TSURUMI PUMP

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.

OIL LIFTER EQUIPPED

SPECIFICATIONS

Discharge Size	2" ~ 3" Npt (50~80 mm)
Horsepower Range	2 ~ 5 Hp. (1.5 ~ 3.7 kW)
Performance Range Capacity	26.4 ~ 264.0 Gpm. (.01 ~ 1.0 m^3/min)
Head	16.4 ~ 82.0 Ft. (5.0 ~ 25.0 m)
Maximum water temperature	104^0 F. (40^0 C.)
Materials of Construction	
Casing	Cast Iron, ASTM 48M Class 30B
Impeller	Cast Iron, ASTM 48M Class 30B
Shaft	403, 420 Stainless Steel
Motor Frame	Cast Iron, ASTM 48M Class 30B
Fasteners	304 Stainless Steel
Mechanical Seal	Silicon Carbide
Elastomers	NBR (Nitril Buna Rubber)
Impeller Type	Semi-Vortex, solids handling.
Solids Handling Capability	1.38” ~ 2.2” (35 mm ~56 mm)
Bearings	Pre-lubricated, Double Shielded
Motor Nomenclature	
Type, Speed, Hz.	Air Filled, 3600 Rpm, 1800 Rpm,60 Hz.
Voltage, Phase	208-230, 460 or 575 V. (3 Phase)
Insulation	Class F
Accessories	Submersible Power Cable 32’ (10 m)
Operational Mode	Manual

STANDARD

OPTIONS

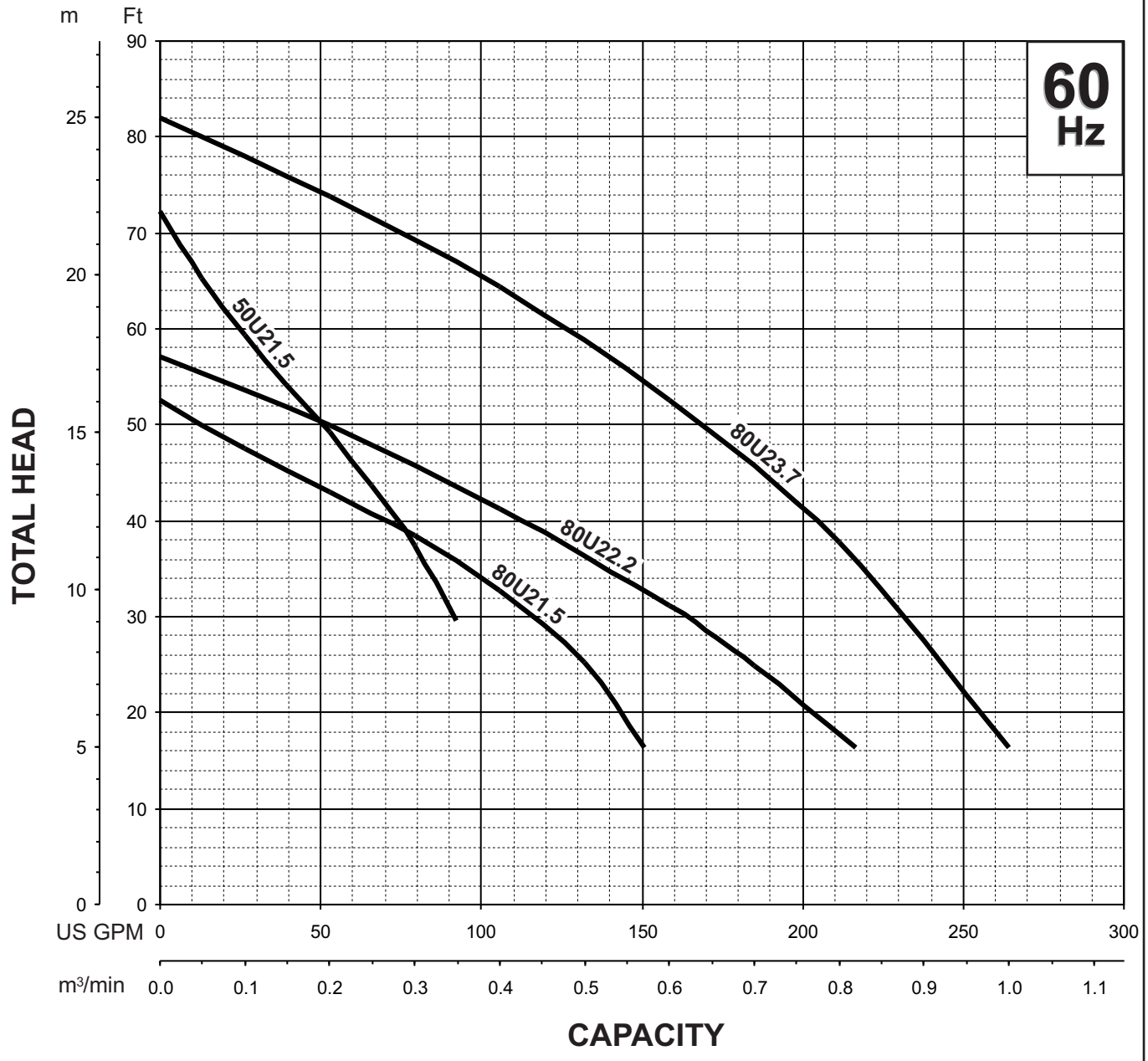
Nema 3R inverter available for 230 V.,1 Ph. operation from 2~5 Hp.

