

| SPECIFICATIONS   | Model        | KRS1022                     |              |              |              |              |              |              |  |
|--|--------------|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--|
|  |              | KRS-series<br>22kW, 3-phase |              |              |              |              |              |              |  |
| <p><b>Type of Pump</b><br/>Submersible high volume drainage pump for construction and foundation works, floodwater drainage, etc.</p> <p><b>Type of Fluid</b><br/>Stormwater, groundwater, wash water, and sand-carrying water</p> <p>Temperature: 0 to 40°C<br/>(High temperature model available on special request)</p> <p><b>Discharge Bore &amp; Connection</b><br/>250mm, Hose Coupling</p> <p><b>Motor Output</b><br/>22kW</p> <p><b>Power Supply</b><br/>Three-phase</p> <p><b>Starting Method</b><br/>Direct on Line (Star-Delta available on special request)</p> <p><b>Motor</b><br/>Continuous-duty rated, dry-type induction motor</p> <p>Insulation Class: F<br/>Degree of Protection: IP68</p> <p>No. of Poles &amp; Speed (Synchronous Speed)<br/>4-pole, 1500/1800min<sup>-1</sup> (50/60Hz)</p> <p>Power Supply Voltages &amp; Rated Currents</p> <table border="0"> <tr> <td>50Hz</td> <td>60Hz</td> </tr> <tr> <td>380V – 47.3A</td> <td>220V – 80.3A</td> </tr> <tr> <td>400V – 45.7A</td> <td>380V – 47.3A</td> </tr> <tr> <td>415V – 45.1A</td> <td>440V – 40.7A</td> </tr> </table> <p><b>Power Cable</b><br/>Sheath: Chloroprene rubber<br/>Standard Length: 10m<br/>200 to 600V supply:<br/>1 x 4 x 22mm<sup>2</sup>, O.D. 31.6mm</p> <p><b>Dry Weight</b> (excluding cable)<br/>390kg</p> | 50Hz         | 60Hz                        | 380V – 47.3A | 220V – 80.3A | 400V – 45.7A | 380V – 47.3A | 415V – 45.1A | 440V – 40.7A | <p><b>Impeller</b><br/>Closed Impeller made of ductile cast iron</p> <p>Solids Passage<br/>50Hz – <math>\phi</math>25mm<br/>60Hz – <math>\phi</math>25mm</p> <p><b>Cable Entry with Anti-Wicking Block</b><br/>Watertight cable entry with strain-relief device. The anti-wicking block prevents water incursion due to capillary action should the power cable be damaged or the end submerged.</p> <p><b>Bearing</b><br/>Permanently lubricated, deep-groove, double-shielded C3 ball bearings</p> <p><b>Shaft</b><br/>420 stainless steel</p> <p><b>Shaft Seal (Mechanical Seal)</b><br/>Furnished with a double-face mechanical seal located in oil chamber. Both upper and lower seal faces always run in a clean environment.</p> <p>Upper Seal Face: SiC + SiC<br/>Lower Seal Face: SiC + SiC</p> <p><b>Oil Seal (Lip Seal)</b><br/>Used as a “Dust Seal”; it protects the mechanical seal from abrasive particles.</p> <p><b>OIL LIFTER (Patented)</b><br/>Equipped in oil chamber. It forcibly supplies lubricating oil to the mechanical seal and continues to supply the oil to the upper seal faces even if lubricant falls below the rated volume.</p> <p>Type of Lubricating Oil &amp; Volume<br/>Turbine Oil (ISO VG32), 4000ml</p> <p><b>Motor Protection Device</b><br/>A circle thermal protector built in the motor housing. Directly cuts the motor circuit if excessive heat builds up or an overcurrent condition occurs in the motor.</p> |
| 50Hz   | 60Hz         |                             |              |              |              |              |              |              |  |
| 380V – 47.3A   | 220V – 80.3A |                             |              |              |              |              |              |              |  |
| 400V – 45.7A   | 380V – 47.3A |                             |              |              |              |              |              |              |  |
| 415V – 45.1A   | 440V – 40.7A |                             |              |              |              |              |              |              |  |

