

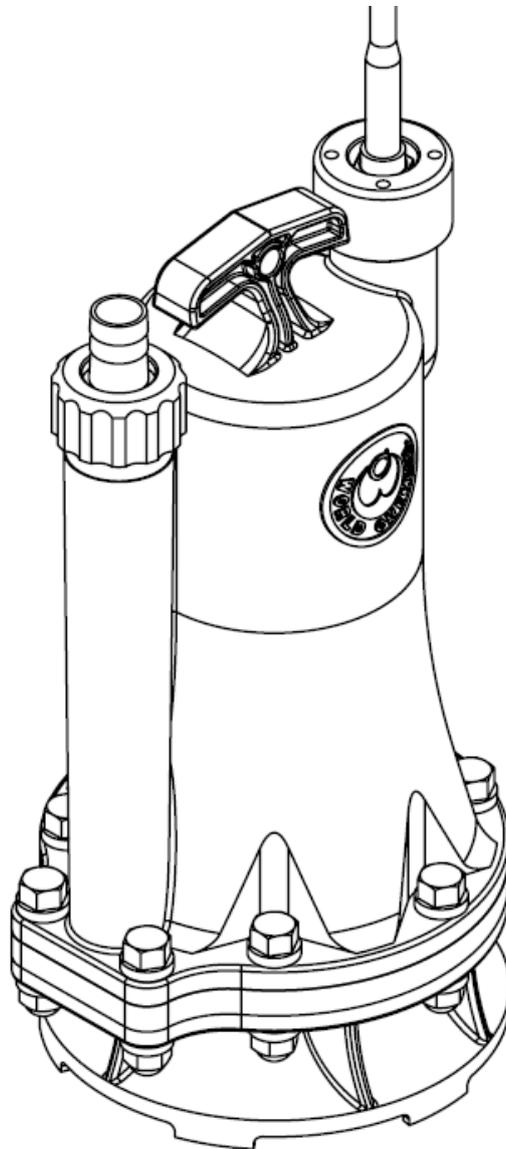
SUBMERSIBLE MAGNET DRIVE PUMP

SUBMERSE

YD-25A6GWN

INSTRUCTION MANUAL

VERSION: 150615



PREFACE

Thank you very much for purchasing World Chemical's submersible magnet drive pump "SUBMERSE". To effectively use the pump for an extended period of time, it is necessary for the user to properly operate and maintain the pump in accordance with the instruction manual.

An adequate understanding of this manual is required to maximize the pump's performance and store this manual where it can be easily accessed.

The pump and Information in this manual is subject to change the specification without notice, because of improvement or design changes.

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SAFETY PRECAUTION (To be observed at all times)

The following procedures are intended to protect you from personal injury and/or property damage.

- The following symbols classify the degree of danger and explain the damages that could occur when its contents are ignored or the pump is used improperly.

	Warning: Non-compliance can lead to fatal or serious injury.
	Caution: Non-compliance can lead to some injury and/or property damage.

- Safety rules to be observed are classified and explained under the following symbols. (The following are examples of picture displays).

	This symbol cautions people to be careful.
	This symbol signifies that this action must not be taken.
	This symbol indicates that the action must be taken.

WARNING

(1) Dangerous liquid and surrounding

When using the pump to transfer dangerous liquid or in surrounding, you must adhere to facility standards determined by law and always conduct daily check-ups to look for and prevent leakage. If the pump is operated under abnormal conditions, such as usage during liquid leaks, it could lead to serious accidents such as explosion or fire and personal injury. Please follow the manufacturer's instructions for handling liquid.

Using and placing the pump with flammable gas or liquid is prohibited. The motor is not explosion-proof.

When you use chemical liquid, put on the protective clothes such as protect glass, glove and rubber boots.

If you suffer chemical liquid, wash it off with large amount of water immediately and submit to medical treatment as the situation demands. If you get chemical liquid into your eyes, bathe your eyes with large amount of water immediately and be evaluated by an ophthalmologist promptly.

(2) Do not use the damaged or modified pump

Do not use the pump if it has been damaged or modified. World chemical is not responsible for any accidents or damages of any kind caused by the user remodeling the pump without first obtaining permission or instruction from World Chemical.

