



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

**SPECIFICATIONS**

**FEATURES**

1. Semi-vortex, Ductile Iron impeller with ethylene propylene casing, increases wear resistance when pumpage contains abrasive particles.
2. Double inside mechanical seals with silicon carbide faces, (both top and bottom) running in an oil filled chamber and further protected by a lip seal running against a replaceable, 430 stainless steel shaft sleeve, provides for the most durable seal design available.
3. Highly efficient, continuous duty air filled, copper wound motor with class B, insulation minimizes the cost of operation.
4. Built in thermal & amperage sensing, protector prevents motor failure due to-

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

**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
  - Upper Seal
  - Lower Seal
  - Elastomers
- Impeller Type
- Solids Handling Capability
- Bearings
- Motor Nomenclature
  - Type, Speed, Hz.
  - Voltage, Phase
  - Insulation
- Accessories
- Operational Mode

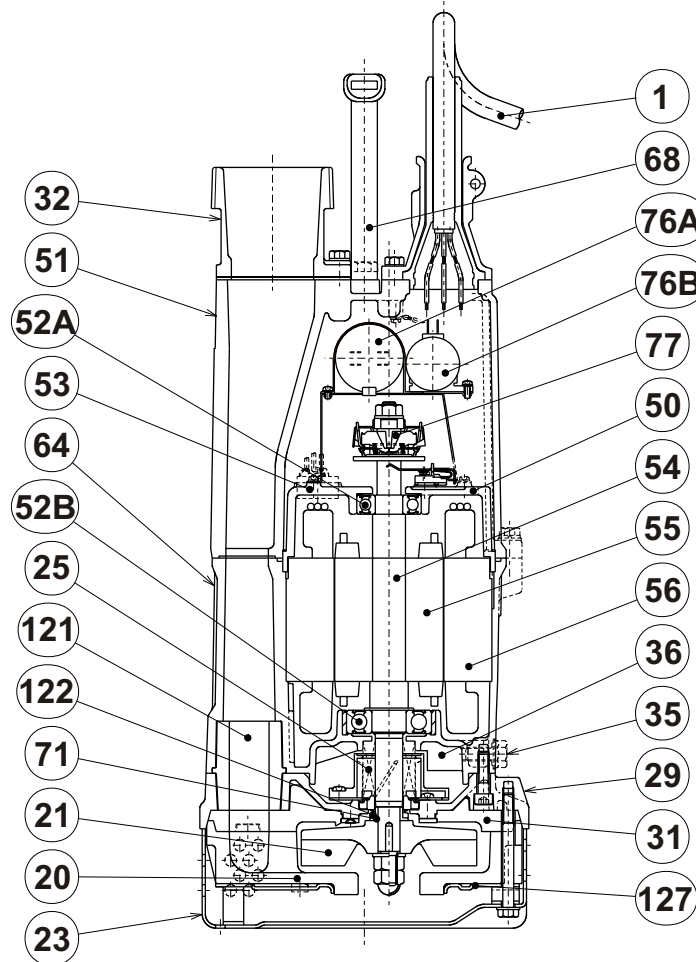
**STANDARD**

- 3" Npt (80 mm)
- 2 ~ 3 Hp. (1.5 ~ 2.2 Kw)
- 30 ~ 130 Gpm. (.11 ~ .49 m<sup>3</sup>/min)
- 6 ~ 74 Ft. (1.82 ~ 22.5 m)
- 130° F. (54.4° C.)
- Ethylene Propylene Rubber
- Ductile Cast Iron
- 403 Stainless Steel
- Aluminum alloy
- 304 Stainless Steel
- Silicon Carbide/Silicon Carbide
- Silicon Carbide/Silicon Carbide
- NBR (Nitril Buna Rubber)
- Semi-vortex, solids handling.
- Screen Size
- Prelubricated, Double Shielded
- Air Filled, 3600 Rpm, 60 Hz.
- 115/230 V., 1 Ph, 230 V. 1 Ph (NK2-22)
- Class B
- Submersible Power Cable 32' (9.75 m)
- Manual

