



U - SERIES

SEMI-VORTEX - SEWAGE & WASTE WATER PUMPS

SPECIFICATIONS

■ FEATURES

1. Semi-vortex , Cast Iron, impeller passes solids and stringy material without clogging and increases wear resistance when pumpage contains abrasive particles.
2. Double inside mechanical seals with silicon carbide faces, running in an oil filled chamber and further protected by a lip seal, provides for the most durable seal design available.
3. Highly efficient, continuous duty, air filled, copper wound motor with class F, insulation minimizes the cost of operation.
4. Built in thermal & amperage sensing, protector prevents motor failure due to overloading, single phasing (in three phase units), or accidental run -dry conditions.
5. Double shielded, permanently lubricated, high temperature C3 ball bearings rated for a B-10 life of 60,000 hours, extend operational life.

■ APPLICATIONS

1. Residential, commercial, industrial sewage, effluent, wastewater and site drainage.
2. Decorative waterfalls, fountains and fish ponds.
3. Raw water supply from rivers or lakes.



■ SPECIFICATIONS

Discharge Size
Horsepower Range
Performance Range Capacity
 Head
Maximum water temperature
Materials of Construction
 Casing
 Impeller
 Shaft
 Motor Frame
 Fasteners

Mechanical Seal
 Elastomers

Impeller Type
Solids Handling Capability

Bearings

Motor Nomenclature
 Type, Speed, Hz.
 Voltage, Phase
 Insulation

Accessories

Operational Mode

■ STANDARD

2" ~ 3" Npt (50~80 mm)
2 ~ 5 Hp. (1.5 ~ 3.7 kW)
26.4 ~ 264.0 Gpm. (.01 ~ 1.0 m³/min)
16.4 ~ 82.0 Ft. (5.0 ~ 25.0 m)
104° F. (40° C.)

Cast Iron, ASTM 48M Class 30B
Cast Iron, ASTM 48M Class 30B
403, 420 Stainless Steel
Cast Iron, ASTM 48M Class 30B
304 Stainless Steel

Silicon Carbide
NBR (Nitril Buna Rubber)

Semi-Vortex, solids handling.
1.38" ~ 2.2" (35 mm ~56 mm)

Pre-lubricated, Double Shielded

Air Filled, 3600 Rpm, 1800 Rpm, 60 Hz.
208-230, 460 or 575 V. (3 Phase)
Class F

Submersible Power Cable 32' (10 m)

