

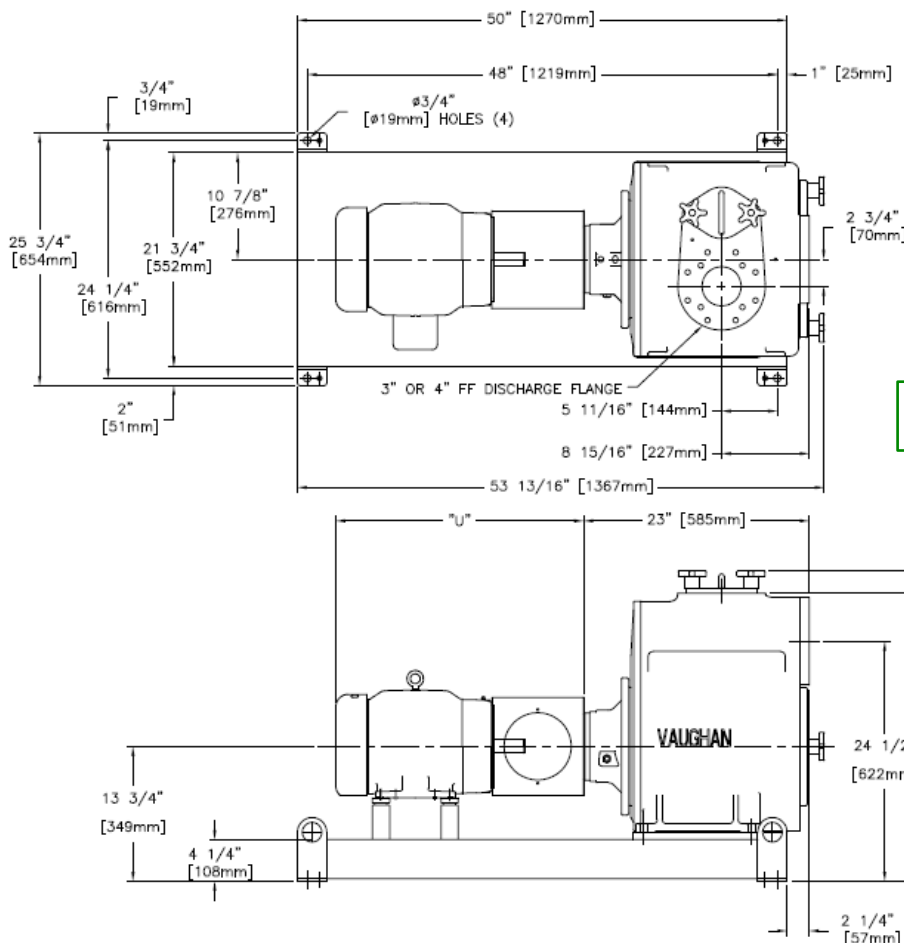


SP4B & SP4C SELF-PRIMING CHOPPER PUMPS

Materials of Construction:

Housing/Casing:	Cast ductile iron.
Impeller/Upper Cutter:	Cast alloy steel, heat treated to minimum Rockwell C 60.
Cutter Bar/Cutter Nose:	Alloy steel, heat treated to minimum Rockwell C60.
Flushless Mechanical Seal:	Cartridge type with silicon carbide or tungsten carbide faces and stainless-steel sleeve. (Other sealing options available.)
Thrust Bearings:	Angular contact ball bearing.
Radial Bearings:	Deep groove ball bearing.
Shaft:	Heat treated alloy steel.
Lubrication:	ISO 46 hydraulic oil.
Suction flange:	4" ANSI CL 125
Discharge flange:	3" or 4" ANSI CL 125
Mounting Base:	Carbon Steel.
Paint:	Epoxy.

DRAWINGS AND DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE. DO NOT USE FOR CONSTRUCTION PURPOSES. CONTACT VAUGHAN FOR CERTIFIED CONSTRUCTION PRINTS.



NEMA Frame	*U
215TC	26.25"
254TC	29.00"
256TC	30.75"

IEC Frame	*U
112M	648 mm
132S	691 mm
132M	731 mm
160M	813 mm

*FOR REFERENCE ONLY. DIMENSION WILL VARY BY MOTOR MANUFACTURER.

MODEL: SP4B/4C SPEC SHEET DWG. #120346



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**MADE IN THE
USA**

SPECIFICATION: SP4B & SP4C SELF-PRIMING CHOPPER PUMPS

The self-priming chopper pump shall be a centrifugal pump specifically designed to pump waste solids at heavy consistencies without plugging or dewatering of the solids. Materials shall be chopped and conditioned by the pump as an integral part of the pumping action. The pump must have demonstrated the ability to chop through and pump high concentrations of solids such as plastics, heavy rags, grease and hair balls, wood, paper products and stringy materials without plugging, both in tests and field applications. Pump shall be manufactured by Vaughan Co., Inc.

