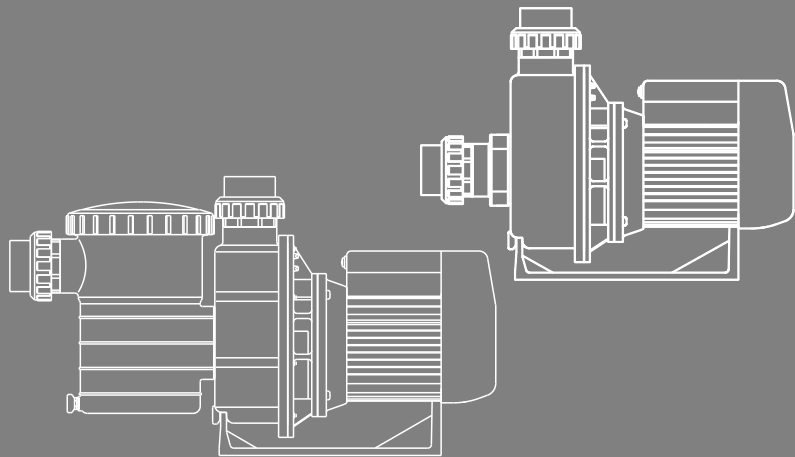




SB & SR Series

Centrifugal Pump

Installation and Operation Manual



USER MANUAL



SAA SASO

Model: SB & SR Series

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WARNINGS AND SAFETY INSTRUCTIONS

GENERAL WARNING

This instruction contain general caution information for use in Pool and SPA pump installation application. Specified Pump model function should be refer to particular manual. Components such as the filtration system, pumps and heater must be positioned so as to prevent their being used as means of access to the pool by young children.



RISK OF ELECTRICAL SHOCK

This appliance should be installed by qualified electrical personnel in accordance with National Electrical Code and all applicable local codes and ordinances. Hazardous voltage can shock, burn, and cause death or serious property damage. DO NOT use an extension cord to connect unit to electric supply to reduce the risk of electric shock.

1. The pump should be permanently connected to an individual circuit breaker.
2. Pump must be connected to a residual current device (RCD) having a rated residual operating current not exceeding 30 mA or receptacle with ground fault circuit interrupt (GCFI).
3. Electrical grounding must be connected before connecting to electrical power. Failure to ground all electrical equipment can cause serious or fatal electrical shock hazard.
4. Bonding: Use at least #8 AWG (#6 AWG for Canada) a solid copper conductor, run a continuous wire from external bonding lug (if available) to the pressure wire connector provided on the electrical equipment and to all metal parts of swimming pool, spa, or hot tub, and metal piping (except gas piping), and conduit within 1.5 m (5 ft) of inside walls of swimming pool, spa, or hot tub.
5. Never open the inside of the drive motor enclosure. There is a capacitor bank that holds a mains supply voltage charge even when there is no power to the unit. The voltage should be referred to the individual pump operation voltage.
6. The pump is capable of high flow rates; use caution when installing and programming to limit pumps performance only.
7. Switch OFF pump power before servicing and disconnecting the main circuit to the pump.
8. Never change the filter control valve position while the pump is running.



COMPRESS AIR HAZARDOUS

This system enclosed pre-filter / filter and become pressurized. Pressurized air can cause the Lid to separate which can result in serious injury or death.

Pool and spa circulation systems operate under high pressure. When any part of the circulating system (i.e. lock ring, pump, filter, valves, etc.) is serviced, air can enter the system and become pressurized. Filter tank Lid and pre-filter cover must be properly secured to prevent violent separation. Place pre-filter / filter air relief valve in the open position and wait for all pressure in the system to be relieved before remove the lib to access the basket for cleaning.



HYPERTHERMIA

SPA water temperature excess 38°C (104°F) may be injurious to health. Measure water temperature before entering SPA.

Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6 °F (37 °C). The symptoms of hyperthermia include drowsiness, lethargy, and an increase in the internal temperature of the body.



SUCTION ENTRAPMENT HAZARD

This pump produces high levels of suction and creates a strong vacuum at the main drain at the bottom of your pool and spa. This suction is so strong that it can trap adults or children under water if they come in close proximity to a pool or spa drain or a loose or broken drain cover or grate.

The Virginia Graeme Baker (VGB) Pool and Spa Safety Act creates new requirements for owners and operators of commercial swimming Pools and spas.

Commercial pools or spas constructed on or after December 19, 2008, shall utilize:

1. A multiple main drain system without isolation capability with suction outlet covers that meet ASME/ANSI A112.19.8a Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs and either:
 - 1.1 A safety vacuum release system (SVRS) meeting ASME/ANSI A112.19.17 Manufactured Safety Vacuum Release systems (SVRS)
For Residential and Commercial Swimming Pool, Spa, Hot Tub, and Wading Pool Suction Systems and/or ASTM F2387 Standard
Specification for Manufactured Safety Vacuum Release Systems (SVRS) for Swimming pools, Spas and Hot Tubs or
 - 1.2 A properly designed and tested suction-limiting vent system or
 - 1.3 An automatic pump shut-off system.

Commercial pools and spas constructed prior to December 19, 2008, with a single submerged suction outlet shall use a suction outlet cover that meets ASME/ANSI A112.19.8a and either:

1. A SVRS meeting ASME / ANSI A112.19.17 and/or ASTM F2387, or
2. A properly designed and tested suction-limiting vent system, or
3. An automatic pump shut-off system, or
4. Disabled submerged outlets, or
5. Suction outlets shall be reconfigured into return inlets.

