

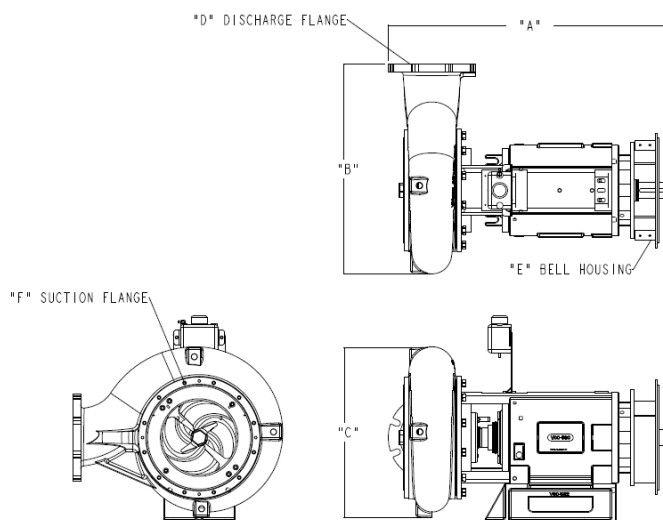
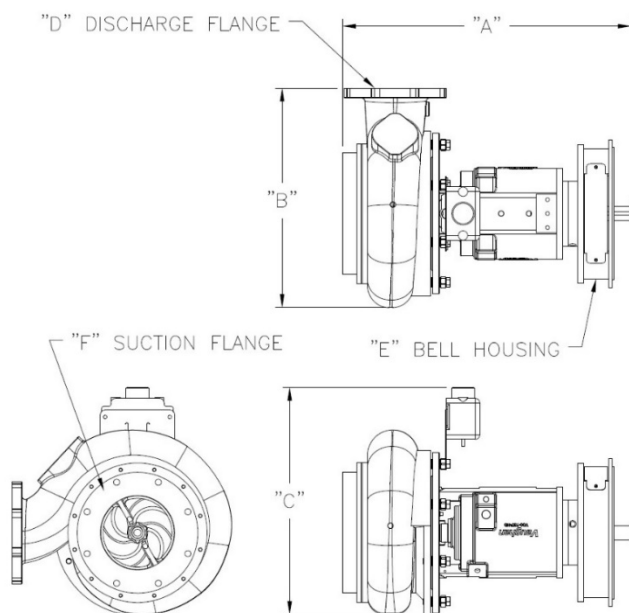


HORIZONTAL CHOPPER PUMPS FOR PORTABLE MOUNTING ENGINE DRIVE

Materials of Construction:

Impeller/Upper Cutter.....	Cast alloy steel, heat treated to minimum Rockwell C 60
Cutter Nut or External Cutter.....	Cast alloy steel, heat treated to minimum Rockwell C 60
Cutter Bar	Alloy steel heat treated to minimum Rockwell C 60
Casing/Back Pull-Out Plate	Ductile cast iron
Flushless Mechanical Seal	Cartridge type with tungsten carbide faces and stainless steel sleeve
Thrust Bearings.....	Face to face tapered roller type
Radial Bearings.....	Cylindrical roller type
Shaft	Heat treated alloy steel
Lubrication.....	ISO Grade 46 oil
Flanges.....	ANSI Class 125
Paint	Epoxy

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



SMALL CBH	A	B	C	D	E	F
THES3L	30.631	15	22.95	3	SAE 5	6
THES3P	29.048	18.688	24.79	3	SAE 5	6
THES4K	30.909	17.186	24.363	4	SAE 5	6
THES4S	30.01	20.528	25.55	4	SAE 4	6
THES4V	31.142	27.2	26.375	4	SAE 3	8
THES6W	31.116	23.62	25.45	6	SAE 4	8
THES8L	33.167	30.075	26.7	8	SAE 3	10

LARGE CBH	A	B	C	D	E	F
THES8P	42.667	30.063	22.417	8	SAE 3	10
THES8S	43.814	32.417	26.381	8	SAE 1	12
THES10R	45.922	38.750	31.813	10	N/A	12
THES12W	47.588	45.371	37.563	12	N/A	14
THES16W	49.581	58.481	44.688	16	N/A	18

DIMENSIONS IN INCHES

Note: Please confirm SAE Bell Housing size with Vaughan.



