



Safe & Sound

Velcon Filters Give You More of Both

To keep your system safe, watch for these problems. To keep your system sound, pay attention to these components.

TROUBLESHOOTING COMMON PROBLEMS IN YOUR FUEL FILTRATION EQUIPMENT:

1. The Differential Pressure Gauge keeps track of the pressure difference between your filter/separator vessel's inlet and outlet, telling you when to change filters. Watch for these problems:

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A sluggish direct-reading gauge may not show correct differential pressure. In a direct-reading gauge like a Gammon Gauge, install a new filter at the top of the gauge. If this doesn't help, dismantle the gauge and polish the piston and the inside of the glass cylinder with a Scotch Brite® pad. Don't use any other material.

A fluctuating needle on a dial-type gauge is hard to read and may be a precursor to a damaged gauge. Install pressure snubbers on the lines leading to the gauge.

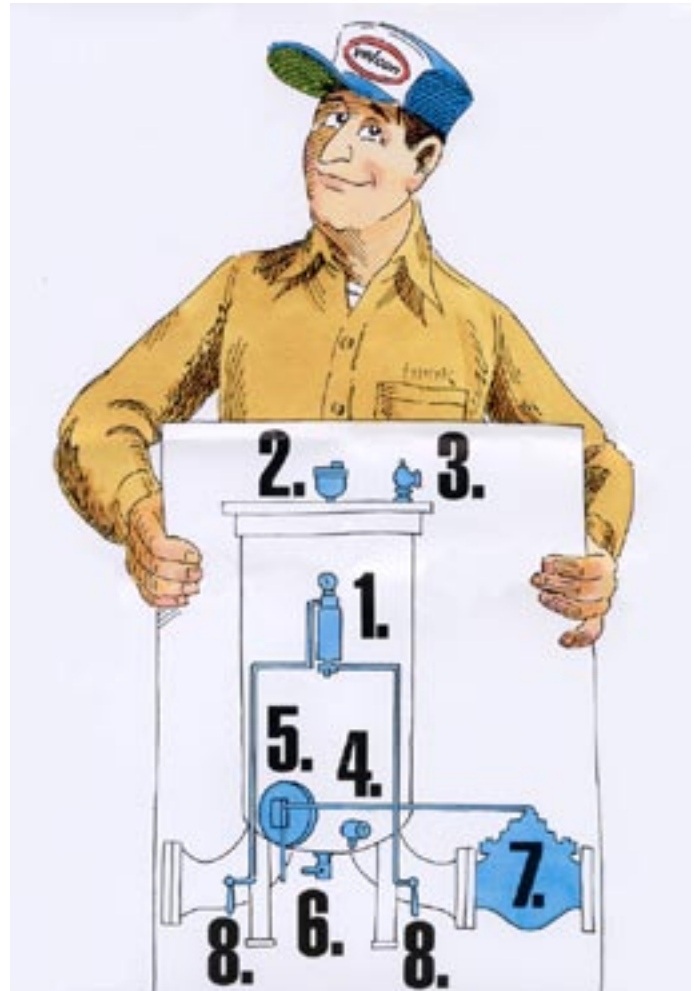
If the needle on your dial gauge has come off or the pointer doesn't return to zero, your gauge has failed and you might have burst or collapsed elements. Replace the gauge and the elements and keep the problem from happening again by putting in adequate-sized surge suppressors.

2. The Automatic Air Eliminator allows trapped air to escape when you're filling the vessel, which prevents interior fires.

If it leaks fuel continuously, the valve pin isn't seating in the seal washer. If the air eliminator has a removable cover, order an overhaul kit.

If it won't release air in cold weather, try tapping it gently on the outside. This should release the internal float, which could be frozen in the closed position.

If it won't release air fast enough, tell your Velcon distributor the actual maximum system operating pressure. You can probably get a seal with a larger opening.



3. The Pressure Relief Valve should be set to keep the system pressure at a safe level.

A continuous fuel leak means the seat seal is damaged. Often it can simply be replaced. Check with the manufacturer. Also, the pressure setting of the valve may not be as high as it should be. Have the valve tested and reset it at the design pressure of the system.

4. The Sump and Drain Heaters keep water from freezing in the system in cold climates.

If the vessel interior is warm when you change filter elements, you forgot to turn off the heater before you drained the vessel. Bad idea!

If the heater doesn't work when the temperature drops to 35°F, try these three things:

- **Reset the internal thermostat, if you have one.**
- **Make sure the heater is hooked up to the right voltage.**
- **Slowly turn the thermostat adjustment through the present ambient temperature to see if it clicks. If it doesn't, it's not working.**

The Sight Glass, we believe, shouldn't be there at all. We recommend you get rid of it. In the first place, it's easily broken, which can lead to big spills. And if the glass gets gummed up, looking at the fuel/water interface becomes difficult, if not impossible.

5. The Float Control sinks in fuel and floats in water. It detects water buildup problems and signals the slug valve to shut down.

When fuel drips continuously from the vent port, check for dirt trapped in the seals. Take the float assembly apart and clean it carefully. Also look for damage to the O-rings and seat. If you find any, order a repair kit.

If you push in on the manual tester and it doesn't show resistance, the float ball is stuck in the top position or is floating in water. Drain all the water in the vessel sump. If the float doesn't return to the down position, remove the float assembly and repair or replace it.

6. The Manual Drain Valve should be opened daily to remove any water and to sample the fuel in the sump.

If water and dirt come out of the sump, check that you opened the right drain valve. Some vessels have two or more drain ports, and one is from the inlet, or dirty compartment, where you expect dirt and water. The other is from the main compartment, where fuel should be clean and coalesced water is accumulated in the sump.

If you can't take samples because the drain line from the clean compartment is solid-plumbed to the slop/recovery tank, your system isn't installed properly. Put in a tee and an additional ball valve.

If a newly-installed vessel shows dirt, pipe scale, or weld slag in the interior, be sure the inlet and outlet drain lines have separate valves and the lines are not interconnected. Otherwise, unfiltered fuel can flow backwards and enter the vessel through the clean-compartment drain valve.

7. The Slug Valve shuts off the system on a signal from the float control when excessive water buildup threatens the system.

If the vessel flow shuts off, check these five things:

- **There might be water in the vessel.**
- **The float might be stuck in the up position.**
- **The float control might be hooked up to the slug valve incorrectly.**
- **The float control vent might be plugged.**
- **The main valve diaphragm might be ruptured.**

8. The Sampling Probes enable you to take representative fuel samples from each side of the vessel.

If it leaks, replace the poppet seal in the quick disconnect. You should install an on/off ball valve between the probe and the quick disconnect so that you can replace the seal without having to drain the system.

The Automatic Drain Valves, like the Sight Glass, we believe, shouldn't be there at all. If you have any, we suggest you take them out and replace them with manual ones. They're neither recommended nor warranted, they don't get rid of all the water, and they frequently malfunction.

Some Sound Information, Useful and Readily Available:

The Manual of Aviation Fuel Quality Control Procedures, ASTM Manual Series MNL5, Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, Phone: (610) 832-9585.

Standards for Jet Fuel Quality Control at Airports, ATA Specification No. 103, ATA Distribution Center, PO Box 511, Annapolis Junction, MD 20701 U.S.A., Phone: (800) 497-3326 / (301) 490-7951.