



SUBMERSIBLE PUMPS **INSTRUCTION MANUAL**

Innovation • Professionalism • Service



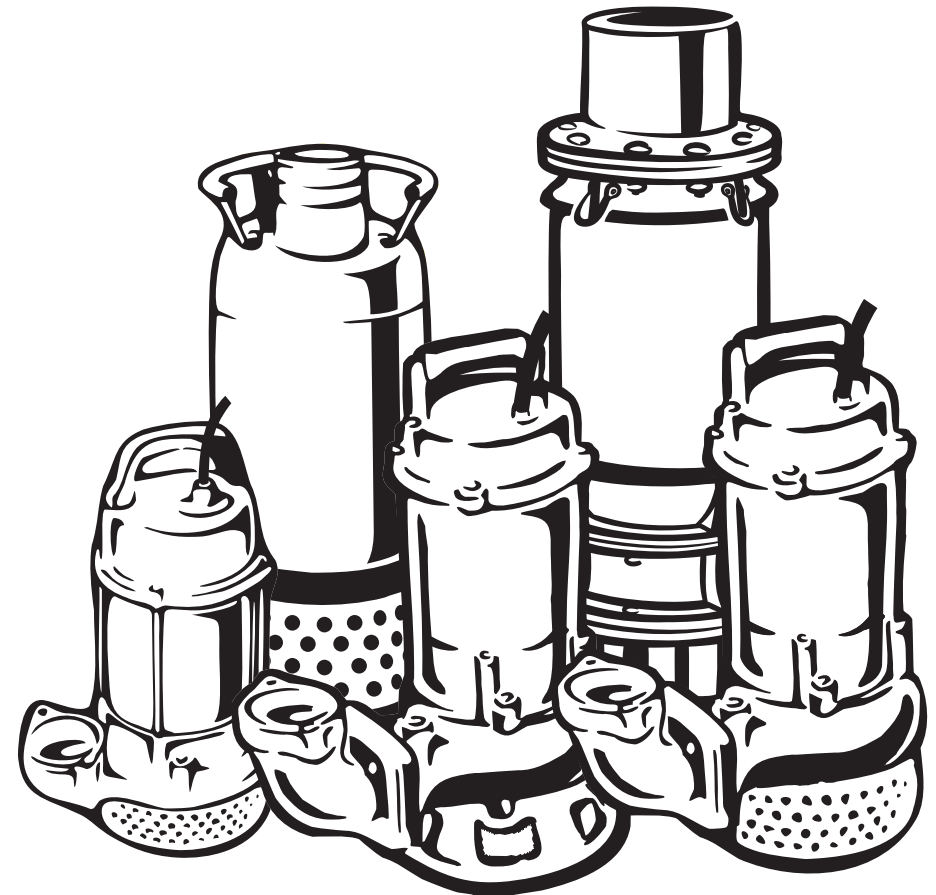
WE MAKE RELIABLE PUMPS

We reserve the right to alter specifications of product at any time without giving prior notice.



Distributor :

EA02IM-1404E



Thank you for using **saci** submersible pump.

- Carefully read through and fully understand the User's Instruction Manual before installation and operation.
- Keep User's Instruction Manual in proper and easy access place any time for pump install technician, operator and maintenance technician.
- When damage observed on the product, please contact with authorized local dealers or sales representative.

This is the safety alert symbol. Paying constant attention to safety is always extremely important.

WARNING

Warning about hazards or unsafe practices which could result in severe personal injury or death.

CAUTIONS

Warning about hazards that will or can cause minor personal injury or product or property damage.

Content

I.	SAFETY INSTRUCTIONS.....	2
II.	PUMP IDENTIFICATION.....	3
III.	INSTALLATION.....	3
IV.	PUMP OPERATION.....	4
V.	MAINTENANCE.....	4
VI.	REPAIR PARTS.....	6
VII.	TROUBLESHOOTING.....	8

I. SAFETY INSTRUCTIONS

⚠ WARNING

Warning about hazards or unsafe practices which could result in severe personal injury or death.

- Use Breaker and ensure the ground wire (Green) is properly grounded by a qualified electrician before operation to avoid fire or personal injury that may be caused by power leakage in the event of motor failure.
- Do not lift, Carry or Hang pump by the electrical cables. Damage to the electrical cable can cause Shock, Burn or death.
- Do not enter the pond during pump operation to avoid personal casualties in case of leakage.
- Disconnect the power before servicing.
- The pump is designed for use with inflammable liquids and a non hazardous environment.
- Do not strain, modify, or any excessive force to the power cable, it can damage the cable and cause short circuit and even lead to electrocution or fire.
- Do not install the pump into any location classified as hazardous environment.

⚠ CAUTIONS

Warning about hazards that will or can cause minor personal injury or product or property damage.

