



Vaporless Manufacturing, Inc.

Quality Petroleum Equipment Solutions For Over 20 Years

OFP-3

**Variable Flow
Hydraulically Damped
Overfill Protection Valve
For Above Ground Storage Tanks
+ Alcohols, Biodiesel and Aviation Fuels**



The Model OFP-3 has been enhanced! Now, the OFP-3 series of valves not only have the highest flow rating in their class, the low flow - low pressure characteristics have been modified to accommodate virtually any delivery truck pump! These valves have the following flow ratings:

7 PSI minimum operating pressure; **10 - 400 GPM.**

Product flow into the tank is shut down completely at any tank level desired. The level is set by suspending the Float Actuated Pilot Valve to the desired level in the tank from the provided Bushing.

Because of the float - pilot valve actuation system used, hydraulic shock is minimized.



OFP - FUNCTIONAL TEST KIT

No matter how well designed, Overfill Protection equipment fails at some point. To date, the only means to test the shutdown function of these valves in the field was to fill the tank above the equipment's shut-off level. The OFP Functional Test Kit is the answer! Available as an option for new **Vmi** OFP-2 and OFP-3 installations, and available as a retrofit kit for **Vmi** installed equipment. Contact factory or visit our web site for full description and installation instructions.

Designed and Manufactured in U.S.A.



SPECIFICATIONS & COMPONENTS

Meets Uniform Fire Code (August, 1994), Article 79 Flammable and Combustible Liquids: "shut off the flow into the tank at 90% of capacity" and "means shall be provided to empty the fill hose into the tank after the automatic shut-off device is activated." Installation instructions provide plumbing details and optional parts to complete this style of installation, additional part OFP-1030 required.

Meets NFPA code 30A requirements for completely stopping the flow of fuel into the tank at 98% fuel level.

CARB tested: Does not affect Stage 2 vapor recovery.

FLOW RATE: PSI flow requirements at valve: 7 PSI minimum operating pressure; 10 - 400 GPM depending on pump capability.

Flow rates into the tank are reflective of pump performance and piping restrictions. A tanker truck equipped with a medium age ("good condition"), three inch positive displacement pump, filling an AST through 12' of 3" flexible hose and an OFP-3 with a 3" drop tube, will flow 236 GPM @ 10 PSI (observed field results).

CAUTION: Any fuel delivery pump, pumping fuel into a tank system equipped with an automatic shutdown device, must have a functioning pressure relief. Vaporless Manufacturing Inc. recommends 30 PSI (PTO or other) pressure relief.

FUELS:

- Gasoline, 100% methanol*, 100% ethanol*, up to 15% MTBE
- Any combination of the above
- #1 or #2 diesel, kerosene, Jet A* or JP-4*, AV Gas*, and **Biodiesel***

* When used with **Biodiesel** over 5%, any **alcohol fuel** concentration above 20%, Jet A, JP-4 or AV Gas, order part # OFP3-SSVS for stainless steel fittings and stainless steel tubing.
For chemical applications other than listed above, contact factory.

COMPONENTS: OFP Valve - 12 1/2" high, 9 1/4" wide, inlet 3" male NTP; discharge 3" female NTP; Pilot Valve and Float Assembly fit through 4" threaded opening. Bushing for tank bung installation provided - 4" or 6", see 3/1 and 3/2 below. The Pilot Valve is connected to the Bushing with Steel Bite (compression) fittings and steel tubing. Steel tubing (2-22" lengths provided) is cut to length at installation to provide compatibility with local regulation and tank size. UL listed compression fittings and tubing provided.

COMPONENT OPTIONS: Part #OFP3-SSVS; Provides Stainless Steel Fittings and Stainless Steel Tubing for the OFP-3/1 and OFP-3/2 Valve when used with Biodiesel concentrations above 5%, Ethanol and Methanol concentrations above 20% and for Jet A, JP-4 and Aviation Gas.

Part #SS-113: Additional Stainless Steel Tubing for use with OFP3-SSVS when installing an OFP-3/2. Available by the foot.

MODEL 3/1: One six inch tank opening required, OFP Valve and Pilot Valve mount on 6" male pipe thread Bushing provided. For use with 3" drop tube only.

MODEL 3/2: Requires two tank bungs. Combinations of : 2 - 4" bungs or 1 - 3" bung and 1 - 4" bung. Consult factory for other combination or custom configurations. One 4" male NPT Bushing provided to install Pilot Valve and to vent OFP Valve. For use with 3" drop tube only.

OPERATION

TANK FILLING: When AST filling operation begins, (fuel in the AST is below the level of the Pilot Valve, no pressure in fuel delivery line) the OFP Valve is in the closed position. The filling operation pressurizes the tubing from the inlet of the OFP Valve, through the Bushing to the Pilot Valve. Pressure continues from the pilot valve back through the second tubing, through the Bushing, entering the area under the piston of the OFP Valve. The piston is forced up, allowing tank to fill. Air above the piston is forced through the vent tubing to the Bushing, into the tank top. When the piston is raised, fuel will flow into the AST.

SHUT OFF: As product in the tank rises, it engages the Float Assembly. When the Float rises to the predetermined fill level, a poppet is closed in the Pilot Valve. The closed poppet shuts off flow and pressure through the Pilot Valve. Without pressure to keep the piston in the open position, the piston resets to the closed position.

Plumbing diagram and fittings needed to clear fuel left in the delivery hose after a shut-down are shown in the installation diagram.

WARRANTY INFORMATION

Equipment is warranted to be free from defects in materials and workmanship for a period of eighteen (18) months from the date of installation (see Warranty Card for details).



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