There are five types of suction entrapment according to The Virginia Graeme Baker (VGB) Pool and Spa Safety Act

1. **Body Entrapment** a section of the torso becomes entrapped
2. **Limb Entrapment** an arm or leg is caught by or pulled into an open drainpipe
3. **Hair Entrapment** or entanglement hair is pulled into and/or wrapped around the grate of the drain cover
4. **Mechanical Entrapment** the bather's jewelry or clothing gets caught in the drain or the grate
5. **Evisceration** the victim's buttocks come into contact with the pool suction outlet and he or she is disemboweled



TO REDUCE ENTRAPMENT HAZARD RISK

Two function suction outlets per pump must be installed to prevent entrapment. The minimum separate of suction on the same plate must be at least point to point measurement 1 meter (3ft) apart. It is used to avoid "dual blockage" by bather.



WARNING:

If suction is found damaged, broken, cracked, missing or not securely attached during regular checking, shut down the pool and replace it immediately.

A vacuum release or vent system is recommended to install for suction entrapment release.

1. SB AND SR SERIES CENTRIFUGAL PUMP OVERVIEW

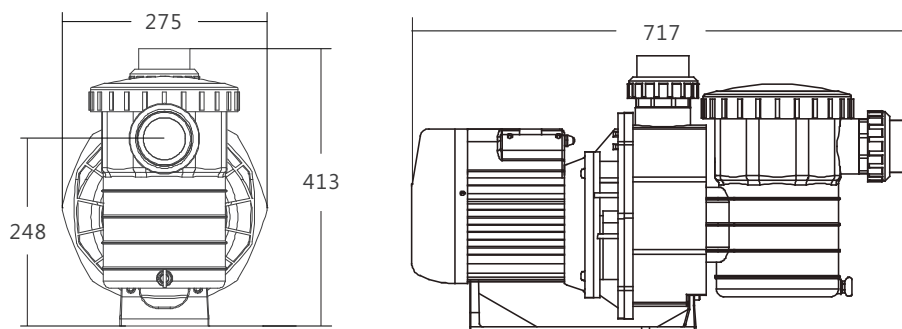
It is a medium power, low noise and easy to maintenance self-priming pump for medium residential in ground pool installation. SB series Pre-filter with transparent Lid cover easy to observe the basket need to be clean or not. IPX5 aluminum motor enclosure design is good for outdoor deployment and heat dissipation. There is built in thermal protection to protect the motor when fault operation cause motor over heat. 220Vac, 50Hz or 60Hz and 380Vac electrical power is available.

2. PRODUCT INFORMATION (SB SERIES)

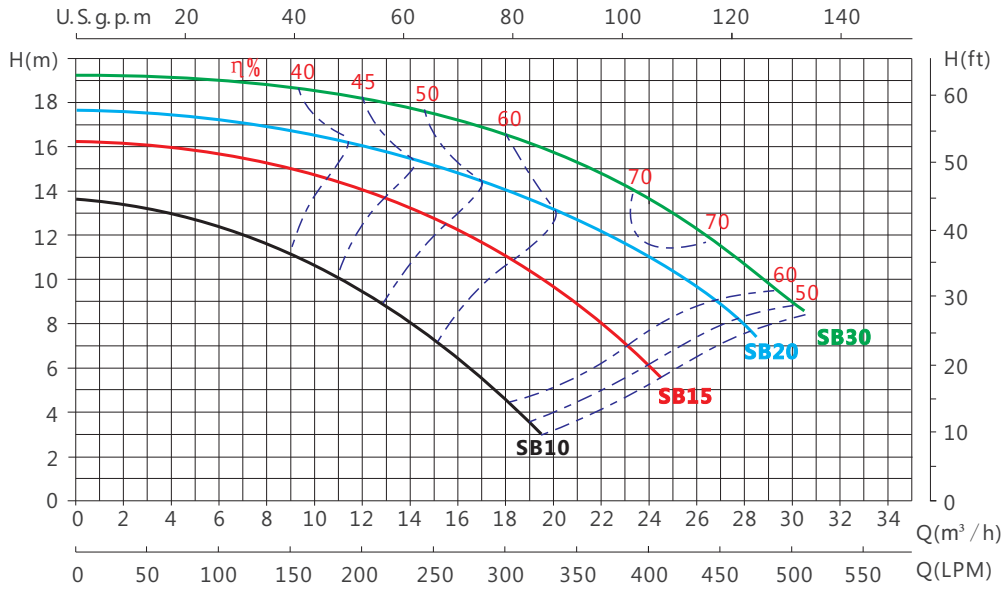
Model 50Hz	Input (kW)	Current (AMP)	Noise (dB)	Head(m)					
				6	8	10	12	14	16
				FlowRate(m ³ /h)					
SB10	0.97	4.7	67	16.4	14	11	7	-	-
SB15	1.30	5.9	67	24	22	19.5	16	12	2
SB20	1.80	8.2	69	31	28	25.2	22	18	12
SB30	2.18	10.5	69	34	32	28.4	26	23	19.2

Code 220V/50Hz	Code 220V/60Hz	Code 380V/50Hz	Model	Connection Size	Horsepower	Weight (kg)	Capacitance
88021305	88021605	88021405	SB10	2"/63mm	1.0hp	16.0	25μF
88021307	88021607	88021407	SB15	2"/63mm	1.5hp	17.0	25μF
88021308	88021608	88021408	SB20	2"/63mm	2.0hp	23.0	30μF
88021309	88021609	88021409	SB30	2"/63mm	3.0hp	24.0	35μF