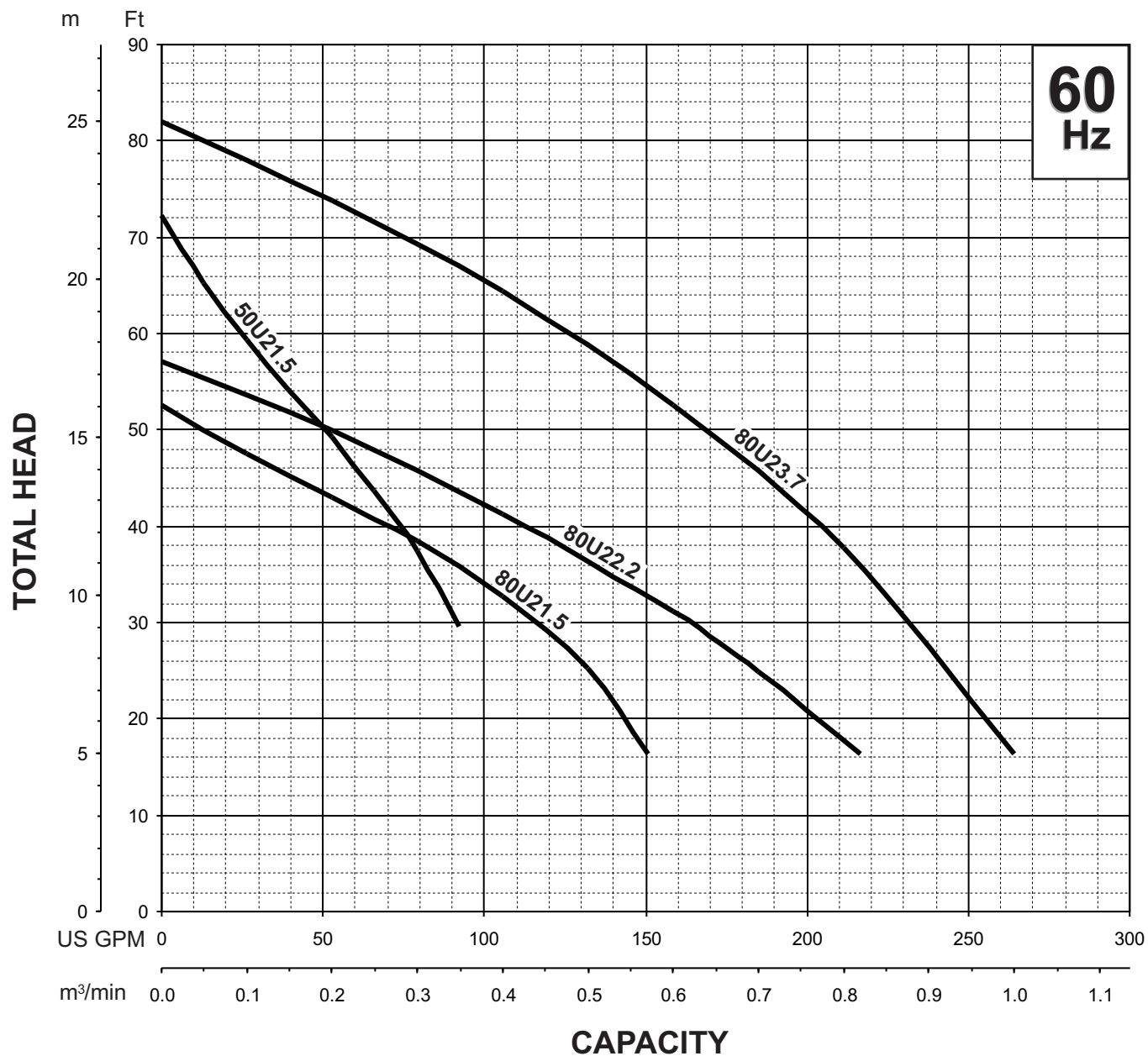
Manual

■ OPTIONS

Nema 3R inverter available for
230 V., 1 Ph. operation from 2~5
Hp.

