



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.

### Motor protective device

All Tsurumi pumps have a built-in motor protection device.

A circle thermal protector (CTP) is incorporated in Tsurumi pumps with a direct-on-line starting motor. The CTP is installed in the motor housing and it directly cuts the motor circuit if excessive heat builds up or an over-current is caused by an electrical or mechanical failure.

Pumps with a star-delta starting motor have three miniature thermal protectors (MTPs) imbedded in each winding of the 3-phase motor.

These MTPs 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.

### Stainless-steel housing

Every component that comes in contact with liquid, including the motor shaft, is made of stainless steel or stainless-steel casting. The following are the materials of main components:

Model SQ : stainless steel SUS304\*  
 Model SFQ : stainless-steel casting SCS14\*  
 Model BQ & CQ : stainless-steel casting SCS13\*

\*For other standards, please refer to Material Conversion Table on the back cover.

### Anti-wicking 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 under the strands of the conductor itself.

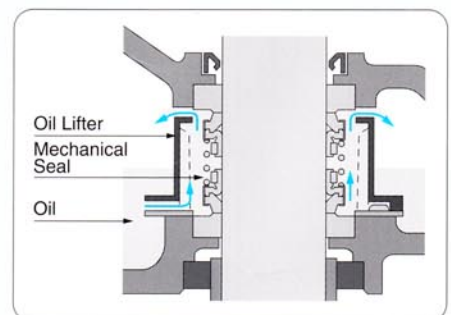


### Motor

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

### Oil Lifter(Pat.Pending)

The Oil Lifter is designed to stabilize the mechanical seal function. Utilizing the rotational energy of the shaft seal, the Oil Lifter continues to supply lubricant to the top seal faces even if the lubricant falls below the rated volume. This amazingly simple device not only turns wasted energy into added protection but also doubles the life expectancy of the mechanical seal and also the maintenance term.

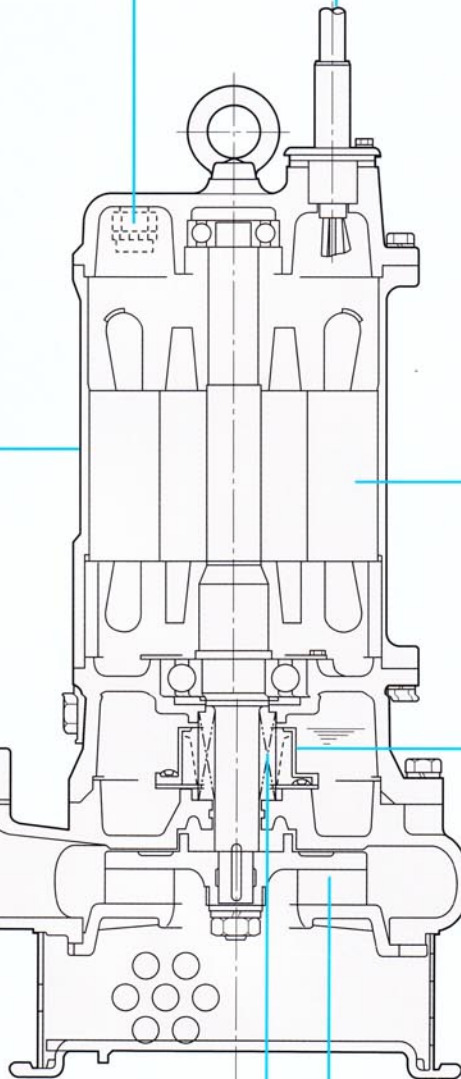


### Mechanical seal

All pumps are provided with a dual inside mechanical seal that is located completely out of the drainage and is running in an oil-filled chamber. The seal has two major advantages: it eliminates spring failure caused by corrosion, abrasion and/or fouling which can prevent the seal faces from closing properly. Also, the seal prevents the loss of cooling energy to the bottom seal faces during run-dry conditions that causes the bottom seal to fail.

### Impeller

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



# SQ Series

## Features

### ● Ideal for less-contamination pumping

All components in contact with liquid are made of 304 stainless steel. In addition to the feature that a non-toxic white oil is used as the lubricant, the pump is suitable for the applications where contamination to the liquid is not desired.

### ● Compact and lightweight

The flow-through design\* always cools the motor and permits the unit to operate at low water levels for extended periods of time. The design also allows the overall dimensions of the pump to be reduced for installation in confined spaces.