- If in a climate where the fluid in the casing could freeze, never leave liquid in the pump casing. Drain the casing complete. During winter months and cold weather, the liquid could freeze and damage the pump casing.
- Do not run the equipment dry or start the pump without the casing flooded.
- The pump shaft MUST turn clockwise when viewed from the motor end. It is absolutely essential that the rotation of the motor be checked before installation and starting the pumps. Incorrect rotation of the pump can unscrew the impeller nut and cause severe damage to pumping assembly.
- The applicable pumping liquid temperature should be 0~40°C, and the pump may be damaged if exceeding such range.
- Vent sewage and septic tank according to local requirements or standards.
- Check proper oil level in seal chamber periodically. Check for water in the seal housing periodically.

This Company places heavy emphasis on product quality and safety, however, this Manual does not fully cover all safety matters. For this reason, the user or the maintenance person must pay special attention to their own safety as well.

II. PUMP IDENTIFICATION

Check carefully items received against Pump Nameplate show on pump, and to be sure that model, output (motor horsepower), Voltage are all correct. Don't operate pump if any of Nameplate information does not match to your specification.

saci PUMPS					
MODEL					
OUTPUT	WV	HP	DISC.	mm(inch)	
CYCLE/P	Hz	P	PHVOLT	Ø	V
HEAD	m	CAPACITY			m ³ /min
MAX H.	m	MAX C.			m ³ /min
CURRENT	A	WEIGHT			kg
ROTATION ↻					

III. INSTALLATION

Pump Mount

- All pumps as a free standing unit. Set the pump on the floor of the basin.
- Several series of pumps may install on Guide Rail System for ease lift out inspection and service. Guide rails allow removal of the pump without disturbing the piping or require personnel to enter the wetwell. (Contact with local dealer or manufacturer for appropriate Guide Rail System)
- Install the Guide Rail on hard level surface cement, asphalt, etc. Never place the pump directly on earth, clay or gravel surfaces.

Piping

- All piping must be independently supported, accurately aligned and be capable of handling semi-solids.
- Reduce the number of bends in the discharge piping to keep the outlet flow as smooth as possible.
- All pump models covered in this manual are intended for use in a wet, flooded sump. Due to this intended service, no suction piping is required.
- The piping must not be smaller than pump discharge.

Electrical

⚠ WARNING

Electricity is dangerous. It can burn, shock or cause death. When installing, operating or servicing this pump, following the instruction below.

- DO NOT splice the power cord.
- DO NOT handle or service the pump while it is connected to the power supply
- DO NOT operate the pump and motor unless it is properly grounded. Wire the pump directly to a grounded terminal block in automatic float or pump control panel. Be sure to follow all local electrical codes where the unit is installed.

- Make sure the supply frequency and voltage corresponds to the nameplate frequency and voltage requirements. Supply voltage must be within 10% of nameplate voltage. Incorrect voltage can seriously damage the motor and could cause fire which would invalidate the warranty. If in doubt consult a licensed electrician.
- Pump must rotate in a clockwise direction (viewed from the motor end). Never operate pump and motor in reverse. If a three phase unit runs backwards, interchange two of three power supply wires to reverse the motor's direction of rotation.
- Connect the pump to its own circuit with nothing else on the same circuit.
- Install the pump in accordance with all applicable electrical codes. Install a fused disconnect switch or a circuit breaker.

WIRING DIAGRAMS

Use a control panel or starter sized to meet the requirements of the pump. Refer to the appropriate wiring diagram for connection details.

IV. PUMP OPERATION

WARNING

Hazardous impeller and possible unexpected starts. Rotation of the impeller with hands can cause loss of fingers. Disconnect the electrical power before working on or handling the pump for any reason.

- It is absolutely essential that the rotation of the pump be checked.
- All the pumps covered in this manual turn clockwise as viewed from motor end.
- An Automatic thermal overload protector in the motor will protect the motor from damage due to overheating and overloading. When the motor cools down, the thermal overload will automatically reset and start the motor. The motor protector is usually classified into A.C. Protector and Thermal Protector.
- If the thermal overload trips frequently, check for the cause. It could be impeller block, wrong/ low voltage, bad A.C. Protector, electrical failure in the motor.
- For Automatic operation, the pump must stop before the liquid level reach Pump Minimum Water Level (M.W.L.)
- DO NOT allow the pump to run in a dry sump. It will void the warranty and maybe damage the pump.

V. MAINTENANCE

Only qualified mechanics with proper tools and knowledge should attempt to service this pump.

WARNING

Hazardous voltage and possible unexpected starts. Disconnect the electrical power before working on or handling the pump for any reason.
Heavy parts. Use a hoist to lift and control the pump during repair.

