



U - SERIES

SEMI-VORTEX - SEWAGE & WASTE WATER PUMPS

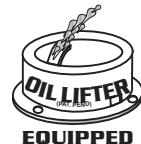
SPECIFICATIONS

■ 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, 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)
104⁰ F. (40⁰ C.)

Cast Iron ASTM 48M Class 30B
Cast Iron ASTM 48M Class 30B
420 Stainless Steel
Cast Iron ASTM 48M Class 25B
304 Stainless Steel

Silicon Carbide
NBR (Nitrile BUNA Rubber)

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

Pre-lubricated, Double Shielded

Air Filled, 3600 RPM 60 Hz.
208-230V or 460V or 575V 3-Phase
Class F

Submersible Power Cable 32' (10 m)

Manual

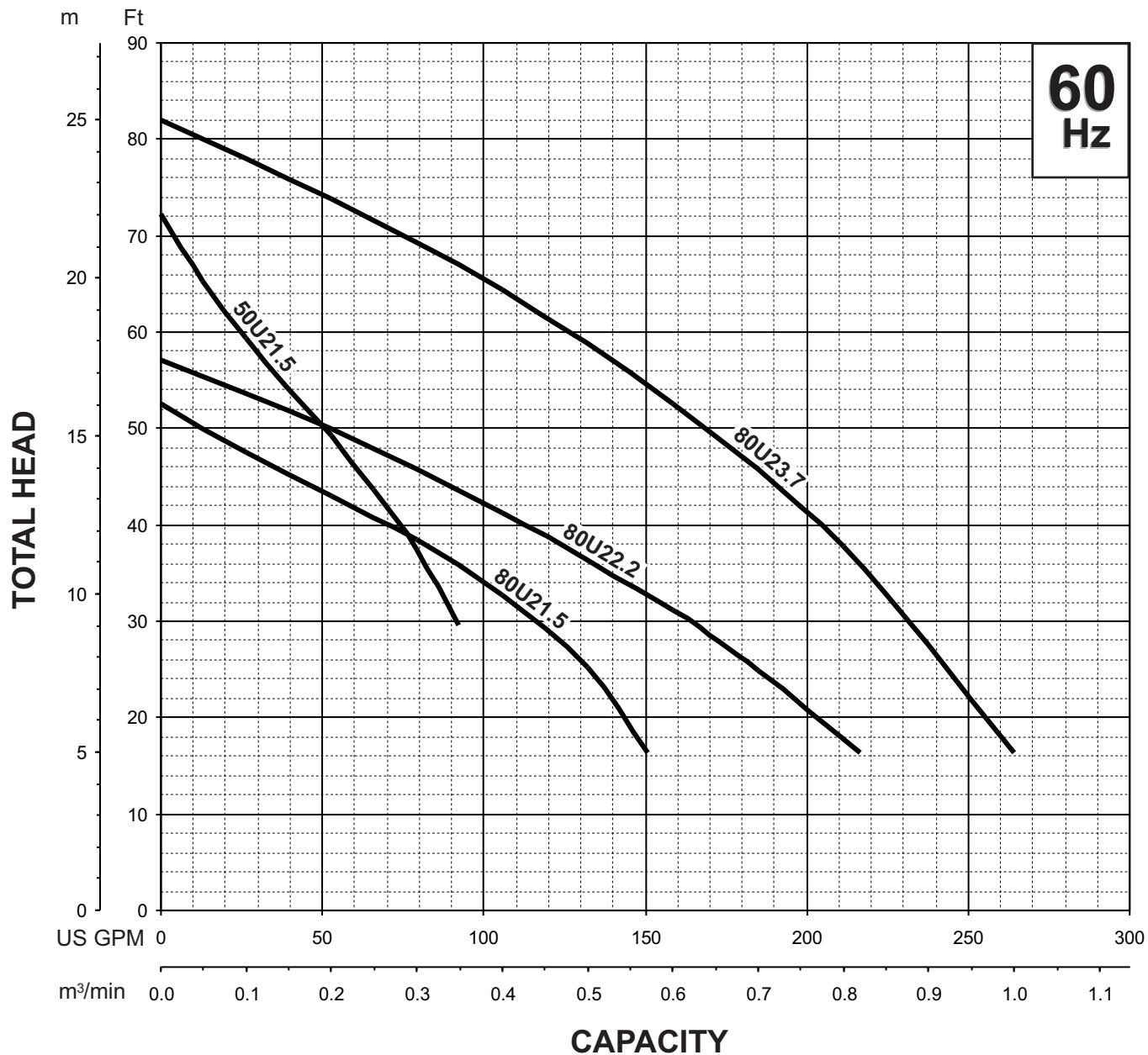
■ OPTIONS

Length as Required

TOS Slide rail system



TSURUMI PUMP

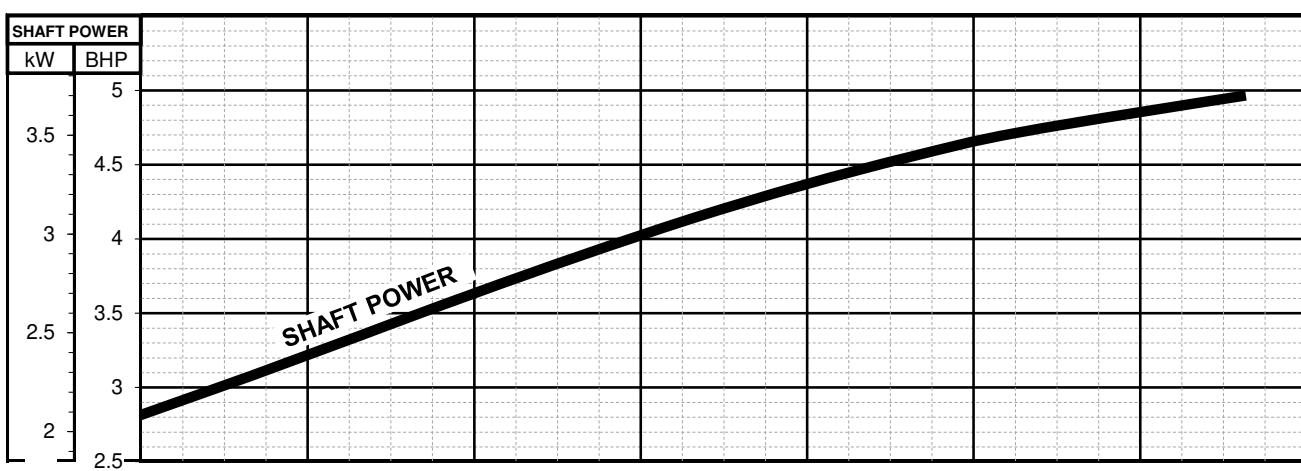
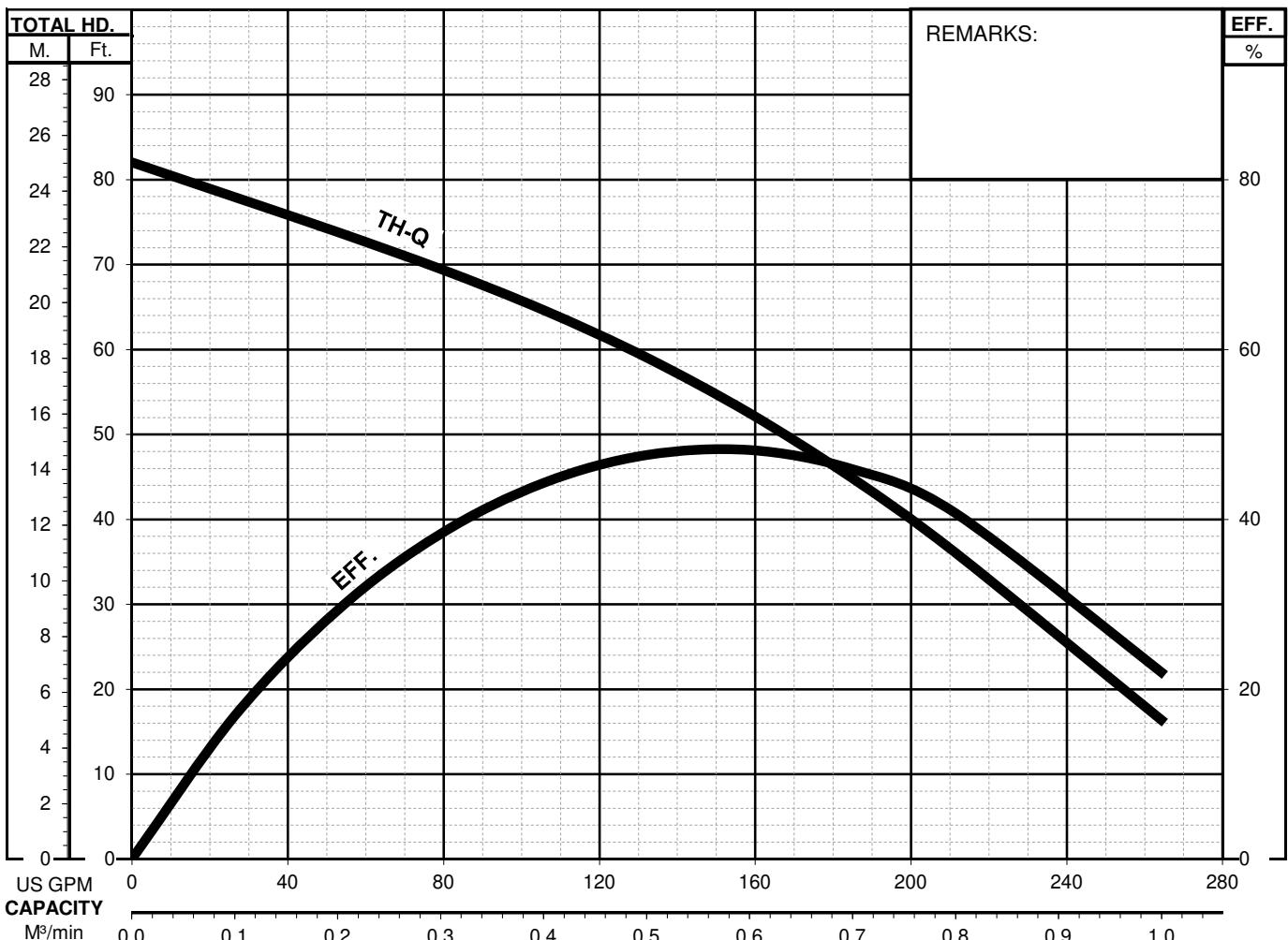
U - SERIES
SEMI-VORTEX - SEWAGE & WASTEWATER PUMPS**PERFORMANCE
RANGE****PERFORMANCE RANGE**



