



TSURUMI PUMP®

BUILT FOR WORK®

SEWAGE AND

WASTEWATER PUMPS



SIMPLE DESIGN, EXTREME QUALITY | Tsurumi C Series CUTTER PUMP™

Cable Entry

Cables are designed with an anti-wicking block at motor entry where each conductor insulation is window cut and the exposed stranded wire is encapsulated in molded rubber or epoxy which eliminates moisture from wicking into the motor.



Motor

The air filled, continuous duty motors are designed to accommodate a maximum liquid temperature of 104°F. Higher temperature options may be available upon request.

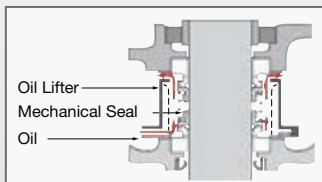
Mechanical Seal

Dual mechanical seal with silicon carbide faces sits within the oil chamber. The oil prevents corrosion, abrasion or fouling of the seal's spring and seal faces due to contamination, and also provides cooling and lubrication of the seal faces, even in run-dry conditions. These are common points of failure in designs where the seal is lubricated by the pumpage as opposed to oil.



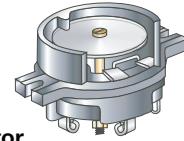
Oil Lifter

The Oil Lifter, utilizing centrifugal force, supplies lubricating oil to the upper seal faces even if oil falls below the rated volume, or pump is oriented horizontally.



Motor Protector

A Circle Thermal Protector (CTP) integrated in the motor housing directly cuts the motor circuit if excessive heat builds up or an electrical/mechanical failure leads to overcurrent.



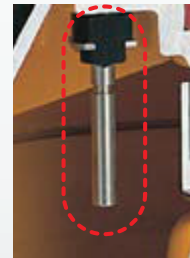
In pumps 15 HP and larger, a Miniature Thermal Protector (MTP) is embedded in each winding of the motors.



Should the winding temperature rise to the actuating temperature, the bimetal strip opens to cut off power supply.

Moisture Sensor

An internal moisture sensor is standard for all pumps 30 HP and larger. An external moisture sensor is available as an option to detect intrusion of water in the oil chamber. Internal and External sensors, when wired to a control panel, alert the operator of a potential leak.



Impeller & Cutter Plate

A tungsten carbide cutter is brazed onto the impeller vane, and rotates along the serrated entry of the cutter plate. Incoming fibrous matters are cut up which prevents clogging.



GUIDE RAIL FITTING SYSTEM

The guide rail fitting system connects the pump to and from the piping easily just by lowering and hoisting the pump, allowing easy maintenance and inspection without the need to enter the sump. Pump models used in combination with the guide rail fitting system can be identified by the prefix "TOS / TO" and "TOK". Refer to standard specifications for availability and model numbers.

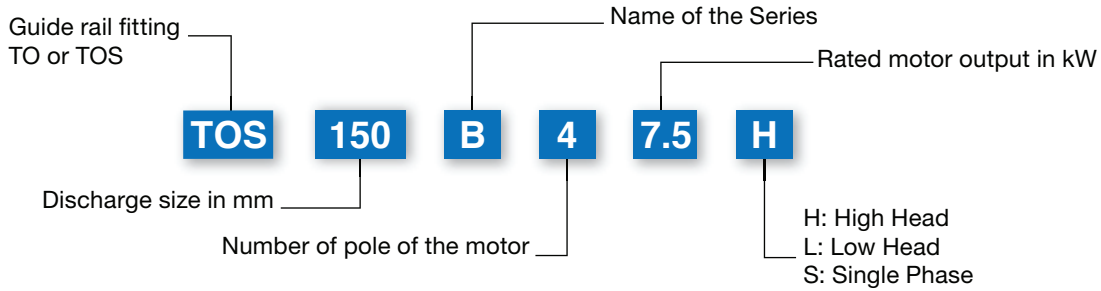
The **TOS / TO** is the standard guide rail fitting system made of cast-iron and is compatible with cast-iron pumps. Pumps having a discharge bore from 2 inches to 6 inches are available for the TOS, and from 8 inches to 32 inches are available for the TO.



The **TOK** guide rail connecting system is made of a high-quality corrosion resistant resin. This system is specifically designed for use with the corrosion resistant, light weight VANCS™ pumps (Page 16).



