Pump Option Selection Guide

Bearings:

Gramix iron: *Standard.* Good, general purpose bearing for normal applications.

Bronze: Improved performance characteristics for thin liquids, and moderate pressures.

DU: Tri-laminate style bearing with an inner layer of Teflon, recommended for thin fluids and pressures exceeding 100 psi.

Carbon Graphite: Excellent performance in aggressive liquids, and high temperatures.

Shaft Seals:

Lip seal: *Standard.* Excellent general purpose shaft seal which avoids the weeping and adjustment requirements normally associated with packing gland designs. Lip seals will generally provide 3000+ hours of service life, and offer simple, low cost replacement.
Operating limitations:

- Maximum discharge pressure is 75 psi without venting to suction option.
- Maximum of 3" Hg suction pressure in single seal design, consult factory for double and triple seal application information.

Packing gland: Good for high temperature applications (up to 585° F). The Hydraulic Institute recommends a minimum seal weep rate of 1 ml/minute to provide adequate cooling and lubrication for the seal and shaft. Experienced maintenance personnel are required for periodic adjustment of the packing gland to avoid damage to the seal and/or shaft.

Mechanical: Excellent for improved service life performance, high temperature and high pressure applications. Some seal face materials are susceptible to shock and vibration damage. A broad variety of seal face materials are available to meet specific application conditions. Consult factory for additional information.

Rotors:

Iron: *Standard.* Good general purpose rotor material providing excellent wear performance in many applications. Available Hatrided, Extra Hard, and with Hot tolerances for enhanced rotor performance characteristics.

Teflon: Very good material selection for thin, and/or aggressive fluids at moderate pressure and temperature conditions. Do not use above 100 psi or 200° F. Limited suction capability. Excellent when used in combination with hardened pumps in abrasive applications as a sacrificial component.

Delrin: Improved abrasion resistance versus Teflon. Good for use with thin, aggressive fluids at somewhat lower operating conditions. Do not use above 80 psi or 120° F. Limited suction capability.

Ni-resist: Stainless iron alloy. Excellent performance characteristics in aggressive fluids at high temperatures and pressures.

Hardening:

Hatriding: Case hardening. Provides limited resistance to abrasion, and mildly aggressive fluids. Excellent for applications that experience periodic fluid contamination.

Extra Hard: Fully hardened pump components for improved service life in abrasive applications. Especially useful when used in conjunction with either a Teflon or Delrin rotor.

Tank Return:

The integral relief valve is modified to direct fluid flow, caused by overpressurization, back to the supply tank rather than to the suction side of the pump. This can simplify piping requirements and reduce system cost.

Hot Tolerances:

Should be used in applications where the pump will experience thermal shock conditions. Thermal shock will occur with temperature differentials exceeding 150° F.

Venting:

Available for both the seal cavity/rear bearing and the front bearing areas. This provides a return to pump suction pathway which avoids overpressurization and improves lubrication for the bearings and seals. Provided as standard in the seal cavity/rear bearing area on mechanical seal pumps. Recommended for the front seal area in applications exceeding 150 psi discharge pressure.

Brackets:

E & H Series: Used for pedestal mounting of the pump only. Typically used for bedplate type mounting.

Z Series: Close-coupled mounting bracket used in conjunction with a footed motor. This bracket eliminates the component alignment problem commonly associated with bedplate mounting. The motor foot supports both pump and motor, and may require disconnecting the piping to replace the motor.

Y Series: Close-coupled mounting bracket which supports the pump and motor. Eliminates component alignment problems, and allows the motor to be replaced without disconnecting the piping.

F48: Used for hub mount, direct drive applications. Available for size 1 - 8 pumps and requires a standard 4 point mount “T” type motor. Consult factory for information.

Outboard Bearing Bracket: Provides additional shaft support for pulley drives, reducers, and direct drive off larger systems.

Elastomers:

Buna-N: *Standard.* Good general purpose elastomer suitable to 300° F. Check the material compatibility tables elsewhere in the technical manual for additional information.

Viton: Very good compatibility with a broad range of aggressive fluids, suitable to 400° F.

Kalraz: Excellent fluid compatibility. Suitable to 500° F.

Teflon: Excellent fluid compatibility. Suitable to 500° F. Usually less expensive and more readily available than Kalraz, but tends to take a compression set.