



BZ - SERIES

SINGLE VANE - SEWAGE & WASTE WATER PUMPS

SPECIFICATIONS

■ FEATURES

1. Single Vane, Cast Iron, impeller passes 3" diameter solids without clogging providing for highly efficient pumping of raw sewage and waste water.
2. Double inside mechanical seals with silicon carbide faces, running in an oil filled chamber and further protected by a lip seal, provides for the most durable seal design available.
3. Highly efficient, continuous duty, air filled, copper wound motor with class F, insulation minimizes the cost of operation.
4. Built in thermal & amperage sensing, protector prevents motor failure due to overloading, single phasing (in three phase units), 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.

■ APPLICATIONS

1. Residential, commercial, industrial sewage, effluent, wastewater and site drainage.
2. Decorative waterfalls, fountains and fish ponds.
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

4" Npt (100 mm)
 2 ~15 Hp. (1.5 ~ 11 kW)
 105.7 ~ 951.0 Gpm. (.40 ~ 3.60 m³/min)
 21.0 Ft. ~ 101.7Ft. (6.4 ~ 31.0 m)
 104° F. (40° C.)

 ASTM 48 Class 35 Cast Iron
 ASTM 48 Class 35 Cast Iron
 420,403 Stainless Steel
 ASTM 48 Class 35 Cast Iron
 304 Stainless Steel

 Silicon Carbide
 NBR (Nitril Buna Rubber)

 Enclosed Single Vane, solids handling.
 3.15" (80 mm)

 Pre-lubricated, Double Shielded

 Air Filled, 1800 Rpm, 60 Hz.
 208-230, 230 or 440, 460 or 575 V.
 (3 Phase)

