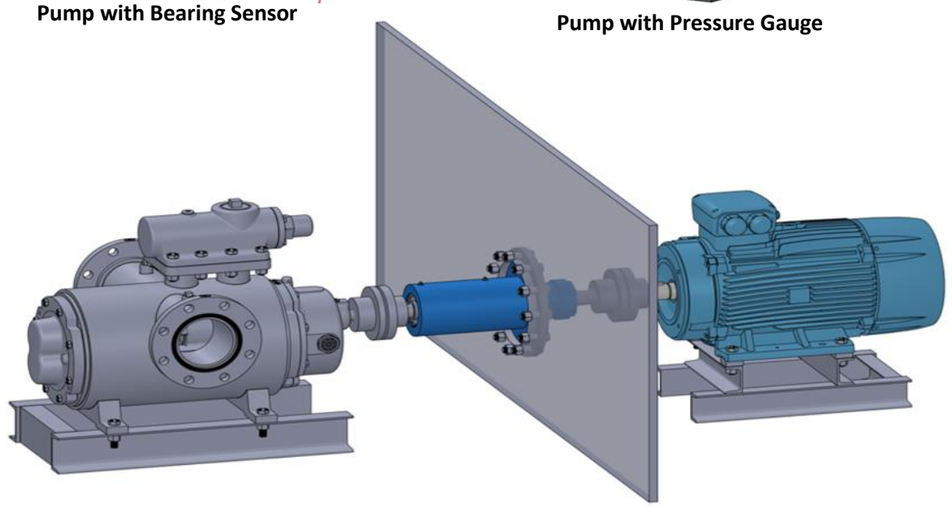
OTHER CONFIGURATIONS:

Pump with Bearing Sensor

Pump with Pressure Gauge



Bulkhead version of pump, used in engine room where motor and pump are kept in different rooms for protection against fire hazard

IMPORTANT NOTE:

- **Pump must be protected against solid particles in the fluid by suitable suction filters. Also, running dry or with non-lubricating liquid will damage pump.**

We also Manufacture

INTERNAL GEAR PUMPS	RELIEF VALVES	SIMPLEX / DUPLEX FILTERS
INTERNAL LOBE PUMPS	TWIN SCREW PUMPS	THREE SCREW PUMPS
EXTERNAL LOBE PUMPS	EXTERNAL GEAR PUMPS	FLEXIBLE IMPELLER PUMPS
STRAINERS	PROGRESSIVE CAVITY PUMPS	PERISTALTIC PUMPS

PUMP

PUMPSQUARE SYSTEMS LLP.

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Vithal Udyog Nagar-388121(Guj.)India.
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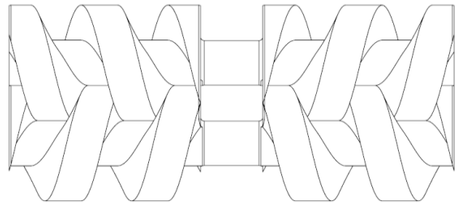
PUMP