MODEL NUMBER DESIGNATION

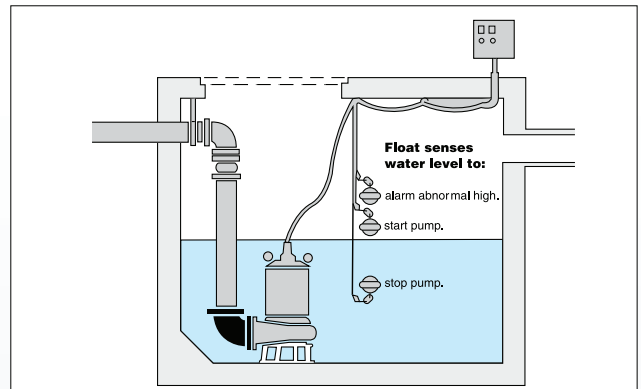


INSTALLATION

Free Standing

Simple installation in the sump saves both money and space.

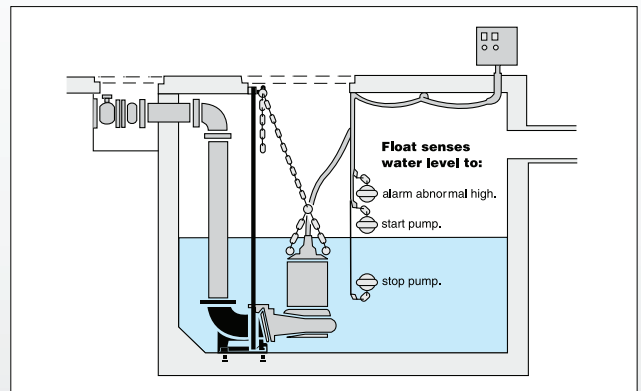
Pump's with legs or a stand can sit directly on the sump floor. A discharge bend and flexible hosing allows for simple install/removal. Install the pump on a pump base if waste could clog or block its suction inlet.



Guide-Rail Fitting

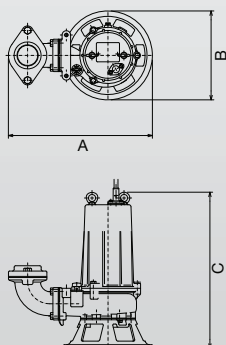
A guide rail suspends the pump with a chain for quick, easy installation or removal.

Mount the pump on the rails using a guide hook above the discharge flange. As the pump is lowered, a hook on the discharge flange locks into and positions against the discharge elbow's flange. No tools or hardware are required as the weight of the pump seals the mated flanges. To remove the pump, simply raise with the chain and the pump will lift along the guide rails.

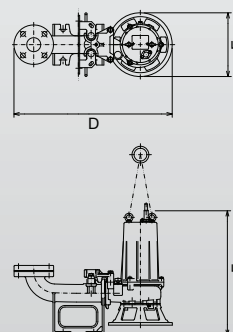


DIMENSIONAL DRAWING DESCRIPTION

Dimension: Free Standing A / B / C



Dimension: Guide Rail Fitting (TO / TOS) D / E / F



VANCS™ : OM • PN • PSF • PU • TM SERIES | Corrosion Resistant Submersible Pump

The **VANCS™ - OM, PU, PN, PSF and TM Series** submersible pump is designed for handling raw sewage, wastewater, as well as industrial and commercial sump pump applications. The VANCS™ pumps have a proven track record for offering long lifecycles in both continuous and intermittent sump applications. With the pump made of complete molded resin material and all other parts coming in contact with the pump liquid in either 304 Stainless Steel or Titanium.

