and fit the new element to the head. Turn the element slightly when fitting so that it slides easily over the "O" ring.



10. Offer up the assembled base and bowl to the head and element. Guide the centre stud through the centre tube of the element and engage it with the centre bolt. Make sure that the rims of the element, glass bowl and base are seating correctly before tightening the centre bolt. Do not overtighten the centre bolt in an attempt to cure leaks.

The bolt should be tightened to a figure of 6-8 lb ft torque (0.830-1.106 kg m). Replace and hand tighten drain thumb-screw.

Turn on the fuel and vent the system in accordance with the engine manufacturer's handbook and at the same time inspect the system for leaks. It is important that this operation be carefully carried out otherwise air trapped in the fuel supply side will prevent efficient working. If a handbook is not available proceed as follows:—

For systems fed by a fuel feed pump and with a gravity vent valve, pressure relief valve, or a permanent air vent orifice fitted to the F.A.S. unit, it is only necessary to operate the feed pump priming lever until air-free fuel oil appears from the vent plug.

If the SS unit is on the suction side of the feed pump do NOT vent this unit.

Twin F.A.S. units should be vented as follows:—

Series flow: Vent both filters at the same time.

Parallel flow: Vent each filter individually.

After venting the units the fuel injection pump must be vented.

**NOTE:—**Do not overtighten the centre bolt in an attempt to cure any leaks appearing at the sealing rings but dismantle the unit and examine the sealing faces and rings for damage. Overtightening the centre bolt beyond the recommended torque figure may permanently distort the base or filter element.