

SPECIFICATIONS AQU Close-Coupled End Suction Pumps

Casing: The casing is constructed of ASTM A48 class 30 high tensile cast iron or other specified material. It is of the single volute design with single suction and has a replaceable bronze case wear ring standard. 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 suction has a cast integral vortex suppressor to minimize inlet vortices and the discharge is of the centerline type. On AQU models, the centerline discharge transmits any residual pipe strain to the cast integral feet on the casing minimizing moment forces that can be catastrophic on casings with a tangential discharge. AQU models feature back pullout allowing the removal of the shaft & bracket 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 and all stainless steel construction. These are available upon request.

Impeller: The impeller is of the single suction, enclosed, 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. Optional impeller wear rings are available upon request. Impellers are furnished with back pump out vanes or double case wear rings to balance axial thrust.

Shaft Sleeve: The shaft sleeve is constructed of a heavy wall bronze 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.

Case Wear Ring: The case wear ring is made of bronze or other specified material. It is designed with a large wearing surface with the diameter at wearing surface reduced to a minimum and is firmly secured in the casing by interference fit. The casing is undercut allowing the case wear ring to be removed without any special machining required.

Shaft: The AQU 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

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shaft is designed to couple to the motor shaft on a standard NEMA or IEC motor. CPS-Pumps is one of the only pump manufacturers to feature an independent & replaceable shaft in a close-coupled pump. This design allows the end user to replace a motor on our close-coupled pumps without complete pump disassembly, something that is required on competitor models that use JM shafted motors. This design also offers the option of packing and/or mechanical seal. In addition, if the end user breaks a shaft in operation this part can be easily replaced as it is not integral to the motor assembly. The precision bore of the pump shaft also eliminates the need to do pump alignment in the field greatly simplifying the installation process.

Rear Cover: The rear covers are extra deep, being designed for packing and lantern ring or component mechanical seals. An internal Plan 1 flush is standard. If the pumped fluid is not suitable for clean flushing then an external flush plan can be supplied upon request.

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.

Motor Bracket: The AQU motor bracket is constructed out of heavy duty ASTM A48 high tensile class 30 cast iron. The pump side of the motor bracket has a precision machined register to keep pump alignment and concentricity. The motor side of the bracket has a precision machined register to mount to the motor. These two registers allow the pump to be assembled correctly without any need for pump alignment in the field.

Motor: AQU models utilize NEMA or IEC C-face motors. This design allows for the removal of the motor without disturbing any item within the pump. This flexibility allows the user to stock fully assembled wet ends less motors. To remove the motor, two to eight set screws need to be loosened, remove the four bolts that hold the motor in location and then remove the motor. This motor concept allows the user to use nearly any motor enclosure such as ODP, TEFC, Explosion Proof, Corro-Duty and Wash-Down duty, enclosures that are not available in other close-coupled designs. This shaft design is a CPS-Pump exclusive.

Model AQU Close-Coupled

CPS PUMPS

Sizes: 1.25x2-5 (32/13) to
12x14-16 (300/40)

Flows: 9,000 GPM (2,440 m³/hr)

Heads: 450 Feet (140 m)

Temp: 250° F (121° C)

Services:

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



Enclosed Impeller

Shaft

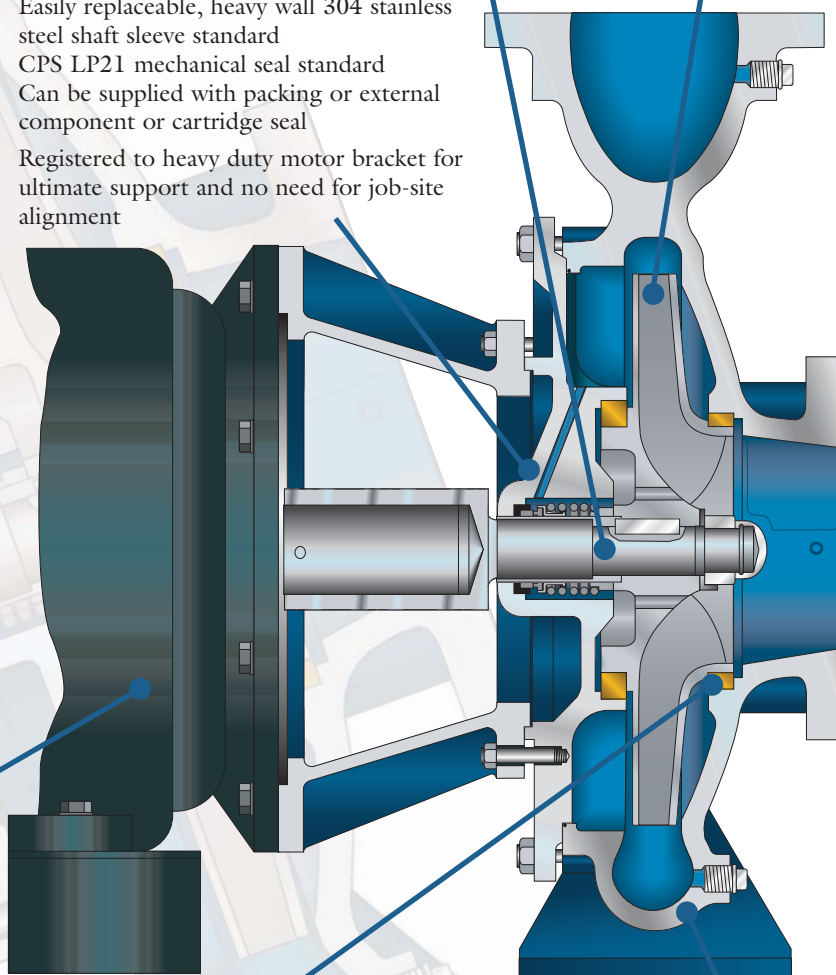
- Supplied in standard 420 stainless steel to for increased strength and corrosion resistance
- Oversized for unplanned loads and to minimize deflection at the mechanical seal location
- Can be supplied to couple to NEMA or IEC motor
- Thrust screws prevent shaft from moving during operation and requires no drilling or machining during assembly

Rear Cover

- Heavy duty ASTM A48 class 30 cast iron or other specified alloy
- Internal Plan 1 flush standard
- External flush optional
- Easily replaceable, heavy wall 304 stainless steel shaft sleeve standard
- CPS LP21 mechanical seal standard
- Can be supplied with packing or external component or cartridge seal
- Registered to heavy duty motor bracket for ultimate support and no need for job-site alignment

Impeller

- One piece investment cast 304 stainless steel or other specified alloy
- Hydraulically balanced using rear pump out vanes or balancing holes in impeller
- Francis design allows for broad band efficiency and large flow region
- Expertly machined and dynamically balanced prior to assembly



Motor

- Off-the-shelf stocked NEMA C-Face motor
- C-Face construction is available in ODP, TEFC, Corro-Duty & Washdown Duty
- Motor can be replaced without complete pump assembly
- Available NEMA registers from 56C to 449TC

Casing

- Heavy duty ASTM A48 class 30 cast iron
- Heavy wall allows for generous corrosion allowance with a 20 year design life
- Unique and industry exclusive suction vortex suppressor
- Centerline & self-venting discharge transmits any residual pipe strain around the circumference of the casing to the cast integral feet
- Centerline discharge also eliminates the need for left & right handed casings & impellers
- Suction and discharge connections have gauge tap standard and are drilled & tapped for quick connection to system piping
- Suction & discharge flanges are cast to 250# dimensions requiring no pattern modification for high pressure applications
- Studded construction make assembly process very quick

Case Wear Ring

- Standard case wear ring is supplied in bronze or other specified alloy
- Can be easily removed and replaced without additional machining
- For hydraulic balancing, larger models feature a front & rear case wear ring in lieu of rear pump out vanes on the impeller