U - SERIES
SEMI-VORTEX - SEWAGE & WASTERWATER PUMPS

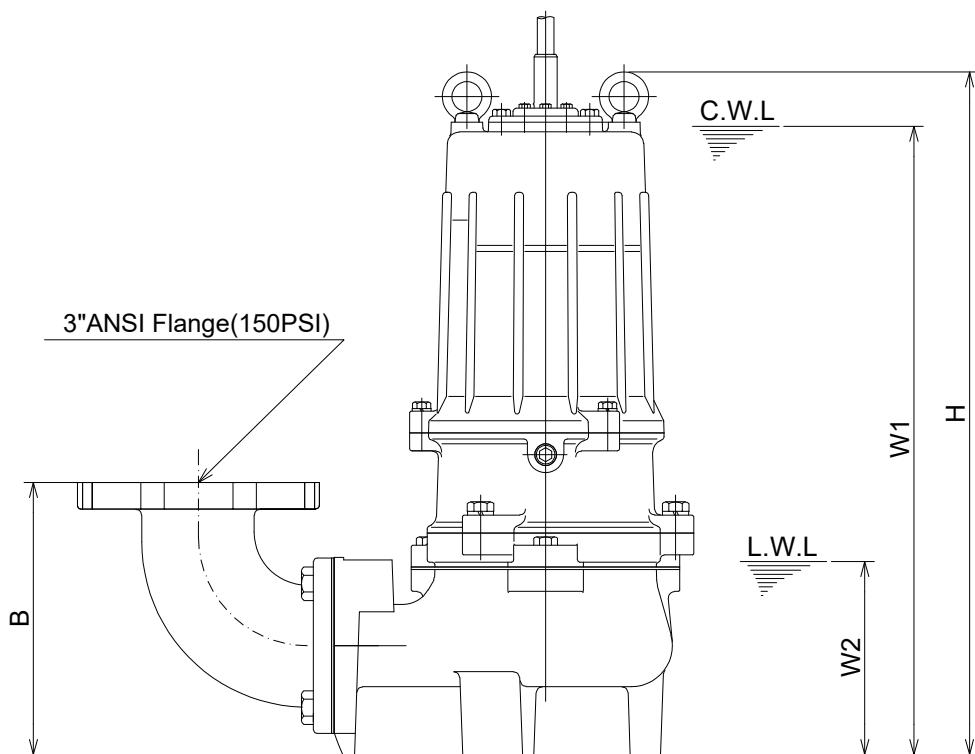
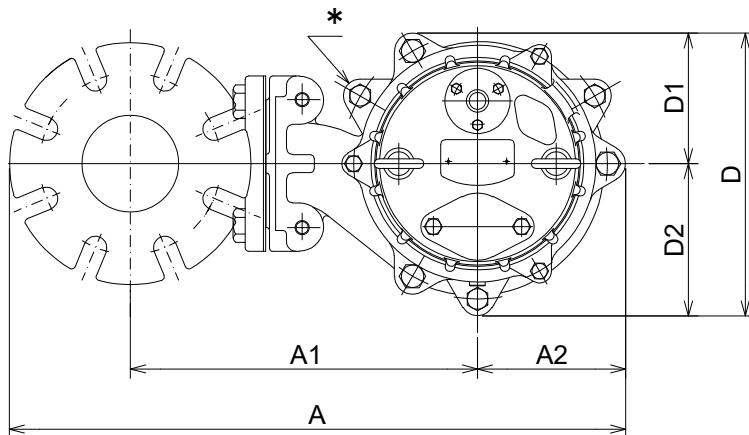
**PERFORMANCE
CURVE**

MODEL	BORE	HP	kW	RPM	SOLIDS DIA.	LIQUID	SG.	VISCOOSITY	TEMP.
(TOS)80U23.7 -65	3"/80mm	5	3.7	3438	2.2"/56mm	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		14.4-13.6 / 6.8 / 5.4	60	Direct On Line		F	
CURVE No.	DATE	PHASE	VOLTAGE	AMPERAGE	HZ	STARTING METHOD		INS. CLASS	
-	-	-	-	-	-	-		-	





80U23.7 -65



* An air release hole to prevent airlock is provided on the top of the pump casing.

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			
80U23.7 -65	5	3"	20 1/2	11 11/16	4 13/16	8 7/8	9 3/16	4 1/4	4 15/16	22 1/4	20 1/2	6 1/4	137

DIMENSIONS:METRIC (mm)

