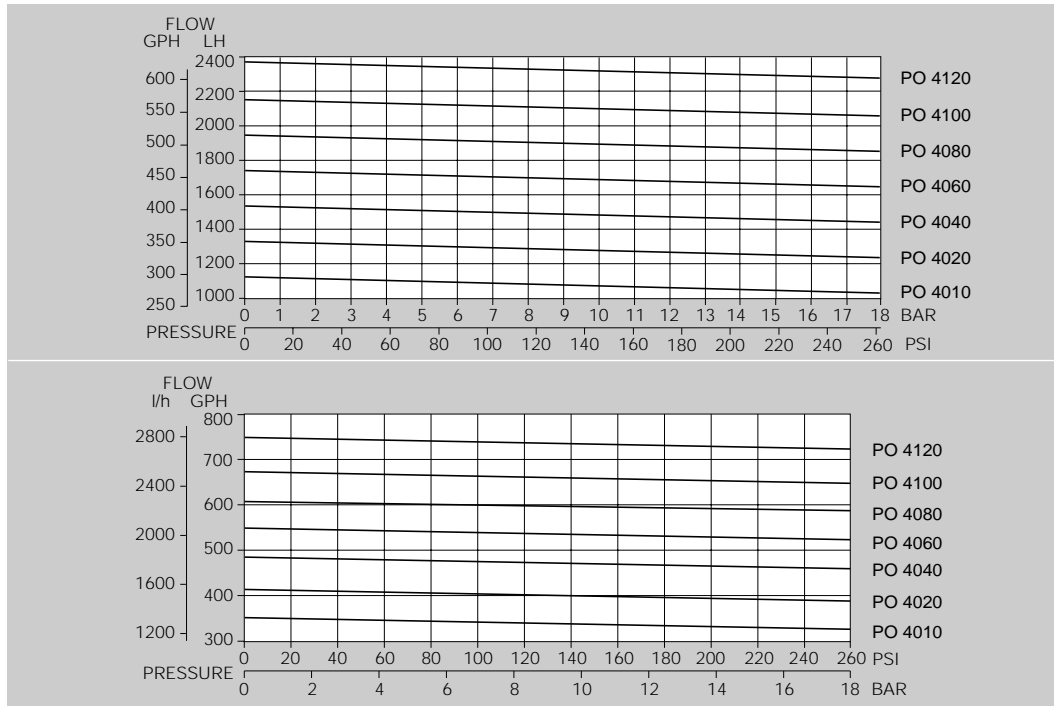
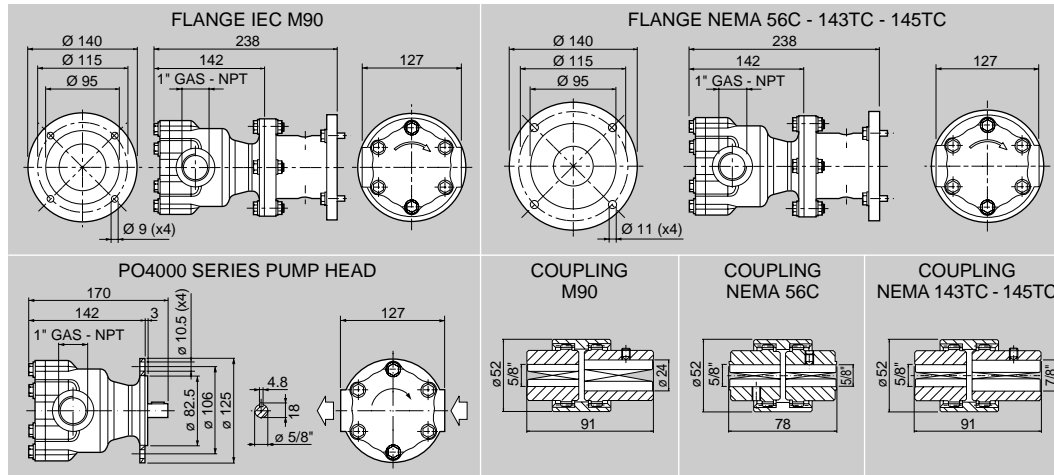


The performance curves of the PO4000 series are supplied here below for your reference.



Figures of flow are averages - Curves with by pass fully closed - Water temperature: 20 C



4000 - 1-98 ED

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   cert. N 0363/0	<b>POSITIVE DISPLACEMENT          ROTARY VANE PUMPS          4000 SERIES          INSTRUCTION MANUAL</b>	
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### Installation

- The pump has to be installed exclusively by authorized staff. Handle with care.
- It's recommended not to pull out the two protection sponge caps placed on the inlet and outlet ports of the pump before mounting the fittings and the pipes, in order to avoid the incidental entrance of any solid estraneous object which might damage the internal components of the pump.
- The **PO4000** series rotary vane pumps look **identical in their exterior aspect**, although the **flow rates** are **different**. For this reason, when substituting just the pump, it is necessary to check the model of the new pump. Changing the pump with a model of different capacity may damage the system, the motor and the pump itself.

