

CDKTV

Vertical Double-Suction Pump with Canister



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Applications

The CDKTV vertical barrel-type double suction pumps are designed for low suction pressure high volume applications. Typical applications are brine recirculation pumps in the desalination industry and hot well pumps suited for geothermal projects.

Operating Data

Total Head * : up to 100m
 Flow rate * : up to 20,000 m³/hr
 Temperatures : max 100 deg C
 Nozzle Size : 500 to 1,500 mm
 Speed : up to 1,800 min⁻¹

*Higher pump heads and flow rates available on request

Design

- Vertical, barrel type volute pump
- Double suction impeller and Single stage or multi-stage construction

Features

- Compact design due to high speed application, allowing the use of low cost drive motor
- A flat and low NPSHreq curve helps to minimize the barrel and pump length
- The stable characteristics of the pump ensure a reliable operation even with partial flow range

Installation

The barrel is arranged in a pit below the installation floor. The pump is connected with the structure by means of a baseplate.

Volute casing and Impeller

The pump comprises of a double volute casing and double suction impeller. Impeller is closed type with replaceable wear rings.

Shaft

The shafting is subdivided into separate lengths, depending on the installation depth of the pump. The individual shafts are connected with sleeve type coupling. Exchangeable shaft protecting sleeves are arranged in the range of the stuffing box and the bearings.

Bearings and Lubrication

Medium-lubricated radial plain bearings are provided inside the pump. Materials are Carbon graphite or Rubber Bearings. Axial thrust is supported by thrust bearing in either pump headgear or motor.

Shaft Seal

Packed Gland, Asbestos free or single mechanical seal. In the shaft seal area, the shaft is provided with a replaceable shaft sleeve.

Nozzle Position

Suction : Can be arranged above or below floor level as required
 Discharge : Always located at above floor level

Flange

Connection dimensions according to Customer's specification

Drive

Direct driven by vertical shaft electric motor. The motor is arranged on a motor stool above pump.

Materials

Fluid Pumped	Seawater Brine	Geothermal Condensate
Bell Mouth	Ni-Resist, 316 AUS, Al-Bronze Duplex, Super Duplex	Cast Iron, Carbon Steel, 316 AUS, 13% Chr
Volute Casing	Ni-Resist, 316 AUS, Al-Bronze Duplex, Super Duplex	Cast Iron, Carbon Steel, 316 AUS, 13% Chr
Impeller	316 AUS, Duplex, Super Duplex	316 AUS, 13% Chr
Wear Rings	316 AUS, Duplex, Super Duplex	Cast Iron, 316 AUS, 13% Chr
Shaft & Shaft Coupling	316 AUS, Duplex, Super Duplex	316 AUS, 13% Chr, Duplex, Super Duplex
Journal Bearing	Rubber	Carbon Graphite, Rubber
Discharge Elbow	Ni-Resist, 316 AUS, Duplex, Super Duplex	Cast Iron, Carbon Steel, 316 AUS, 13% Chr
Barrel	FRP, GRP, 316 AUS, Duplex, Super Duplex	Carbon Steel, 316 AUS, FRP, GRP

Design Features

Separate Fabricated Driver Stool

The Driver is mounted on a driver stool above pump

Shaft Sealing

- Options available
- Packed stuffing box, Asbestos free
- Mechanical Seal Single Balanced
- Removal Seal box allows servicing the throttle bushing without removing the Discharge Nozzle

Fabricated Discharge Nozzle Flange

- Connection dimensions according to Customer's specification
- Cast version available
- Top Casing with Suction and Discharge Nozzles available

Sleeve Intermediate Shaft Coupling

- Designed for all shaft diameter

Radial Bearings

- Product lubricated bearings are Carbon graphite or Rubber
- Provides for long maintenance-free periods
- Located in all Bearing Spiders and Casing

Dual Wearing Surface

- Replaceable wear rings for Impellers and Casings
- Prevents galling and allows operating efficiency and mechanical stability to be maintained without costly repairs.