-  (3) Caution when transporting or lifting the pump
Certainly use the hoist bolt for pumps that come with them. If not, hang the pump carefully by using a belt sling while watching the weight balance. This operation should be performed by qualified personnel and the slings to be used should have sufficient strength. Do not carry the pump by hand, could cause accidents.
-  (4) Do not inspect or dismantle the pump or the motor during the power on
Do not inspect or dismantle the pump or motor during the power turned on. This could lead to personal injuries from electric shock or getting caught in the rotor. Work should be performed only after verifying that multiple safety precautions have been taken, such as the switch for main power supply, the operation switch and the hand switch for the pump are off.
-  (5) Connecting the grounding line
Using the pump without attaching the ground line from the motor could cause electric shock. The grounding operation should be performed by a qualified person in accordance with electric facilities technical standards and interior wiring regulations.
-  (6) Protection of the power supply cord
Stretching, pinching or otherwise damaging the power supply cord or motor lead wire could cause fire or electric shock.
-  (7) Installing the Ground Fault Interrupter (GFI)
Electric shock might result if the pump is used without attaching ground fault interrupter. The electric accident and the motor damaged should be prevented by installing the Ground Fault Interrupter or the Over Current Protection device.
-  (8) Caution when removing the pump
Before removing the pump from piping, close the valves and verify there are no liquid leaks. Always put protective gears when performing these operations because direct contact with the liquid could cause injuries.
-  (9) Maintenance
When providing maintenance, check or repair, turn off the wiring circuit breaker of the primary side. Place a sign “Men working” and make sure not to turn on the switch at fault.
Do not touch the electric equipment, wiring and switch by wet hands to prevent electric shock. It could cause your serious injury, the facility damage or trouble.

CAUTION

 (1) Unspecified use
Do not use the pump for purposes other than those specified on the nameplate. Specially, verify the motor specification (phase, voltage and frequency) and connect the motor. Unspecified use could cause personal injuries or damage to the pump and peripheral equipments.

 (2) User restrictions
Transportation, installation, wiring, operation, servicing, and inspection of the pump should be performed only by experts who have full knowledge of the handling the pump.

 (3) Opening the package
Before opening the package, check the package upside down. When opening a wooden crate or box, be careful of injury from nails and silvers.

 (4) Repair and returning of the pump
In the event of a pump failure, contact the distributor or us. When the pump is to be returned by courier, wash the interior and exterior of the pump thoroughly and verify no chemical liquid on. Wrapping the pump in plastic bags and packing is required.

 (5) Regarding resin parts
The pump is made of resin. If it is subject to impact, it could cause injury and damaged. Do not hit objects nor got on top of the pump.

It also should be attached the piping support not to apply too much load to the pump directly.

The pump is constructed by general-purpose plastic and the pressure capacity is depending on the temperature unlike the metal pump. Check the acceptable pressure carefully when using the pump in the high temperature.

Pump component parts: Carbon fiber reinforced polypropylene / Alumina ceramics / CFR PTFE

O-rings: FPM (Fluorine-rubber)

Use the pump with the liquid which can be used for the above material.

The chemical resistance is greatly affected by the used liquid's kind, concentration, temperature, interaction of several liquid, material stress, wetted time or other conditions by itself or with others. For this reason, we are not responsible for the chemical resistance and recommend the chemical resistance is tested as ahead of time as possible before using.

It sure is the aged deterioration happens for the installed environment. For the pump's long life, it is recommended to do daily inspection and strive for the early reaction including parts replacement.