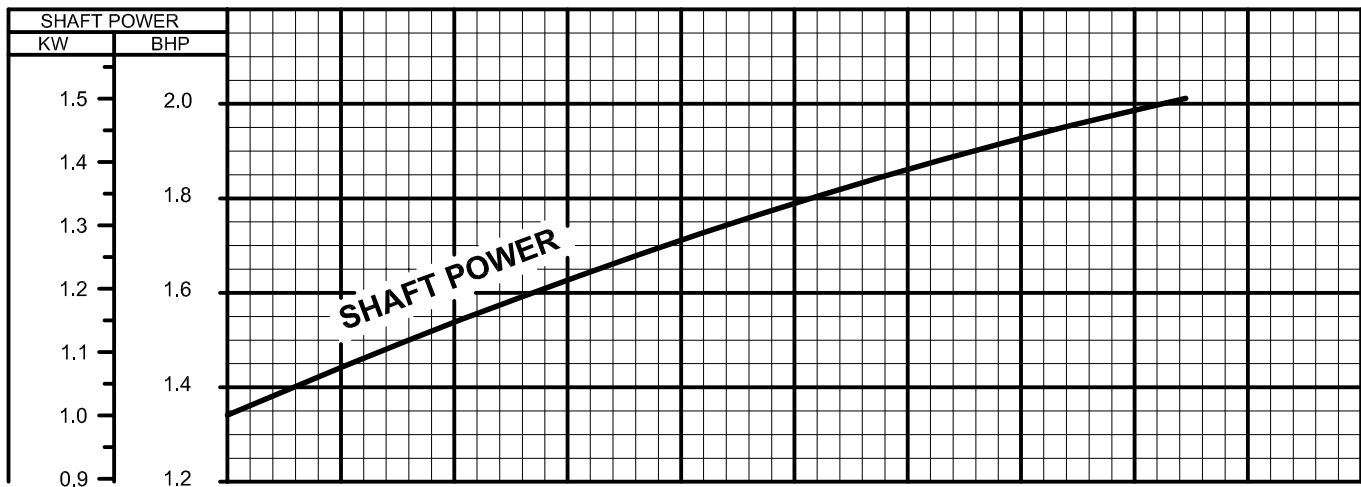
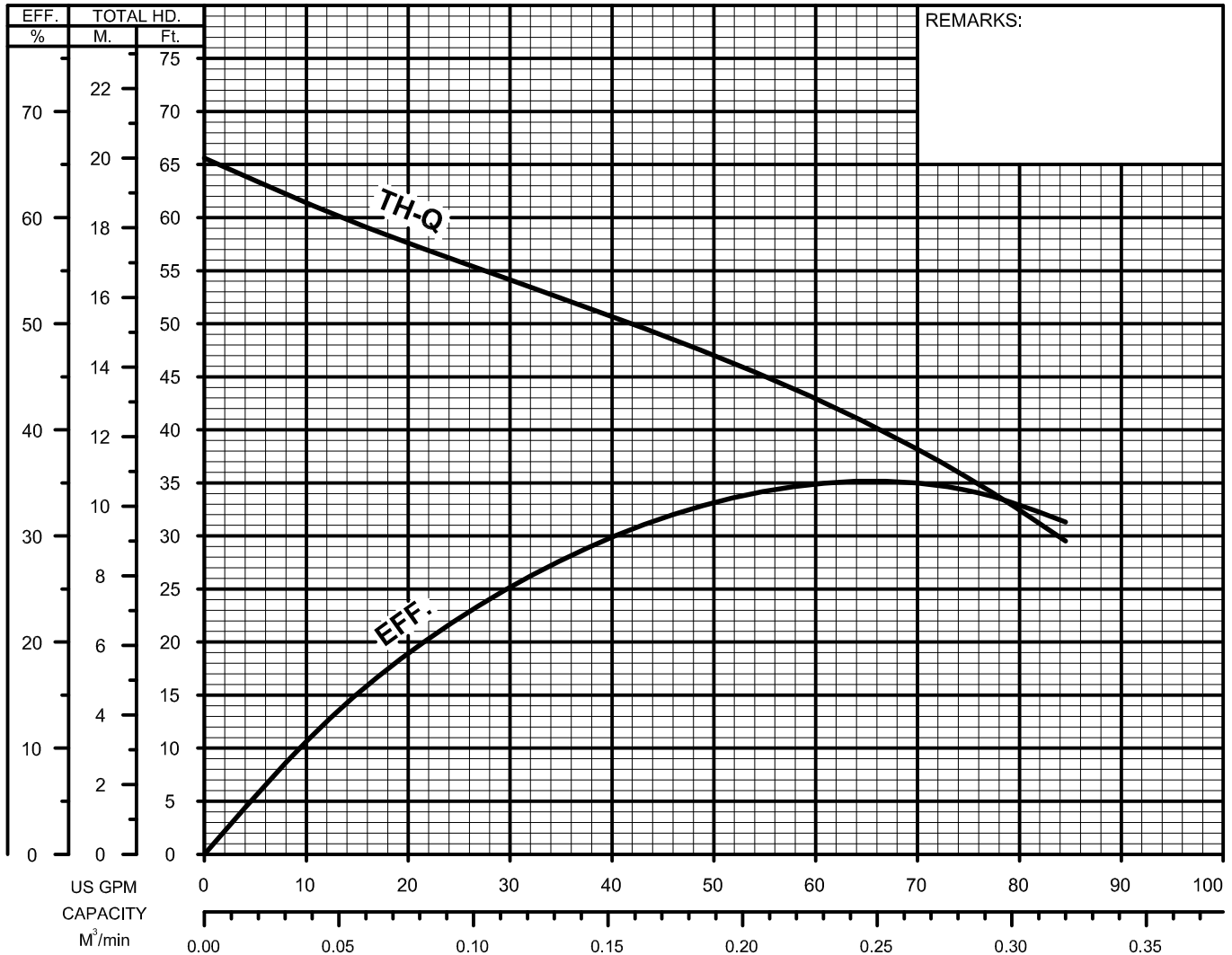
Length as Required

