

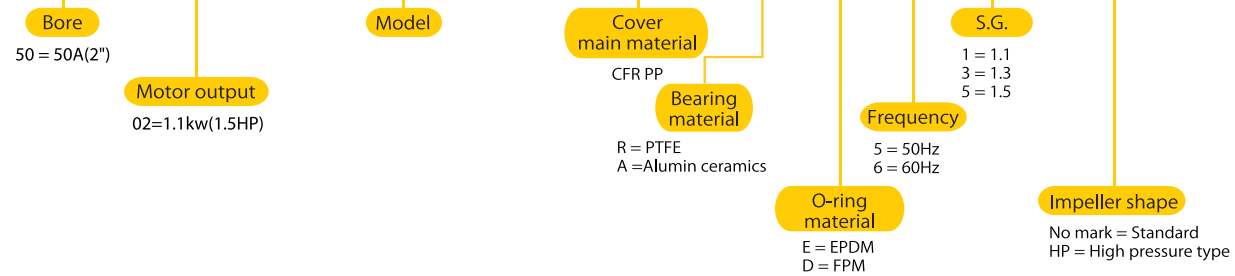
# GWVN series

Chemical Sump Pump/ Submersible Magnetic Drive Pump



< Model description >

YD-5002GWN1-CP-AD61-HP

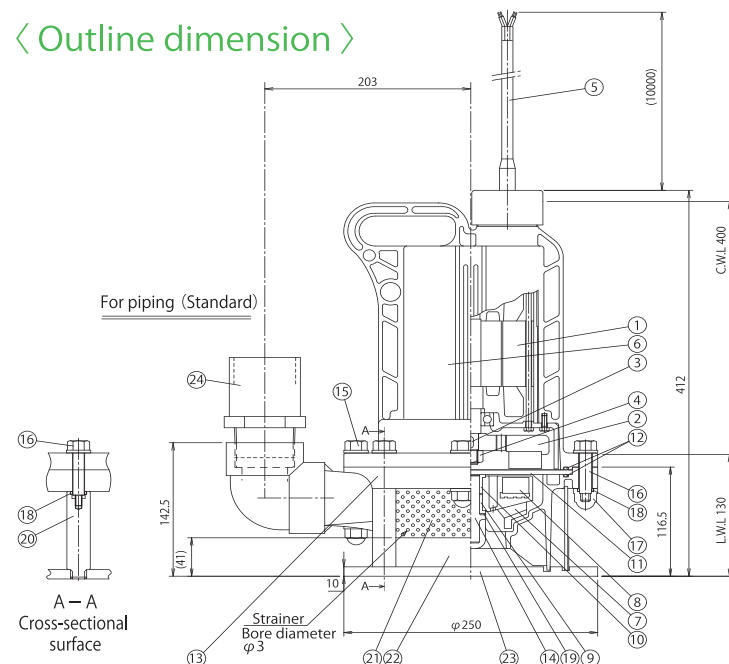


< Standard performance >

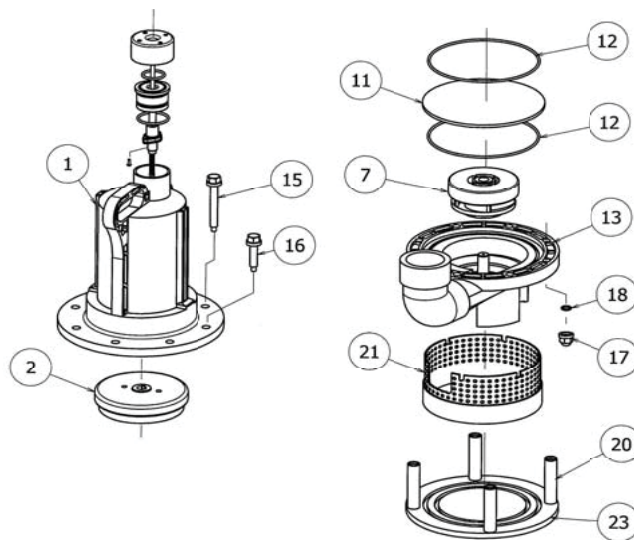
Standard	Frequency	Standard performance		Motor output	Power	Insulation	Bore (Discharge)	Liquid temperature	Weight
		THD	Capacity						
5002GWN1	60Hz	8.3m (27ft)	200L/min (52gpm)	1.1kW	200/220V/460V 60Hz	H	50mm (2")	158F=70°C MAX	23kg (50lbs)
5002GWN1-HP	60Hz	11.9m (39ft)	100L/min (26gpm)						