Length as Required

TOS Slide rail system

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

PERFORMANCE RANGE



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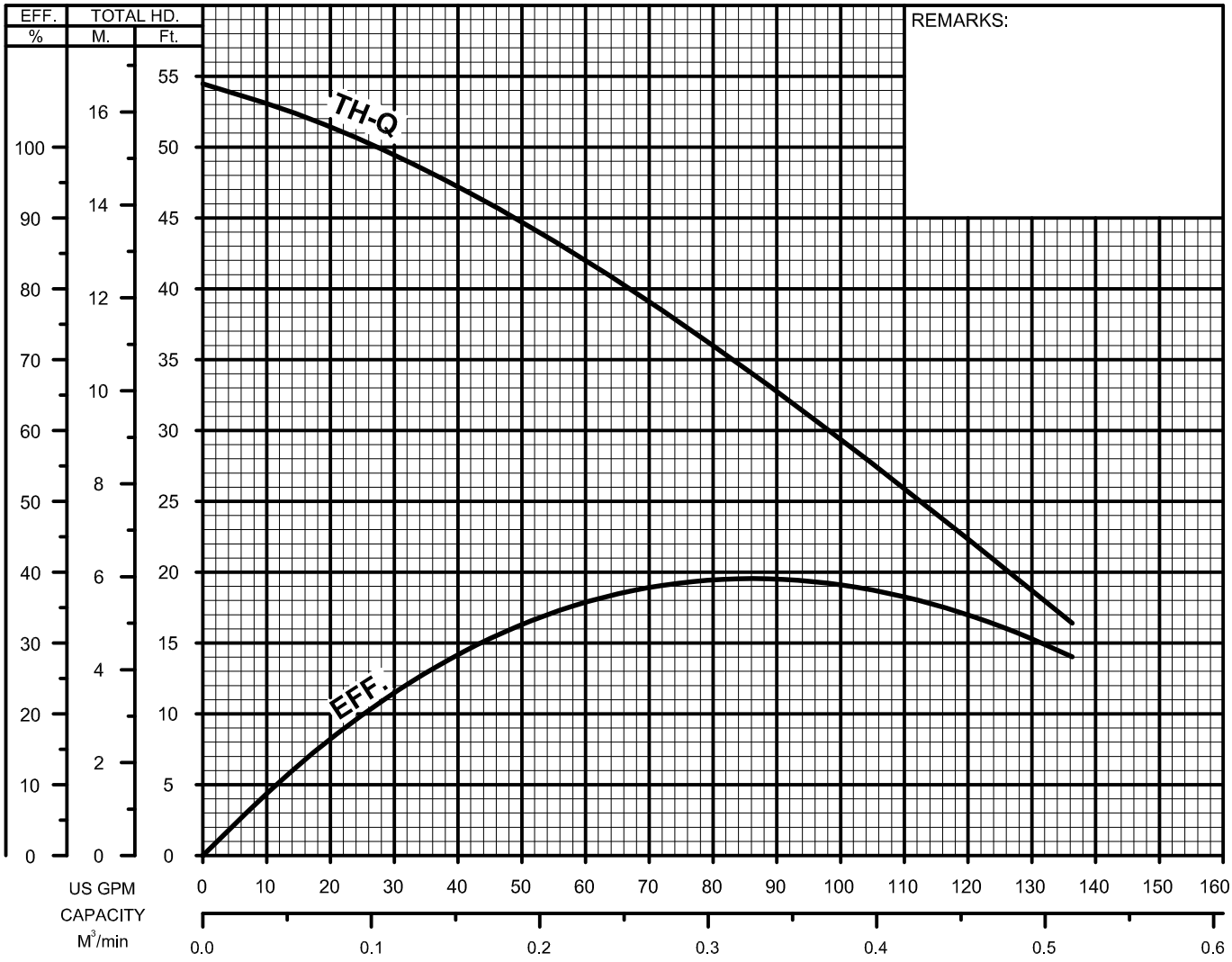
PERFORMANCE CURVE

