



Submersible Sewage Pump

Tsurumi
HS2.4S

P-101
P-102
P-201
P-202
P-301
P-302



HS - SERIES SEMI-VORTEX - WASTEWATER PUMP

SPECIFICATIONS

FEATURES

1. Semi-vortex Urethane Rubber impeller with agitator suspends solids and allows for pumping of sand and stringy material.
2. Highly efficient, continuous duty air filled, copper wound motor with class B, 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 provide for one the most durable seal designs 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. Residential, commercial, industrial dewatering and site drainage.
2. Decorative waterfalls and fountains.
3. Raw water supply from lakes or rivers.
4. Sediment removal from small sumps or basins.



SPECIFICATIONS

Discharge Size.....	
Horsepower Range.....	
Performance Range Capacity.....	
Head.....	
Maximum water temperature.....	
Materials of Construction	
Casing.....	
Impeller.....	
Shaft.....	
Motor Frame.....	
Fasteners.....	
Mechanical Seal	
Upper Seal.....	
Lower Seal.....	
Elastomers.....	
Impeller Type.....	
Solids Handling Capability.....	
Bearings.....	
Motor Nomenclature	
Type, Speed, Hz.....	
Voltage, Phase.....	
Insulation.....	
Accessories.....	
Operational Mode.....	

STANDARD

2" Npt (50 mm)
1/2 Hp. (.4 kW)
15 ~ 53 Gpm. (.056 ~ .20 m ³ /min)
5 Ft. ~ 34 Ft. (1.5 ~ 10.3 m)
104 °F. (40 °C.)
Ductile Cast Iron
Urethane Rubber
403 Stainless Steel
Aluminum alloy
304 Stainless Steel
Ceramic/Carbon
Silicon Carbide/Silicon Carbide
NBR (Nitril Rubber)
Semi-vortex
1" x 3/8" (25 x 9.5 mm)
Prelubricated, Double Shielded
Air Filled, 3600 Rpm, 60 Hz.
115 V., 1 Phase
Class B
Submersible Power Cable 20' (6.2 m)
Manual

OPTIONS

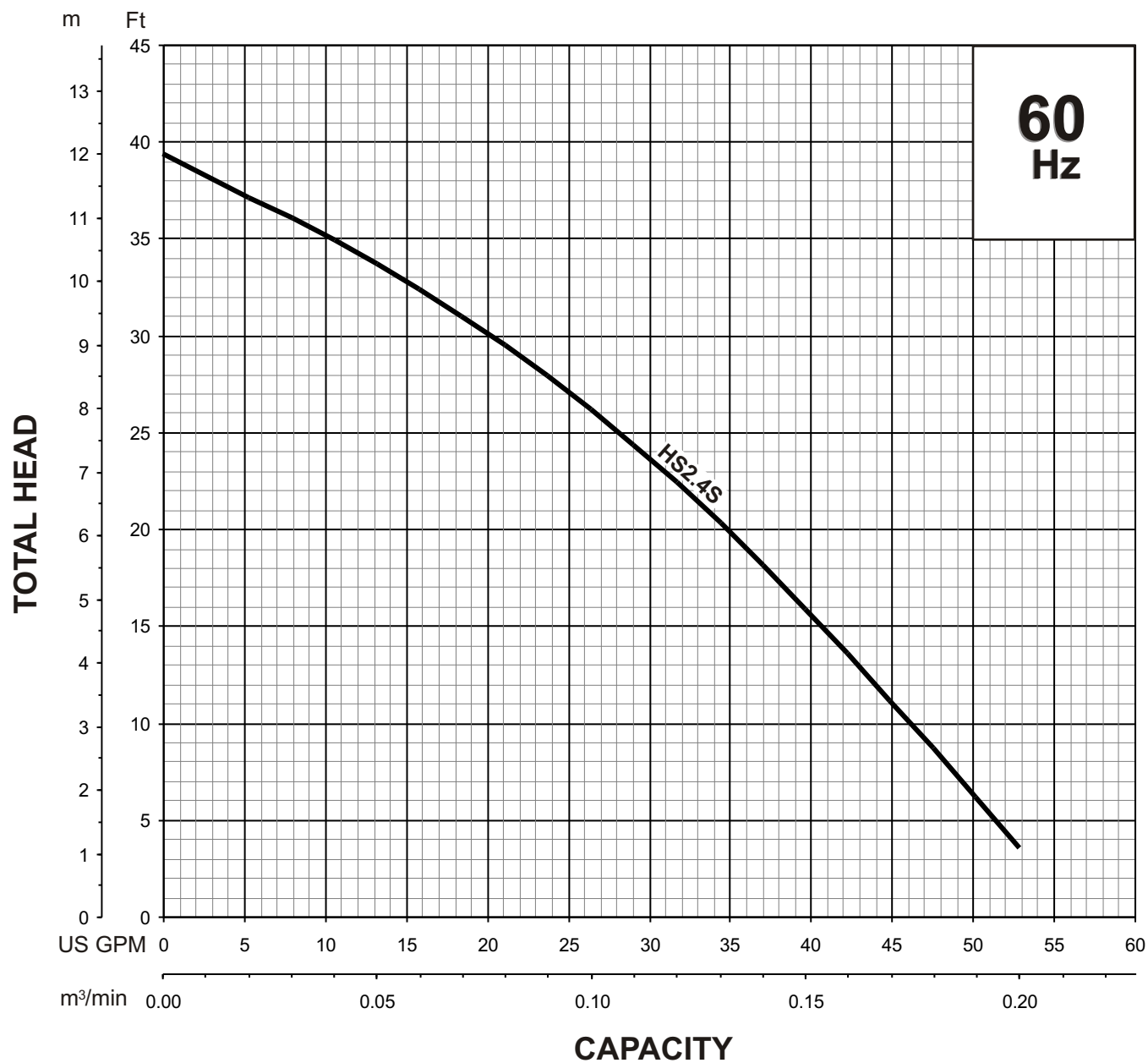
Length as Required, (76' Max)
TS-301 Float Switch