DIMENSIONS



PERFORMANCE CURVE

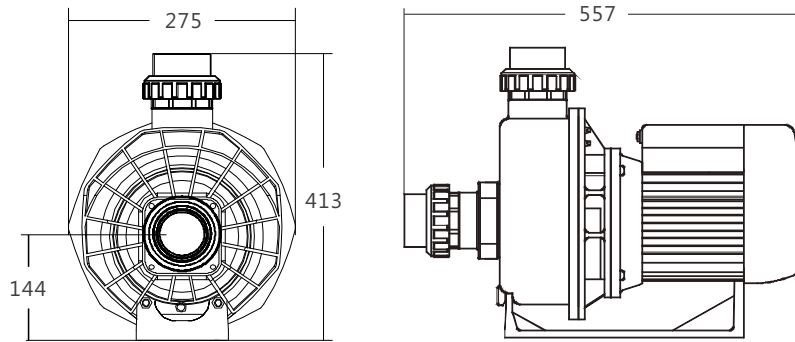


3. PRODUCT INFORMATION (SR SERIES)

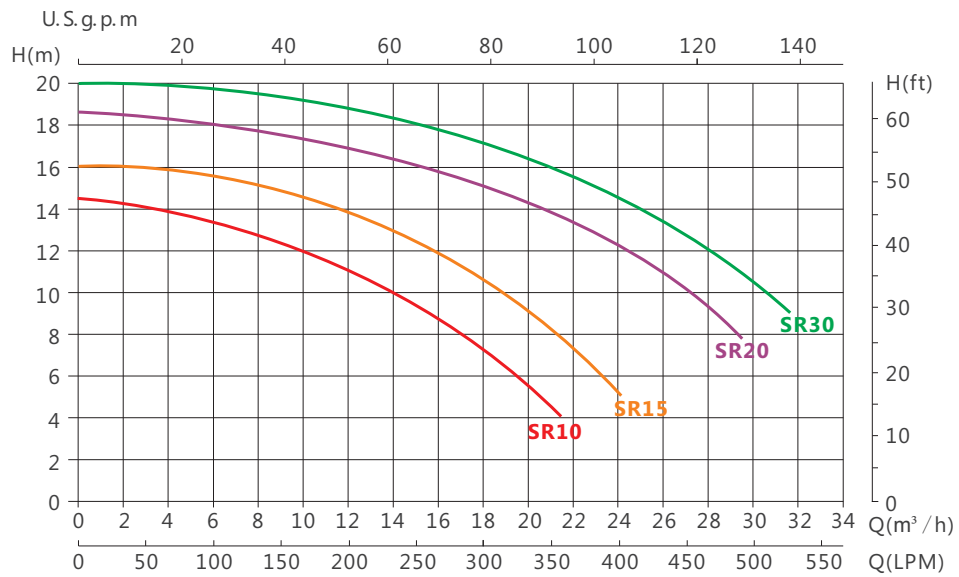
Model 50Hz	Input (kW)	Current (AMP)	Noise (dB)	Head(m)				
				8	10	12	14	16
				FlowRate(m³/h)				
SR10	0.97	4.7	67	17	14	10	4	-
SR15	1.30	5.9	67	21	18.8	14.8	11.6	2
SR20	1.80	8.2	69	29.2	27	24	20.5	16
SR30	2.18	10.5	69	32	30.5	28	25	21

Code 220V/50Hz	Code 220V/60Hz	Code 380V/50Hz	Model	Connection Size	Horsepower	Weight (kg)	Capacitance
88023605	88023705	88023905	SR10	2"/63mm	1.0hp	14.70	25µF
88023607	88023707	88023907	SR15	2"/63mm	1.5hp	16.30	25µF
88023608	88023708	88023908	SR20	2"/63mm	2.0hp	19.70	30µF
88023609	88023709	88023909	SR30	2"/63mm	3.0hp	22.10	35µF

DIMENSIONS



PERFORMANCE CURVE



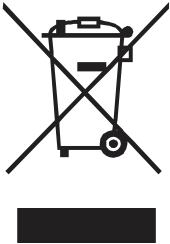
4. IMPORTANT SAFETY INSTRUCTIONS



WARNING:

The user guide you are holding includes essential information on the safety measures to be implemented for installation and start-up. Therefore, the installer as well as the user must read the instructions before beginning installation and start-up. Keep this manual for future reference.

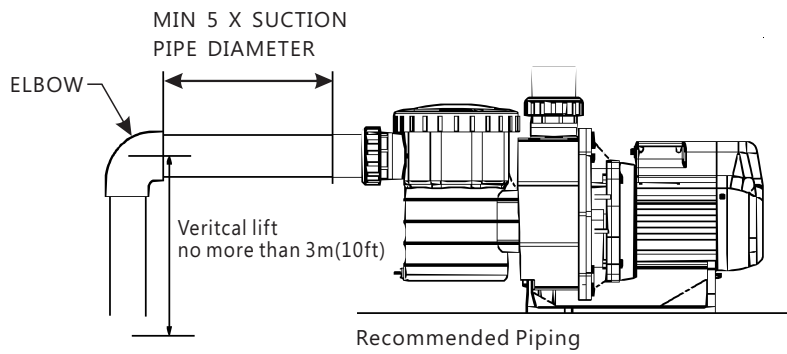
1. A protective device is to be installed in the fixed wiring.
2. This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
3. The appliance shall be installed in accordance with national wiring regulations means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules. A disconnected incorporated in the fixed wiring is to be provided.
4. The pump is to be supplied through a residual current device (RCD) or Ground Fault Circuit Interrupt (GFCI) having a rated residual operation current not exceeding 30mA.

