

# Stan-Cor Pump Design Specifications

Refer to the Stan-Cor Instruction Manual for complete installation, operation and maintenance instructions.

## Location

Locate the pump near to the liquid source, so that the suction line is short and direct. When practical, locate the pump below the level of the liquid to eliminate the need for priming.

## Foundation

The foundation should be sufficiently rigid and substantial to absorb any vibration, and to permanently support the base plate at all points. A concrete foundation, poured on a solid footing of adequate thickness to support the pumping unit, provides the most satisfactory foundation. The base plate should be installed in a level position. Baseplates should be grouted. For proper grouting procedures, refer to the Hydraulics Institute Standards.

## Temperature Consideration

Check the pump model selected for temperature limitations using the graphs below. Please contact Wanner Engineering or your local Stan-Cor distributor for any assistance you may need with your specific application.

Notes:

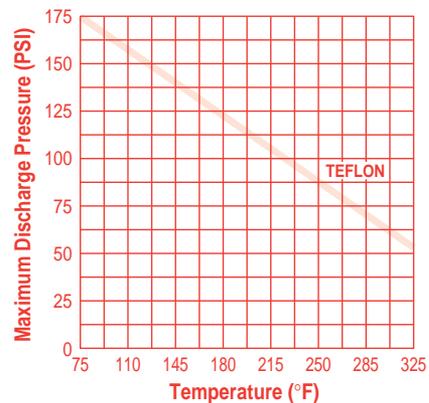
- Maximum temperature for all Kynar 370 pumps: 250°F.
- Maximum temperature for Teflon pumps: 325°F
- For insulated pumps, multiply "maximum Discharge Pressure" by 0.8.

## Coupling Alignment

Good service life of the pump and driver depends upon good alignment through the flexible coupling. If the electric motor is mounted at the factory, the pump and motor are in alignment when shipped. The alignment between the driver and pump should be inspected after installation to ensure that transportation or other handling has not caused misalignment. Poor alignment may cause failure of the coupling, pump, or motor bearings, or of either shaft. The recommended procedure for coupling alignment is to use a dial indicator detailed in the Stan-Cor Instruction Manual. For more information on coupling alignment, refer to the Hydraulic Institute Standards.

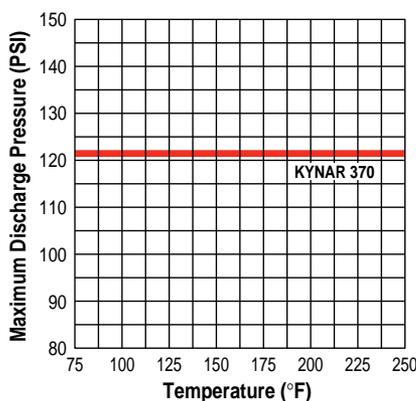
## For TEFLON Pumps

### AB, A50 and A70 Pump Designation

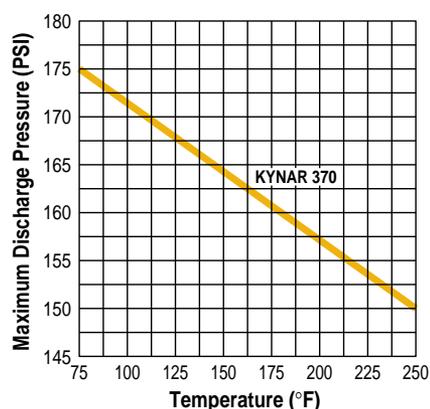


## For KYNAR Pumps

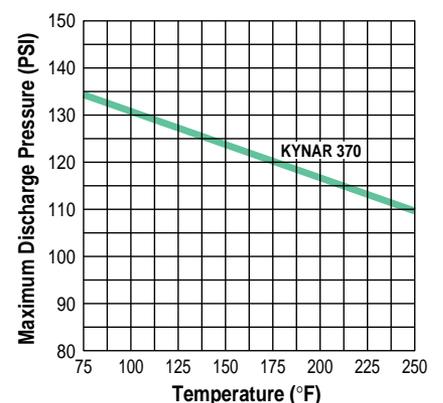
### AA and AB Pump Designation



### A50, A60 and A70 Pump Designation



### A30 and A40 Pump Designation



# Stan-Cor Pump Design Considerations

## Pump Weights

Kynar Pump Designation	Teflon Pump Designation	Weight (lbs)
PST-AA		115
PST-AB	PST-AB-TFE	120
PST-A50M	PST-A50M-TFE	200
PST-A50L		220
PST-A60M		210
PST-A50L		230
PST-A70M	PST-A70M-TFE	220
PST-A70L		240
PST-A30		270
PST-A40		280

## Piping (General)

Anchor the piping independently of the pump and as near to it as possible. Pipe companion flanges should line up naturally with pump flanges. Do not draw the pipe to the pump with flange bolts. TFE envelope gaskets are recommended to effect a seal with minimum torque on flange bolts.

