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# Submersible Axial Propeller Pump

REAL

CHINA PUMP  
CONSULTANCY

Flood and storm water control

Large volume drainage and irrigation

Raw water intake

Municipal sewage treatment

Circulation of large volume of water

Water level control

Filling and emptying of dry docks

and harbour installations, reservoirs

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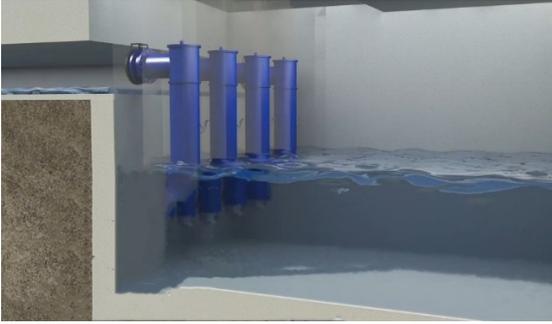
- **One-piece casting impeller available**
- **Suction bell support installation available**
- **Wear ring/Liner available**
- **Flexible column pipe diameters**
- **Material variants**

Submersible axial flow and mixed flow pumps, also known as submersible column pumps because of its typical installation method, are widely used in flood control and ideal for other heavy-duty pumping applications. Pump section shares same single shaft with submersible motor, to make it an integrated pump set, and is well sealed to operated safely and reliably in water.

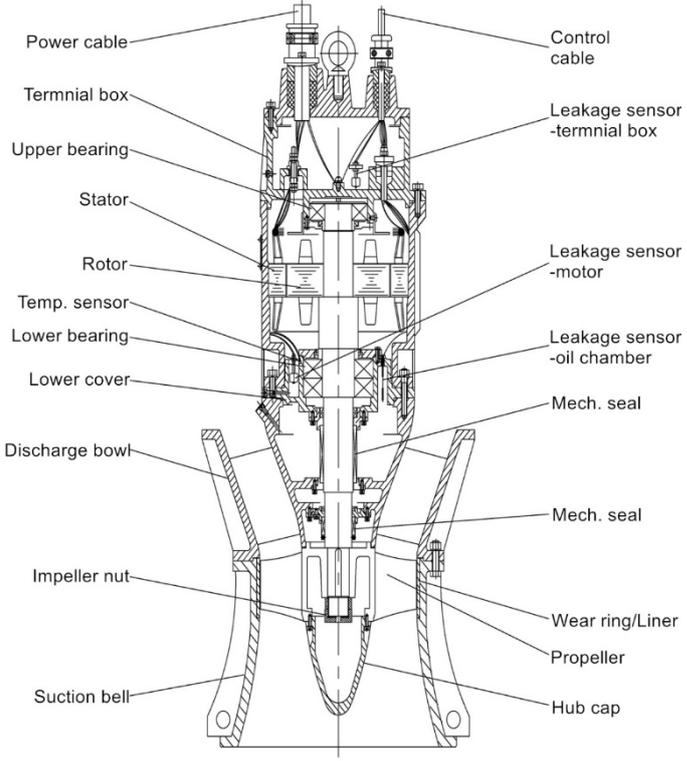
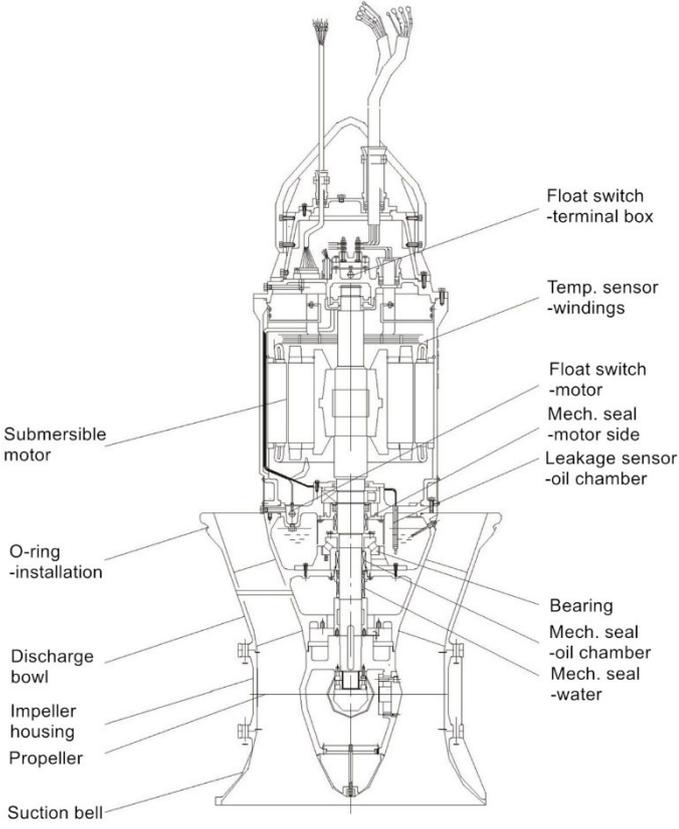
Pumps are installed inside a steel column pipe or concrete well, either discharge bowl supported or suction bell supported. In the opinion of China pump industry, bowl supported is preferred as center of gravity of pump is closer to support surface, which means more stable during operation.