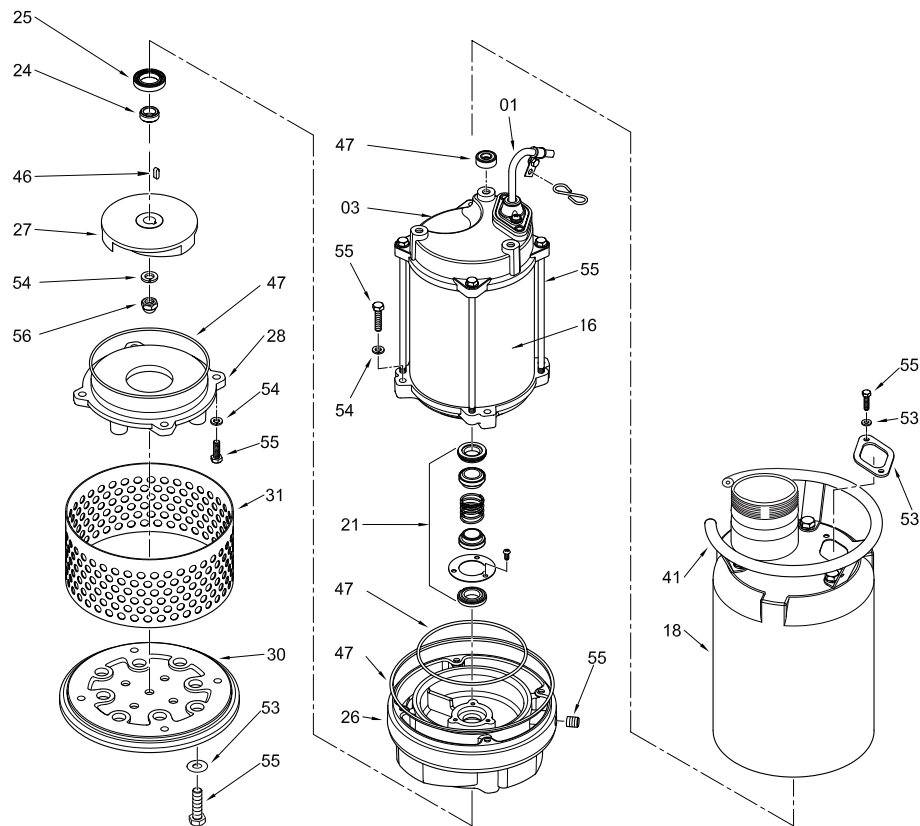
CAUTIONS

Warning about hazards that will or can cause minor personal injury or product or property damage.

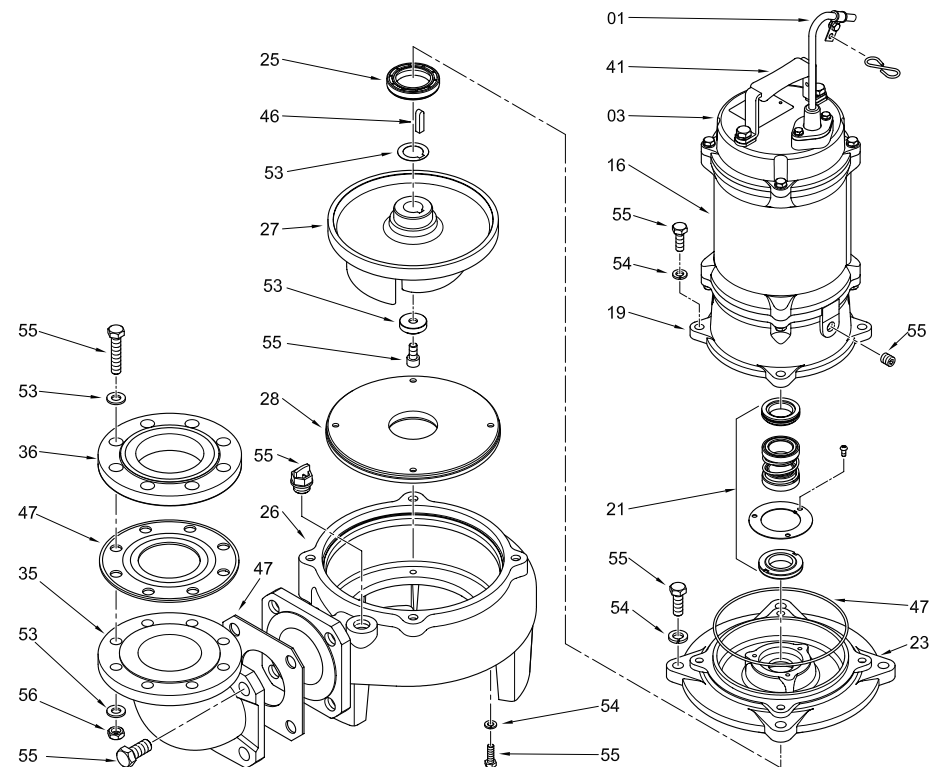
It must be very careful when disassemble and replace new o-ring for assembling the motor and mechanical seal chamber. In proper assembling may impair the waterproof and cause motor burn by leakage and will void the warranty.