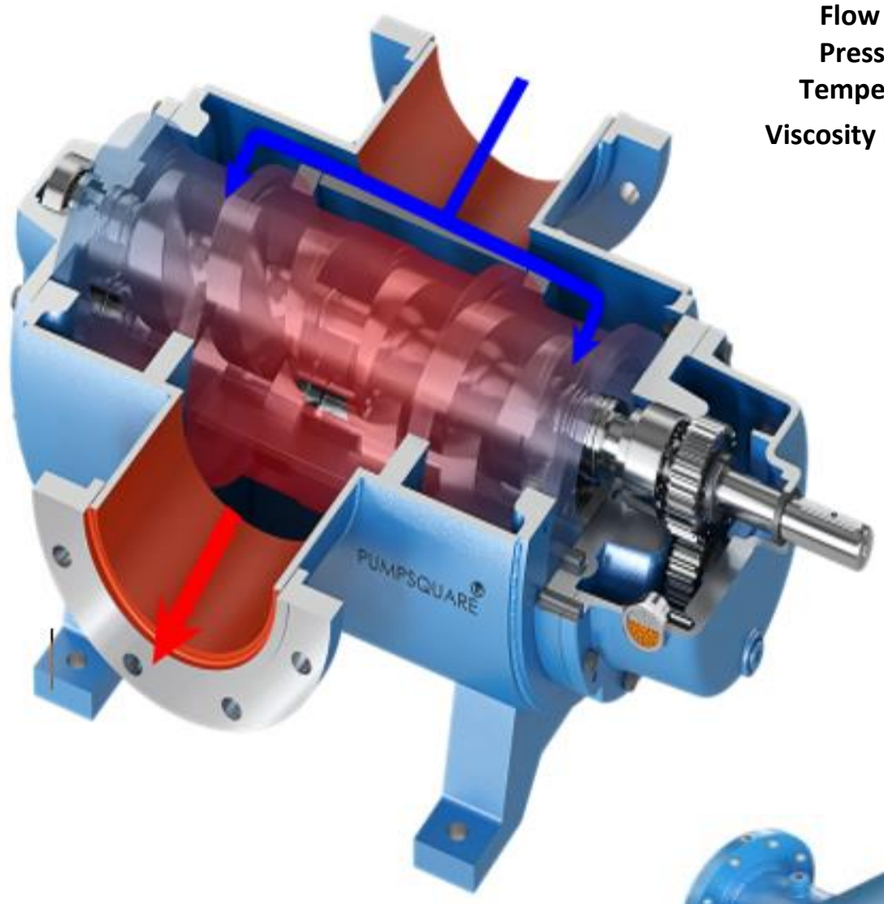


PUMPSQUARE®

TW 1X

Twin-Screw Pumps

Flow up to 600 m_3/hr
Pressure up to 16 Bar
Temperature up to 80° C
Viscosity up to 207600 mm^2/s