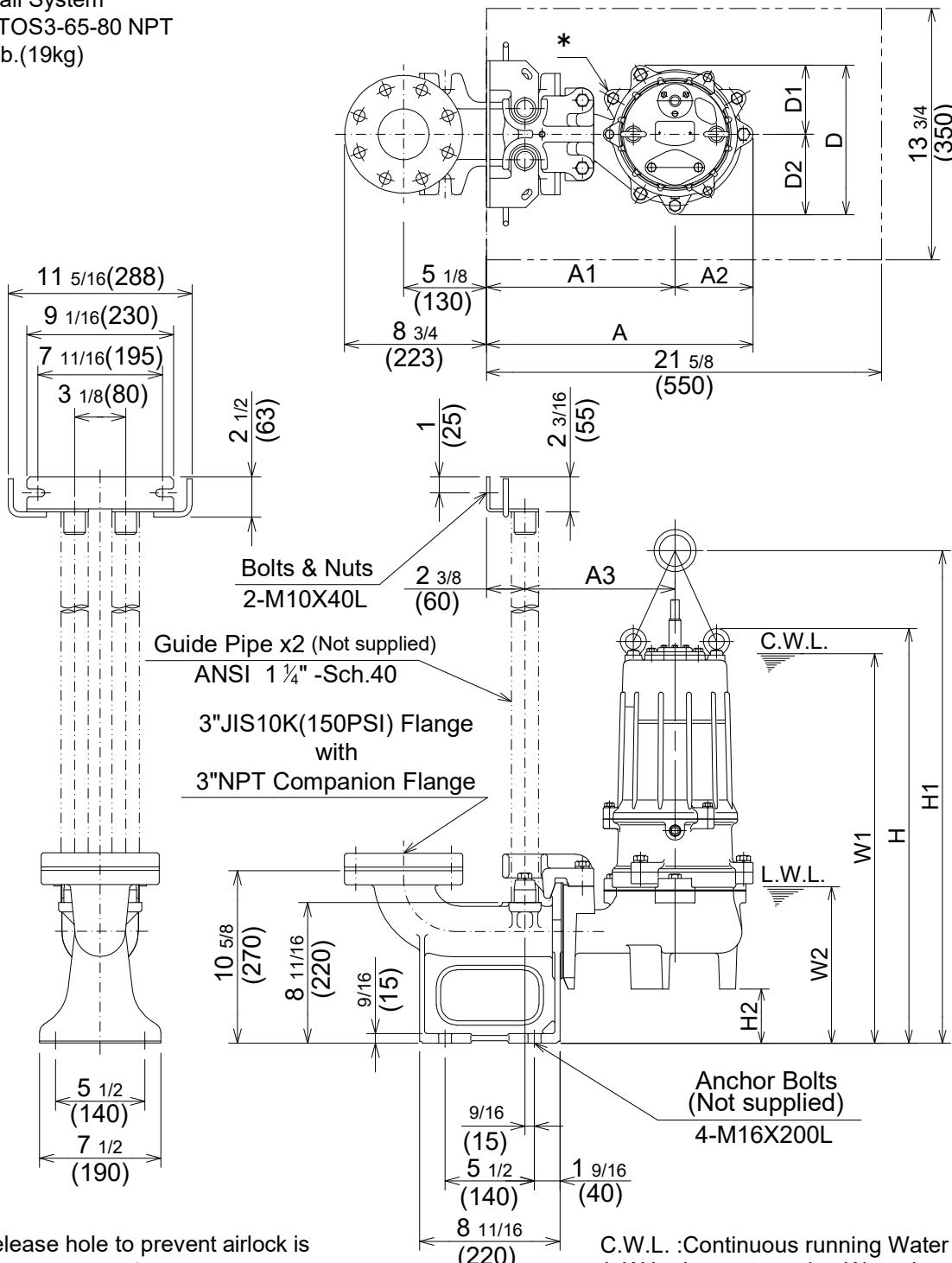
Model	kW	NOM. SIZE	Pump & Motor								C.W.L.	L.W.L.	*Wt. (kg)
			A	A1	A2	B	D	D1	D2	H			
80U23.7 -65	3.7	80	520	297	123	225	234	108	126	565	520	160	62

*Excluding Cable



TOS80U23.7 -65

Guide Rail System
Model : TOS3-65-80 NPT
Wt. : 42lb.(19kg)



* An air release hole to prevent airlock is provided on the top of the pump casing.

