



**NK - SERIES**  
**SEMI-VORTEX - DEWATERING PUMP**

**SPECIFICATIONS**

**FEATURES**

1. Double inside mechanical seals with silicon carbide faces, running in an oil filled chamber and further protected by a lip seal running against a replaceable, stainless steel shaft sleeve provides for the most durable seal design available.
2. Highly efficient, continuous duty, air filled, copper wound motor with class B insulation minimizes the cost of operation.
3. Built in thermal & amperage sensing protector prevents motor failure due to overloading or accidental run dry conditions.
4. Double shielded, permanently lubricated, high temperature C3 ball bearings rated for a B-10 life of 60,000 hours extend operational life.

5. Top discharge, flow-thru design enables operation at low water levels for extended periods.

Sand Kit : NK2-15SK / NK3-22SK  
The Sand Kit can be added to the NK series to suspend sand and prevent sand lock.

**APPLICATIONS**

1. Residential, commercial, industrial wastewater and construction site drainage.
2. Effluent transfer.
3. Decorative waterfalls and fountains.
4. 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**

- 3" NPT (80 mm)
- 2 ~ 3 HP. (1.5 ~ 2.2 kW)
- 55.5 ~ 211.0 GPM. (0.21 ~ 0.80 m<sup>3</sup>/min)
- 34.4 ~ 85.0 Ft. (10.50 ~ 25.91 m)
- 104° F. (40.0° C.)
- Butadiene Rubber + Natural Rubber , Cast Iron (NK3-22L)
- Ductile Cast Iron , High Chrome Cast Iron (NK3-22L , NK2-15SK / NK3-22SK)
- 420 , 403 Stainless Steel
- Aluminum alloy
- 304 Stainless Steel
- Silicon Carbide
- NBR (Nitril Butadiene Rubber)
- Semi-vortex, solids handling.
- 0.334" (8.5mm)
- Prelubricated, Double Shielded
- Air Filled, 3600 RPM, 60 Hz.
- 110/220 V., 1 Ph (NK2-15 Dual Voltage)
- Class B
- Submersible Power Cable 32' (10.0 m)
- Manual

**OPTIONS**

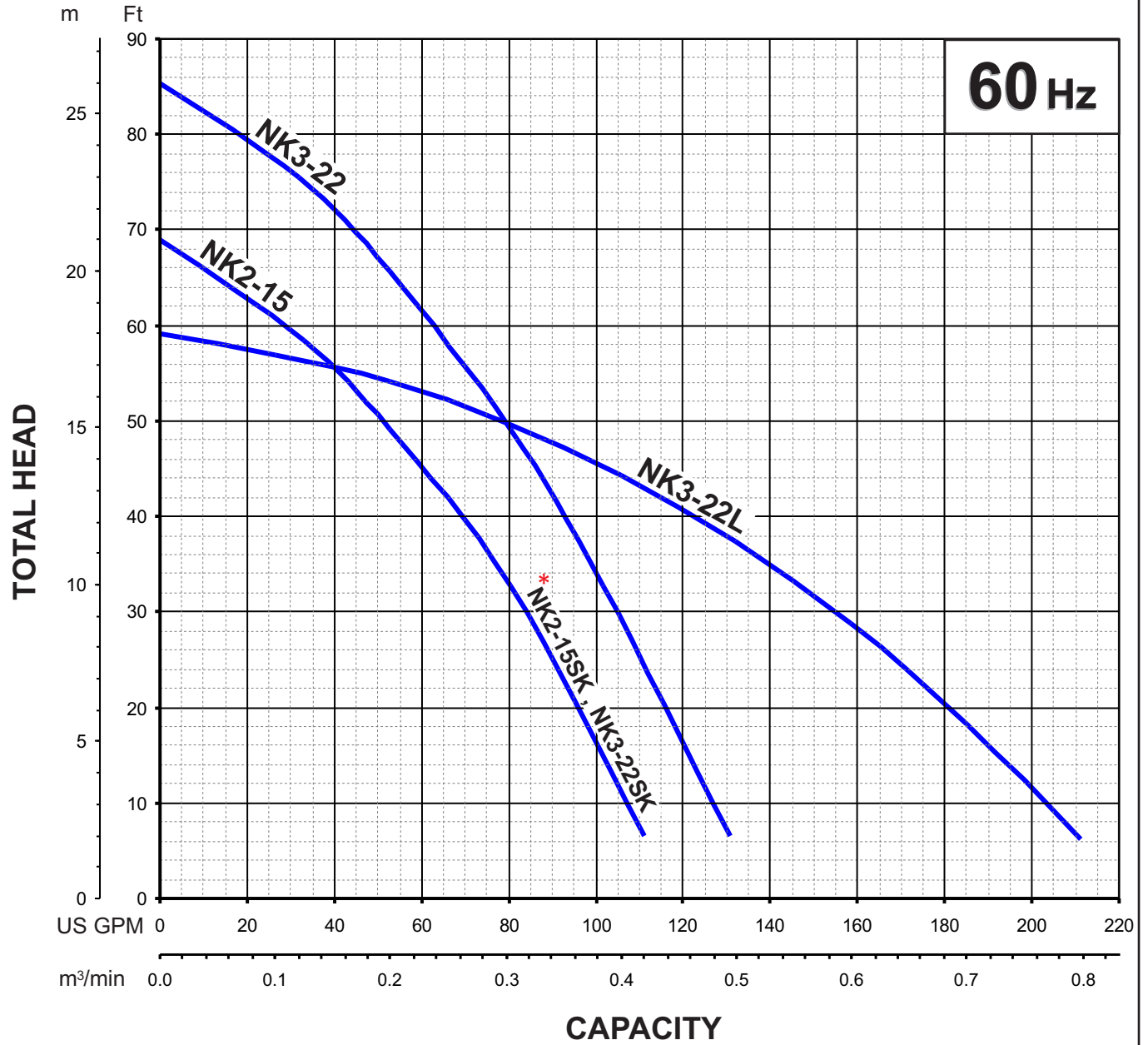
- Length as Required
- TS-301 Float Switch



