

### ■ FEATURES

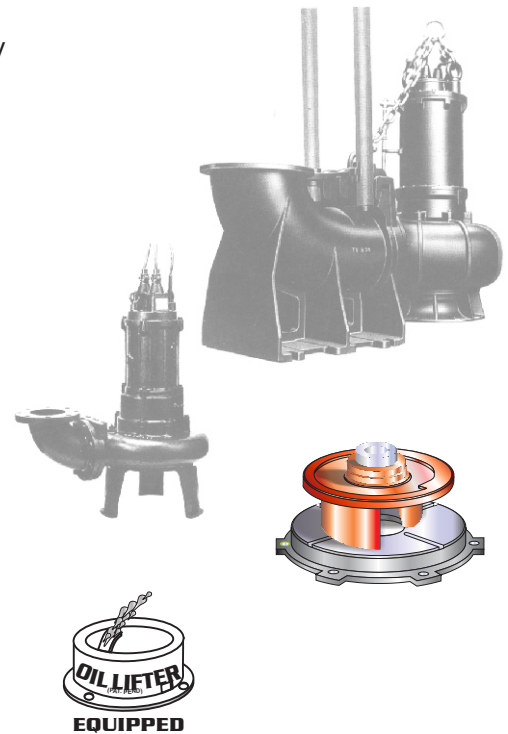
1. Semi-open, Single vane, impellers with field adjustable /replaceable shear plate and, Enclosed Multi-vane, impellers, with field adjustable / replaceable wear plate provides for high wear resistance and enhanced solids handling capability.
2. Highly efficient, continuous duty air filled, copper wound motor with class E, B, F insulation minimizes the cost of operation.
3. Built in thermal protection prevents motor failure due to overloading, accidental run-dry and single phasing in three phase units.
4. Double inside mechanical seals with silicon carbide faces, running in an oil filled chamber, equipped with an oil lifter,, and further protected by an exclusionary oil Seal(s), provides for the most -

- durable seal design available.

5. Double shielded, permanently lubricated, high temperature C3 ball bearings rated for a B-10 life of 60,000 hours provide for extended operational life.

### ■ APPLICATIONS

1. Commercial, Industrial sewage, wastewater, or effluent transfer.
2. Decorative fountains and aquiculture .
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" ~ 8" (50 ~ 200 mm)  
1 Hp. ~ 20 Hp. (.75 kW ~ 20 kW)  
20 ~ 1850 G.P.M. (.08 ~ 7.00 m<sup>3</sup>/min)  
8.2 Ft.~105.0 Ft. (2.5 ~ 32.0m)  
104° F. (40° C.)  
Cast Iron, ASTM 48 Class 35  
Cast Iron, ASTM 48 Class 35  
403,420 Stainless Steel  
Cast Iron, ASTM 48 Class 30  
304 Stainless Steel  
Silicon Carbide  
NBR (Nitril Buna Rubber)  
Semi-open, Enclosed, solids handling.  
.79" ~ 2.95" (20 ~ 75 mm)  
Pre-lubricated, Double Shielded  
Air Filled,  
3600, 1800 & 1200 Rpm, 60 Hz.  
115 or 230 (1Phase)  
208-230, 460 or 575 V., (3 Phase)  
Class E, B, F  
Submersible Power Cable 32' (10 m)  
Manual