While the pump may be operated satisfactorily without expansion joints, we recommend that an FEP or TFE expansion joint be used on the suction and discharge flanges. Expansion joints eliminate undue strains caused by piping misalignment and/or temperature variations.

Arrange the piping so that corrosives can be flushed from the pump before it is opened for service. Installation of tees in the suction and discharge piping between the pump and the shutoff valves, with a drain valve connected to the branch of the tee, to permit flushing of the pump before removing it from the line.

## Piping (Suction)

Properly selected and installed suction piping is extremely important to eliminate vibration and cavitation in the pump. Vibration can cause mechanical seal damage or undue bearing loads.

The suction line should be equal to or larger than the pump suction. The capacity of a centrifugal pump should never be adjusted by throttling the suction line. Install a positive shutoff valve of a type to cause minimum turbulence in the suction line — to permit the closing of the line and removal of the pump for inspection and maintenance. The suction line should be designed to eliminate any air pockets. The piping should gradually slope downward to the source of supply to eliminate air pockets. The suction line should have a straight section into the pump of a length equivalent to at least two times its diameter: e.g., 4-in. dia. Suction line, 8-in. straight run.

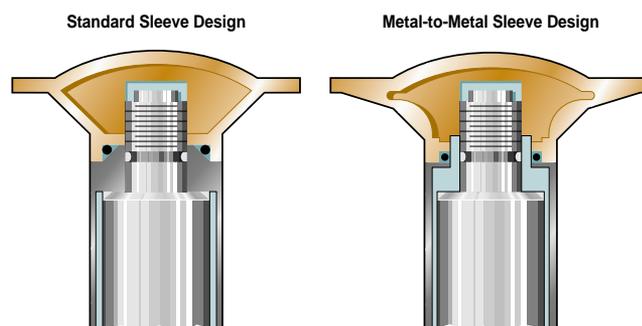
## Piping (Discharge)

Install a positive shutoff valve in the discharge piping to permit inspection and maintenance of the pump.

All piping should be independently supported and accurately aligned. The pump must not support the weight of the pipe or compensate for misalignment.

If operating conditions are not known with enough accuracy, provide a throttle valve in the discharge line to ensure that the pump operates at the design point.

## When to use MTM (Metal-to-Metal) Impeller/ Shaft Sleeve Design Kynar Pumps



On the standard Stan-Cor Kynar pump design, the drive shaft is protected by a Kynar-encased sleeve that threads directly into the impeller hub. An O-ring seals between the Kynar of the impeller and the Kynar of the shaft sleeve to insure that corrosive process fluids do not come into contact with any metallic parts.

For added protection on demanding applications which utilize large-size impellers over 9" in diameter, the Stan-Cor PST-A60M, PST-A30 and PST-A40 can be fitted with an optional MTM impeller/sleeve design in which the metal insert of the shaft sleeve extends around the drive shaft. When the shaft is threaded into the impeller and tightened, this sleeve extension forms a solid metal-to-metal contact with the impeller hub for added impeller stability.

For strenuous pump applications in which the pump undergoes excessive cavitation or in which the pump is allowed to "run off the curve" because of low head and high flow requirements, the MTM option provides the added impeller stability to help avoid the possibility of excessive impeller deflection. As with the standard design sleeve design, the MTM sleeve is coated with Kynar and an O-ring seals between the sleeve and impeller so that no metallic parts come into contact with the process fluid.

If occasional upset conditions as described earlier occur in the application, the MTM design option should be considered to help protect the pump from damage during the occurrences. The MTM design will not stop the effects of cavitation, but it can protect the pump from damage for a period of time. System problems that lead to these occurrences must still be dealt with to insure proper and trouble-free operation of the Stan-Cor pump.