**NK - SERIES**  
SEMI - VORTEX - DEWATERING & AGITATOR PUMPS

**PERFORMANCE RANGE**

**GROUP PERFORMANCE RANGE**



	Standard	High Torque
* Model	NK2-15SK 2HP(1.5kW)	NK3-22SK 3HP(2.2kW)

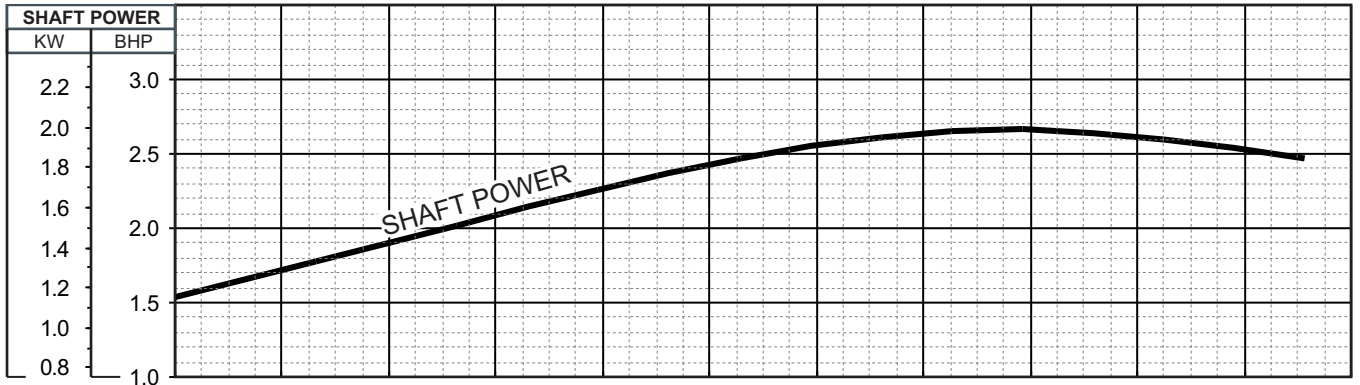
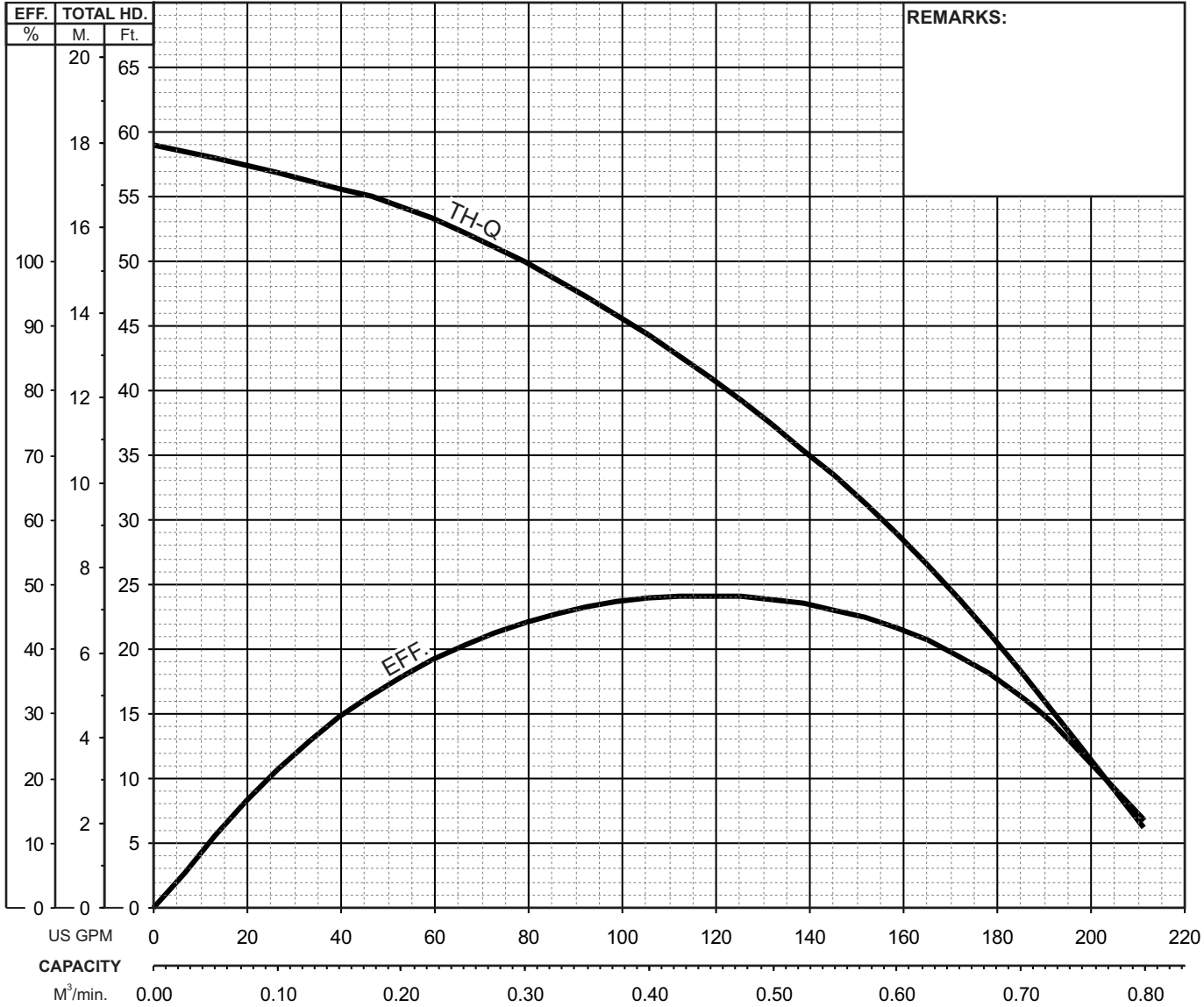
High Torque model further suitable for heavy duty application.



## NK - SERIES SEMI-VORTEX - DEWATERING PUMPS

## PERFORMANCE CURVE

MODEL	BORE	HP	KW	RPM	SOLIDS DIA	LIQUID	SG.	VISCOSITY	TEMP.
NK3-22L	3"/80mm	3	2.2	3465	0.334"/8.5mm	Water	1.0	1.123 cSt.	60°F
PUMP TYPE		PHASE	VOLTAGE	AMPERAGE	HZ	STARTING METHOD	INS. CLASS		
Semi-Vortex - Dewatering Pump		Single	220	13.0	60	Capacitor Start	B		
CURVE No.	DATE	PHASE	VOLTAGE	AMPERAGE	HZ	STARTING METHOD	INS. CLASS		
-	-	-	-	-	-	-	-		