DETAILS OF CONSTRUCTION

- A. Housing:** Shall include ANSI Class 125 flanged inlet and discharge flanges, an oversized cleanout and mounting feet. The housing shall be cast ductile iron with all water passages to be smooth, and free of blowholes and imperfections for good flow characteristics.
- B. Casing:** The pump casing shall be of volute design, spiraling outward to the discharge. Casing shall be cast ductile iron with all water passages to be smooth, and free of blowholes and imperfections for good flow characteristics. Casing shall be a replaceable component independent of the housing.
- C. Bearing Housing:** Shall be cast ductile iron, machined with piloted bearing fits for concentricity of all components. Back pull-out design shall incorporate adjusting sleeves for accurate external adjustment of impeller/cutter bar and impeller/upper cutter clearance and shall allow removal of pump components without requiring disconnection of housing from inlet or discharge piping. Viton® double lip seals riding on stainless steel shaft sleeves shall provide sealing at both ends of the bearing housing. Bearing housing cover shall include a replaceable Rockwell C60 steel cutter to cut against the rotating impeller pump-out vanes for removing fiber and debris.
- D. Impeller:** Shall be semi-open type with pump out vanes to reduce seal area pressure. Chopping of materials shall be accomplished by the action of the cupped and sharpened leading edges of the impeller blades moving across the stationary cutter bar at the intake openings, with a maximum set clearance between the impeller and cutter bar of 0.015-0.025" (0.40-0.65 mm) cold. Impeller shall be cast alloy steel heat treated to minimum Rockwell C60 and dynamically balanced. The impeller shall be threaded to the shaft and shall have no axial adjustments and no set screws.
- E. Cutter Bar:** Shall be recessed into the pump bowl and shall extend diametrically across entire pump suction opening. Cutter bar shall be alloy steel heat treated to minimum Rockwell C60.
- F. Cutter Nose:** Designed to cut stringy materials and prevent binding using two opposing cutter edges that cut against the inside of the cutter bar fingers. Cutter nose shall be alloy steel heat treated to minimum Rockwell C60.
- G. Upper Cutter:** Shall be threaded into the bearing housing cover behind the impeller, designed to cut against the pump-out vanes and the impeller hub, reducing and removing stringy materials from the mechanical seal area. Upper cutter shall be cast alloy steel heat treated to minimum Rockwell C60.
- H. Pump Shafting:** Shafting shall be heat treated alloy steel. The pump shaft and impeller shall be supported by rolling element bearings.
- I. Bearings:** Shall be oil bath lubricated with ISO 46 hydraulic oil and sight glass indication. Shaft thrust in both directions shall be taken up by a double-row angular contact ball bearing. A deep groove radial bearing shall also be provided. L-10 bearing life shall be minimum 100,000 hours.
- J. Mechanical Seal:** Mechanical seal shall be cartridge type with silicon carbide or tungsten carbide faces and Viton elastomers. Seal shall be positively driven by set screws. This cartridge seal shall be pre-assembled, and pre-tested so that no seal settings or adjustments are required from the installer. Any springs used to push the seal faces together must be shielded from the fluid to be pumped. The cartridge shall also include a 17-4PH, heat-treated seal sleeve and a ductile iron seal gland.
- K. Shaft Coupling:** Bearing housing and motor stool design is to provide accurate, self-aligning mounting for a C or B5 flanged electric motor. Pump and motor coupling shall be T.B. Woods Sureflex elastomeric type.
- L. Optional Belt Drive:** Adjustable brackets shall be used to support a side-mounted motor. Sheaves and belts shall be properly sized for horsepower ratings, and all guards are to be supplied with the belt drive system.
- M. Stainless Steel Nameplate:** Shall be attached to the pump giving the manufacturer's model and serial number, rated capacity, head, speed and all pertinent data.
- N. Motor Requirements:** Drive motor shall be ____ HP (KW), ____ RPM, ____ volts, 3 phase, 60(50) hertz, 1.15 service factor, C or B5 flange and foot mounted, TEFC enclosure. The motor shall be sized for non-overloading conditions.
- O. Surface Preparation:** Solvent wash and a single coat of Tnemec 431 epoxy (except motor).
- P. Optional Premium Surface Preparation:** Solvent wash, sandblast, and coat with minimum 30 MDFT Tnemec Perma-Shield PL Series 431 epoxy (except motor).