



# Submersible Heavy Duty Solids Handling Pumps

## Model SH

*To meet your submersible pump needs  
and assure the lowest possible cost  
over the life ...*



### Applications:

- Sewage Lift Stations
- Treated Sewage System
- Waste Water Transfer
- Dewatering
- General Industrial Service



EIM ELECTRIC CO., LTD.

With over 50 years of proven experience in the design and the difficult applications of heavy duty submersible pumps handling sewage, solids, sludge and slurries, EIM has been providing pumping solutions which permit customers to continuously improve pumping system reliability and cost efficient performance.

The SH series pumps with non-clogging, single-vane, closed impeller have proven successful operation in the toughest applications handling large solids and stringy material.

## GENERAL DESCRIPTION

	Standard	Option
<b>Pump</b>	Free Standing Models	Guide Rail System
Discharge Diameter	80, 100 and 150 mm	
Flow and TDH	See performance curves on the back page.	
Impeller	Non-clogging, single-vane, closed impeller	
Max. Solids Size	75 mm sphere	
Max. Submergence	20 m	
Liquid Temperature	-10 °C to 40 °C	High temperature designs up to 80° C.
<b>Materials</b>		
Impeller/Pump Casing /Suction Cover	Cast Iron	
Hardware	304 Stainless Steel	
<b>Motor</b>		
Configuration	Flange mounted, air-filled submersible vertical AC motor	
Synchronous Speed	1500RPM (50Hz)/1800RPM (60Hz)	
Insulation Class / SF	F / 1.15	Insulation Class H
Voltages / Phase / Hertz	200, 380, 400 Volts / 3 $\phi$ / 50 Hz 220, 380, 440 Volts / 3 $\phi$ / 60 Hz	Special voltages in the range of 200-600 Volts
Thermal Protection Device	up to 7.5KW: Bimetallic over current switch 11KW and above: Two normally closed thermostats embedded in windings	
Cable Length	10 m	Extra length cable
<b>Materials</b>		
Motor Housing	Cast Iron	
Motor Shaft	403 Stainless Steel	
Shaft Seals	Double shaft seals [Outer seal ( process side)] Silicon Carbide faces (both rotating and stationary faces) [Inner seal (motor side)] Carbon against Ceramic faces	Silicon Carbide faces (both rotating and stationary faces) inner and outer seals and VITON seal elastomers
Bearings	Deep groove ball bearings	
O-Rings	Nitrile Butadiene Rubber (NBR)	VITON O-rings

## AVAILABLE MODELS

Discharge Diameter (mm)	Model No.		BHP		Discharge Diameter (mm)	Model No.		BHP	
	Free Standing	Guide Rail System	KW	HP		Free Standing	Guide Rail System	KW	HP
80	SH-83E	SH-83B	2.2	3	100	SH-105E	SH-105B	3.7	5
	SH-85E	SH-85B	3.7	5		SH-108E	SH-108B	5.5	7.5
	SH-88E	SH-88B	5.5	7.5		SH-1010E	SH-1010B	7.5	10
	SH-810E	SH-810B	7.5	10		SH-1015E	SH-1015B	11	15
	SH-815E	SH-815B	11	15		SH-1020E	SH-1020B	15	20
	SH-820E	SH-820B	15	20		150	SH-158E	SH-158B	5.5
				SH-1510E	SH-1510B		7.5	10	
				SH-1515E	SH-1515B		11	15	
				SH-1520E	SH-1520B		15	20	

## FEATURES

### ① CABLE

Extra hard usage, water-resistant vinyl cable is used for electric cable.

### ② CABLE ENTRY

Strain relief rubber bushing integrated with cable sheath at the entry point is tightly compressed to the motor housing cover. In addition, each cable strand at the entry point is formed into a solid conductor for a true non-wicking cable entry. This double sealing system completely prevents water from entering into the motor housing.

### ③ LIFTING DEVICE

Lifting eye-bolts of 304 stainless steel are of adequate strength to lift the entire pump assembly.

### ④ MOTOR

An air-filled, induction motor with specially treated class F (155°C) nonhygroscopic insulation and rated with 1.15 service factor is used as standard. The motor housing of heavy duty cast iron is sealed using O-rings.