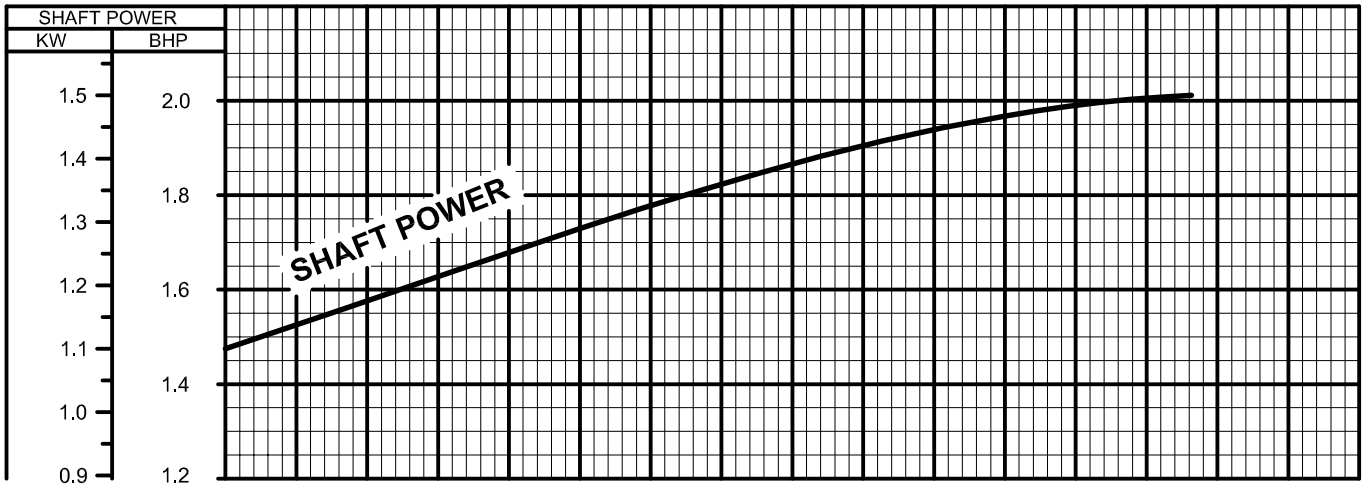
MODEL	BORE	HP	KW	RPM	SOLIDS DIA.	LIQUID	SG.	VISCOSITY	TEMP.
(TOS)80U21.5 -63	3"/80mm	2	1.5	3400	1.81"/46mm	Water	1.0	1.123cSt.	60°F