MODEL DESCRIPTION

Y D – 2 5 A 6 G W N – C P – R D 5 2

(1) (2) (3) (4) (5) (6) (7) (8)

- (1) Discharge outlet 25: 25A
- (2) Motor output and voltage A6: Single phase / 100V / 260W
- (3) Pump model GWN: Submersible pump
- (4) Main material CP: Carbon fiber reinforced polypropylene (CFR PP)
- (5) Bearing material R: Carbon fiber reinforced PTFE (CFR PTFE)
- (6) O-ring material D: FPM (Fluorine-rubber)
- (7) Frequency 5: 50Hz 6: 60Hz
- (8) The limit of the liquid specific gravity
1: S.G.1.1 2: S.G.1.2

[Standard performance]

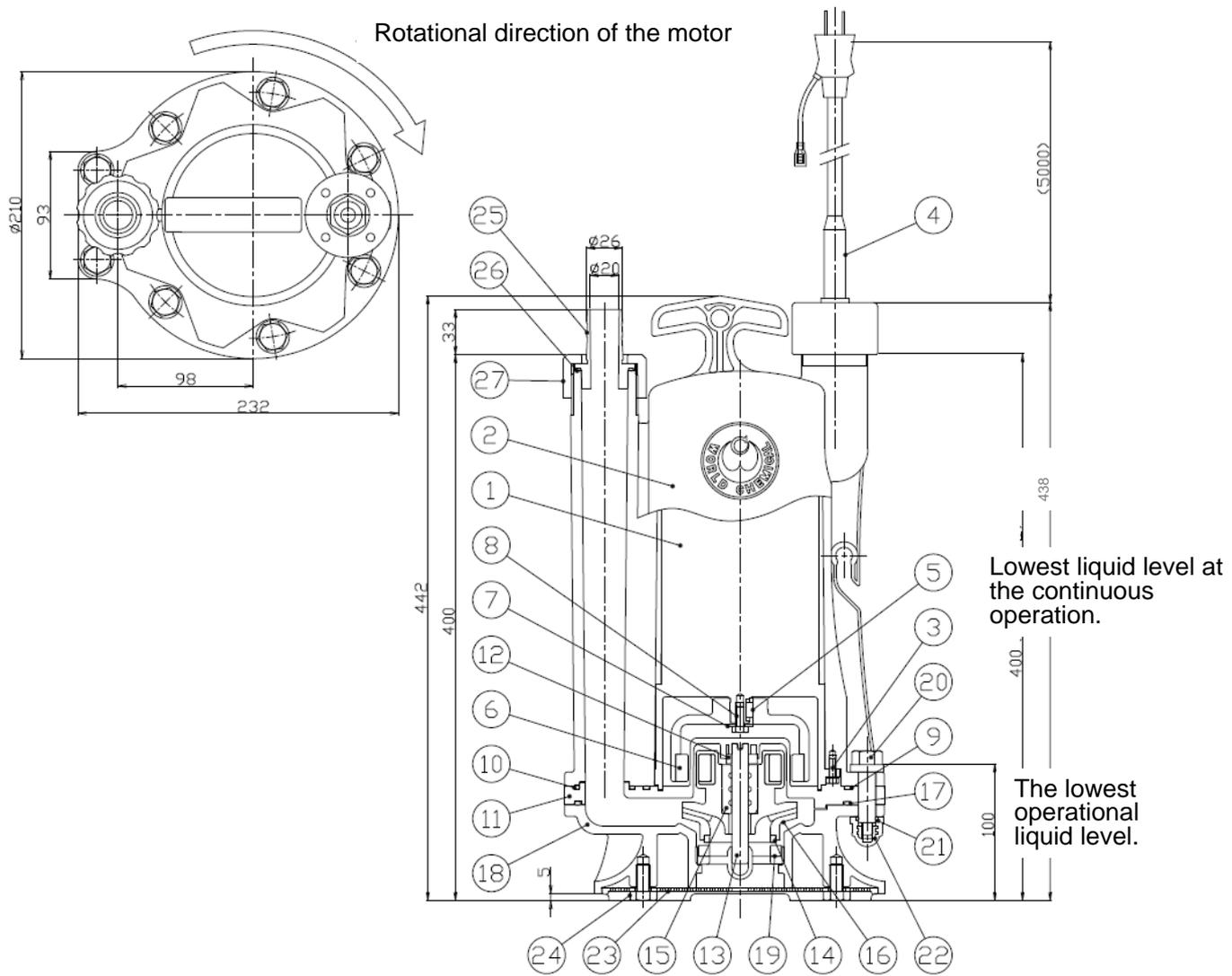
Model	Frequency Hz	S.G.	Standard performance		Motor			Weight
			T.H.D.	Capacity	Output	Voltage/PH	Ins.	
YD-25A6GWN-CP-RD52	50	1.2	6m (19.7ft)	60L/min (16gpm)	0.26kW (1/3HP)	100V* Single	F	14kg
YD-25A6GWN-CP-RD62	60		6.5m (21.3ft)					

* Other voltage is available such as 115V, 220V, 230V.