HS - SERIES
SEMI-VORTEX - WASTEWATER PUMP

GROUP PERFORMANCE
RANGE

GROUP PERFORMANCE RANGE

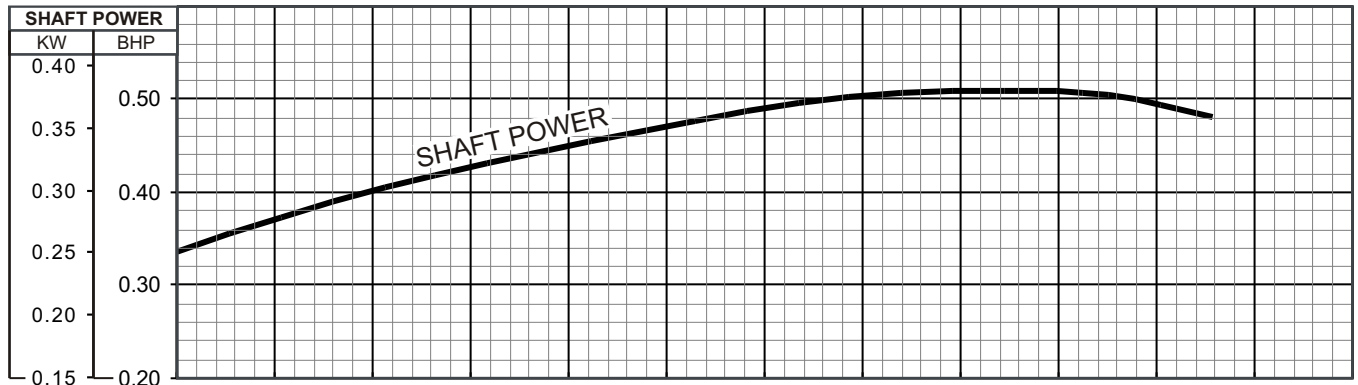
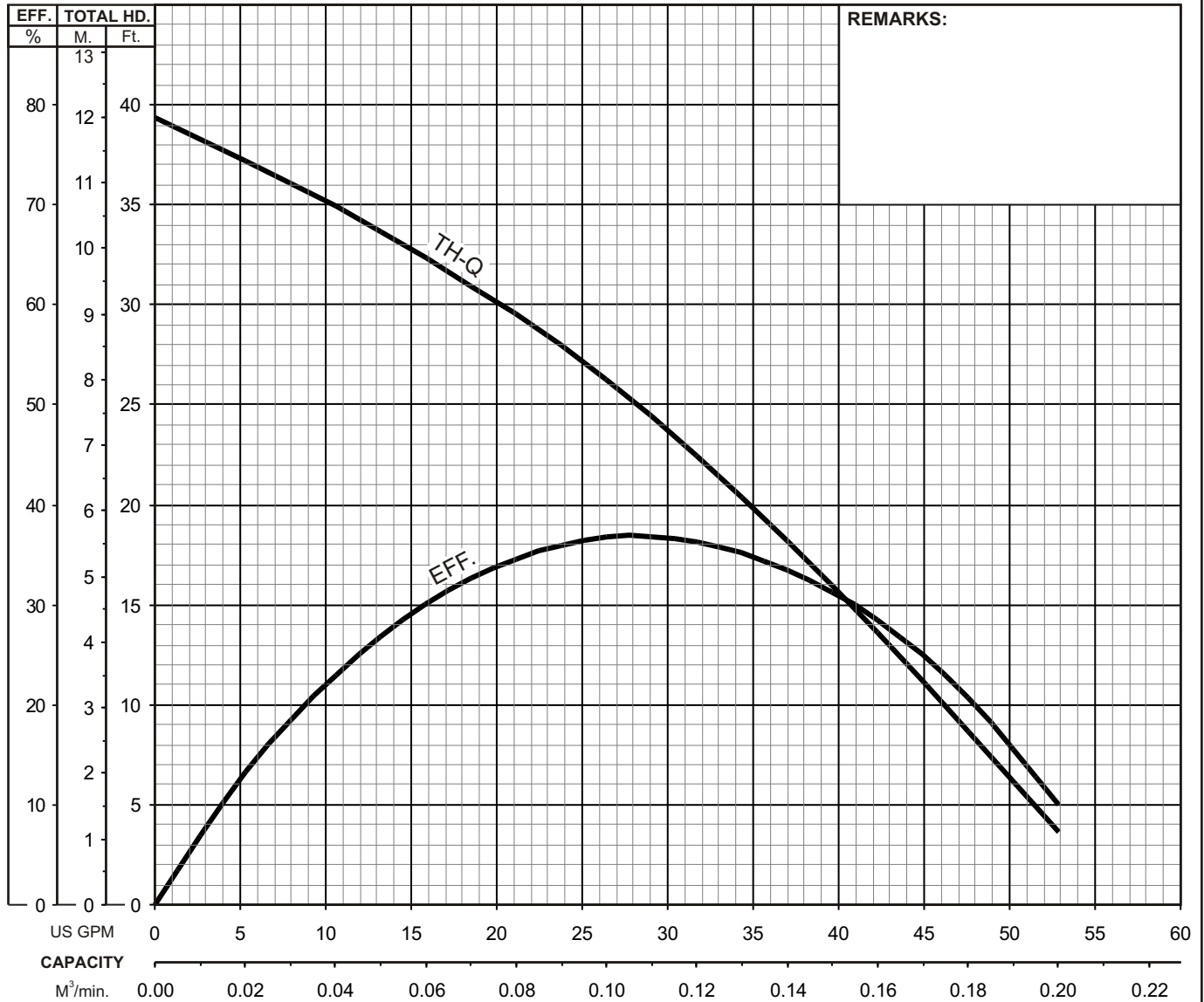