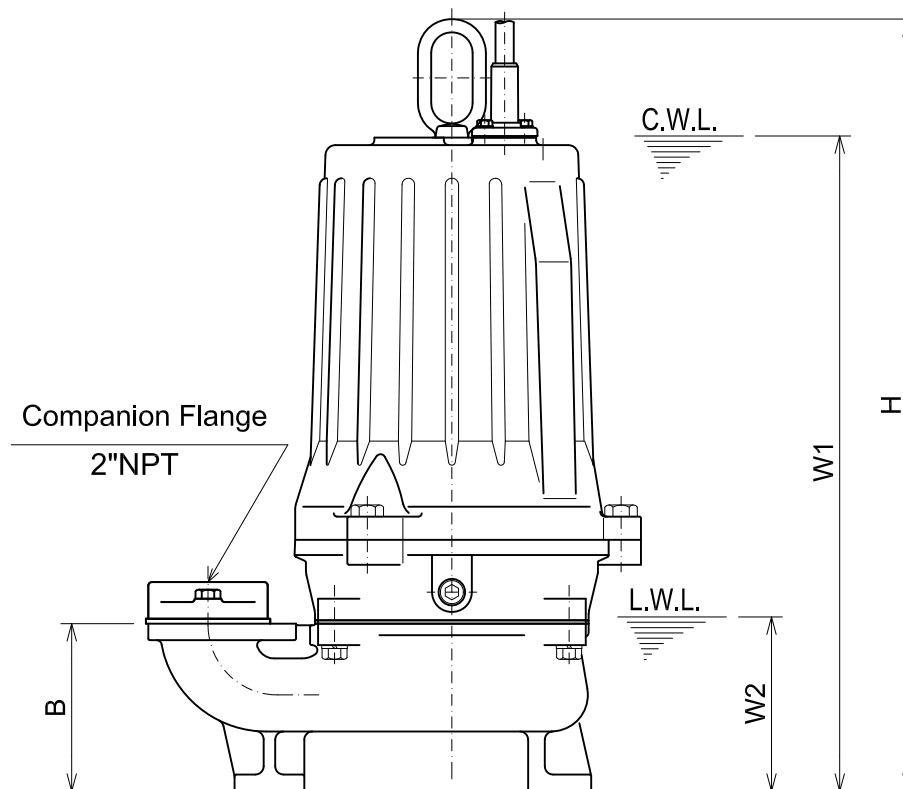
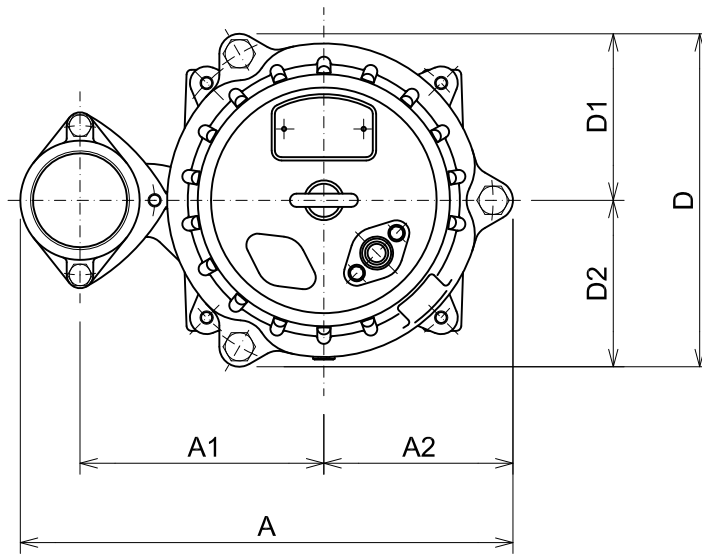
TOS Slide rail system

**TSURUMI PUMP****U - SERIES**
SEMI-VORTEX - SEWAGE & WASTEWATER PUMPS**PERFORMANCE**
RANGE**PERFORMANCE RANGE**

**TSURUMI PUMP**
U-SERIES
SEMI-VORTEX - SEWAGE & WASTEWATER PUMPS
PERFORMANCE
CURVE

MODEL		BORE	HP	KW	RPM	SOLIDS DIA.	LIQUID	SG.	VISCOSITY	TEMP.
(TOS)50U21.5 -63		2"/50mm	2	1.5	3400	1.38"/35mm	Water	1.0	1.123cSt.	60°F
PUMP TYPE		PHASE	VOLTAGE		AMPERAGE		HZ	STARTING METHOD		INS.CLASS
Semi-Vortex-Sewage&Wastewater		3	208-230/460/575		6.2-5.9/3.1/2.3		60	Direct On Line		F
CURVE No.	DATE	PHASE	VOLTAGE		AMPERAGE		HZ	STARTING METHOD		INS.CLASS
-	-	-	-		-		-	-		-