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
-	-	-	-	-	-	-	-

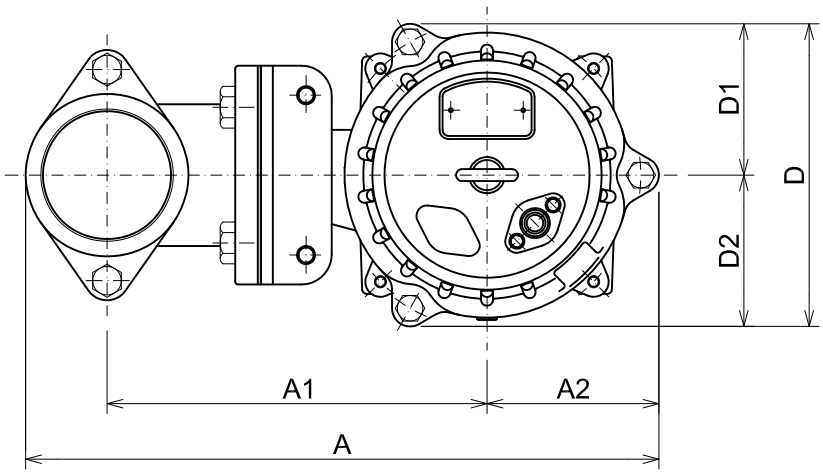
REMARKS:

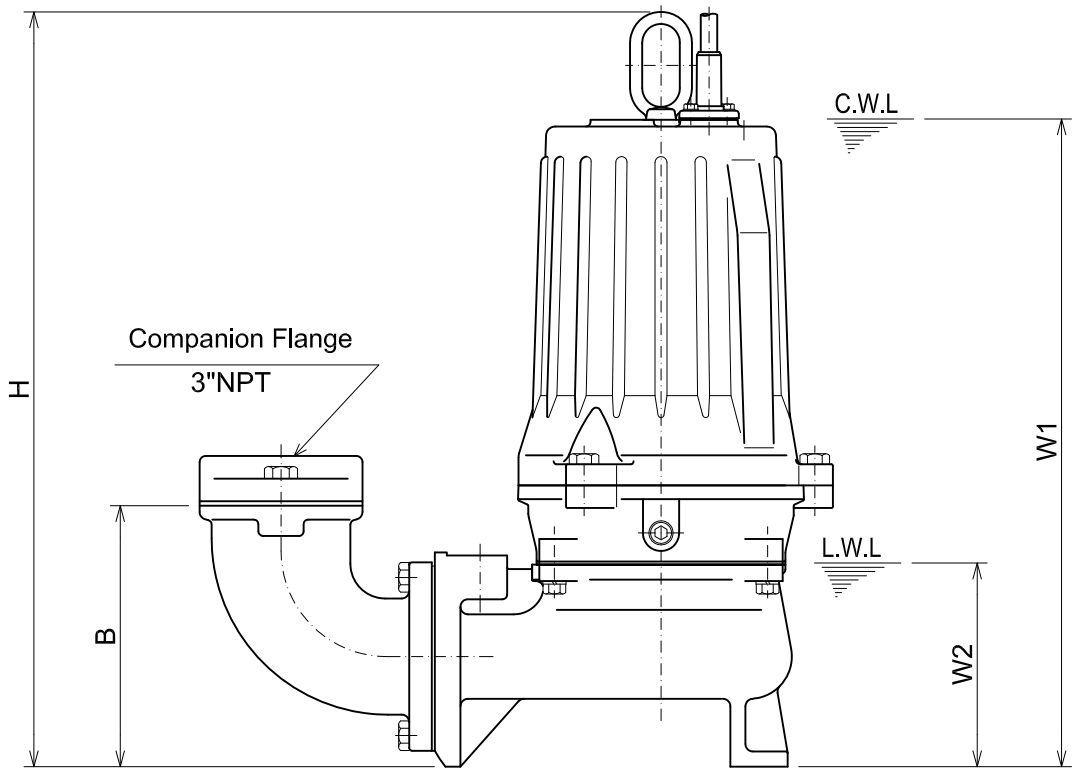




TSURUMI PUMP | U-SERIES SEMI-VORTEX - SEWAGE & WASTEWATER PUMPS | DIMENSIONS

80U21.5 -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.
			A	A1	A2	B	D	D1	D2	H	W1	W2	(lbs.)
80U21.5 -63	2	3"	16 9/16	9 15/16	4 1/2	6 13/16	7 15/16	4	4	19 5/8	16 7/8	5 3/8	88