VANCS™



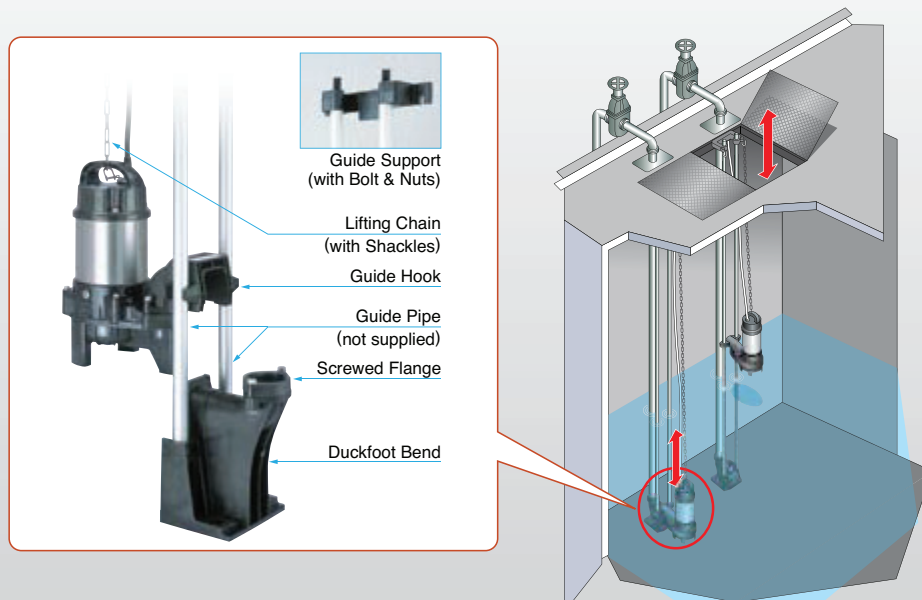
- Residential, commercial, industrial, effluent, wastewater and site drainage
- Chemical spill containment
- Raw water supply from rivers or lakes
- For TM Series: Titanium components increases corrosion resistance in a wide variety of applications. Ideal use for salt wastewater, site drainage and bilge pumps
- Automatic Operation (A) and Auto Alternating Operation (W) are available

✓ **VANCS™ Pumps: TOK Guide Rail Fitting System**

The TOK guide rail fitting system connects the pump to and from the piping easily just by lowering and hoisting the pump, allowing easy maintenance and inspection without the need to enter the sump.

Made of high-quality resin, the TOK is designed for lightweight, small to middle sized pumps. Rubber bellows attached to the guide hook are inverted to the duckfoot bend when the pump starts operating, and it seals by the pumping pressure. This eliminates leakage at the seal even if a lightweight pump is used in combination with the TOK.

The TOK is available in all motor output ranges of the PU, PN, and PSF Series.



✓ Automatic & Auto-Alternation Models

The VANCS™ pumps are available with automatic duplexing (suffix "A") capabilities eliminating the need for a duplexing control panel*. The auto-alternating model has three floats and can be identified by the suffix "W". Refer to standard specifications for availability and model numbers. It is available in the same output range of the automatic pumps.

*Note: Must be installed in accordance with all National or Local Electrical or Building Codes.



PNA: Automatic (A) Model

PUW: Auto-alternation (W) Model

✓ VANCS™ Pumps: Selection Table

Category	Series	Discharge Size inch	Impeller	Model	Motor Output HP							
					1/5	1/3	1/2	1	2	3	5	
Wastewater	OM	1.5	Vortex	Standard	Available							
				Automatic (A)	Available							
Wastewater	PN	2 – 3	Vortex	Standard		Available	Available	Available	Available	Available	Available	Available
				Automatic (A)		Available	Available	Available	Available	Available	Available	Available
				Auto-alternation (W)		Available	Available	Available	Available	Available	Available	Available
Wastewater -High Head-	PSF	2 – 3	Closed	Standard		Available	Available	Available	Available	Available	Available	Available
				Automatic (A)		Available	Available	Available	Available	Available	Available	Available
				Auto-alternation (W)		Available	Available	Available	Available	Available	Available	Available
Sewage	PU	2– 3	Vortex	Standard	Available	Available	Available	Available	Available	Available	Available	Available
				Automatic (A)	Available	Available	Available	Available	Available	Available	Available	Available
				Auto-alternation (W)	Available	Available	Available	Available	Available	Available	Available	Available
Seawater	TM	2 – 3	Vortex	Standard		Available	Available	Available	Available	Available	Available	
				Automatic (A)		Available	Available	Available	Available	Available	Available	Available

✓ VANCS™ Pumps: Type of Impeller

Vortex



The vortex impeller is adopted in every series except for the PSF Series. Rotation of the impeller produces a whirling, centrifugal action between the impeller and the pump casing, and it moves the fluid through the pump. Being coupled with a wide pump casing, wastewater containing solid matters can be pumped out without obstruction.