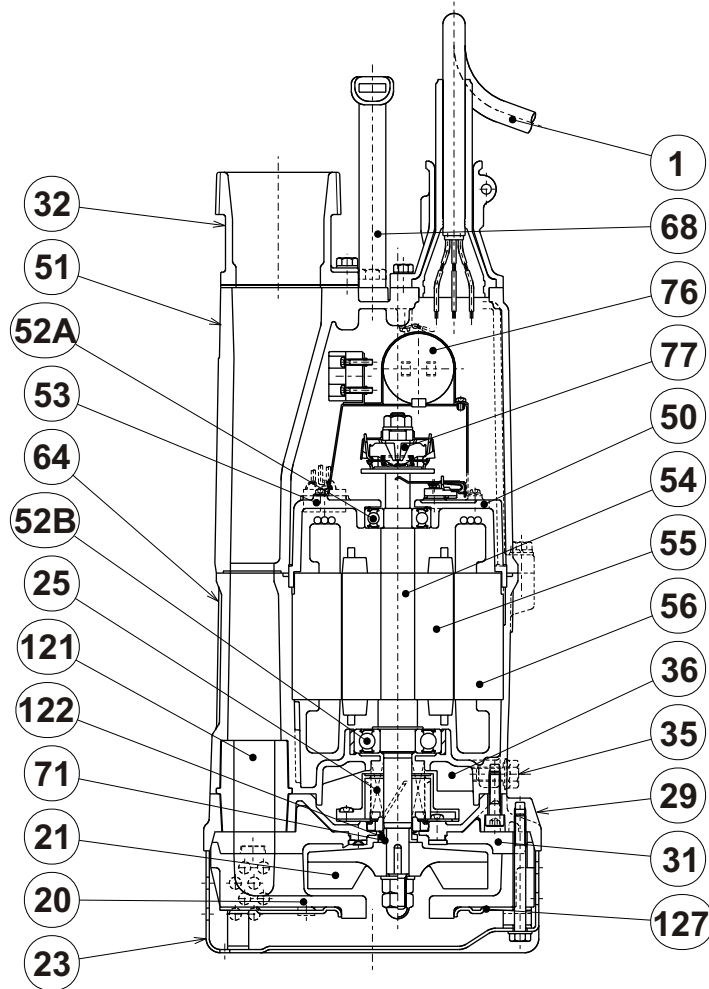
**OPTIONS**

- Length as Required
- TS-301 Float Switch

NK2-22



| ITEM# | DESCRIPTION          | MAIN MATERIAL / NOTE                    | ASTM, AISI CODE      | RELATED DIN CODE   | Q'TY |
|-------|----------------------|---|----------------------|--------------------|------|
| 1     | Power Cable          | Chloroprene Sheath AWG14/3-32ft         |                      |                    | 1    |
| 20    | Pump Casing          | Butadiene Rubber + Natural Rubber       |                      |                    | 1    |
| 21    | Impeller             | Ductile Cast Iron                       | A536 Grade 100-70-03 | 1693/GGG70         | 1    |
| 23    | Suction Strainer     | Carbon Steel                            | A109 Class 91        | 1624-87 St 2,3,4   | 1    |
| 25    | Mechanical Seal      | Silicon Carbide / H-20                  |                      |                    | 1    |
|       | Oil Lifter           | ABS Resin                               |                      |                    | 1    |
| 29    | Oil Casing           | Aluminum Alloy Die Casting              | B85 , A383           | N/A (BS Code LM 2) | 1    |
| 31    | Wear Ring            | Butadiene Rubber + Natural Rubber       |                      |                    | 1    |
| 32    | Discharge Connection | Cast Iron / NPT 2" (3")                 | 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        | Cast Iron                               | A48 Class 30         | 1691/GG15          | 1    |
| 51    | Motor Head Cover     | Aluminum Alloy Die Casting              | B85 , A383           | N/A (BS Code LM 2) | 1    |
| 52A   | Upper Bearing        | #6204ZZC3                               |                      |                    | 1    |
| 52B   | Lower Bearing        | #6305ZZC3                               |                      |                    | 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 + Nitrile Butadiene Rubber | A109 Class 91        | 1624-87 St 2,3,4   | 1    |
| 71    | Shaft Sleeve         | Stainless Steel                         | AISI 304             | 17440 X5 CrNi 18-9 | 1    |
| 76A   | Capacitor            |   |                      |                    | 1    |
| 76B   | Capacitor            |   |                      |                    | 1    |
| 77    | Centrifugal Switch   |   |                      |                    | 1    |
| 121   | Duct Sleeve          | Styrene Butadiene Rubber                |                      |                    | 1    |
| 122   | V-Ring               | Nitrile Butadiene Rubber                |                      |                    | 1    |
| 127   | Fixing Plate         | Carbon Steel                            | A109 Class 91        | 1624-87 St 2,3,4   | 1    |