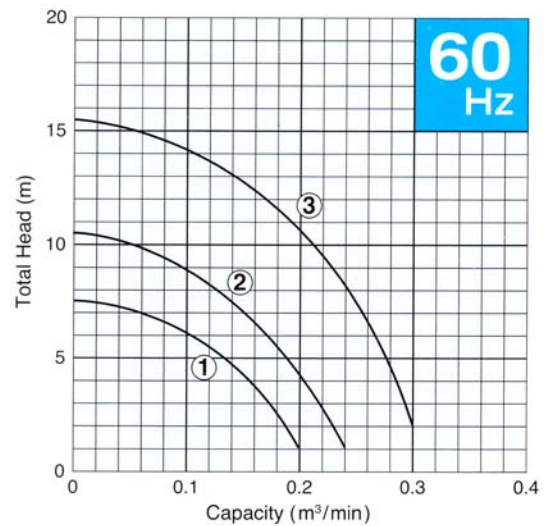
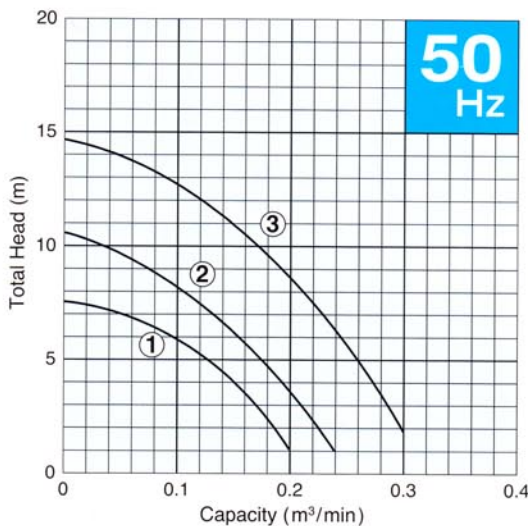
(\*Pumped liquid flows around the motor on its way to the top discharge.)

### ● Automatic version available (Model SQA)

Tsurumi offers the automatic version of the SQ pump series. The automatic version can be identified by the symbol, A, added to the model code.



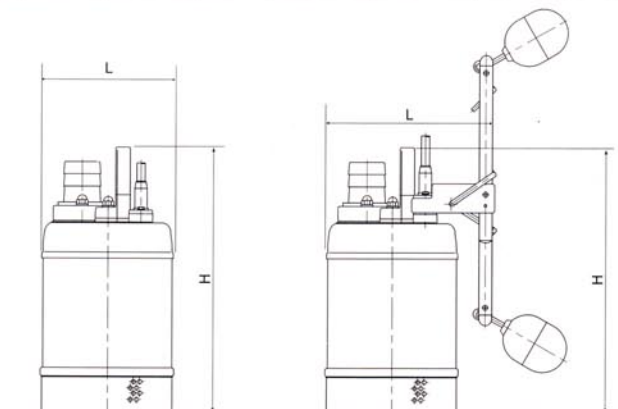
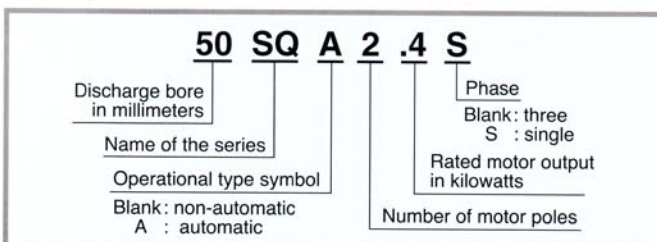
## Performance Curves



## Specifications

Curve No.	Discharge Bore mm	Standard Model	Automatic Model	Motor Output kW	Phase	Revolution 50Hz/60Hz min <sup>-1</sup>	Starting Method	Impeller Passage mm	Standard Cable Length m	Cable Code	Dimensions L×H (mm)		Dry Weight (kgs)	
											Standard Model	Automatic Model	Standard Model	Automatic Model
1	40	40SQ2.25S	40SQA2.25S	0.25	Single	3000/3600	Capacitor Run	6	5	a	180×364	229×364	12.5	13.0
1	40	40SQ2.25	—	0.25	Three	3000/3600	D.O.L.	6	6	A	180×364	—	12.0	—
2	50	50SQ2.4S	50SQA2.4S	0.4	Single	3000/3600	Capacitor Run	6	5	a	180×364	229×364	12.5	13.0
2	50	50SQ2.4	—	0.4	Three	3000/3600	D.O.L.	6	6	A	180×364	—	12.0	—
3	50	50SQ2.75	—	0.75	Three	3000/3600	D.O.L.	6	6	A	180×384	—	14.0	—