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	H1	H2			
TOS80U23.7 -65	5	3"	16 7/16	11 5/8	4 13/16	9 1/4	9 3/16	4 1/4	4 15/16	25 9/16	30 3/8	3 3/8	24	9 5/8	128

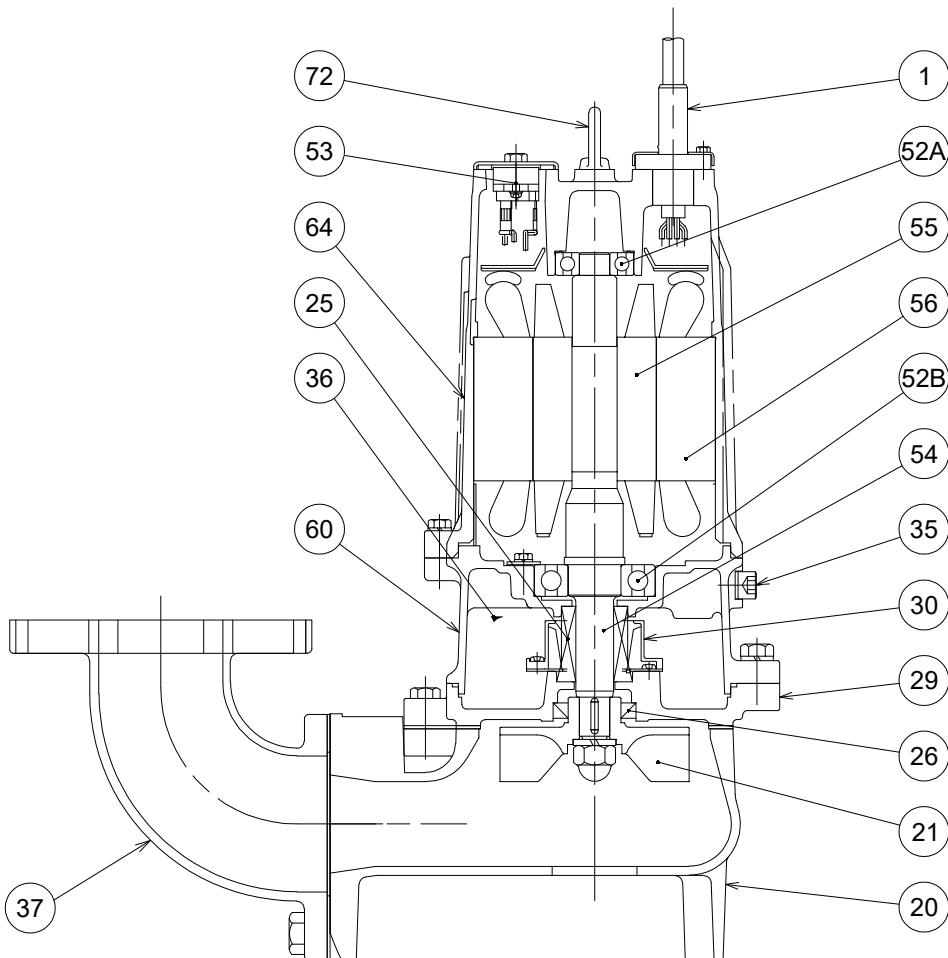
DIMENSIONS:METRIC (mm)

Model	kW	NOM. SIZE	Pump & Motor									C.W.L.	L.W.L.	Wt.* (kg)	
			A	A1	A2	A3	D	D1	D2	H	H1	H2			
TOS80U23.7 -65	3.7	80	418	295	123	235	234	108	126	650	771	85	610	245	58

* Excluding TOS & Cable



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PART#	DESCRIPTION	MAIN MATERIAL / NOTE	ASTM, AISI CODE	RELATED DIN CODE	QTY
1	Power Cable	PVC Sheath AWG 12/4-32ft			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-25			1
26	Oil Seal	NBR / TC355511			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 / 3"ANSI Flange(150PSI)	A48M Class30B	EN 1561 GJL-200	1
52A	Upper Bearing	#6304ZZC3			1
52B	Lower Bearing	#6307ZZC3			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	2

 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.		