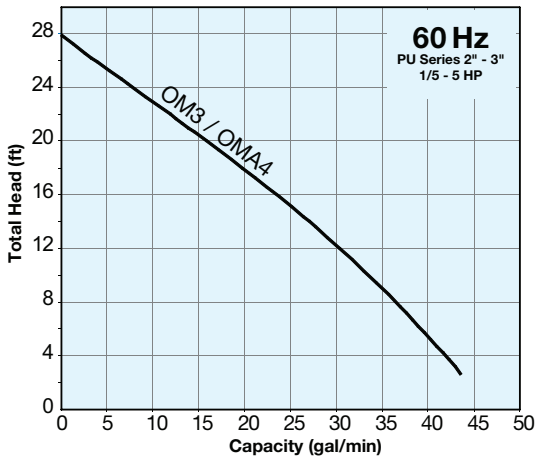
Closed



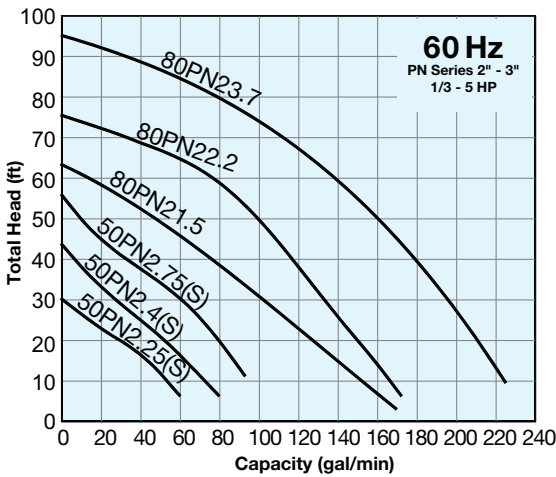
The closed impeller is adopted in the PSF Series. The impeller is also referred to as shrouded impeller, as it has circular shrouds at both sides of the impeller vanes. Although the pump has a limited solids passage capability, it can be used for higher pumping head applications.