[Caution]

- The standard performance as above is under the pure water (S.G.1.0) and 20 degrees (68F).
- The minimum necessary flow rate during operation: 5L/min (1.3gpm)
- The dimension of the hose: Inner bore 25mm (0.1in) x Outer bore 33mm (0.13in)
- The minimum liquid level at continuous operation: 400mm (15.7in)
- The minimum liquid level: 100mm (4in)

OUTLINE DEMENSION AND PARTS



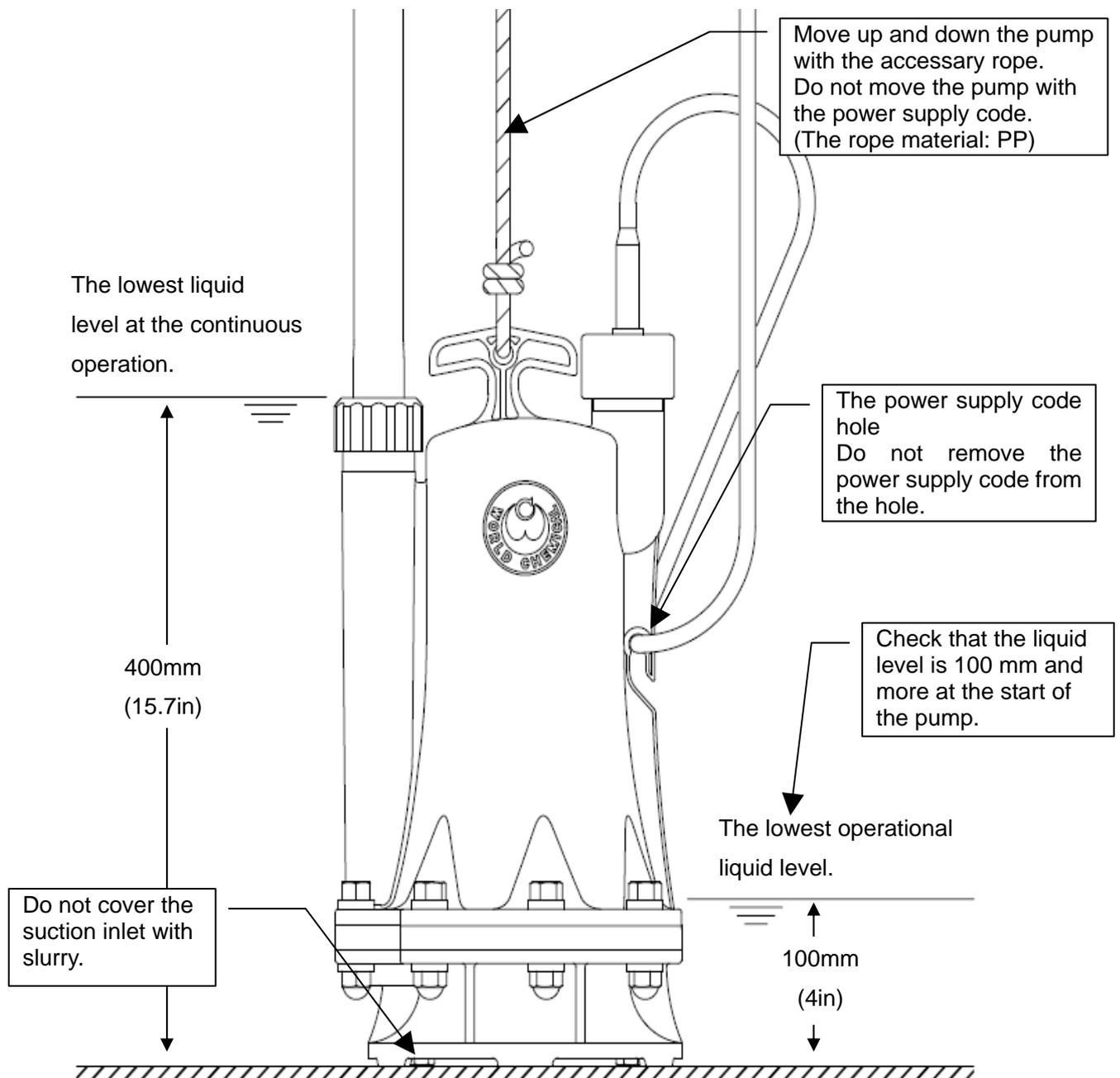
No.	Parts name	Qty	Material	Remarks
1	Motor	1	FC	
2	Motor cover	1	CFR PP	
3	Hexagonal bolt	4	SUS304	M5 x 15
4	Cabtyre cable	1	CR	2PNCT
5	Key	1	S45C	5 x 5 x 10
6	Outer magnet	1	Ferrite	
7	Washer	1	SUS304	
8	Hexagonal bolt	1	SUS304	M6 x 15
9	O-ring for rear casing	1	FPM	
10	O-ring for discharge outlet	1	FPM	P38
11	Rear casing	1	CFR PP	
12	Rear thrust ring	1	Alumina ceramics	
13	Pump shaft	1	Alumina ceramics	
14	Mouth ring	1	CFR PTFE	
15	Bearing	1	CFR PTFE	
16	Impeller	1	CFR PP	
17	O-ring for casing	1	FPM	
18	Casing	1	CFR PP	
19	Liner ring	1	Alumina ceramics	
20	Set bolt 37	8	CFR PP	
21	O-ring for set bolt	8	FPM	
22	Nut for set bolt	8	CFR PP	
23	Strainer	1	CFR PP	
24	Hexagonal bolt	4	PVC	M10 x 20
25	Hose joint	1	CFR PP	
26	O-ring for hose joint	1	FPM	P34
27	Nut for hose joint	1	CFR PP	