### Applications

- Flood and storm water control
- Large volume drainage and irrigation
- Raw water intake
- Transfer of liquids in large-scale municipal sewage treatment plants
- Circulation of large quantities of water
- Water level control in coastal and low-lying areas
- Filling and emptying of dry docks and harbour installations
- Filling or emptying of reservoirs



### Typical Structures



## **Impeller**

Most advanced hydraulics are applied with optimized performance, stability, reliability and good anti-cavitation performance. Construction of impeller can be:

- Hub-vane type, which is easy to satisfy different duty points by adjusting vane angles of each size pump.
- Single-piece casting, which ensures good performance and avoids vane loose during operation.

## **Shaft Seal**

Two or three sets of separate mechanical seals are equipped to provide higher reliability.

## **Oil Chamber**

Lubricate and cool seals, and isolate pumped liquid from motor. Reserved space inside chamber can protect from rapid pressure rise.

## **Advanced sealed cable entry**

Special design to prevent water or air entering motor compartment. Easy for maintenance and replace.

## **Bearings**

Roller bearings are applied to bear both axial and radial loads. Isolate completely from pumped liquid.

## **Shaft**

Only single shaft is fitted, to make the structure compact. Ensures low vibration and longer life of bearings and seals.

## **Motor**

High-performance submersible squirrel induction motor with Class F isolation and IP68 protection. Standard voltage is 380-460V. Medium and high voltage are available.

## **Protection and Monitoring**

Many sensors are equipped to protect pump for safe operation, like leakage sensors, temperature sensors, vibration sensors and etc.