VANCS™ Pumps Group Curves

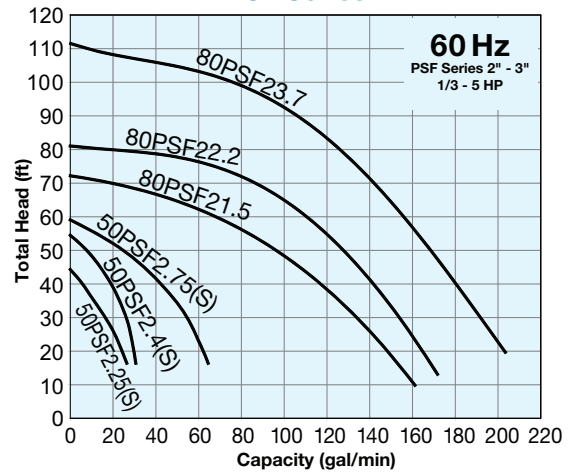
OM Series



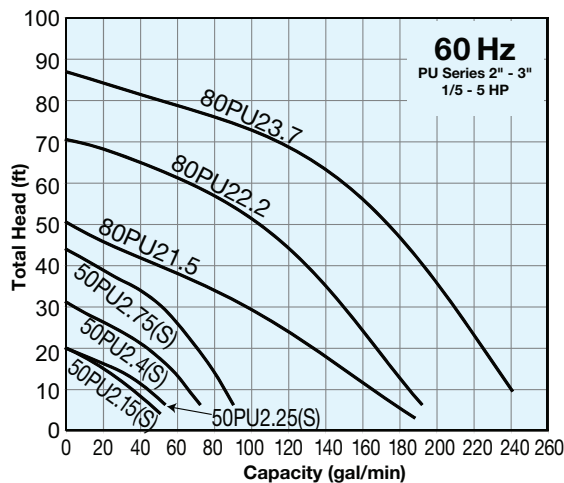
PN Series



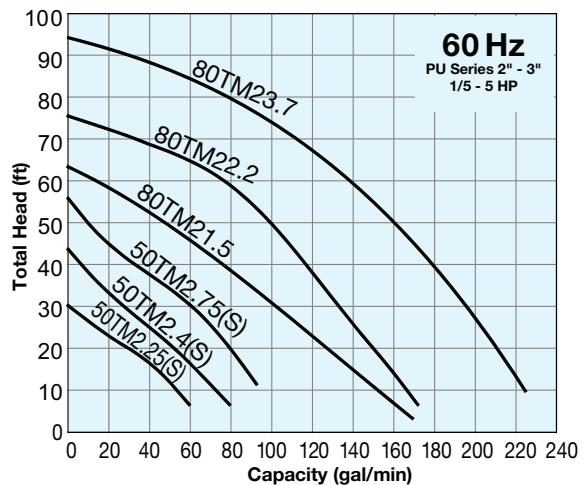
PSF Series



PU Series



TM Series



VANCS™ Pumps Specifications

* S.S. = Synchronous Speed

OM Series	Single Phase Model	Motor Output (HP)	Rated Current (A)		*S.S. (RPM)	Discharge Size (in.)	Dimensions (in.)			Max. Solids Dia. (in.)
			115V	230V			Free Standing Models			
			A	B			C			
OM3 ★	1/5	3.2	1.6	3600	1.5	8	5 1/2	12 7/16	0.394	
OMA3 ★	1/5	3.2	1.6	3600	1.5	8	7	12 11/16	0.394	

★ For VANCS™ pumps 1HP and smaller:
 These pumps should not be operated on a VFD.
 Contact factory for more information.

PN Series	Single Phase Model	Motor Output (HP)	Rated Current (A)				*S.S. (RPM)	Discharge Size (in.)	Dimensions (in.)						Max. Solids Dia. (in.)
			115V		230V				Free Standing Models			TOK Guide Rail Models			
			A	B	C	D			E	F					
50PN2.25S ★	1/3	4.6	2.3	3600	2	9 5/16	6 3/8	14 3/16	17 1/8	6 3/8	15 3/16	0.394			
50PN2.4S ★	1/2	5.8	2.9	3600	2	9 5/16	6 3/8	14 3/16	17 1/8	6 3/8	15 3/16	0.394			
50PN2.75S ★	1	9.2	4.6	3600	2	9 5/16	6 3/8	14 15/16	17 1/8	6 3/8	16	0.394			
PN Series	Three Phase Model	Motor Output (HP)	Rated Current (A)				*S.S. (RPM)	Discharge Size (in.)	Dimensions (in.)						Max. Solids Dia. (in.)
			208V	220V	460V	575V			Free Standing Models			TOK Guide Rail Models			
			A	B	C	D			E	F					
50PN2.25 ★	1/3	1.65	1.6	0.75	---	3600	2	9 5/16	6 3/8	13 3/4	17 1/8	6 3/8	14 3/4	0.394	
50PN2.4 ★	1/2	2.1	2.0	0.95	---	3600	2	9 5/16	6 3/8	14 3/16	17 1/8	6 3/8	15 3/16	0.394	
50PN2.75 ★	1	3.2	3.2	1.5	---	3600	2	9 5/16	6 3/8	14 3/4	17 1/8	6 3/8	15 3/4	0.394	
80PN21.5	2	6.9	6.6	*3.6	---	3600	3	11 5/8	7 11/16	17 1/8	20 3/8	7 11/16	19 1/4	0.787	
80PN22.2	3	9.1	8.5	4.2	3.3	3600	3	12 1/4	8 3/8	22	21 5/16	8 3/8	23 3/8	0.787	
80PN23.7	5	14.4	13.4	6.5	5.0	3600	3	12 1/4	8 3/8	23 3/8	21 5/16	8 3/8	24 3/4	0.787	