INSTALLATION

Warning

Install Ground Fault Interrupter to prevent the electrical shock! Connect Ground line of the plug!

- When installing the pump, move up and down the pump with a rope. Do not use the power supply code to move the pump. It could cause electrical leaks.
- Install the pump at the site without slurry. When the suction inlet is clogged by slurry, it could cause the pump failure.
- Verify the liquid level is 100mm (4in) and more when starting the pump. If not, it could cause dry running and the pump damaged.



CONNECTION OF POWER SOURCE AND MOTOR

Warning

- **Install Ground Fault Interrupter to prevent electrical shock!**
- When connecting the power source and the pump, maintenance or repair, turn off the wiring circuit breaker and place a sign "Men working". Make sure not to turn on the switch nor cause a fatal accident. Specially, when a number of people work together, pay attention not to return the breaker at fault.
- **The ground line must be arranged.
Install the ground line through the use of the plug tab.**
- When installing the sensitive current variable type earth leakage breaker, follow the directions given by the licensed electrical engineer.
The up and down of the sensed current and the prevention of electrical shock/insulated resistance are conflicting.
- Do not touch the electrical equipment, wire and switch by wet hands to prevent the electrical shock.
- Conduct a periodic inspection whether the motor wiring terminal in the power board is burn or discolored.
When the terminal is loose, it could cause the burn out for heat or fire. This work should be done by the licensed electrical engineer.

INSPECTION

Warning

- Before the operation, make sure to inspect the pump.

Content		Repetition	
		Daily	Once a month
1. Before Operation	1-1 Liquid leaks from the connection	◎	◎
	1-2 Open/close of the handle of the drain valve	◎	
	1-3 Deformation of the pipe for liquid temperature	◎	
	1-4 Loosen bolts of the connection		
	1-5 Liquid leaks from the outside of the pipe	◎	
	1-6 Clean	◎	
2. During Operation	2-1 Liquid leaks from the connection	◎	
	2-2 Deformation of the pump	◎	
	2-3 Motor noise	◎	
3. At the end	3-1 Clean	◎	

OPERATION



Warning

- During the operation, verify no liquid leaks, the noise of the pump and motor and the drainage state of the liquid.
If the abnormal state is found, stop the pump immediately and take measures.
- When blackout or the electric power failure, turn off the switch. After recovery of the power, each pump should start one by one.

