

# Torishima Pump Global Network



# SPV

Vertical Mixed-Flow Pump



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## North America

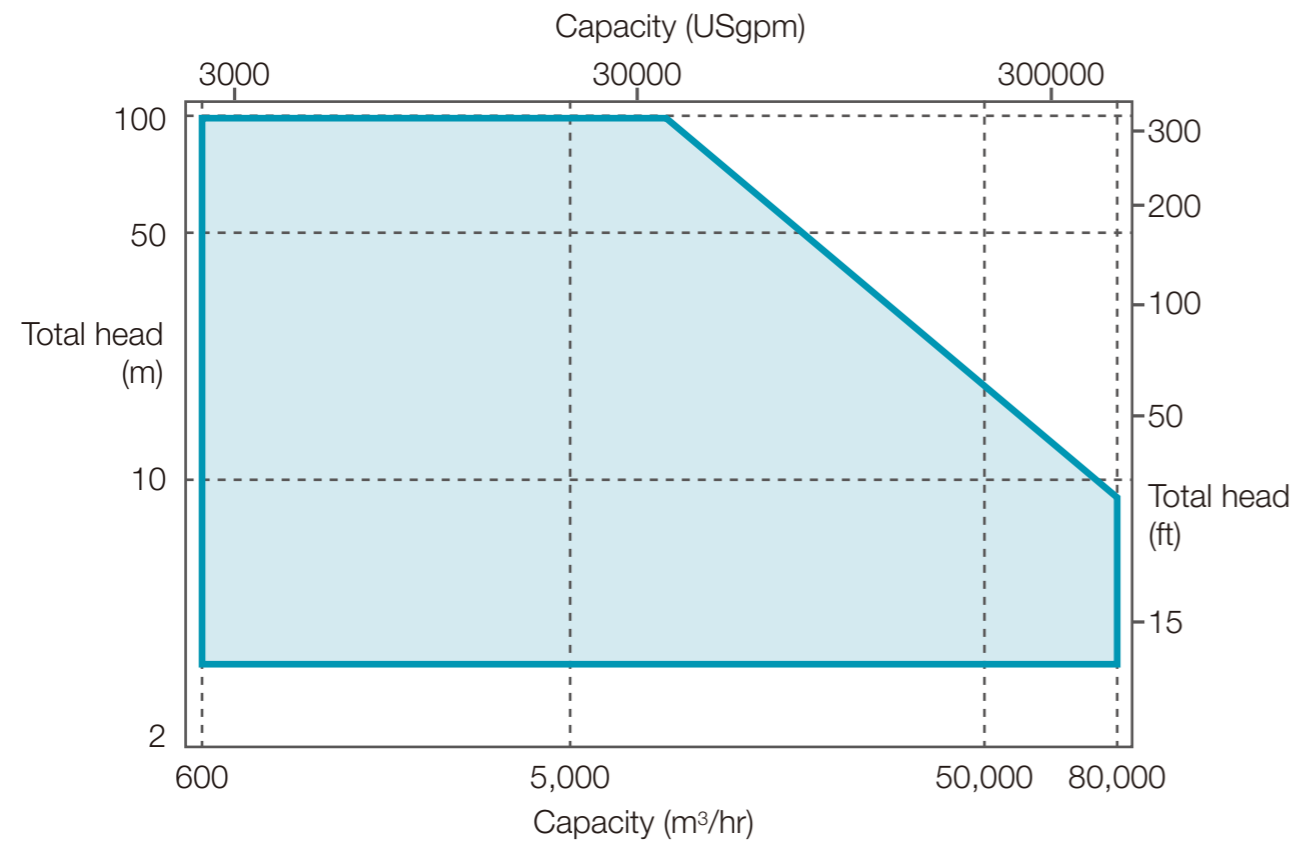
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■ Manufacturing ■ Service Center