### ■ OPTIONS

Dry-Pit

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

Length as required.  
TO/TOS Slide Rail System

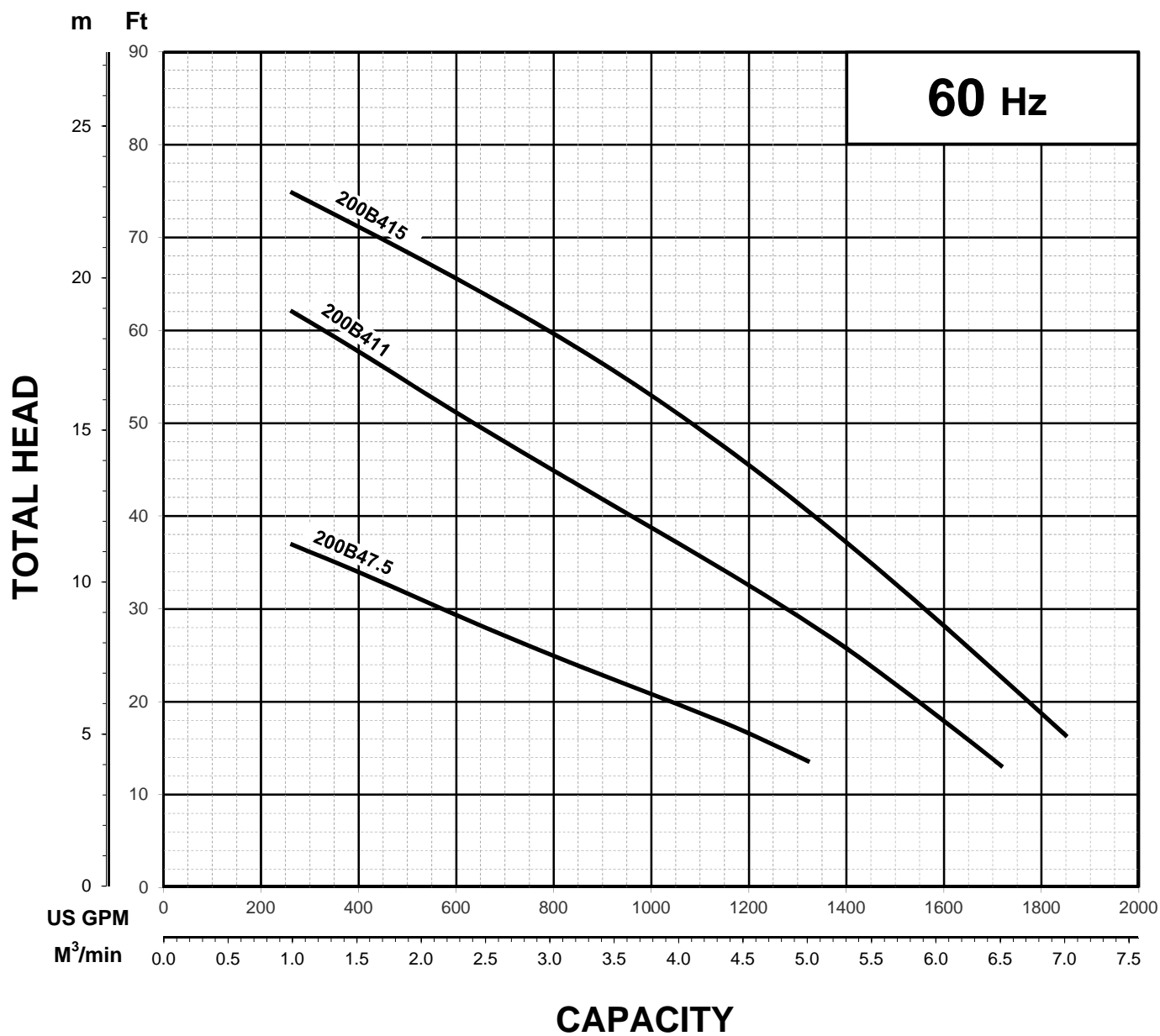


# B - SERIES 8"

SEWAGE & WASTEWATER PUMPS

PERFORMANCE  
CURVE

## GROUP PERFORMANCE RANGE



Note

Ex.