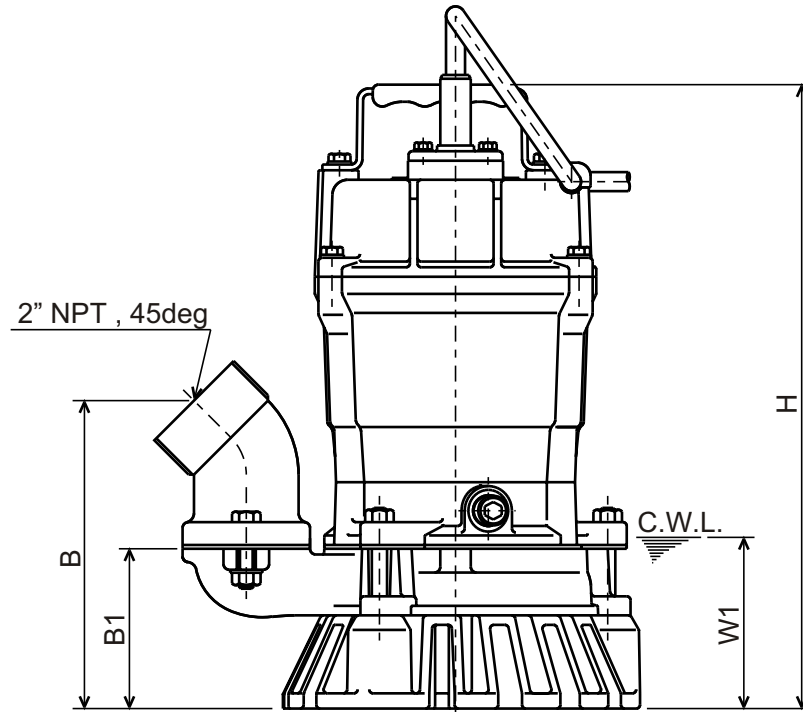
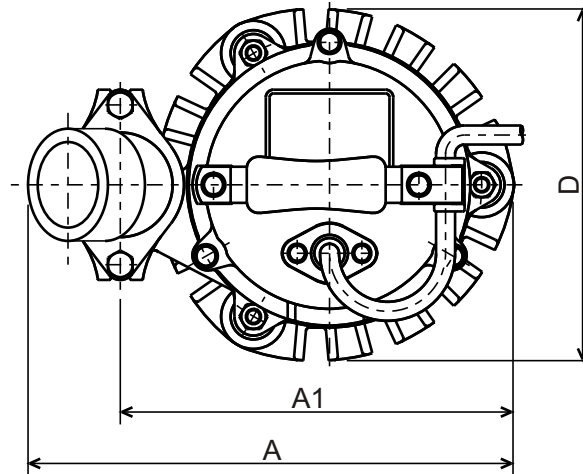


