

# General Catalogue

## General Information

The company MZT Pumpi was established in 1945 as a small company producing diesel pump aggregates. During the period of former Yugoslavia the company becomes a compact production unit of wide range of pumps within the public industrial group MZT. In the 1990s, the MZT industrial group restructured, with the pump production unit turning into a private company with legal status - MZT Pumpi A.D.

### Industrial Identity Card

<b>Year of Establishment</b>	<b>1945</b>
<b>Legal Status</b>	<b>Corporation</b>
<b>Production site</b>	<b>25 000 m<sup>2</sup></b>
<b>Industrial Activity</b>	<b>Design, Manufacturing and Maintenance</b>
<b>Number of employees</b>	<b>110</b>
<b>Main Markets</b>	<b>Southeast Europe; Western Europe; Egypt, Russia and the former USSR countries.</b>
<b>Production Materials</b>	<b>Production Materials Cast iron , Ductile iron; Cast Steel, Bronze, SS (AISI 304, 316) Duplex SS, Super duplex SS, Hastelloy C and other on customer demand.</b>
<b>Industrial Sectors</b>	<b>Water Supply and Irrigation; Water treatment ; Chemical and petrochemical industry; Energy, Mining ,Shipbuilding Industry.</b>



## CORE BUSINESS

The main activity of the company is the production of wide range of industrial pumps including the following types:

- End Suction Centrifugal pumps (according to ISO 2858);
- Split Case double suction pumps;
- Multi-stage Centrifugal pumps;
- Vertical Turbine Deep well pumps;
- Three Screw Pumps;
- Self-priming oil transfer pumps;
- Archimedean Screw pumps.


In addition to design and production, MZT Pumpi also offers after sales services including maintenance.

The company MZT Pumpi continues to expand in Europe. The most important professional challenges of the company remain the investment in production and conquest of the new markets. The development of the company is based on the spirit of innovation and flexibility of its professionals, with focus on design of new products according to the needs of the customers.

## QUALITY ASSURANCE

MZT Pumpi has Integrated Quality Management system which complies with the requirements of BS EN ISO 9001: 2015 ; BDS EN ISO 14001:2015 and BS OHSAS 18001:2007.

## THE MAIN COMPETITIVE ADVANTAGES

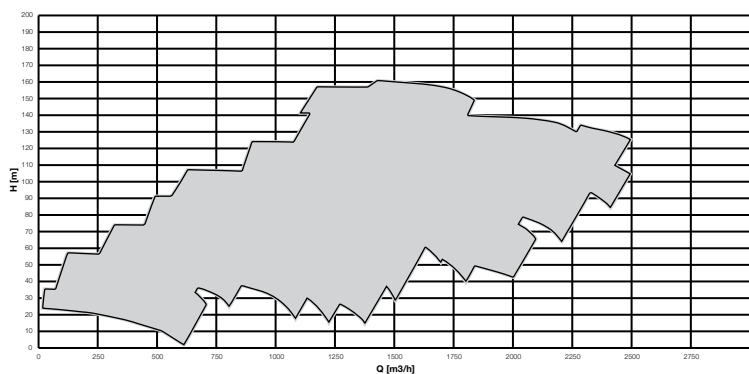
- Excellent quality / price ratio;
  - Short delivery terms;
  - Positioned in the heart of South Eastern Europe,
  - More than 70 years of experience in production of pumps;
  - Strong differentiation capacity (Design/Technology/Application).
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# END SUCTION CENTRIFUGAL PUMPS - SCP (According to ISO 2858)



Single stage, low pressure, centrifugal end suction pump with an axial inlet into the impeller and flanged bearing frame. Simple and compact design, suitable for flexible coupling to electric motor or internal combustion engine as a drive. Fast and easy dismantling without detaching from the existing pipeline.

## Hydraulic characteristics



## Arrangements:

1. Horizontal arrangement ->SCP;  
Horizontal arrangement for thermal oil -> STCP;
2. Vertical arrangement -> VSCP.

## Application:

For liquid transfer and circulation of cold and hot clean or slightly polluted water.

Typical applications are in:

- Municipal water supply;
- Domestic water supply;
- Industrial plants;
- Boiler feed and condensate systems;
- Irrigation and dewatering;
- General purposes etc.

## Advantages:

- Ample dimensioned shaft guided through roller bearings and hardened shaft sleeve.
- Reliable wet impeller technology;
- Fully-enclosed single piece casting;
- High operating reliability

## Drive:

- Electric motor;
- Diesel motor.

## Sectional Drawing of SCP pumps

### Pump case

The pump case is of rigid design with a generous wall thickness, giving good protection against erosion and corrosion.

### Shaft sealing

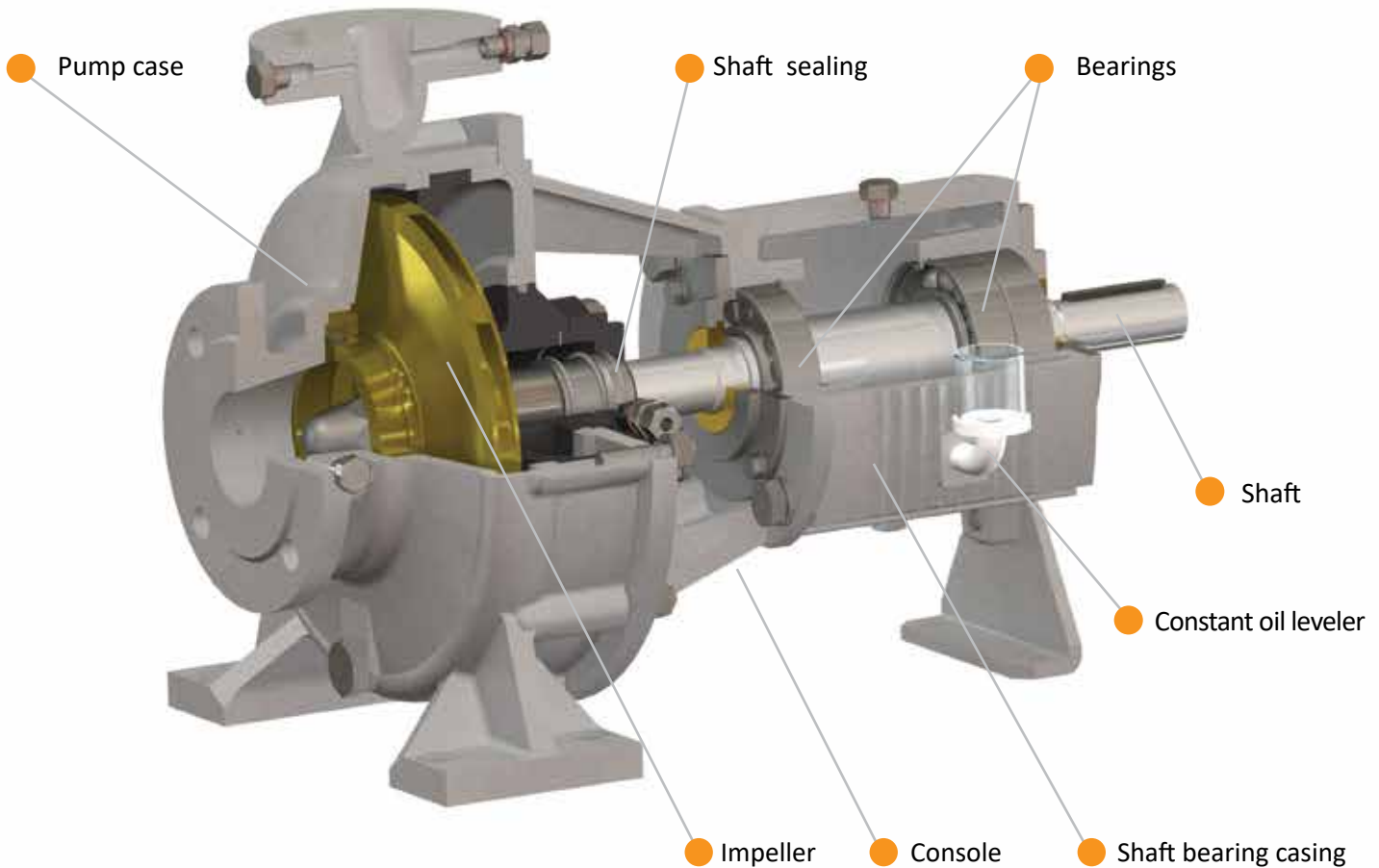
Shaft sealing can be with:  
- soft packing  
- mechanical seal.

### Shaft bearing bracket

The heavy duty console with incorporated lantern assures silent operation.

### Impeller

Fully enclosed, single -piece casting gives reliability, long trouble-free operation and high efficiency.



### Bearings

The shaft is protected by a replaceable shaft sleeve in stainless steel.

### Shafts

Ample dimensioned single and double row ball bearings improve the stiffness and minimize shaft deflection.

### Console

Aligned between the bearing bracket and the pump case.

### Constant oil leveler

For maintaining a constant oil level for efficient lubrication of the bearings.

### Technical data:

Capacity: up to 2500 m<sup>3</sup>/h  
Head: up to 150 m  
Pump size: up to DN300  
Temperature: up to 160°C

## Sectional Drawing of STCP pumps

### Pump case

The pump case is of rigid design with a generous wall thickness, giving good protection against erosion and corrosion.

### Shaft sealing

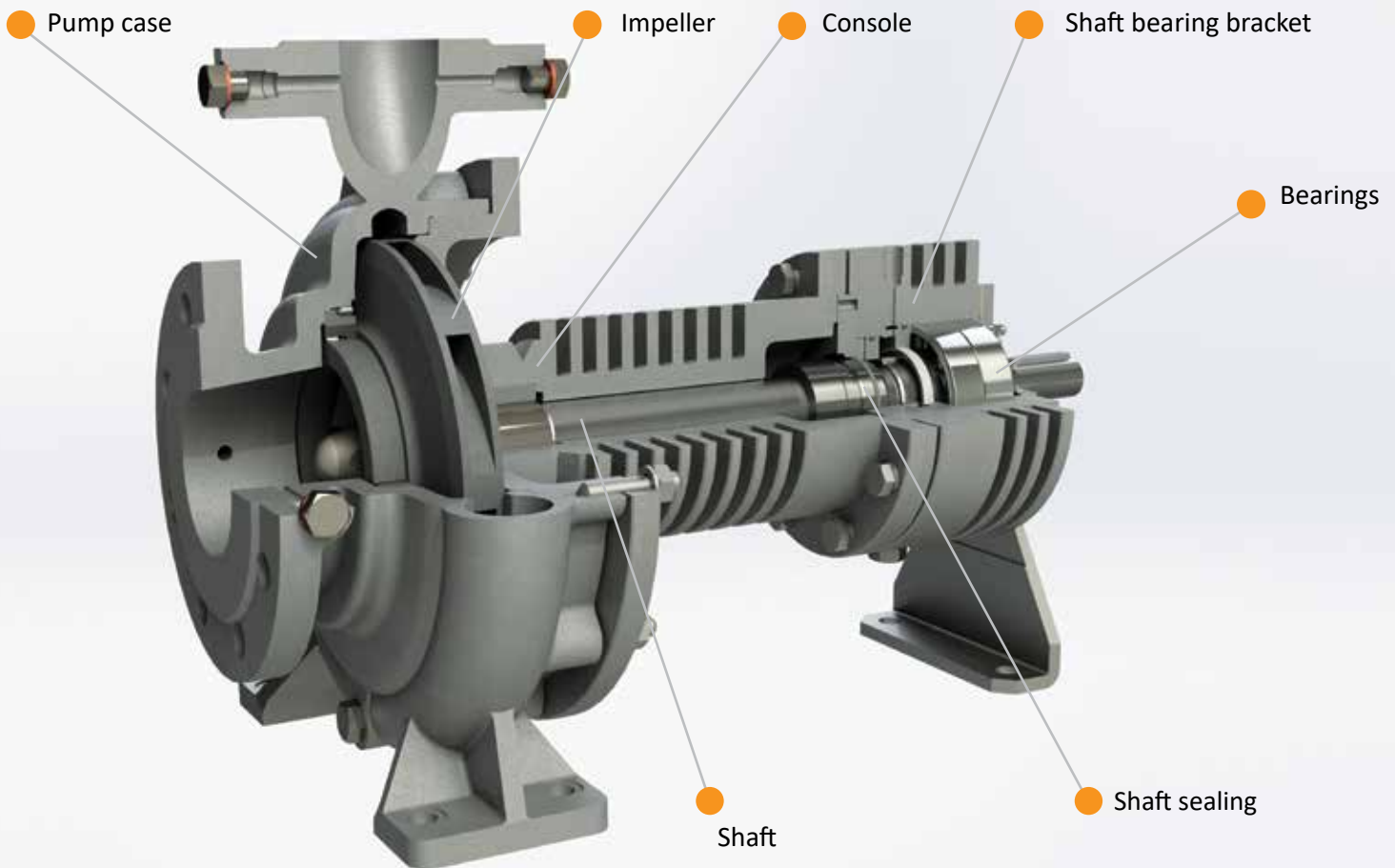
Shaft sealing can be with:  
- soft packing  
- mechanical seal.