■ The minimum liquid level during the operation

Keep the liquid level which the whole of the pump is sunk in.

(The minimum liquid level at the continuous operation: 400mm (15.7in) and more from the mounting surface of the pump)

The continuous operation below the minimum liquid level should work 5 minutes or less. Also do not operate the pump at short intervals.

- According to the operation condition, the built-in thermal protector is activated and the pump could stop. At such times, the operation should be paused and verify the pump without the abnormal condition. After securing the proper liquid level, operate the pump.
The minimum liquid level at the start of the pump is 100mm (4in) and more.
- Based on the condition of the liquid surface, even if the liquid level is over the available operational liquid level, air enters the pump and the operation could be impossible.
- When operating the pump in the air, the rotation parts inside of the pump could be damaged.

■ Measures against air lock

If the liquid stands in the drain pipe when stopping the pump, air lock could happen at the re-start of the operation and water priming could be inefficient. Additionally, the same phenomenon easily happens after deadhead running. In this case, install the air release valve in the drain pipe, or make sure the air release and prime the liquid in the pump casing before the operation.

When installing check valves between the suction piping, install exhaust bypass pipes at the bottom.

(No air release pipe may cause air lock.)

DISMANTLING AND ASSEMBLING

[DISMANTLING]

1. Remove eight bolts (20) which set the motor cover (2) with the casing (18).
2. Remove the part below the rear casing (11) from the motor cover (2).
3. Heave the rear casing (11) and remove the impeller (16).
 - At this time, the motor becomes exposed and be careful not to wet the metal part by chemical liquid.
 - Do not be adhered the dirt or foreign objects to the O-rings or seal parts.

[ASSEMBLING]

1. After checking the motor dry, O-rings are cleaned off and set as same way as dismantling.
2. Tighten the bolts (20) alternately and diagonally. The tightening torque is $7.5\text{N} \cdot \text{m}$.

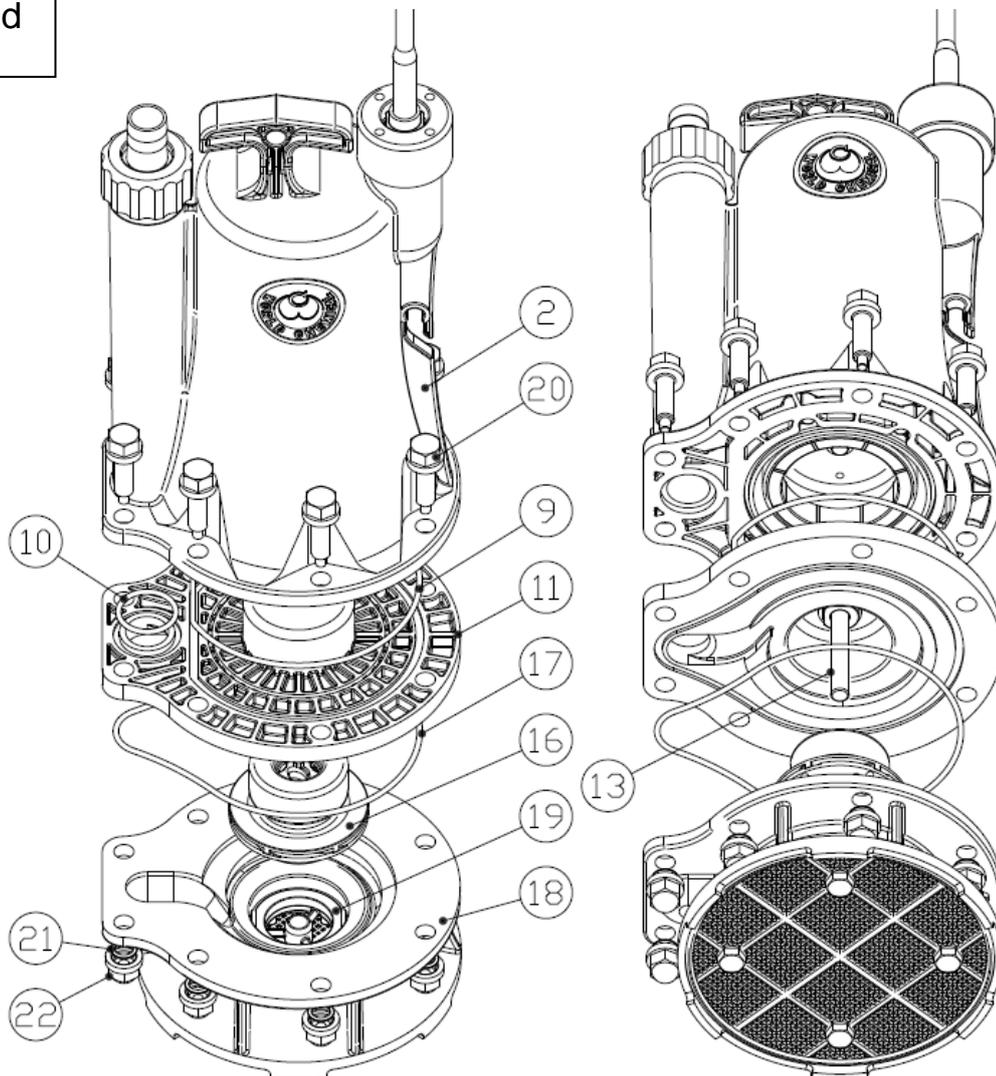
■ Dismantling of the motor including cable is prohibited.