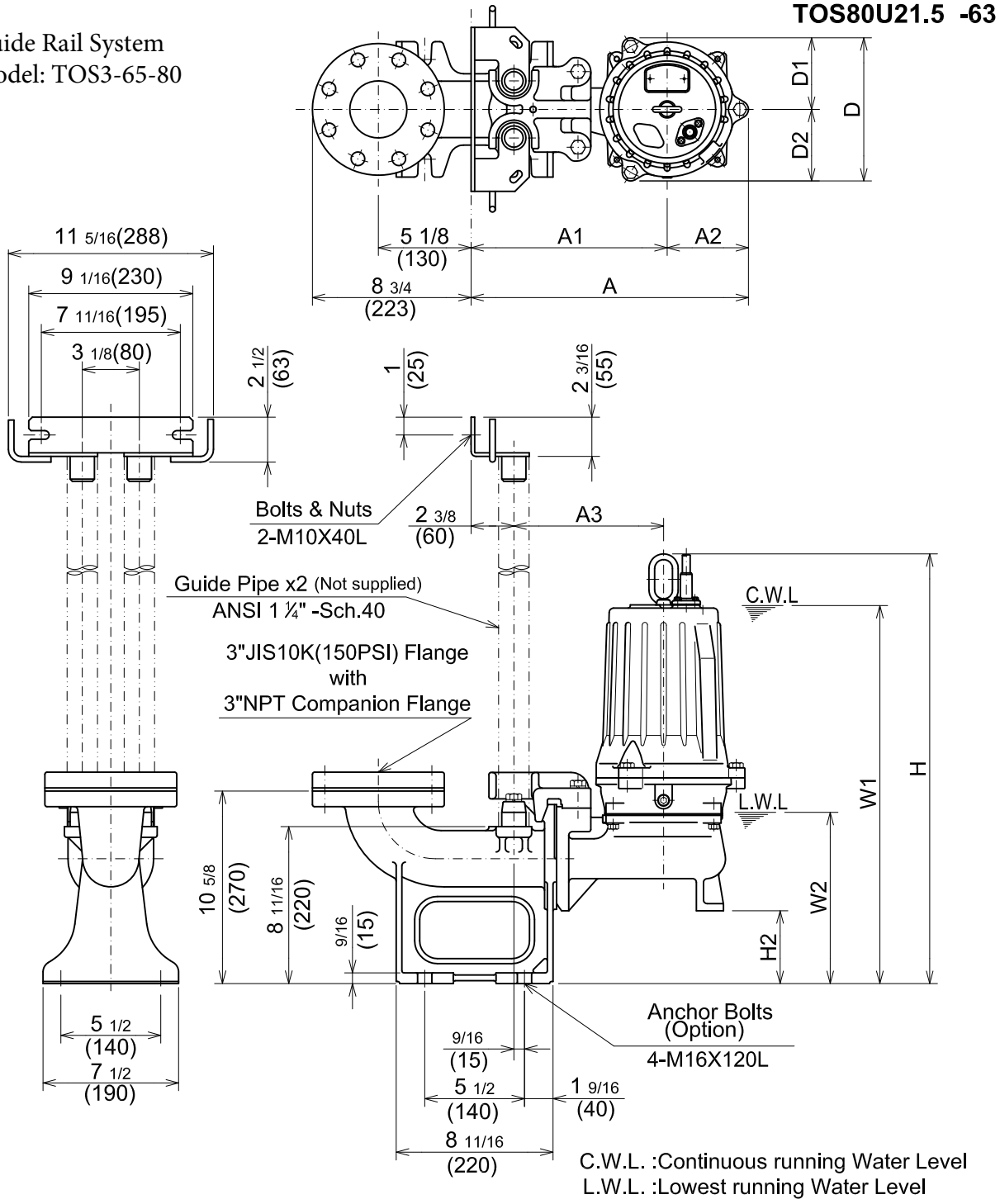
DIMENSIONS:METRIC(mm)

