

TRITON

4" - 6" Submersible Screw Centrifugal Pumps

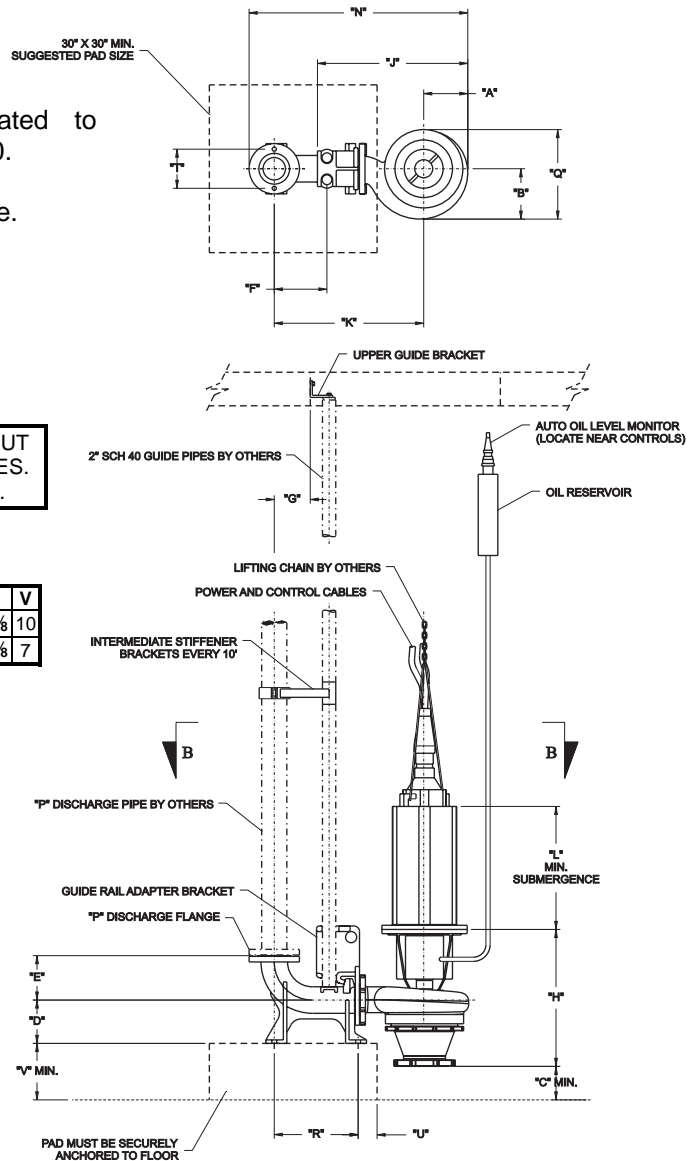
Materials of Construction:

Impeller/Casing/Inlet Manifold/ Bearing Housing/ Guide Bracket/Elbow: Ductile cast iron.
Upper Cutter..... Cast steel, heat treated to minimum Rockwell C 60.
Mechanical Seal: Silicon carbide.
Thrust Bearings:..... Angular contact ball type.
Shaft:..... Heat treated steel.
Lubrication:..... ISO Gr. 46 oil.
Flange: 150 lb. ANSI rated.
Paint:..... Stainless 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 | J | K | N | P | Q | R | T | U | V |
|---------|---|-------|---|-------|---|-------|-------|--------|--------|--------|--------|---|--------|----|---|-------|----|
| SSC4X6A | 8 | 9 | 6 | 8 | 8 | 9 3/4 | 6 1/2 | 24 1/2 | 27 1/2 | 27 | 39 1/4 | 4 | 16 3/4 | 15 | 7 | 3 3/8 | 10 |
| SSC6X6 | 8 | 9 1/2 | 6 | 9 3/4 | 8 | 11 | 7 1/2 | 24 1/4 | 27 1/2 | 28 3/4 | 43 | 6 | 16 1/2 | 15 | 7 | 3 3/8 | 7 |

| HP | SPEED | FRAME | L | W |
|-----|-------|-------|--------|--------|
| 5 | 1170 | 180TY | 17 1/4 | 12 3/8 |
| 5 | 1750 | | | |
| 7.5 | 1750 | | | |
| 7.5 | 1170 | | | |
| 10 | 1170 | | | |
| 10 | 1750 | 210TY | 21 7/8 | 15 1/4 |
| 15 | 1750 | | | |
| 15 | 3510 | | | |
| 20 | 1750 | | | |
| 20 | 3510 | | | |
| 15 | 1170 | 250TY | 25 1/8 | 17 |
| 20 | 1170 | | | |
| 25 | 1750 | | | |
| 30 | 1750 | | | |
| 40 | 1750 | | | |



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U.S. PATENTS: No. 5,460,482; No. 5,460,483; No. 5,456,580; No. 5,076,757; No. 3,155,046; No. 3,973,866; No. 3,774,323; No. 4,840,384; No. 4,842,479. FOREIGN PATENTS: No. 94/7561; No. 1,274,886; No. 910.127; No. 698,327; No. 1,040,006; No. 178,507; No. 539,722; No. 1,531,025; No. 1,193,483; No. 1,193,484; No. 1,193,485; No. 1,193,486; No. 498,063; No. P26 18 559; No. 512,380; No. 1,172,906; No. 963,918; No. 1,290,981; No. 687,476; No. 276,224; No. 75,941; No. 3480. OTHER U.S. AND FOREIGN PATENTS PENDING.