**TSURUMI PUMP**
U-SERIES
SEMI-VORTEX - SEWAGE & WASTEWATER PUMPS
DIMENSIONS**50U21.5 -63**

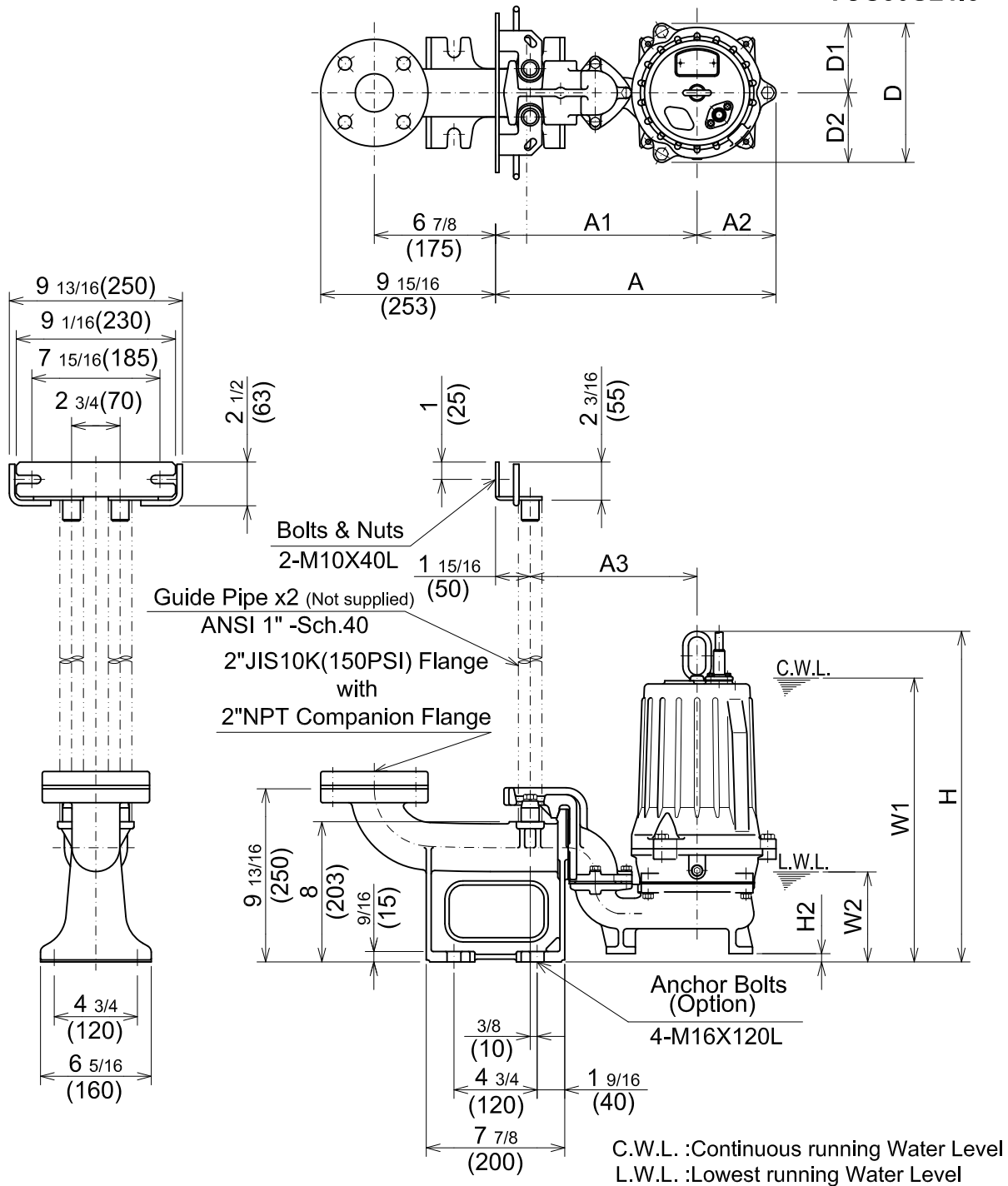
C.W.L. :Continuous running Water Level
 L.W.L. :Lowest running Water Level

DIMENSIONS:USCS(Inch)

Model	HP	NOM. SIZE	Pump & Motor								C.W.L.	L.W.L.	Wt. (lbs.)
			A	A1	A2	B	D	D1	D2	H	W1	W2	
50U21.5 -63	2	2"	11 11/16	5 13/16	4 1/2	4	7 15/16	4	4	18 3/8	15 1/2	4 1/8	66