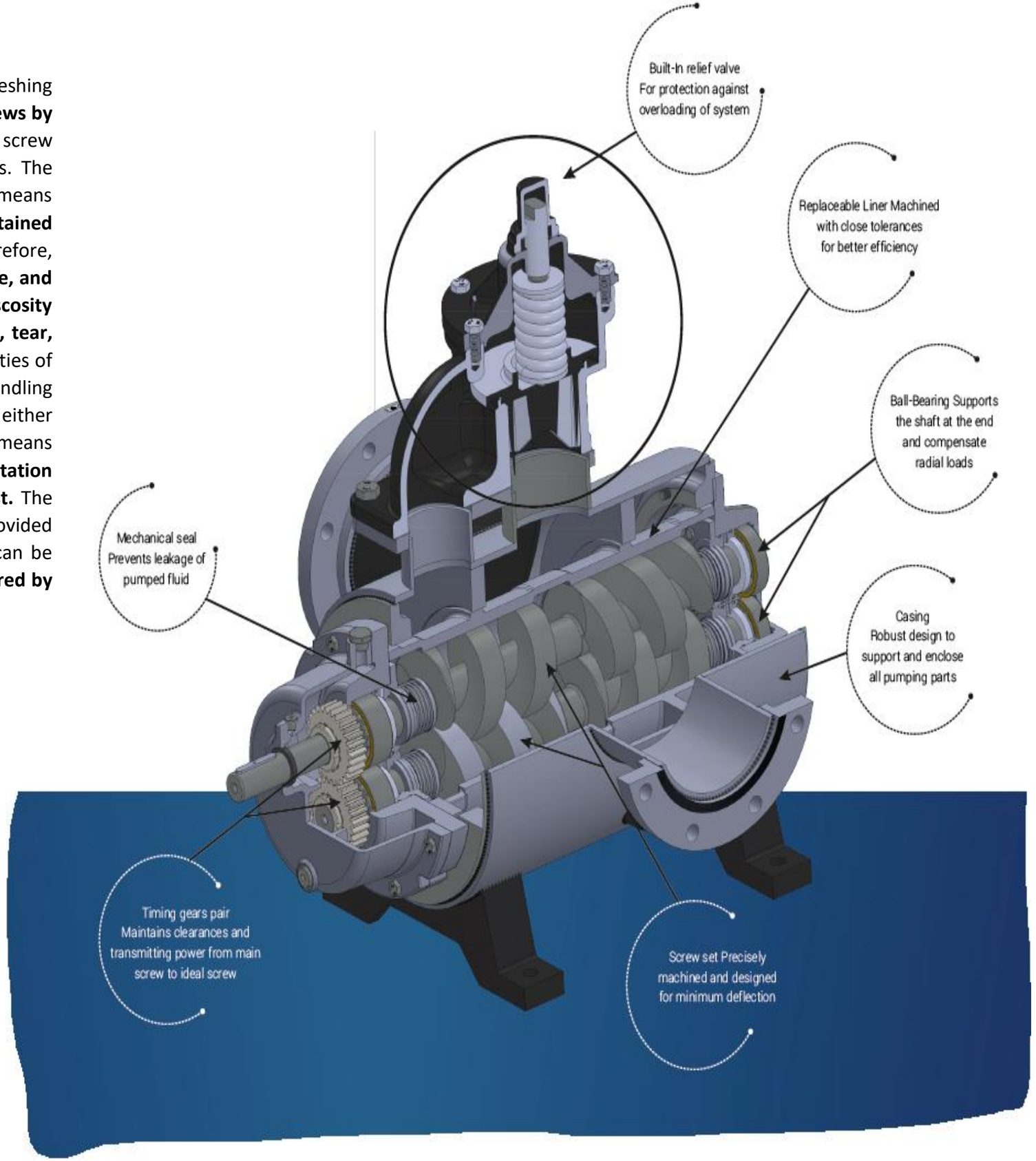


General Information:

The twin-screw pump is a positive displacement pump with two intermeshing screws rotating in a pump casing insert. **Our precisely manufactured screws by advance CNC machines ensures highly efficient performance** and the screw shafts are well supported and axially held in position by ball bearings. The rotational motion from driving shaft to the driven shaft is transferred by means of timing gear pair, as a result **the small positive clearance is maintained between the screws and thus prevents the metal to metal contact.** Therefore, our twin-screw pump **can be run dry for some time without any damage, and suitable for handling the fluid with low lubricity and low to high viscosity range**. Furthermore, no metal to metal contact assures **negligible wear, tear, and long service life of pump**. In addition, due to the less internal velocities of pair of screw, the **suction power is practically the lowest** even while handling highly viscous product at motor speed. The bearing and timing gears are either lubricated by the liquid to be pumped or by grease filled and/or by the means of oil bath. **The fluid in this pump travels axially without turbulence, rotation or churning and the noise and vibration created are almost the lowest.** The shaft sealing is relied by **the mechanical seals** and the pump casing is provided with an **exchangeable cylinder**. The bottom part of the pump casing can be executed as a heating jacket and **protection against overloading is ensured by a built-in spring loaded or line mounted relief valve.**

Features:

- Self-priming and positive displacement
- Robust casing design
- Prevention of metal to metal contact
- Ability of dry running for some time
- Long and reliable service life
- Axial constant smooth flow without churning
- Unparallel suction power
- Minimum wear and tear
- Exchangeable cylinder
- Built-in relief valve for overload protection
- Heating jacket is available



Material of Construction:

Casing: Cast iron, Bronze, Carbon Steel, Stainless Steel, Mild steel, Special material

Casing Design: Casting, Fabrication, Custom

Casing Insert: Cast iron, Bronze, Special material

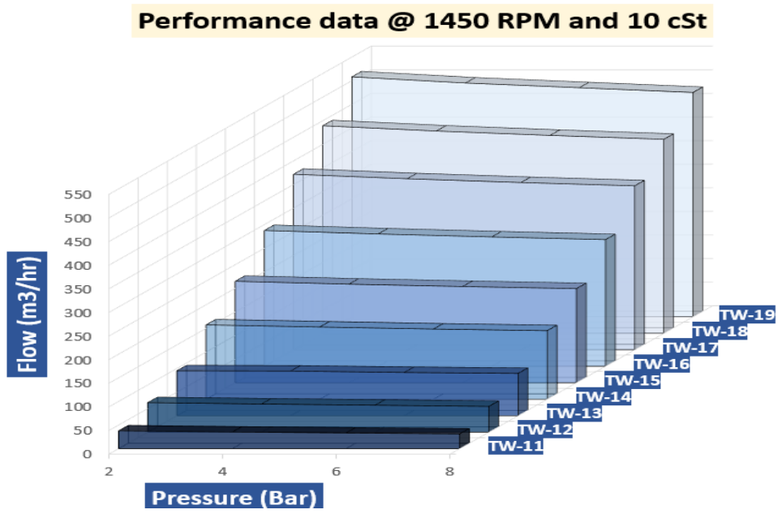
Screws and Shaft: EN-8, Alloy Steel, Stainless Steel, Special material