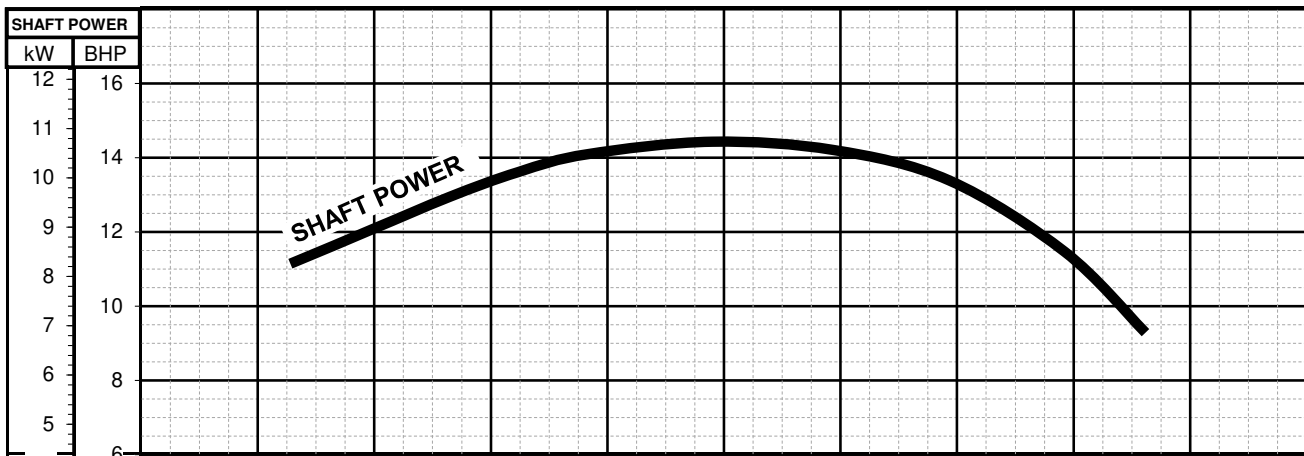
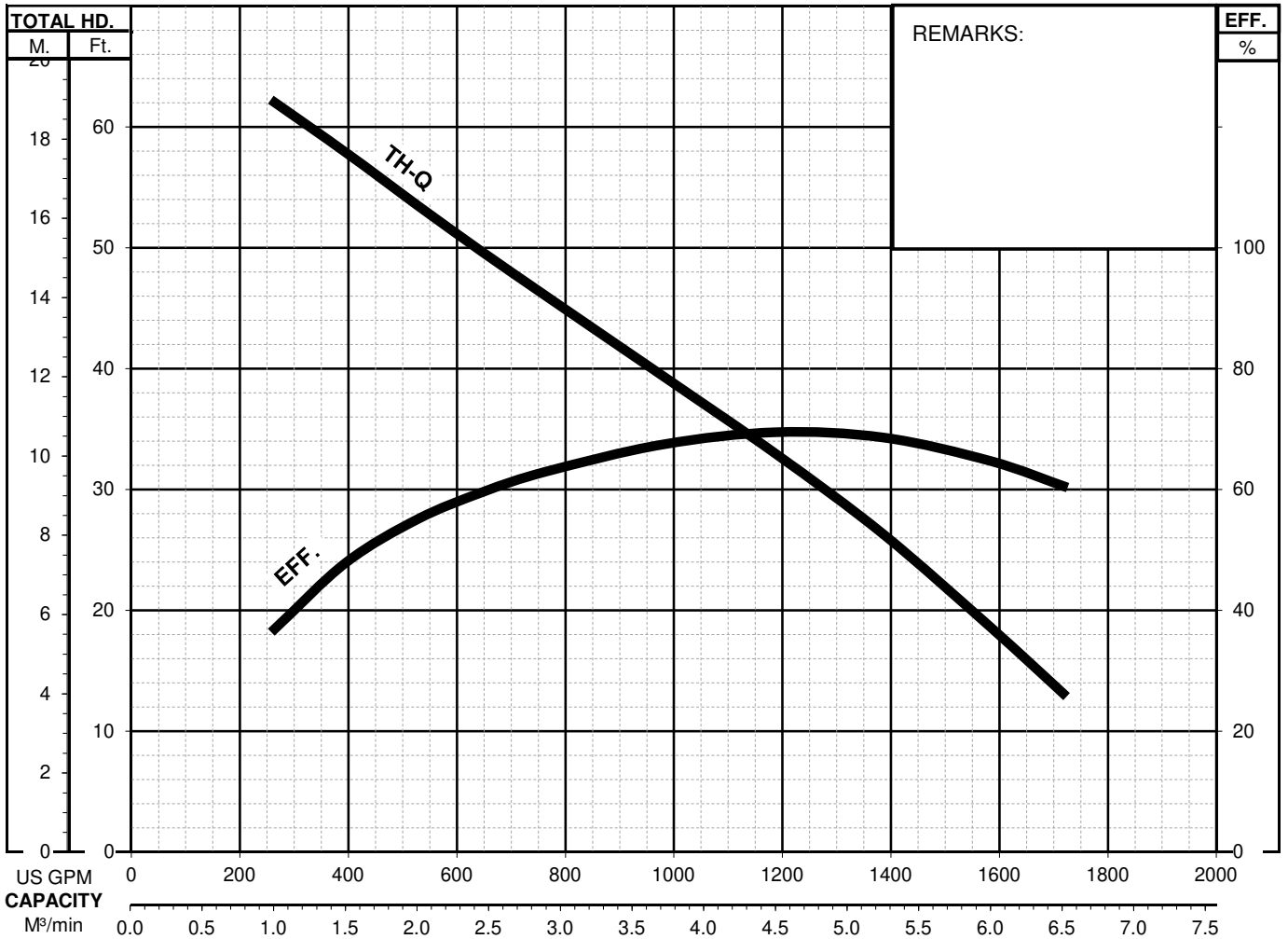
**TSURUMI PUMP**