HS - SERIES PERFORMANCE CURVE

HS2.4S-61

MODEL	BORE	HP	KW	RPM	SOLIDS DIA	LIQUID	SG.	VISCOSITY	TEMP.
HS2.4S-61	2"/50mm	0.54	0.40	3350	0.375"/9.5mm	Water	1.0	1.81 CST	60°F
PUMP TYPE	PHASE	VOLTAGE	AMPERAGE		HZ	STARTING METHOD		INS. CLASS	
Semi-Vortex - Wastewater Pump	Single	110 / 115	5.4 / 5.2		60	Capacitor Start		B	
CURVE No.	DATE	PHASE	VOLTAGE	AMPERAGE	HZ	STARTING METHOD		INS. CLASS	
-	-	-	-	-	-	-		-	





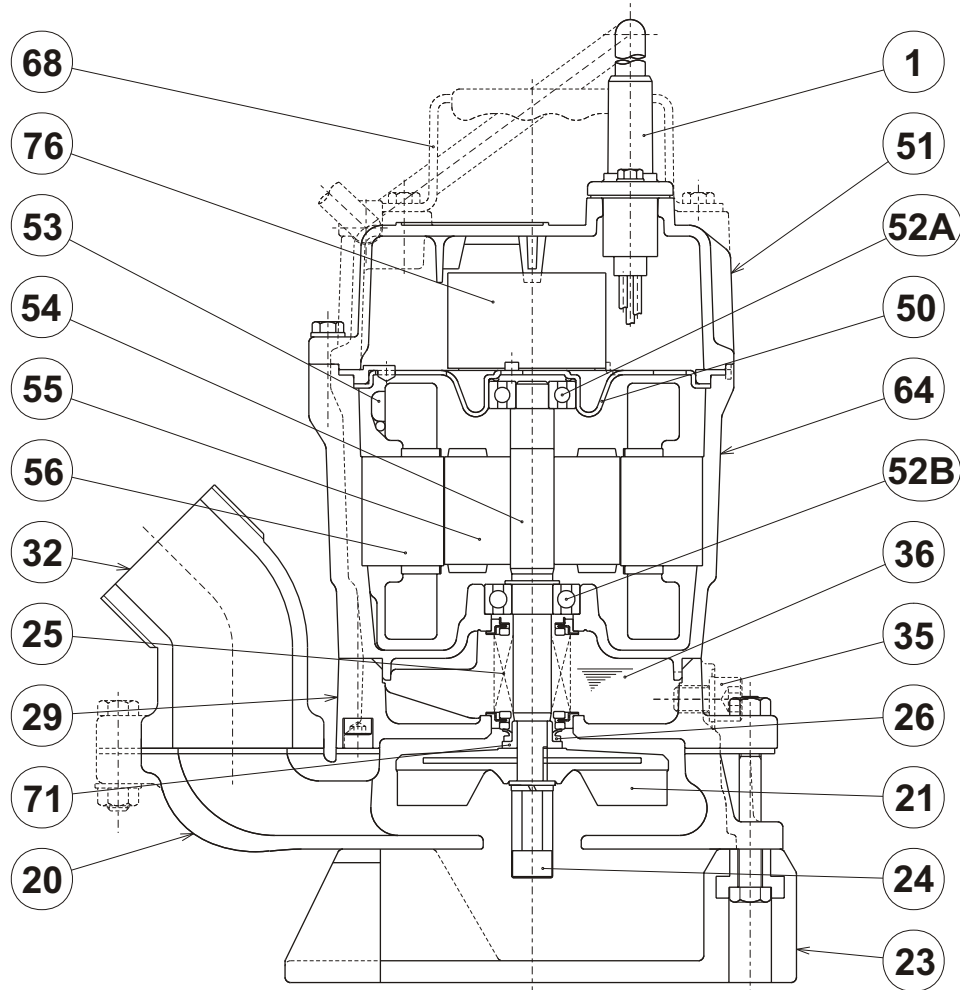
C.W.L. : Continuous running Water Level

DIMENSIONS:USCS (Inch)

