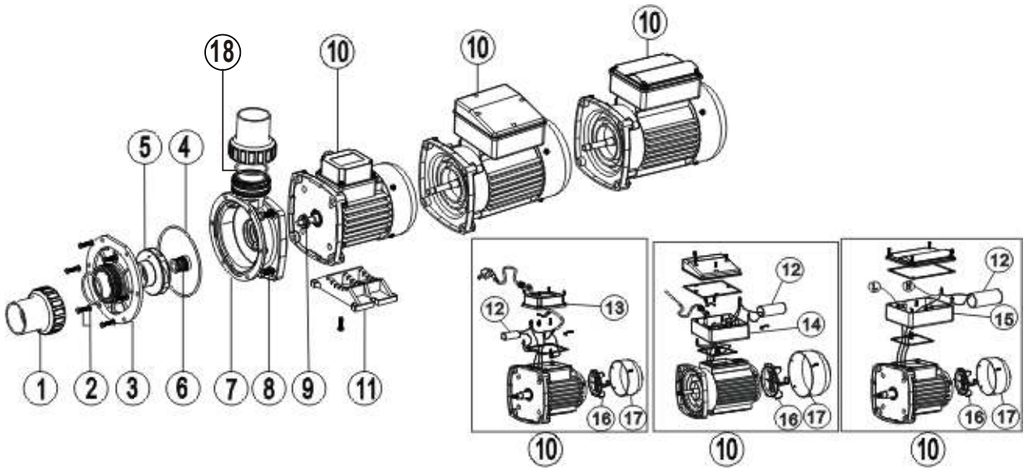
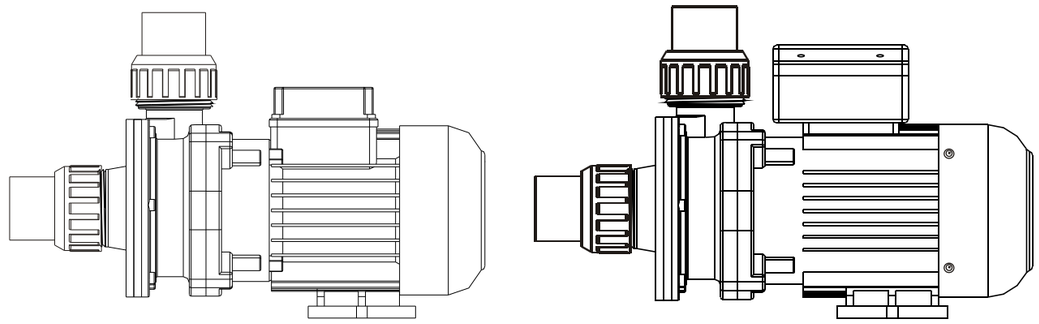


PUMP PARTS FOR ST

Item	Part No.	Product Description	Qty	Item	Part No.	Product Description	Qty
1	89280105	1.5"union	2		89022201	Motor ST020(220V/60HZ)	1
2	89022103	M5*16 Screw for pump front with Washer	6		89022202	Motor ST033(220V/60HZ)	1
3	01021046	ST Pump body cover	1		89022203	Motor ST050(220V/60HZ)	1
4	02011076	O-Ring for pump body	1		89022204	Motor ST075(220V/60HZ)	1
5	01311015	Impeller ST020(220V/50HZ)	1		89022205	Motor ST100(220V/60HZ)	1
	01311016	Impeller ST033(220V/50HZ)	1		89022206	Motor ST120(220V/60HZ)	1
	01311017	Impeller ST050(220V/50HZ)	1	10	89022305	Motor ST020(110V/60HZ)	1
	01311018	Impeller ST075(220V/50HZ)	1		89022306	Motor ST033(110V/60HZ)	1
	01311019	Impeller ST100(220V/50HZ)	1		89022301	Motor ST050(110V/60HZ)	1
	01311020	Impeller ST120(220V/50HZ)	1		89022302	Motor ST075(110V/60HZ)	1
	01311023	Impeller ST020(220V/60HZ)	1		89022303	Motor ST100(110V/60HZ)	1
	01311024	Impeller ST033(220V/60HZ)	1		89022304	Motor ST120(110V/60HZ)	1
	01311015	Impeller ST050(220V/60HZ)	1	11	89022101	Base with M5*20 Screw	1
	01311016	Impeller ST075(220V/60HZ)	1		04016028	Capacitor for ST050 Pump	1
	01311017	Impeller ST100(220V/60HZ)	1		04016019	Capacitor for ST075 Pump	1
	01311018	Impeller ST120(220V/60HZ)	1		04016021	Capacitor for ST100 Pump	1
	01311023	Impeller ST020(110V/60HZ)	1		04016009	Capacitor for ST050 Pump	1
	01311024	Impeller ST033(110V/60HZ)	1		04016010	Capacitor for ST075 Pump	1
	01311015	Impeller ST050(110V/60HZ)	1	12	04016012	Capacitor for ST100 Pump	1
	01311016	Impeller ST075(110V/60HZ)	1		04016032	Capacitor for ST020 Pump	1
	01311017	Impeller ST100(110V/60HZ)	1		04016033	Capacitor for ST033 Pump	1
	01311018	Impeller ST120(110V/60HZ)	1		04016030	Capacitor for ST020 Pump	1
6	04015002	1/2"Mechanical seal	1		04016031	Capacitor for ST033 Pump	1
7	01021024	ST Pump body	1	13	89022111	Cable Box for ST020-ST033 Pump	1
8	89022104	M8*25 Screw with Washer for motor	4	14	89022110	Cable Box for ST050-ST120 Pump	1
9	02011156	Motor Slinger	1	15	89021505	Cable Box for ST050-ST075 Pump	1
10	89022109	Motor ST020(220V/50HZ)	1		89022307	Cable Box for ST100-ST120 Pump	1
	89022110	Motor ST033(220V/50HZ)	1	16	01031027	Cooling fan for ST050-ST120 Pump	1
	89022105	Motor ST050(220V/50HZ)	1		01031026	Cooling fan for ST020-ST033 Pump	1
	89022106	Motor ST075(220V/50HZ)	1	17	01031011	Fan Cover for ST020-ST033 Pump	1
	89022107	Motor ST100(220V/50HZ)	1		01031010	Fan Cover for ST050-ST120 Pump	1
	89022108	Motor ST120(220V/50HZ)	1	18	02011104	O-Ring	2