### Shaft bearing bracket

The heavy duty console with incorporated lantern assures silent operation.

### Impeller

Fully enclosed, single -piece casting gives reliability, long trouble-free operation and high efficiency.



### Bearings

The shaft is protected by a replaceable shaft sleeve in stainless steel.

### Shafts

Ample dimensioned single and double row ball bearings improve the stiffness and minimize shaft deflection.

### Console

Aligned between the bearing bracket and the pump case.

### Technical data:

- Capacity: up to 350m<sup>3</sup>/h
- Head: up to 100 m
- Pump size: up to DN150
- Temperature: up to 350 °C

## Sectional Drawing of VSCP pumps

### Coupling

Connection between the electric motor and the pump is carried out by means of an elastic coupling.

### Shaft sealing

The shaft sealing could be arranged by graphite soft packing.

### Impeller

Designed for maximum efficiency with wide range of hydraulic coverage. Precision balanced for smooth operation.

### Suction strainer

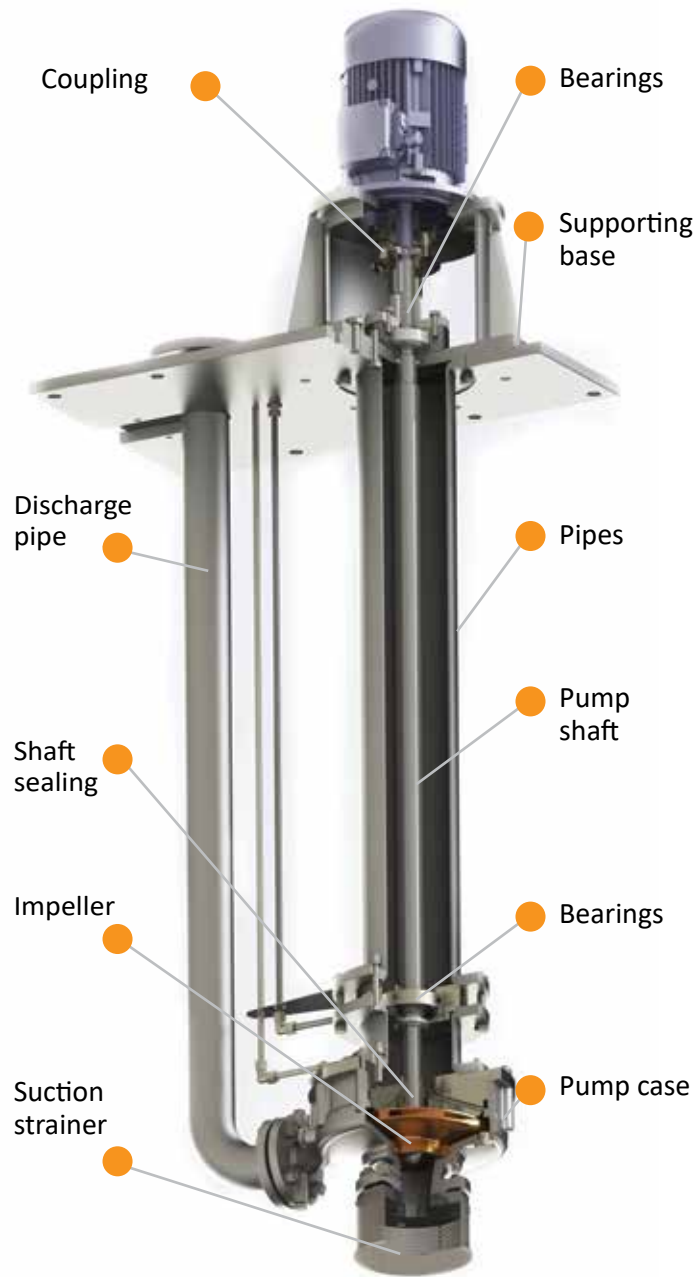
Prevents solids from entering suction bearing.

### Pump case

The pump case is of rigid design with a generous wall thickness, giving good protection against erosion and corrosion.

### Technical data:

Capacity: up to 1000 m<sup>3</sup>/h  
Head: up to 100 m  
Pump size: up to DN250  
Temperature: up to 160 °C



### Bearings

Weight and axial hydraulic thrust bear upon the upper semi-axial roller bearing. It's also used for centering of shaft at the same time.

### Supporting base

The base support is of welded design with supporting rolling bearings. In order to fasten the whole pump set, there must be provided a supporting frame, or steel profile. The profile is concreted in a plant plate.

### Pipes

The required depth for pump fitting is realized with assembly of certain number of inter-pipes with welded flanges.

### Pump Shaft

Ample dimensioned single and double row ball bearings improve the stiffness and minimize shaft deflection.

### Bearings

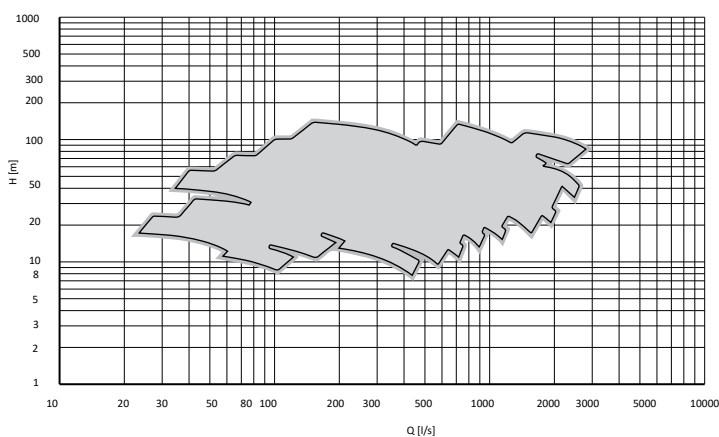
The vertical transmission of the pump bears upon two rolling bearings and the weight and axial force, upon the upper semi-axial rolling bearing. The bearings are grease lubricated.

# SPLIT CASE DOUBLE SUCTION PUMPS - D



Horizontal Split Case Double Suction Centrifugal Pumps Type: D are engineered to pump clean water or low viscosity clean liquids at moderate heads more efficiently than any other type of pump. All fabricated parts are standardized and accurately machined for true alignment, increasing overall durability. Impellers are statically and dynamically balanced and constructed with double inlets, practically eliminating the axial thrust and resulting in high operating efficiency.

## Hydraulic characteristics



## Arrangements:

Split Case Double Suction Pumps Type D could be arranged in:

1. Horizontal arrangement;
2. Vertical Arrangement.

## Drive:

- Electric motor;
- Diesel motor.

## Application:

For liquid transfer and circulation of cold clean or slightly polluted water.

Typical applications in:

- Municipal water supply;
- Power plants;
- Industrial plants;
- Boiler feed and condensate systems;
- Irrigation and dewatering;
- General purposes etc.

## Advantages:

- Single stage, medium pressure double inlet centrifugal pump with two flanged bearing frame, suitable for flexible coupling to electric motor or internal combustion engine as a driver;
- Ample dimensioned shaft guided through roller bearings and hardened shaft sleeve;
- Fully-enclosed single piece casting, double inlet impeller practically doesn't produce any axial thrust.
- High operating reliability due to maintenance and Service parts;
- Spiral housing axially splitted means easy maintenance without pipe disconnection.



## Sectional Drawing of D pumps

### Shaft sealing

Shaft sealing can be with:

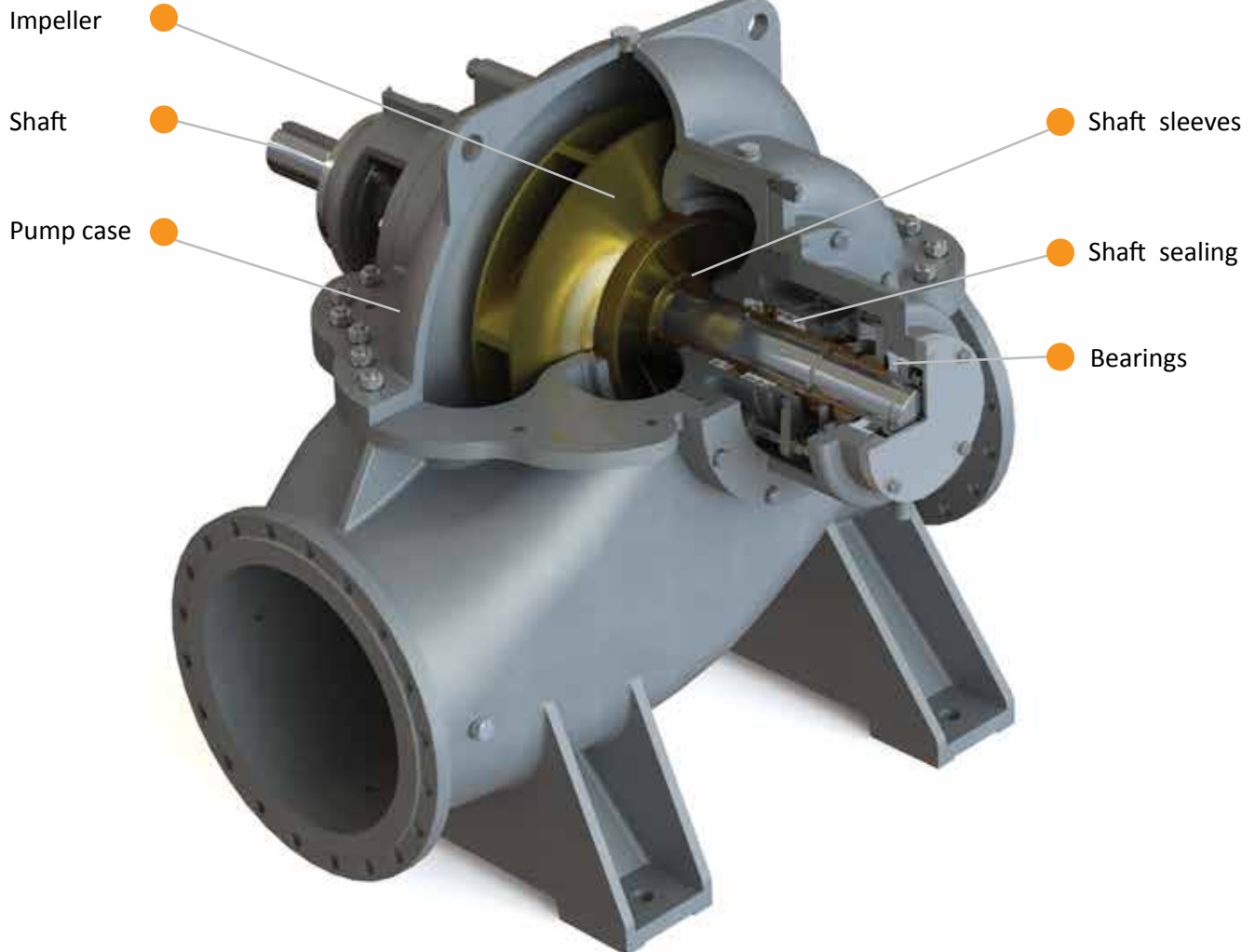
- soft packing
- mechanical seal.

