

TH

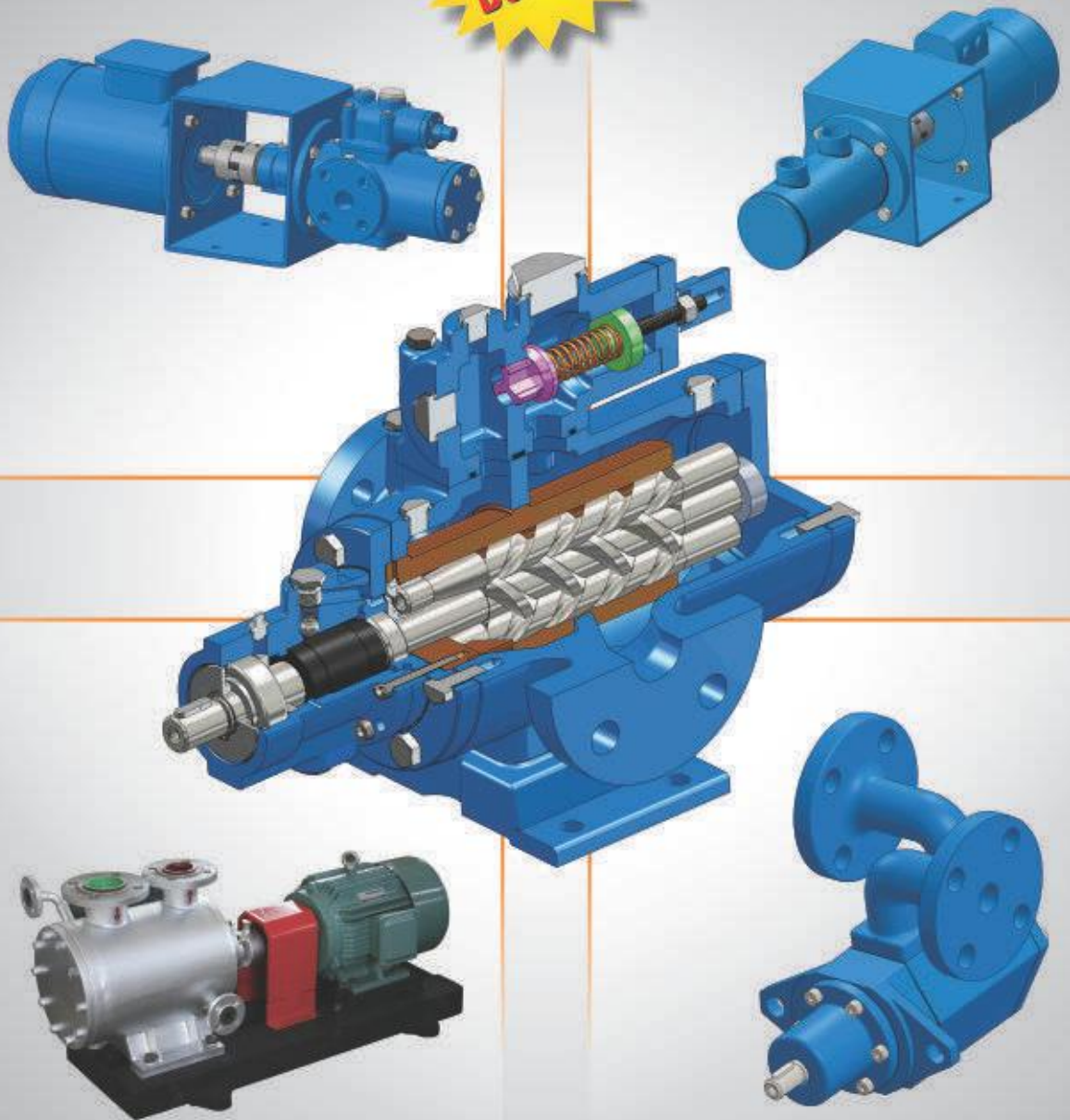
Triple Screw Pumps Three Screw Pumps

- Pressure upto 40 Bar
- Capacity upto 3000 L/Min
- Viscosity from 2 cSt to 10,000 cSt
- Cartridge Design for Flexibility
- Hydraulically Balanced Rotors