### ⑤ SHAFT

The high quality, one-piece, oversized shaft made of 403 stainless steel is designed so as to lengthen bearing and seal life reducing shaft deflection and vibration.

### ⑥ BEARINGS

Both main and support bearings packed with lithium grease for high temperature usage consist of oversized deep groove ball bearings, countering both radial and axial forces.

### ⑦ SHAFT SEAL

Double mechanical seal system for maximum resistance to corrosion, abrasion and thermal shock prevents water from penetrating into the oil chamber and the motor housing. The outer seal (process side) uses Silicon Carbide faces (both rotating and stationary faces). Carbon against ceramic faces are used for the inner seal (motor side). In addition, to prevent dust, sand, mud, sludge, slurry, etc. from entering into the seal area, the dust seal is mounted on the outside of the shaft seal, facing to process liquid.

### ⑧ OIL CHAMBER

Oil in the oil chamber lubricates and cools the shaft seals and functions as a buffer to prevent water penetration into the motor.

### ⑨ PUMP CASING

Owing to the specially designed pump casing with large opening at motor side, motor unit and wet end are easily separated for fast access to impeller and shaft seals. This results in true savings, greatly reducing maintenance and downtime costs.

### ⑩ IMPELLER

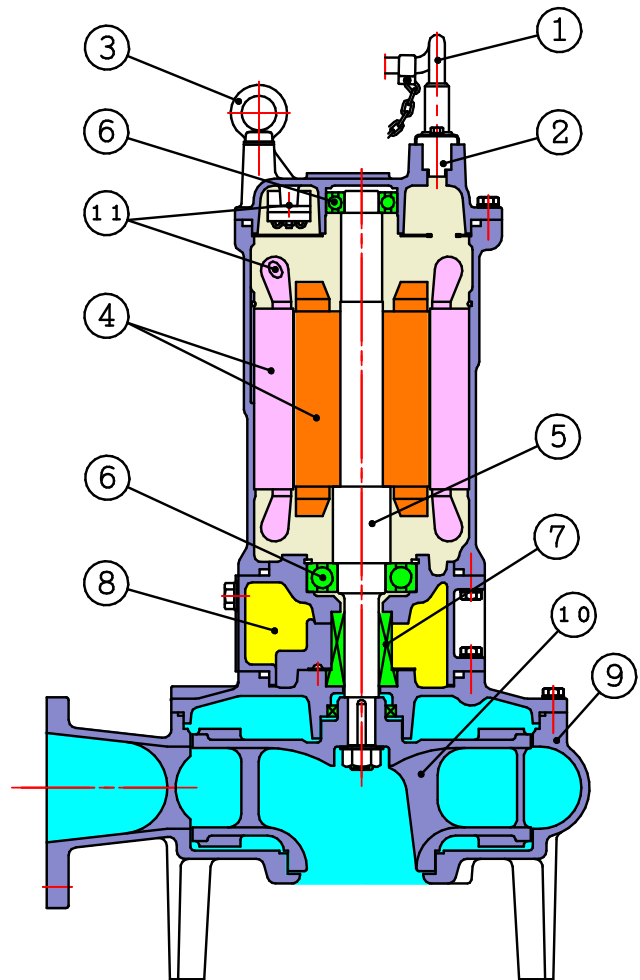
Single-vane, closed impeller with large opening assures passage of large solids and stringy material along with high pump efficiency.