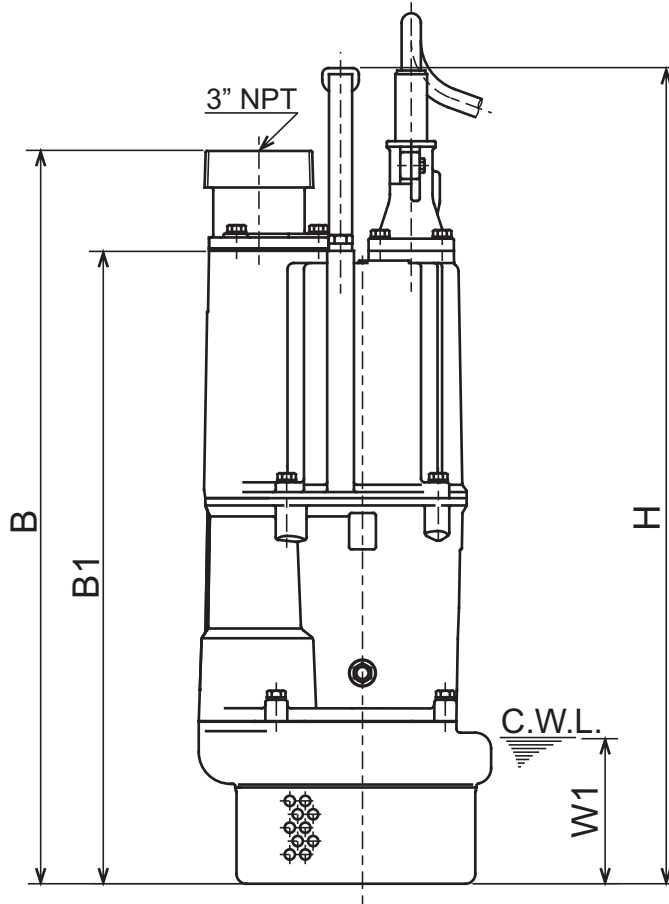
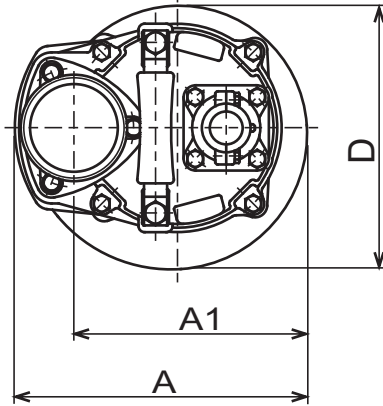




**NK - SERIES**  
**SEMI-VORTEX - DEWATERING PUMPS**

**DIMENSIONS**

**NK3-22L**



C.W.L. : Continuous running Water Level

**DIMENSIONS:USCS (Inch)**

Model	HP	NOM. SIZE	Pump & Motor						C.W.L.	*Wt.
			A	A1	B	B1	D	H	W1	(lbs.)
NK3-22L	3	3"	9 1/4	7 1/2	23 5/8	20 3/8	8 1/2	26 1/2	4 3/4	73

\* Excluding Cable

**DIMENSIONS:METRIC (mm)**

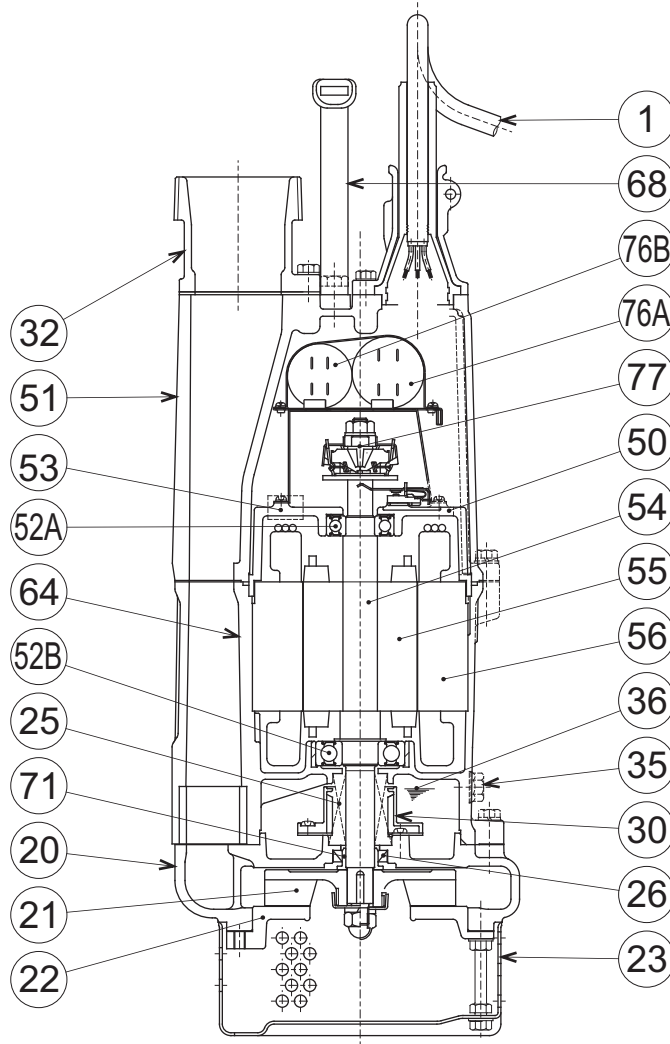
Model	kW	NOM. SIZE	Pump & Motor						C.W.L.	*Wt.
			A	A1	B	B1	D	H	W1	(kg)
NK3-22L	2.2	80	235	192	601	519	216	669	120	33.0