NO. A-20750-1

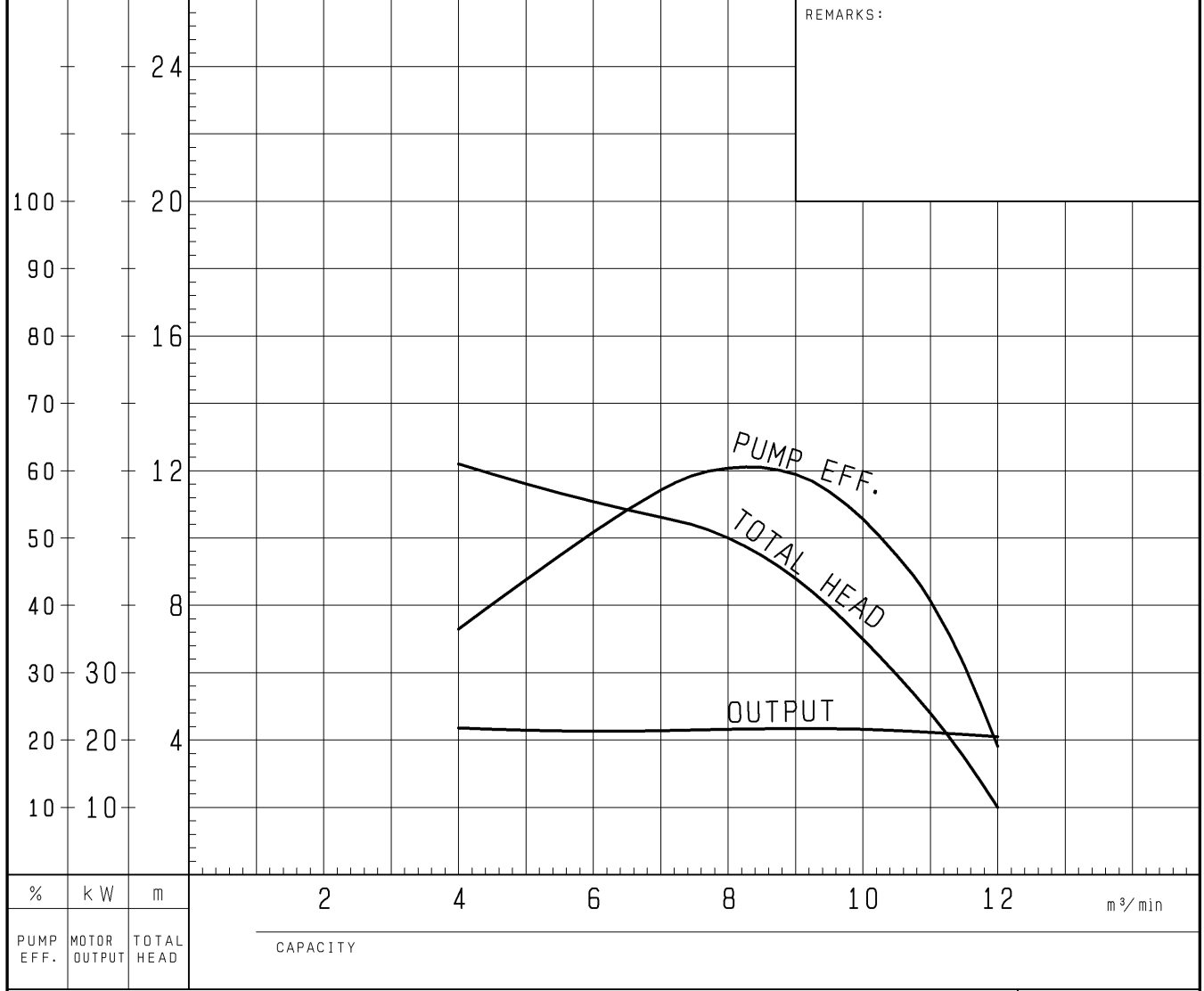
# PUMP PERFORMANCE CURVES

|   |                      |                    |
|---|----------------------|--------------------|
| TYPE<br>SUBMERSIBLE GENERAL DEWATERING PUMP | MODEL<br>KRS1022 -51 | FREQUENCY<br>50 Hz |
|---|----------------------|--------------------|

CUSTOMER'S NAME \_\_\_\_\_

EQUIPMENT TITLE \_\_\_\_\_ NO. \_\_\_\_\_

|                    | STANDARD SPECIFICATIONS            | REQUIRED SPECIFICATIONS |
|--------------------|------------------------------------|-------------------------|
| DISCHARGE BORE     | 250 mm                             | mm                      |
| TOTAL HEAD         | 10 m                               | m                       |
| CAPACITY           | 8 m <sup>3</sup> /min              | m <sup>3</sup> /min     |
| MOTOR OUTPUT       | 22 kW                              | kW                      |
| PHASE × VOLTAGE    | 3 φ × V                            | φ × V                   |
| CURRENT            | A                                  | A                       |
| POLES / REVOLUTION | 4 P / S. S. 1500 min <sup>-1</sup> | P / min <sup>-1</sup>   |
| STARTING METHOD    | DIRECT ON LINE                     |                         |
| INSULATION CLASS   | F                                  |                         |