*440V

PSF Series	Single Phase Model	Motor Output (HP)	Rated Current (A)				*S.S. (RPM)	Discharge Size (in.)	Dimensions (in.)						Max. Solids Dia. (in.)
			115V	230V	Free Standing Models				TOK Guide Rail Models						
			A	B	C	D			E	F					
50PSF2.25S ★	1/3	4.6	2.3	3600	2	9 5/16	6 3/8	14 3/16	17 1/8	6 3/8	15 3/16	0.315			
50PSF2.4S ★	1/2	5.8	2.9	3600	2	9 5/16	6 3/8	14 3/16	17 1/8	6 3/8	15 3/16	0.315			
50PSF2.75S ★	1	9.2	4.6	3600	2	9 5/16	6 3/8	14 15/16	17 1/8	6 3/8	16	0.315			
PSF Series	Three Phase Model	Motor Output (HP)	Rated Current (A)				*S.S. (RPM)	Discharge Size (in.)	Dimensions (in.)						Max. Solids Dia. (in.)
			208V	220V	460V	575V			Free Standing Models			TOK Guide Rail Models			
			A	B	C	D			E	F					
50PSF2.25 ★	1/3	1.65	1.6	0.75	---	3600	2	9 5/16	6 3/8	13 3/4	17 1/8	6 3/8	14 3/4	0.315	
50PSF2.4 ★	1/2	2.1	2.0	0.95	---	3600	2	9 5/16	6 3/8	14 3/16	17 1/8	6 3/8	15 3/16	0.315	
50PSF2.75 ★	1	3.2	3.2	1.5	---	3600	2	9 5/16	6 3/8	14 3/4	17 1/8	6 3/8	15 3/4	0.315	
80PSF21.5	2	6.9	6.6	*3.6	---	3600	3	11 5/8	7 11/16	17 1/8	20 3/8	7 11/16	19 1/4	0.512	
80PSF22.2	3	9.1	8.5	4.2	3.3	3600	3	12 1/4	8 3/8	22	21 5/16	8 3/8	23 3/8	0.512	
80PSF23.7	5	14.4	13.4	6.5	5.0	3600	3	12 1/4	8 3/8	23 3/8	21 5/16	8 3/8	24 3/4	0.512	

*440V

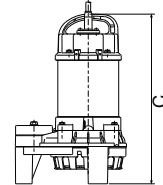
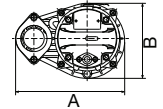
PU Series	Single Phase Model	Motor Output (HP)	Rated Current (A)				*S.S. (RPM)	Discharge Size (in.)	Dimensions (in.)						Max. Solids Dia. (in.)
			115V	230V	Free Standing Models				TOK Guide Rail Models						
			A	B	C	D			E	F					
50PU2.15S ★	1/5	3.2	1.6	3600	2	8 7/8	6 1/16	14 13/16	17 1/8	6 1/16	16 1/8	1.38			
50PU2.25S ★	1/3	4.6	2.3	3600	2	9 5/16	6 3/8	14 3/16	17 1/8	6 3/8	15 3/16	1.38			
50PU2.4S ★	1/2	5.8	2.9	3600	2	9 5/16	6 3/8	14 3/16	17 1/8	6 3/8	15 3/16	1.38			
50PU2.75S ★	1	9.2	4.6	3600	2	9 5/16	6 3/8	14 15/16	17 1/8	6 3/8	16	1.38			
PU Series	Three Phase Model	Motor Output (HP)	Rated Current (A)				*S.S. (RPM)	Discharge Size (in.)	Dimensions (in.)						Max. Solids Dia. (in.)
			208V	220V	460V	575V			Free Standing Models			TOK Guide Rail Models			
			A	B	C	D			E	F					
50PU2.25 ★	1/3	1.65	1.6	0.75	---	3600	2	9 5/16	6 3/8	13 3/4	17 1/8	6 3/8	14 3/4	1.38	
50PU2.4 ★	1/2	2.1	2.0	0.95	---	3600	2	9 5/16	6 3/8	14 3/16	17 1/8	6 3/8	15 3/16	1.38	
50PU2.75 ★	1	3.2	3.2	1.5	---	3600	2	9 5/16	6 3/8	14 3/4	17 1/8	6 3/8	15 3/4	1.38	
80PU21.5	2	6.9	6.6	*3.6	---	3600	3	11 5/8	7 11/16	18 11/16	20 3/8	7 11/16	19 1/4	1.81	
80PU22.2	3	9.1	8.5	4.2	3.3	3600	3	12 1/4	8 3/8	22 15/16	21 5/16	8 3/8	23 3/8	1.81	
80PU23.7	5	14.4	13.4	6.5	5.0	3600	3	12 1/4	8 3/8	24 5/16	21 5/16	8 3/8	24 3/4	1.81	