PUMP

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PUMP PERFORMANCE TABLE FOR THREE SCREW PUMP

Pump Model	68cST / 30 Bar							
	1440 RPM				2900 RPM			
	Low Pitch		High Pitch		Low Pitch		High Pitch	
	Flow LPM	Power kW	Flow LPM	Power kW	Flow LPM	Power kW	Flow LPM	Power kW
TH 05	23.67	1.84	40.5	3.16	52.5	4.0	91.8	6.64
TH 06	44	3.28	81	6.01	96.3	7.0	180	12
TH 07	75.5	5.63	118.8	8.66	166	12	261	18
TH 08	135.9	9.46	218.7	15.4	288	20	473	32
TH 09	196.2	13.86	293.4	20.6	419	30	630	43
TH 10	287	20	466	32	602	42	885	60
TH 11	449	30	727	49	936	64	1535	102
TH 12	644	44	1031	69	1355	94	2168	144
TH 13	782	53	1423	94	1624	113	1929	132
TH 14	1243	83	1455	96	Not Recommended Beyond 1750 RPM			
TH 15	1628	109	1898	125	Not Recommended Beyond 1750 RPM			
TH 16	2407	161	Consult Us !		Not Recommended Beyond 1750 RPM			
TH 17	3037	197	Consult Us !		Not Recommended Beyond 1750 RPM			

* Data Indicated is for standard pump model and is subject to changed. Dimensional Drawing and Performance Curves on Request.

MOUNTING OPTIONS



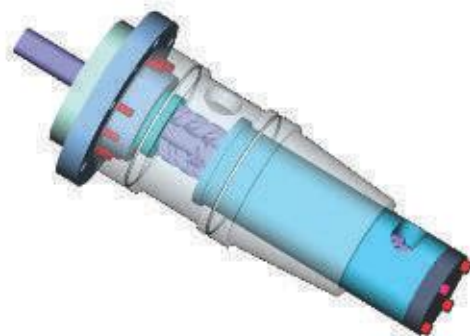
Foot Mounted Pump with build-on pressure Relief Valve



