



# Submersible **Stainless Steel** Pumps

## SQ/SFQ/BQ/CQ



# Tsurumi submersible stainless steel pumps.

## An immediate solution for the customer need for high durability in the draining of corrosive liquids.

### Stainless Steel Components

All components in contact with liquid are made of stainless steel or stainless steel casting. The following are the materials of main components:

- SQ-Series: 304 Stainless Steel (SUS304)\*
- SFQ-Series: Stainless Steel Casting (SCS 14)\*
- BQ & CQ Series: Stainless Steel Casting (SCS13)\*

\*For other standards, please refer to MATERIAL CONVERSION LIST on the back cover.

### Motor Protector

A thermal protector is incorporated in the pumps of up to 7.5 kW motor. The protector is installed in the motor housing and it directly cuts the motor circuit if excessive heat builds up or an overcurrent is caused by an electrical or mechanical failure.

The pump with 11kW motor has three thermal protectors embedded in each winding of the three-phase motor. These protectors are connected in series, with their wires led out of the motor. Should the winding's temperature rise to the actuating level, the bimetal strip opens to cause the control panel to shut down the power supply.



### 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.

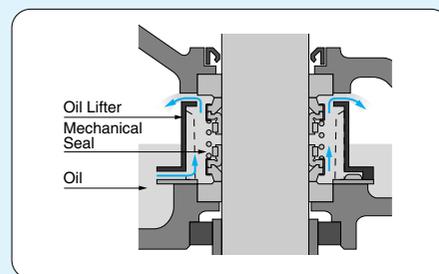


### Motor

The motor is a dry-type, squirrel-cage induction motor, housed in a watertight casing, and conforms to insulation classes E or F. In each of these insulation classes, all standard pumps can be used in ambient temperatures up to 40°C.

### 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.



### 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.

### Impeller

Each pump incorporates an impeller which is designed to suit the pump's application. The same material used in the pump casing is also used for the impeller.

### Model Number Designation

<b>80</b>	<b>SFQ</b>	<b>A</b>	<b>2</b>	<b>3.7</b>	<b>S</b>	<b>H</b>
Discharge bore in millimeters	Name of the series	Operation sub code None: None automatic operation A: Automatic operation	Number of poles of the motor	Rated motor output in kilowatts	Phase None: Three-phase S: Single-phase	Sub code for the pumping head H: High head L: Low head

(This model does not exist.)

### Features

#### Austenitic Stainless Steel for Wetted Parts

At the metal components that come in contact with liquid are made of stainless steel casting (SCS14) or 316 stainless steel (SUS316).

#### Corrosion-resistant Mechanical Seal

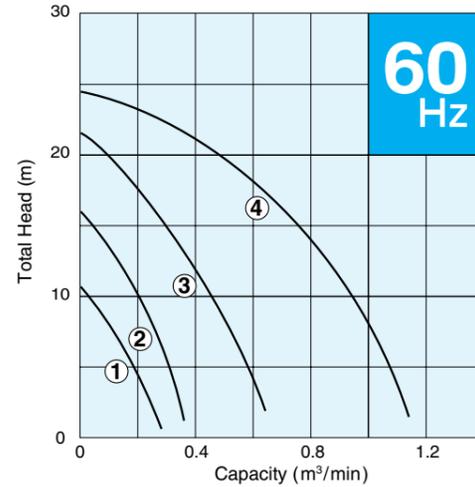
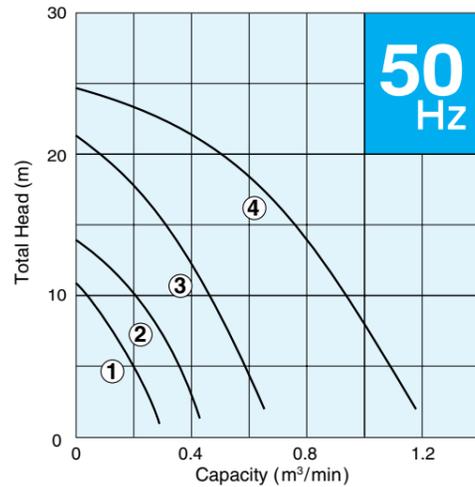
The SFQ-series is equipped with a special mechanical seal. The seal has superb corrosion resistance because silicon carbide is used for the seal faces while the gaskets are made of fluoro-rubber.

#### Powerful Pumping of Corrosive Liquids

The SFQ-series is ideal for the transfer and/or draining of corrosive liquids in chemical and pharmaceutical plants, laboratories, etc.



### Performance Curves



### Standard Specifications 50/60Hz

Curve No.	Discharge Bore mm	Model	Motor Output kW	Phase	Speed (S.S.) min <sup>-1</sup>	Starting Method	Solids Passage mm	Cable Length m	Cable Code	Dimensions L x H mm	Dry Weight** kg
1	50	50SFQ2.4S	0.4	Single	3000/3600	Capacitor	6	5	a	252 x 427	21
	50	50SFQ2.4	0.4	Three	3000/3600	D.O.L.	6	6	A	252 x 398	20
2	50	50SFQ2.75	0.75	Three	3000/3600	D.O.L.	6	6	A	252 x 398	22
3	80	80SFQ21.5	1.5	Three	3000/3600	D.O.L.	6	6	A	329 x 484	36
4	80	80SFQ23.7	3.7	Three	3000/3600	D.O.L.	15	6	C (E*)	359 x 542	52

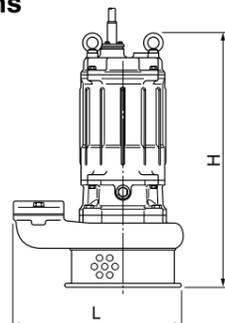
\* 200-240V

\*\* All weights excluding cable

### Applications

- Draining wastewater from chemical plant, plastic plant, etc.
- Draining effluent from hospital and laboratory, etc.

