

Specifications - PFGPC - High Head (HHS) & High Volume (HVS)

General:

Furnish and install a quantity of _____ Power-Flo® Pumps & Systems submersible grinder pump(s) Model PFGPC _____, 2 HP, 3450 RPM, single phase, 60 Hz, _____ volts. 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.

Pump Design:

The centrifugal submersible grinder pump shall be capable of reducing all material found in normal residential and light industrial sewage containing small quantities of plastic, disposable diapers, sanitary napkins, rubber, food particles and other non-abrasive solids into a finely ground slurry. The temperature limitation of the liquid being pumped is 160°F intermittent and shall be capable of running dry for extended periods. Each pump(s) shall have 1.25" NPT vertical discharge connection. The grinder pumps shall be CSA listed.

Pump construction:

Castings: Shall be class 30 cast iron for the volute, seal plate, motor housing and upper housing.

Coating/Hardware: Exterior surfaces shall have an industrial grade powder coating. All exposed hardware shall be stainless steel.

Impeller: The pump impeller shall be of the recessed vortex design with bronze construction and machined for threading to the motor shaft. The impeller shall be capable of being trimmed to meet specific performance characteristics.

Support legs: Shall be utilized, enabling the pump to be a free standing unit. The legs shall of sufficient high to allow solids and stringy debris to enter the cutter/suction area. The legs shall be adjustable and removeable.

Grinder mechanism: Shall consist of a radial cutter threaded on the motor shaft and locked in place with a washer in conjunction with a flat head capscrew, and a shredding ring containing a minimum of fifteen flow passages for PFGPC-HVS series and seven flow passages for PFGPC-HHS series, with cutting edges. The shredding ring's cutting edge life shall be doubled with a reversible design. The shredding ring and radial cutter shall be constructed of 440C stainless steel hardened to a minimum Rockwell C55 and shall be finish for a fine cutting edge.

Mechanical shaft seal: A tandem double seal arrangement shall be utilize and shall operate in an oil atmosphere. Each shaft seal shall prevent leakage between the pump and motor. The materials of construction shall be carbon rotating face and ceramic stationary face, 300 series stainless steel hardware, and all elastomer parts to be Buna-N.

The seal shall be commercially available and not a proprietary design of the manufacturer.

Motor: Design shall be of the capacitor start and capacitor run for single phase units and they shall be included in separate sealed chamber from the motor cavity. The pump shall be designed to be non-overloading throughout the entire pump curve. The rotor and stator assembly shall be of the standard frame design and secured to the pump seal plate by four threaded fasteners allowing for easy serviceability.

The motor windings shall be of Class B insulation and operate in a sealed environment containing clean dielectric oil, making it 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 motor shaft shall be of stainless steel.

Thermal protection: Shall be provided by an automatically resetting, in-line heat/current sensor. The sensor shall be connected in series with, and attached to the motor windings.

Bearings: Pump shall utilize a three bearing design operating in an oil bath atmosphere, consisting of an upper single row, ball bearing for radial load, an intermediate single row, ball bearing for radial and thrust loads and a lower bronze sleeve bearing for radial loads to prevent shaft deflection.

Power cord: Shall be 20 ft. of type SOW and connected to a terminal block with brass pin inserts via spade terminals in the lower motor housing. A Buna-N o-ring shall provide isolation sealing between the terminal block in lower motor housing and the upper housing. Additional sealing and strain relief shall utilize a secondary pressure grommet at point of cable entry in the upper housing. A three prong, grounded, 200 or 230 volt plug shall be molded to power cord for automatic operation.

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.