Flange Mounted Pump with built on Relief Valve



Pedestal Mounted Pump with built on Relief Valve

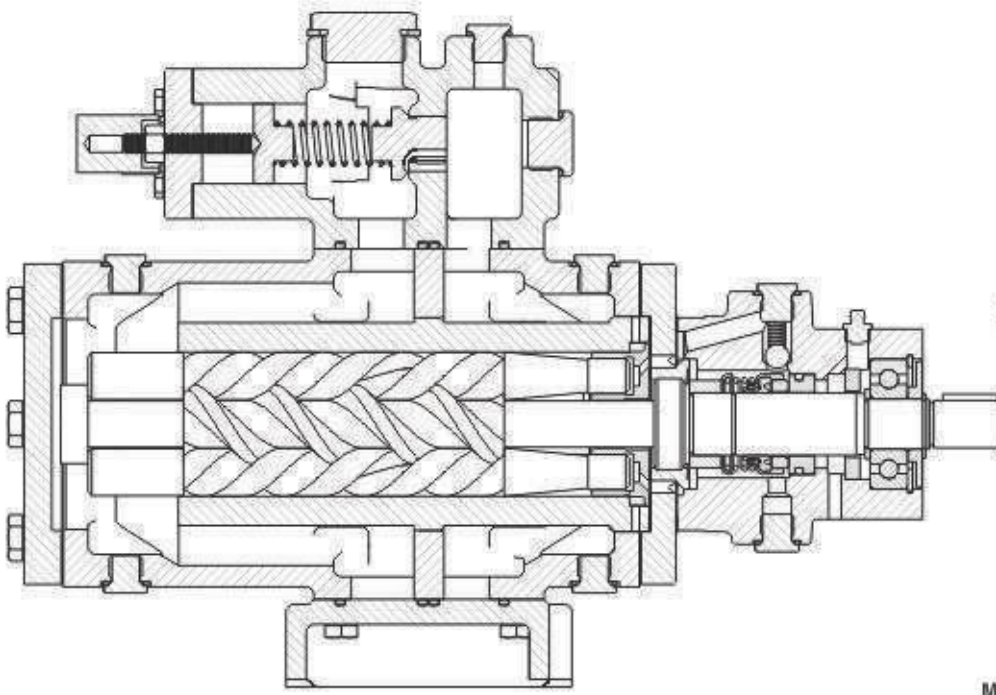


Cartridge Mounted Unit

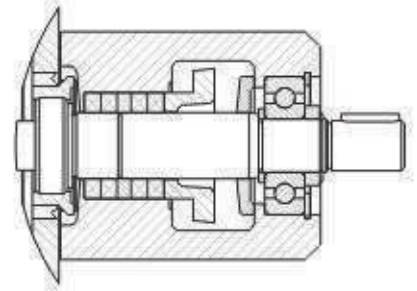
Those are examples of standard housings, built on a sectionalized construction system. Further housing types and special construction are available. Dimensional drawings on request.

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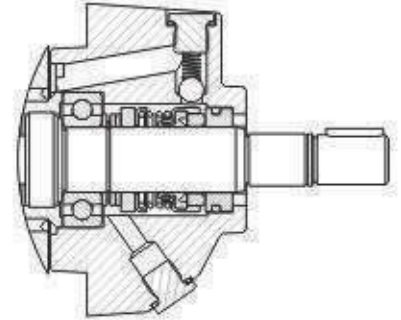
GENERAL LAYOUT / STANDARD DESIGN OPTIONS



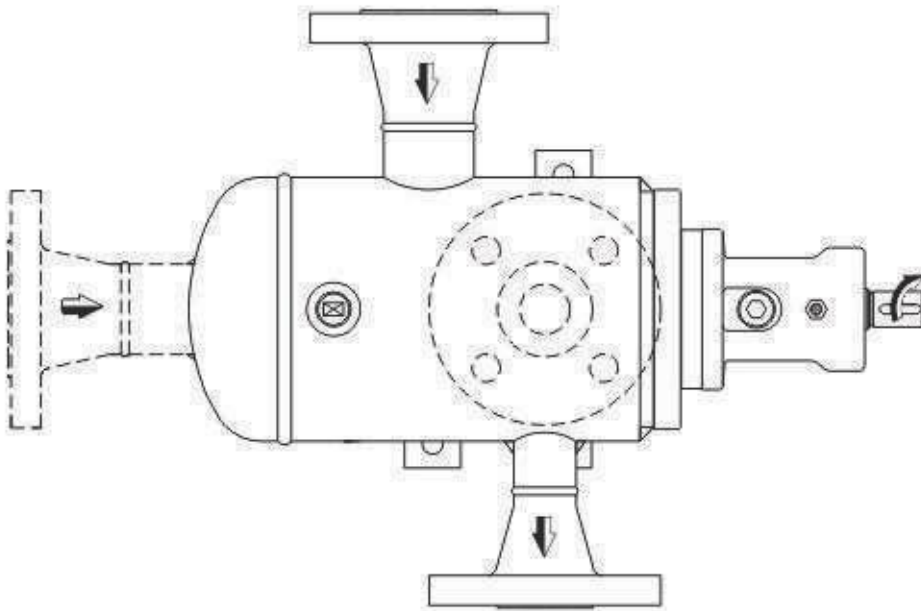
Mechanical Seal with External Bearing Design



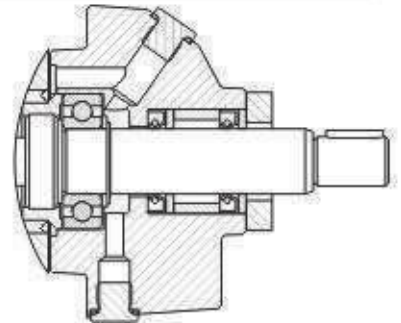
Gland Packing with External Bearing Design