DIMENSIONS:METRIC(mm)

Model	kW	NOM. SIZE	Pump & Motor								C.W.L.	L.W.L.	Wt. (kg)
			A	A1	A2	B	D	D1	D2	H	W1	W2	
50U21.5 -63	1.5	50	297	147	114	101	202	101	101	466	395	105	30

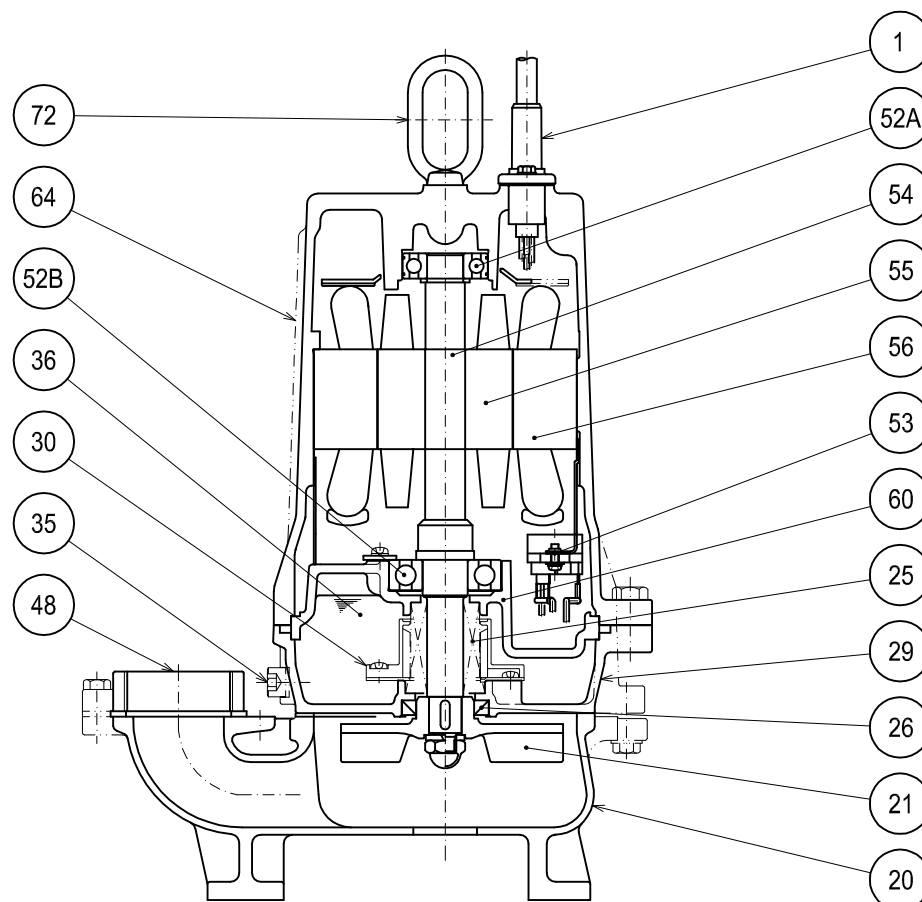
**TSURUMI PUMP**
U-SERIES
SEMI-VORTEX - SEWAGE & WASTEWATER PUMPS
DIMENSIONS**TOS50U21.5 -63****DIMENSIONS:USCS(Inch)**

Model	HP	NOM. SIZE	Pump & Motor									C.W.L.	L.W.L.	Wt.
			A	A1	A2	A3	D	D1	D2	H	H2	W1	W2	(lbs.)
TOS50U21.5 -63	2	2"	15 15/16	11 7/16	4 1/2	9 1/2	7 15/16	4	4	18 13/16	1/2	16 1/8	5 1/8	77

DIMENSIONS:METRIC(mm)

DIMENSIONS: METRIC (mm)

Model	kW	NOM. SIZE	Pump & Motor									C.W.L.	L.W.L.	Wt. (kg)
			A	A1	A2	A3	D	D1	D2	H	H2	W1	W2	
TOS50U21.5 -63	1.5	50	405	291	114	241	202	101	101	478	12	410	130	35