## Composition of model code



# SFQ Series

50 · 80 mm (0.4~3.7kw)

## Features

### ● Austenitized stainless-steel for wet parts

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

### ● Corrosion-resistant mechanical seal

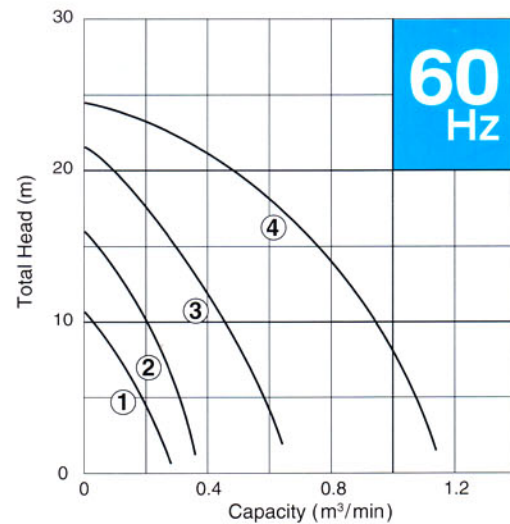
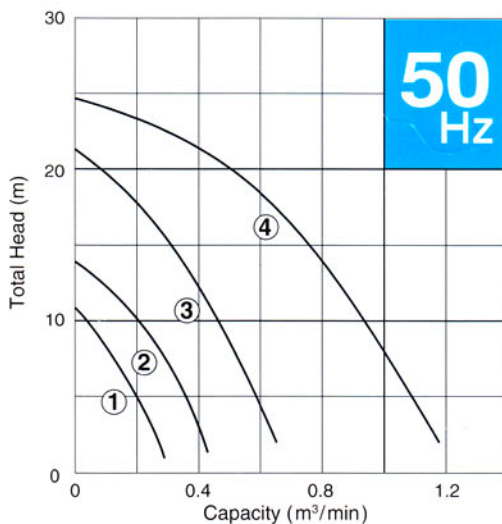
All SFQ pumps are equipped with a special mechanical seal. The seal has superb corrosion resistance because silicon carbide is used for the seal faces while the gaskets are made of fluororubber.

### ● Powerful pumping of corrosive liquids

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



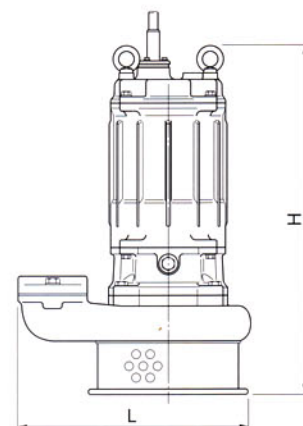
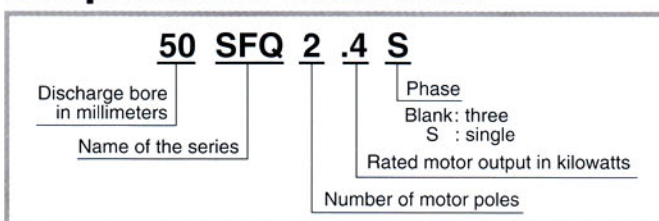
## Performance Curves



## Specifications

Curve No.	Discharge Bore mm	Model	Motor Output kW	Phase	Revolution 50Hz/60Hz min <sup>-1</sup>	Starting Method	Impeller Passage mm	Standard Cable Length m	Cable Code	Dimensions L×H (mm)	Dry Weight (kgs)
1	50	50SFQ2.4S	0.4	Single	3000/3600	Capacitor	6	5	a	252×426	22
1	50	50SFQ2.4	0.4	Three	3000/3600	D.O.L.	6	6	A	252×397	20
2	50	50SFQ2.75	0.75	Three	3000/3600	D.O.L.	6	6	A	252×397	22
3	80	80SFQ21.5	1.5	Three	3000/3600	D.O.L.	6	6	A	329×484	38
4	80	80SFQ23.7	3.7	Three	3000/3600	D.O.L.	15	6	C	359×542	52

