

TRITON

8"-12" Horizontal Screw Centrifugal Pumps

Materials of Construction:

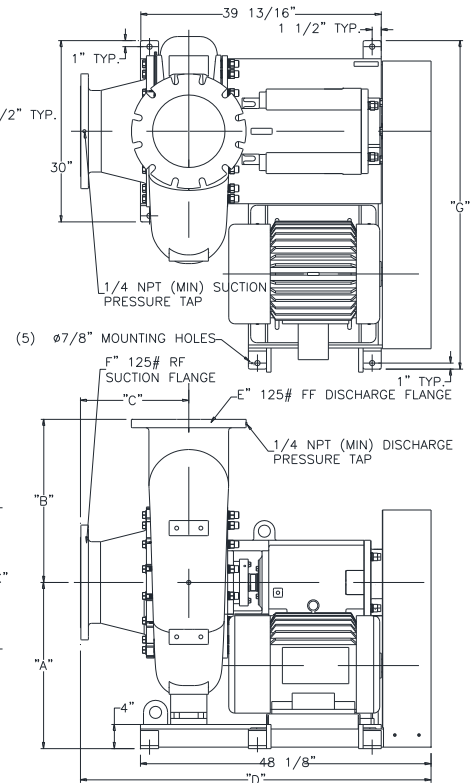
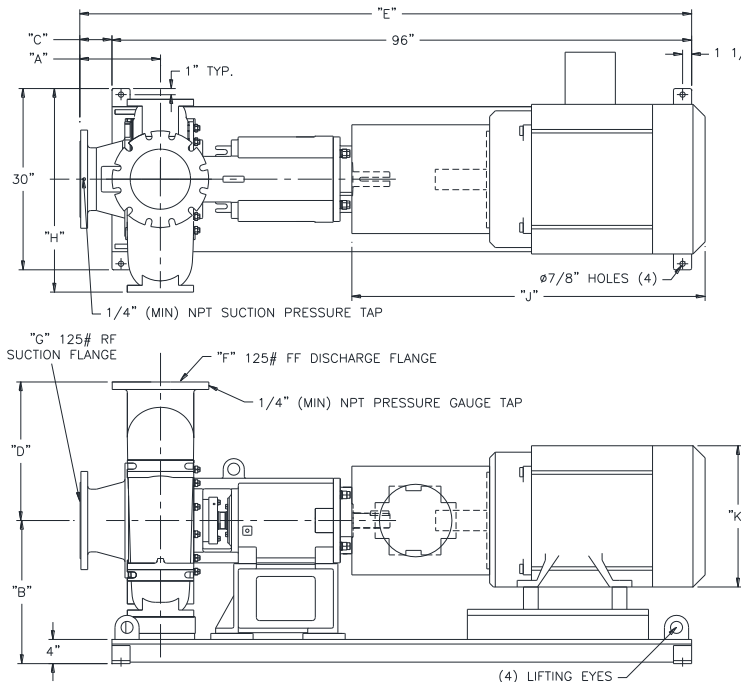
- Impeller/Casing/Inlet Manifold/Back Pull-Out Plate:** Ductile cast iron.
Insert Cutter Hardened steel
Flushless Mechanical Seal: Cartridge type with silicon carbide (or tungsten carbide) faces.
- Optional Flushed Double Mechanical Seal:** Cartridge type with tandem set of silicon carbide (or tungsten carbide) faces.
- Optional Flushed Mechanical Seal:** Welded bellows with silicon carbide (or tungsten carbide) faces.
- Optional Packing:** 5-ring packing with split Teflon lantern ring.
- Seal Sleeve:** Stainless steel.
Thrust Bearings: Face to face tapered roller type.
Radial Bearings: Spherical roller type.
Shaft: Heat treated steel.
Lubrication: ISO Gr. 100 oil.
Flanges: 125 lb. ANSI rated.
Mounting Base: Steel.
Paint: Ceramic Epoxy.

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

MODEL	A	B	C	D	E
HSC8F	13 1/8	18 1/2	5	17 3/4	101
HSC10D	13 1/8	23 11/16	5 5/16	23	101 5/16
HSC12D	17 3/4	27 1/2	10	27	106

MODEL	F	G	H	K
HSC8F	8	8	30	53 1/8
HSC10D	10	10	33 3/4	53 1/2
HSC12D	12	12	37 5/8	58

MOTOR FRAME SIZE	J	L (max)
284TC / 286TC	39 3/4	51 1/2
324TC / 326TC	42 1/2	54
364TC / 365TC	45 1/2	57
404TC / 405TC	50 9/16	65
444TC / 445TC	58 1/2	72



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CURRENT U.S. PATENTS: Nos. 7,125,221,
 5,460,482; 5,460,483; 5,456,580; 5,256,032;
 5,076,757; 4,840,384; 4,842,479.

CURRENT FOREIGN PATENTS: Nos. 2 371
 834; 2 188 138; 1,290,981; 276224; 0 774 045.
 OTHER PATENTS PENDING.

SPECIFICATIONS - HORIZONTAL SCREW CENTRIFUGAL PUMPS

The Vendor shall furnish () horizontal, end suction, screw-centrifugal pump(s) and all appurtenances as specified. The pump(s) shall be of heavy-duty construction intended for services requiring reliable solids handling, gentle pumping action, high efficiency, and low NSPH_R. Pump shall be manufactured by Vaughan Co., Inc.