 Class F
 Submersible Power Cable 32' (10 m)
 Manual

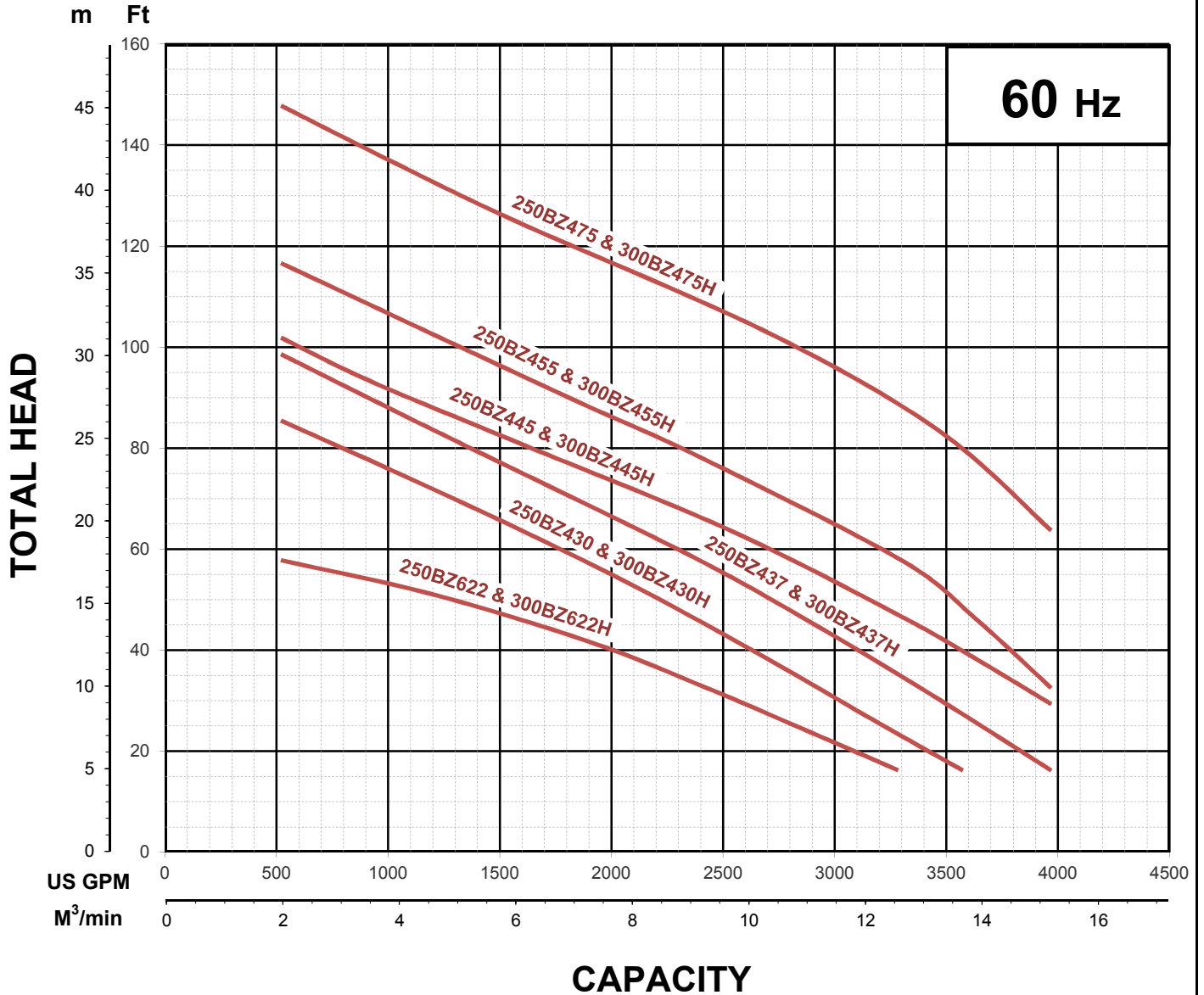
■ OPTIONS

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