When we assemble the motor, the pressure resistant / leaked test is conducted and no liquid enters in is verified.

If customer uses the pump dismantled and assembled the motor by themselves, we are not responsible for it.

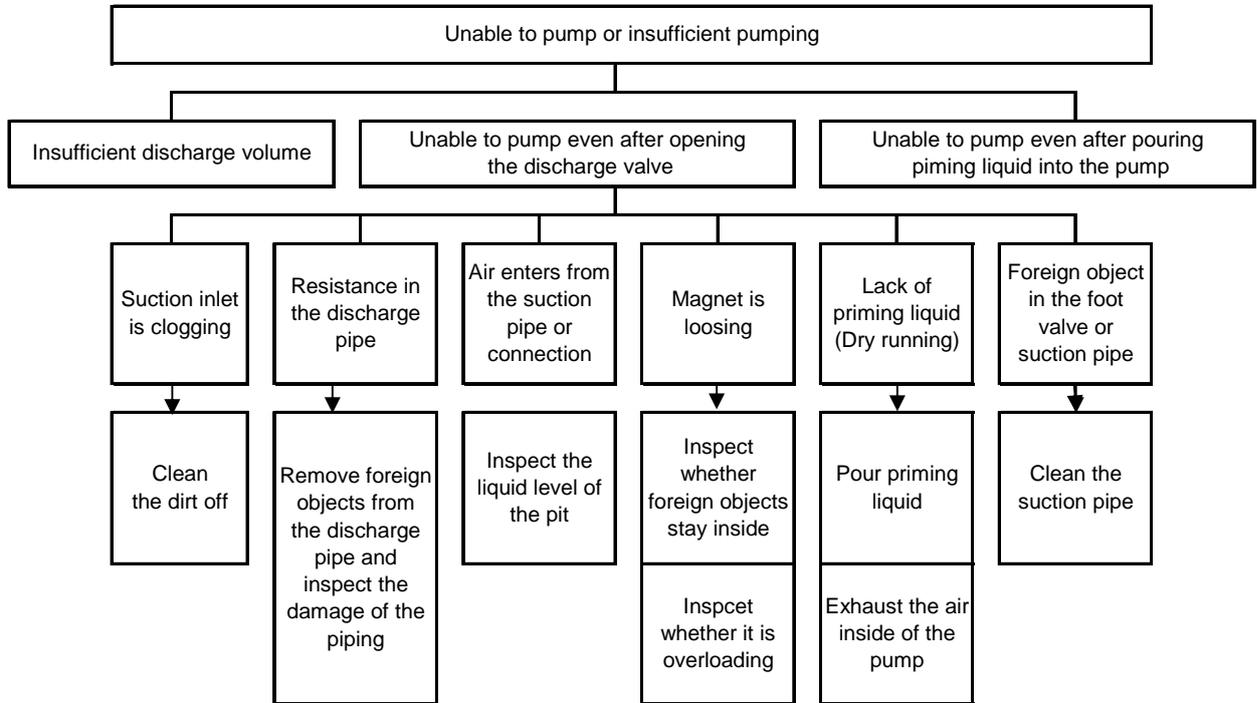
When having an overhaul of the pump, contact your distributor or us.

