CVT Vertically Suspended Sump Pump
Main Applications

Vertically suspended pumps are used in many applications where mounting of the driver and discharge piping is well above the liquid level, or where floor space is limited. The CVT vertically suspended sump pump can be applied to any sump application with moderate solids content.

Sump pumps are mounted on sumps or tanks and are typically controlled by a level switch to pump down the sump or tank and shutoff until the level rises again. Other applications may pump continuously. CVT pumps are utilized in all industrial applications, refining, oil and gas production, chemical, pulp & paper, and water facilities.

Typical applications include:
• Drainage sumps
• Oily water sumps
• Lube oil supply
• Tank transfer

API 610 Features
The CVT incorporates many API 610 features as standard while others are optional.

Standard:
• API 610 bearing spacing
• API 610 nozzle loads
• SS capscrews below the mounting plate to help reduce corrosion
• Steel driver stand
• Grease lubricated 7300 BECBM thrust bearing with machined brass cages. Sump pumps can sit for long periods without operation and the grease helps prevent rust

Optional:
• 316 SS lineshaft bearing lube lines
• External lineshaft bearing flush
• API cartridge type mechanical seals and API 610 seal chambers
• Round 150# bolt circle mounting plate designed for nominal sump pressure
• Hydrotested welded discharge pipe and elbow
• 3 mm (0.12 in) corrosion allowance
• Sealing options
  - Lip Seal
  - Labyrinth Seals

The Sulzer Model CPT ASME B73.1 casing, casing cover and semi-open duplex SS impeller are utilized in the CVT. The semi-open impeller handles dirty fluids better than an enclosed impeller, and the clearance is adjustable from the mounting plate.

Materials

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CPT pump casing and impeller
- Casing and impeller are interchangeable with Sulzer CPT ANSI B73.1 chemical pump
- Minimizes spare part inventory
- Ductile iron or Duplex SS casing with Duplex SS impeller for long life

Semi-open impeller
- Handles limited solids
- Clearance can be adjusted from mounting plate to renew efficiency

Suction strainer
- Stainless steel suction strainer to help prevent clogging

Conservative shaft and bearing design
- Bearing spacing follows API 610 to assure that first critical speed of shaft system is above operating speed
- Carbon graphite bearings are standard. Other bearing materials optional
- Heavy duty shaft in variety of materials for improved corrosion resistance and high torque capacity

Column bearing lubrication
- Grease lube standard. Internal or external bearing flush is optional

Thrust bearing
- 7300 BECBM grease lubricated thrust bearing with lip seals is standard. Isolators optional

Mounting plate and driver support
- Epoxy coated carbon steel mounting plate is standard. Other materials are optional
- To reduce emissions, a variety of mechanical seal systems are optional
- Epoxy coated CS driver stand supports driver and allows height for mechanical seal when specified

Instrumentation
- A variety of level switches, level transducers and other instrumentation is available to meet specifications

Drivers and couplings
- NEMA or IEC vertical motors can be supplied
- ASME B73.1 pump couplings are standard. Others are optional
CVT Vertically Suspended Sump Pump

**Performance ranges**

**50 Hz**
- 50 to 200 mm
- up to 750 m³/h
- up to 120 m
- up to 26 bar
- -40 to 205°C

**60 Hz**
- 2 to 8 in
- up to 3,200 USgpm
- up to 550 ft
- up to 375 psi
- -40 to 400°F

**Operating data**

**50 Hz**
- 3000 rpm
- 3600 rpm

**60 Hz**
- 1500 rpm
- 1800 rpm

- Hydrocarbon processing
- Oil and gas
- Power generation
- Pulp and paper
- General industry
- Chemical process industry
- Water and wastewater

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We Do What We Say

Customer partnership
• We are a reliable partner
• We provide a high level of service
• We make our customers more competitive

Committed people
• We drive accountability
• We are open and transparent
• We are team players

Operational excellence
• We focus on results
• We take initiative and work within established processes
• We act safely

A Global Specialist at Your Doorstep

Sulzer serves clients worldwide through a network of over 150 production and service sites and has a strong footprint in emerging markets.