Daily	1. Check voltage and Amperage is corresponds to the nameplate. Voltage must be within 10% of nameplate voltage. 2. Check if the water flow is normal.
Monthly	Check the insulation is lower than 10MΩ, the maintenance is recommended. Replace new motor immediately when insulation is lower than 1MΩ.
Annual	Inspect lubricant: <ul style="list-style-type: none"> ● For pumps $\leq 0.75\text{KW}$, the item should be checked every 3000 hours or 12 months (whichever comes first). ● For pumps $\geq 1.5\text{KW}$, the item should be checked every 6000 hours or 12 months (whichever comes first). PS: Loosen the oil plug screw and check the color of the lubricant. If the lubricant looks unclear, please change the mechanical seal and the lubricant immediately. Apply adhesive before re-securing the oil plug screw to strengthen the screw against leakage.
Biannual	1. Change the lubricant : <ul style="list-style-type: none"> ● For pumps $\leq 0.75\text{KW}$, the item should be changed ever 4500 hours or 24 months (whichever comes first). ● For pumps $\geq 1.5\text{KW}$, the item should be changed every 9000 hours or 24 months (whichever comes first). 2. Change mechanical seal: Inspecting and replacing the mechanical seal. Only qualified mechanics with proper tools and knowledge should be attempting to service this pump or contact our authorized local dealers or HCP for such services.
Every 2~5 Years	1. Strongly recommended the pump to be overhaul or regular inspection even if it is still operating. This maintaining procedure can extend pump operating life cycle. 2. Please contact your authorized local dealers or HCP for such service.

VI. REPAIR PARTS



NO.	PART NAME	NO.	PART NAME	NO.	PART NAME
01	Power Cable	26	Casing	47	Packing
03	Upper Cover	27	Impeller	53	Washer
16	Motor Frame	28	Casing Cover	54	Spring Washer
18	Outer Casing	30	Footing	55	Screw
21	Mechanical Seal	31	Strainer	56	Nut
24	Oil Seal Bush	41	Handle		
25	Oil Seal	46	Impeller Key		



NO.	PART NAME	NO.	PART NAME	NO.	PART NAME
01	Power Cable	26	Casing	47	Packing
03	Upper Cover	27	Impeller	53	Washer
16	Motor Frame	28	Casing Cover	54	Spring Washer
19	Bearing Bracket	35	Outlet Bend	55	Screw
21	Mechanical Seal	36	Flange	56	Nut
23	M. Seal Bracket	41	Handle		
25	Oil Seal	46	Impeller Key		

VII. TROUBLESHOOTING

WARNING

Hazardous voltage can shock, burn, or kill. Disconnect the electrical power before attempting any service or repair work on pump.

SYMPTOM	POSSIBLE CAUSE	RECOMMENDED SOLUTION
Pump Not Operating	Power failure	Check power and correct connection.
	Defective cable	Replace power cable.
	Impeller clogged	Remove the foreign objects from impeller or casing.
	Bad Motor Protector	Replace new motor protector.
	The motor burn out	Rewind or Replace new motor.
	Float switch defective	Replace new float switch.
	Bad Control Panel	Repair or replaced.
Pump Stop During Operation	Impeller Jammed	Remove the foreign objects from impeller or casing.
	Abnormal voltage	Check the power and make sure it corresponds to the nameplate.
	The motor protector tripped	Make sure liquid temperature is below 40°C ~ pump is complete submerged.
Pump not reaching design flow rate	Incorrect rotation	Reverse two of three leads on a three phase motor.
	Worn and damaged impeller or cavitation	Replace new impeller.
	The block of strainer	Remove the foreign objects from impeller or casing.
	Objects inside the pump or the impeller	Remove the foreign objects from impeller or casing.
	Valves and pipe plugged	Remove plugged objects or replace new valves or pipes.
	System head excessive	Consult dealer.
	Cavitations	Reposition liquid level control.
Electric Leakage Circuit Breaker Activated	Power cable damaged	Replace new Cable.
	Wet cable terminal	Reconnect after drying out.
	Worn mechanical seal cause water enter	Replace new Mechanical seals and oil seal.
	The motor burns	Replace new motor.
Abnormal high Amperage	Abnormal voltage	Check the power and make sure it corresponds to the nameplate.
	Incorrect rotation	Reverse two of three leads on a three phase motor.
	High viscosity liquid	More liquid needs to be added to the pump fluid to decrease its viscosity.
	Objects inside the pump or the impeller	Remove the foreign objects from impeller or casing.
	Defective bearings	Replace new bearing.