## **Working range**

Small and medium sized DN300-1400

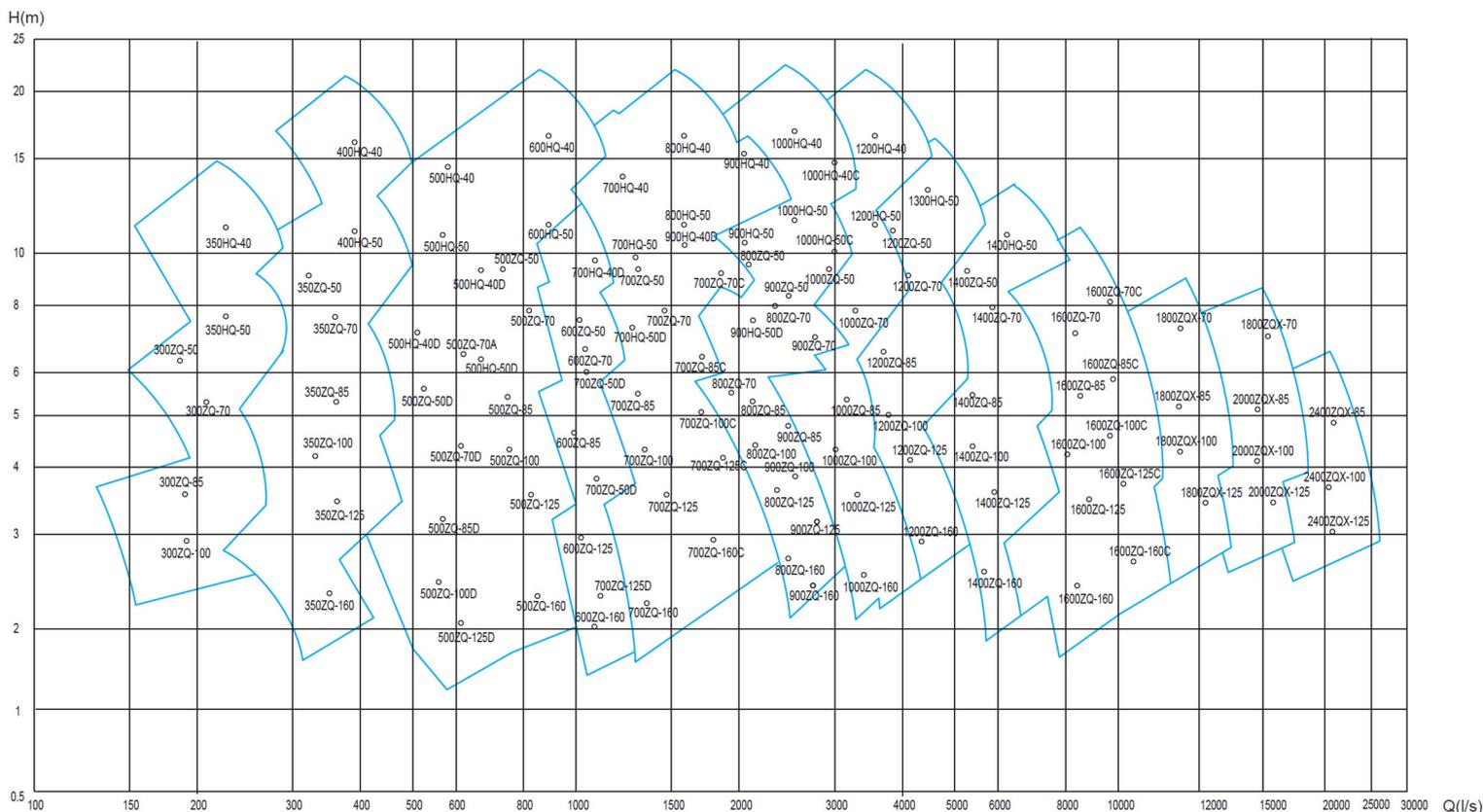
Large sized DN1600-2400

Capacity: 500-32,000 m<sup>3</sup>/h

Capacity: 25,000-86,000 m<sup>3</sup>/h

Head: up to 23 m

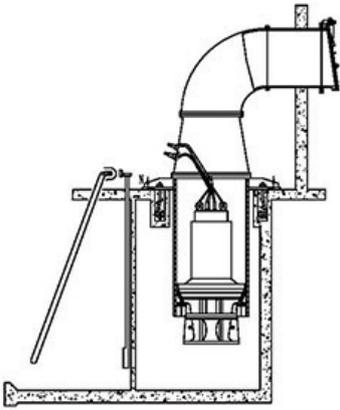
Head: up to 10 m



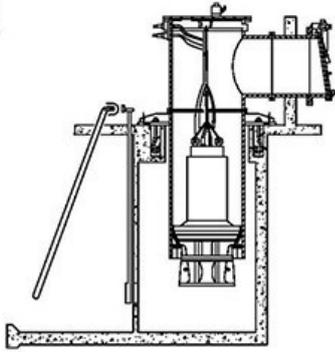
## Material construction

Main parts	Material	Standard			Variants
		GB	DIN	ASTM	
Suction bell	Grey cast iron	HT250	EN-GJL-250	A48-CL35	Ductile cast iron, Cast steel
Impeller housing	Grey cast iron	HT250	EN-GJL-250	A48-CL35	Ductile cast iron, Cast steel
Discharge bowl	Grey cast iron	HT250	EN-GJL-250	A48-CL35	Ductile cast iron, Cast steel
Motor housing	Grey cast iron	HT250	EN-GJL-250	A48-CL35	Ductile cast iron
Impeller	Stainless steel 304	06Cr19Ni10	G-X6CrNi-189	A743-CF-8	Ductile cast iron, Cast steel, SS316, Duplex SS
Wear ring	Stainless steel	2Cr13	X20Cr13/1.4021	A276-420	Bronze, SS304
Shaft	Stainless steel	2Cr13	X20Cr13/1.4021	A276-420	Carbon steel, duplex SS
Bearings	NSK/SKF				FAG, Chinese reliable brands
Mechanical seals	Burgmann				Equivalent to Burgmann Chinese reliable brands
Screws, bolts & nuts	Stainless steel 304	A2-70	X5CrNi-189-1.4301	A276-304	Stainless steel 316
O-rings	NBR rubber				As per requirement
Cable length	10-meters, submersible				As per requirement