Exploded view

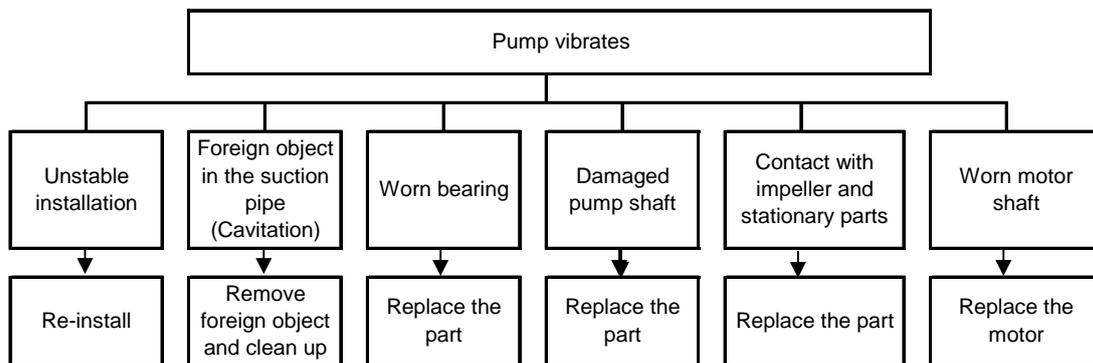


TROUBLESHOOTING

1. Unable to pump up and insufficient pumping



2. Pump vibrates



WARRANTY PERIOD AND COVERAGE

WARRANTY

1. The warranty period is one year (operational time: 8 hours a day) from the date of the delivery.
2. During the warranty period, if the pump fails or becomes damaged in a normal operating condition due to manufacturing defect(s), the failure or damaged part(s) will be repaired free of charge.
3. There will be a service charge for repairing the following failure(s) or damage(s) and for the replacement of worn part(s):
 - Any failure or damage occurring after the warranty period.
 - Any failure or damage due to improper use or safekeeping.
 - Any failure or damage due to the use of part(s) manufactured by other or the use of unauthorized parts.
 - Any failure or damage from repair or modification by an unauthorized agent.
 - Any failure or damage as result of natural disaster or force majeure.
 - Any failure or damage due to use under the inappropriate environment except confirming with the instruction manual or the special agreement.
 - Any failure or damage not for our pump.
 - Any failure or damage due to the improper use other than the original.
 - Any failure of damage unexpected under the technology at the delivery
4. We are not responsible for any failure or damage of the pump produced according to the special specification or material designated by the customer.
5. The warranty does not cover irregularities or failures caused by chemical or hydrodynamic corrosion, or the property of the liquid pumped. The material chosen at the time of purchase is strictly a recommendation; the chemical resistance of the material is not guaranteed.
6. Any disputes over the cause of a failure or damage shall be resolved through discussion between the customer and the manufacturer.
7. Travel expense for non-warranted repair service to a remote location will be the responsibility of the customer.
8. Damages and costs incurred as a result of pump failure during operation is not covered under the warranty.

REPAIR

1. For the request of the repair service, contact our distributor or us.
2. When returning the pump, clean the pump thoroughly with water and pack properly.
3. Before requesting repair service, carefully read the instruction manual again and recheck the pump.
4. When requesting repair service, provide us with the following information.
 - Model name and serial number
 - Duration and condition of the use
 - Damaged section and condition
 - Pumped liquid (name of liquid, specific gravity, liquid temperature and presence of slurry)

If chemical liquid leaks from the pump during the delivery are happened, it is very dangerous. Ensure to thoroughly wash the inside of the pump to prevent the accident.

The parts' name is ordered from the parts list when replacement or purchase of the spare parts. Also mention the material of them so that there is no mistake.



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