CPS PUMPS

SPECIFICATIONS
CNCV Vertical Non-Clog Pumps

Casing: The casing is constructed of ASTM A536 high tensile ductile iron or other specified material. It is of the single volute design with single suction. Heavy wall allows for generous corrosion allowance with a 20 year design life. Suction & discharge flanges are cast of 250 PSI dimensions and all models feature a 250 PSI case working pressure. Each suction and discharge flange is drilled and tapped for easy connection to the system piping. The suction and discharge flanges also feature a tapped connection for a suction and discharge gauge. The discharge portion of the casing assembly also features an integral clean-out port to remove obstructions that enter the pump casing. On CNCV models, the tangential discharge maintains a very high effiency and allows the casing to be rotated to meet job-site requirements. CNCV models feature back pullout allowing the removal of the power frame assembly without disturbing suction or discharge piping. CPS-Pumps is one of only a select number of pump manufacturers in the world that offers end suction pumps in a variety of other cast materials including all bronze, all stainless steel and high chrome construction. These are available upon request.

Impeller: The impeller is of the single suction, enclosed, two-vane non-overloading type. It is constructed of investment cast 304 stainless steel or other specified material, machined, dynamically & hydraulically balanced. The impeller is keyed to the shaft and secured by locking impeller nut and lock washer. The two vane impeller design allows for limp and stringy solids to be pumped with solids passing through a 7 inch spherical solid. Impellers are furnished with front & rear pump out vanes to keep solids from collecting in the casing area.

Shaft Sleeve: The shaft sleeve is constructed of a heavy wall stainless steel or other specified material and machined to precision tolerances. An internal o-ring is designed to keep fluid from leaking under the shaft sleeve. The shaft sleeve is keyed to prevent rotation during operation.

Shaft: The CNCV shaft is manufactured of corrosion resistant 420 stainless steel, ground and polished to a smooth external surface. It is designed for extra stiffness to avoid all critical speeds in operation and is threaded for bearing lock nuts. The portion of the shaft that is exposed to the pumped fluid is covered with a renewable 304 stainless steel shaft sleeve, locked tightly against the impeller. The shaft is designed to use an inboard and outboard deep groove ball bearing for rotor support.

Rear Cover: The rear covers are extra deep, being designed for packing and lantern ring or component mechanical seals. The FML rear cover uses flow modifiers to stop solids from collecting around the mechanical seal. If the pumped fluid is not suitable for clean flushing then an external flush plan can be supplied upon request. Five different type of rear covers are available allowing a complete engineered solution base on job-site requirements.

CPS-Pumps offers many different type of packing and mechanical seals. Packing can be supplied in carbon graphite and/or polymer designs. A variety of component and cartridge mechanical seals are available upon request.

Suction Elbow/Stand: CNCV models feature a suction elbow constructed of ASTM A48 class 30, high tensile cast iron and provides support for the entire pumping assembly. The suction elbow also features an integral clean-out port to remove obstructions that enter the suction elbow.

Power Frame: CNCV models feature a power frame constructed of ASTM A48 class 30, high tensile cast iron and provides support for the inboard and outboard bearings. The power frame is fitted with a single row, deep groove ball bearing at the outboard location and a double row, deep groove ball bearing at the inboard location. Each bearing is of ample capacity designed to account for radial as well as axial loads in either direction. Each bearing is pressed on to the shaft and located against precision machined shoulders assuring proper alignment and location. The power frame has oil lip seals standard to provide protection to the bearings by keeping dust and dirt out of the power frame. Each bearing is of the grease lubricated type for quiet operation.

CNC Bearings: The inboard beaeing is of the double row, deep groove type and outboard bearing is of the single row, deep groove type, precision grade. Each bearing is of the extra large capacity for both radial and axial loads and both bearings are confined rigidly in the bearing housing. All bearings are sized to maintain a minimum L10 bearing life of 50,000 hours with many models exceeding 100,000 hours standard. Each bearing is designed for oil lubrication and a water slinger is provided to prevent leakage from the stuffing box from entering the bearing housing. Grease lubrication is available upon request. Each bearing housing is sealed from water leakage by the use of a bearing isolator. Double row outboard bearings are available upon request.

Motor: CNCV models utilize NEMA or IEC T-frame motors. This design uses readily available and stocked standard motors. This motor concept allows the user to use nearly any motor enclosure such as ODP, TEFC, Explosion Proof, Corro-Duty and Wash-Down Duty.

End Suction

Model CNCV & CNCC

CPS PUMPS

Sizes:	3x3-10 (80/26) to 14x14-26 (350/66)
Flows:	14,000 GPM (3,180 m^3/hr)
Heads:	360 Feet (110 m)
Temp:	500° F (260° C)
Solids:	To 7 inches (180 mm)

Services:

- Building Trades
- Chemical
- Construction
- Food & Beverage
- General Industry
- Marine
- Mining & Aggregate
- OEM
- Oil & Gas
- Power Generation
- Petro-Chemical
- Pharmaceutical
- Pulp & Paper
- Water & Wastewater