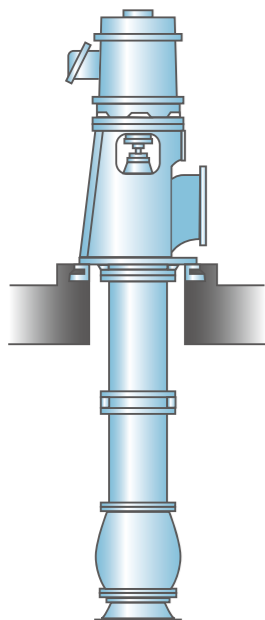
## Performance Range



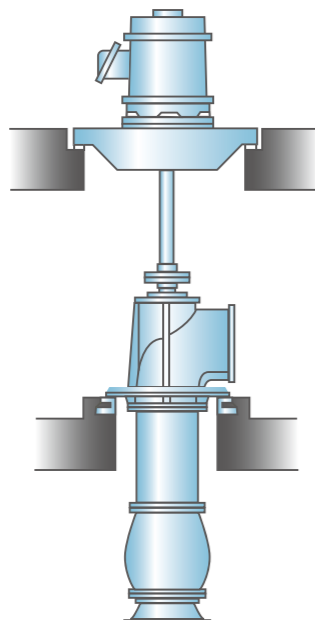
Pumps beyond the standard range are also available.

## Type of Installation

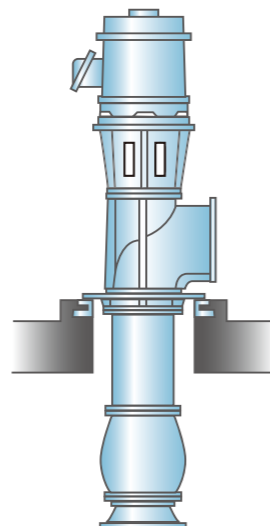
Above floor installation



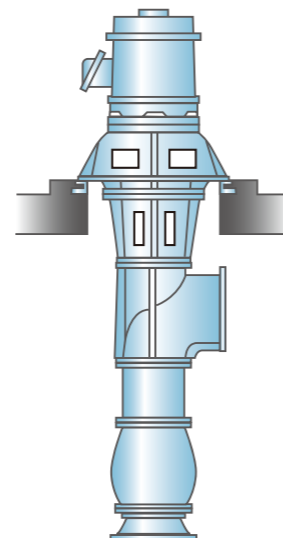
Two-floor installation



Pump motor unit



Below floor installation



## References



Dewatering pump with adjustable vane  
(Size:2,400mm, Driver:1,103kW)



Cooling water pump for P.A.I. Shuaiba, Kuwait  
(Size:1,400mm, Driver:1,500kW)



Various seawater pumps in Al Taweela MSF desalination plant, Abu Dhabi, UAE



Vaporizing pumps in LNG Plant, Korea  
(Size:1,000mm, Driver:650kW)



Brine recirculation pump for Sabia MSF desalination plant, Kuwait  
(Size:1,000mm, Driver:3,550kW)



Circulating water pump for Meseieed A IWPP project, Qatar  
(Size:1,500mm, Driver:1650kW)



# Vertical Mixed-Flow Pump

The **TORISHIMA** SPV is a vertical, mixed-flow pump suitable for a wide range of applications. Whatever process you operate; Power, Desalination, Petrochemical, LNG, Water Treatment or Supply, Drainage or general industries, the complete plant operation depends on the reliable performance of the main intake, cooling or seawater pumps. Torishima's reputation for providing reliable mixed flow pumps to operate in critical processes is second to none. With several thousand pumps operating worldwide you can count on Torishima pumps to be the driving force behind your pumping requirements.

