



Thank you very much for purchasing World Chemical CHEMI-FREE.

Please make sure to read this manual carefully for safety before use. Furthermore, store it or future maintenance.

Safety instruction

Make sure to follow the instructions mentioned below, which are extremely important to safety. The following symbols and marks classify the degree of danger and damage which may occur by an improper use.

	WARNING	Potentially dangerous state which may cause death or serious wounds if an accident occurs.
	CAUTION	Dangerous state which may lead to non-fatal injury or material loss.

* Material loss means the secondary damages expanded to the houses, buildings, furniture, cattle, and pets.

Examples of
Symbols



Prohibition. It means the instructions that you should not do.



Observance. It means the instructions you should follow.

Instructions for installation



WARNING



Experts

Wiring shall be carefully executed by experts in accordance with the Technical Standards for Electric facilities. Improper wiring may cause an electric shock or fire.



Grounding

Make sure to set earth wire and provide the short-circuit breaker for its exclusive use. If not, you may receive an electric shock when short-circuited. Please consult the distributor concerning the earth wire.



CAUTION



No Damage to power cable

Do not damage, scratch, modify, bend, twist or bundle the power cable. Furthermore, if putting any heavy matter on the cable, pinching, the power cable may be damaged and cause a fire or electric shock accident.



No Cloth Cover

Do not cover the pump with a blanket or any other clothes which may cause a fire due to the heat of the motor.



No Racing

No dry running. (It means the operation with no water.) Otherwise, the shaft seal unit will be damaged which may cause leakage.



Water Proof

Check if the floor is equipped with drainage and waterproofed. If not, unexpected leakage may cause a serious damage.

Part names



Use

- | | |
|---|--|
| <input type="radio"/> Surface processing | <input type="radio"/> Supply and circulation of plating liquid |
| <input type="radio"/> Circulation of washing liquid | <input type="radio"/> Scrubber |
| <input type="radio"/> Circulation of alkali liquid | <input type="radio"/> Circulation of acid liquid |

* Check if the material of the wet parts kit (Casing, Bearing, O-ring and so on) is suitable for the liquid.

Performance

Model	YD-3320GS1-GP-RD73		YD-3420GS1-GP-RD71		YD-352GS1-GP-RD72		YD-3720GS1-GP-RD71	
Rated voltage (V)	1PH, 200V		1PH, 200V		1PH, 200V		1PH, 200v	
Rated frequency (Hz)	50	60	50	60	50	60	50	60
Rated wattage (W)	71	91	75	100	105	155	160	230
Rated current (A)	0.51	0.59	0.56	0.72	0.72	0.92	1.1	1.4
Rated output (MAX W)	45	60	50	75	80	120	120	160
Rotating speed (min-1)	2870	3380	2850	3300	2860	3290	2870	3320
Condenser (μF)	6		6		8		8	
Insulation	E		E		E		E	
Protector	Automatic recovery		Automatic recovery		Automatic recovery		Automatic recovery	
Bore (mm)	G 3/4 thread		G 3/4 thread		G 1 thread		G1 thread	
Head (m)	3/2	4/3	4/3	5/3	5/3	7/5	5.5/4	8/6
Capacity (L/min)	21/30	27/34	22/31	31/43	19/40	21/40	34/50	34/51
Temperature to use (°C)	60		60		60		60	
Place to use	Indoor		Indoor		Indoor		Indoor	
O-ring material	FKM							
Weigh (kg)	3.4		3.4		4.8		5.4	

How to install & pipe

1. Installation the pump at the place to be convenient for the maintenance.
2. The installing direction is unrestricted, but be well-ventilation.
3. When using hoses to the pump, they may be crashed by the suction power. It is recommended to use the thick one.
Besides, do not use the thin hoses with less bending.

Operating precautions



WARNING



**No
Disas-
sembly**

No one but electricians should disassemble, repair or tamper with the product. Otherwise, it may ignite or abnormally run which may do you an injury.



CAUTION



Plug out

Make sure to pull out the power plug or shut off the power if you will not use the pump for a long time. Otherwise, it may cause a short circuit and/or fire which result from deterioration of insulation.



