



# Vaughan®

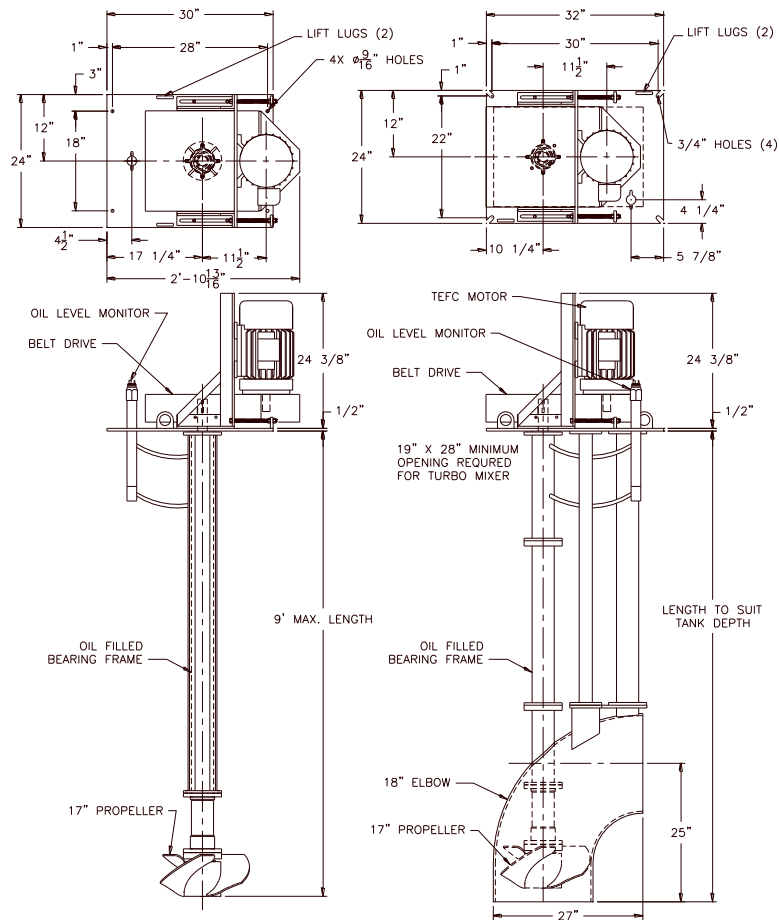
# Propeller Mixers

## Materials of Construction:

- Casing: ..... Carbon Steel
- Propeller: ..... Alloy steel, heat treated to minimum Rockwell C 60.
- Upper Cutter: ..... Cast alloy steel, heat treated to minimum Rockwell C 60.
- Mechanical Seal: ..... Cartridge type with silicon carbide (or tungsten carbide) faces.
- Thrust Bearings: ..... Back-to-back angular contact ball type.
- Radial Bearings: ..... Ball type.
- Shaft: ..... Heat treated alloy steel.
- Lubrication: ..... ISO Gr. 46 oil.
- Mounting Plate: ..... Carbon steel.
- Paint: ..... Epoxy.

## VERTICAL MIXER

## TURBO MIXER



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

SEE SECOND PAGE FOR FLOWS AND DRIVES



### Vaughan Co., Inc.

364 Monte Elma Road  
Montesano, WA 98563

Phone: 360-249-4042, FAX: 360-249-6155  
E-mail: info@chopperpumps.com

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 PROPELLER MIXERS

Style	HP	Motor RPM	Mixer RPM	Prop Dia.	Flow (GPM)
<b>Belt Drive Turbo &amp; Vertical</b>	7.5	1765	406	17.0"	5,350
	10	1765	456	17.0"	5,985
	15	1765	505	17.0"	6,575
	20	1765	566	17.0"	7,450
<b>Gear motor Turbo &amp; Vertical</b>	7.5	1765	415	17.0"	5,470
	10	1765	467	17.0"	6,130
	15	1765	529	17.0"	6,890
	20	1765	579	17.0"	7,695

- A. **Casing:** 18-inch diameter forged steel. Includes adjustable tool steel tip cutter (applies to Turbo Mixer only).
- B. **Propeller:** Fabricated from alloy steel. Blades are cold forged to helical design with large radius tips along leading edges. Heat-treated to minimum 60 Rockwell C Hardness. Propeller dynamically balanced.
- C. **Upper Cutter:** Shall be threaded into the bearing housing behind the propeller, designed to cut against the propeller 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. 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 mixer shall be 3.0 or less.
- D. **Shafting:** Shall be heat treated alloy steel. Upper shaft extension shall be turned, ground and polished. The shaft column shall be minimum 4" 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.
- E. **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 L-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 1.7", with a mechanical seal to isolate the bearings from the pumped media at up to 250 F.
- F. **Mechanical Seal:** The mechanical seal shall be located immediately behind the propeller hub to maximize the flushing available from the propeller vanes. The seal shall be a cartridge-type mechanical seal with Viton O-rings and silicon 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 a ductile cast iron seal gland.
- G. **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.
- H. **Mounting Plate:** Shall be fabricated carbon steel, 1/2" minimum thickness, and shall include lifting lugs.
- I. **Gear Motor Drive Requirements:**
- **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 a guard meeting OSHA requirements.
  - **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.
  - **Gear Motor Requirements:** Gear motor shall be a helical inline type vertically mounted to the motor stool via a piloted flange, rated at \_\_\_ HP, \_\_\_ RPM, \_\_\_ volts, \_\_\_ phase, \_\_\_ hertz, \_\_\_ service factor, \_\_\_ enclosure. The motor shall be sized for non-overloading conditions.
- J. **Belt Drive Requirements:**
- **Belt Drive:** includes adjustable motor mount, safety guard, belts and sheaves for \_\_\_ Mixer RPM
  - **Motor Requirements:** Drive motor shall be \_\_\_ HP, \_\_\_ RPM, \_\_\_ volts, \_\_\_ phase, \_\_\_ hertz, \_\_\_ service factor, \_\_\_ enclosure. The motor shall be sized for non-overloading conditions.
- K. **Surface Preparation:** Degreased and coated with 5-8 MDFT epoxy (except motor).
- L. **Stainless Steel Nameplates:** Shall be attached to the mixer and drive motor giving the manufacturer's pertinent data.
- M. **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).