## Applications

### Power

- Cooling Tower and Cooling Water Circulation

### Desalination

- Seawater Intake
- Brine Recirculation / Blowdown
- Distillate

### Petrochemical

- Seawater Intake
- Cooling Water
- Water Transfer

### Water, Wastewater, Drainage

- River water intake
- Water Transfer
- Waste or Storm Water Sump Drainage
- Irrigation Supply and Land Drainage
- Flood Control

### Industries

- Cooling Water
- Fire and Service Water

## Technical Data

Head : 3 to 100 m (10 to 330 ft)  
 Capacity : 600 to 81,600m<sup>3</sup>/h (2,600 to 360,000 USgpm)  
 Temperature : -10 to +80°C (14 to 176°F)  
 Size : 300 to 2,800mm (12" to 110")

## Materials

Critical applications require pumps from a reliable manufacturer who has proven experience in a wide range of applications and materials. Torishima provides a wide range of expertise in material selection and has experience in manufacturing pumps from the following materials:

### Pump Diffuser Casing and Impellers

- Duplex and Super Duplex Stainless Steel
- Stainless Steel
- Cast iron, Ductile Iron, Ni Resist Cast Iron
- Bronze, Aluminium Bronze

### Shaft

- Duplex and Super Duplex Stainless Steel
- Stainless Steel
- Carbon Steel,