※ Cabtyre cable = 2PNCT (1.25mm<sup>2</sup> × 10m)

< Outline dimension >



< Exploded view >



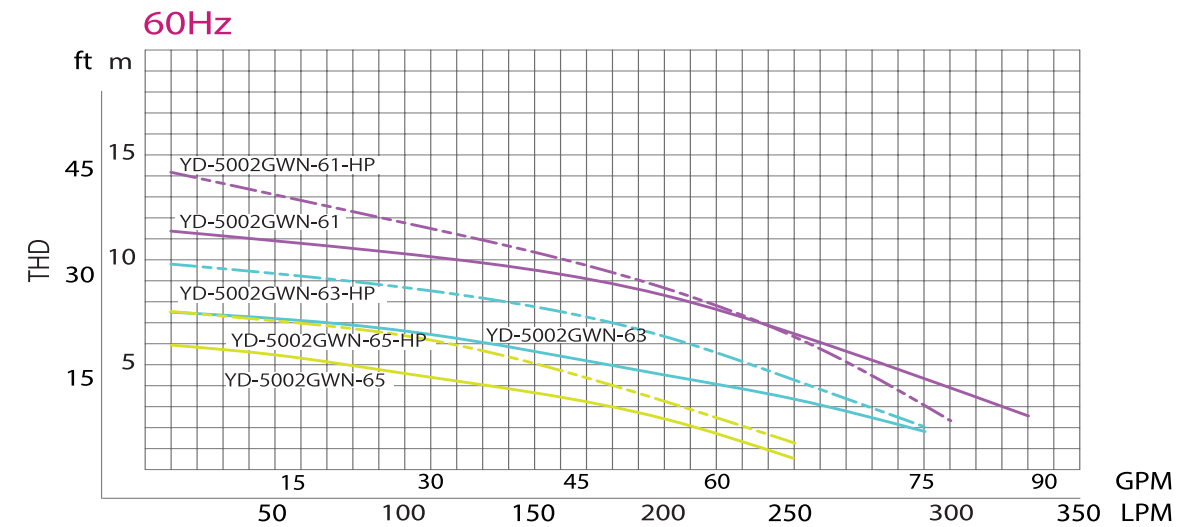
< Parts list >

No.	Part name	Remarks
①	Motor	FC
②	Motor side magnet	Ferrite magnet
③	Key for motor side magnet	SS
④	Nut for motor side magnet	SS
⑤	Cabtyre cable	CR 2PNCT(10m)
⑥	Motor cover	CFR PP
⑦	Impeller	CFR PP
⑧	Impeller side magnet	Ferrite magnet
⑨	Front bearing	PTFE / Ceramics
⑩	Rear bearing	PTFE
⑪	Separating board	Ceramics
⑫	O-ring	EPDM / FPM

No.	Parts name	Remarks
⑬	Casing	CFR PP
⑭	Pump shaft	SiC
⑮	Set bolt 92	CFR PP
⑯	Set bolt 52	CFR PP
⑰	Nut for set bolt	CFR PP
⑱	O-ring	EPDM/FPM
⑲	Floating washer	PTFE (only for Ceramics bearing)
⑳	Stand bolt	HT.PVC
㉑	Strainer	PP
㉒	Sludge fence	PP
㉓	Bottom board	PP
㉔	50A valve socket	PVC

※ When using a pump for high temperature (55°C and more), do not use Valve socket (PVC) : No. 24.