ST & STA Series Pump



Before installation, be sure to read all instructions and warnings carefully.

Refer to product data plate(s) for additional operating instruction and specifications.

INSPECTION

Examine the equipment when received. Notify your dealer or carrier of any damage or missing parts. Verify that equipment is of size and model specified.

IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

1. READ AND FOLLOW ALL INSTRUCTIONS.
2. WARNING —To reduce risk of injury, do not permit children to use this product unless they are closely supervised at all times.
3. WARNING — (For cord & plug connected units) risk of electric shock. Connect only to a grounding type receptacle protected by a ground-fault circuit-interrupter(GFCI). Contact a qualified electrician if you cannot verify that the receptacle is protected by a GFCI.
4. WARNING —(For cord & plug connected units). To reduce the risk of electric shock, replace damaged cord immediately.
5. WARNING —(For cord & plug connected units). To reduce the risk of electric shock do not use an extension cord to connect unit to electric supply; Provide a properly located outlet.
6. WARNING —(For hot tub and spa pumps). Do not install within an outer enclosure or beneath the skirt of the hot tub or spa, unless so marked.
7. SAVE THESE INSTRUCTIONS

EMPU10011815

INSTALLATION LOCATION

Locate pump as close to pool/spa as possible, preferably in a dry, well ventilated area away from direct sunlight. it should be on a hard, level surface. Give consideration to:

1. Drainage —away from pump
2. Ventilation of pump motor
3. Access for future servicing and winterizing
4. Protection from the elements

Pumps without strainer bodies are designed for flooded suction (all suction fittings and suction piping below water level) and will not self-prime. Consequently, the pump must be installed at an elevation that is below water level when pool or spa is filled.

GENERAL PLUMBING

FOR SOLVENT WELD CONNECTION

Rigid or flexible PVC pipe can be used. Pipe ends should be clean and free of any flash caused by the cutting operation. Be sure that the proper solvent is used on type of pipe specified.

Caution: We recommend that consider climatic conditions when applying adhesives, make the adhesive action of certain glues less effective. Check the manufacturer's instructions.

PUMP PLUMBING

Suction pipe should be as large or large than discharge pipe avoid using a suction pipe smaller than pump connection.

Keep the piping as straight and short as possible, and of suitable size. Avoid connecting an elbow directly into the pump inlet(use a length of straight pipe to allow a proper entry for the water).arrange horizontal runs to slope upward to the pump to prevent high spots that could form air pockets.

ELECTRICAL DATA

Refer to information on motor nameplate for electrical service data. All motors should have fused disconnect switch or circuit breaker. Be sure wire size is sufficient for pump hp and distance from power source. Wiring should be done in accordance with applicable codes by a competent electrician.

PUMP START UP

Do not operate pump until it has been primed as water acts to cool and lubricate the seal. For pumps without strainer bodies and located above water, close suction line valve and fill pump with water in order to prime. If no flow is observed in five minutes, stop the motor and re-prime. If the pump fails to operate, check for air leaks. Refer to trouble shooting section.

PUMP MAINTENANCE

1.Motors are self-lubricating no lubrication required.

2.Shaft seals may become worn and must be replaced if leakage is observed.

SERVICE & REPAIR PARTS

Refer all service to your local dealer as his knowledge of your equipment makes him the vest qualified source of information. Order all repair parts through your dealer. Give the following information when ordering repair parts:

1.Unit nameplate data.
2.Description of part.

TROUBLE SHOOTING

MOTOR DOES NOT START

1. Disconnect switch or circuit breaker in off position
2. Fuses blown or thermal overload open
3. Locked motor shaft
4. Motor windings burned out
5. Defective starting switch inside sing phase Motor
6. Disconnected or defective wiring
7. Low voltage

NOISY PUMP AND MOTOR

1. Worn motor bearings
2. Suction line partly plugged

MOTOR OVERHEATS

1. Low voltage
2. Inadequate ventilation

AIR BUBBLES AT INLET FITTINGS

1. Leakage of air into suction line at connections or valve stem
2. Low water level in drain of bath

LOW PUMP CAPACITY

1. Suction or discharge line partly plugged
2. Suction or discharge line too small
3. Pump running at reduced speed
4. Impeller clogged

HIGH PUMP PRESSURE

Return lines too small

PUMP DOES NOT REACH FULL SPEED

1.Low voltage.
2.Pump connected for wrong voltage.

PUMP DELIVERS NO WATER

1. Pump is not primed
2. Leakage or air into suction system
3. Impeller clogged

LEAKAGE OF WATER AT SHAFT

Shaft seal requires replacement

NOTE: If the recommendations in the trouble shooting portion of this manual do not solve your particular problem(s), please contact your local dealer for service.