### Discharge Bend and Rising Main

- Duplex and Super Duplex Stainless Steel
- Stainless Steel
- Cast Iron, Ni Resist Cast Iron
- Carbon Steel

Specific material grades are available on request.

## Product Life Cycle Support

The mixed flow pumps are always operated under the most arduous conditions particularly for seawater intake and drainage applications. Unexpected operating conditions can occur on site, so it is important that the pump supplier understands the complete plant design. As a qualified plant supplier Torishima can provide a wide range of technical design services to extend the lifecycle of your mixed flow pumps.

### Torishima Design Services

- Intake sump modelling
- Finite Element analysis
- 3D Flow Modelling
- Noise and Vibration Analysis
- Model Pump Testing
- Surge Analysis

### Torishima Site Support

Torishima's site service capability backed by our design expertise ensures the best service for our customers. Our global team can provide network

- Installation & Commissioning
- Pump Performance Testing
- Overhaul
- Maintenance vendor management

### Torishima - Research and Development

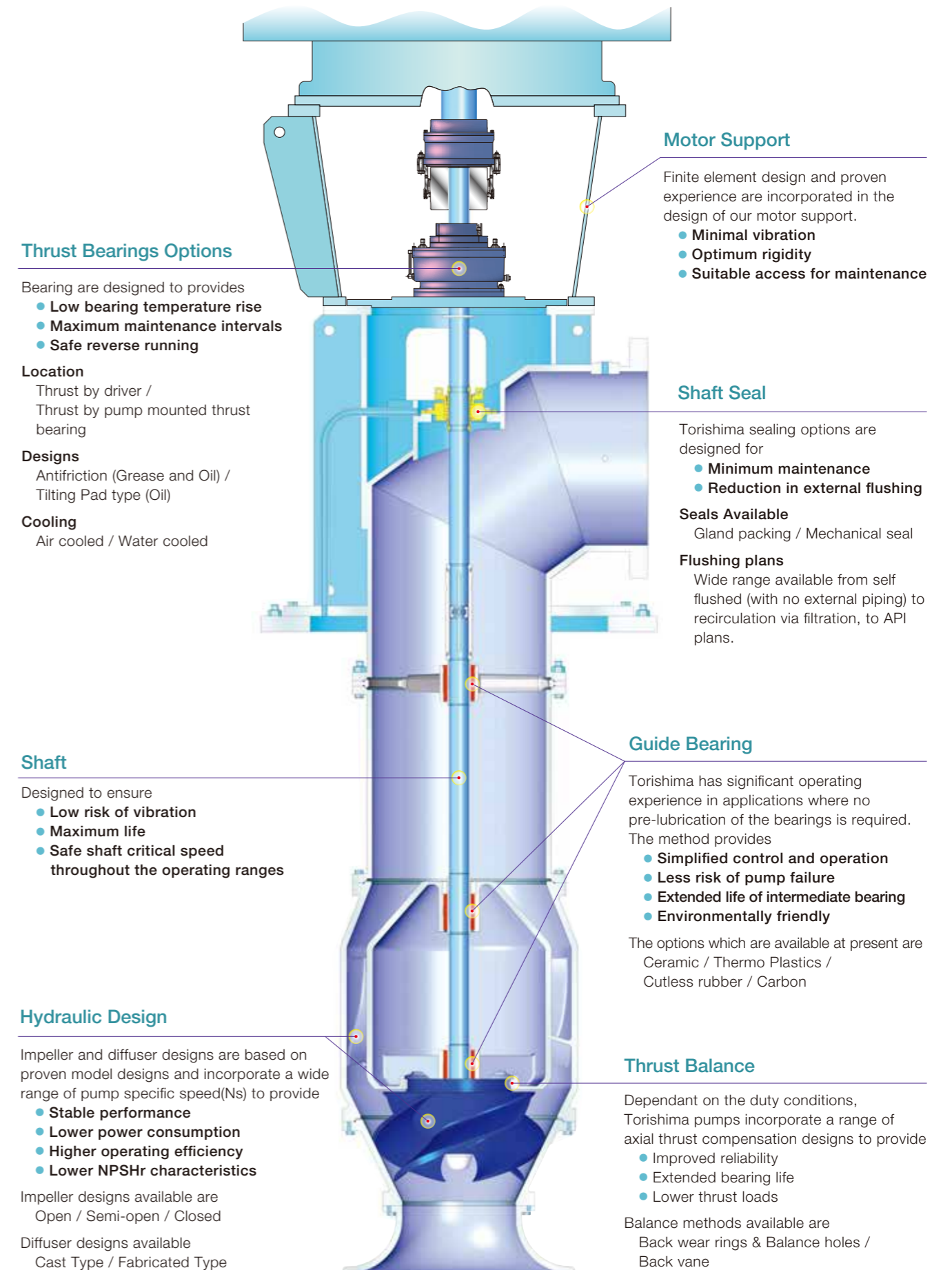
To provide reliable and energy efficient mixed-flow pumps, our experienced engineers are dedicate to