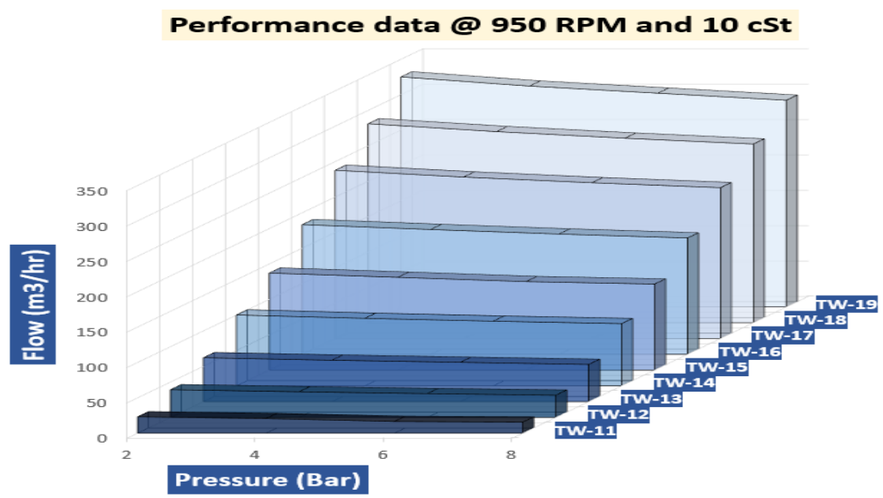
End Covers: Cast Iron, Fabricated MS, Special material

Bearing Housing: Cast iron, Special material

Relief Valve: Cast iron, Steel

Performance curves





APPLICATIONS:

Industry:

Major applications of twin-screw pump can be found in following industries:

- Chemical Industry
- Petrochemical Industry
- Oil and Gas
- Soap Industry
- Sugar Industry
- Plastic Industry
- Tar Industry
- Refineries
- In tank-farms
- Paint
- Lacquer and beverages
- Food industry
- Pharmaceuticals
- Dairy
- On-shore & off-shore applications
- Ship and marine applications
- Pulp and Paper Industry
- Steel Industry
- Power generation

These pumps can be used as:

- Main lube oil pumps
- Auxiliary lube oil pumps
- Fuel oil pumps
- Fuel oil Trim Pumps
- Fuel oil transfer pumps
- Heavy fuel oil pumps
- Heavy fuel oil transfer pumps
- Bilge / Ballast pumps
- General service pumps
- Cargo pumps
- Transport Pump

