

TRITON

8"–12" Vertical Wet Well Screw Centrifugal Pumps

Materials of Construction:

Impeller/Casing/Inlet Manifold/

Back Pull-Out Plate: Ductile cast iron.

Upper Cutter Cast steel, heat treated to minimum Rockwell C 60.

Mechanical Seal: Cartridge type with silicone carbide or tungsten carbide faces.

Seal Sleeve: Stainless steel.

Thrust Bearings: Back-to-back angular contact ball type.

Radial Bearings: Ball type.

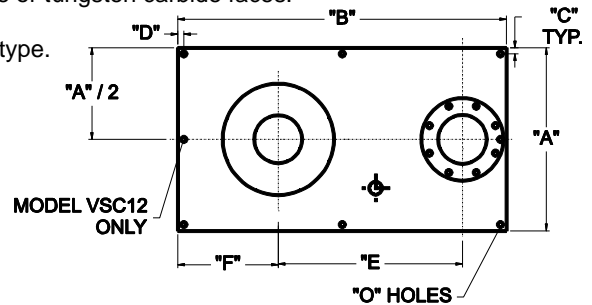
Shaft: Heat treated steel.

Lubrication: ISO Gr. 46 oil.

Discharge Flange: 150 lb. ANSI rated.

Mounting Plate: Carbon Steel.

Paint: Epoxy.



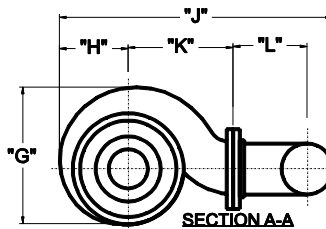
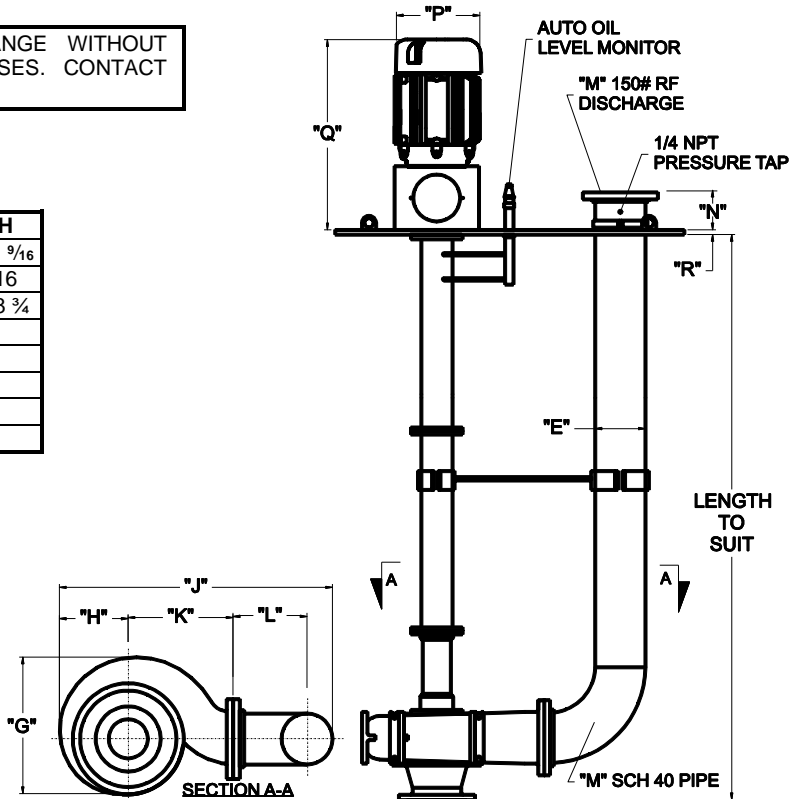
DRAWINGS AND DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE. DO NOT USE FOR CONSTRUCTION PURPOSES. CONTACT VAUGHAN FOR CERTIFIED CONSTRUCTION PRINTS.