- Pump Hydraulic Development and Model Testing
- Bearing design and development
- Computer aided model sump design
- Mechanical Seal Development

Rain water drainage pump, Jaan  
 (Size: 2,000mm, Driver:3,100kW)



# Reliable Design



# Options to meet clients' needs

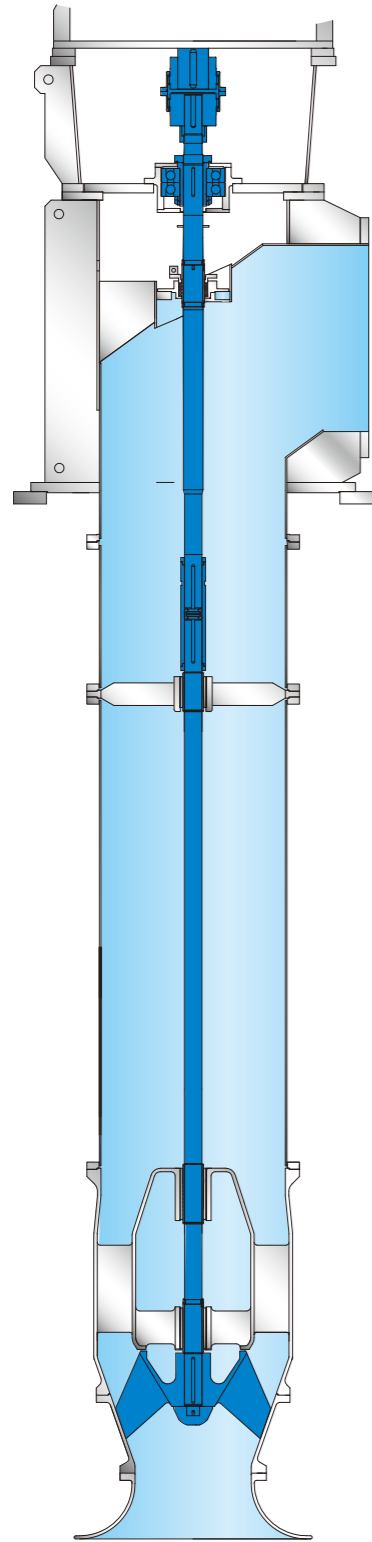
**Fabricated main stational parts**

**Reduced weight**

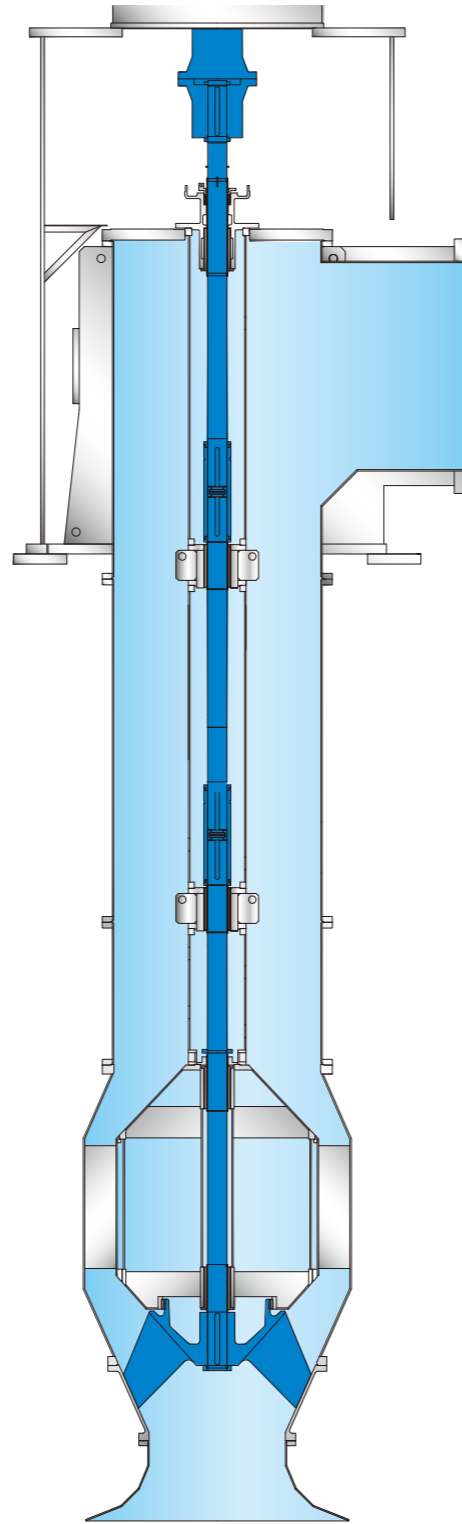
