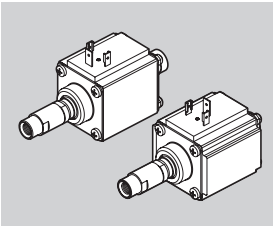
Fluid-o-Tech
POWER THE FLOW

INSTRUCTION MANUAL



SOLENOID PUMPS MONO, SYRUP AND DUPLEX SERIES

INSTALLATION

The installation should be done by a qualified technician. In case of substitution of a pump verify that the model on the label is the same of the original pump to avoid damage due to different hydraulic or electric characteristics or fluid compatibility. The power supply must be consistent with the electrical data stamped on the pump, with particular regard to voltage and frequency. Verify also that, during installation, the machine to which the pump is going to be mounted is disconnected from the power supply.
For the models in epoxy resin without the double insulation (class I device) the grounding wire is necessary. In case of prolonged working the coil gets hot. In case the pump operates in a closed space or with temperature higher than 50 °C (122 F), a thermal protector is necessary. Electric wires, rubber pipes or any part sensible to heat should not be in contact with the pump. Also avoid installing electric or electronic components nearby the pump, because a leak might damage them. A leaking pump has to be repaired or replaced. It's advisable to install the pump under the tank in order to avoid cavitation. If the pump is directly connected to the line, the inlet pressure shouldn't be higher than 2 bar (29 psi). Do not install the pump plunged in the liquid if this is not a dielectric one. The vibrations during operation can be damped by utilising the stands available from Fluid-o-Tech; this will reduce noise or resonance of machine parts.

WARNING

Before installation, in order to improve the subsequent correct priming of the pump, it is suggested to blow compressed air from the suction line for three seconds.

OPERATING CONDITIONS

Make sure that the pumped fluid is compatible with the materials of the pump. Avoid as well to use liquids with temperature higher than 70 °C (158 F). The pump is designed to handle clean water. Particles in the fluid may cause failure of the pump. For any application involving different fluids or unusual operating conditions please verify the compatibility with Fluid-o-Tech. It's necessary to mount a 10 µm filter before the pump if the fluid contains particles or extraneous objects and to keep it clean periodically; a dirty filter (or an insufficient surface area) doesn't let the liquid flow causing cavitation and fast wear of the internal parts. Priming and operating the pump at more than 0.5 m higher than the water line may cause prolonged dry running or cavitation. The pump shouldn't work with the outlet clogged or at maximum pressure because overheating of the pump and breaking of some parts of the circuit may occur under these circumstances.
Models with relief valve are available: in case of obstruction of the pipe the pressure can't raise over the set valve. The relief valve is set by Fluid-o-Tech at 10 bar (145 psi) for the models 1006 and 1106 and 6 bar (88 psi) for the models 1008 and 1108, except for specific request of the customer. For a correct use of the pump, the working pressure should be at least 1 bar (14.5 psi) lower than the set value. The 1006 series should work with back-pressure not lower than 1.5 bar (22 psi). The 1008 series should work with back-pressure not lower than 1 bar (14.5 psi). The 1106 and 1108 series may work without back pressure. It's strongly recommended not letting the pump run dry. Dry running causes overheating and wears out the internal parts of the pump.
If the pump is not equipped with a relief valve it's advisable to check that the system is protected (it's possible to use an external relief valve or a pressure switch to interrupt the liquid flow) against accidental overpressures (electrovalves shutting or a clogged outlet) which may compromise the integrity of the circuit. If the pump is equipped with a relief valve, a storage tank or a system to recover the liquid dripping through the valve is necessary. The relief valve is not and must not be used as a flow regulator. Models equipped with a flow

regulator (restrictor) are available. The flow depends on the working pressure. If the pump is powered by an electronic circuit, this must be able to supply the necessary current (pulsating current with peaks equals to 1.8 times the average).

WORKING CYCLES

Different coils in Nylon or Epoxy resin from 24 V AC, 110 V AC, 220 V AC, 50 and 60 Hz are available. The maximum continuous operation for the models with a 70 Watt coil is 5 minutes, with 1 minute stop (intermittent duty). If prolonged or abnormal operation is possible (lack of water or clogged outlet) it is necessary to use a thermal protector. The models equipped with the "IF" coil (70 W, 110 V, 60 Hz) are UL listed under the following limitations:

- The pump and quick connect terminals must be provided with a suitable enclosure in accordance with the requirements of the end-use Standard.
- The quick connect terminals are not suitable for field wiring purposes.
- The suitability of the pumps for a duty cycle other than 5 min on/30 s off, and at an ambient temperature greater than 40 °C (104 F), must be evaluated in the end product.
- The suitability of the pump for control of a water source greater than atmospheric pressure, or at a water temperature greater then 25 °C (77 F), must be evaluated in the end product.
- Temperatures of the coil windings are to be monitored in the end product by the change-of-resistance method, and are not to exceed Class A limits (110 °C).
- The suitability of the permanence of markings shall be determined in the end product.
- The end product shall provide provisions for preventing the dry operation of the pump, and over-current protection in the case of blocked plunger.

STANDARD MAINTENANCE, REPLACEMENT OF PARTS SUBJECT TO WEAR, SPARE PARTS

Solenoid pumps do not need any maintenance. In case of break-down the replacement of worn out parts should be done by Fluid-o-Tech or authorized repair centers. Every pump is marked with production date, model number and electric characteristics of the coil.

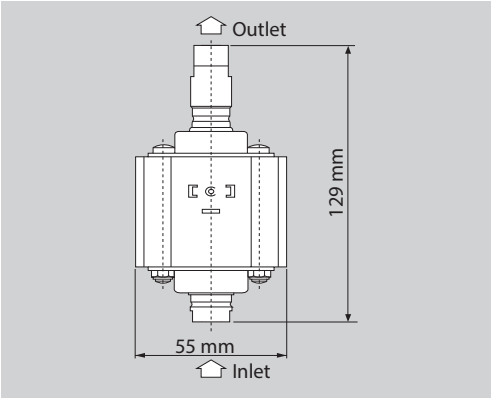
WARRANTY

Every new pump manufactured by Fluid-o-Tech is guaranteed to be free of defects in workmanship and material when leaving the factory for a period of 12 months from the production date stamped on the pump's housing. Fluid-o-Tech will repair or replace at its judgement part or all of the product not conforming to this warranty. Fluid-o-Tech's responsibility under this warranty is limited to the repair or replacement of defective equipment returned to us on a D.A.P. basis, providing that our analysis discloses that such part or parts were defective at the time of sale. The warranty is void if:

- The identifying label is missing.
- The instructions are disregarded.
- The pump has been disassembled or modified by anyone other than a Fluid-o-Tech engineer.
- The pump operated dry or with a small quantity of water.
- Extraneous solid particles are found which have compromised the normal operation of the pump.
- The wiring is burned due to one of the following reasons:
  - continuous working for the models of max. power;
  - voltage or frequency different from the ones stamped on the label.

It is responsibility of the user to predispose, in the machine where the pump will be used, all the necessary protections in order to avoid at all times the dry running of the pump.

Pump Connections



CERTIFICATIONS

This product is supplied with the mark "CE" that grants its conformity to directive 98/37/CE provided that it is utilized in accordance to the operating conditions reported on this instruction manual.

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