SPECIFICATIONS - SUBMERSIBLE SCREW CENTRIFUGAL PUMPS

The Vendor shall furnish () submersible, 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: Shall be of semi-concentric design, with the first half of the circumference being cylindrical beginning after the pump outlet, and the remaining circumference spiraling outward to the 150 lb. flanged centerline discharge. Casing shall be ductile cast iron with all water passages to be smooth, and free of blowholes and imperfections for good flow characteristics.
- B. 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.
- C. Upper Cutter Assembly: The impeller pump-out vanes shall be specially modified to shear against an upper cutter assembly mounted into the back side of the casing, in order to eliminate any build up of rags, hair, or other stringy material in the seal area or between the impeller and the pump casing. The upper cutter shall consist of no more than 2 cutting anvils to minimize the potential for binding. The set clearance between the impeller and upper cutter shall be adjustable to .010" or less. The upper cutter shall be cast steel and heat treated to a minimum 60 Rockwell C Hardness.
- D. 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 special tools.
- E. Pump Shafting: The pump shaft and impeller shall be supported by ball bearings. Shafting shall be heat treated steel, with a minimum diameter of 1.5 inches in order to minimize deflection during solids chopping.
- F. Bearing Housing: Shall be ductile cast iron, and machined with piloted bearing fits for concentricity of all components. Piloted motor mount shall firmly align motor on top of bearing housing.
- G. Thrust Bearings: Shaft thrust in both directions shall be taken up by two back-to-back mounted single-row angular contact ball bearings. Overhang from the centerline of the lower thrust bearing to the seal faces shall be a maximum of 1.2". A third mechanical seal shall be provided to isolate the bearings from the pumped media at operating temperatures to 250 F. The third seal, as well as the thrust bearings shall be oil bath lubricated in the bearing housing by I.S.O. Grade 46 turbine oil, with a minimum B-10 life rated 100,000 hours. Shaft overhang exceeding 1.2 inches from the center of the lowest thrust bearing to the seal faces shall be considered unacceptable.
- H. Pump Mechanical Seal: Shall be fitted with silicon carbide seal faces to provide long life expectancy in the presence of grit and abrasive solids. The seal shall ride on a 316 stainless steel shaft sleeve, with the seal tension held by 3 set screws. Seal shall be tested for flatness within 2 Helium light bands under a Helium light source and optical flat.
- I. Automatic Oil Level Monitor: An oil level switch shall be mounted at the top of the wet well, with a hose feeding down to the side of the bearing housing to detect oil level and shut off the motor in event of low oil level. A sensitive relay shall be included for mounting in the motor control panel.
- J. Shaft Coupling: The submersible motor shall be close coupled directly to the pump shaft using a solid sleeve coupling, which is keyed to both the pump and motor shafts.
- K. Stainless Steel Nameplates: Shall be attached to the pump and drive motor giving the manufacturer's model and serial number, rated capacity, head, speed and all pertinent data.
- L. Submersible Motor: The submersible motor shall be U/L listed and suitable for Class I, Group D, Division I hazardous locations, rated at ___ HP, ___ RPM, ___ Volts, 60 Hertz and 3 phase, with a 1.15 service factor (1.0 for Continuous In-Air) and Class F insulation. Motor shall have tandem mechanical seals in oil bath and dual moisture sensing probes. The lower motor seal shall be exposed only to the lubricant in the bearing housing, with no exposure to the pumpage. Motor shall include two normally closed automatic resetting thermostats connected in series and imbedded in adjoining phases. Motor frame shall be cast iron, and all hardware and shaft shall be stainless steel.
- M. Guide Rail System: Provide a guide rail system consisting of two (galvanized or stainless steel) 2" SCH 40 pipe guide rails, cast ductile iron pump guide bracket and discharge elbow with mounting feet and 125 lb. flanges, an upper guide rail mounting bracket and intermediate guide brackets every 10 feet.
- N. (OPTIONAL) Non-Sparking Guide Rail System: Provide a non-sparking guide rail system consisting of two (galvanized or stainless steel) 2" SCH 40 pipe guide rails, cast bronze pump guide bracket, cast ductile iron discharge elbow with mounting feet and 125 lb. flanges, upper guide rail mounting bracket, and intermediate guide brackets every 10 feet. System design shall prevent spark ignition of explosive gases during pump installation and removal.
- O. Surface Preparation: SSPC-SP5 commercial sandblast, primed and finish coated with minimum 10 MDFT 316 stainless steel pigment epoxy.