## Composition of model code



# SFQ Series

80 mm (5.5~11kW)

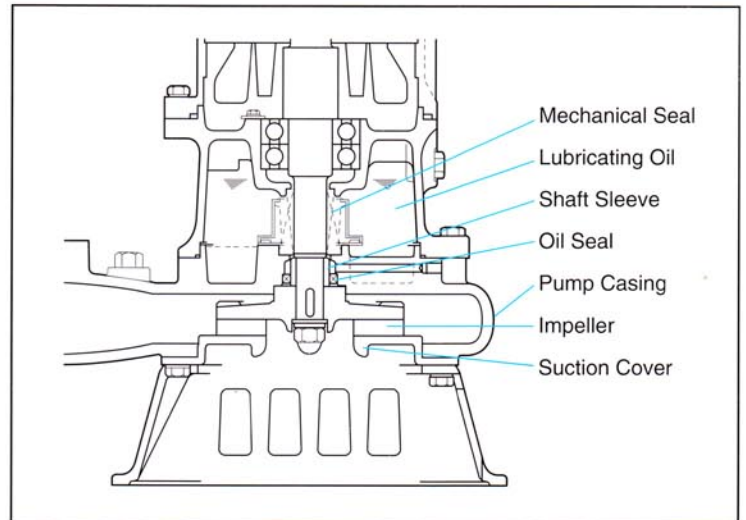
## Features

### ● Guide-rail fitting type available

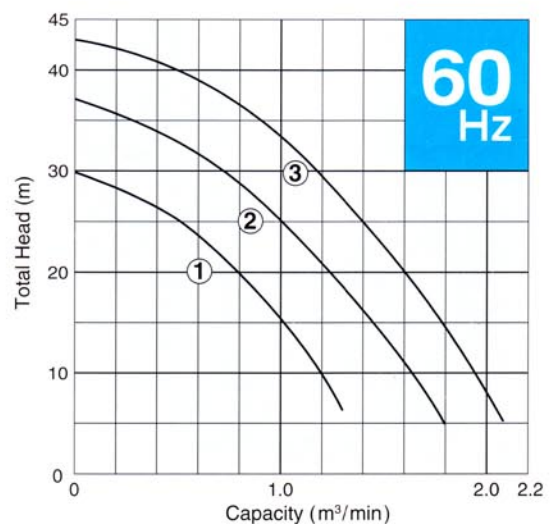
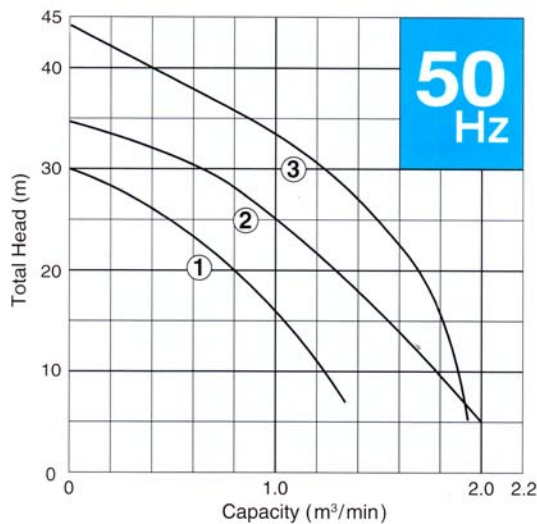
Tsurumi SFQ pumps of 5.5 kW and over are available with guide-rail fittings. Guide-rail fitting accessories are made of SCS14 or SUS316 austenitized stainless steel. Pumps in this series have a 'TO' identifier on top of their model codes.

### ● Seal pressure relief system

The SFQ pumps have 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.