**NK2-15**


| ITEM# | DESCRIPTION          | MAIN MATERIAL / NOTE                    | ASTM, AISI CODE      | RELATED DIN CODE   | Q'TY |
|-------|----------------------|---|----------------------|--------------------|------|
| 1     | Power Cable          | Chloroprene Sheath AWG12/3-32ft         |                      |                    | 1    |
| 20    | Pump Casing          | Butadiene Rubber + Natural Rubber       |                      |                    | 1    |
| 21    | Impeller             | Ductile Cast Iron                       | A536 Grade 100-70-03 | 1693/GGG70         | 1    |
| 23    | Suction Strainer     | Carbon Steel                            | A109 Class 91        | 1624-87 St 2,3,4   | 1    |
| 25    | Mechanical Seal      | Silicon Carbide / H-20                  |                      |                    | 1    |
|       | Oil Lifter           | ABS Resin                               |                      |                    | 1    |
| 29    | Oil Casing           | Aluminum Alloy Die Casting              | B85 , A383           | N/A (BS Code LM 2) | 1    |
| 31    | Wear Ring            | Butadiene Rubber + Natural Rubber       |                      |                    | 1    |
| 32    | Discharge Connection | Cast Iron / NPT 2" (3")                 | 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        | Cast Iron                               | A48 Class 30         | 1691/GG15          | 1    |
| 51    | Motor Head Cover     | Aluminum Alloy Die Casting              | B85 , A383           | N/A (BS Code LM 2) | 1    |
| 52A   | Upper Bearing        | #6204ZZC3                               |                      |                    | 1    |
| 52B   | Lower Bearing        | #6305ZZC3                               |                      |                    | 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 + Nitrile Butadiene 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    |
| 77    | Centrifugal Switch   |   |                      |                    | 1    |
| 121   | Duct Sleeve          | Styrene Butadiene Rubber                |                      |                    | 1    |
| 122   | V-Ring               | Nitrile Butadiene Rubber                |                      |                    | 1    |
| 127   | Fixing Plate         | Carbon Steel                            | A109 Class 91        | 1624-87 St 2,3,4   | 1    |

