

Specifications - PF4SCC, PF4SCD, PF4SCE, PF4SCF - Double Seal

Furnish and install a quantity of ___ Power-Flo® Pumps & Systems submersible cutter pump(s), Model PF _____, ___ HP, _____ RPM, three phase, 60 Hz, _____ volts, with a 4" horizontal discharge 125 lb. flange connection. Each pump shall be capable of delivering the following performance, _____ U.S. GPM at _____ Ft. Total Dynamic Head, with a shut off head of _____ Ft. TDH minimum, and _____ % efficiency at _____ U.S. GPM at _____ Ft. TDH operating point.

Pump Design:

The pump(s) shall incorporate cutting components to shear solids entering the pump and be capable of handling raw, unscreened domestic sewage. The pump(s) shall be capable of handling liquids with temperatures to 104 degrees F continuous, and shall be capable of running dry for extended periods.

Pump construction:

Castings: The volute shall consist of ASTM A-48, class B cast iron. The impeller shall be constructed of ASTM A436. All other castings shall be a minimum ASTM A-48 Class 25 cast iron. Exterior surfaces shall be painted with a water based air dry enamel. All exposed hardware shall be 300 series stainless steel.

Cutter blade: Shall be adjustable and/or replaceable from outside of the pump without disassembling the pump. The cutter blade shall be heat treated steel with 45/47 Rockwell "C" minimum. To improve pump inlet conditions the cutter blade and holder shall also act as a straightening vane.

Impeller: Shall be 2 vane, one-piece, enclosed non-clog design and keyed to the motor shaft and secured with a stainless steel socket head cap screw. The cone portion of the impeller is hardened to 52/53 Rockwell "C" minimum and forms a continuation of the impeller vanes into the eye of the impeller. The cone shall mate in close tolerance with cutter blade so shearing occurs to all solid material entering the impeller. The impeller shall be dynamically balanced to ISO G6.3 specifications.

Mechanical shaft seal: A tandem seal arrangement shall be utilized with inboard seal operating in an oil filled cavity. Outboard seal faces to be lubricated by the same oil. The inboard seal shall be carbon for rotating face and stainless steel for stationary seat. The outboard seal shall be tungsten carbide for both rotating face and stationary seat. All hardware for both seals shall be 300 series stainless steel and all elastomer parts are BUNA-N.

Seal Leak sensor: A seal leak sensor detection system consisting of one normally open (N/O) probe shall be installed in the pump seal chamber. This probe will detect any moisture present and shall be connected in series to an alarm device or motor starter coil which will alert the operator that moisture has been detected in the seal cavity.

Motor: The windings shall be Class F insulation and operate in a sealed air filled environment. The motor shall meet the standard NEMA design B. The pump shall be non-overloading throughout the entire pump curve and shall be capable of operating in a totally, partially or non-submerged condition for extended periods of time without damage due to the heat being generated. The shaft shall be of 420 stainless steel. The lower bearing shall be of the oversized, heavy-duty double row ball type to accept radial and thrust loads, and the upper bearing of the oversized, heavy-duty single row ball type for radial loads. Bearings shall be permanently lubricated.

Thermal sensors: Shall be used to monitor stator temperatures. Thermal switches shall be embedded in the end coils of the stator winding. The sensors shall be used in conjunction with external motor overload protection and wired to the control panel.

Power cord: Shall be 30 ft. of type 4G power cable, and 30 ft. of sensor cable type 4G. All incoming lead wires shall enter the motor through a sealing gland into a dry chamber above the winding chamber.

Tests and inspections: Shall be performed by the pump manufacture.

1. A ground continuity check and motor chamber shall be Hi-potted to test for electrical integrity.
2. Check that motor voltage and frequency matches name plate.
3. The pump shall be pressurized and a air leak test is performed to ensure the integrity of the motor housing.
4. The pump is submerged and operated to determine the unit meets hydraulic performance requirements.



Power-Flo Pumps & Systems

a Power-Flo Technologies company

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Cutter Pumps - 4" Discharge - Double Seal

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INTRODUCING OUR SEVERE DUTY CUTTER PUMP

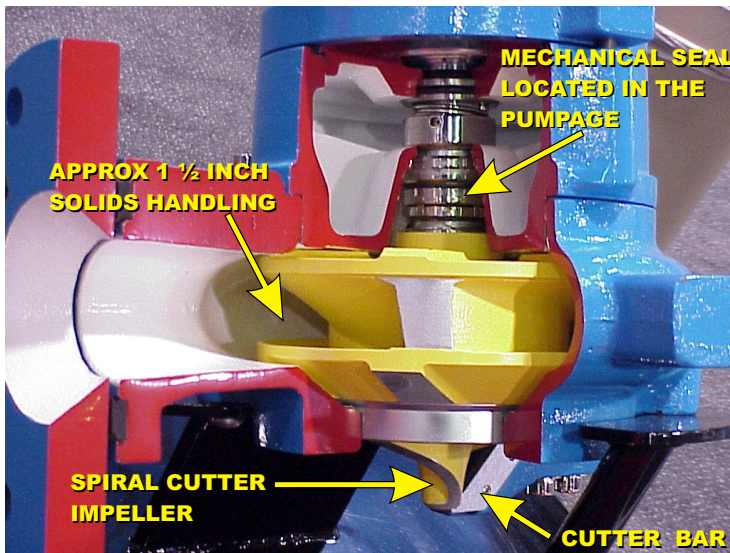
Pumping un-screened raw sewage can cause system problems - for a variety of reasons:

Stringy, fibrous material frequently clog conventional submersible pumps and discharge piping. Pumps that macerate or grind the solid material can overload the primary sedimentation tanks at sewage treatment plants.

Power-Flo Cutter pumps incorporate a unique shearing “scissoring” action. This guarantees that fibrous waste and debris are chopped into pumpable pieces allowing blockage free flow through the pump and piping.

Power-Flo Cutter pumps have been successfully installed and operated in many difficult pumping applications. They have achieved significant savings on operation costs as well as delivering marked improvements in system efficiency.

Power-Flo 4” Cutter Pump



Max Flow - 4500 GPM

Max Head - 295 Ft. TDH

Pump Body - Cast Iron to Class 40B

Impeller - Austenitic Cast Iron to ASTM A436-80-85-06

Cutter Blades - Tool Steel hardened and tempered to grade 45/47 Rockwell “C”

Power-Flo submersible cutter pumps are currently providing trouble free pumping of un-screened raw sewage, screenings, storm overflow, digester sludge holding tank mixing, etc., in a variety of difficult pumping environments across the United States.

The Cutting Edge



Cutter Pumps - 4" Discharge - Double Seal