	Correct disposal of this product
	<p>This symbol on the product, or in its packaging, indicates that this product may not be treated as household waste. Instead, it should be taken to the appropriate waste collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by the inappropriate waste handling of this product. For more detailed information about the recycling of this product, please contact your local council, your household waste disposal service, or the shop where you purchased the product.</p>

5. INSTALLATION

5.1 PIPING

1. Install the pump as close to the pool as possible, preferably in a dry, well ventilated area away from direct sun light. Protect the pump from excessive moisture.
2. Place the pump as close to the water source as possible, so that the suction pipe is short, straight and direct to reduce the friction loss. Don't install the pump at more than 10 ft (3 meters) of geometrical height from water level.
3. Before installing the pump, make sure that the surface is solid, elevated, rigid and vibration free.
4. Secure the pump to the base with screws or bolts to limit the vibration and the stress on the pipe or the joints.
5. Leave enough space for gate valves in suction and discharge piping, if required.
6. Ensure there is enough clearance for pre-filter basket & Lid open and motor ventilation.
7. Connect the suction and discharge pipe to the outlet and inlet of the swimming pool.
8. Make sure that floor drainage is adequate to prevent flooding.
9. Make sure that the pump and piping are accessible for servicing.



Note: The pump suction and discharge connections are mounded in thread stops, DO NOT try to screw the pipe beyond these stops.
 SB and SR series pump has 2 sets 2" union adaptor in internal and external thread and universal design for metric and imperial PVC pipe connection.



5.2 ELECTRICAL WIRING



Warning: This power pump demand licensed or certified electrician or qualified pool installer to ensure there is adequate protection between the pump motor and mains power supply according to individual countries safety code.

The pump has power cord with plug attached on the plug, plug it to a power socket with circuit breaker to isolate the motor from the mains power for over load protection. The circuit breaker rating should refer to the electrical specification of individual pump working voltage and power.

The power has to be with a Residual Current Device (RCD) or Ground Fault Circuit Interrupt (GFCI) having a rated residual operating current not exceeding 30mA.



WARNING: If the RCD / GFCI device trips, it means there is fault on the power line or motor. Do not use this pump. Disconnect the pump and have the problem corrected by a qualified service representative before using. Press the reset button to reset the RCD / GFCI devices after fixed. It will keeps the circuit shut off and will not reset if the power line problem is not fixed.

It is recommend to test the RCD / GFCI at least once a month.

Pumps should be shipped with Power cord with plug for corresponding countries. If there is not power cord attached to the pump, it is necessary to follow the local electricity power line color code to connect the power according to the wiring for individual pump diagram.

5.3 ELECTRICAL WIRING– 3 PHASE

For pump operate at 380Vac or above, 3 phase power line is needed to drive the motor. The latest cable color code is Brown for L1, Black for L2, Grey for L3 , Blue for Neutral and Green & Yellow for Earth.

For old code it is Red for L1, Yellow for L2, Blue for L3, Black for Neutral and Green & Yellow for Earth.

3 phase Cable New Wire Color Code			3 phase Cable Old Wire Color Code		
L/L1		Brown	L/L1		Red
L2		Black	L2		Yellow
L3		Grey	L3		Blue
N		Blue	N		Black
Earth		Green & Yellow	Earth		Green & Yellow

DOL starting is the simplest, cheapest and most common starting method. It actually gives the lowest temperature rise within the motor during startup of all the starting methods. But the drawback is starting current can be 3-8 time of full load current. Therefore, it is not recommend for pump power higher than 5.5KW in public low voltage mains 400V.

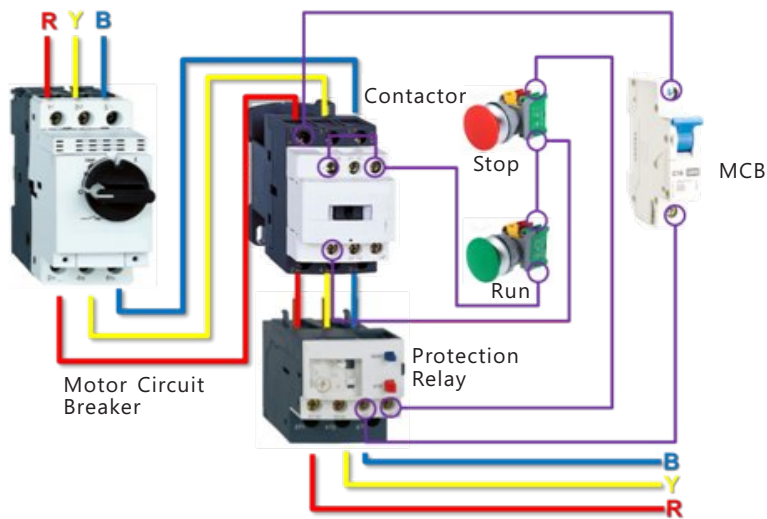
The typical common 3 phase pump Run / Stop starter is Direct-On-Lone Starter that include:

1. Motor Circuit Breaker is a short circuit magnetic protection devices.
2. Control unit for Run and Stop operation and status monitoring.
3. Protection relay is an overload thermal protection device.
4. Single phase MCB for secondary protection.