MODEL	A	B	C	D	E	F	G	H
VSC8B	30	54	1	1	30 1/4	16 1/2	23 3/16	11 9/16
VSC10C	48	72	1 1/2	1 1/2	39 3/16	21 3/4	31 7/8	16
VSC12C	51 1/2	90	2	2	46 1/4	28	37 9/16	18 3/4

MODEL	J	K	L	M	N	O	R
VSC8B	46 1/8	17 3/4	12 1/2	8	8	1	7/8
VSC10C	60 1/2	23	16 1/4	10	8	1	7/8
VSC12C	71 3/8	27	19 3/16	12	10	1 1/2	1 1/4

MOTOR FRAME SIZE	Q	P
286TC	39 3/4	14 5/8
324TC / 326TC	42 1/2	16 1/2
364TC / 365TC	45 1/2	18 1/4
404TC / 405TC	50 9/16	20 1/8
444TC / 445TC	58 1/2	22 3/8

UNITS: INCHES



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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 – VERTICAL WET WELL SCREW CENTRIFUGAL PUMPS

The Vendor shall furnish (___) vertical wetwell pit, 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 Pull-Out Adapter Plate and Wear Plate: The pump casing shall be of volute design, spiraling outward to the flanged centerline discharge. A ½"-NPT pressure tap shall be included on or near the discharge flange. Back pull-out adapter plate shall allow removal of pump components from outboard of the casing, and allow external adjustment of impeller-to-cutter bar clearance. Casing and adapter plate shall be ductile cast iron with all water passages to be smooth, and free of blowholes and imperfections for good flow characteristics. The back pull-out wear plate shall be heat treated low-alloy steel plate. Backplate will include a replaceable Rockwell C 60 steel wear plate adjustable for 0.005-0.050" clearance to cut against the rotating impeller pumpout vanes for removing fiber and debris.
- 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.
- C. Impeller: Shall be open channel, screw-centrifugal type with pump out vanes to reduce seal area pressure. 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. Upper Cutter: Shall be bolted into the back pull-out adapter plate 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 steel, heat treated to minimum Rockwell C 60. The upper cutter teeth are positioned as closely as possible to the center of shaft rotation to minimize cutting torque and nuisance motor tripping. The ratio of upper cutter cutting diameter to shaft diameter in the upper cutter area of the pump shall be 3.6 or less.
- E. Pump Shafting: Shall be 2-7/16" diameter minimum. Lower stub shaft shall be heat treated. Upper shaft extension shall be turned, ground and polished. The shaft column shall be 6-5/8" inch O.D. precision steel tubing welded to steel flanges and machined with piloted bearing fits for concentricity of all components. All support column tubes shall be leak tested. Distance between shaft bearings shall not exceed critical speed dimensions.
- F. Pump Shaft Ball Bearings: Shall be oil bath lubricated by I.S.O. Grade 46 turbine oil, with the exception of the top bearing, which shall be greased packed. The bearings shall have a minimum B-10 life rated 100,000 hours. Shaft thrust shall be taken up by two back-to-back mounted single row angular contact ball bearings, which bear against a machined shoulder on one side and the seal sleeve on the other side. Overhang from the centerline of the lower thrust bearing to the seal faces shall be a maximum of 2.75", with a mechanical seal to isolate the bearings from the pumped media at up to 250 F.
- G. Mechanical Seal: The mechanical seal shall be located immediately behind the impeller hub to eliminate the stuffing box and maximize the flushing available from the impeller pumpout vanes. The seal shall be a screw-in, cartridge-type mechanical seal with Viton O-rings and silicon carbide (or tungsten carbide) faces. This cartridge seal shall be a pre-assembled, 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.
- H. Automatic Oil Level Monitor: Shall be located above the mounting plate and be fitted with an internal oil level switch to detect oil level and shut off the motor in event of low oil level.
- I. Pump Discharge Pipe: The pump assembly shall be mounted vertically on a common steel base plate with 150 LB. rated discharge flange. A 1/4" NPT pressure tap shall be located above the deck plate.
- J. Shaft Coupling: Shall be T.B. Woods Sureflex elastomeric type with a minimum 1.5 service factor based on the drive rated horsepower, and shall be protected with an guard meeting OSHA requirements.
- K. Motor Stool: Shall be a fabricated carbon steel weldment machined with piloted fits to positively align the C-flanged motor and pump shaft, with no adjustments.
- L. Pump Base Plate: Shall be fabricated carbon steel, 1" minimum thickness, and shall include lifting lugs.
- M. Stainless Steel Nameplates: Shall be attached to the pump and drive motor giving the manufacturer's pertinent data.
- N. Motor Requirements: Drive motor shall be ___ HP, ___ RPM, ___ volts, ___ phase, ___ hertz, ___ service factor, _____ enclosure. The motor shall be sized for non-overloading conditions.
- O. Surface Preparation: Degreased and coated with 5-8 MDFT epoxy (except motor).
OPTIONAL ADDER Surface Preparation: SSPC-SP5 commercial sandblast (except motor), primed with 5-8 MDFT epoxy primer and finish coated with 5-8 MDFT epoxy (except motor).