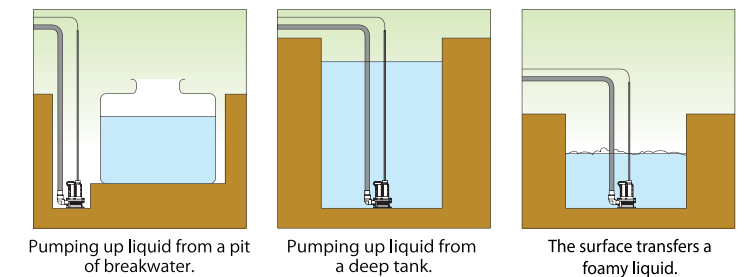
< Performance curve >



< Example of use >

- Pumping up chemical liquid or wastewater from a deep or narrow tank.
- The surface transfers a foamy liquid.
- Pumping up chemical liquid from a sealed tank.
- Circulating liquid in a tank.
- Agitating liquid in a tank or equipment.
- Pumping or transferring liquid for emergency.

< Example of installation >



Structure

➤ Separating Board

The disk type magnet drive method is adopted so that a drive side disc-shaped magnet and passive magnet (Disc-shaped impeller) can hold a strong ceramic separating board and rotate. The simple water path resists air lock and slurry.

➤ Even the bolts is our "ORIGINAL"

The exclusive bolt for YD-GWN is covered a stainless bolt with molded carbon fiber reinforced polypropylene resin (CFR PP). It is our original bolt which is strong to metal and high corrosion resistance. The O-Ring between the nut and joints is as well.

➤ Silicon Carbide is adopted as standard.

Silicon Carbide enormously resists heat shock and is strong than ceramics. The abrasion resistance is the best for the shaft for the submersible magnet drive pump.

➤ Impeller

Impeller is injection-molded with carbon reinforced polypropylene resin (CFR PP) and molds the magnet inside. CFR-PTFE (Carbon filled teflon resin) bearing, which slide with the shaft is inserted in the center of the impeller.

※ Different Specific gravity (S.G.1.3,1.5) is also available upon request.



< Operating precautions >

- Corrosion**
1. CFR PP (Carbon fiber reinforced polypropylene resin)  
It is used for the main body, so using the pump for general acid and alkali liquid is fine. However, it is corroded by sulfuric acid, nitric acid, hydrofluoric acid, chromic acid or sodium hypochlorite depending on the concentration. Please consult with chemical liquid supplier.
  2. Ceramics  
High Chemical-resistant and highly pure ceramics is adopted and using the pump for acid and alkali is available.
  3. Sealing material  
Selecting O-rings depending on chemical resistance is available. EPDM O-rings for alkali and FPM O-rings for acid are provided. They are not used for organic solvent.
  4. 2PNCT  
The cabtyre cable is made of 2PNCT and can be used for acid and alkali except organic solvent.

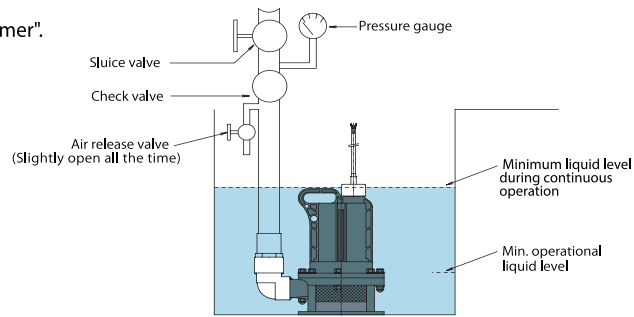
**Limit temp.** The motor insulation is H type and can be used for liquids up to 70 degrees/158F, C as standard.