### Bearings

Ample dimensioned grease lubricated roller bearings, improve the stiffness and minimize shaft deflection.

### Shaft Sleeves

Shaft is protected of excessive wear in stuffing box region by two hardened stainless steel shaft sleeves.



### Shaft

The shaft is dimensioned for minimum deflection and is protected by a replaceable shaft sleeve in stainless steel.

### Impeller

Double suction, fully enclosed, single-piece casting impeller design gives practically zero axial forces.

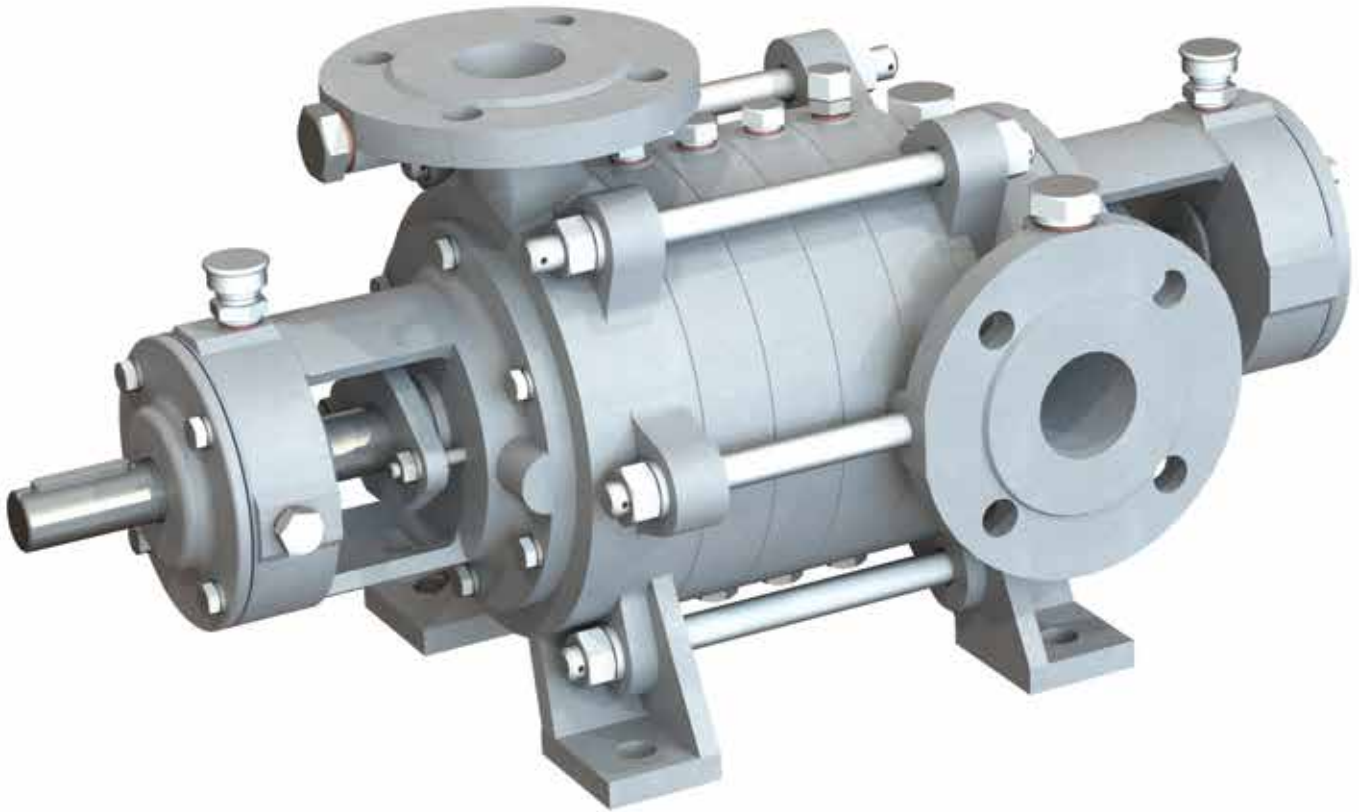
### Pump case

Axially split pump case arrangement for easy pump's maintenance without dismantling.

### Technical data:

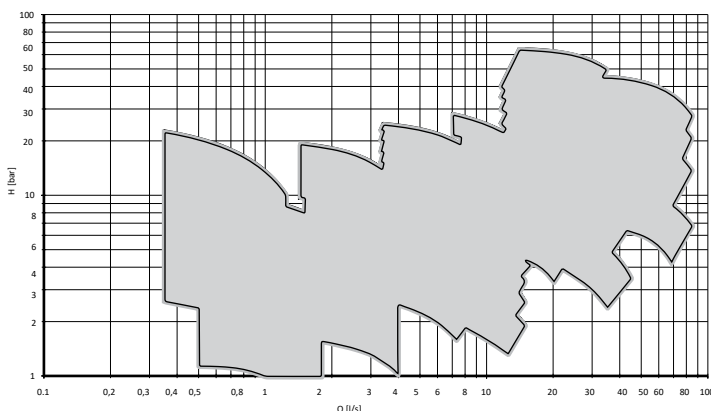
- Capacity: up to 2500 l/s;
- Head: up to 140 m;
- Pump size: up to DN 600;
- Temperature: up to 90°C

# MULTISTAGE PUMPS - C, KCP, VC, CS



The C type range is the basic range of our centrifugal ring section multistage pumps. The simplified design, utilizing hydraulically balanced impellers by means of holes into impeller, or by “back to back” impeller execution, provides the optimum pumping solution for medium pressure applications. Pump casing is consisted of suction and discharge housing, middle chambers and bearing brackets. All of the impellers are centrifugal of closed type, and are statically and dynamically balanced.

## Hydraulic characteristics



## Arrangements:

1. Horizontal version:
  - Type C;
  - Type KCP;
2. Vertical version:
  - Type VC;
  - Type CS;
3. With cooling system:
  - Type KCP.

## Application:

- Agriculture irrigation;
- Boiler feed;
- Chemical and light hydrocarbon transfer;
- Coating and surface treatment;
- High rise building sprinklers;
- Paper mill shower water;
- Pressure boosting systems;
- Sanitary wash down services;
- Rotating equipment lube and seal oil supply.

## Advantages:

- Impellers which are released of axial force (balanced impellers) result in low axial force transmitted onto the bearings.
- Relative small dimensions concerning to the performances.

## Drive:

- Electric motor;
- Diesel motor.

## Sectional Drawing of C, KCP Pumps

### Impellers

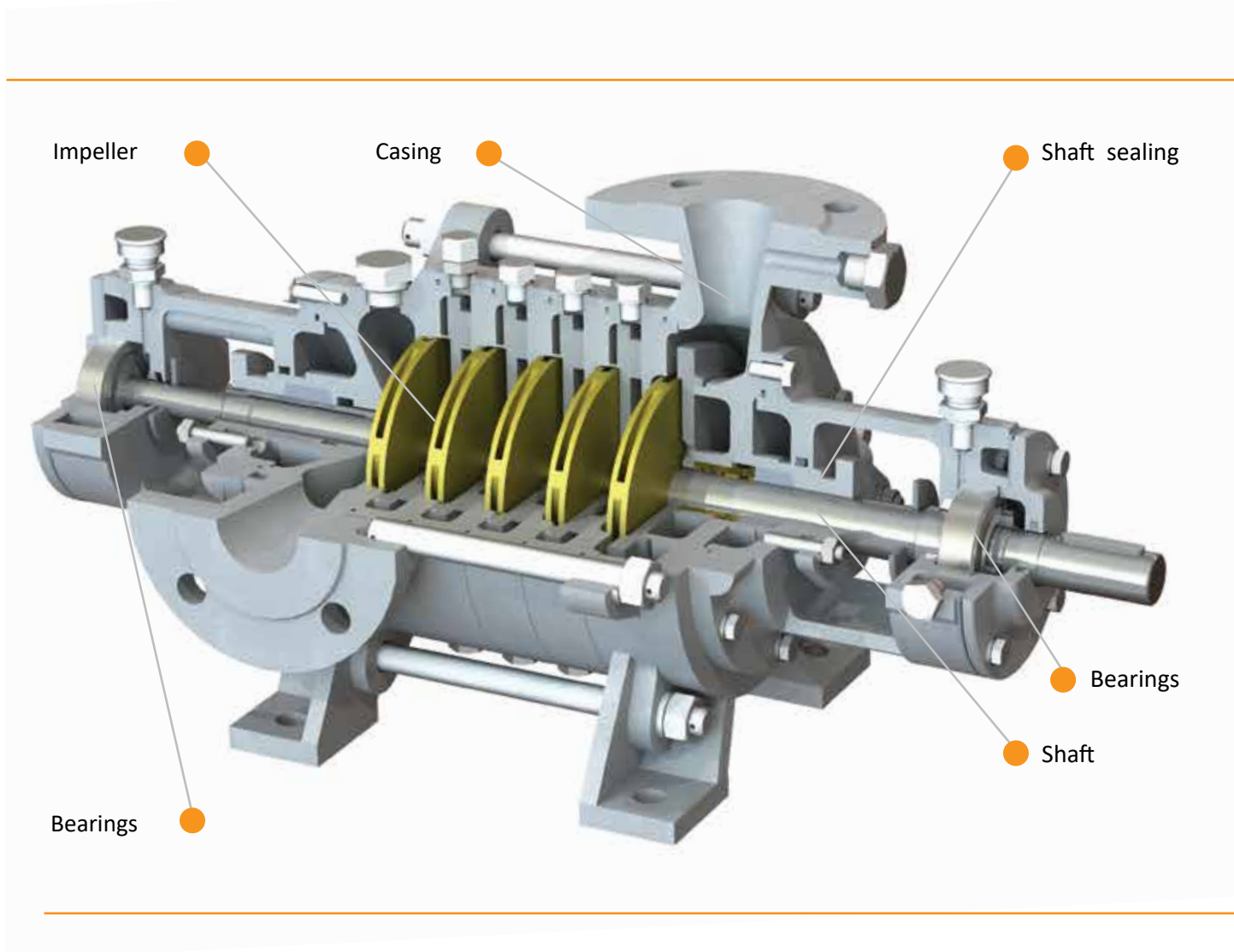
Fully shrouded impellers statically and dynamically balanced.

### Casing

Gray iron as standard, other material executions available.

### Shaft sealing

Gland packing as standard mechanical seals as option.