Vertical Solid Shaft Motor

- Direct drive by vertical electric motor
- Designed with thrust bearing to handle the pump axial thrust

Rigid Coupling

- Thrust bearing is located in motor
- Flexible coupling also available (Option)

Thrust Bearing Application(option)

- Thrust Bearing can be provided in the pump. It is selected to support the axial thrust generated by pump at normal operation and at start-up periods.

Flanged Fabricated Column Pipes

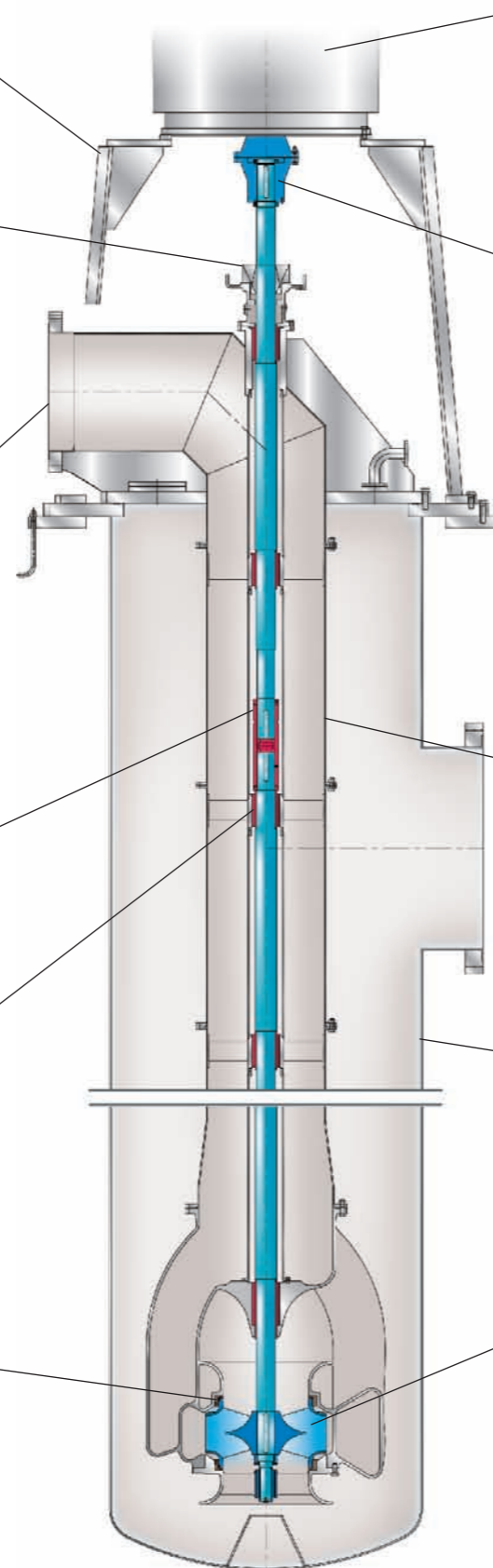
- Designed with bolted joint flange and sealed O-rings
- Provides adequate sealing without overstressing the bolts

Fabricated Barrel

- Has bottom rib to provide uniform and adequate velocity flow downstream along with barrel length

First Stage Double Suction Impeller

- The pumps are of a double suction, high suction specific speed (NSS) design
- A flat and low NPSHreq curve helps to minimize the barrel and pump length
- Impeller is a between bearing design
- Multi-stage construction is also available



References

Handling Brine in Seawater Desalination Plant



Brine Recirculation Pump for Jebel Ali M (MSF) Desalination Plant, U.A.E.
(Size : 1,200mm, Driver : 4,900kW)



Brine Recirculation Pump for Shuweihat S2 IWPP (MSF) Desalination Plant, U.A.E.
(Size : 1,200mm, Driver : 4,100kW)

Condensate in Geothermal Power and Energy System



Hot Well Pump for Darajat III Geothermal Power Station, Indonesia
(Size : 1,200mm, Driver : 1,050kW)



Hot Well Pump for Germencik Geothermal Power Project, Turkey
(Size : 1,000mm, Driver : 600kW)

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