 Length as Required

 Model
 TOS Slide rail system

GROUP PERFORMANCE RANGE



Note

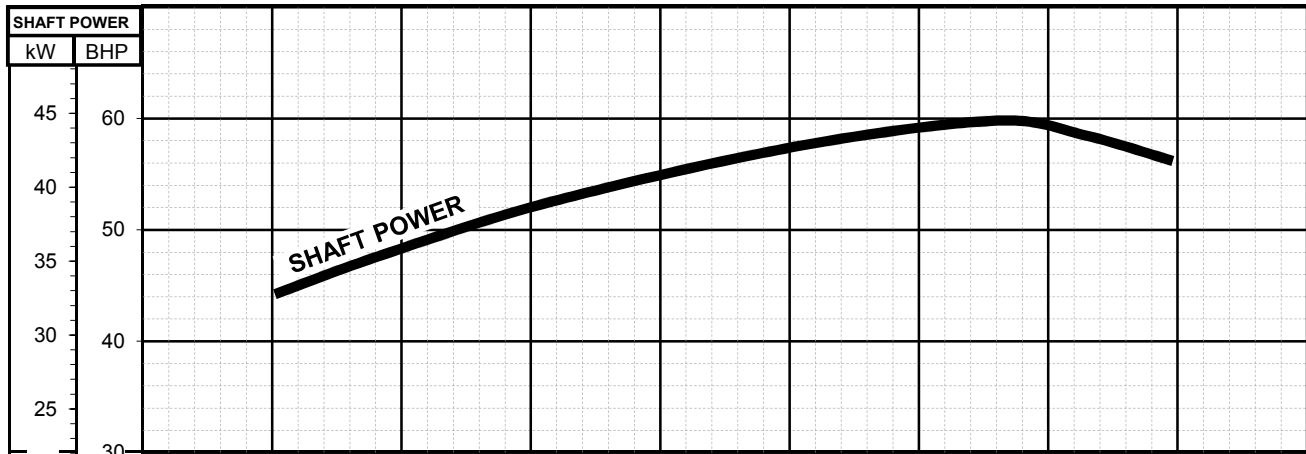
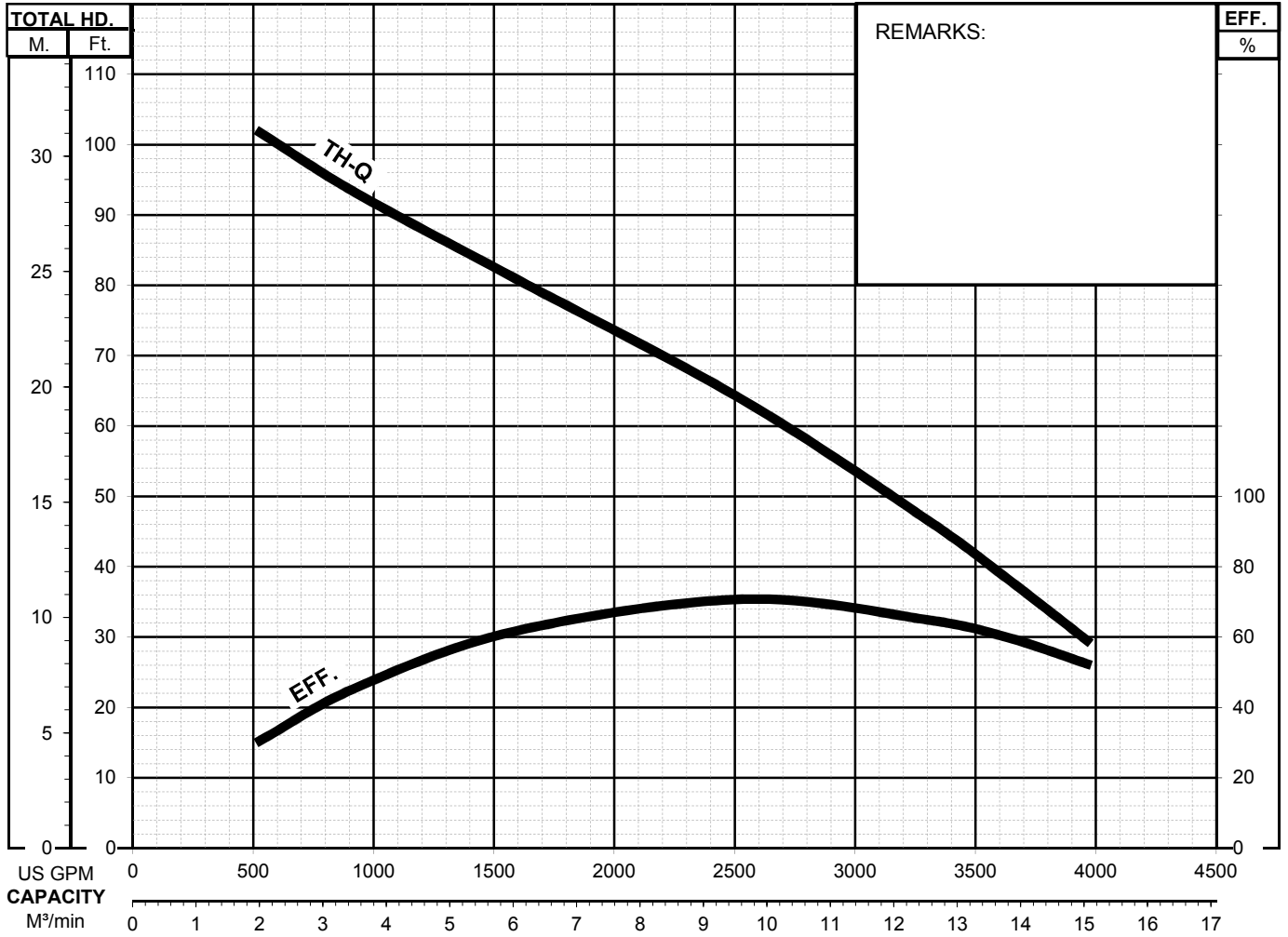