### Shaft

Stainless steel shaft, precisely machined and grounded.

### Ball bearings

Grease lubricated ball bearings to handle axial thrust in either direction.

### Technical data:

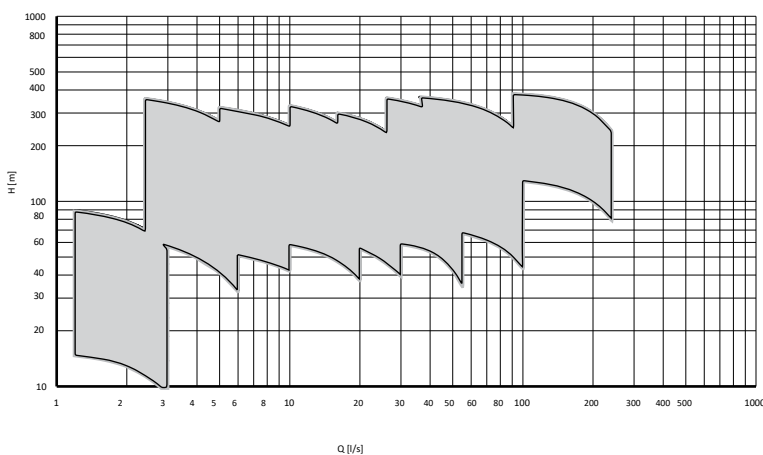
- Capacity: up to 85 l/s;
- Head: up to 650 m;
- Pump size: up to DN 200;
- Temperature: up to 160°C

# MULTISTAGE PUMPS - MS, DMS, MSTD, MSS



The MS are process duty multistage centrifugal pumps in ring section design, designed (produced) for moderate to high pressure heads available in five basic sizes. The suction and pressure bodies can be turned for 90° in both directions, which enables the pumps to be mounted and adapted to the requirements of the installation. Axial thrust is relieved by means of a drum mounted on the shaft inside the discharge hull, rest of the thrust bears one of the roller bearings. The impellers are centrifugal of closed type identically fixed to a shaft, supported on two roller bearings.

## Hydraulic characteristics



## Arrangements:

Multistage type of pumps could be arranged in:

- Horizontal version MS, DMS, MSTD;
- Vertical version MSS, VMS;
- Cooling system MSTD.

## Application:

- Industrial and process services;
- Water supply pumps, irrigation and drainage pumps in agriculture, water circulation pumps;
- Mining and civil engineering;
- Transport of thin oils, petroleum products;
- Chemical and process industry.

## Advantages:

- This MS pumps achieve very high pressure  $\approx 30\text{m}$  / impeller;
- Suction and discharge flanges can be rotated for 90° to conform with the pipeline;
- One way of balancing the axial thrust in MS pumps is to arrange the impellers in opposite direction, another way of balancing the axial thrust is to use a balancing drum, the rest of the axial force is beared by roller bearings.

## Drive:

- Electric motor;
- Diesel motor.

## Sectional Drawing of DMS pumps

### Shaft

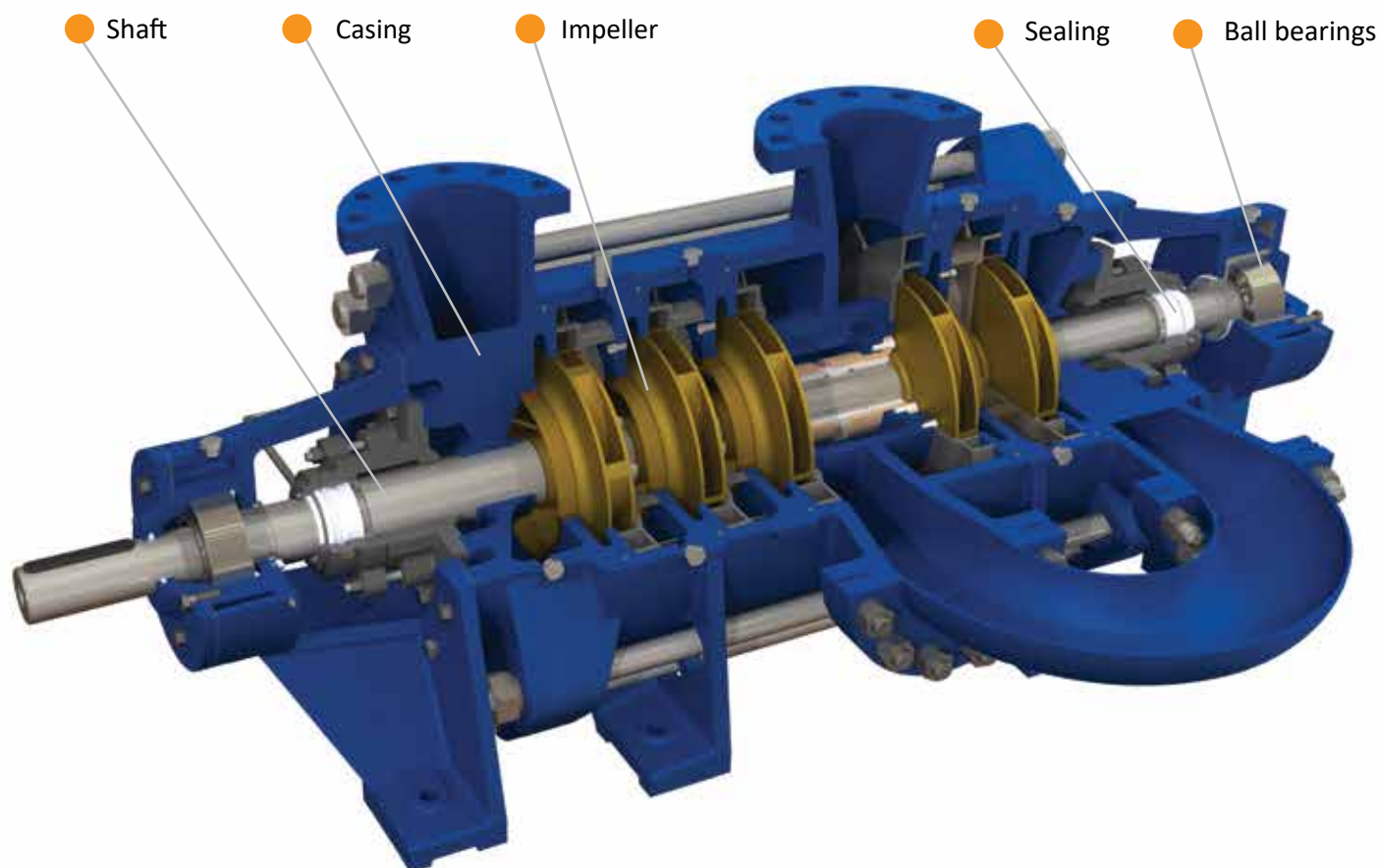
Stainless steel shaft, precisely machined and grounded.

### Casing

High quality casings available in grey iron as standard, other material combinations as option.

### Impellers

Fully shrouded impellers statically and dynamically balanced.



### Shaft sealing

Soft cord packing as standard mechanical seals as option.

### Ball bearings

Grease lubricated ball bearings to handle axial thrust in either direction.

### Technical data:

- Capacity up to 240 l/s;
- Head: up to 370 m;
- Pump size: up to DN 200;
- Temperature: up to 160°C.

## Sectional Drawing of VMS pumps

### Coupling

Connection between the electric motor and the pump is carried out by means of an elastic coupling.

### Shaft sealing

The shaft sealing could be arranged by graphite soft packing.

### Impeller

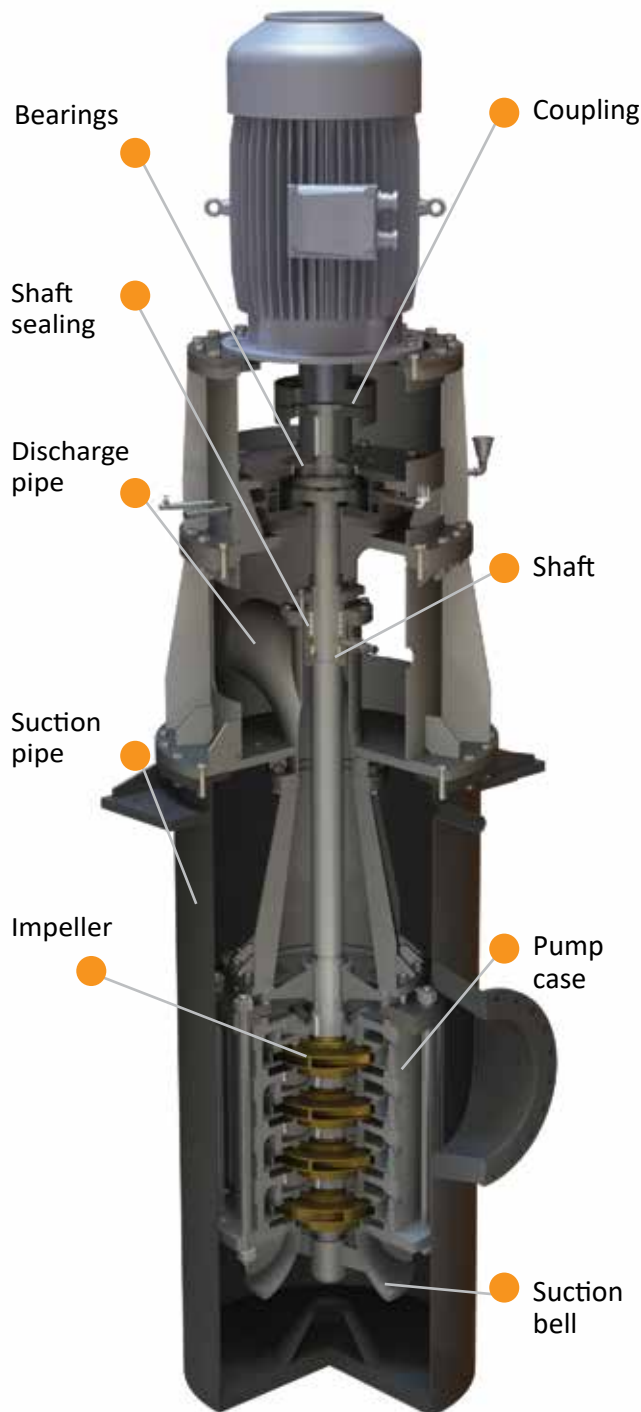
Designed for maximum efficiency with wide range hydraulic coverage. Precision balanced for smooth operation.

### Suction bell

Provided for shaft stability.

### Discharge pipe

Properly sized for optimum water velocities to insure peak hydraulic performance.



### Pump case

The pump case is of rigid design with a generous wall thickness, giving good protection against erosion and corrosion.

### Bearings

Weight and axial hydraulic thrust bear upon the upper semi-axial roller bearing. It's also used for centering of shaft at the same time.

### Suction Pipe

The required depth for pump fitting is realized with assembly of certain number of inter-pipes with welded flanges.

### Pump Shaft

Ample dimensioned single and double row ball bearings improve the stiffness and minimize shaft deflection.