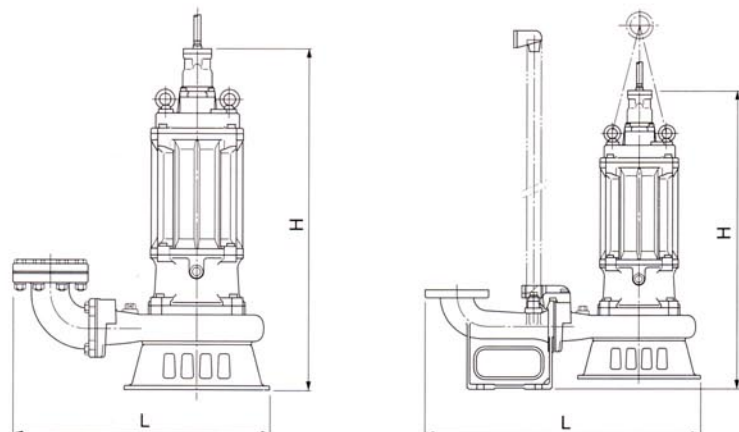


## Performance Curves



## Specifications

Curve No.	Discharge Bore mm	Free Standing Model	Guide Rail Fitting Model	Motor Output kW	Phase	Revolution 50Hz/60Hz min <sup>-1</sup>	Starting Method	Impeller Passage mm	Standard Cable Length m	Cable Code	Dimensions L×H (mm)		Dry Weight (kgs)	
											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	H	635×844	808×1067	124	113
2	80	80SFQ27.5	TOS80SFQ27.5	7.5	Three	3000/3600	D.O.L.	23/20	8	I	635×844	808×1067	123	112
3	80	80SFQ211	TOS80SFQ211	11	Three	3000/3600	Y-△	23	8	F	635×892	808×1111	143	132



# BQ Series

## Features

### ● All wet parts made of stainless steel

As part of popular B series pumps, Tsurumi has come up with BQ series pumps made of SCS13 cast stainless steel. The shaft, bolts and nuts are made of SUS304 stainless steel.

### ● Single-channel impeller for clog-free operation

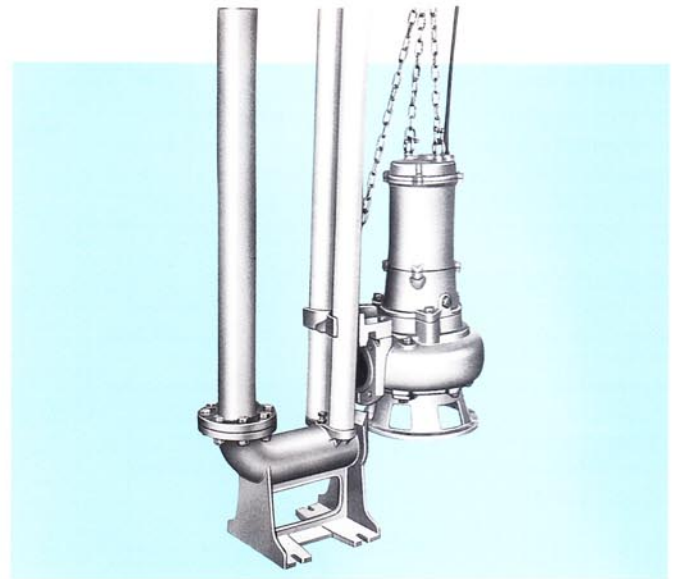
The widely opened volute casing and a single-channel impeller allow the unit to pump waste water or sewage without clogging.

### ● Suitable for pumping corrosive water

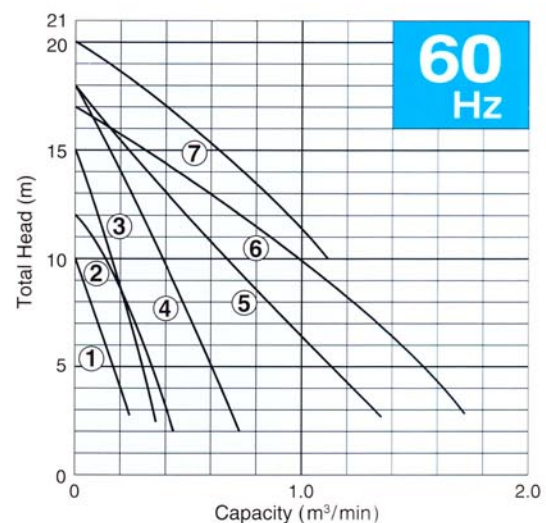
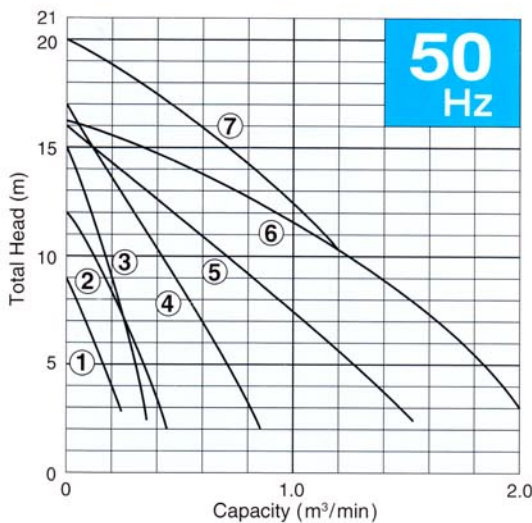
The durable BQ pumps are suitable for pumping waste water containing solids and corrosive substances.