Two-Vane
Enclosed Impeller

Stuffing Box/Seal Chamber

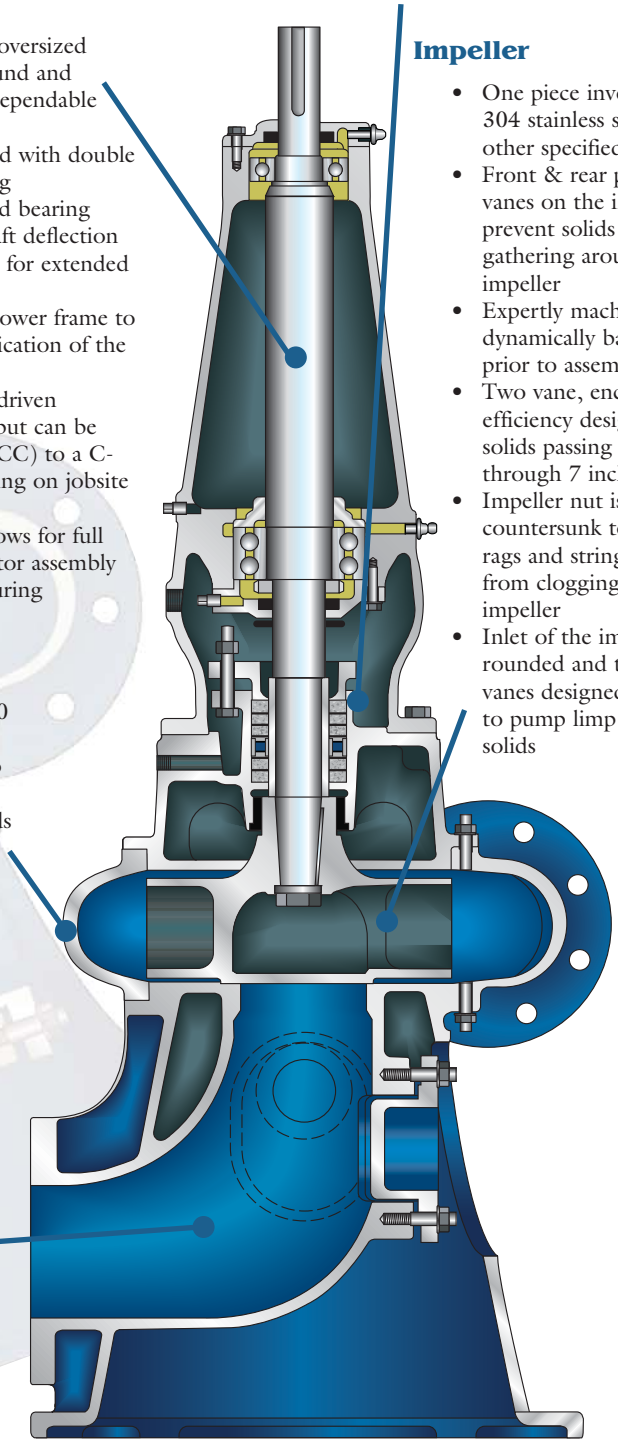
- Standard ASTM A48 class 30 cast iron
- Oversized to insure long life of packing with lantern ring or a wide variety of component and cartridge mechanical seals
- Integral shock resistant bushing that prevents major shaft deflection and bearing damage from rocks or other heavy objects entering the impeller
- Modular design allows for full back pull-out of rotor assembly for quick service during maintenance

Power Frame

- Standard ASTM A48 class 30 cast iron
- 420 stainless steel, oversized shaft precision ground and finished to assure dependable heavy duty service
- Single row outboard with double row inboard bearing
- Double row inboard bearing assures minimal shaft deflection at the seal chamber for extended mechanical seal life
- Grease lubricated power frame to assure positive lubrication of the bearings
- Flex-coupled shaft driven standard (CNCV) but can be close-coupled (CNCC) to a C-face motor depending on jobsite requirements
- Modular design allows for full back pull-out of rotor assembly for quick service during maintenance

Impeller

- One piece investment cast 304 stainless steel or other specified alloy
- Front & rear pump out vanes on the impeller to prevent solids from gathering around the impeller
- Expertly machined and dynamically balanced prior to assembly
- Two vane, enclosed high efficiency design with solids passing capability through 7 inches
- Impeller nut is countersunk to prevent rags and stringy solids from clogging the impeller
- Inlet of the impeller has rounded and tapered vanes designed specifically to pump limp and stringy solids



Heavy Duty Casing

- Heavy duty ASTM A536 ductile iron
- Heavy wall allows for generous corrosion allowance with a 20 year design life
- High efficiency tangential discharge casing with the ability to rotate the casing to meet job-site conditions
- Designed specifically to pump fluids with large spherical solids
- Discharge connection has gauge tap standard and are drilled & tapped for quick connection to system piping
- Discharge flanges are cast to 250# dimensions requiring no pattern modification for high pressure applications
- Studded construction makes the assembly process very quick
- Large oversized cleanout cover on discharge portion of the casing to provide visibility and accessibility to the impeller vanes and casing cutwater

Suction Cover

- Heavy duty ASTM A548 cast iron
- Heavy wall allows for generous corrosion allowance with a 20 year design life
- Unique and industry exclusive suction cleanout cover
- Oversized fluid passageway designed specifically to handle fluids with large spherical solids present
- Suction connection has gauge tap standard and are drilled & tapped for quick connection to system piping
- Suction flange is cast to 250# dimensions requiring no pattern modification for high pressure applications
- Studded construction makes the assembly process very quick
- Integral base on stand ensure that however the casing is rotated there are always feet supporting the pumping assembly