- Safety & measures**
1. A thermal protector is incorporated to prevent the motor heating by overload and the single operation, **but make sure to install an earth leakage circuit breaker to prevent electric leakage.** It makes the motor stop and prevent burn when liquid goes into the motor as well as the prevention of electric leakage.  
※ When using, always check the motor insulation resistance.
  2. **Do not disassemble the motor and connection of the cabtyre cable. It may cause electric leakage.**

**Example of installation** Piping as seen on the diagram on the right to prevent "Water-hammer".

Minimum liquid level during continuous operation: 400mm  
(The state of the motor fully submerged)

Minimum operational liquid level: 5" (130mm)  
(It is possible to prime liquid, but the cooling of the motor is not enough. Using a pump for 10 minutes is as a guide.)

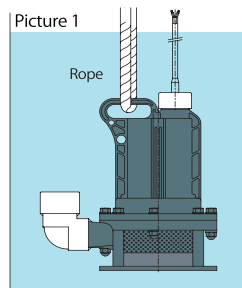


- Operating cautions**
1. Liquid with slurry makes the bearing wear. Especially, when using the pump in a settlement tank, provide the mounting and raise the pump so as to not have the slurry enter or install the pump after removing slurry. (Bearing change is easy. When slurry is in liquid, use the ceramic bearing.)
  2. Use the pump fully submerged, exposure to air may cause failure.
  3. If the check valve is attached, install the air release pipe beneath the check valve to release the air all the time.
  4. If the pump is operated out of liquid, the motor resin cover may be damaged because the motor is not cooled.
  5. The pump may run dry for glitch of the liquid level indicator. Check whether it works properly before use.
  6. Do not remove the strainer to avoid dirt entering the pump and always clean the strainer to avoid clogging.  
If the strainer is clogged, it will cause priming failure and cause the pump to BURN.
  7. When extending the cable, consider the cable bore to prevent a voltage drop.
  8. When using the pump with high temperature liquid (55 degrees C and more), change the discharge valve socket from PVC to other material.

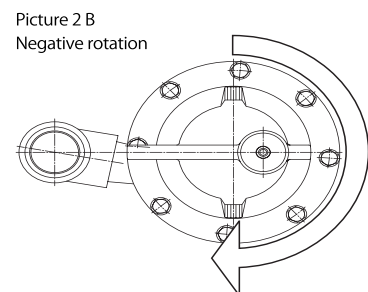
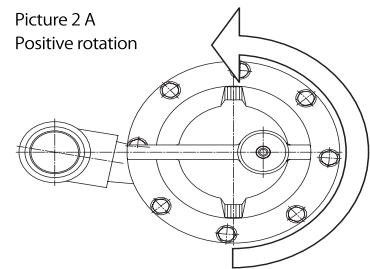
**Handling cautions** The pump is made of resin. Handle the pump with care. Pulling the cable when lifting the pump make break. Make sure to use the attached rope.  
**Unreasonable handling of the pump parts may damage the pump or cause injuries.**

How to check the rotational direction

1. YD-GWN is Submersible Magnetic Drive Pump. If it RUNS DRY, it may cause shaft damage or the resin parts to deform by heat.
2. When it is the positive rotation, the pump moves counterclockwise as viewed from above like Picture 2 A at the start.  
**(Be careful about liquid spout from the discharge pipe.)**