**Do not
Touch**

Do not touch the pump or motor with bare hands. They are extremely heated, which may burn your hands.



**No
Racing**

No racing. (It means the pumping with no water in the pump). Otherwise, the shaft seal unit will be damaged which may cause leakage.



**No Cloth
Cover**

Do not cover the pump with a blanket or any other clothes which may catch fire for the head of the motor.



Caution

1. It is prohibited by laws to attach the earth wire to any gas pipe.
2. No dry running.
(It may make the bearing burn or wear out fast and cause trouble.)
3. Any liquid which contains the powders of iron or nickel is not suitable for this pump, in which a powerful magnet is built in.
4. Any liquid which contains slurry is not suitable for this pump of which bearing will be worn out fast. It will shorten the life cycle of the pump.
5. Install the pump indoor or at the place which is not only exposed to the rain. The temperature is 40 degrees or less.
6. Be the pressure under gravity fall 100kpal or less.

Operation procedure

Turn on the power with the discharge side closed after releasing the air in the pipe. Then, open the discharge side gradually.

Step out

In normal operation, each magnet on the motor side and pump side rotates synchronously. However, when the impeller does not rotate for any solid matter caught in them, the pump stops even if the motor rotates normally.
In this situation, shut the power off first and check if the pump shows any abnormal sign. Then, run the pump again.

Precaution of maintenance & repair



WARNING



Plug out

Make sure to pull out the power plug from a socket or shut off the power at maintenance. At that time, do not handle the plug with wet hands. Otherwise, you may receive an electric shock or burn yourself.



Clean plug

Wipe off the blades of the plug, if coated with dust. Otherwise, it may cause a fire.



No

Disassembly

No one but electricians should disassemble, repair, or tamper with the product. Otherwise, it may ignite or abnormally run which may do you an injury.



CAUTION



No Damage To Power Cable

Do not give a damage to the power cable with tapering with , bending by force, jerking, twisting and bundling. Furthermore, do not handle the power cable with putting any heavy matter on it, pinching in the matter. Otherwise, the power cable is so damaged that it may cause a fire or electric shock accident.





Plug out

Make sure to pull out the power cable or shut off the power in order to prevent any accident when the pump does not run or any other troubles occur. Then, consult the distributor immediately. Because it may cause a fire or electric shock accident due to the short circuit.

Troubleshooting

Symptoms	Causes	Countermeasures
Motor does not run.	<ul style="list-style-type: none"> ○ Wiring failure, disconnection ○ Motor failure, disconnection ○ Protector is working ○ Condenser failure 	<ul style="list-style-type: none"> ○ Inspections (Voltage and power supply) ○ Replace or repair it ○ Remove the cause, then run the motor again ○ Replace or repair it
Pump does not work, or pumping failure.	<ul style="list-style-type: none"> ○ Dry running ○ Air stagnant in the pump. ○ The air goes into the pump from the suction inlet. ○ Suction hose depressed ○ Impeller stuck with foreign 	<ul style="list-style-type: none"> ○ Check the pump before use. ○ Fully release the air ○ Fasten the joint firmly. ○ Replace the hose to other one which is enough hard. ○ Wash impeller.

	objects.	
Abnormal noise and vibration	<input type="radio"/> Dry running <input type="radio"/> Impeller stuck with foreign objects. <input type="radio"/> Impeller contacts.	<input type="radio"/> Check the pump before use. <input type="radio"/> Wash impeller. <input type="radio"/> Replace the pump.
Overload	<input type="radio"/> Specific gravity and/or viscosity is too high.	<input type="radio"/> Replace the pump.

 Tender Care	● Check your faithful pump of longtime service.			
	Have you seen any symptom like this?	<ul style="list-style-type: none"> ● Abnormal noises and/or vibrations during operation. ● Safety device and/or short-circuit Breaker work when powered on. ● Liquid leakage (at pump unit and joints) ● It smells burnt. ● You receive slight electric shock when you touch the pump. ● Cables and/or wires are chapped or cut. ● Other abnormality. 		Stop running

We, hereby, certify that this pump has successfully passed many tests and inspections to be free of defects in materials and



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