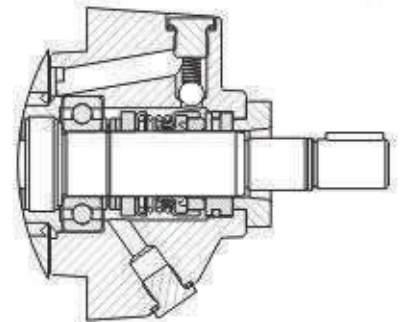
Mechanical Seal with Internal Bearing Design



Fabricated Casing Design with Inlet & Outlet Flanges as per your requirements

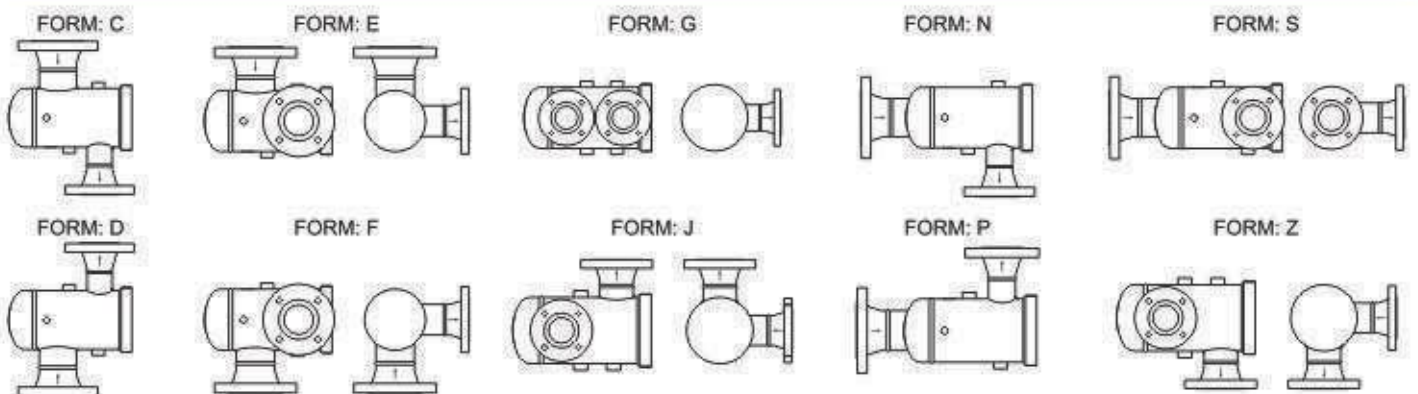


Lip Seal with Internal Bearing Design



Mechanical Seal / Gland Packing with Internal Bearing Design for Pump Size above TH-12

PLAN VIEWS FOR TYPICAL AVAILABLE INLET & OUTLET FLANGE ARRANGEMENT



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Working Principle

Triple Screw Pumps are positive displacement pumps of very simple design. They consist of three rotating parts only "the rotors" which turn in their precisely machined housing bores. The rotors are of double start screws, continuously meshing to form delivery chambers, which move constantly from the suction to the pressure / discharge side. Constant volume of the chambers and the uniformity of the movement allow an even flow. The pumps remain therefore near silent in operation and almost free of pulsation, even at high speed. The Principle of screw pump and its accurate profiles warrant high suction power. Axial loads on the rotor are compensated by adequate design of the bearing part. All the radial loads are self-compensated.

Application

Triple Screw Pumps, type TH are used for the transfer of fluids with lubricating properties, as well as for generating pressure in hydraulic units or overcoming pressure in the hydraulic circuits. Main Industrial uses are in:

- Power Hydraulics
- Industries
- Oil & Gas
- Marine
- Power Generation
- Machine Tools
- Compressor Lubrication
- Filtrations
- Lube
- Windmill
- Presses

Typical Liquids

All kind of Bunker Oil, Engine Oil, Furnace Oil, Heating Oil, Hydraulic Oils, High Viscosity Lubrication Oil, Mineral Oil, Synthetic Oil, Oil Water Emulsions and Fuel Oils, Diesel Oil, LSHS, LDO.