Model	HP	NOM. SIZE	Pump & Motor						C.W.L.	Wt. (lbs.)
			A	A1	B	B1	D	H	W1	
HS2.4S-61	1/2	2"	10 1/16	8 1/8	6 3/8	3 5/16	7 5/16	12 15/16	3 1/2	25

DIMENSIONS:METRIC (mm)

Model	kW	NOM. SIZE	Pump & Motor						C.W.L.	Wt. (kg)
			A	A1	B	B1	D	H	W1	
HS2.4S-61	0.40	50	255	207	162	84	185	328	90	11.3



ITEM#	DESCRIPTION	MAIN MATERIAL / NOTE	ASTM, AISI CODE	RELATED DIN CODE	Q'TY
1	Power Cable	PVC Sheath AWG16/3-20ft			1
20	Pump Casing	Cast Iron	A48 Class 35	1691/GG20	1
21	Impeller	Urethane Rubber			1
23	Suction Strainer	PVC			1
24	Agitator	Steel	A283 Grade D	17100 RSt 46-2	1
25	Mechanical Seal	Silicon Carbide / W-14VL			1
26	V-Ring	Nitrile Butadiene Rubber			1
29	Oil Casing	Cast Iron	A48 Class 35	1691/GG20	1
32	Discharge Connection	Cast Iron / NPT 2"	A48 Class 35	1691/GG20	1
35	Oil Plug	Stainless Steel	AISI 304	17440 X5 CrNi 18-9	1
36	Lubricant	Turbine Oil ISO VG32 or SAE10W/20W			
50	Motor Bracket	Carbon Steel	A109 Class 91	1624-87 St 2,3,4	1
51	Motor Head Cover	Aluminum Alloy Die Casting	B85 , A383	N/A (BS Code LM 2)	1
52A	Upper Bearing	#6201ZZC3			1
52B	Lower Bearing	#6202ZZC3			1
53	Motor Protector				1
54	Shaft	Stainless Steel	AISI 403	17440 X15 Cr 13	1
55	Rotor				1
56	Stator				1
64	Motor Housing	Aluminum Alloy Die Casting	B85 , A383	N/A (BS Code LM 2)	1
68	Handle	Carbon Steel + Natural Rubber	A109 Class 91	1624-87 St 2,3,4	1
71	Shaft Sleeve	Stainless Steel	AISI 304	17440 X5 CrNi 18-9	1
76	Capacitor				1



HS - SERIES SEMI-VORTEX - WASTEWATER PUMP

SAMPLE SPECIFICATIONS

1. SCOPE OF SUPPLY -

Furnish and install TSURUMI Model HS2.4S-61 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 wastewater, or effluent containing debris and 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.

2. MATERIALS OF CONSTRUCTION -

Construction of major parts of the pumping unit(s) shall be as follows: Pump casing shall be gray cast Iron, ASTM A48 CLASS 35. Motor frame shall be aluminum alloy die casting. Impeller shall be urethane rubber and shall incorporate an agitating device in order to disperse debris and suspend particles. A fused polymer coating shall protect Internal and external surfaces coming into contact with the pumpage. All exposed fasteners shall be stainless steel. All units shall be furnished with a 2" NPT discharge connection. Impellers shall be of the multi-vane, semi-vortex, solids handling design and shall be slip fit to the shaft and positively driven. The suction strainer shall be manufactured from ABS high impact resin and shall incorporate flow-reversing vanes.

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. Mechanical seals shall rated to preclude the incursion of water up to 42.6 PSI. (98.4 Ft.) submergence. Units shall have silicon carbide mechanical seal faces. Mechanical seal hardware shall be stainless steel.

4. MOTOR -

The pump motor(s) shall be 1/2 Hp., 0.40 kW., 115 V., 60 Hz., 1 Phase and shall be NEMA MG-1, Design Type B equivalent. Motor(s) shall be rated at 5.4 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 protection in the 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. 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 step. 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.