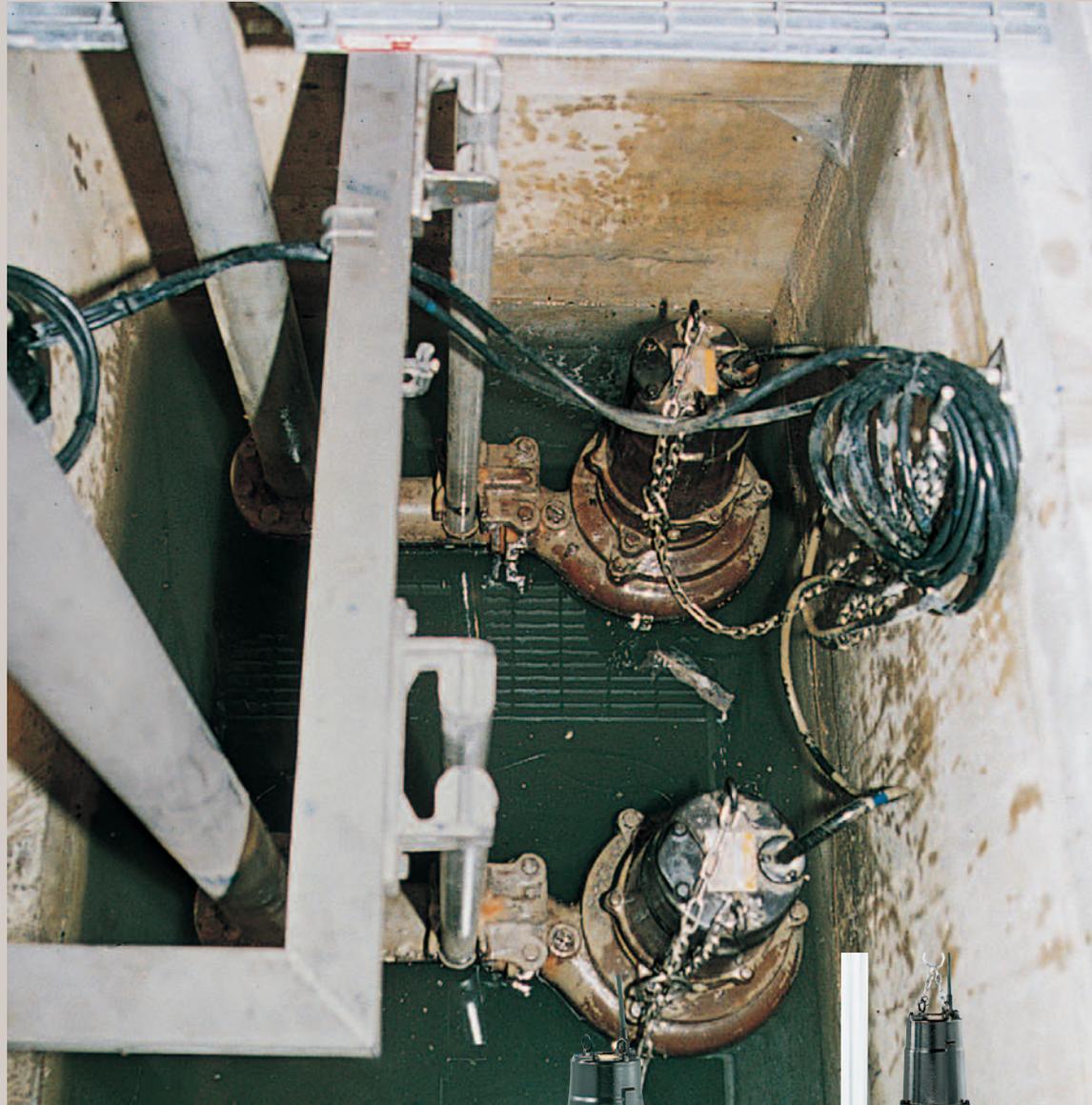




Submersible Sewage Pumps

Channel Impeller

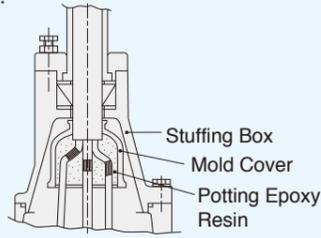
BZ



A specially designed single channel impeller makes the BZ pump possible to pass 80mm diameter solids.

Cable Entry

Every cable has an anti-wicking block at the cable entry section of the pump. This mechanism is such that a part of each conductor is stripped back and the part is sealed by molded rubber or epoxy potting which has flowed in between each strand of the conductor. This unique feature prevents wicking along the strand of the conductor itself.