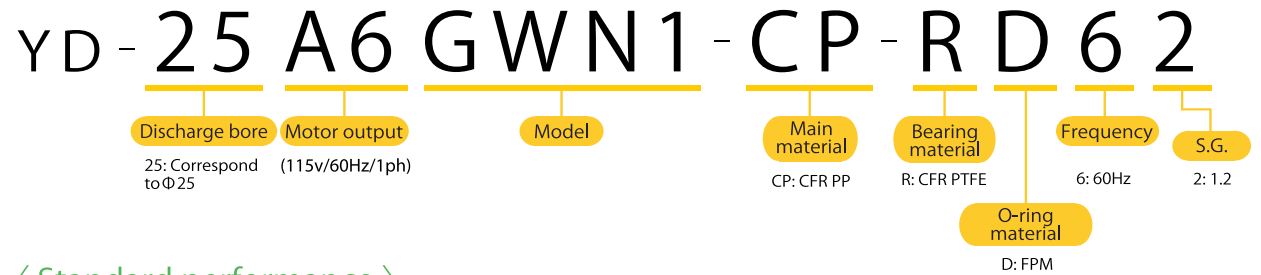


Submerge the pump in a container or pit and hang it, then check the rotational direction.



# Small Submersible Magnet Drive Pump

< Model description >

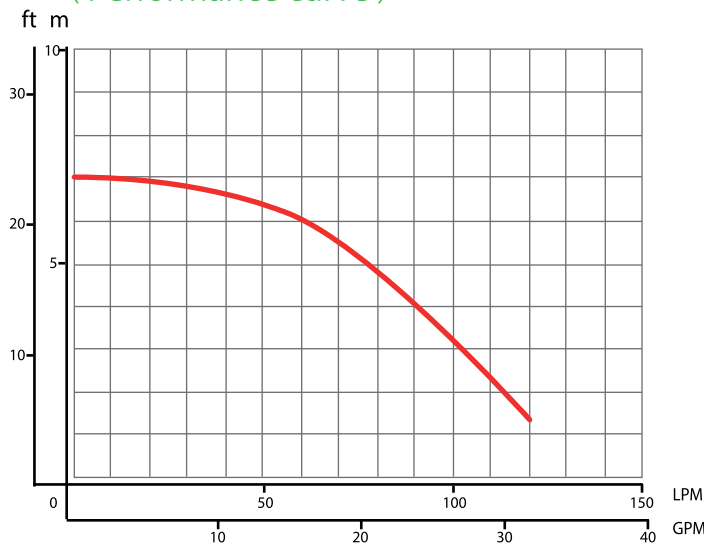


< Standard performance >

Model	Frequency	S.G.	Hose size	Std. performance		Motor			Liquid temp.	Weight
				THD	Capacity	Output	Voltage/PH	Insulation		
YD-25A6GWN1-CP-RD62	60Hz	1.2	ID: 25mm/1" OD: 33mm/1.2	21ft/6.5m	15gpm/ 60lpm	1/3HP (0.26kW)	115V/1ph	E	104°F/40°C MAX	30lbs/ 14kg

※ Cabtyre cable (2PNCT, 5m) is adopted as a power supply cable and can be used for common acid and alkali except for organic solvent.

< Performance curve >



< Example of use >

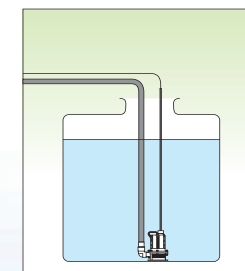
- To replace liquid in a tank.
- To pump up liquid from a deep tank.
- To pump liquid from a tank truck.
- For a raw tank in a wastewater plant.
- To pump up at breakwaters.
- To break chemical liquid in small amounts.
- The surface transfers a foamy liquid easily.

Feature

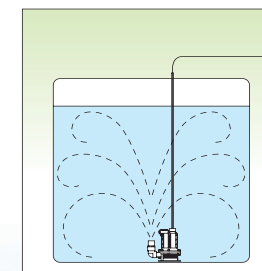
- Single phase, 115V type
- Minimum Liquid Level of only 0.4" (10mm)