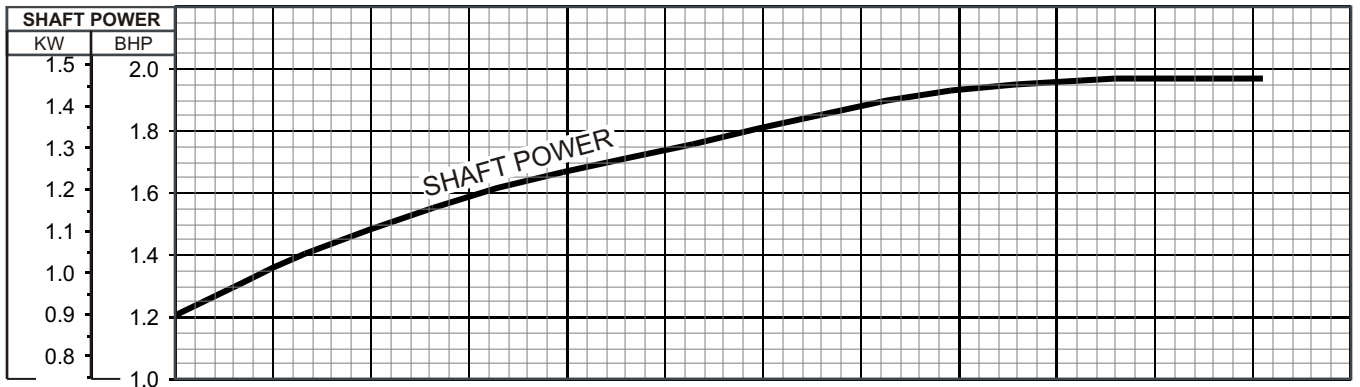
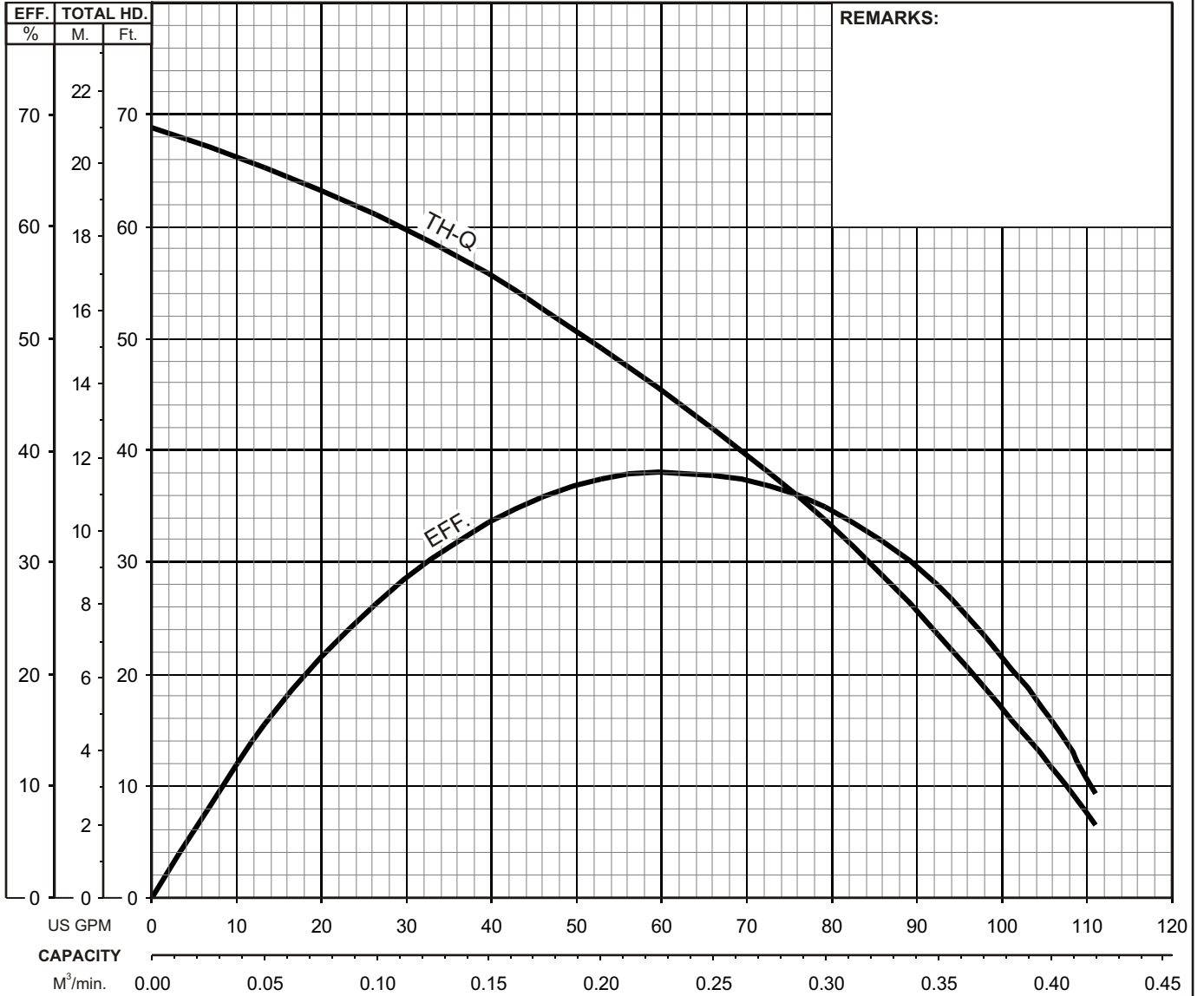




## NK - SERIES SEMI-VORTEX - DEWATERING PUMPS

## PERFORMANCE CURVE

| MODEL                       | BORE    | HP              | KW                  | RPM      | SOLIDS DIA      | LIQUID          | SG.        | VISCOSITY | TEMP. |
|-----------------------------|---------|-----------------|---------------------|----------|-----------------|-----------------|------------|-----------|-------|
| NK2-15                      | 3"/80mm | 2               | 1.5                 | 3440     | 0.334"/8.5mm    | Water           | 1.0        | 1.81 CST  | 60°F  |
| PUMP TYPE                   | PHASE   | VOLTAGE         | AMPERAGE            | HZ       | STARTING METHOD | INS. CLASS      |            |           |       |
| Semi-Vortex Dewatering Pump | Single  | 110/115/220/230 | 23.0/22.0/11.5/11.0 | 60       | Capacitor Start | B               |            |           |       |
| CURVE No.                   | DATE    | PHASE           | VOLTAGE             | AMPERAGE | HZ              | STARTING METHOD | INS. CLASS |           |       |
| -                           | -       | -               | -                   | -        | -               | -               | -          |           |       |