Mechanical Seal

The mechanical seal with two seal faces containing silicon carbide (SiC) is equipped with the oil chamber. The advantages of the seal are two-fold, it eliminates spring failure caused by corrosion, abrasion or fouling which prevents the seal faces from closing properly, and prevents loss of cooling to the lower seal faces during run-dry conditions which causes the lower seal faces to fail.

Oil Lifter (Patented)

The Oil Lifter was developed as a lubricating device for the mechanical seal. Utilizing the centrifugal force of the shaft seal, the Oil Lifter 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. This amazingly simple device is not only reliably lubricates and cools down, but also retains the stable shaft seal effect and extends the inspection term.



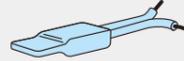
Motor Protector

Each pump up to 7.5kW as standard has a built in auto-cut, self-resetting Circle Thermal Protector (CTP). Integrated in the motor housing, the CTP directly cuts the motor circuit if excessive heat builds up or an overcurrent caused by an electrical or mechanical failure occurs.



Circle Thermal Protector

A Miniature Thermal Protector (MTP) is embedded in each winding of the motor. These MTPs are connected in series, and their wires are led out of the motor. Should the winding temperature rise to the actuating temperature, the bimetal strip opens to cause the control panel to shut the power supply.



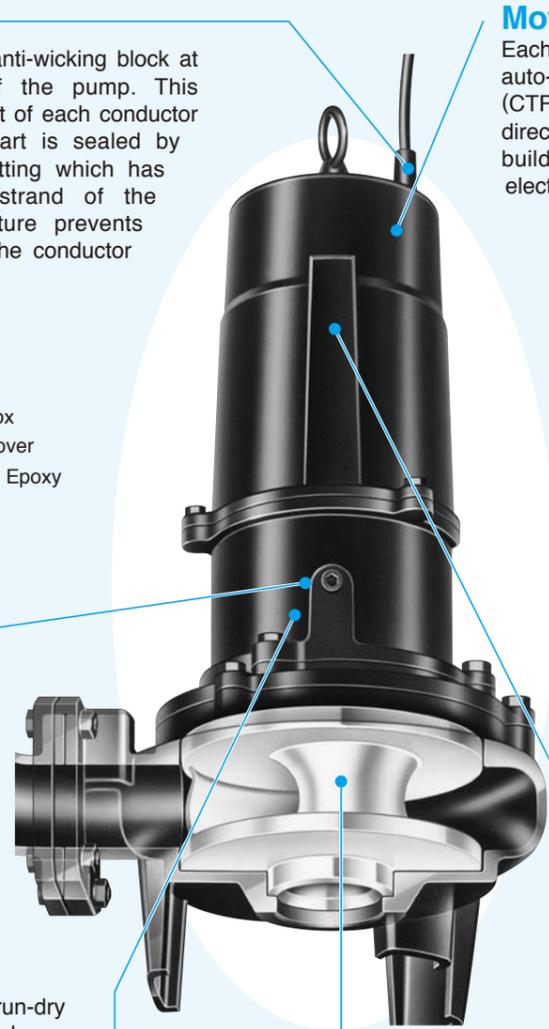
Miniature Thermal Protector

Motor

The motor is dry-type, squirrel-cage induction motor, housed in a cast iron watertight casing, and conforms to insulation classes of E or F. All standard pumps can be used under the maximum ambient temperature of 40°C.

Back Pullout Design

Unfastening the bolts between the oil casing and the pump casing allows the body to be separated into the pump section and the motor section with the impeller left in position. This facilitates inspections of the main portions. (Applied to pumps up to 3.7kW)



Impeller

The BZ pump is equipped with a specially designed single channel impeller. It is designed to have a wide passage from the inlet to outlet and enables it to pass solids with 80mm in diameter. This ensures waste water and sewage are transferred without clogging.