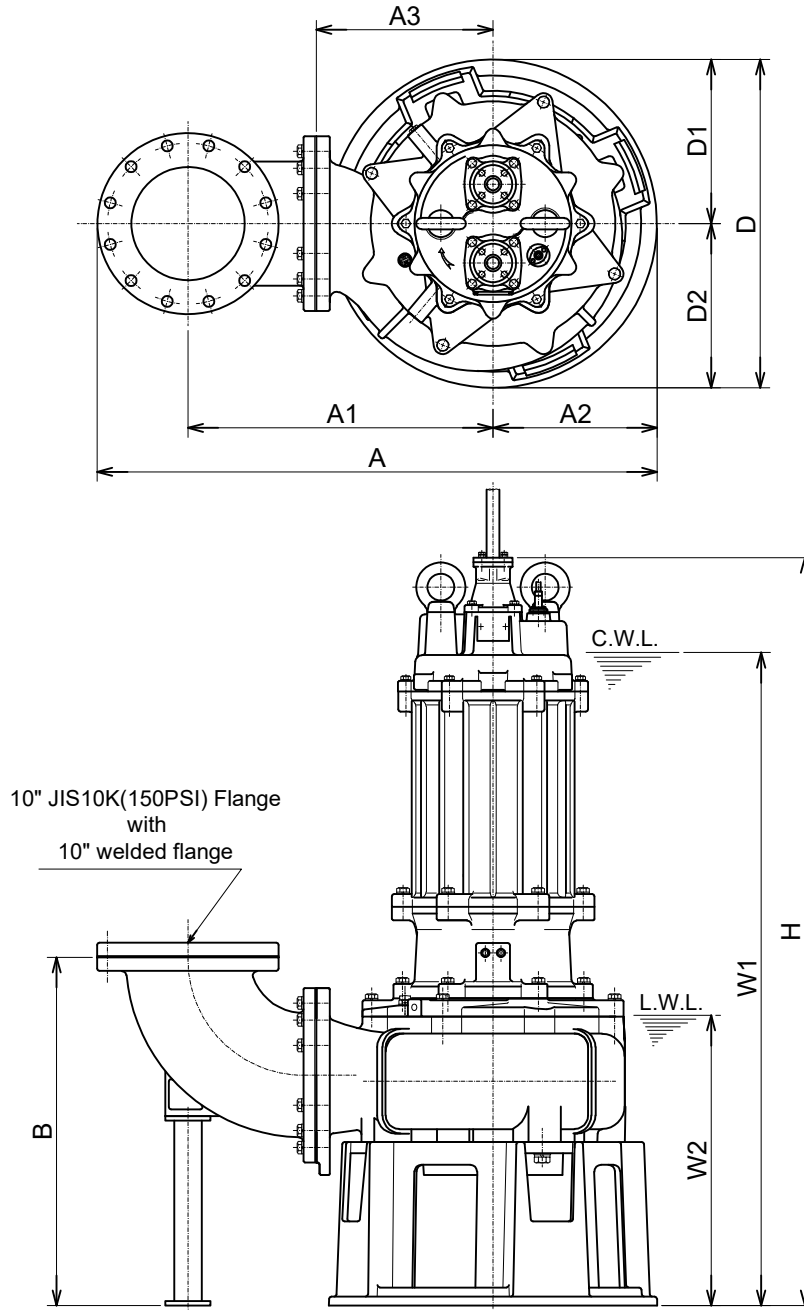
BZ - SERIES

SEWAGE & WASTEWATER PUMPS

PERFORMANCE CURVE

| | | | | | | | | | |
|--------------------------|--------------|----------------|-----------------|-----------------|--------------------|------------------------|-------------------|-------------------|--------------|
| MODEL | BORE | HP | kW | RPM | SOLIDS DIA. | LIQUID | SG. | VISCOSITY | TEMP. |
| (TO)250BZ445 -61 | 10"/250mm | 60 | 45 | SS 1800 | 3.11"/79mm | Water | 1.0 | 1.123cSt. | 60°F |
| PUMP TYPE | PHASE | VOLTAGE | AMPERAGE | | HZ | STARTING METHOD | | INS. CLASS | |
| Sewage & Wastewater Pump | 3 | 460 / 575 | - / - | | 60 | Star-Delta | | F | |
| CURVE No. | DATE | PHASE | VOLTAGE | AMPERAGE | HZ | STARTING METHOD | INS. CLASS | | |
| - | - | - | - | - | - | - | - | | |





250BZ622 -61
250BZ437 -61
250BZ445 -61

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

DIMENSIONS:USCS (Inch)

| Model | HP | NOM. SIZE | Pump & Motor | | | | | | | | | C.W.L. | L.W.L. | *Wt. (lbs.) |
|-------------|----|-----------|--------------|--------|--------|--------|--------|--------|--------|--------|----------|--------|--------|-------------|
| | | | A | A1 | A2 | A3 | B | D | D1 | D2 | H | | | |
| 250BZ622-61 | 30 | 10" | 48 5/8 | 26 1/2 | 14 1/4 | 15 3/8 | 30 1/4 | 28 1/2 | 14 1/4 | 14 1/4 | 64 15/16 | 56 3/4 | 25 1/4 | 1790 |
| 250BZ437-61 | 50 | 10" | 48 5/8 | 26 1/2 | 14 1/4 | 15 3/8 | 30 1/4 | 28 1/2 | 14 1/4 | 14 1/4 | 64 1/2 | 56 1/4 | 25 1/4 | 1940 |
| 250BZ445-61 | 60 | 10" | 48 5/8 | 26 1/2 | 14 1/4 | 15 3/8 | 30 1/4 | 28 1/2 | 14 1/4 | 14 1/4 | 64 15/16 | 56 3/4 | 25 1/4 | 1960 |