It is a typical wiring diagram for reference only. All electrical rating of individual device has to match with pump's current rating.

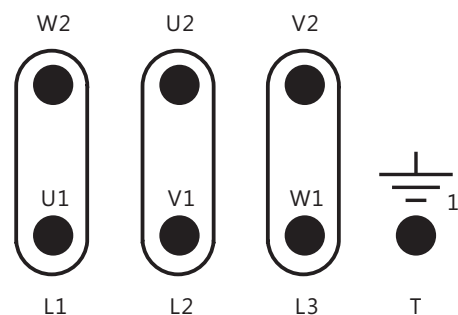
WARNING:



Direct-On-Line (DOL) Starter typical wiring.

DOL Starter can be applied to motor connect in Delta or WYE / Star connection.

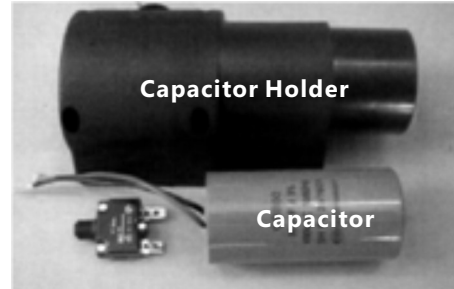
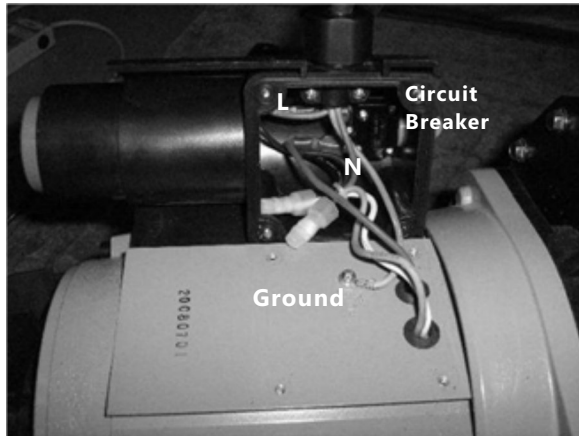
Factory default 3 phase motor connection is in Delta Connection and can't be changed.



Low Voltage
Delta Connection

Wiring Box Diagram:

SB10, SB15, SB20, SB30, SR10, SR15, SR20, SR30 all model 220Vac 50/60Hz.



6. START UP



WARNING:

1. Verify the pump shaft turn freely.
 2. Check the mains voltage, current and frequency are accordingly to the name plate.
 3. Never run pump dry! Running pump dry may cause damage to the mechanical seal causing leakage and flooding. Fill the pre-filter with water before starting motor.
 4. Before removing the pre-filter Lid, STOP PUMP, CLOSE GATE VALVES in suction and discharge pipes.
 5. Always STOP THE PUMP before when RELEASE ALL PRESSURE from the pump and the piping system before proceeding.
 6. Never tighten or loosen screw while the pump is in operation.
 7. The suction pipe and the suction inlet in the pool must be free from obstruction.
- Before start-up, the alignment of the pump should be checked. The tubing should be inspected to ensure that they are properly fitted and tightened and that they do not exert pressure or tension on the pump's suction or discharge connection. The pump should never be operated.

WARNING: Tighten/untighten the pump Lid by hand only.

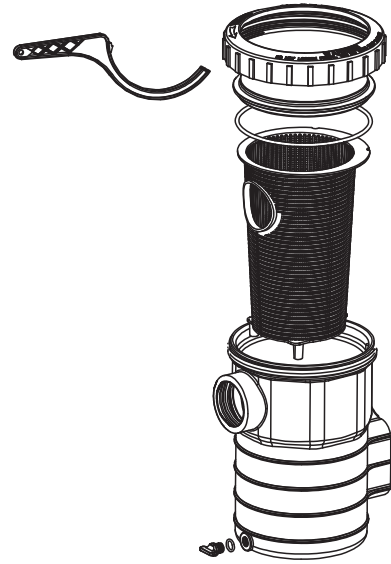
1. Clear all piping of construction debris and verify that the piping has passed a proper pressure test.
2. Check the filter and other equipment for proper installation, verifying all clamps and connections are properly installed as per the manufacturer's instructions.
3. Open any shut off valves on the suction and discharge lines.
4. Open the filter pressure relief valve and release all pressure from the system.
5. If the pump is located below the water level of the pool, opening the pressure relief valve will fill the pump with water.
6. If the pump is located above the pool water level, remove the Lid from the pre-filter and fill with water before starting the pump.
7. Check to see that the Lid O-ring and seat areas are clean and lubricated. Debris in the sealing area can cause air to leak into the system and make it difficult to prime the pump.
8. Close / tighten the Lid to make an airtight seal.
9. Turn on power wait for pump to prime. Pump priming time for 3m (10ft) should be at least 4.5 minutes. Priming will depend on vertical length of suction lift and horizontal length of suction pipe. If pump does not prime within prime time, stop the motor and determine cause.
10. If the pump does not prime within 10 minutes. Ensure all instructions to this point have been followed. Stop the pump! Check for suction leaks and repeat steps (1) through (8).

7. ROUTINE MAINTENANCE

The pump mechanical seal requires no lubrication and service.

