Unmatched Reliability

SP8N SELF-PRIMING CHOPPER PUMPS

Materials of Construction:

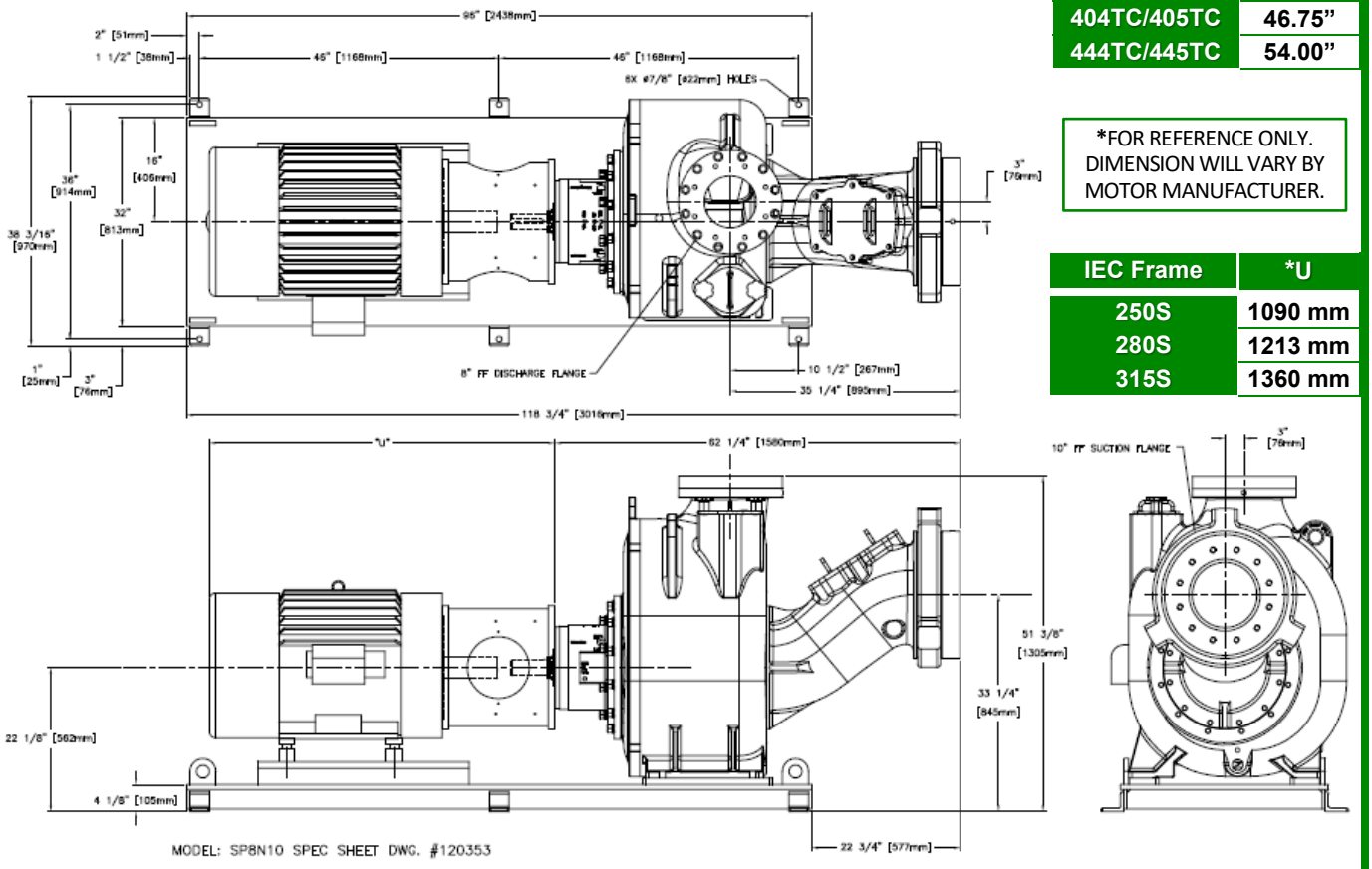
Housing/Casing: ..... Cast ductile iron.
Impeller/Upper Cutter: ..... Cast alloy steel, heat treated to minimum Rockwell C 60.
Cutter Bar/Cutter Nose: ..... Alloy steel, heat treated to minimum Rockwell C60.
Flushless Mechanical Seal: ..... Cartridge type with silicon carbide (or tungsten carbide) faces and stainless-steel sleeve. (See following page for other sealing options)
Thrust Bearings: ..... Angular contact ball bearing.
Radial Bearings: ..... Spherical roller bearing.
Shaft: ..... Heat treated alloy steel.
Lubrication: ..... ISO 46 hydraulic oil.
Suction flange: ..... 10” ANSI CL 125
Discharge flange: ..... 8” 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
364TC/365TC	41.10”
404TC/405TC	46.75”
444TC/445TC	54.00”

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

IEC Frame	*U
250S	1090 mm
280S	1213 mm
315S	1360 mm



MODEL: SP8N10 SPEC SHEET DWG. #120353

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MADE IN THE USA

For all current patents, see https://www.chopperpumps.com/patents/

SPECIFICATION: SP8N SELF-PRIMING CHOPPER PUMP

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 CL 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. Bearing Housing: Shall be cast ductile iron, machined with piloted bearing fits for concentricity of all components. Design shall incorporate adjusting sleeves for accurate external adjustment of impeller/cutter bar and impeller/upper cutter clearances. A replaceable Rockwell C60 alloy steel wear plate with internal cutter groove, and adjustability to maintain 0.030-0.050" (0.75-1.25 mm) clearance to cut against the rotating impeller pump-out vanes for removing fiber and debris shall also be included.

C. 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.

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 contain at least two shear bars extending diametrically across the intake opening to within 0.025” - 0.040” (0.65–1.0 mm) of the rotating external cutter tooth, for the purpose of preventing intake opening blockage and wrapping of debris at the shaft area. Chopper pumps utilizing individually mounted shear bars, or which do not have a rotating external cutter extending through to the opposite side of the shear bars, shall not be acceptable. Cutter bar shall be alloy steel heat-treated to minimum Rockwell C60.

F. External Cutter: The external cutter shall be used to eliminate binding and the build-up of stringy materials at the pump inlet. The external cutter shall consist of opposing cutter wings which shear against the outside surface of the shear bars and the anvil, an integral cast tooth which shears against the adjacent surface of the shear bars, and a hex head sufficiently sized for ease of removal. The external cutter shall be cast alloy steel and heat treated to a minimum Rockwell C60.

G. Upper Cutter: Shall be threaded into the wearplate behind the impeller, designed to cut against the impeller pump-out vanes and the impeller hub, reducing and removing stringy materials from the mechanical seal area. Upper cutter shall be cast alloy steel and heat treated to minimum Rockwell C60.

H. Pump Shafting: Pump shaft shall be heat treated alloy steel and 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 back-to-back mounted angular contact ball bearings. A single spherical roller 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 coated with 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).