DETAILS OF CONSTRUCTION

- A. Casing, Back Plate and Wear Plate: The pump casing shall be of volute design, spiraling outward to the 125 lb. flanged centerline discharge. Back pull-out design shall incorporate adjusting sleeves for accurate adjustment of impeller-to-suction cone clearance, and shall allow removal of pump components without requiring disconnection of casing from inlet or discharge piping. A ½"-NPT pressure tap shall be included on or near the discharge flange. Casing and back plate shall be ductile cast iron with all water passages to be smooth, and free of blowholes and imperfections for good flow characteristics. The replaceable wear plate shall be heat treated alloy steel plate with cutting groove to cut against insert cutter in the impeller hub.
- B. Inlet Suction Cone: The inlet suction cone shall be ductile cast iron with all water passages to be smooth, and free of blowholes and imperfections for good flow characteristics. The suction cone shall incorporate a spiral groove to channel into the casing trapped fiber that would otherwise bind between the impeller OD and the inlet cone ID. The clearance of the impeller to the cone shall be externally adjustable without requiring pump or piping disassembly or special tools.
- C. Impeller: Shall be open channel, screw-centrifugal type. The impeller shall be ductile cast iron and shall be dynamically balanced. The single-passage impeller shall combine the action of a positive displacement screw and a single-vane centrifugal impeller.
- D. Insert Cutter: Shall be installed in the impeller hub, designed to cut against the cutter groove in the replaceable wear plate, reducing and removing stringy materials from between the impeller and wear plate and from the mechanical seal area. Insert cutter shall be steel, heat treated to minimum Rockwell C 60. The insert cutter clearance from the impeller hub to wear plate shall be externally adjustable without requiring pump disassembly.
- E. Pump Shafting: The pump shaft and impeller shall be supported by ball and tapered roller bearings. Shafting shall be heat treated steel.
- F. Stuffing Box: The stuffing box shall be ductile cast iron. The stuffing box shall be designed to accommodate the mechanical seal or packing.
- G. Seal: [NOTE TO CONSULTING ENGINEER: Please choose one of the 4 options below]:
- Packing design with 5-ring Kevlar packing, split Teflon lantern ring and water fitting. The packing shaft sleeve shall be 316 SS with Nickel-Chrome-Boron coating. Contractor is to provide a 6-10 gal./hr. packing flush with filtered water, a rotameter, throttle valve, and solenoid operated isolation valve interlocked with an auxiliary contact of the motor starter.
 - Mechanical seal with throttle bushing and water fitting for seal water flush. The seal shaft sleeve shall be 316 SS. Mechanical seal materials shall be 316 SS with silicon carbide faces. Seal shall be positively driven by set-screws. Elastomers shall be of Buna N, and stationary seal member shall be of the cup-mounted type to ensure cushioning of face material from mechanical shock. Contractor is to provide a 6-10 gal./hr. seal flush with filtered water, a rotameter, throttle valve, and solenoid operated isolation valve interlocked with an auxiliary contact of the motor starter.
 - Mechanical Seal system *specifically designed to require no seal flush*: The mechanical seal shall be located immediately behind the impeller hub to eliminate the stuffing box. The seal shall be cartridge-type mechanical seal with Viton O-rings and silicon carbide (or tungsten carbide) faces. This cartridge seal shall be a 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 housing (or stainless steel).
 - Flushed Double Mechanical Seal: The seal shall be cartridge-type tandem mechanical seal with Viton O-rings and silicon carbide (or tungsten carbide) faces. This cartridge seal shall be a 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 (or stainless steel) seal housing. Seal requires flush to drain at 2-3 US gallons/hr flow rate.
- H. Bearings: Shaft thrust in both directions shall be taken up by two face to face mounted tapered roller bearings. Spherical roller bearings shall be provided for radial loads. Bearings shall be rated with a minimum L10 bearing life of 100,000 hours at any acceptable operating point on the performance curve.
- I. Bearing Housing: Shall be cast iron, and machined with piloted bearing fits for concentricity of all components. Bearing housing shall have oil bath lubrication using ISO Gr. 100 turbine oil. Fill and drain ports shall be provided. Bronze non-contacting labyrinth style, O-ring mount bearing isolators shall be provided at each end of the bearing housing to prevent egress of oil and ingress of contaminants. Bearing housing shall include a cast-in lifting eye to aid in removing the back-pullout assembly from the pump casing during maintenance.
- J. Shaft Coupling:
- [for direct-drive pumps]: Bearing housing and motor stool design is to provide accurate, self-aligning mounting for a C-flanged electric motor. Pump and motor coupling shall be T.B. Woods Sureflex elastomeric type.
 - [for belt-drive pumps]: Adjustable brackets shall be used to support an over-head [or optional side-mounted] mounted motor. Sheaves and belts shall be properly sized for horsepower ratings with a service factor of at least 1.5, and all guards are to be supplied with the belt drive system and shall meet the requirements of ANSI B15.1.
- K. Stainless Steel Nameplates: Shall be attached to the pump and drive motor giving the manufacturer's model and serial number, rated capacity, head, pump and motor speed and motor horsepower.
- L. Drive Motor: Shall be ___ HP, ___ RPM, ___ volts, ___ phase, ___ hertz, ___ service factor, C-flange mounted, _____ enclosure. The motor shall be sized for non-overloading conditions.
- M. Surface Preparation: Solvent wash and a single coat of Tnemec 431 epoxy applied at 5 MDFT minimum (except motor).
- N. *OPTIONAL* Surface Preparation: SSPC-SP6 commercial sandblast (except motor), a prime coat of Tnemec 431 epoxy and a finish coat of Tnemec 431 epoxy for total finish of 30 MDFT minimum (except motor).