The only routine maintenance needed is the inspection and cleaning of the pre-filter basket. Debris or trash collected in the basket will choke off the water flow through the pump. Follow the instructions below in order to clean the pre-filter basket:

1. Turn off the pump, close the gate valve in suction and discharge, and release all pressure from the system before proceeding.
2. For SB pump series, turn the transparent Lid cover follow the arrow on the Lid cover by lid ring opening key provided to release and lock.
3. Remove the pre-filter basket and cleaning. Make sure all the holes in the basket are clear, flush the basket with water and replace it in the trap with large opening at the pipe connection port (between rib sprovided). If the basket is replaced back wards, the cover will not fit on the trap body.
4. Clean and inspect the Lid's O-ring ring; reinstall on the Lid cover.
5. Clean the ring groove on the pre-filter body and replace the Lid. To help keep the Lid from sticking, tighten it by hand only.
6. Put back the basket with opening face directly to the suction inlet as the picture show above.
7. Fill up the filter body with water and Prime the pump.



8. WINTERIZING

If the air temperature drops below 0°C (32°F), the water in the system can freeze and cause damage. Freezing damage is not warrantable.

To prevent freezing damage follow the procedures listed below:

1. Shut off electrical power for the pump at the house circuit breaker.
2. Drain the water out of the pump case by removing the two drain plugs from the case.
3. Store the plugs in the pump basket.
4. Cover the motor to protect it from severe rain, snow and ice.
5. If it is possible, store the pump in a dry location during this time.
6. Do not wrap the motor in plastic. It will cause condensation and rust on the inside of the motor.
7. Where possible, have a qualified service technician or electrician disconnect the electrical wiring at the switch or junction box and store the pump indoors.
8. When the pump is reactivated, ensure all seals and O-rings are in operational condition. If they are not, re-greasing or replacing may be necessary.

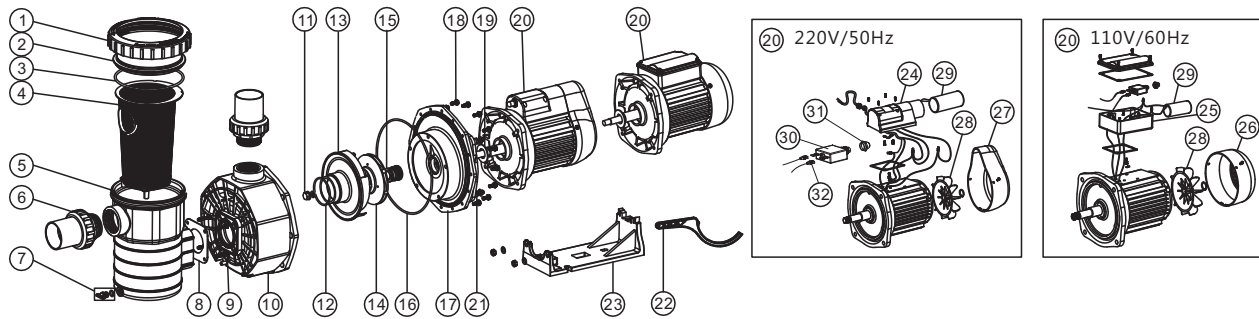
9. TROUBLE SHOOTING

Problem description	Possible causes
Motor does not start	<ol style="list-style-type: none"> 1. Disconnect switch or circuit breaker in off position 2. Fuses blow nor thermal over load open 3. Locked motor shaft 4. Motor windings burned out 5. Defective starting switch inside single phase motor 6. Disconnected or defective wiring 7. Low voltage
Pump does not reach full speed	<ol style="list-style-type: none"> 1. Low voltage 2. Pump connected to the wrong voltage
Motor over heats (protect or trips)	<ol style="list-style-type: none"> 1. Low voltage 2. Motor windings connected to the wrong voltage on dual voltage model
Pump delivers no water	<ol style="list-style-type: none"> 1. Pump is not primed 2. Closed valve in suction or discharge line 3. Leakage or air into suction system 4. Impeller clogged
Leakage of water at the shaft	Shaft seal requires replacement
Low pump capacity	<ol style="list-style-type: none"> 1. Valve in the suction or discharge line partly closed 2. Suction or discharge line partly plugged 3. Suction or discharge line too small 4. Plugged basket in skimmer or hair and lint strainer 5. Dirty filter 6. Impeller clogged
High pump pressure	<ol style="list-style-type: none"> 1. Discharge vale or inlet fittings closed too much 2. Return lines too small 3. Dirty filters
Noisy pump and motor	<ol style="list-style-type: none"> 1. Plugged basket in skinner or hair in lint strainer 2. Worn motor bearings 3. Valve in suction line partly closed 4. Suction line partly plugged 5. Vacuum hose plugged or too small 6. Pump not supported properly
Air bubbles at inlet fittings	<ol style="list-style-type: none"> 1. Leakage of air into the suction line in connections or valve stem 2. Cover gasket of hair and lint strainer needs cleaning 3. Low water level in the pool

Note: If the above recommendations of this manual do not solve your particular problem(s), please contact your local service agent for further assistance.