### Dimensions



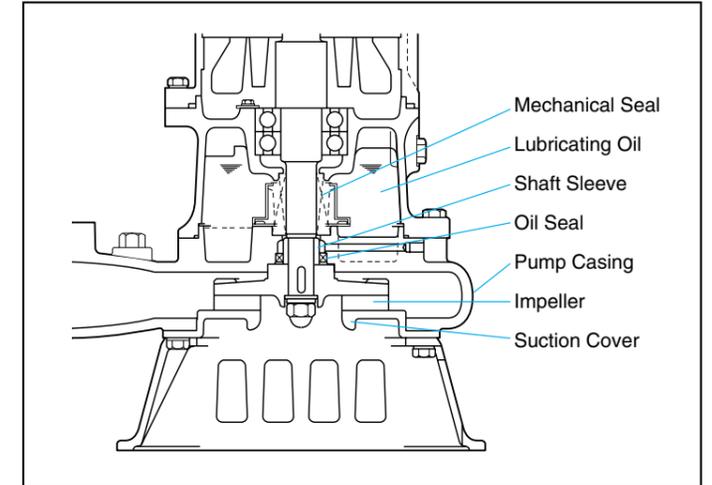
### Features

#### Seal Pressure Relief System

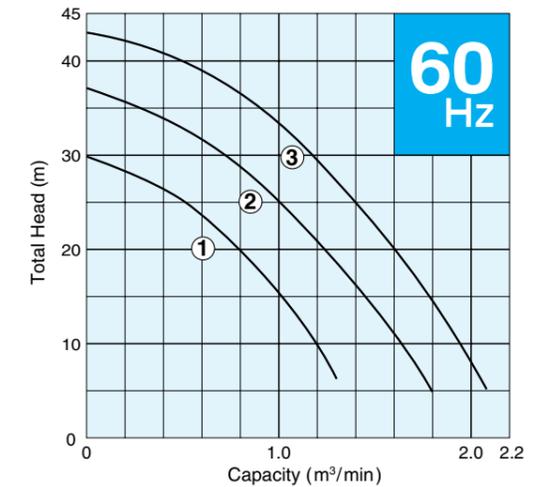
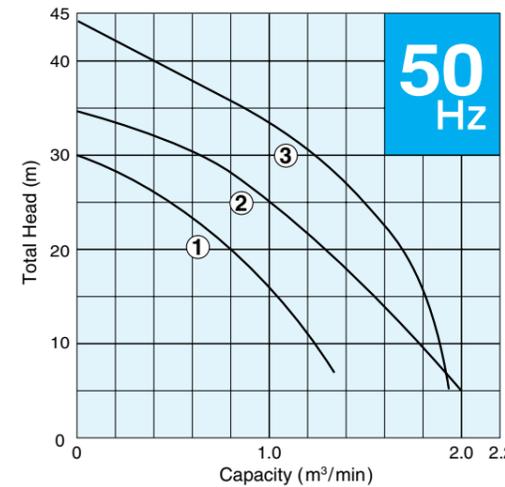
The SFQ-series of 5.5kW and over has a seal pressure relief system. This system features an independent pump casing separate from the oil casing in which the mechanical seal is housed. Installed between these two components is an intermediate chamber which is opened to the outside. Thanks to this system, the mechanical seal is only subject to static pressure (submergence pressure) with no pumping pressure operating on the mechanical seal.

#### Guide Rail Fitting Model Available

The SFQ-series of 5.5kW and over is available with guide rail fittings. Guide rail fitting accessories are made of stainless steel casting (SCS14) or 316 stainless steel (SUS316). Pumps in this series have a 'TOS' identifier on top of their model codes.



### Performance Curves



### Standard Specifications 50/60Hz

Curve No.	Discharge Bore mm	Free Standing Model	Guide Rail Fitting Model	Motor Output kW	Phase	Speed (S.S.) min <sup>-1</sup>	Starting Method	Solids Passage mm	Cable Length m	Cable Code	Dimensions L x H (mm)		Dry Weight* (kg)	
											Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting
1	80	80SFQ25.5	TOS80SFQ25.5	5.5	Three	3000/3600	D.O.L.	18	8	G	635 x 844	808 x 875	124	113
2	80	80SFQ27.5	TOS80SFQ27.5	7.5	Three	3000/3600	D.O.L.	23/20	8	I	635 x 844	808 x 875	123	112
3	80	80SFQ211	TOS80SFQ211	11	Three	3000/3600	Star-Delta	23	8	K	635 x 892	808 x 923	143	132

\* All weights excluding cable

Weights of guide rail fitting model excluding duckfoot bend

### Dimensions

