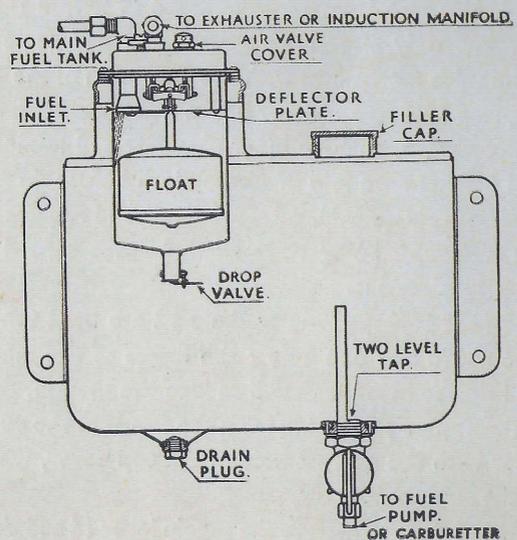


## PARTS OF INTERNAL MECHANISM

1. Top cover c/w deflector plate and Supports.
2. Suction Elbow c/w nut and nipple for  $\frac{3}{8}$ " o/d pipe.
3. Fuel Elbow c/w nut and nipple for  $\frac{3}{8}$ " o/d pipe.
4. Gauze Filter Cone.
5. Hexagon Union Nut for  $\frac{3}{8}$ " pipe.
6. Nipple for  $\frac{3}{8}$ " pipe.
7. Clamp Screw.
8. Clamp Plate.
9. Domed Air Vent Cover.
10. Spring Washer for Clamp.
11. Top Cover Screw.
12. Cork Washer for top cover.
13. Air Valve with rocker and pivot.
14. Suction Valve with rocker and pivot.
15. Valve Lever.
16. Float Toggle Lever.
17. Screw and Nut for Valve Lever.
18. Valve Pivot  $\frac{7}{16}$ " long.
19. Float Pivot  $\frac{1}{2}$ " long.
20. Valve Spring.
21. Float Link.
22. Float complete with stem.
23. Inner Tank with drop valve.
24. Drop Valve complete.

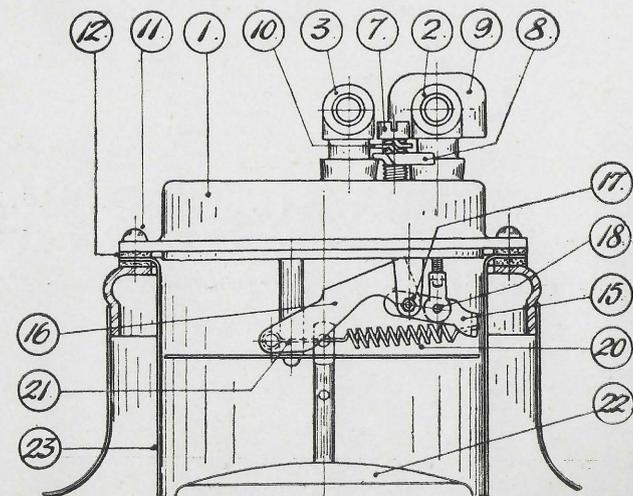
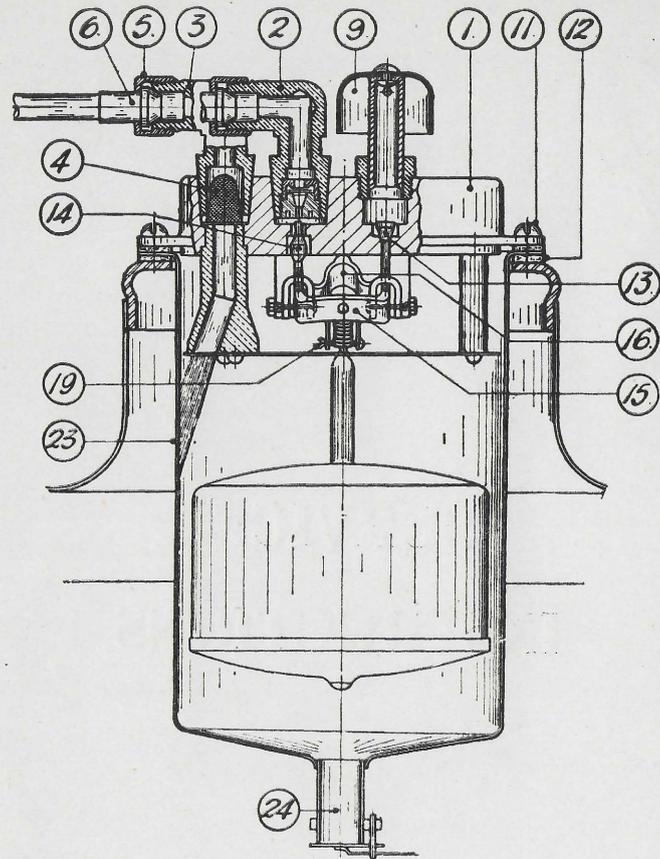