10. REPLACEMENT PARTS

10.1 SB SERIES



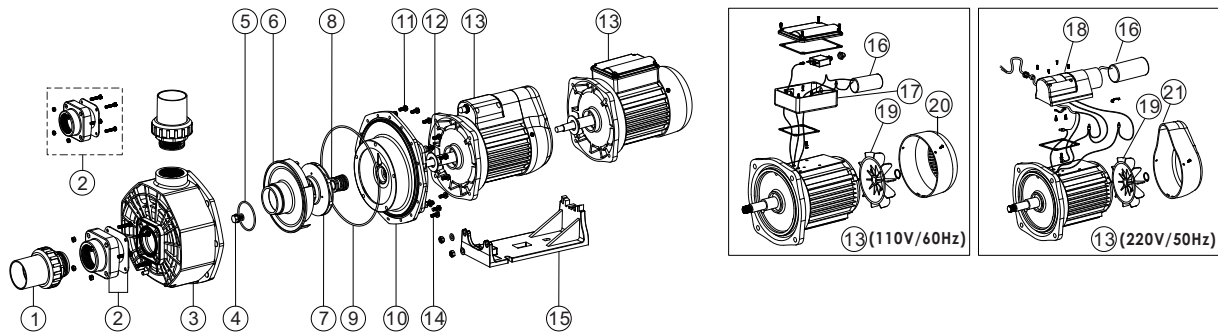
Key No.	Part No.	Description	QTY
1	01021008	Nut for lid	1
2	01041022	Transparent Lid	1
3	02010248	O-Ring for Lid	1
4	01111030	Basket	1
5	89021305	Pre-Filter Body	1
6*	89280103	2.0" Union (Black/ White Colour)	2
7	89021307	Drain Plug with O-ring	1
8	02011115	Square Gasket	1
9	03011083	M6 x 30 Screw for Pump Body	4
10	89021308	Pump body for SB,SR	1
11	89021309	Screw for Impeller with O-Ring	1
12	02011108	O-Ring for Diffuser	1
13	01111015	Diffuser	1
14	01311001	Impeller SB10 (110V/60Hz) and (220V/60Hz)	1
14	01311002	Impeller SB20 (110V/60Hz) and (220V/60Hz)	1
14	01311003	Impeller SB/ SR20 (220V/50Hz) and (380V/50Hz)	1
14	01311004	Impeller SB/ SR10 (220V/50Hz) and (380V/50Hz)/ SB15 (110V/60Hz) and (220V/60Hz)	1
14	01311005	Impeller SB/ SR15 (220V/50Hz) and (380V/50Hz)/ SB30 (110V/60Hz) and (220V/60Hz)	1
14	01311006	Impeller SB30 (220V/50Hz) and (380V/50Hz)	1
15	E020001	3/4" Mechanical seal	1
16	02011093	O-Ring for Flange	1
17	01021013	Pump Flange for SB/ SR	1
18	03011080	M6×15 Hexagonal Bolt	16
19	02011096	Motor Slinger	1
20	89021301	Motor SB/ SR10 (220V/50Hz)	1
20	89021302	Motor SB/ SR15 (220V/50Hz)	1

Key No.	Part No.	Description	QTY
20	89021303A	Motor SB/ SR20 (220V/50Hz)	1
20	89021304	Motor SB/ SR30 (220V/50Hz)	1
20	89021401	Motor SB/ SR10 (220V/60Hz)	1
20	89021402	Motor SB/ SR15 (220V/60Hz)	1
20	89021403	Motor SB/ SR20 (220V/60Hz)	1
20	89021404	Motor SB/ SR30 (220V/60Hz)	1
20	89021601	Motor SB/ SR10 (380V/50Hz)	1
20	89021602	Motor SB/ SR15 (380V/50Hz)	1
20	89021603	Motor SB/ SR20 (380V/50Hz)	1
20	89021604	Motor SB/ SR30 (380V/50Hz)	1
20	89021501	Motor SB/ SR10 (110V/60Hz)	1
20	89021502	Motor SB/ SR15 (110V/60Hz)	1
20	89021503	Motor SB/ SR20 (110V/60Hz)	1
20	89021504	Motor SB/ SR30 (110V/60Hz)	1
21	89021310	M8*20 Bolt for motor with washer	4
22	01021021	Opening key	1
23	01111032	Base with Nut & Washer for SB10/ Sb15	1
23	01111031	Base with Nut & Washer for SB20/ Sb30	1
24	89021312	Cable Box for SB/ SR Pump 220V/50Hz; 220V/60Hz; 380V/50Hz.	1
25	89021505	Cable Box for SB/ SR Pump 110V/60Hz	1
26	01031001	Fan Cover for EPH SB/SR20 SB/SR30	1
26	01031002	Fan Cover for SB/SR10,SB/SR15 Pump	1
27	01031008	Fan Cover for SB/SR20,SB/SR30 Pump	1
27	01031009	Fan Cover for SB/SR10,SB/SR15 Pump	1
28	01031007	Cooling fan for SC SB/SR10,SB/SR15	1
28	01031006	Cooling fan for EPH SB/SR20,SB/SR30	1
29	04016014	Capacitor for SB/ SR10/ SB/ SR15 (220V/50Hz) (220V/60Hz)	1
29	04016015	Capacitor for SB/ SR20 (220V/50Hz) (220V/60Hz)	1
29	04016016	Capacitor for SB/ SR30 (220V/50Hz) (220V/60Hz)	1
29	04016022	Capacitor for SB/ SR10/ SB15 (110V/60Hz)	1
29	04016023	Capacitor for SB/ SR20/ SB30 (110V/60Hz)	1
30	04015042	Overload Switch PE77-6A/250VAC for SB/ Sr10	1
30	04015015	Overload Switch PE77-8A/250VAC for SB/ Sr15	1
30	04015012	Overload Switch PE77-10A/250VAC for SB/ Sr20	1
30	04016037	Overload Switch PE77-13A/250VAC for SB/ Sr30	1
31	02021039	Cover for Overload Switch	1
32	04014018	Insulation Fitting for Overload Switch	1