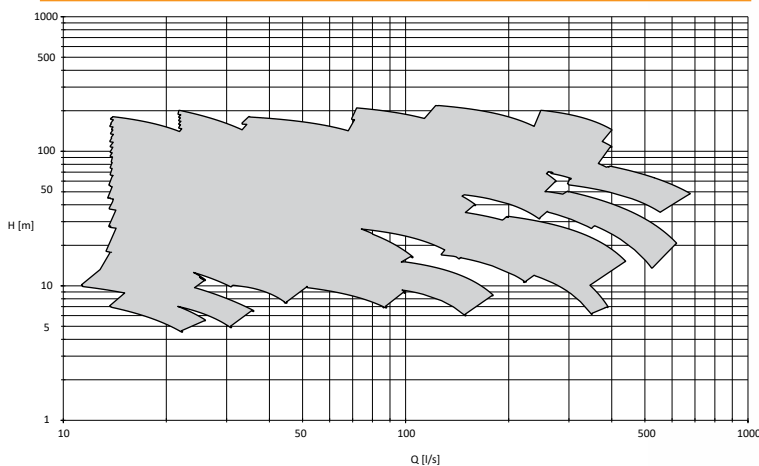
### Technical data:

- Capacity: up to 240 l/s;
- Head: up to 370 m;
- Pump size: up to DN 200;
- Temperature: up to 160°C.

# VERTICAL TURBINE DEEL WELL PUMPS -DP,VPH,HMF

This vertical and semi-axial pump covers the capacity range up to 680 (l/s) against head of up to 210(m), "DP" and "VPH" type are produced as single and multistage pumps while "HMF" type is manufactured only as single stage pump. Centrifugal pump with one or more semi axial impellers. It is applied for installation into the wells. There is a possibility for discharge connection to be under or above of the base plate in the pump unit.

## Hydraulic characteristics



## Application:

- For liquid transfer and circulation of clean or slightly polluted water.

Typical application in:

- Metallurgical and other industries;
- Water supply of populated places;
- Industrial plants;
- Irrigation and dewatering;
- Municipal water supply;
- Sanitary wash down services;
- Thermal Power Plants;
- Mining;
- Civil engineering.

## Advantages:

- Electric motor is not submersible - there is no need of sealing. Therefore the life time of the pump is longer;
- There is self-sealing with water on bearing of transmission shafts;
- These pumps are used for transportation of clean and slightly polluted water with temperatures up to 60°C and suction head higher than 7m with smaller space for installing the pump.

## Drive:

- Electric motor;
- Diesel motor.



## Sectional Drawing of DP pumps

### Shaft sealing

The shaft sealing could be arranged by graphite soft packing.

### Discharge pipe

Properly sized for optimum water velocities to insure peak hydraulic performance.

### Pump case

The pump case is of rigid design with a generous wall thickness, giving good protection against erosion and corrosion.

### Impeller

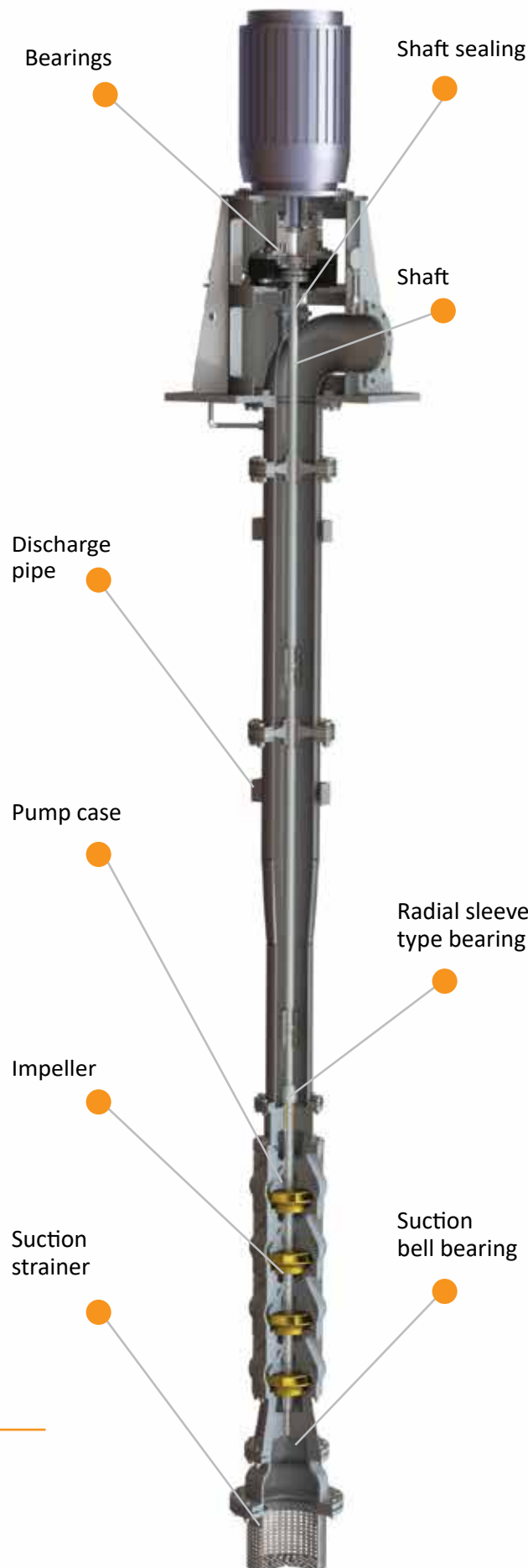
Designed for maximum efficiency with wide range of hydraulic coverage. Precision balanced for smooth operation.

### Suction strainer

Prevents solids from entering suction bearing

### Technical data:

- Capacity: up to 680 l/s;
- Head: up to 210 m;
- Pump size: up to DN 500;
- Temperature: up to 90°C.



### Bearings

Weight and axial hydraulic thrust bear upon the upper semi-axial roller bearing. It's also used for centering of shaft at the same time.

### Shafts

Heavy duty for strength and corrosion resistance. The shaft is protected by a replaceable shaft sleeve in stainless steel.

### Radial sleeve type bearing

Provided at each stage To assure stable operation away from critical speeds.

### Suction bell bearing

Provided for shaft stability.

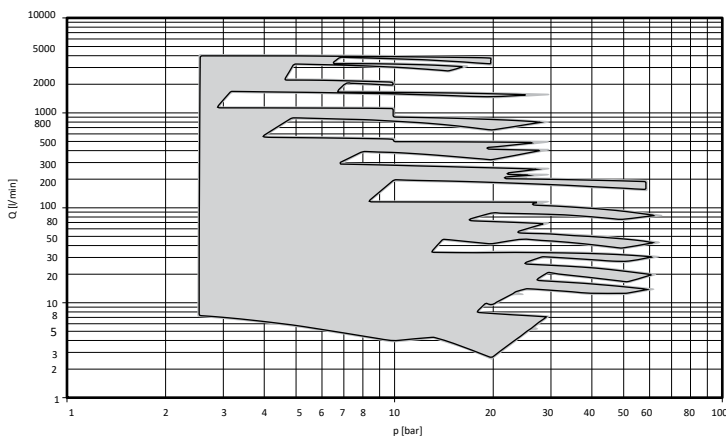


# THREE SCREW PUMPS - HVP, KHVP, VVP, PVVP



Screw – spindle pumps belong into the group of volumetric pumps. The main working elements of the pump are three screw (helical) spindles (with special profile) and sleeve (casing). Screw spindle pumps can be compared with gear that have big screw length of his teeth or with piston pump which indefinite number of pistons. Pumps are made in horizontal and vertical design with adequate fitting flanges in horizontal or vertical position. Working spindles are totally hydraulically disburdened of axial forces. Fluid is moving axially without turbulence and mixing which enables pumping of a lot of viscous fluids without making foam.

## Hydraulic characteristics



## Arrangements:

- Horizontal: HVP, KHVP, KHVP-p;
- Vertical: VVP, BVVP, PVP.

## Drive:

- Electric motor;
- Diesel motor.

## Application:

Three-Spindle screw pumps are used for transport of viscous fluids with lubricating properties: lube oils, fuel oils, synthetic, mineral and vegetable oils. They are suited for variety of marine and offshore applications such as: fuel-injection, oil burners, boosting, hydraulics, fuel, lubrication, circulating, feed and many more.

Typical applications are:

- As transport pumps for loading and unloading of tanks and tankers;
- For lubricating of machines, motors, turbines, generators,
- For dosing of fuel oil in burners;
- For transport of viscous fluids for other applications.

## Advantages:

- High reliability & long service life;
- Negligible maintenance;
- High temperature capability and efficiency;
- Smooth pulsation – free flow, without turbulence
- Low noise level and vibrations;
- Excellent suction capability of self-priming;
- Hydraulic balancing of forces eliminates need for bearings;
- Well suited for use with variable speed drives.

## Sectional Drawing of HVP pumps

### Shaft sealing

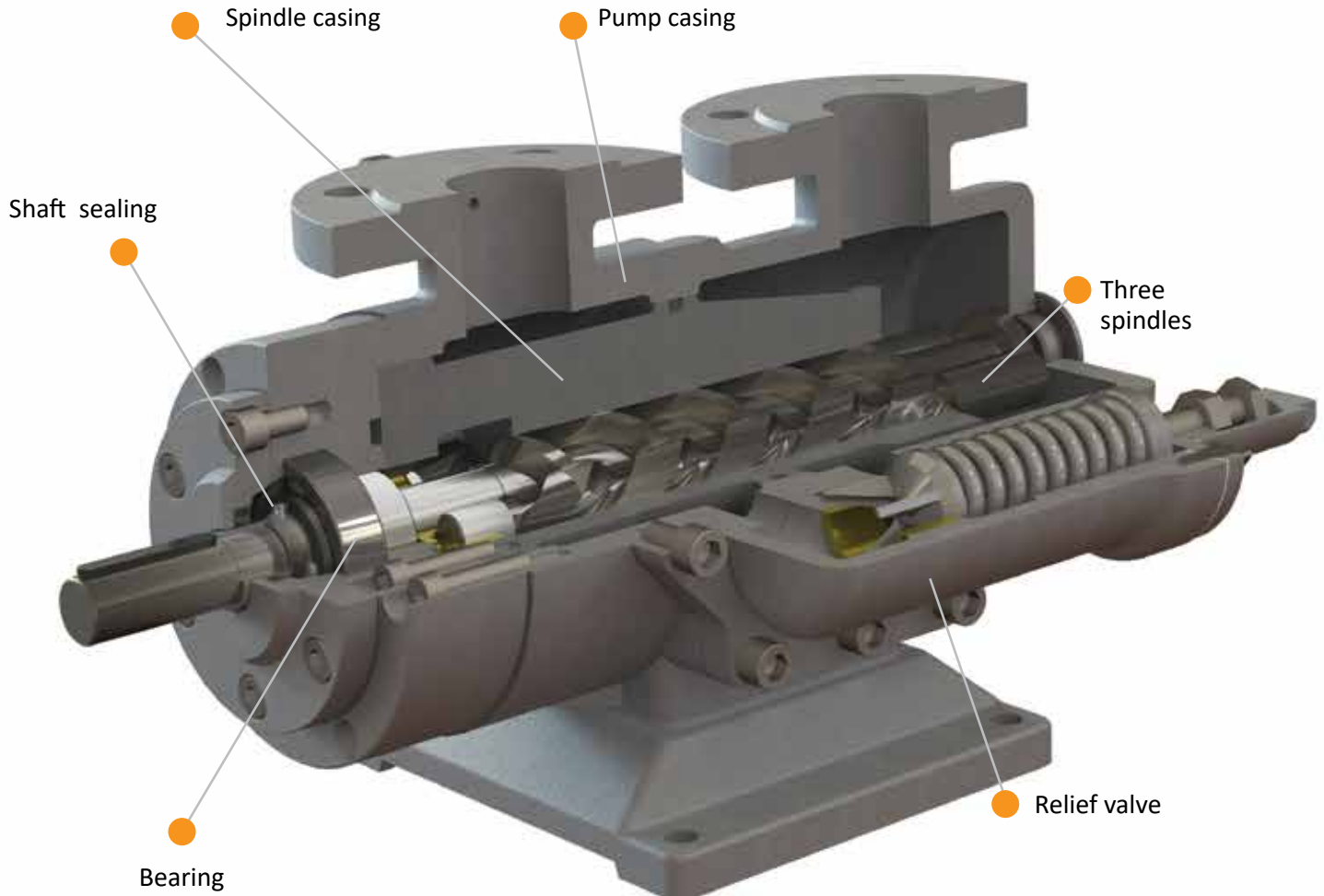
Shaft sealing is standard with shaft lip seal rings, mechanical seals available on demand, the seal chamber is connected to pump inlet so the seals work on lower pressure, seals material combination depends on working fluid and temperature.