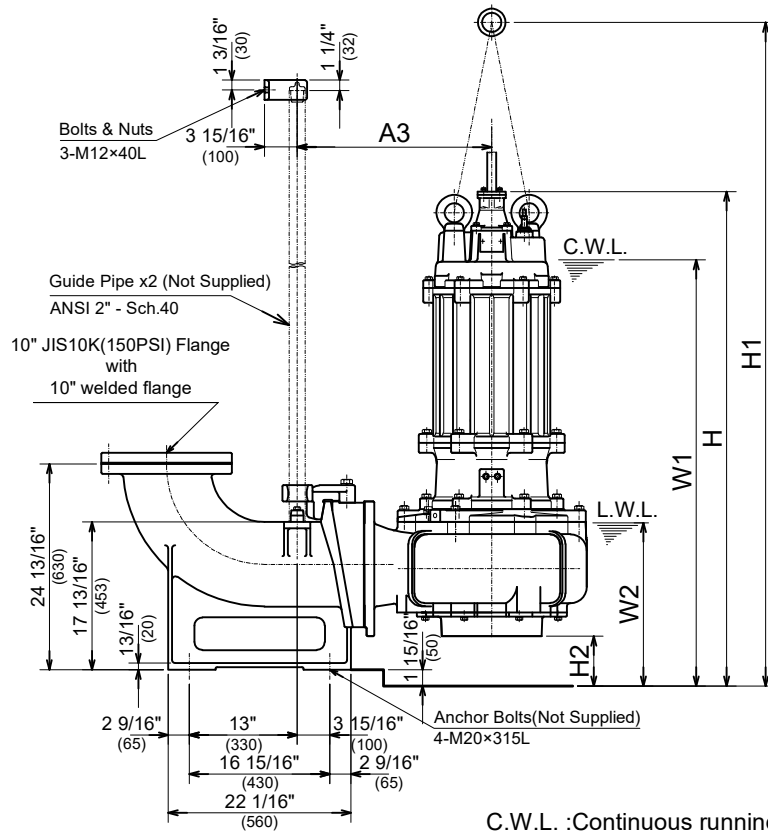
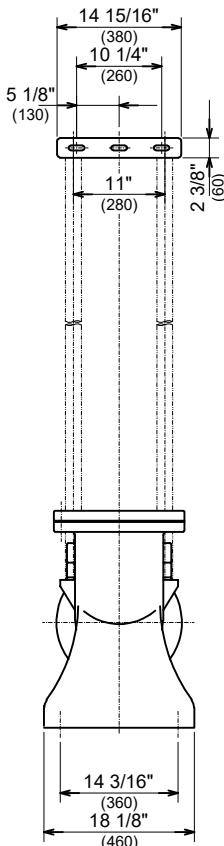
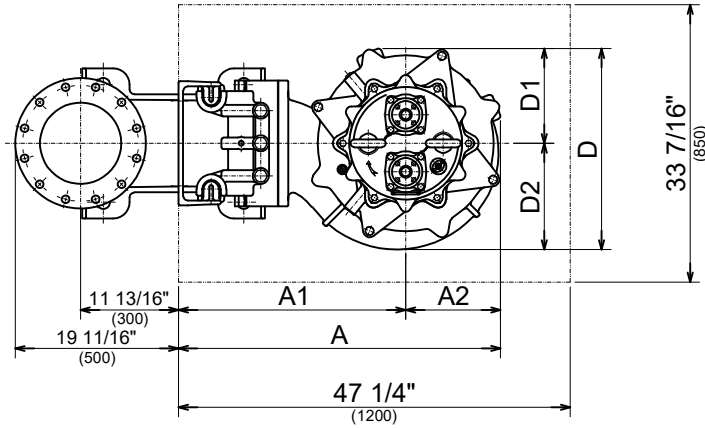
DIMENSIONS:METRIC (mm)