# **B - SERIES**

**SEWAGE & WASTEWATER PUMPS**

**PERFORMANCE**  
**CURVE**

MODEL	BORE	HP	kW	RPM	SOLIDS DIA.	LIQUID	SG.	VISCOSITY	TEMP.
(TO)200B411 -66	8"/200mm	15	11	1739	2.28"/58mm	Water	1.0	1.123cSt.	60°F
PUMP TYPE	PHASE	VOLTAGE	AMPERAGE		HZ	STARTING METHOD		INS. CLASS	
Sewage & Wastewater	3	208-230/460/575	41.4-38.0 / 19.0 / 15.7		60	Star-Delta		F	
CURVE No.	DATE	PHASE	VOLTAGE	AMPERAGE	HZ	STARTING METHOD		INS. CLASS	
-	-	-	-	-	-	-		-	



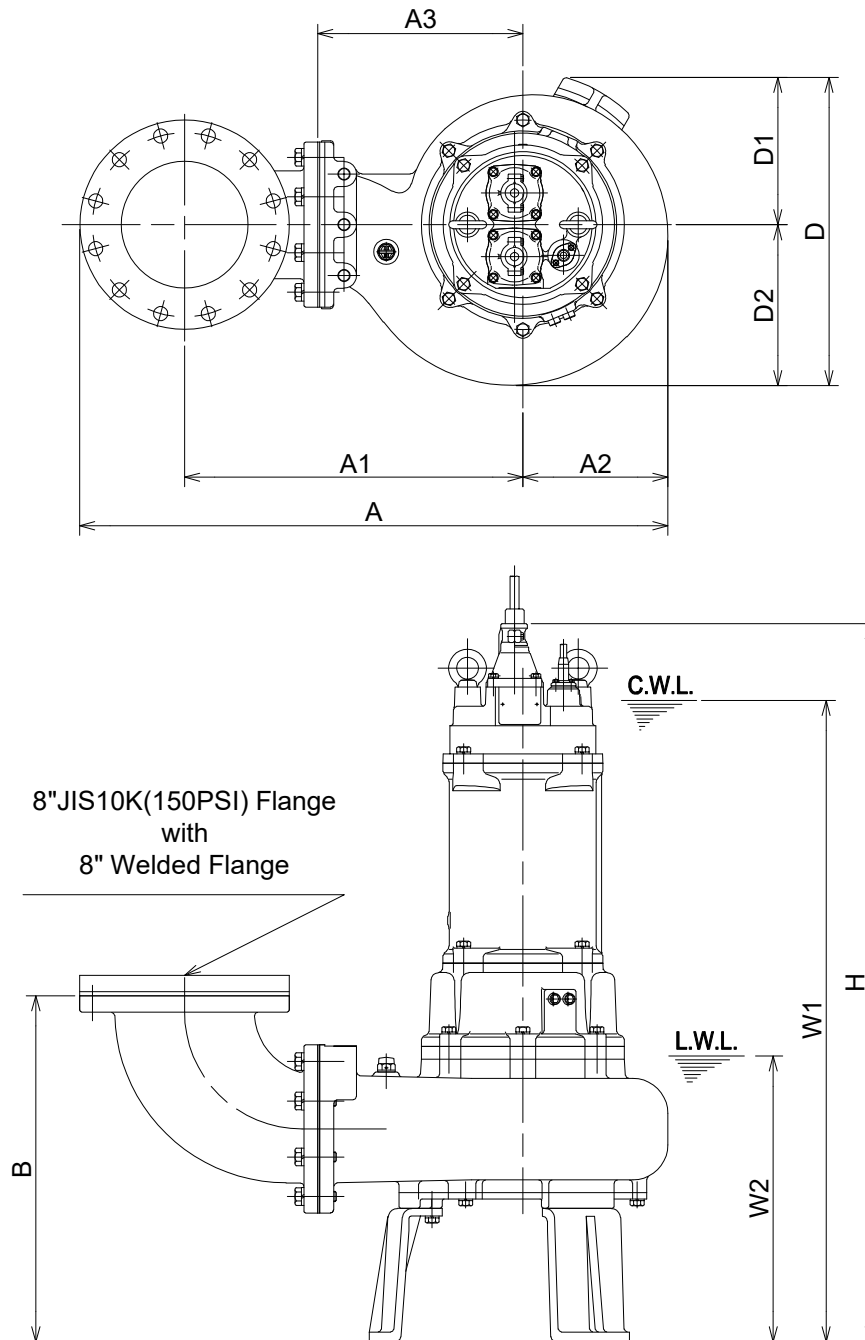


**TSURUMI PUMP**

**B-SERIES  
SEWAGE & WASTEWATER PUMPS**

**DIMENSIONS**

**200B411 -66**



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

**DIMENSIONS:USCS (Inch)**

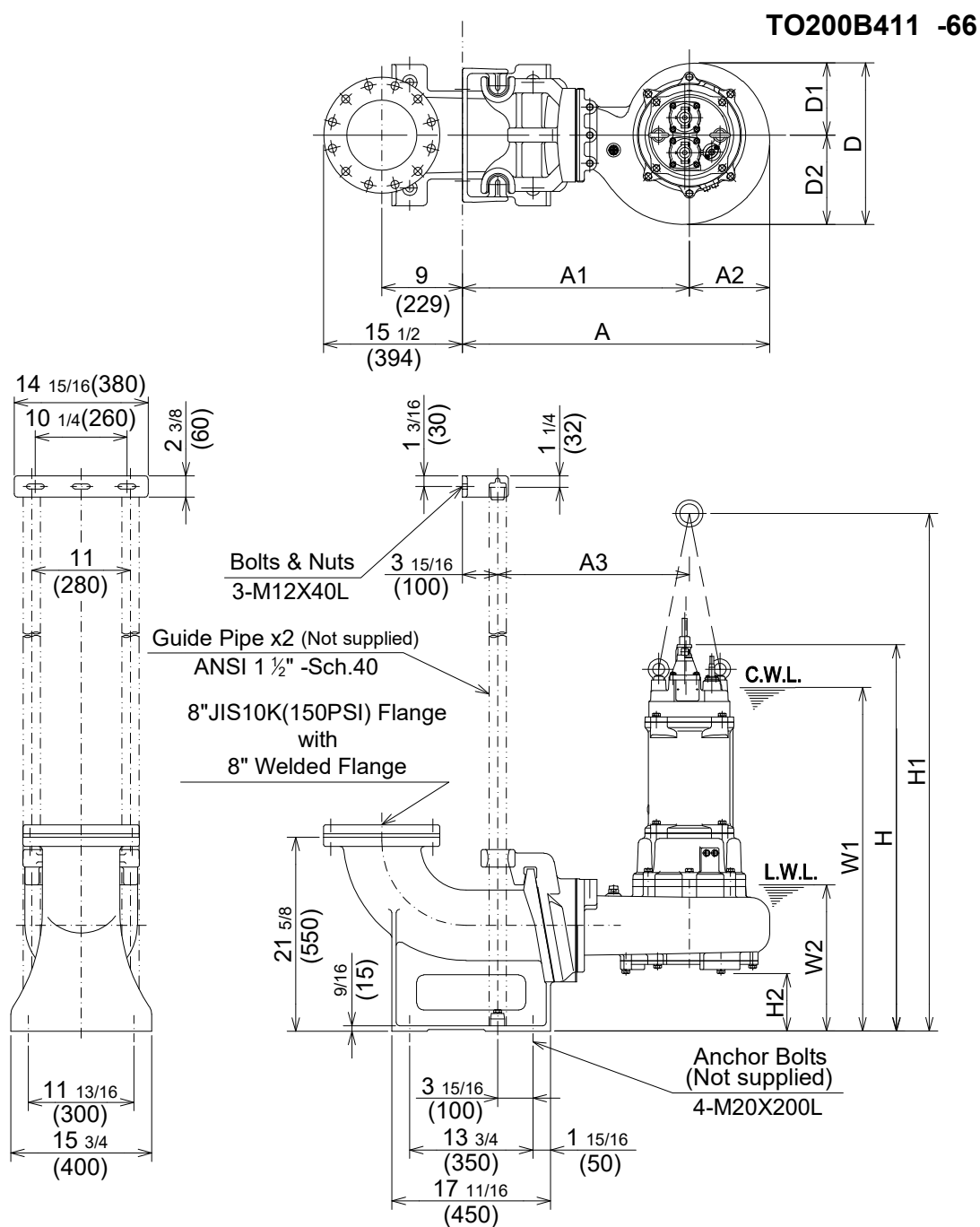
DIMENSIONS (inches)