**TSURUMI PUMP**
**NK - SERIES  
SEMI-VORTEX - DEWATERING 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, 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 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 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 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 rated to preclude the incursion of water up to 42.6 PSI. (98.4 Ft.) submergence. Units shall have silicon carbide versus 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 20 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. Motors 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. 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.

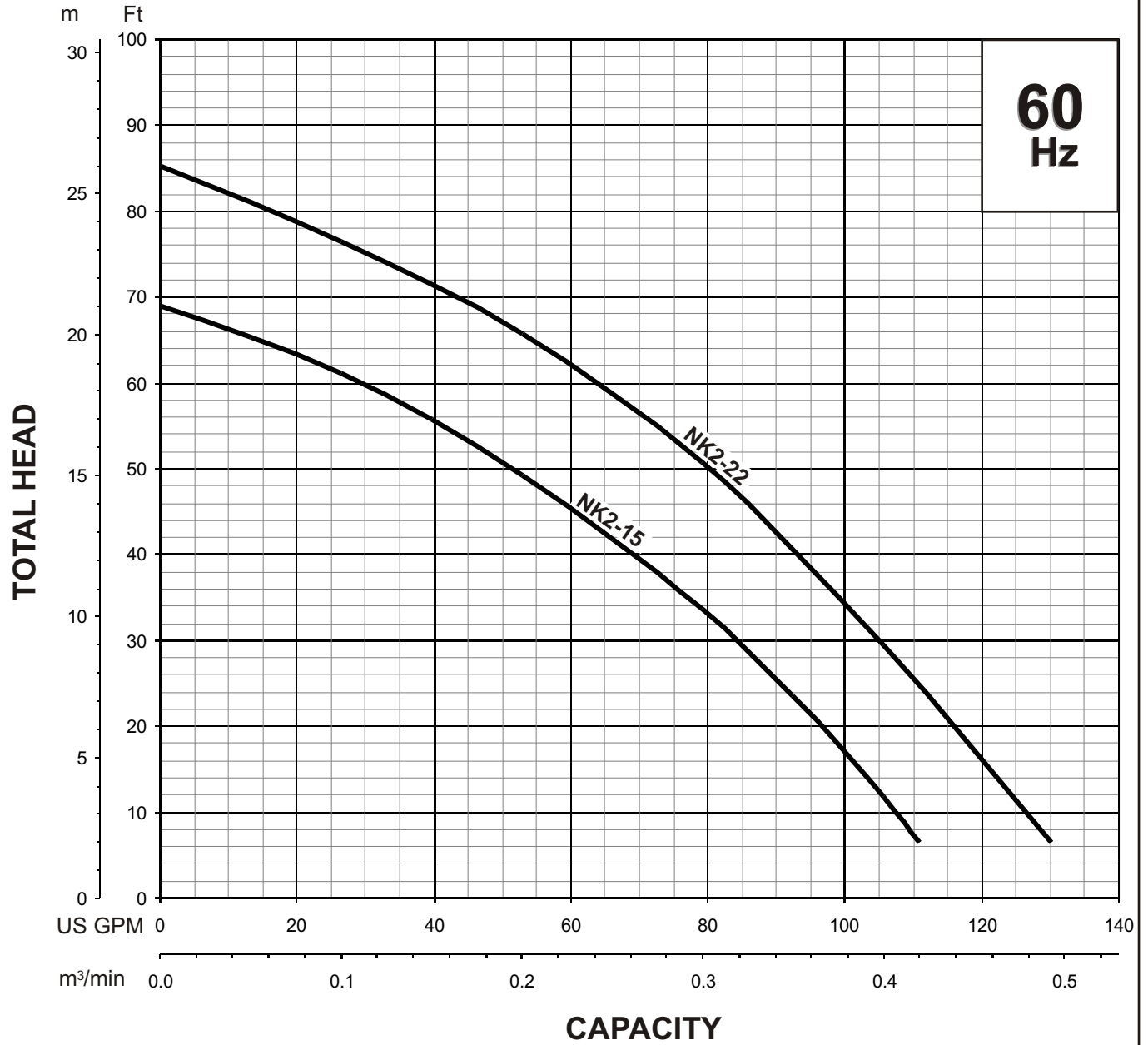


**TSURUMI PUMP**

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

**PERFORMANCE  
RANGE**

**GROUP PERFORMANCE RANGE**

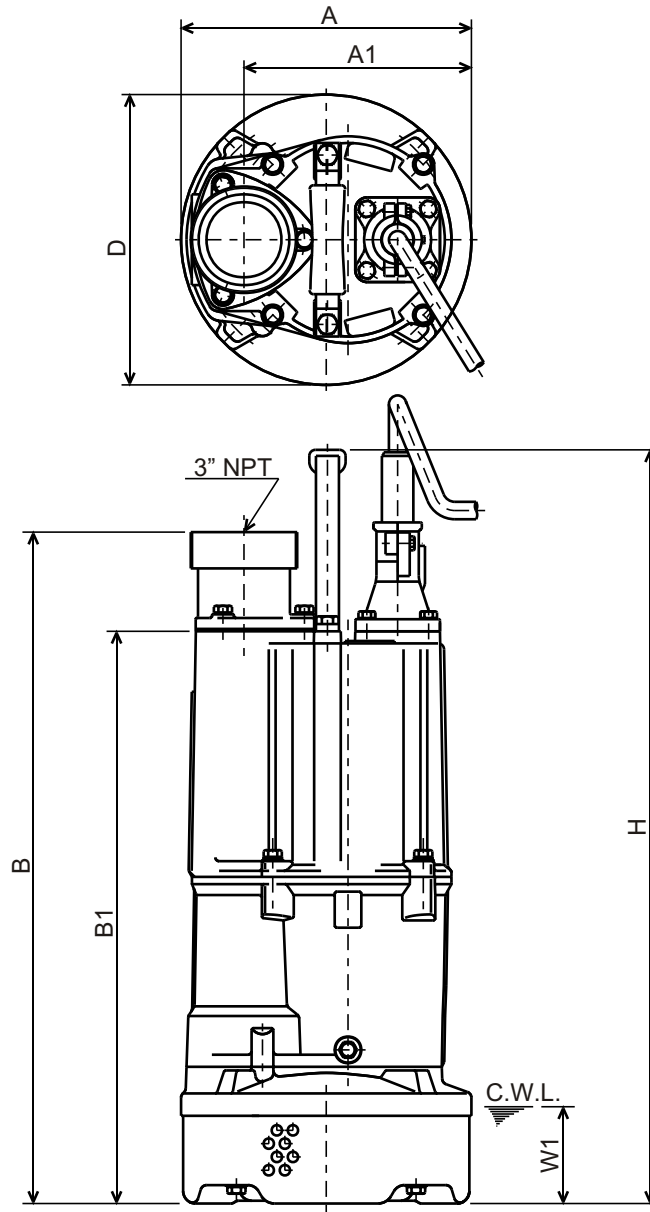




**NK - SERIES  
SEMI-VORTEX - DEWATERING PUMPS**

**DIMENSIONS**

**NK2-15  
NK2-22**



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     |            |
| NK2-15 | 2  | 3"        | 9 7/16       | 7 3/8 | 21 7/8 | 18 5/8 | 9 7/16 | 24 1/2 | 3 1/4  | 63.5       |
| NK2-22 | 3  | 3"        | 9 7/16       | 7 3/8 | 21 7/8 | 18 5/8 | 9 7/16 | 24 1/2 | 3 1/4  | 64         |

**DIMENSIONS:METRIC (mm)**

| Model  | kW  | NOM. SIZE | Pump & Motor |     |     |     |     |     | C.W.L. | Wt. (kg) |
|--------|-----|-----------|--------------|-----|-----|-----|-----|-----|--------|----------|
|        |     |           | A            | A1  | B   | B1  | D   | H   | W1     |          |
| NK2-15 | 1.5 | 80        | 240          | 188 | 555 | 473 | 240 | 623 | 80     | 28.8     |
| NK2-22 | 2.2 | 80        | 240          | 188 | 555 | 473 | 240 | 623 | 80     | 29.0     |