### ● All models available with guide-rail fitting

All BQ models are available with guide-rail fitting. Refer to the specifications table for the correct model code of the pump you are choosing.



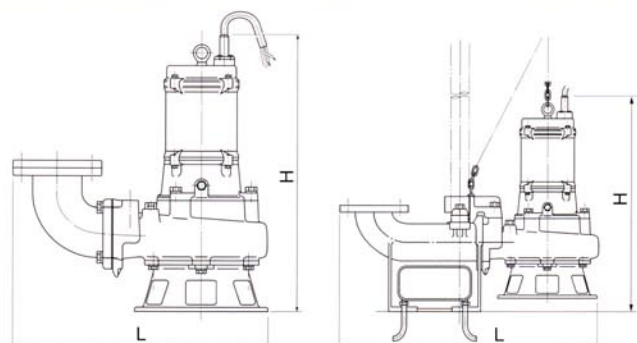
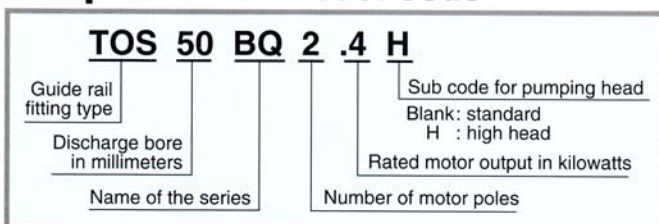
## Performance Curves



## Specifications

Curve No.	Discharge Bore mm	Free Standing Model	Guide Rail Fitting Model	Motor Output kW	Phase	Revolution 50Hz/60Hz min <sup>-1</sup>	Starting Method	Impeller Passage 50Hz/60Hz mm	Standard Cable Length m	Cable Code	Dimensions L × H (mm)		Dry Weight (kgs)	
											Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting
1	50	50BQ2.4	TOS50BQ2.4	0.4	Three	3000/3600	D.O.L.	19/17	6	A	340 × 450	556 × 508	25	24
2	50	50BQ2.75	TOS50BQ2.75	0.75	Three	3000/3600	D.O.L.	20/24	6	A	410 × 507	626 × 547	40	39
3	50	50BQ2.75H	TOS50BQ2.75H	0.75	Three	3000/3600	D.O.L.	20	6	A	410 × 484	626 × 527	40	39
4	80	80BQ21.5	TOS80BQ21.5	1.5	Three	3000/3600	D.O.L.	25	6	A	425 × 517	646 × 566	50	48
5	100	100BQ42.2	TOS100BQ42.2	2.2	Three	1500/1800	D.O.L.	40	6	C	603 × 653	821 × 695	93	86
6	100	100BQ43.7	TOS100BQ43.7	3.7	Three	1500/1800	D.O.L.	53/45	6	C	603 × 735	821 × 772	109	102
7	100	100BQ43.7H	TOS100BQ43.7H	3.7	Three	1500/1800	D.O.L.	35	6	C	637 × 727	855 × 769	109	102

## Composition of model code



# CQ Series

## Features

### ● Stainless-steel wet parts

Tsurumi CQ pumps, which belong to the C (cutter pump) series, are built with SCS13 cast stainless steel. The shaft, bolts and nuts are made of SUS304 stainless steel.