*Excluding Cable

| Model | kW | NOM. SIZE | Pump & Motor | | | | | | | | | C.W.L. | L.W.L. | *Wt. (kg) |
|-------------|----|-----------|--------------|-----|-----|-----|-----|-----|-----|-----|------|--------|--------|-----------|
| | | | A | A1 | A2 | A3 | B | D | D1 | D2 | H | | | |
| 250BZ622-61 | 22 | 250 | 1235 | 673 | 362 | 390 | 768 | 724 | 362 | 362 | 1650 | 1440 | 640 | 810 |
| 250BZ437-61 | 37 | 250 | 1235 | 673 | 362 | 390 | 768 | 724 | 362 | 362 | 1638 | 1430 | 640 | 880 |
| 250BZ445-61 | 45 | 250 | 1235 | 673 | 362 | 390 | 768 | 724 | 362 | 362 | 1650 | 1440 | 640 | 890 |

**TO250BZ622 -61
TO250BZ437 -61
TO250BZ445 -61**

**Guide rail
Model: TO-250
Weight: 353 lbs. (160kg)**



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

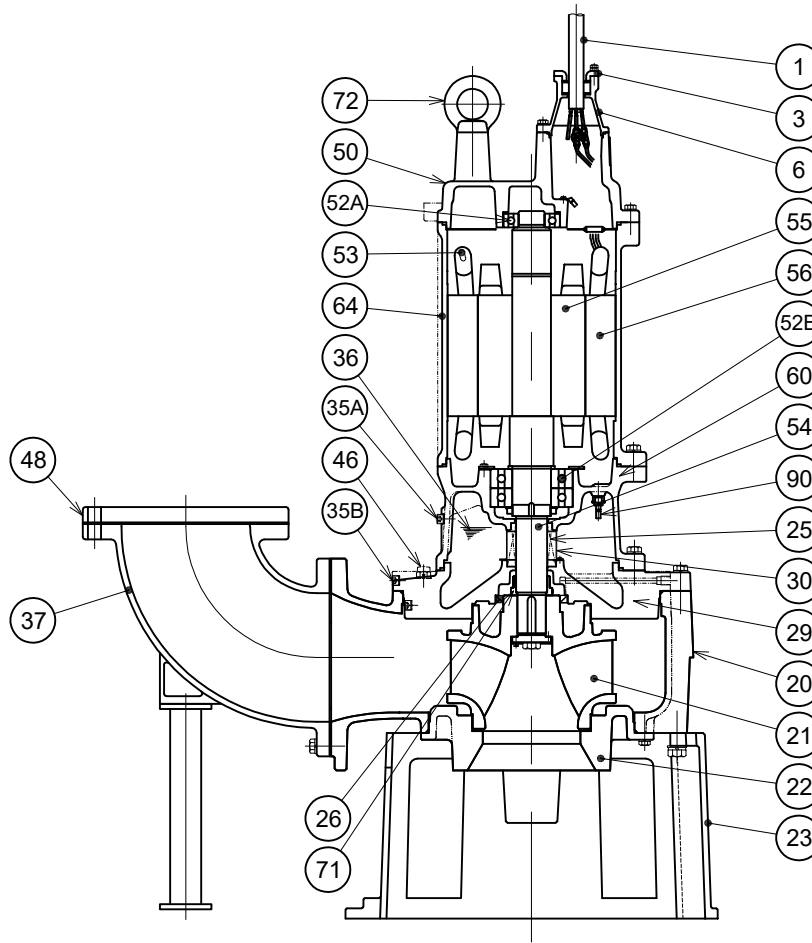
DIMENSIONS:USCS (Inch)

| Model | HP | NOM. SIZE | Pump & Motor | | | | | | | | | | C.W.L. | L.W.L. | *Wt. (lbs.) |
|----------------|----|-----------|--------------|--------|---------|---------|--------|---------|----------|---------|--------|----|--------|--------|-------------|
| | | | A | A1 | A2 | A3 | D | D1 | D2 | H | H1 | H2 | | | |
| TO250BZ622 -61 | 30 | 10" | 38 13/16 | 27 3/8 | 11 7/16 | 23 7/16 | 24 1/4 | 11 7/16 | 12 13/16 | 59 5/8 | 80 | 6 | 51 3/8 | 19 5/8 | 1680 |
| TO250BZ437 -61 | 50 | 10" | 38 13/16 | 27 3/8 | 11 7/16 | 23 7/16 | 24 1/4 | 11 7/16 | 12 13/16 | 59 9/16 | 79 1/2 | 6 | 51 | 19 5/8 | 1830 |
| TO250BZ445 -61 | 60 | 10" | 38 13/16 | 27 3/8 | 11 7/16 | 23 7/16 | 24 1/4 | 11 7/16 | 12 13/16 | 59 5/8 | 80 | 6 | 51 3/8 | 19 5/8 | 1850 |