### ⑪ THERMAL PROTECTOR

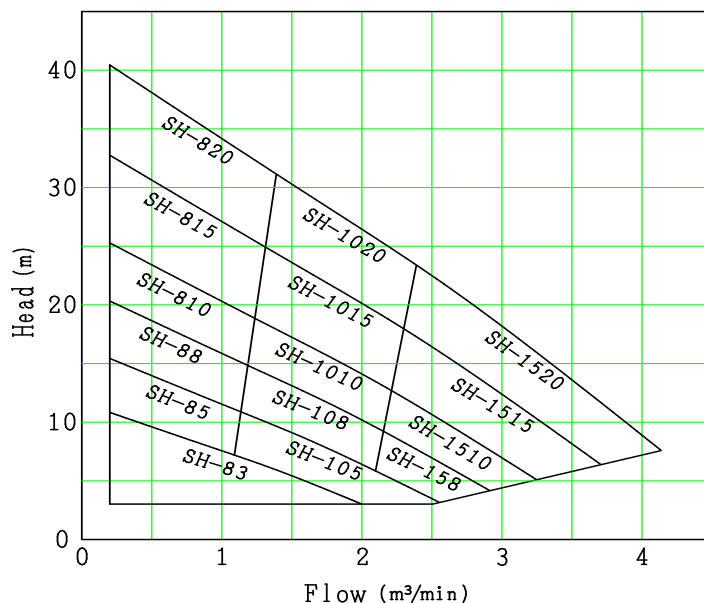
To protect over heating, bimetallic over current switch is built in the motor housing cover (discharge  $\phi$  80 mm) or two normally closed thermostats are embedded in the motor windings (discharge  $\phi$  100 mm).

### ⑫ HARDWARE

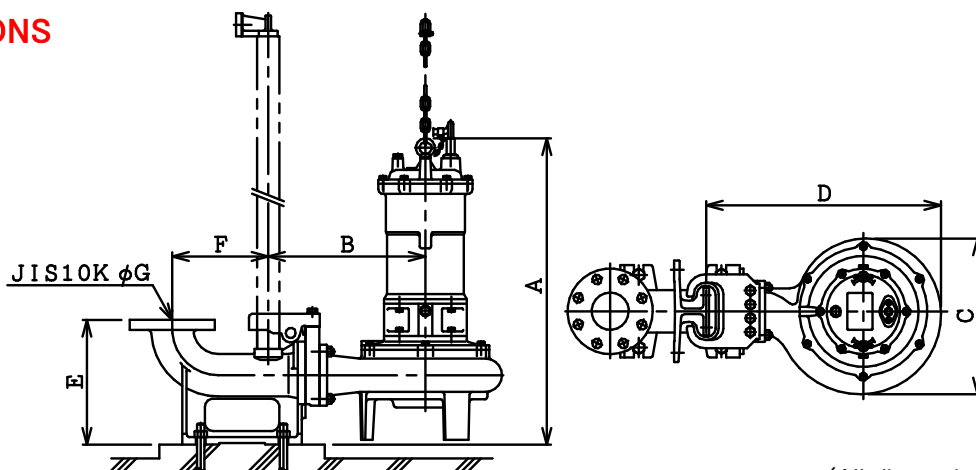
All the external hardware are made of heavy duty 304 stainless steel.



# PUMP PERFORMANCE CURVES



# DIMENSIONS



(All dimensions in mm)

Discharge Diameter	Model	A	B		C		D		E	F	G	w't (kg)	
			50Hz	60Hz	50Hz	60Hz	50Hz	60Hz				Pump	Discharge Elbow
80	SH-83B	675	352	352	335	335	525	525	270	209	80	65	25
	SH-85B	675	352	352	335	335	525	525					
	SH-88B	830	412	352	440	335	635	525					
	SH-810B	830	412	412	440	440	635	635					
	SH-815B	830	412	412	440	440	635	635					
	SH-820B	1090	462	412	530	440	730	635					
100	SH-105B	705	352	352	335	335	525	525	325	239	100	75	31
	SH-108B	860	412	352	440	335	635	525					
	SH-1010B	860	412	412	440	440	635	635					
	SH-1015B	860	412	412	440	440	635	635					
	SH-1020B	1120	462	412	530	440	730	635					
150	SH-158B	930	439	379	440	335	665	555	460	282	150	140	65
	SH-1510B	930	439	439	440	440	665	665					
	SH-1515B	930	439	439	440	440	665	665					
	SH-1520B	1190	489	439	530	440	760	665					

## SAFETY PRECAUTIONS



- Before operating our pumps, read the operation manual carefully.
- All the pictures shown in this catalog have been taken after removing all the safety devices legally required, to make the products easier to see.
- Pump and pump installations drawings are only for explanatory and descriptive purposes.

• The designs or Specifications of the models in this catalogue are subject to change without prior notice due to continual improvement.



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