### ● Efficient cutter mechanism for clog-free operation

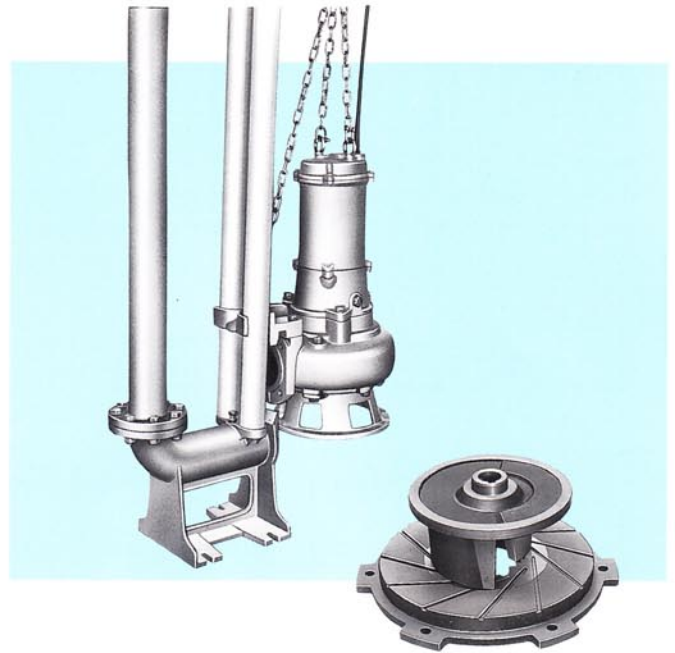
A sintered tungsten carbide alloy tip is brazed onto the stainless-steel impeller vanes which rotate on the serrated part of the stainless-steel suction cover. Incoming fibrous matter is cut up by this mechanism which thus prevents clogging in the discharge pipes and valves.

### ● Effective for pumping fibrous water

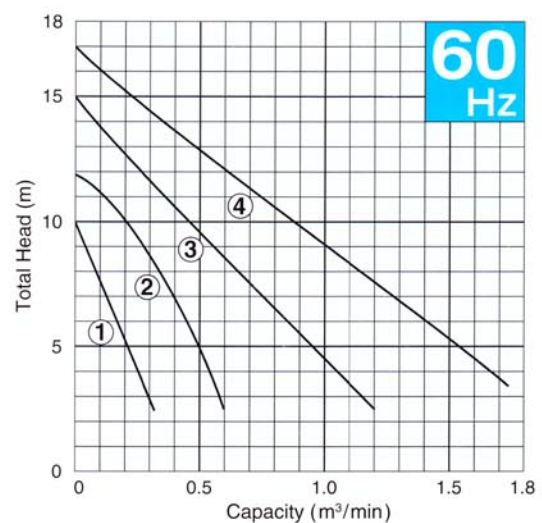
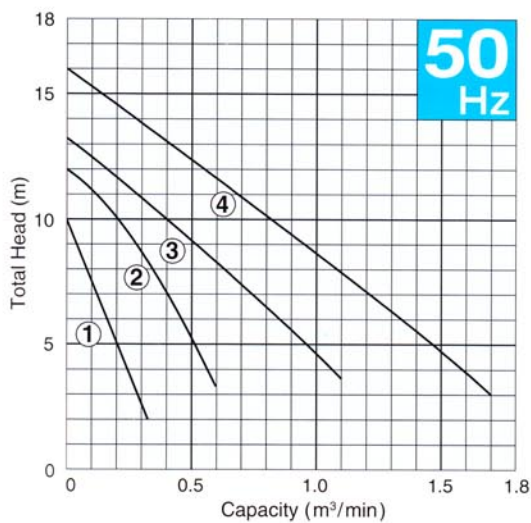
The CQ pumps suit pumping work involving waste water which contains corrosive liquid and/or fibrous material.

### ● All models available with guide-rail fitting

All CQ models are available with guide-rail fitting. Refer to the specifications table for the correct model code of the pump you are choosing.



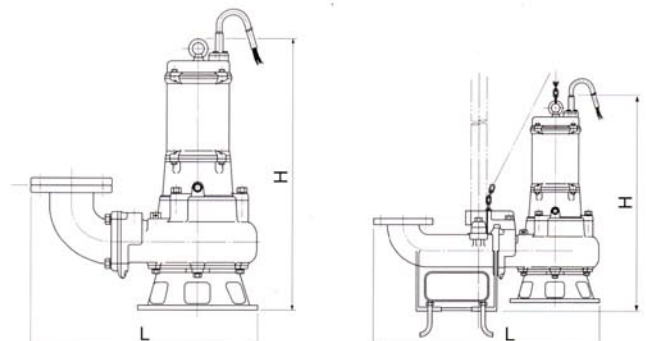
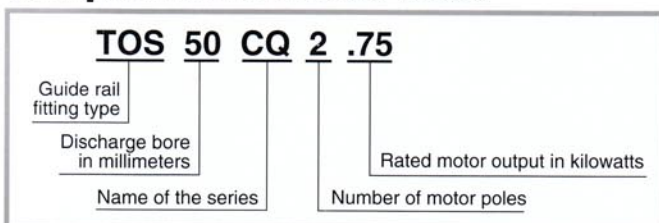
## Performance Curves