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

**MADE IN THE
USA**

SPECIFICATIONS: HORIZONTAL CHOPPER PUMPS FOR PORTABLE MOUNTING ENGINE DRIVE

The horizontal chopper pump shall be specifically designed to pump waste solids at heavy consistencies without plugging or dewatering of the solids. Materials shall be chopped/macerated 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. Casing and Back Pull-Out Plate:** The pump casing shall be of volute design, spiraling outward to the Class 125 flanged centerline discharge. Back pull-out design shall incorporate adjusters for accurate adjustment of impeller-to-cutter bar clearance. Casing & backplate shall be ductile cast iron with all water passages to be smooth, and free of blowholes and imperfections for good flow characteristics. A pressure tap shall be included on or near the discharge flange. Backplate shall include a replaceable Rockwell C 60 cast alloy steel cutter adjustable for 0.005-0.050" clearance to cut against the rotating impeller pump out vanes for removing fiber and debris.
- B. Impeller:** Shall be semi-open type with pump out vanes to reduce seal area pressure. Chopping/maceration of materials shall be accomplished by the action of the cupped and sharpened leading edges of the impeller blades moving across the cutter bar at the intake openings, with a maximum set clearance between the impeller and cutter bar of 0.015-0.025" cold. Impeller shall be cast alloy steel heat treated to minimum Rockwell C 60 and dynamically balanced. The impeller shall be keyed to the shaft and shall have no axial adjustments and no set screws.
- C. Cutter Bar Plate:** Shall be recessed into the pump bowl and shall contain 2 shear bars extending diametrically across the intake opening to within 0.010-0.030" of the rotating cutter nut tooth, for the purpose of preventing intake opening blockage and wrapping of debris at the shaft area. Cutter bar shall be cast alloy steel heat-treated to minimum Rockwell C 60.
- D. Cutter Nut (THES3L-THES8L):** The impeller shall be secured to the shaft using a cutter nut, designed to cut stringy materials and prevent binding using a raised, rotating cutter tooth. The cutter nut shall be cast alloy steel heat treated to minimum Rockwell C 60.
OR – External Cutter (THES8P-THES16W): The external cutter shall be used to eliminate binding or build-up of stringy materials at the pump inlet. The external cutter shall consist of opposing cutter wings which shear against the outside cutting surfaces of the shear bars, and an integral cast tooth which shears against the adjacent surface of the shear bars. The external cutter shall be cast alloy steel and heat treated to a minimum Rockwell C 60.
- E. Upper Cutter:** Shall be threaded 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 alloy steel heat treated to minimum Rockwell C 60.
- F. Pump Shafting:** Shall be heat treated alloy steel.
- G. Bearings:** Shall be oil-bath lubricated with ISO Grade 46 oil. Shaft thrust in both directions shall be taken up by two face to face mounted tapered roller bearings. A cylindrical roller type radial bearing shall also be provided.
- H. Bearing Housing:** Shall be ductile cast iron and machined with piloted bearing fits for concentricity of all components. Bearing housing shall include a side-mounted sight glass. Viton® double lip seals riding on stainless steel shaft sleeves are to provide sealing at each end of the bearing housing. Thrust bearings are mounted in an adjustable cartridge to allow external upper cutter adjustment.
- I. Seal:** Mechanical Seal system specifically designed to require no seal flush: The mechanical seal shall be located immediately behind the impeller hub to maximize the flushing available from the impeller pump out vanes. The seal shall be a cartridge-type mechanical seal with Viton O-rings and tungsten carbide faces. 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 stainless-steel seal housing. An external oil reservoir shall be provided for seal lubrication.
- J. Suction Adaptor:** Shall be cast ductile iron assembly mounted horizontally with a Class 125 inlet flange.
- K. Bell Housing:** SAE 1, SAE 3, SAE 4, or SAE 5 bell housing for mounting customer motor.
- L. Stainless Steel Nameplate:** Shall be attached to the pump giving the manufacturer's model and serial number.
- M. Engine Requirements:** The motor/engine shall be sized for non-overloading conditions.
- N. Premium Surface Preparation:** Solvent wash, sandblast, and coat with minimum 30 MDFT Tnemec Perma-Shield PL Series 431 epoxy. (Except Motor & stainless-steel parts.)