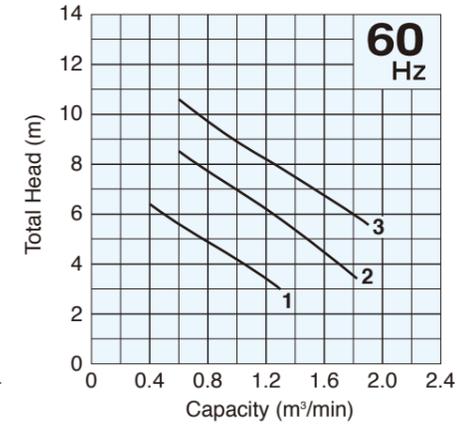
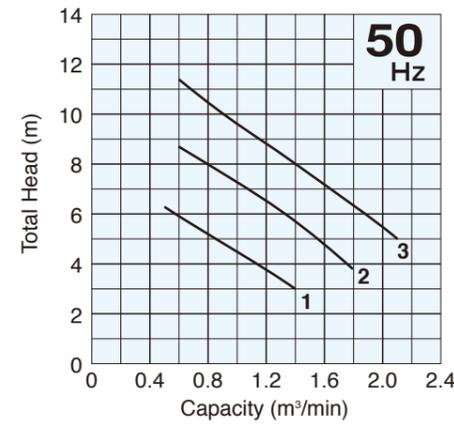


MODEL NUMBER DESIGNATION

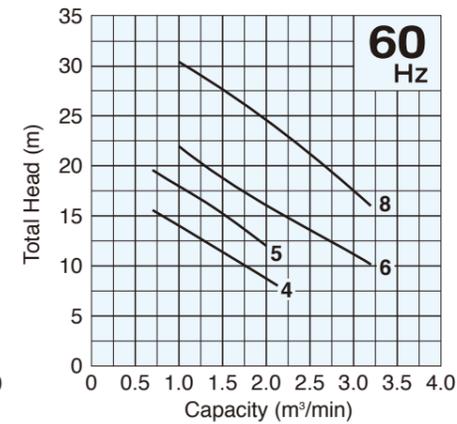
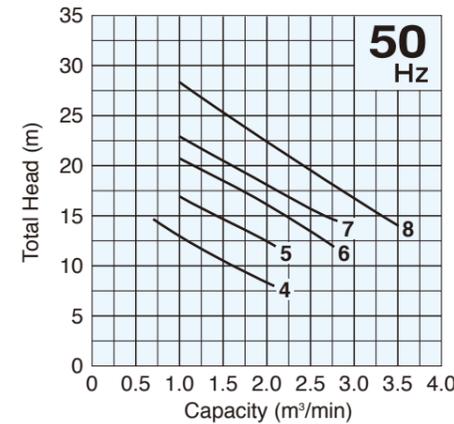
100	BZ	4	11	H
Discharge bore in millimeters	Name of the series	Number of motor poles	Rated motor output in kilowatts	Sub code for the pumping head H : High head Blank : Standard

Performance Curves

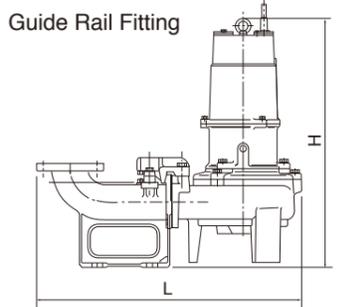
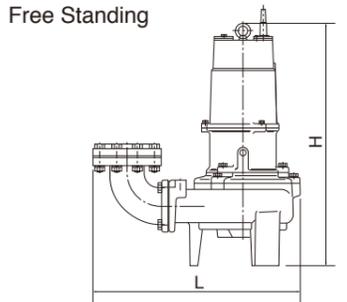
DISCHARGE BORE 80mm•100mm



DISCHARGE BORE 100mm



Dimensions



Model Selection 50/60Hz

Curve No.	Discharge Bore mm	Model		Motor Output kW	Speed (S.S.) min ⁻¹	Starting Method	Solids Passage mm	Cable Length m	Cable Code	Dimensions LxH mm		Dry Weight ^{*3} kg	
		Free Standing	Guide Rail Fitting							Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting
1	80	80BZ41.5	TOS80BZ41.5	1.5	1500/1800	D.O.L.	80	6	A	523x631	697x646	78	74
2	100	100BZ42.2	TOS100BZ42.2	2.2	1500/1800	D.O.L.	80	6	A(B ^{*2})	551x631	709x646	80	74
3	100	100BZ43.7	TOS100BZ43.7	3.7	1500/1800	D.O.L.	80	6	B(C ^{*2})	584x681	743x696	100	94
4	100	100BZ45.5	TOS100BZ45.5	5.5	1500/1800	D.O.L.	80	8	D	716x925	935x914	175	168
5	100	100BZ47.5	TOS100BZ47.5	7.5	1500/1800	D.O.L.	80	8	E	716x946	935x935	194	187
6	100	100BZ411	TOS100BZ411	11	1500/1800	Star-Delta	80	10	F	727x1023	946x1016	219	212
7 ^{*1}	100	100BZ411H	TOS100BZ411H	11	1500/ —	Star-Delta	80	10	F	727x1023	946x1016	219	212
8	100	100BZ415	TOS100BZ415	15	1500/1800	Star-Delta	80	10	G	845x1160/ 770x1088	1044x1174/ 989x1076	297	290

Note : Every model operates on a three phase supply.