### Spindle casing

Replacable casing in various material executions.

### Three spindles

The spindles are hardened and ground.



### Pump casing

Robust pump casing design, execution with jacketed casing for steam or head conveyor available in fabricated steel design.

### Bearing

Roller bearings lubricated by the working fluid, in case of external bearing executions lubrication by means of grease with grease nipple.

### Relief valve

Adjustable pressure relief valve for overload protection, in case of pump without relief valve there must be overpressure protection provided on other way.

### Technical data:

- Capacity: up to 4200 l/min;
- Head: up to 60 bar;
- Pump size: up to DN 200;
- Temperature: up to 140°C.

## Sectional Drawing of KHVP pumps

### Shaft sealing

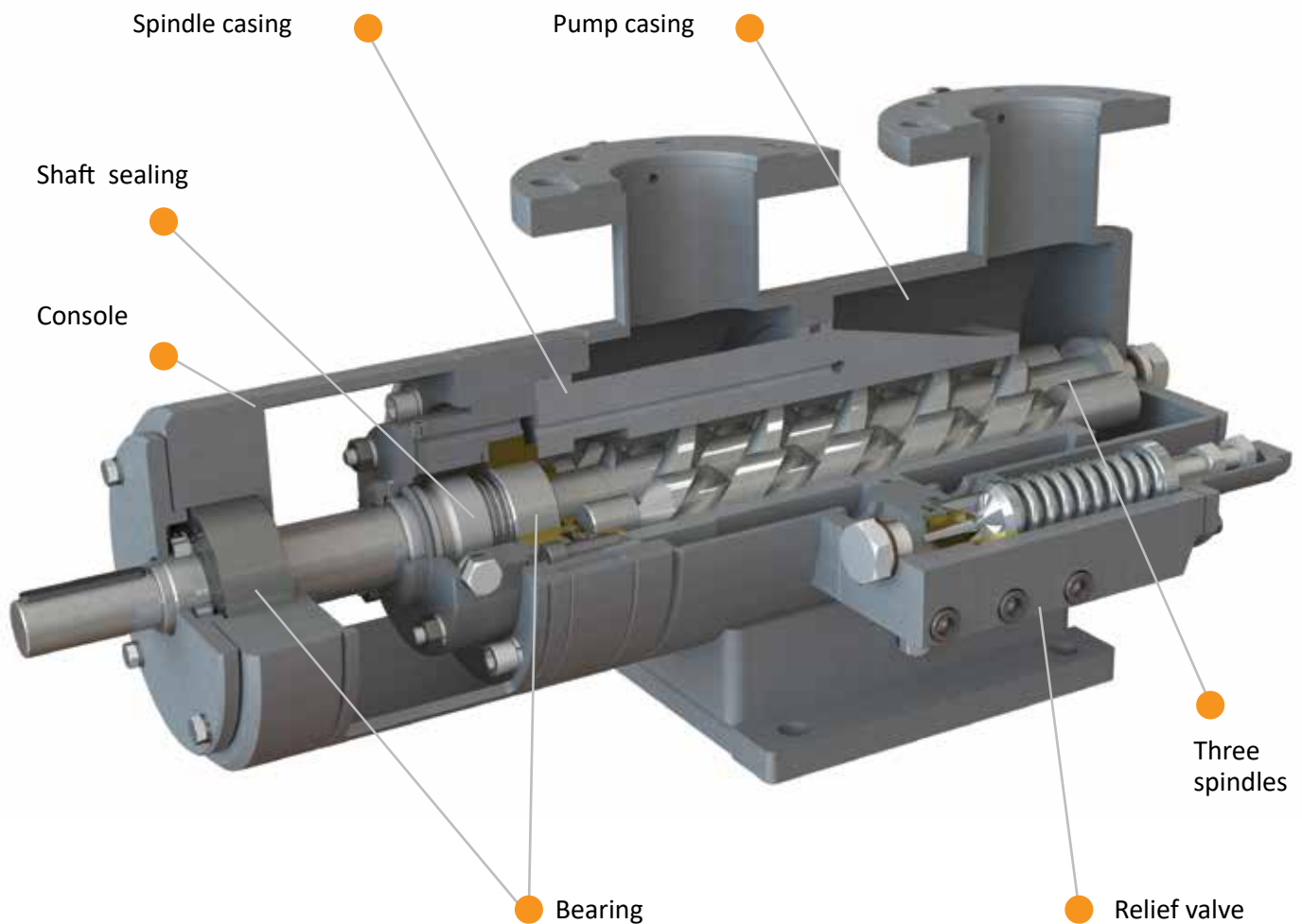
Shaft sealing is standard with shaft lip seal rings, mechanical seals available on demand, the seal chamber is connected to pump inlet so the seals work on lower pressure, seals material combination depends on working fluid and temperature.

### Spindle casing

Replacable casing in various material executions.

### Three spindles

The spindles are hardened and ground.



### Pump casing

Robust pump casing design, execution with jacketed casing for steam or head conveyor available in fabricated steel design.

### Bearing

Roller bearings lubricated by the working fluid, in case of external bearing executions lubrication by means of grease with grease nipple.

### Relief valve

Adjustable pressure relief valve for overload protection, in case of pump without relief valve there must be overpressure protection provided on other way.

### Technical data:

- Capacity: up to 4200 l/min;
- Head: up to 60 bar;
- Pump size: up to DN 200;
- Temperature: up to 140°C.

## Sectional Drawing of VVP pumps

### Shaft sealing

Shaft sealing is standard with shaft lip seal rings, mechanical seals available on demand, the seal chamber is connected to pump inlet so the seals work on lower pressure, seals material combination depends on working fluid and temperature.

### Spindle casing

Replaceable casing in various material executions.

### Three spindle

The spindles are hardened and grounded.

### Pump casing

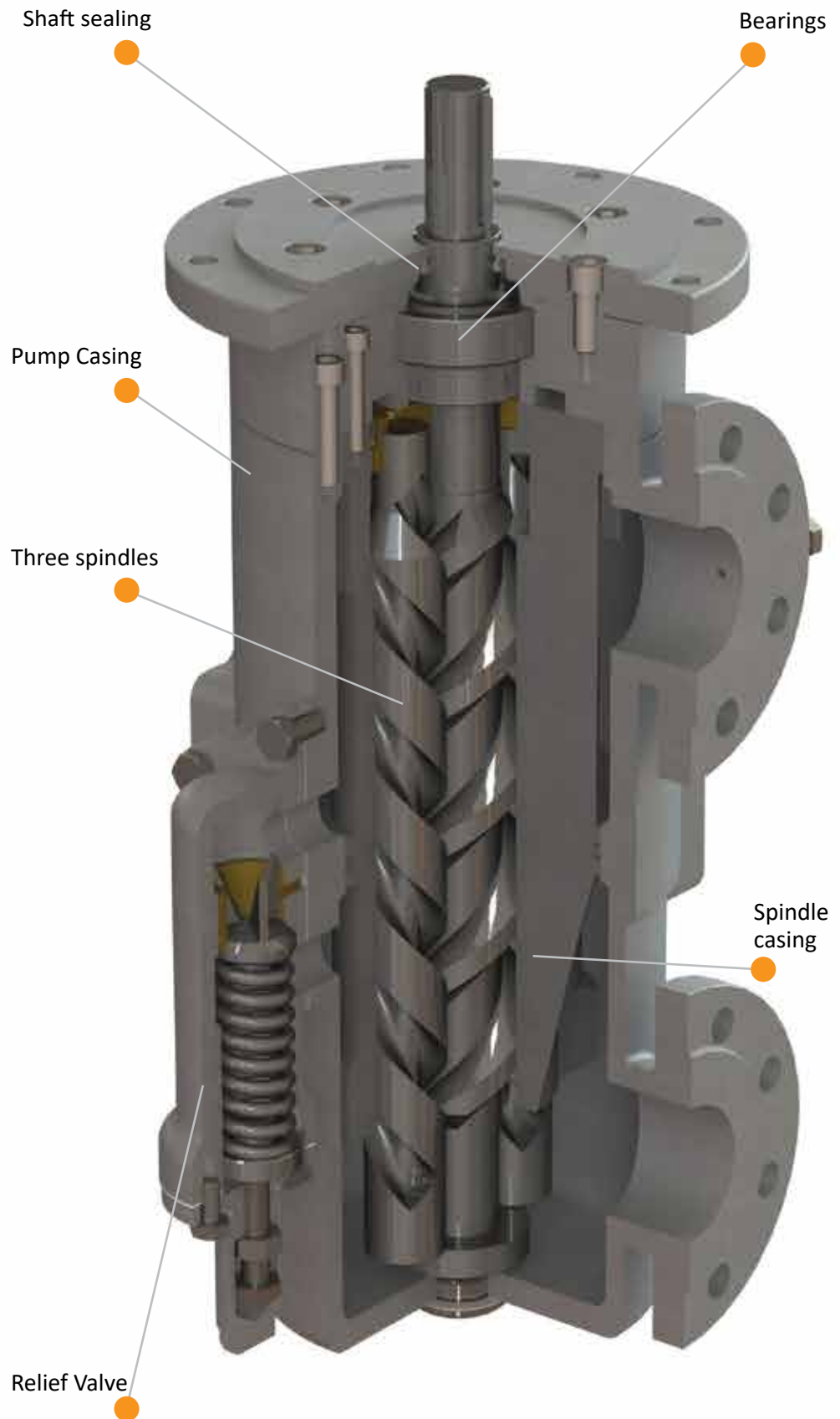
Robust pump casing design, execution with jacketed casing for steam or head conveyor available in fabricated steel design.