**TSURUMI PUMP**
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SECTIONAL VIEW**50U21.5 -63**

PART#	DESCRIPTION	MAIN MATERIAL / NOTE	RELATED ASTM,AISI CODE	RELATED EN CODE	QTY
1	Power Cable	PVC Sheath AWG 16/4-32ft			1
20	Pump Casing	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
21	Impeller	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
25	Mechanical Seal	Silicon Carbide / H-20			1
26	Oil Seal	NBR / TC32488			1
29	Oil Casing	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
30	Oil Lifter	PBT Resin W/GF40			1
35	Oil Plug	Stainless Steel	S 30400	1.4301	1
36	Lubricant	Turbine Oil ISO VG32 or SAE 10W-20			
48	Companion Flange	Cast Iron / NPT 2"	A48M Class30B	EN 1561 GJL-200	1
52A	Upper Bearing	AC-#6204ZZC3			1
52B	Lower Bearing	#6305ZZC3			1
53	Motor Protector				1
54	Shaft	Stainless Steel	S 42000	1.4028	1
55	Rotor				1
56	Stator				1
60	Bearing Housing	Cast Iron	A48M Class25B	EN 1561 GJL-150	1
64	Motor Housing	Cast Iron	A48M Class25B	EN 1561 GJL-150	1
72	Lifting Lug Bolt	Stainless Steel	S 30400	1.4301	1

**TSURUMI PUMP**

U - SERIES
SEMI-VORTEX - SEWAGE & WASTEWATER PUMPS

SAMPLE
SPECIFICATIONS

1. SCOPE OF SUPPLY -

Furnish and install TSURUMI Model _____ Submersible Pump(s). Each unit shall be capable of delivering _____ GPM(_____m³/min) at _____ Feet (_____m) TDH. The pump(s) shall be designed to pump waste water, sewage or effluent containing _____ inch (_____mm) diameter solids without damage during operation. The pump(s) shall be designed so that the shaft power required (BHP)/(kW) shall not exceed the motor rated output throughout the entire operating range of the pump performance curve. The pump discharge size shall be _____inch, (_____mm).

2. MATERIALS OF CONSTRUCTION -

Construction of major parts of the pumping unit(s) including pump casing, impeller, and discharge elbow shall be manufactured from gray cast iron, ASTM A48 CLASS 35. Internal and external surfaces coming into contact with the pumpage shall be protected by a fused polymer coating. All exposed fasteners shall be stainless steel. All units shall be furnished with a discharge elbow with 150 lb. (10 kg/cm²) flat face flange and NPT companion flange. Impellers shall be of the semi-vortex, solids handling design equipped with back pump out vanes and shall be slip fit to the shaft and key driven.

3. MECHANICAL SEAL -

All units shall be furnished with a dual inside mechanical shaft seal located completely out of the pumpage, running in a separate oil filled chamber and further protected by an exclusionary oil seal located between the bottom seal faces and the fluid being pumped. The oil chamber shall be fitted with a device that shall provide positive lubrication of top mechanical seal, (down to one third of the standard oil level). The device shall not consume any additional electrical power. Mechanical seals shall rated to preclude the incursion of water up to 42.6 PSI. (98.4 Ft.). Units shall have silicon carbide mechanical seal faces. Mechanical seal hardware shall be stainless steel.

4. MOTOR -

The pump motor(s) shall be _____Hp., _____ kW., _____ V., 60 Hz., 3 Phase and shall be NEMA MG-1, Design Type B equivalent. Motor(s) shall be rated at _____ full load amps. Motor(s) shall have a 1.15 service factor and shall be rated for 20 starts per hour. Motor(s) shall be air filled, copper wound, class E insulated with built in thermal and over amperage protection for each winding. Motor shaft shall be 403 stainless steel and shall be supported by two permanently lubricated, high temperature ball bearings, with a B-10 life rating at best efficiency point of 60,000 hours. The bearings shall be single row, double shielded, C3, deep groove type ball bearings. Motor housing and bearing housing shall be gray cast iron, ASTM A48 CLASS 30. Motors shall be suitable variable speed applications, utilizing a properly sized variable frequency drive.

5. POWER CABLE AND CABLE ENTRANCE -

The pump power cable shall be suitable for submersible pump applications. The cable entrance shall incorporate built in strain relief, a one piece, three way mechanical compression seal with a fatigue reducing cable boot. The cable entrance assembly shall contain an anti-wicking block to eliminate water incursion into the motor due to Capillary wicking should the power cable be accidentally damaged.