^{*1} 50Hz only

^{*2} 200~240V

^{*3} All weights excluding cable

Weights of guide rail fitting model excluding duckfoot bend

CABTYRE CABLE CODE REFERENCE

Code	Pieces per Unit	Cores×mm ²	Dia. mm	Material
A	1	4×1.25	11.1	PVC
B	1	4×2	11.8	
C	1	4×3.5	13.9	
D	1	4×3.5	14.1	Chloroprene Rubber
E	1	4×5.5	16.8	
F	3	4×3.5 3×3.5 2×1.25	14.1 12.9 9.8	
G	3	4×5.5 3×5.5 2×1.25	16.8 15.2 9.8	

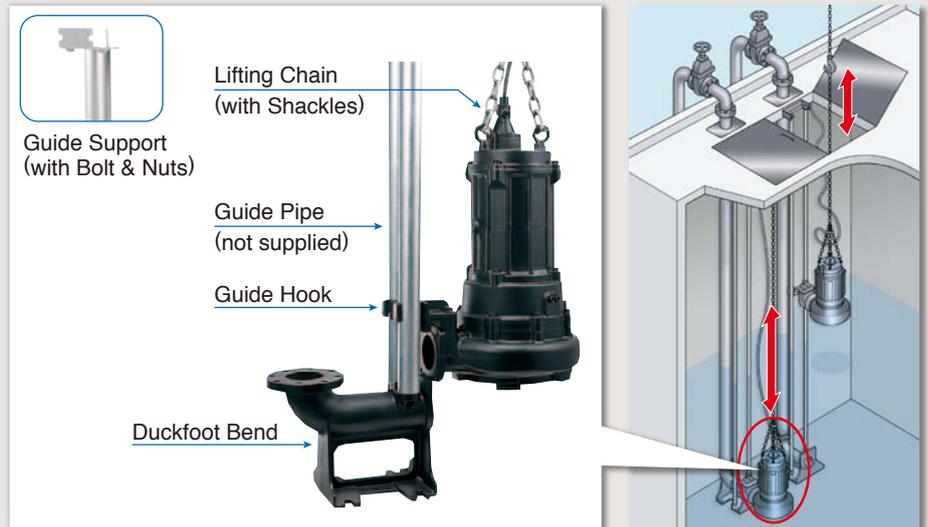
GUIDE RAIL FITTING SYSTEM

The guide rail fitting system connects the pump to and from the piping easily just by lowering and hoisting the pump, allowing easy maintenance and inspection without the need to enter the sump.

The TOS is the standard guide rail fitting system made of cast iron and is compatible with cast iron pumps.

Accessories

- Duckfoot Bend
- Guide Support (with Bolt & Nuts)
- Guide Hook
- Lifting Chain 5m (with Shackles)
- JIS 10kg/cm² Flange



TSURUMI OPTIONS

SPECIAL VERSION WITH GALVANIC CORROSION PROTECTION

In seawater, a material's resistance to corrosion can be seen clearly. When metals with different potentials are brought into contact in seawater, only the metal of lower potential corrodes. As the difference in potential increases, the metal of lower potential corrodes faster. As an option, Tsurumi can supply pumps with parts made of higher electric potential metal as the sacrificial anode.

SPECIAL VERSION FOR HIGHER TEMPERATURE LIQUID

Standard pumps are designed for continuous running at a maximum ambient temperature of 40°C. In addition to these, Tsurumi can provide pumps for operation at higher liquid temperature upon request. Refitting for operation at higher temperature involves modification of not only the insulation of motor windings but also several components. The high-temperature operation models are available for the RANK 60 version, for the operation in liquids up to 60°C. Consult your dealer for more details. (These special versions are not available for some pump models.)

DRY PIT VERSION

The advantage of the dry pit type pump is that a flooding of water will not damage it, as it is constructed by a submersible pump. Tsurumi can provide the dry pit type pumps as option for the whole range of BZ-series pumps. Durable motor with effective water-cooling jacket assures the pump continuous running without overheating.

SPECIAL VERSION WITH NON-STANDARD MATERIALS

Tsurumi can also provide you with pumps with essential components such as the impeller, pump casing, and the suction cover made of non-standard materials. Select from stainless steel, chromium iron, and bronze to suit your specific requirements. Consult your dealer for more details.

We reserve the right to change the specifications and designs for improvement without prior notice.

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