### Bearing

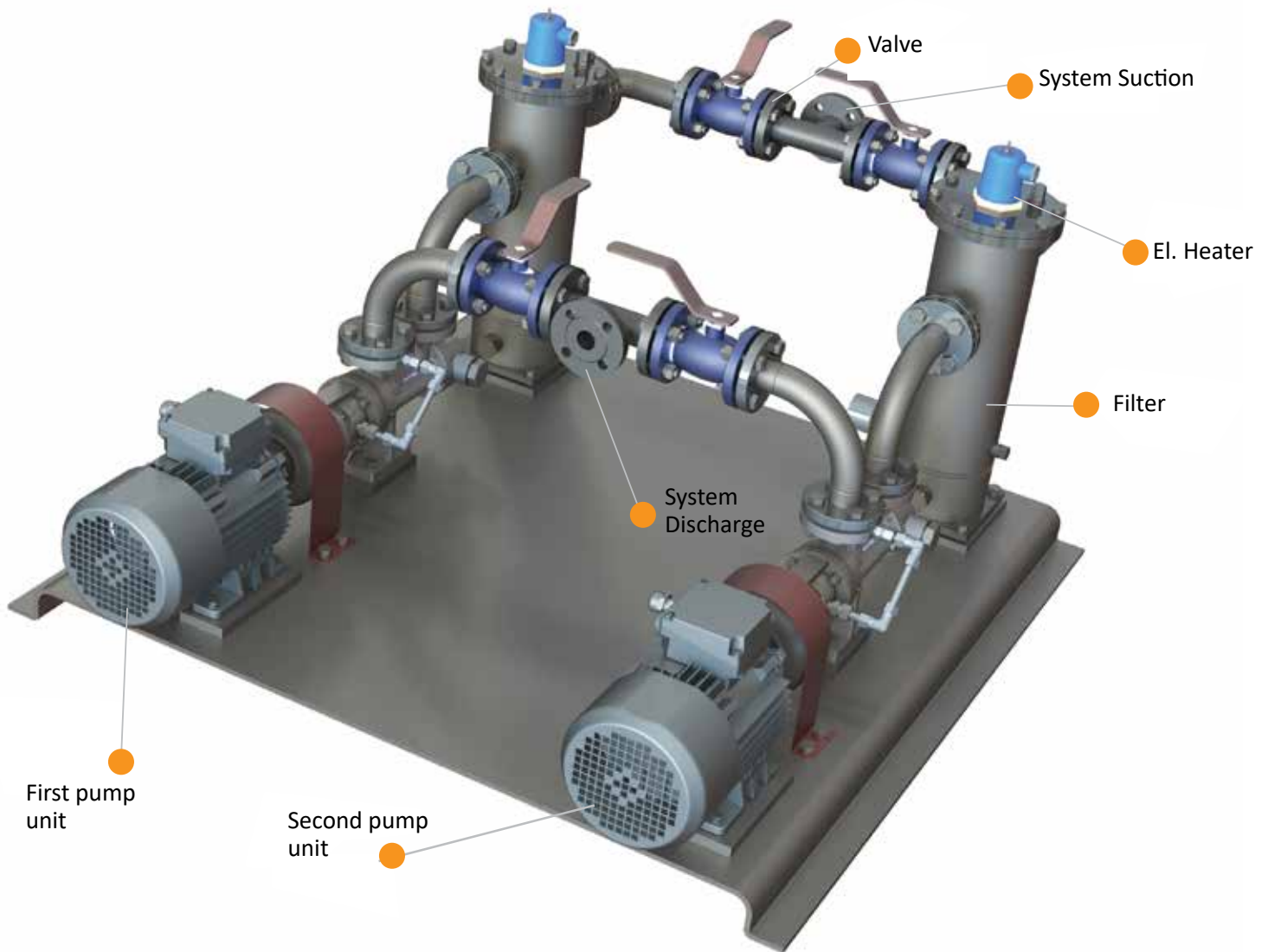
Roller bearings lubricated by the working fluid, in case of external working fluid, in case of external bearing executions lubrication by means of grease with grease nipple.

### Relief valve

Adjustable pressure relief valve for overload protection, in case of pump without relief valve there must be over pressure protection provided on other way.



## Sectional Drawing of System of Three Screw Spindle Pumps with filters and valves (SVPF)



System SVPF as a system of two or three screw pumps of which one is duty and one is stand by, connected with suction main pipe with filter before each pump and discharge main pipe. The whole system is mounted on one steel base frame equipped with anchor bolts and ready for concreting.

### First Pump Unit

Composed of Three Screw Spindle Pump equipped with baseframe, coupling and Electric motor.

### Second Pump Unit

Composed of Three Screw Spindle Pump equipped with baseframe, coupling and Electric motor.

### Valve

Each line of the pump contains also suction valve and discharge valve in order to arrange duty or stand by pump to operate.

### Filter

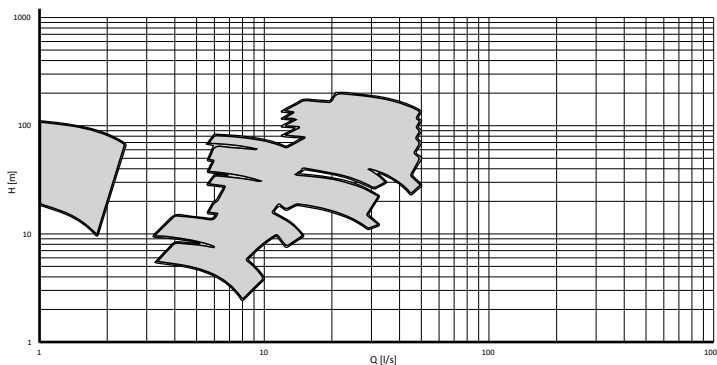
The filters are compact construction (two stage filters) equipped with heating chamber, electric heater and thermostat.

# PETROL CENTRIFUGAL PUMPS - BCP



BCP petrol pumps are centrifugal, self-priming, horizontal pumps. They are assigned for transport of all kinds of petrol and diesel. They also could be used for transport of ammonia, benzol etc. BCP pumps are designed as single stage and multistage. They can be driven by electric drive on the same base plate. Self-priming of the pump is made possible by means of the vacuum rotor which is enclosed in the pump.

## Hydraulic characteristics



## Application:

The BCP pumps are intended for pumping of volatile fluids saturated with air and steam without mechanical contaminants. Fluids that may be pumped include: petrol, diesel, ammonia etc.

Main fields of Applications:

- Loading and discharging of tankers and lorry tanks;
- Refinery process pump;
- Petrol storage tanks.

## Advantages:

BCP pumps are self-priming with cavity impeller and relief valve for protection of the pipeline from high pressure;

## Drive:

- Electric motor;
- Diesel motor.

## Sectional Drawing of BCP pumps

### Self priming

Self priming is improved by Vacuum Pump.

### Bearings

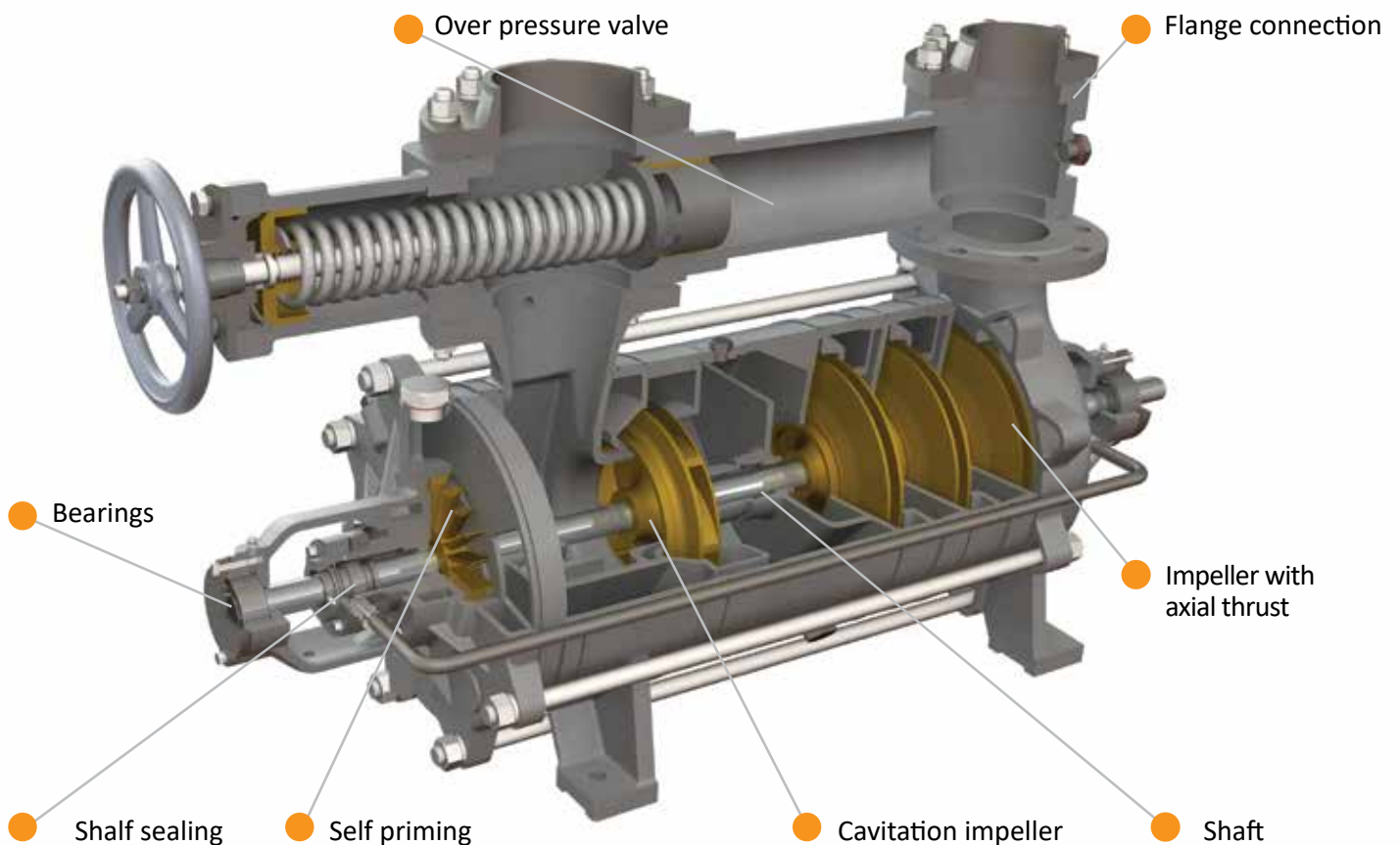
Ample dimensioned bearings of roller type grounded the pump shaft for smooth pump operation and long life service.

### Cavitation impeller

The first centrifugal impeller is designed with larger inlet eye and fluid's velocity is allowed to achieve best cavitation performance.

### Axial thrust

Throw the holes into the impeller's hub the hydraulic axial forces are relieved, the rest of the thrust bears the roller bearing.



### Shaft sealing

Two mechanical seals of single spring type are mounted on both ends of the pump shaft.

### Over pressure valve

Specially designed valve to avoid increasing of the outlet pressure above that the limited pressure.

### Pump shaft

The shaft of high grade steel is precisely machined and grounded to minimize deflection and wearing of pumps parts and assure the mechanical seals long life.

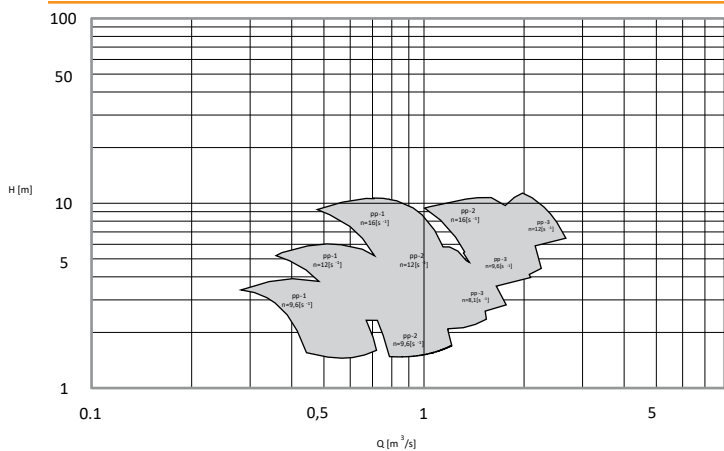
### Technical data:

- Capacity: up to 50 l/s;
- Head: up to 200 m;
- Pump size: up to DN 125;
- Temperature: up to 40°C.