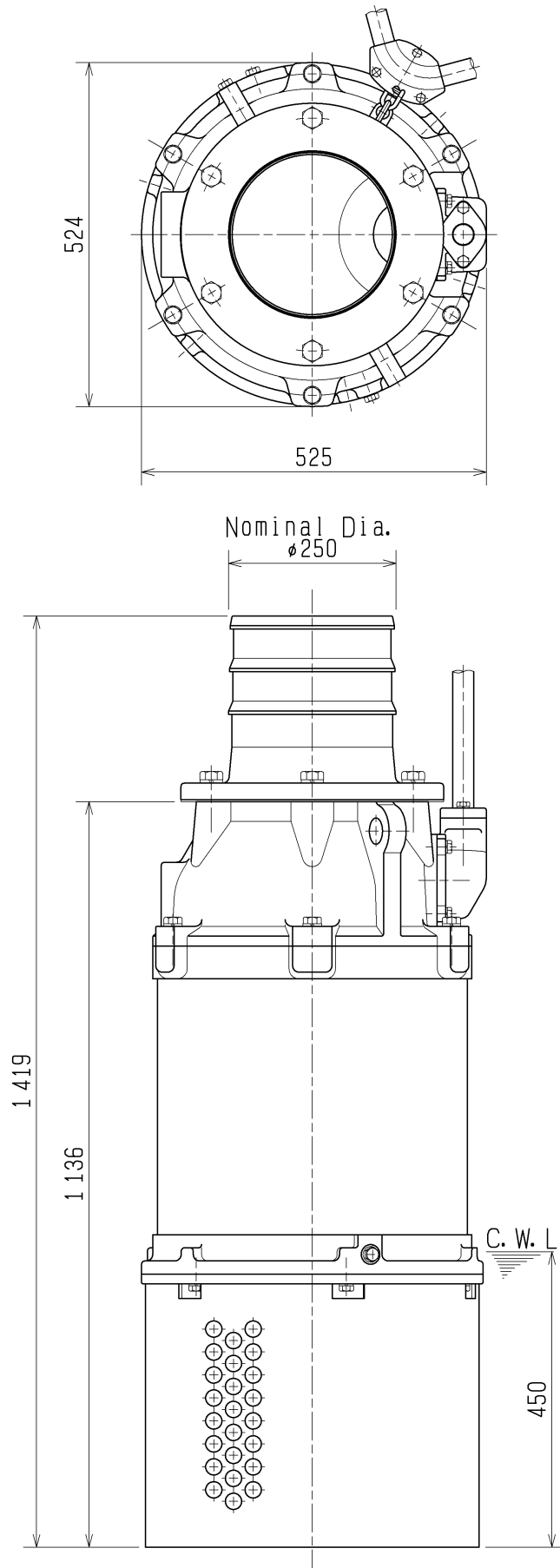


TSURUMI MFG. CO., LTD.

|                   |                                     |       |                |           |
|-------------------|-------------------------------------|-------|----------------|-----------|
| DIMENSION DRAWING |                                     | No.   | No.            | A-20754-1 |
| TYPE              | SUBMERSIBLE GENERAL DEWATERING PUMP | MODEL | KRS1022 -51/61 |           |