*440V

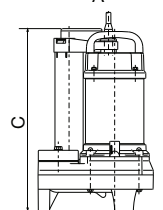
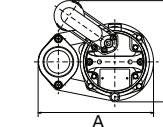
TM Series	Single Phase Model	Motor Output (HP)	Rated Current (A)				*S.S. (RPM)	Discharge Size (in.)	Dimensions (in.)						Max. Solids Dia. (in.)
			115V	230V	Free Standing Models				TOK Guide Rail Models						
			A	B	C	D			E	F					
50TM2.25S ★	1/3	4.6	2.3	3600	2	9 5/16	6 3/8	14 3/16	N/A	N/A	N/A	0.394			
50TM2.4S ★	1/2	5.8	2.9	3600	2	9 5/16	6 3/8	14 3/16	N/A	N/A	N/A	0.394			
50TM2.75S ★	1	9.2	4.6	3600	2	9 5/16	6 3/8	14 15/16	N/A	N/A	N/A	0.394			
TM Series	Three Phase Model	Motor Output (HP)	Rated Current (A)				*S.S. (RPM)	Discharge Size (in.)	Dimensions (in.)						Max. Solids Dia. (in.)
			208V	220V	460V	575V			Free Standing Models			TOK Guide Rail Models			
			A	B	C	D			E	F					
50TM2.25 ★	1/3	1.65	1.6	0.75	---	3600	2	9 5/16	6 3/8	13 3/4	N/A	N/A	N/A	0.394	
50TM2.4 ★	1/2	2.1	2.0	0.95	---	3600	2	9 5/16	6 3/8	14 3/16	N/A	N/A	N/A	0.394	
50TM2.75 ★	1	3.2	3.2	1.5	---	3600	2	9 5/16	6 3/8	14 3/4	N/A	N/A	N/A	0.394	
80TM21.5	2	6.9	6.6	*3.6	---	3600	3	11 5/8	7 11/16	17 1/8	N/A	N/A	N/A	0.787	
80TM22.2	3	9.1	8.5	4.2	3.3	3600	3	12 1/4	8 3/8	22	N/A	N/A	N/A	0.787	
80TM23.7	5	14.4	13.4	6.5	5.0	3600	3	12 1/4	8 3/8	23 3/8	N/A	N/A	N/A	0.787	

*440V

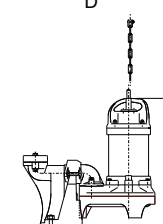
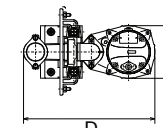
Dimension:
 Free Standing
 (PU, PN, PSF, TM, OM Series)



Dimension:
 Free Standing
 (PUF2.15S, OMA4)



Dimension:
 Guide Rail Fitting TOK
 (PU, PN, PSF, TM Series)



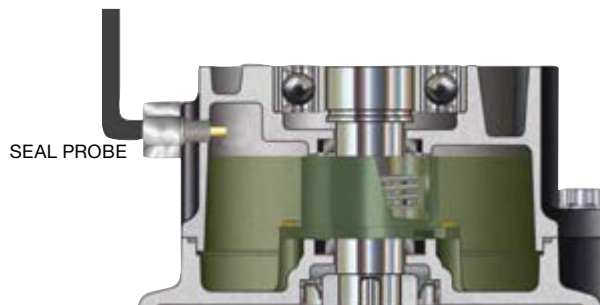
CONTROL PANELS & MOISTURE DETECTOR

■ TS SERIES CONTROL PANELS



- Lockable – 4X Enclosures
- HOA Switch – Heavy Duty Oil Tight
- Terminal Block – For Field Wiring
- Pump Run Indicator – Heavy Duty Oil Tight
- Multi-Tap Control Transformer 208 / 230 / 460 VAC Operation
- Control Alarm Fuse
- Motor Protective Switch
- Adjustable Overload Protection
- IEC Rated Magnetic Contactor
- Horn Silence Switch – Heavy Duty Oil Tight
- Auto Reset Horn Silence
- Buzzer – 95db warble
- Red Alarm Beacon
- Includes three (3) Mechanical Float Switches & Pipe Clamp

■ SEAL MOISTURE PROBE



The **TSMP SEAL MOISTURE PROBE** is designed to detect moisture in the mechanical seal chamber, alerting customers of potential motor failure. The TSMP SEAL MOISTURE PROBE can be field installed on any new or existing Tsurumi pump models and connected to the control panel for the appropriate alarm or notification.

Principle of Operation:

- Sensor is installed through the oil port and directly into the mechanical seal chamber which contains an electrically non-conductive oil.
- The presence of water changes the chamber fluid mixture to a conductive condition and therefore completes the circuit which will result in a leakage indication on the control panel.

Electrical Specification

Sensor Type:	Conductive
Suggested Seal Fail Relay Voltage:	24 VAC
Required Wiring:	Single wire in separate sensor cable to be connected to seal leak relay in control panel by customer.



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