# PROPELLER PUMPS - PP

Propeller pumps are of an axial type i.e. where water flow into a suction bell axially passing via impeller and stat diffuser, being further directed through a discharge pipe piping. The shaft is by means of a flexible coupling joint with an electric motor. Propeller pumps are applied for the supply of high quantities of water at low heads, being the very economically applied in the systems of irrigation and drainage, industry and others. Upon a customer requirement, the pumps provided with deflecting blades operation, are also produced.

## Hydraulic characteristics



## Application:

For supply of big quantities of water at low heads. Typical applications are:

- For Drainage;
- Industrial plants;
- Irrigation systems;
- General purposes.

## Advantages:

- Easy installation Reliable and hard-wearing;
- Low maintenance costs;
- High operating reliability at low operating costs
- Constant efficiencies;
- Low maintenance.

## Arrangements:

Propeller type of pumps could be arranged in several modifications, depending on:

- Customer requirements;
- Working and medium conditions;
- Space available;
- Applications where a special design is needed.

## Drive:

- Electric motor;
- Diesel engine with a right angle gear unit upon request .





## Sectional Drawing of PP pumps

### Shaft sealing

The shaft sealing could be arranged by graphite soft packing.

### Coupling half

Used to connect the shafts between the Electric Motor and the pump, for the purpose of transmission of the power to the hydraulics working area.

### Bearings

Weight and axial hydraulic thrust bear upon the upper semi-axial roller bearing. It's also used for centering of shaft at the same time.

### Sleeve type bearing

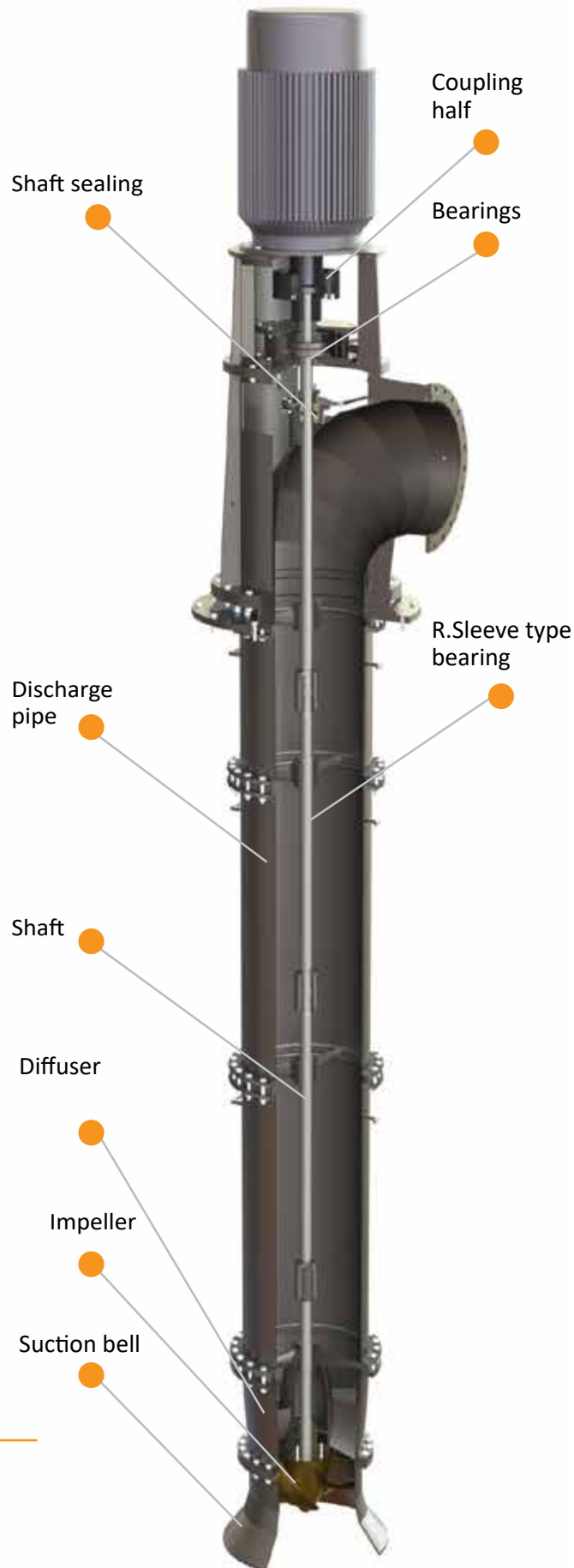
Sliding action bearing with self-lubrication, used to guide and reduce the friction on shafts and bearing support.

### Discharge pipe

Properly sized for optimum medium velocities to insure peak hydraulic performance.

### Technical data:

- Capacity: up to 2500 l/s;
- Head: up to 10 m;
- Pump size: up to DN 800;
- Temperature: up to 60°C.



### Shaft

Heavy duty for strength and corrosion resistance. The shaft is protected by a replaceable shaft sleeve in stainless steel.

### Diffuser

Used for converting velocity head into pressure head

### Impeller

Designed for maximum efficiency with wide range of hydraulic coverage. Precision balanced for smooth operation.

### Radial Sleeve type bearing

Provided at each stage to assure stable operation away from critical speeds.

### Suction bell

Provided for shaft stability & provided for proper suction conditions for pump.

# ARCHIMEDEAN SCREW PUMPS



Archimedean screw pumps are designed for pumping sludge and polluted liquids without their pretreatment. The principle of operation of these pumps is by rotating of the blades to transport the medium to a higher level. Large passages make the Archimedean pumps possible to handle with solid liquids without any danger of a blockage in the process. One of the main benefits of these pumps is inability to cause a cavitation and since they are operated on a low speed there is almost no efficiency loss.

Depending on what type of water is being transported, the life time of these pumps can be from 30 to 40 years.

## Application:

Archimedean screw pumps offer wide application possibilities:

Typical applications are:

- Waste water treatment;
- Drainage;
- Rainwater;
- Flood water;
- Industrial process water;
- Domestic sewage.
- Irrigation projects;
- Water supply;
- Land drainage;
- Reclamation of wetlands.

## Advantages:

- Simple and Robust Construction, open, Clog-Free;
- Easy Maintenance and Low Operational Costs;
- Pump Capacity is Self-regulated as a function of incoming flow;
- Long Operational Lifetime (30 - 40 years);
- High Efficiency (Up to 85 %).

## Arrangements:

Screw Pump in a Concrete Trough, where the screw suspended between the upper and lower bearing rotates free from the trough with a minimal gap of few millimeters.

## Anticorrosive protection (coating system):

Item	Application	System	Thickness in $\mu\text{m}$
Standard	Activated sludge	Sand blasting SA 2,5 Epoxy coating	2 x 150
Auto cure	Waste water	Sand blasting SA 2,5 Zink primer Epoxy coating	1x40 2x150
Heavy Duty I	Sand & Particles	Sand blasting SA 2,5 Zink Primer Sealer Epoxy coating	1x40 1x40 2x150
Cover coating	H2S occurrence	Sand blasting SA 2,5 Epoxy special coating	2 x 175

# Archimedean Screw Pump Drawing

## Performance data for Archimedean screw pumps:

Inclination angle:	30°	35°	38°
Screw diameter [mm]:	up to 3000	up to 3000	up to 3000
Capacity [l/s]	up to 3130	up to 2513	up to 2170
Head [m]:	up to 8.8	up to 10.2	up to 10.9

### Driving unit

The standard drive-unit consists of Electric Motor connected to the reduction gearbox, which is connected with the upper bearing of the screw pump. Depending on customer requirements, there can be made different drive-unit arrangements.

### Upper bearing

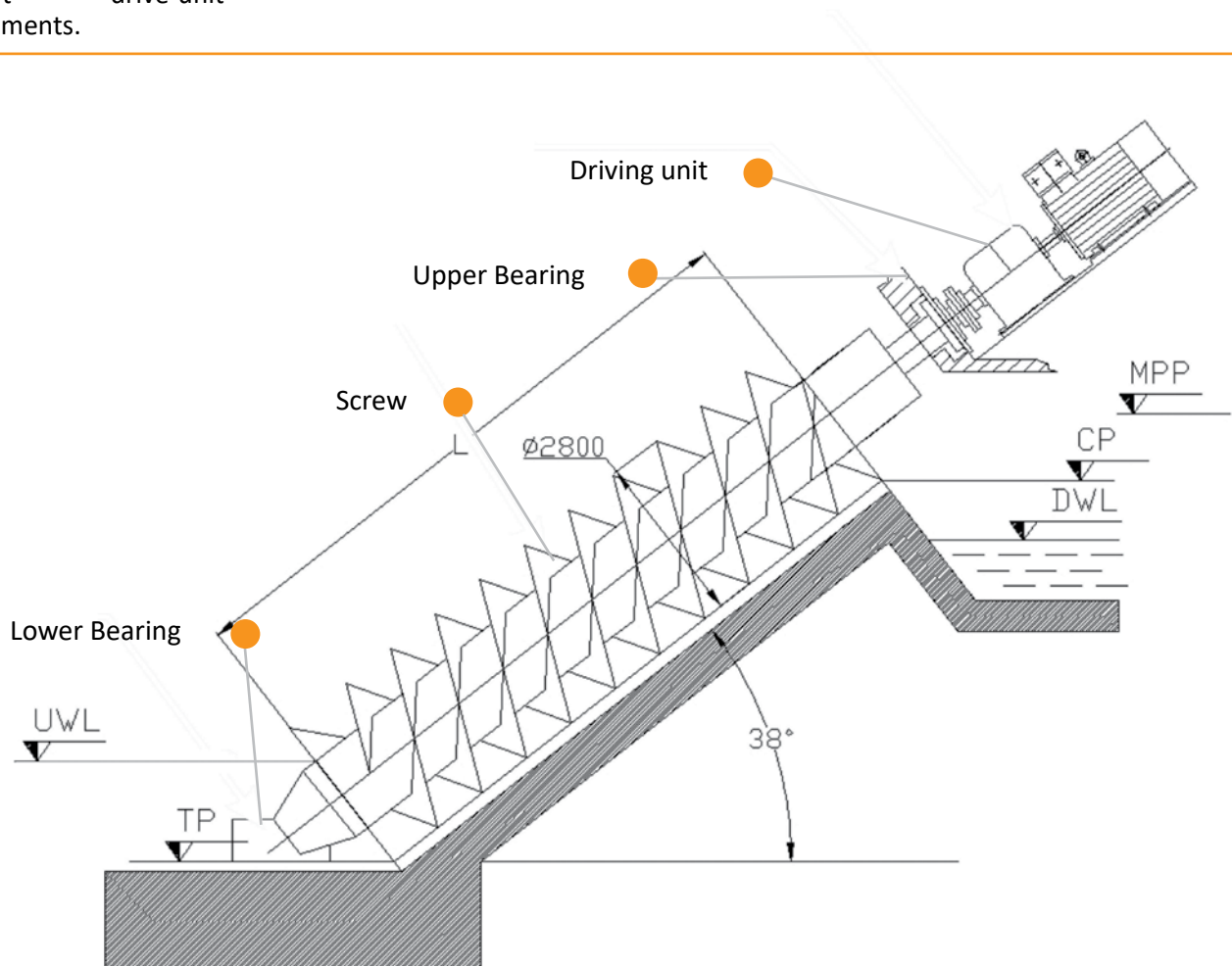
Accommodates axial and radial forces. Designed as a self-aligning roller bearing.

### Lower bearing

Connected to the screw body. Accommodates only radial loads. During the operation of the pump, this bearing is lubricated with grease by the automatic lubricator.

### Screw

The screw has the most important role i.e. by rotating the screw is lifted and transported to higher levels. The screw body is usually made by longitudinally or spirally wound steel tubes.





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