Model	HP	NOM. SIZE	Pump & Motor									C.W.L.	L.W.L.	*Wt.
			A	A1	A2	A3	B	D	D1	D2	H	W1	W2	(lbs.)
200B411-66	15	8"	36 7/16	21	9	12 11/16	21 7/16	19 1/8	9 1/8	10	44 1/2	39 3/4	17 3/4	558

**DIMENSIONS:METRIC (mm)**

\*Excluding Cable

DIMENSIONS:METRIC (mm)												Excluding Cable		
Model	kW	NOM. SIZE	Pump & Motor									C.W.L.	L.W.L.	*Wt.
			A	A1	A2	A3	B	D	D1	D2	H	W1	W2	(kg)
200B411-66	11	200	926	533	228	323	545	486	232	254	1131	1010	450	253



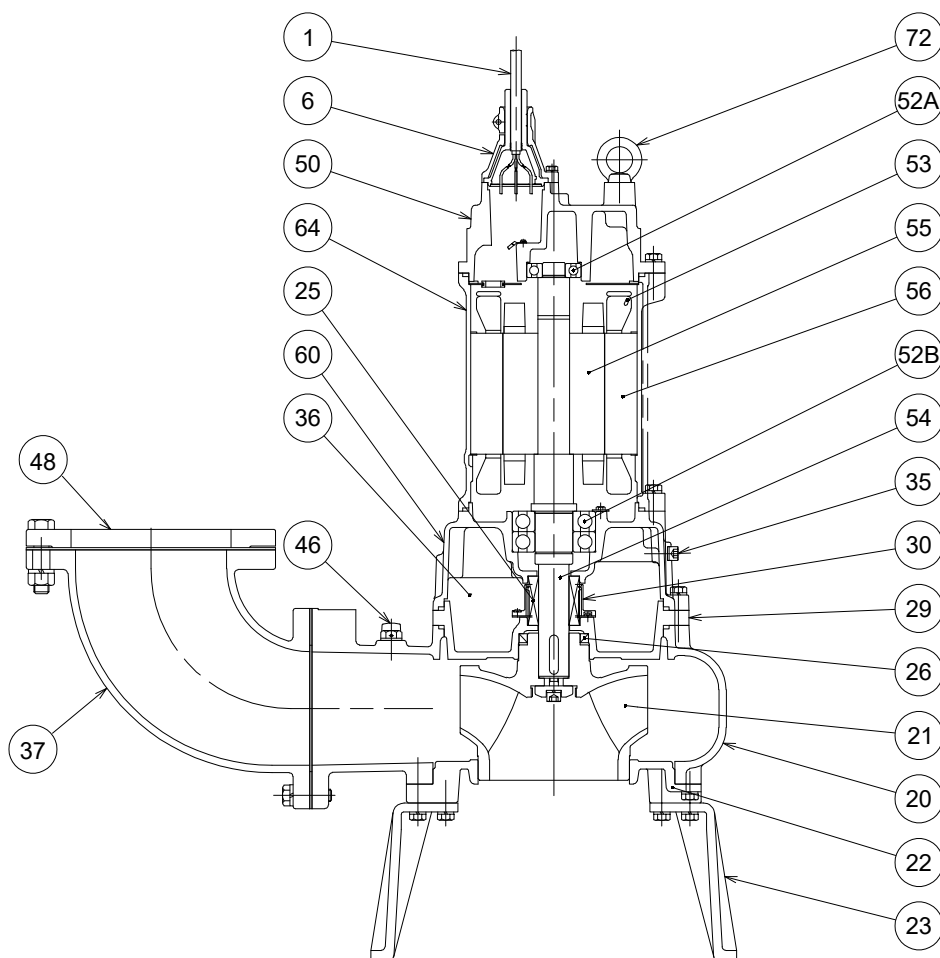
C.W.L. :Continuous running Water Level  
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**DIMENSIONS:USCS (Inch)**