- The **motor rotation must be clockwise** (looking the motor in front). If operated **counterclockwise**, the pump won't work.
- In case the rotation is counterclockwise, proceed according to the scheme generally enclosed in the electrical wiring box.
- If the pump fails or some estraneous object enters it, the group may stop or work in critical conditions; for this reason the motor should have a **thermal protection** to avoid overheating or a **current protection** to avoid overloading.

### Mounting the pump onto the motor

The overall dimension drawing of the pump is shown on the last page of this leaflet. When mounting the pump onto the motor, it's advisable to pay the maximum attention in order to avoid shocks against the shaft, checking the correct alignment and verifying, after mounting, that the shaft turns free.

- If continuous operation is needed, the pump has to be mounted in an airy space in order to dissipate the heating produced from the motor.
- The pump must be mounted **orizontally**.
- To avoid vibrations of mechanical parts and noise it is advisable mounting the motor with rubber shock-absorbing supports.

### Note:

The motor should be a 4 poles type with B3 B14 frame, with power between 1.5 and 2.2 Kw, in accordance to the capacity of the pump (325 to 700 gph) and to the operating pressure. Take into account that the pump performs differently if operated at 50 Hz (1450 rpm) or 60 Hz (1725 rpm). Do not run the pump with a 2 poles motor (2900 rpm at 50 Hz or 3500 rpm at 60 Hz). Running the pump at such speed, highly effects the life of the mechanical seal.

### Wiring the motor to the power supply

- The power supply must be consistent with the electrical data stamped on the motor plate, with particular regard to voltage, frequency and current.
- The power supply should be switched off during installation.

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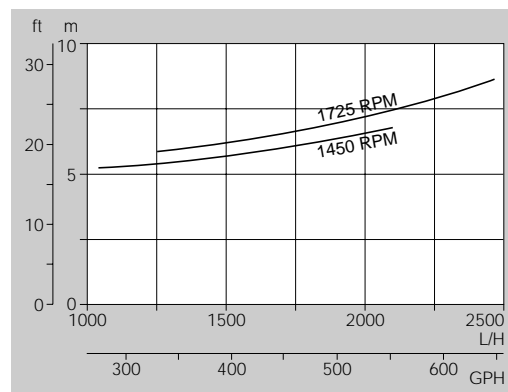
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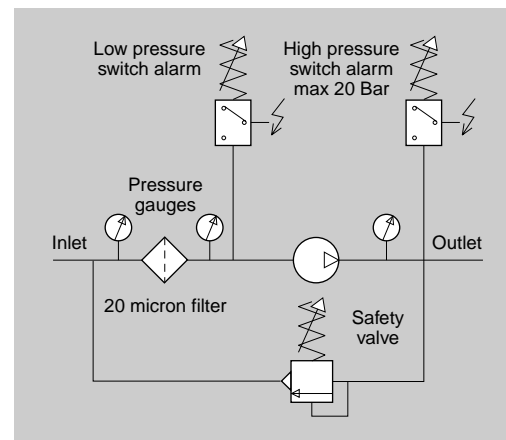


(2900 rpm at 50 Hz or 3500 rpm at 60 Hz). Running the pump at such speed, highly effects the life of the mechanical seal. How to proceed:

- Make sure the **motor is unplugged** from the electric line
- Check that the key be tight on the motor shaft
- Mount the motor side of the coupling on the motor, **without hammering it**.
- Tighten the set screw (only for the couplings equipped with the set screw).
- Insert the shock absorber on the coupling on the motor side.
- Secure the **pump side of the coupling** on the pump, **without hammering it**.
- Mount the adapter on the motor flange and tighten the screws.
- Mount the pump on the motor by inserting the coupling side of the pump shaft into the coupling side of the motor shaft.
- Turn the pump to the position desired and stop it by tightening the 4 bolts.

## Connecting the pump to the circuit

- A particular care is needed while mounting



**ΔP MAX: 18 BAR**  
**SYSTEM PRESSURE MAX: 20 BAR**

**Solenoid valves should not be installed in the circuit**; however, if needed, a mechanical safety valve needs to be installed before the solenoid valve, in order to protect the pump from pressure peaks.

the fittings, to avoid liquid leaks.

- If using liquid sealer or Teflon it's important that **no particles** of it fall **into the pump**.
- It is advisable to use **fittings** made of **stainless steel or plastic**.
- The **circuit** should be **carefully flushed** before starting the pump.

## Operating Conditions

- **Make sure that the pumped fluid is compatible with the materials of the pump.**  
For particular applications, contact the nearest **Fluid-o-Tech** authorized distributor.
- **Avoid** as well to use **liquids** with temperature  $\geq 60$  C (140F).
- It's strongly recommended to use **pipes and connections** of suitable size for the pump capacity, with **internal diameter** of at least **25 mm (1 inch)**, especially on the inlet side.  
This precaution avoids the possibility of cavitation and consequent damage of the pump.
- The **maximum differential pressure** should not exceed **18 bar (260 psi)**.
- The **maximum system pressure** should not exceed **20 bar (290 psi)**.

The graph here shown reports the **NPSH** (Net Positive Suction Head) for the **PO4000** series run at 1450 and 1725 rpm. Although this is a **positive displacement** pump, it is strongly recommended not to operate it over the values specified by the curves in the graph.