# The PATENT Autovac VACUUM FUEL FEED APPARATUS

## SERVICE INSTRUCTIONS

AUTOVAC MANUFACTURING Co. Ltd.  
HEATON NORRIS . . . STOCKPORT

Telephone : STOCKPORT 4232    Telegrams : 'AUTOVAKING, STOCKPORT'



## DESCRIPTION

The Autovac is divided into two chambers, the inner or vacuum chamber 23 being connected to the exhauster 2 and main fuel tank 3 and the lower or outer tank to the engine supply.

Communication between the two tanks is by the drop valve 24. The suction from the exhauster creates a partial vacuum in the inner tank 23 thus closing the drop valve and drawing up fuel from the main tank. As the fuel flows in, the Float 22 rises and operates two valves. One valve 14 cuts off the suction, the other 13, admits air. The admission of air destroys the vacuum, releases the drop valve, and allows the fuel to flow into the outer tank. The outer tank is always open to the atmosphere through the air vent 9 and the fuel feeds the engine by gravity.

The Autovac is fitted with a Patent Self-draining Float 22. The Float Stem is hollow, and has two holes drilled through it, one inside the Float and one outside. If fuel enters the Float through a leak it is automatically evacuated through the stem during the suction period and, during the period of atmospheric pressure, air flows into the body of the Float, enabling it to function as when air-tight.

## MAINTENANCE

Foreign matter in Filter 4 and sediment trap at base of outer tank. To remove Filter, disconnect fuel supply pipe from elbow 3 and slack off clamp screw 7. Sediment from the fuel collected at the base of the outer tank can be drawn off by removing the Hexagon Plug.

The pipe connections 5 must be tight and free from leakage.

The screws 11 holding down the top cover must be tight.

The elbows must not be reversed, the one with the internal valve 2 is the suction elbow.

Clean any extra filters in the supply system.

The valves 13 and 14 are pinned and sweated into position, and require no subsequent adjustment.

## SHOULD ENGINE STOP & AUTOVAC IS SUSPECTED

Turn off Tap and disconnect engine supply pipe at Autovac, next open Tap to see if you get a flow of fuel, making sure at the same time that the Tap is not choked with foreign matter. If Autovac is found to be empty then it, or connecting pipes from exhauster or supply, can be suspected.

Disconnect main fuel pipe at Autovac and try to lift fuel by sucking on this pipe (blowing is a false test), if fuel cannot be lifted by this method, then examine pipe for cracks or restrictions.

If no faults are found in main fuel pipe, then make a test on suction pipe by disconnecting at Autovac (this will have to be made by running the engine, in which case a small supply of fuel will have to be put into the Autovac, so that the engine can be fed by gravity while running) when engine is running, test for suction by placing your finger over the pipe, if no pull is felt then suction pipe should be examined for cracks or restrictions.

If after the pipes have been tested and nothing is found wrong, then the Autovac can be suspected, in which case we recommend a replacement or the apparatus in question taken to a service depot for overhaul. We find that the chief cause of failure is accumulated wear, but only after long service and our remedy is to change all the valve mechanism with the exception of the float.

Replace spring 20 if stretched or broken.

To test drop valve, remove inner chamber and immerse drop valve in fuel making sure face of disc is clean before doing so. If fuel enters tube fairly quickly, valve is leaking and requires renewing. When Autovac is being re-assembled—take careful note of the following instructions.

Two reinforced cork packing washers 12 are used for the top cover. One above and one below the flange of the inner tank. Air leakage into the inner tank will reduce the suction.

The small vent pipe projecting from the flange of the outer tank must register with the correct hole in the top cover, which connects with the air vent 9.

The link 21 holding the float to the toggle lever 16 and the spring 20 must be looped into the top hole in the float stem.

If it should be necessary to prime the Autovac by hand, pour in about one pint of fuel—if the Autovac has no filler to the outer tank remove fuel elbow and prime through fuel inlet.