

# S A F E T Y   W A R N I N G

## P A N   W O R L D JAPAN

### M a g n e t i c   d r i v e n   p u m p

Applicable series name: PX series, PX-N series, PX-F series

CE AH-P-EU-802 2022

#### 1. USER GUIDE & INCORRECT APPLICATIONS

- 1) The pump should only be used the purpose and duty conditions originally specification by the purchaser (hereby called user).  
If the user wishes to change from agreed duty or specification, the other kind of chemical, user is required to inform the new parameter of specification with PAN WORLD or our agent.
- 2) PAN WORLD will only consider the pump safe for purpose and duty conditions originally specified by the user.  
PAN WORLD will not accept responsibility for pump or part failure or personal injury, compensation arising from miss-application.

#### 2. OPEN PACKING AND TRANSPORTATION

- 1) The pump is dispatched into carton boxes.  
User ensures that pump arrives at user's promise undamaged.
- 2) User should make sure whether user chosen pump is delivered.  
User is required to ask the change of wrong pump to correct pump, if different pump is found.

#### 3. INSATLLATION

- 1) The user must ensure that all maintenance, inspection & installation word is carried out by authorized and qualified personnel, who are sufficiently trained in advanced.
- 2) Pump should be hooked and installed by lifer in order to avoid any damage into pump inside.
- 3) Before pump installation, user should make sure that user pipe system and equipment can be withstood over 1.5 times of duty pressure.
- 4) Electric spark at terminal will cause personnel injury, fire or explosion. User should be sure to ground properly in accordance with relevant laws and regulation.
- 5) User should not spray water onto motor terminal.
- 6) Pump flange should be fastened with matching flange of pipe together with correct material of flange gasket.
- 7) Check valve should be installed between discharge valve and pump if the discharge pipe is longer than 15m.
- 8) User should not be stomp onto pump their foot.

#### 4. OPERATION

- 1) User should confirm the no leakage from pipe system, pump, and another equipment by static positive air pressure or water.
- 2) User should confirm direction of rotation as the followings.  
From pump side: C.C.W., from motor side: C.W.
- 3) User never use liquid which is not in compliance with agreement in advance.  
The use of incorrect material of pump inside causes highly damage to pump, personal injury, and property damage.
- 4) User bears responsibility for pollution or secondary disaster arising failure to follow pump washing procedures properly.
- 5) In the event of any one of the following conditions occurring, pump and motor should be shut down and cause investigated.
  - \* Serious vibration.
  - \* Sound level is increased or unstable.
  - \* Chemical leakage is found from base plate.
  - \* Unstable pressure in suction line and discharge line.
  - \* Discharge pressure is 0 Bar even motor is rotated.
  - \* Excessive power consumption.
  - \* Losses of flow or zero flow.
  - \* Water hammer is found.
- 6) User should fully open discharge valve or suction valve when pump is started.
- 7) User ensures specified duty such as head and discharge flow.
- 8) Pump discharge pressure should not exceed agreed specification.

#### 5. DISASSEMBLE & RE-ASSEMBLE

- 1) User must shut off discharge valve completely then switch off electric power of motor.
- 2) Loose suction flange bolts first, then loose discharge flange bolts slightly to remove chemical from pump inside.  
Customer should use glove, face met or spectacle.  
Gasoline should not be used to clean up pump inside due to highly flammable.
- 3) After remove flanges, flush pump with water or secure liquid.
- 4) To eliminate the risk of injury by chemical, user should disassemble pump at wide place, away to escape from chemical.
- 5) When exchange failed part to new one, user proceed procedure of exchange part depend instruction manual.
- 6) Disposal of failed part  
In order to eliminate pollution, user is required the flush of failed part.  
User may return those part agent or PAN WORLD.

## Operation and Maintenance

PX , PX-N , PX-F Series

CE-EU AH-P-EU-801 2022

### 1. Unpacking and Inspection

- 1) Does the description on the name plate comply with your order?
- 2) Are all items delivered?
- 3) Is there any damage from pump or/& during transportation?
- 4) Are all bolts tightened?

### 2. Precaution for operation

\* Do not operate the pump without liquid.

As the abrasion parts are cooled by the self-lubricating system/by pumped liquid, dry running, no positive in the pump inside, erratic operation such as suction valve closed, may give serious damage to the internal parts.

\* Influence of temperature

The pump performance is not affected by any temperature change. But liquid may be changed its viscosity, vapor pressure, and corrosiveness.

\* Allowable temperature to be operated is shown as the followings.

PX series: 0 to 60°C , PX-N series: 0 to 80°C , PX-F series: 0 to 90°C .

Allowable environment condition: 0 to 40°C , up to 85%

\* Allowable specific gravity and viscosity

Specific gravity: 1.1 kg/L, Viscosity: 20 C.P.

### 3. Precaution before operation

- 1) Clean up pipe, tank or equipment.
- 2) Retighten the flange bolts, hose and base plate bolts.
- 3) Prime the pump until the pump is filled with liquid.
- 4) Completely close the discharge valve.
- 5) Turn the motor fan by screw-drive to expel remained air from pump inside.
- 6) Verify the direction of rotation of pump (C.W from front view of pump).

### 4. Precaution during operation

- 1) To start up the pump, close discharge valve.

When no discharge is found, check direction of rotation

- 2) After the pump is started, gradually open the discharge valve as check flow meter/or director and pressure gauge to make sure whether the pump is been operating under normal situation.

## 5. Cease of operation

- 1) Gradually close the discharge valve. Do not close the discharge by solenoid valve or any quick way to prevent water hammer.
- 2) Stop motor. Check whether the motor stops smoothly or not.  
If not, inspect the internal part and correct abnormal friction.
- 3) When the pump operation is stopped for long period, be sure to drain liquid from pump completely to prevent freezing, crystallization.
- 4) When a power failure occurs, the power switch should be turned off immediately.

## 6. Maintenance and inspection

- 1) Verify that the pump is running without vibration or abnormal noise and also no abnormal cavitation noise is found.
- 2) Check the discharge pressure, flow rate whether the pump operating condition is normal.
- 3) If the stand-by pump is installed, operate it from time to time to make sure that it can be operated anytime.

## 7. Preventive maintenance

Part Name	※ Inspection items	Measures
Magnet housing	※ Evidence of rubbing	Pursue the cause
Rear casing	※ Evidence of rubbing or cracking	Replace
Magnet capsule	※ Evidence of scrub or craking	Pursue cause and replace
Impeller	※ Evidence of traces of cavitation ※ Contamination and /or clogging on the blades and/or bearing	Pursue cause and clean up

## 8. Disassemble procedure

- 1) Drain the liquid from the pump and flush the pump inside.
- 2) Remove the bolts from front casing, then pull out front casing from bracket.
- 3) Pull the impeller/magnet capsule pout forward for removal.
- 4) Pull out O-ring and the rear casing forward.

## 9. Re-assembly procedure

- 1) Assemble the pump in the reverse procedure of disassembly.
- 2) Carefully handle magnet capsule to avoid any damage.
- 3) Always replace new O ring on each re-assemble.
- 4) Tighten all bolts equally but not be over-tightened.