Note: 6* 89280103B is 2.0 Union in Black Colour

6* 89280103W is 2.0 Union in White Colour

10.2 SR SERIES



Key No.	Part No.	Description	QTY
1*	89280103	2.0" Union (Black/ White Colour)	2
2	89023601	Connecting Fitting	1
3	89021308	Pump body for SB,SR	1
4	89021309	Screw for Impeller with O-Ring	1
5	02011108	O-Ring for Diffuser	1
6	01111015	Diffuser	1
7	01311001	Impeller SR10 (110V/60Hz)/ (220V/60Hz)	1
7	01311002	Impeller SR20 (110V/60Hz)/ (220V/60Hz)	1
7	01311003	Impeller SR20 (220V/50Hz)/ (380V/50Hz)	1
7	01311004	Impeller SR10 (220V/50Hz) and (380V/50Hz)/ SR15 (110V/60Hz) and (220V/60Hz)	1
7	01311005	Impeller SR15 (220V/50Hz) and (380V/50Hz)/ SR30 (110V/60Hz) and (220V/60Hz)	1
7	01311006	Impeller SR30 (220V/50Hz) and (380V/50Hz)	1
8	E020001	3/4" Mechanical Seal	1
9	02011093	O-Ring for Flange	1
10	01021013	Pump Flange for SB,SR	1
11	03011080	M6 ×15 Hexagonal Bolt	16
12	02011099	Motor Slinger for SR10/ Sr15	1
12	02011101	Motor Slinger for SR20/ Sr30	1
13	89021301	Motor SB10 or SR10 (220V/50Hz)	1
13	89021302	Motor SB15 or SR15 (220V/50Hz)	1
13	89021303A	Motor SB20 or SR20 (220V/50Hz)	1
13	89021304	Motor SB30 or SR30 (220V/50Hz)	1
13	89021401	Motor SB10 or SR10 (220V/60Hz)	1
13	89021402	Motor SB15 or SR15 (220V/60Hz)	1
13	89021403	Motor SB20 or SR20 (220V/60Hz)	1
13	89021404	Motor SB30 or SR30 (220V/60Hz)	1
13	89021601	Motor SB10 or SR10 (380V/50Hz)	1
13	89021602	Motor SB15 or SR15 (380V/50Hz)	1
13	89021603	Motor SB20 or SR20 (380V/50Hz)	1
13	89021604	Motor SB30 or SR30 (380V/50Hz)	1
13	89021501	Motor SB10 or SR10 (110V/60Hz)	1
13	89021502	Motor SB15 or SR15 (110V/60Hz)	1

Key No.	Part No.	Description	QTY
13	89021503	Motor SB20 or SR20 (110V/60Hz)	1
13	89021504	Motor SB30 or SR30 (110V/60Hz)	1
14	89021310	M8*20 Bolt for motor with washer	4
15	01111032	Base with Nut & Washer for SB/SR10 / SB/SR15	1
15	01111031	Base with Nut & Washer for SB/SR20 / SB/SR30	1
16	04016014	Capacitor for SB/SR10, SB15	1
16	04016015	Capacitor for SB/SR20 & SC/EPH200 & SPH200 Pump	1
16	04016016	Capacitor for SB/SR30 EPH300,EPH400 & SPH300 Pump	1
16	04016022	Capacitor for SR/SB10-15 & SC100-150 Pump 110V	1
16	04016023	Capacitor for SR/SB20-30 & SC200 Pump 110V	1
17	89021505	Cable Box	1
18	89021312	Cable Box for SR Pump 220V/50Hz / 220V/60Hz / 380V/50Hz.	1
19	01031007	Cooling fan for SC SB/SR10 / SB/SR15	1
19	01031006	Cooling fan for EPH SB/SR20 / SB/SR30	1
20	01031001	Fan Cover for EPH SB/SR20 / SB/SR30	1
20	01031002	Fan Cover for SB/SR10 / SB/SR15 Pump	1
21	01031008	Fan Cover for SB/SR20 / SB/SR30 Pump	1
21	01031009	Fan Cover for SB/SR10 / SB/SR15 Pump	1

Note: 1* 89280103B is 2" Union in Black Colour
1* 89280103W is 2" Union in White Colour

11. TERMS OF THE WARRANTY

As original purchaser of this equipment have purchased from Emaux Water Technology Co Ltd, through Authorized International Distributor or Dealer, warrants its products free from defects in materials and workmanship under normal use during warranty period. The warranty period begins on the day of purchase and extends only to the original purchaser. It is not transferable to anyone who subsequently purchases the product from you. It excludes all expendable parts.

During the warranty period, Emaux authorized reseller will repair or replace defective parts with new parts or, at the option of Emaux, serviceable used parts that are equivalent or superior to new parts in performance.

This Limited Warranty extends only to products purchased from Emaux authorized reseller. This Limited Warranty does not extend to any product that has been damaged or rendered defective (a) as a result of accident, misuse or abuse;

(b) as a result of an act of God;

(c) by operation outside the usage parameters stated herein;

(d) by the use of parts not manufactured or sold by Emaux;

(e) by modification of the product;

(f) as a result of war or terrorist attack; or

(g) as a result of service by anyone other than Emaux authorized reseller or authorized agent.

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