Chemical Industry

Petro-chemical Industry

Sugar Industry

Pharmaceuticals

Dairy

Oil Storage Tank

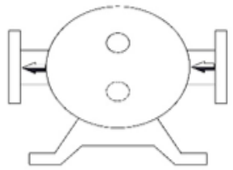
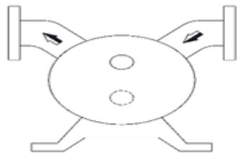
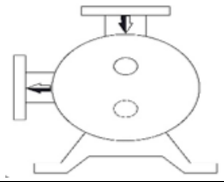
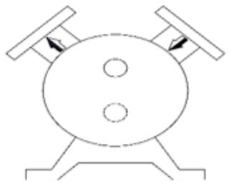
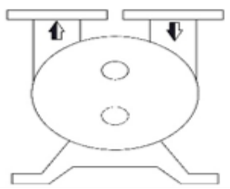
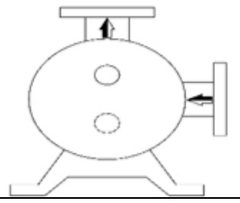
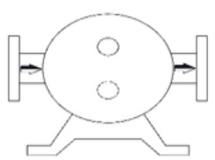
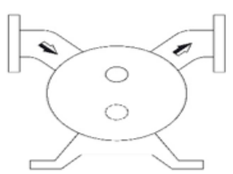
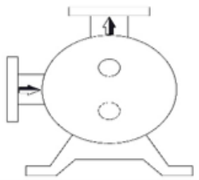
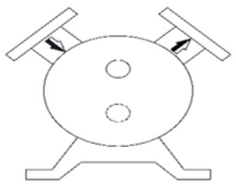
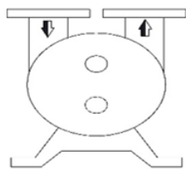
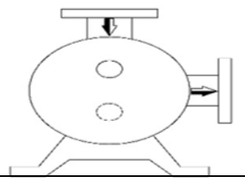
Fuel oil pumps

Cargo pumps

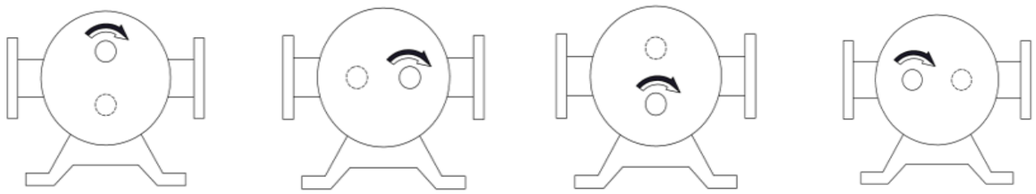
Typical Liquids:

Water, Lubricating oils, Fuel oils, Seawater, Oils, Light products Chemicals, Diesel oil, Petrol, Crude Oil, Lye, Additives, Glycerine, Paraffins, Polythylene, Polyster, Polybutadiene, Polyisoprene, Liquid Sulphur, Solvent, Molasses, Syrups, Mass Cutie, All kinds of heating oil, Tar, Bitumen, Additives, Residues, Sludges, Benzene, Toluene, Xylene, Phenol, Aniline, Liquid soaps, Soap stocks, Caustic soda, Fatty acids, Black Liquor, Milk Concentrate, Yeast Cream, Tomato Paste, Liquid Coffee, Glucose, Butter Oil, Mango Pulp etc.

PORTING OPTIONS:

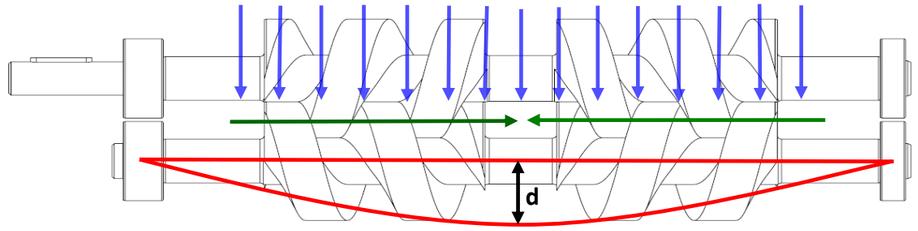
Clockwise Rotation of driver Shaft when viewing from drive side (Standard)			
			
Counter-Clockwise Rotation of driver Shaft when viewing from drive side (On demand)			
			

Shaft Configurations:



Standard	On demand

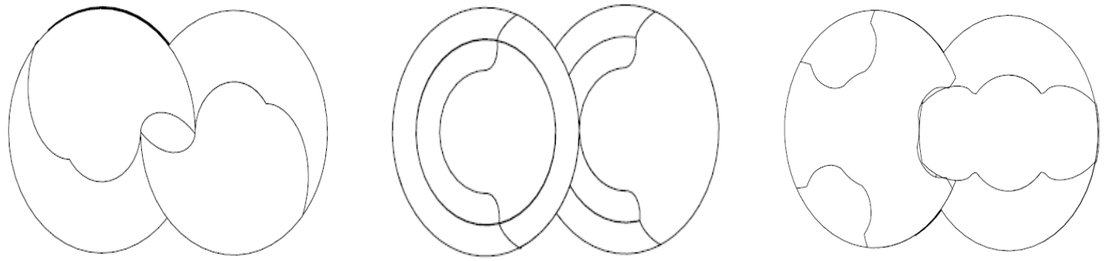
Force Distribution and Deflection in the Screw set:



→	Radial Force	Compensated by adequate design of ball bearings
→	Axial Force	Self-compensated due to the opposite helix of both screws
→	Deflection curve	Rigid shaft design to minimise maximum deflection (d)

Screw Profiles Available:

Based on the application of consumer, three different screw profiles are provided as shown below:

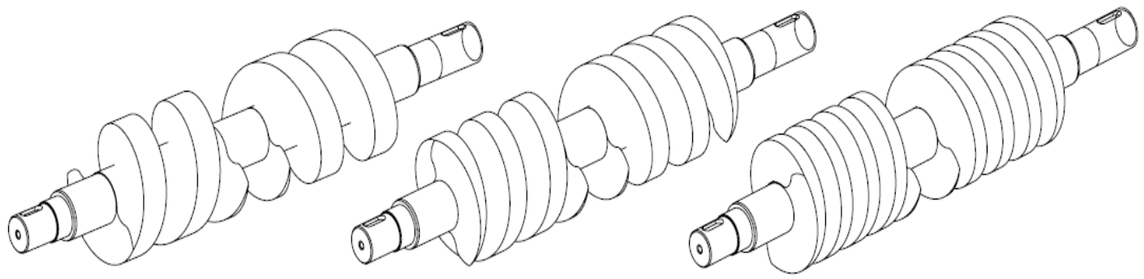


Vacuum Profile
Non-reversible (Standard)
Used for low pressure applications and minimising leakage

Multiphase Profile
Reversible (only on demand)
Used when there is a gas or solid particles in fluid

2/3 Screw Profile
Reversible (only on demand)
Used when the timing gears are not used

Variation in Screw pitch:

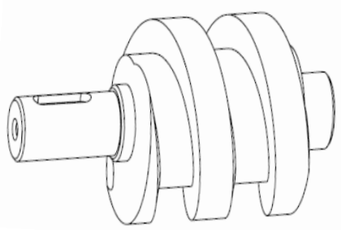


Higher Pitch
Higher Flow Capacity
Lower Pressure Capacity
Lower Volumetric Efficiency

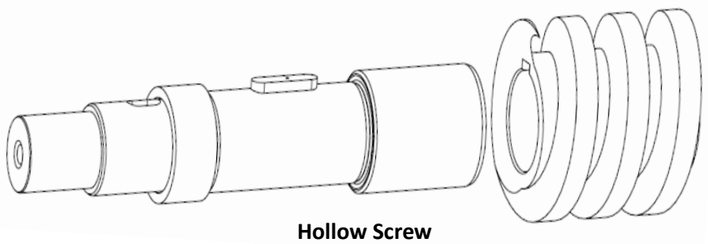
Medium Pitch
Medium Flow Capacity
Medium Pressure Capacity
Medium Volumetric Efficiency

Lower Pitch
Lower Flow Capacity
Higher Pressure Capacity
Higher Volumetric Efficiency

Screw type:

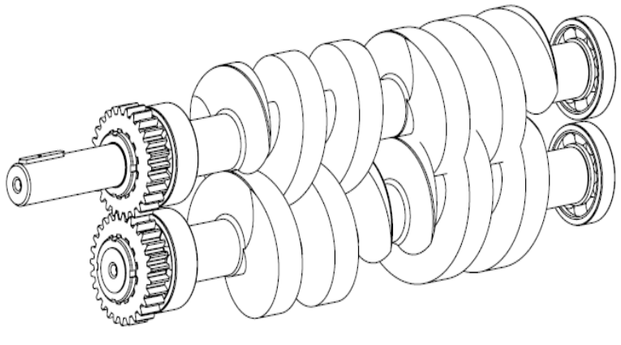


Solid Screw



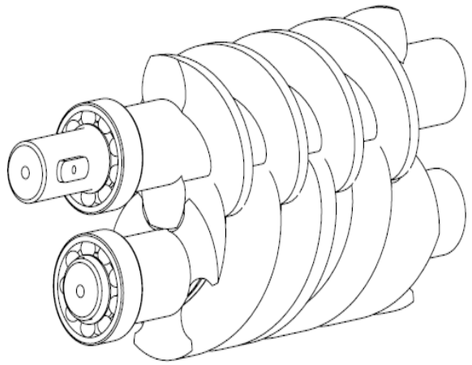
Hollow Screw

Screw-set type:



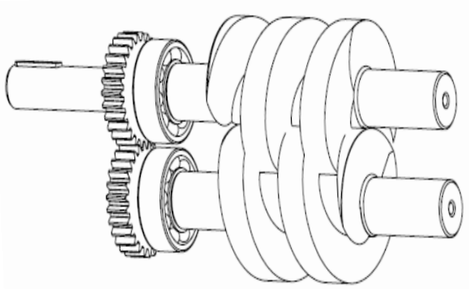
Timed Screw Set (Standard)

Power is transferred by pair of timing gears
Small positive clearances maintained between screws
Relatively longer life span of screw set



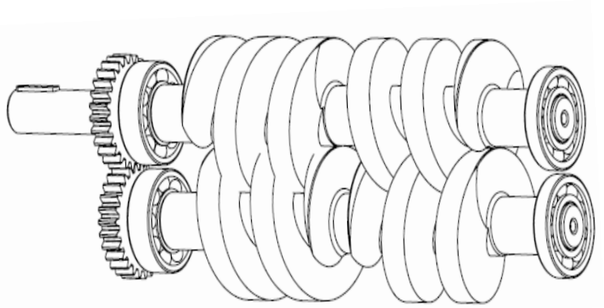
Non-timed Screw Set (On demand)

Power is transferred due to the screw profile
No positive clearances maintained between screws
Relatively shorter life span of screw set



Compact Screw Set

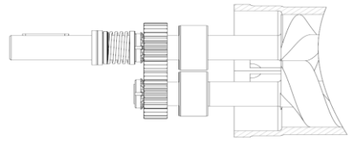
Generally used when the required flow is less like in food and pharmaceuticals applications.
The radial and axial both forces are compensated by means of overhung shaft design.
Use of single mechanical seal simplifies maintenance.
Seal-less version is also available with magnetic coupling.
The reduced size of pump saves the floor space.



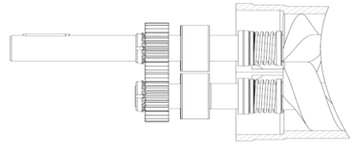
Non-Compact Screw Set

Mostly used in bulk transfer applications like in Marine and tank loading and unloading.
Between bearing shaft design minimises shaft deflection caused by radial load.
Variety of seals can be used that make these pumps enable for handling even the most corrosive liquids in a wide range of viscosity

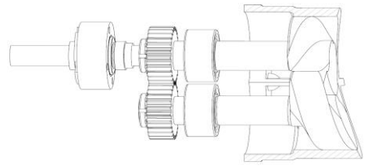
SEALING OPTION:



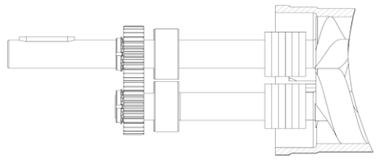
1 mechanical seal



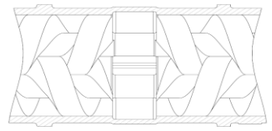
4 mechanical seal

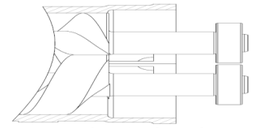


Mechanical cartridge seal unit

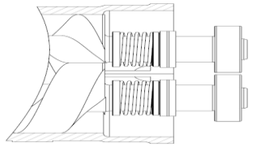


Gland packing

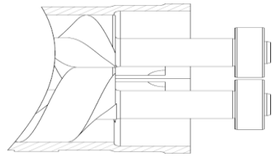




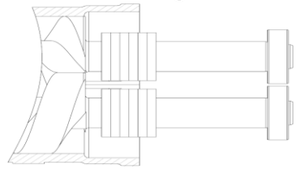
1 mechanical seal



4 mechanical seal



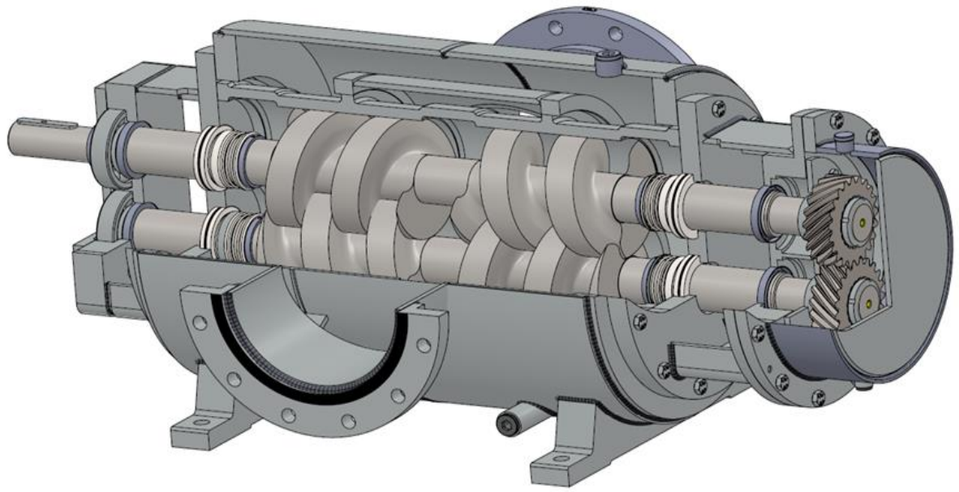
Mechanical cartridge seal unit



Gland packing

Long shaft Design:

When pumping highly corrosive liquids, extra care is taken to protect materials like bearing by this design.



As shown in the above figure, the API version of pump can be provided on demand, which incorporates timing gears on back side. Further, helical timing gears are also provided when requested. Please note that our standard design contains spur timing gears on front side.

RELIEF VALVE OPTIONS:

Pump without Relief Valve

Pump with Built-in Relief Valve

Pump with Built-in Relief Valve with facilitation of connection to tank for preventing overheating of pumping media

Pump with Line Mounted Relief Valve

JACKETING OPTIONS:

Fully Jacketed Pump for heating or cooling pumping media

Foot Jacketed Pump

Note that our standard pump comes without jacketing. Above versions are provided on customer request only.

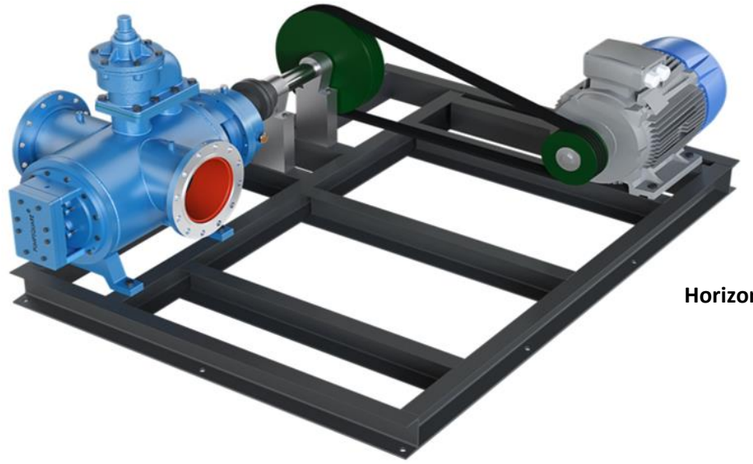
MOUNTING AND DRIVER OPTIONS:

Horizontal Foot Mounted Pump Directly Coupled with Motor

Horizontal Foot Mounted Pump Coupled with Gearbox and Motor

Horizontal Foot Mounted Pump Coupled with Geared Motor

Vertical Flange Mounted Pump Directly Coupled with Motor



Horizontal Foot Mounted Pump Coupled with pulley Drive