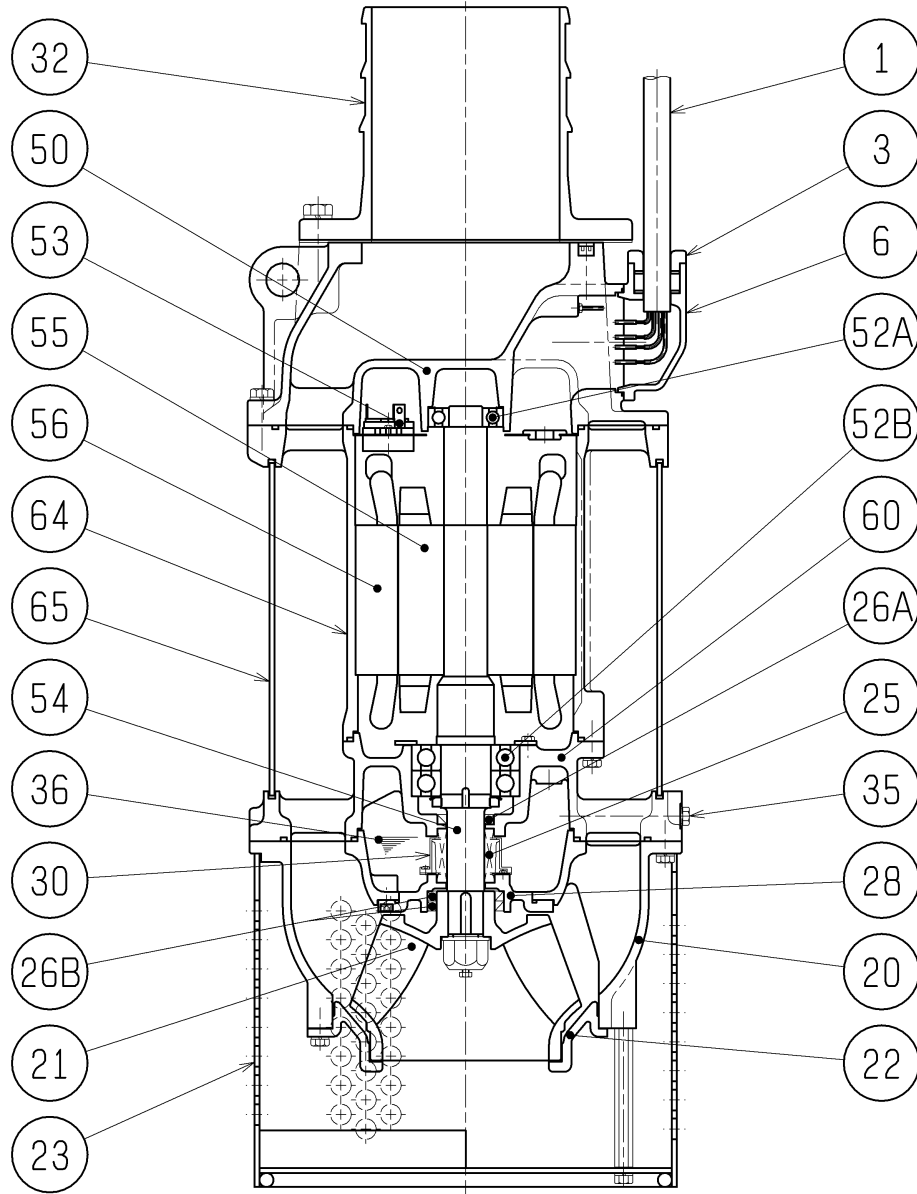
Approximate Weight (※)  
390kg

※excluding cable



C. W. L. :Continuous running Water Level

|                          |                                     |       |                |
|--------------------------|-------------------------------------|-------|----------------|
| <b>SECTIONAL DRAWING</b> |                                     | No.   | No. A-20757-2  |
| TYPE                     | SUBMERSIBLE GENERAL DEWATERING PUMP | MODEL | KRS1022 -51/61 |



| REQ. SPECIFICATION |
|--------------------|
|                    |
|                    |
|                    |

| No. | DESCRIPTION     | Q'TY | MATERIAL / NOTE      | No. | DESCRIPTION     | Q'TY | MATERIAL / NOTE        |
|-----|-----------------|------|----------------------|-----|-----------------|------|------------------------|
| 1   | Cable           | 1    | Chloroprene Sheath   | 36  | Lubricant       |      | Turbine Oil (ISO VG32) |
| 3   | Gland           | 1    | Gray Iron Casting    | 50  | Motor Bracket   | 1    | Gray Iron Casting      |
| 6   | Stuffing Box    | 1    | Gray Iron Casting    | 52A | Upper Bearing   | 1    | 6308ZC3                |
| 20  | Pump Casing     | 1    | Gray Iron Casting    | 52B | Lower Bearing   | 1    | 6312ZZD2C3             |
| 21  | Impeller        | 1    | Ductile Iron Casting | 53  | Motor Protector | 1    |                        |
| 22  | Suction Cover   | 1    | Gray Iron Casting    | 54  | Shaft           | 1    | Stainless Steel 420J2  |
| 23  | Strainer Stand  | 1    | Structure Steel      | 55  | Rotor           | 1    |                        |
| 25  | Mechanical Seal | 1    | H-45X                | 56  | Stator          | 1    |                        |
| 26A | Oil Seal        | 1    | TC456812             | 60  | Bearing Housing | 1    | Gray Iron Casting      |
| 26B | Oil Seal        | 2    | TC709212             | 64  | Motor Flame     | 1    | Gray Iron Casting      |
| 28  | Seal Housing    | 1    | Gray Iron Casting    | 65  | Outer Cover     | 1    | Structure Steel        |
| 30  | Oil Lifter      | 1    | Plastic              |     |                 |      |                        |
| 32  | Hose Coupling   | 1    | Gray Iron Casting    |     |                 |      |                        |
| 35  | Oil Plug        | 3    | Stainless Steel 304  |     |                 |      |                        |