

## Safety warning

### Applicable series

### PX-SP series, PS-SP series, PW-SP series

1. Please never touch or insert any foreign objects into pump and motor inside while pump is running due to dangerous.
2. Before wiring, please make sure that the power supply is off to avoid electric shock.
3. While the pump is running, please do not remove flange/flange bolt or/and pump casing bolts.
4. Please never operate pump run dry and please do not suck a few kind of chemicals through a few suction lines which cause chemical reaction in pump inside.
5. Please use groove, helmet, goggle and boot to protect from chemical burning during disassemble and reassemble.
6. During disassemble and reassemble, please pay more attention as chemical is not spread by wind. Therefore flushing by water is always required.

# Instruction manual

## Applicable series

PX-SP series, PS-SP series, PW-SP series

### 1. Installation and Precaution

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### 3. Recommendation, Discharge piping

### 4. Recommendation, wiring

### 5. Procedure of operation

### 6. Preventive maintenance

### 7. Advise of disassemble and re-assemble

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## 1. Installation and Precaution

1. Install the pump as near as possible to the suction tank and provide enough space around pump to permit easy inspection and repair.
2. The pump base is required to be flat to mount the pump horizontally.
3. Please tighten enough pump base by bolt.

## **2. Recommendation, Suction piping**

1. Secure seamless and enough tightness by bolt through suction line and pump casing so that air will not suck.
2. Suction line in horizontal position shall be within 1 meter.
3. Real negative suction lift head shall not be longer than specified length which is mention in catalog or/and drawing.
4. When pump is handled heavier liquid, suction lift head/available will be divided by specific gravity.
5. The suction pipe should be independent line which is not connected with another branch.
6. For more reliability, the installation of the food valve is recommended.
7. Please install vacuum pressure gauge to monitor of suction lift in self-priming process.

## **3. Recommendation, Discharge piping**

1. Please install check valve to prevent water hammer.
2. If U-trap with liquid in discharge line or/and cloth discharge line against atmosphere, please install solenoid actuated air relief valve with certain timer to prevent exhausted air lock.
3. Please install pressure gauge to monitor whether self-priming process is completed.
4. Please hung discharge pipe by hunger to avoid loading of unnecessary weight on to pump.

## **4. Recommendation, wiring**

1. Please install safety breaker, and electromagnetic switch thermal relay to prevent overloading of motor.

2. To verify direction of the pump, switch of 1second and check motor rotation through fan cover, which should be C.C.W. from back view of fan cover.

## **5. Procedure of operation**

1. Close discharge valve.
2. Plug off filler cap from the top of self-priming chamber.
3. Fill up self-priming chamber with same liquid to be handled until over-flow liquid flow out from inlet of self-priming chamber.
4. Plug on filler cap and fasten sufficiently by hand. But please make sure that O-ring is already positioned inside of filler cap before fastened.
5. Switch on motor and check self-priming status as time is gone on. Generally self-priming lift of 1 meter as taking 1 min. is normal status.
6. After pump start stable operation by pressure gauge or/and flow detector visually, please stop pump and check remained volume of liquid in self-priming chamber after siphon break down. In meantime please confirm whether liquid level in self-priming chamber is still kept at the lower level of suction port.
7. Please make sure whether self-priming is surely available, after pump is repeated switch on and switch off.

## **6. Preventive maintenance**

1. Daily check

Check terms, required Vibration, loading ampere of motor, self-priming capability, excising of liquid leakage, movement of pressure gauge indication.

## 2. Monthly check

2.1. After 1 month later from initial operation, please check self-pump whether any slurry or not.

2.2. Please re-tighten Bolt between Motor bracket and Front casing.

2.3. Please inspect wearing of radial bearing and mouth ring.

## 3. Annual check

Please ask to the vendor as total preventive maintenance.

## **7. Advise of disassemble and re-assemble**

### **Precaution of disassemble procedure**

1. Please make sure that the discharge valve is completely closed.
2. Please make sure that the electric power is shut off.
3. Remove drain plug by flattened head driver then drain liquid from self-priming chamber.
4. Remove 4-6 pcs of hexagon head bolts from self-priming chamber then pull out self-priming chamber + inter, chamber + Front casing forward by hand.
5. The rest of disassemble process of pump membrane is same as PX, PS, PW pump.
6. Please flush parts, tooling and floor by water soonest.

### **Precaution of re-assemble procedure**

Totally reverse procedure of above.

## **8. Troubleshooting**

### 1. In case of self-priming is unavailable

1.1. Air is sucked in suction line or/and self-priming chamber-inter,  
chamber front casing need correction

1.2. Liquid in self-priming chamber is not filled enough.

Fill sufficiently.

1.3. Opening of suction end is not dipped under liquid surface.

Extend suction end deeper.

1.4. Strainer, filter or food valve is clogged.

Need cleaning or change element to new one.

### 2. Rest of pump trouble

Please refer instruction manual of relative magnetic driven pump series.