DIMENSIONS:METRIC (mm)

| Model | kW | NOM. SIZE | Pump & Motor | | | | | | | | | | C.W.L. | L.W.L. | *Wt. (kg) |
|----------------|----|-----------|--------------|-----|-----|-----|-----|-----|-----|------|------|-----|--------|--------|-----------|
| | | | A | A1 | A2 | A3 | D | D1 | D2 | H | H1 | H2 | | | |
| TO250BZ622 -61 | 22 | 250 | 986 | 696 | 290 | 596 | 616 | 290 | 326 | 1514 | 2032 | 153 | 1305 | 500 | 760 |
| TO250BZ437 -61 | 37 | 250 | 986 | 696 | 290 | 596 | 616 | 290 | 326 | 1513 | 2020 | 153 | 1295 | 500 | 830 |
| TO250BZ445 -61 | 45 | 250 | 986 | 696 | 290 | 596 | 616 | 290 | 326 | 1514 | 2032 | 153 | 1305 | 500 | 840 |

*Excluding TOS & Cable



250BZ622 -61
250BZ437 -61
250BZ445 -61

| PART# | DESCRIPTION | MAIN MATERIAL / NOTE | RELATED ASTM, AISI CODE | RELATED EN CODE | QTY |
|-------|----------------------------|--------------------------------------|-------------------------|-----------------|-----|
| 1 | Power Cable | Chloroprene Sheath AWG 6/4 - 32ft | | | 1 |
| | Power Cable | Chloroprene Sheath AWG 6/3 - 32ft | | | 1 |
| | Control Cable | PVC Sheath AWG 16/3 - 32ft | | | 1 |
| 3 | Gland | Cast Iron | A48M Class30B | EN 1561 GJL-200 | 2 |
| 6 | Staffing Box | Cast Iron | A48M Class30B | EN 1561 GJL-200 | 2 |
| 20 | Pump Casing | Cast Iron | A48M Class35B | EN 1561 GJL-250 | 1 |
| 21 | Impeller | Cast Iron | A48M Class35B | EN 1561 GJL-250 | 1 |
| 22 | Suction Cover | Cast Iron | A48M Class35B | EN 1561 GJL-250 | 1 |
| 23 | Strainer Stand | Cast Iron | A48M Class30B | EN 1561 GJL-200 | 1 |
| 25 | Mechanical Seal | Silicon Carbide / H-60 | | | 1 |
| 26 | Oil Seal | NBR / TC11014014 | | | 1 |
| 29 | Oil Casing | Cast Iron | A48M Class30B | EN 1561 GJL-200 | 1 |
| 30 | Oil Lifter | Steel (Cold Rolled) | A109/A1008 | EN 10130 | 1 |
| 35A | Oil Plug | Stainless Steel | S30400 | 1.4301 | 2 |
| 35B | Oil Plug | Stainless Steel | S30400 | 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 Valve | Nylon | | | 1 |
| 48 | Welded Flange | Steel / 10" | A283 Grade D | EN 10025 S275 | 1 |
| 50 | Motor Bracket | Cast Iron | A48M Class30B | EN 1561 GJL-200 | 1 |
| 52A | Upper Bearing | #6310ZZC3 | | | 1 |
| 52B | Lower Bearing | 37kW: #6314ZZC3 / 22&45kW: #6315ZZC3 | | | 2 |
| 53 | Motor Protector | | | | 3 |
| 54 | Shaft | Stainless Steel | S42000 | 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 |
| 71 | Shaft Sleeve | Stainless Steel | S30400 | 1.4301 | 1 |
| 72 | Lifting Lug Bolt | Steel | A283 Grade D | EN 10025 S275 | 2 |
| 90 | Leakage Sensor (Electrode) | Stainless Steel | | | 1 |


TSURUMI PUMP
**BZ - 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 (_____ m³/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 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/cm²) flat face flange and NPT companion flange. Impellers shall be of the single vane, enclosed, solids handling design equipped with back pump out vanes 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. The oil chamber 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.). 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., 3 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 E or F (7.5 Hp. and above) 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), 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 (7.5 Hp. and above). Motors shall be D.O.L. or Star-delta start (15 Hp.), 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. 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, 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.