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**SECTIONAL VIEW**

**NK3-22L**



ITEM#	DESCRIPTION	MAIN MATERIAL / NOTE	RELATED ASTM, AISI CODE	RELATED EN CODE	Q'TY
1	Power Cable	Chloroprene Sheath AWG14/3-32ft			1
20	Pump Casing	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
21	Impeller	High Chrome Cast Iron	A532 ClassIII TypeA	DIN 1695 G-X260Cr27	1
22	Suction Cover	Ductile Cast Iron	A536 65-45-12	EN 1563 GJS-500-7	1
23	Suction Strainer	Steel (Cold Rolled)	A109/A1008	EN 10130	1
25	Mechanical Seal	Silicon Carbide / H-20T			1
26	Oil Seal	NBR Rubber / TC25388			1
30	Oil Lifter	PBT Resin			1
32	Discharge Connection	Cast Iron / NPT 3"	A48M Class30B	EN 1561 GJL-200	1
35	Oil Plug	Stainless Steel	S 30400	1.4301	1
36	Lubricant	Turbine Oil ISO VG32 or SAE 10W-20			
50	Motor Bracket	Cast Iron	A48M Class25B	EN 1561 GJL-150	1
51	Motor Head Cover	Aluminum Alloy Die Casting	B85 383.0	EN 1706 AC-46100	1
52A	Upper Bearing	#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
64	Motor Housing	Aluminium Alloy Casting	B108 333.0	EN 1706 AC-46200	1
68	Handle	Steel (Cold Rolled) + NBR Rubber	A109/A1008	EN 10130	1
71	Shaft Sleeve	Stainless Steel	S 30400	1.4301	1
76A	Capacitor				1
76B	Capacitor				1
77	Centrifugal Switch				1



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**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, 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. Pump(s) shall be of the top discharge, flow through design.

**2. MATERIALS OF CONSTRUCTION -**

Construction of major parts of the pumping unit(s) shall be as follows: Pump casing shall be synthetic rubber. Motor frame shall be aluminum alloy die casting. 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 \_\_\_\_\_" NPT discharge connector. Impellers shall be of the multi-vane, ductile cast iron, semi-vortex design, equipped with back pump out vanes and shall be slip fit to the shaft and keyed.

**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 the top mechanical seal, (down to one third of the standard oil level). The device shall not consume any additional electrical power. Mechanical seals shall be rated to preclude the incursion of water up to 13.9 PSI. (32 Ft.) submergence. Units shall have silicon carbide upper and lower mechanical seal faces. Mechanical seal hardware shall be stainless steel.

**4. MOTOR-**

The pump motor(s) shall be \_\_\_\_\_ Hp., \_\_\_\_\_ kW., \_\_\_\_\_ V., 60 Hz., 1 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 starts per hour. Motor(s) shall be air filled, copper wound, class B insulated with built in thermal and over amperage protection for each winding. Motor shaft shall be 403 stainless steel, fitted with a replaceable stainless steel shaft sleeve 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. Bearings on all units shall be single row, double shielded, C3, deep groove type ball bearing.

**5. POWER CABLE AND CABLE ENTRANCE -**

The pump power cable shall be suitable for submersible pump applications. The power cable shall be field replaceable utilizing standard submersible pump cable. The cable entrance shall incorporate built in strain relief and a combination three way mechanical compression seal with a fatigue reducing / thermal expansion 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.