Model	HP	NOM. SIZE	Pump & Motor										C.W.L.	L.W.L.	*Wt.
			A	A1	A2	A3	D	D1	D2	H	H1	H2	W1	W2	(lbs.)
TO200B411-66	15	8"	34 5/16	25 3/8	9	21 7/16	18 1/16	8 1/16	10	43 1/8	57 9/16	6 7/16	38 3/8	16 3/8	569

**DIMENSIONS:METRIC (mm)**

Pump & Motor													Excluding 10% Cash		
Model	kW	NOM. SIZE	A	A1	A2	A3	D	D1	D2	H	H1	H2	C.W.L. W1	L.W.L. W2	*Wt. (kg)
			TO200B411-66	11	200	872	644	228	544	459	205	254	1096	1462	164

**200B411 -66**


PART#	DESCRIPTION	MAIN MATERIAL / NOTE	RELATED ASTM, AISI CODE	RELATED EN CODE	QTY
1	Power Cable	Chloroprene Sheath AWG 12/4-32ft			1
	Power Cable	Chloroprene Sheath AWG 12/3-32ft			1
	Control Cable	PVC Sheath AWG 16/2-32ft			1
6	Stuffing Box	Cast Iron	A48M Class30B	EN 1561 GJL-200	2
20	Pump Casing	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
21	Impeller	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
22	Suction Cover	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
23	Pump Stand	Ductile Cast Iron	A536 65-45-12	EN 1563 GJS-450-10	3
25	Mechanical Seal	Silicon Carbide / H-40X			1
26	Oil Seal	NBR / TC709212			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	2
36	Lubricant	Turbine Oil ISO VG32 or SAE10W -20			
37	Discharge Bend	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
46	Air Release Valve	Nylon			1
48	Welded Flange	Steel / 8"	A283 Grade D	EN 10025 S275	1
50	Motor Bracket	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
52A	Upper Bearing	#6306ZZC3			1
52B	Lower Bearing	#6310ZZC3			2
53	Motor Protector				3
54	Shaft	Stainless Steel	S 42000	1.4028	1
55	Rotor				1
56	Stator				1
60	Bearing Housing	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
64	Motor Housing	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
72	Lifting Lug Bolt	Stainless Steel	S 30400	1.4301	2

**TSURUMI PUMP**

## **B - SERIES**

### **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<sup>3</sup>/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 30B. Unit(s) shall have a field adjustable and or replaceable, cast iron shear type wear plate or wear rings. 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<sup>2</sup>) ANSI flange or flat face flange and NPT companion flange. Impellers shall be of the solids handling design and shall be slip fit to the shaft and key driven. The pump casing shall incorporate an air relief valve.

#### **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. All units 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.), 56.8 PSI.(131.2 Ft.), 71.1 PSI.(164.0 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., \_\_\_\_\_ 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 10(1 Hp.), 5-6(2 to 5 Hp.), 3-4(7.5 to 20 Hp.), and 2-3(30 Hp. and above) starts per hour. Motor(s) shall be air filled, copper wound, class E, B, or F insulated with built in thermal protection for each winding. Motor shaft shall be 420 or 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. On units up to 10 Hp. (7.5 kW), the bottom bearing shall be single row, double shielded, C3, deep groove type ball bearings. On units 15 Hp. (11 kW) and above, the bottom bearing shall be two row, double shielded, C3, deep groove type ball bearings. The top bearing on all units 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 25B or 30B(150B63.7, 7.5 Hp. and above). Motors shall be D.O.L. or Star-delta start (15 Hp. and above), and shall be suitable for across the line start or 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. Units up to 5 Hp., (except 150B63.7) shall be supplied with a cable entrance that incorporates built in strain relief, a one piece, three way mechanical compression seal with a fatigue reducing cable boot. On units 7.5 Hp. and above, and 150B63.7, the cable entrance shall incorporate built in strain relief, and combination three way mechanical compression sealing with a fatigue reducing/thermal expansion rubber boot. The power cable shall be field replaceable utilizing standard submersible pump cable. The cable entrance assembly on all units shall contain an anti-wicking block to eliminate water incursion into the motor due to capillary wicking should the power cable be accidentally Damaged.