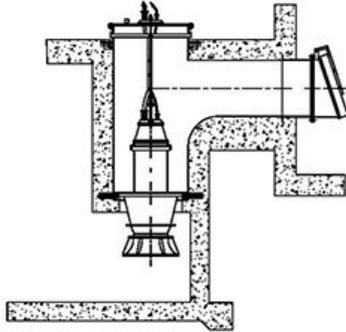
# Typical Installation methods



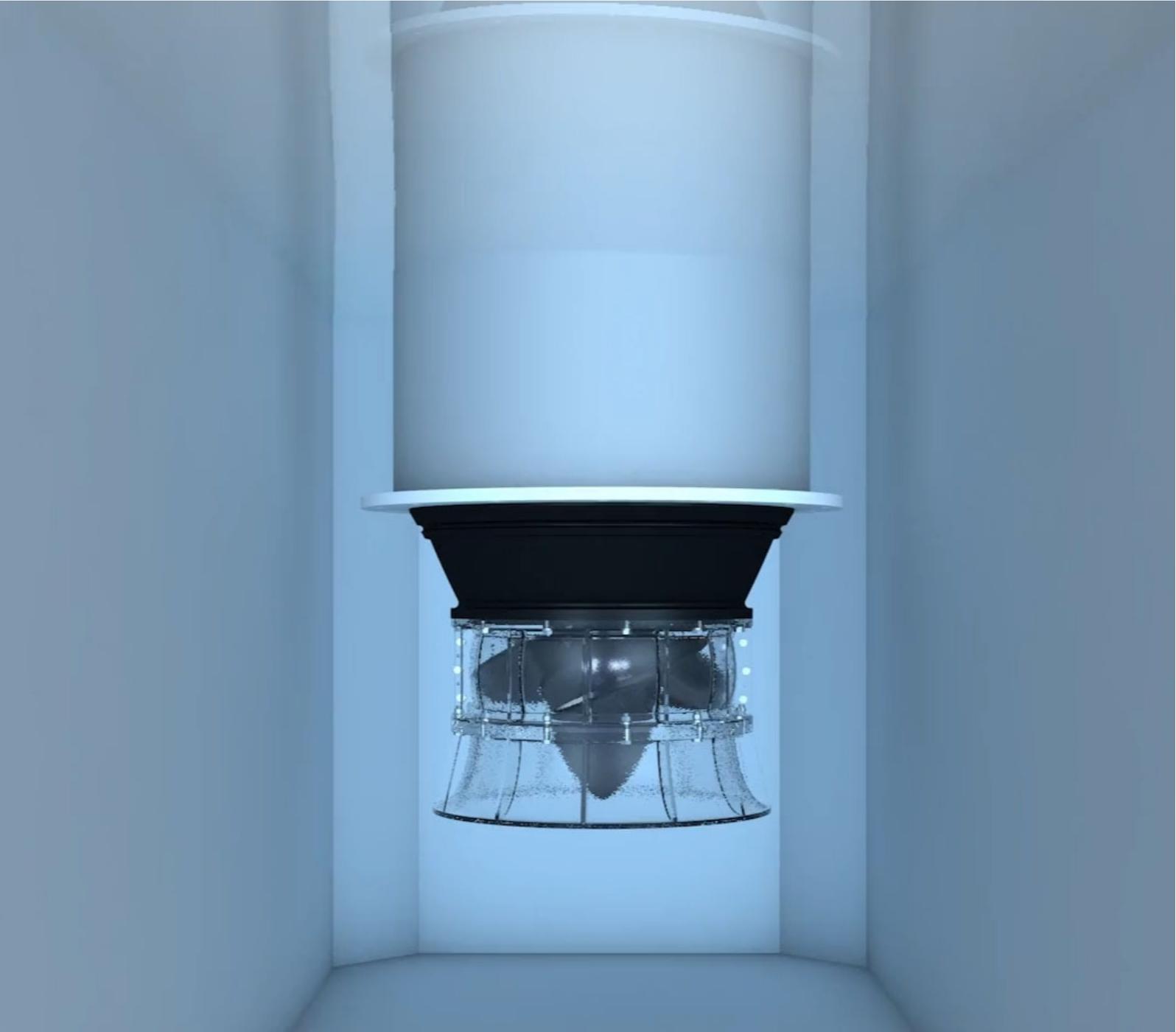
Discharge bowl support at column pipe



Concrete well installation



Suction bell support



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