Model	kW	NOM. SIZE	Pump & Motor								C.W.L.	L.W.L.	Wt.
			A	A1	A2	B	D	D1	D2	H	W1	W2	(kg)
80U21.5 -63	1.5	80	420	252	114	173	202	101	101	499	430	135	40

TSURUMI PUMP	U-SERIES SEMI-VORTEX - SEWAGE & WASTEWATER PUMPS	DIMENSIONS

TOS80U21.5 -63

Guide Rail System
Model: TOS3-65-80



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

DIMENSIONS:USCS(Inch)

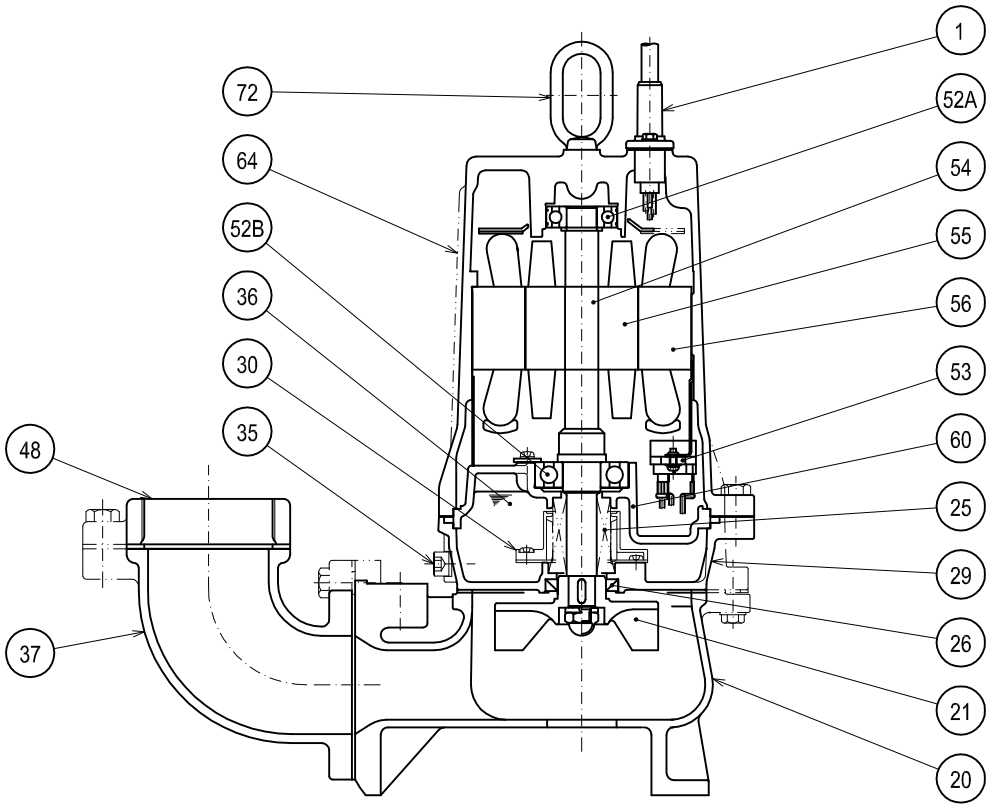
Model	HP	NOM. SIZE	Pump & Motor									C.W.L.	L.W.L.	Wt. (lbs.)
			A	A1	A2	A3	D	D1	D2	H	H2	W1	W2	
TOS80U21.5 -63	2	3"	15 1/8	10 5/8	4 1/2	8 1/4	7 15/16	4	4	23 11/16	4	20 7/8	9 1/2	79

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	
TOS80U21.5 -63	1.5	80	384	270	114	210	202	101	101	601	102	530	240	36

TSURUMI PUMP | U-SERIES SEMI-VORTEX - SEWAGE & WASTEWATER PUMPS | SECTIONAL VIEW

80U21.5 -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			
37	Discharge Bend	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
48	Companion Flange	Cast Iron / NPT 3"	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(_____m^3/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/cm^2) 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.