**Reduced spare parts cost**

**Reduced capital cost**

**High efficiency**

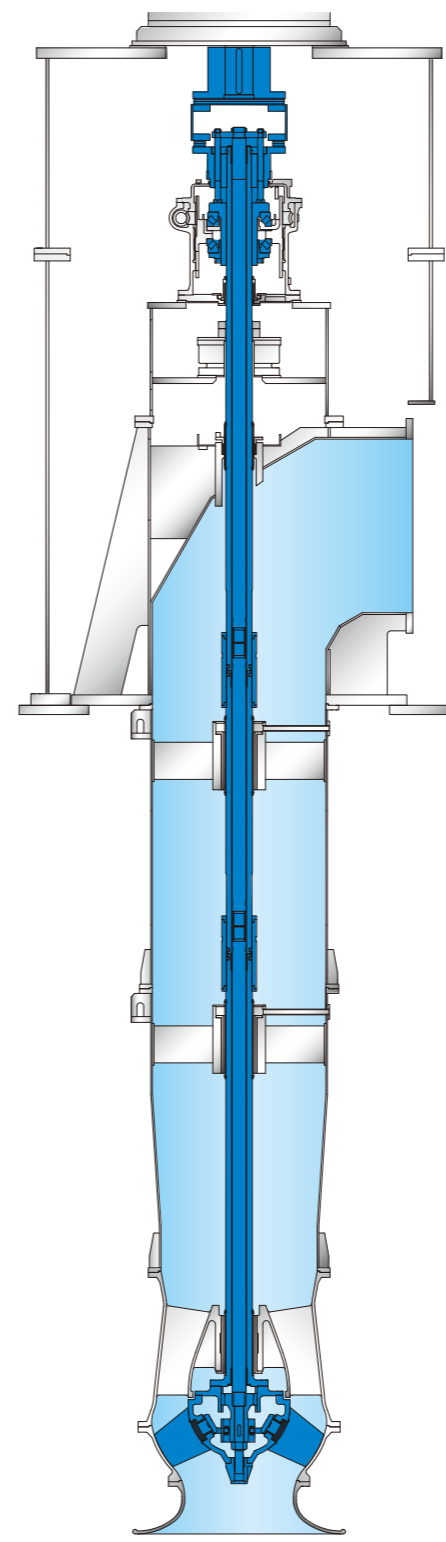


**Non-pull-out type**



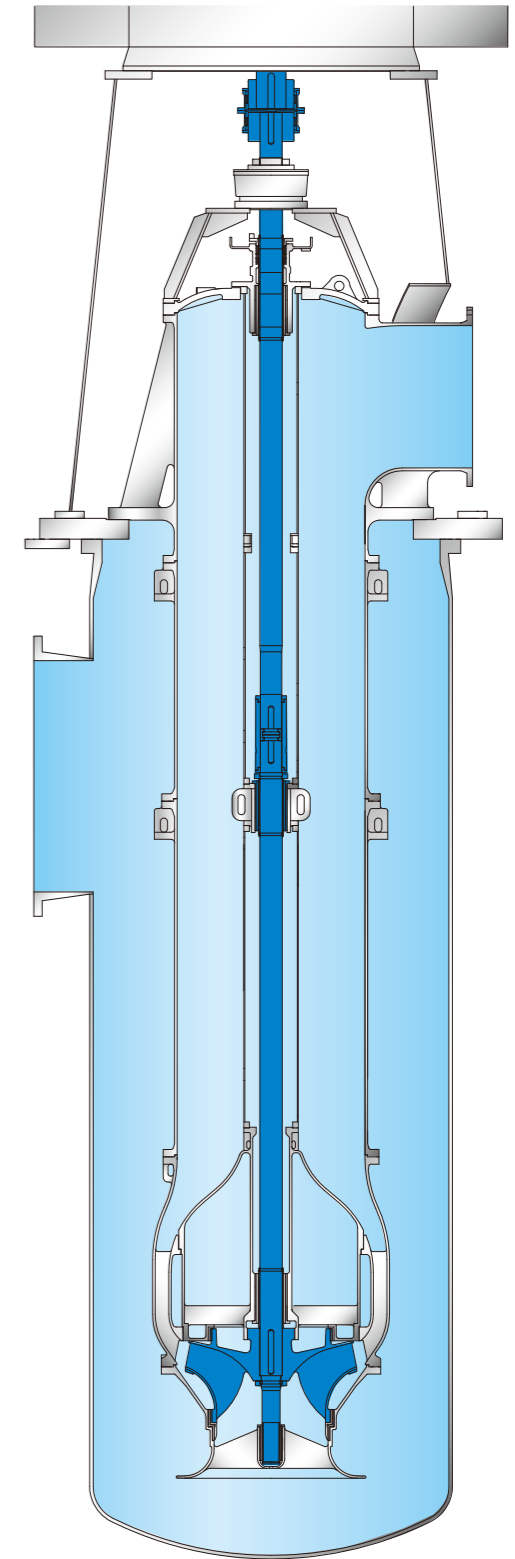
**Rotor pull-out type**

- Reduced maintenance cost and time
- Elimination of standby pump, spare rotor can be held as spare parts



**Blade pitch adjustment**

- Energy cost saving
- The operating point can be adjusted to achieve the heat efficiency point for energy cost saving.



**Canister type (SPTV)**

- Low NPSH