## Specifications

Curve No.	Discharge Bore mm	Free Standing Model	Guide Rail Fitting Model	Motor Output kW	Phase	Revolution 50Hz/60Hz min <sup>-1</sup>	Starting Method	Impeller Passage 50Hz/60Hz mm	Standard Cable Length m	Cable Code	Dimensions L×H (mm)		Dry Weight (kgs)	
											Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting
1	50	50CQ2.75	TOS50CQ2.75	0.75	Three	3000/3600	D.O.L.	18	6	A	410×484	626×527	40	39
2	80	80CQ21.5	TOS80CQ21.5	1.5	Three	3000/3600	D.O.L.	29	6	A	425×517	646×566	50	48
3	100	100CQ42.2	TOS100CQ42.2	2.2	Three	1500/1800	D.O.L.	35	6	C	603×653	821×695	93	86
4	100	100CQ43.7	TOS100CQ43.7	3.7	Three	1500/1800	D.O.L.	55	6	C	603×735	821×772	109	102

## Composition of model code



## Standard Accessories

### Guide-rail fittings

It is recommended that Tsurumi guide-rail fitting system be used with Tsurumi pumps. This system helps connect/disconnect the pump to/from the piping by lifting up and down the pump. This allows effortless maintenance and inspection without the need to enter the sump.

When an SFQ, BQ or CQ pump is ordered with guide-rail fitting\*, the following accessories will come with the pump as standard equipment (\*Please attach TO or TOS to its model code.):

- 1 x duckfoot bend
- 1 x guide support
- 1 x guide hook
- 1 x lifting chain (5 m long) with shackle

#### Note:

- (1) The material variation of these accessories is subject to the pump material.
- (2) Foundation bolts are available as an optional accessory.

### Cabtyre cable code reference

#### Single-Phase

Code	Pcs/unit	Core x mm <sup>2</sup>	Dia. mm	Material
a	1	3 x 1.25	10.1	PVC Sheath

#### Three-Phase

Code	Pcs/unit	Core x mm <sup>2</sup>	Dia. mm	Material
A	1	4 x 1.25	11.1	PVC Sheath
C	1	4 x 2	11.8	
E	1	4 x 3.5	13.9	

#### Three-Phase (Star-Delta)

Code	Pcs/unit	Core x mm <sup>2</sup>	Dia. mm	Material
H	1	4 x 3.5	14.1	Chloroprene Sheath
I	1	4 x 5.5	16.8	
F	3	4 x 3.5	14.1	
		3 x 3.5	12.9	
		2 x 2.0	10.6	

## Optional Accessory-Tsurumi Float Switch

### Tsurumi float switch

Model MC-2 is a heavy-duty float switch with a shock absorber.

Equipped with a high-grade microswitch, the float assures trouble-free pump operation in the sewage or liquid containing suspended solids and floating scum.

Either of the two contacts, normally open or normally closed, can be selected as required.



Model RF-5 is an economy float switch which can detect upper/lower limit water levels with a single float.

The snap on-off action ensures stable pump operation in the clean or waste water containing suspended solids or oil and fat.



## Material Conversion List

	JIS	ASTM/AISI	DIN	BS
Stainless Steel	SUS304	304	X5 CrNi 18-10	304S31
	SUS316	316	X5 CrNiMo 17-12-2	316S31
Stainless Steel Casting	SCS13	CF 8	G-X6 CrNi 18-9	304C15
	SCS14	CF 8M	G-X6 CrNiMo 19-11-2	316C16

\* The above chart is based on JIS and shows the nearest foreign standard.

The specifications and designs herein may be changed for improvement without notice.

**TSURUMI**  
MANUFACTURING CO.,LTD.

### Seawater pumps

Tsurumi offers a range of submersible seawater pumps under the common trade name, Marinemate. All the wet parts of these pumps are made of titanium and engineering plastic that have superb corrosion resistivity against seawater.

The Marinemate seawater pumps are available in variations from 0.25 kW single-phase to 0.75 kW three-phase.



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