Material of Construction

Pump Housing : Carbon Steel, Cast Iron, Stainless Steel

Liner : Aluminium Alloy/Cast Iron/Copper

Rotors

Main Screw : Alloy Steel, Hardened Steel and Surface Treated Steel

Idler Screw : Hardened Steel, Surface Treated Steel

Shaft Sealing : Mechanical Seal / Lip Seal with Elastomers in Viton, EPDM & Nitrile/Gland Pack/Graphoil Rings

Mounting Frames : Fabricated Steel

Relief Valve Parts : In Steel & Cast Iron

Execution

The pumps here described may be incorporated in various housings and supplied as Foot, Flange or Pedestal Pumps. We also supply cast or welded housings to your specifications. To adapt the pumps to various applications, they can be fitted with the following seal variations:

- Radial shaft seals
- Gland packings (stuffing box)
- Mechanical seals

Pressures

Up to 120 bar are admissible.

Please contact us !

Installation

Screw-Pumps work perfectly in any position, provided suction and pressure lines are arranged in a way that prevents emptying of the pump when at a standstill.

Running Dry or with Non Lubricating Liquid will damage the pump!

We also Manufacture :

Internal Gear Pumps
Internal Lobe Pumps
External Gear Pumps

External Lobe Pumps
Progressive Cavity Pumps
Twin Screw Pumps

Thermic Fluid Pumps
Flexible Impeller Pumps
Shuttle Block Pumps

Piston Pumps
Peristaltic Pumps
Simplex / Duplex Filters

Direction of Rotation

Clockwise from the Shaft End of the Pump (*Standard*)

Anticlockwise from the Shaft End of the Pump (*On Request / Non Standard*)

Drive

In general the pumps are connected with a flexible coupling to a foot or flange mounted motor. Radial loads onto the shaft end are not permissible, unless when absorbed by an additional external bearing, e.g. in case of pump drive by belts or gears.

Speed of rotation

Shaft Speed Ranging from 500 – 3600 RPM

Do not exceed 1500 RPM when pumping residual fuels, crude oil due to the presence of abrasives and contaminants.

Viscosity

Normal range 21,5 to 385 cSt. Depending on type, pressure, speed and suction conditions, fluids with viscosities ranging from 6 to 3800 cSt may be pumped. Regarding viscosities outside the normal range.

Please consult us !

Temperature Range

When fitted with standard radial shaft seals, up to 90 Deg C. Depending on operating conditions, temperatures as high as 180 deg C are permissible.

Please ask us !

Cooling Jacket & Heating Jacket for the pump body & covers can be provided for easing the cold start of the pump and for continuously pumping liquids at high temperature.

Suction lift or inlet pressure

For speed between 1000 and 1700 r.p.m and viscosities below 385 cSt you may reckon with an absolute manometric suction lift of maximum 0,5 bar. For other speeds or viscosities, **Please contact us !**

The inlet pressure should not exceed +0,5 bar, when radial shaft seals are used. For higher inlet pressures we offer gland packings or mechanical seals. If the suction lift condition exceeds the pump capability, cavitation will occur resulting in noise and possible pump damage.

Suction and Pressure Lines

The cross section of the suction line should be such that fluid velocity nowhere exceeds 1 m/sec . In the pressure line velocity should not exceed 5 m/sec .

Pressure Relief Valve

All housings described here may be obtained with or without pressure relief valve, which we supply at your option as **by-pass valve**, connected to the suction chamber, or as **return valve**, conducting the fluid by a separate connection to the tank. When a larger quantity should have to pass through the valve for more than 10 seconds, a return valve has to be fitted , to avoid an undue rise in temperature.

Filtration

The pumps must be protected against solid particles in the fluid by suitable suction filters. The mesh width should be 0.1 mm and care has to be taken that even with a contaminated filter the admissible suction lift capability is not exceeded.

Important :

Please state complete working condition when enquiring for a pump :

- Fluid to be pumped
- Viscosity
- Capacity
- Pressure
- Operating Temperature
- Suction lift or inlet pressure

PUMP

PUMPSQUARE SYSTEMS LLP

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