< Example of installation >

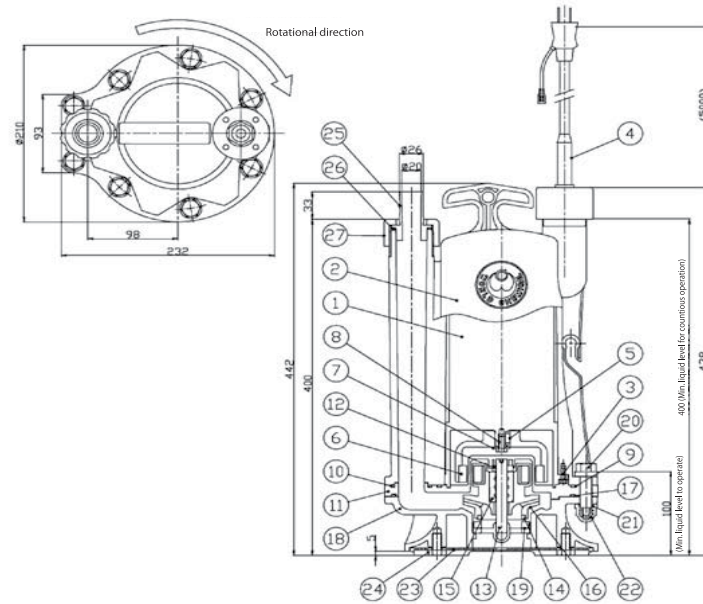


Replace liquid in a tank

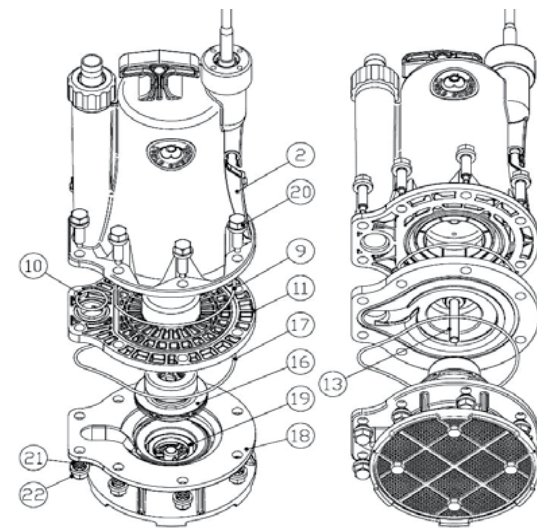


Mixing

< Outline dimension >



< Exploded view >



< Parts list >

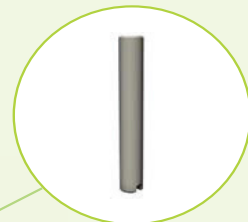
No.	Parts name	Qty	Material	Remarks
①	Motor	1	FC	
②	Motor cover	1	CFR PP	
③	Hex. bolt	4	SUS304	M5×15
④	Cabtyre cable	1	CR	2PNCT
⑤	Key	1	S45C	5×5×10
⑥	Outer magnet	1	Ferrite magnet	
⑦	Flat washer	1	SUS304	
⑧	Hex. bolt	1	SUS304	M6×15
⑨	O-ring for Rear casing	1	FPM	
⑩	O-ring for discharge outlet	1	FPM	P38
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	

No.	Parts name	Qty	Material	Remarks
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	P12
㉒	Set bolt nut	8	CFR PP	
㉓	Strainer	1	CFR PP	
㉔	Hex. bolt	4	PVC	M10×20
㉕	Hose joint	1	CFR PP	
㉖	O-ring for hose joint	1	FPM	P34
㉗	Hose joint nut	1	CFR PP	

Structure

Impeller

Injection molding impeller is made with CFR PP. The bearing inserted at the center of the impeller.



Shaft

The shaft is made of alumina ceramics and two point support construction of the shaft for durability.



Bolt, nut

The bolt is covered with molded carbon fiber reinforced polypropylene resin (CFR PP).



Rear casing

No mechanical seals, magnetic drive pump method. It completely divided the pump parts and motor.

< Operating precautions >

Corrosion

- CFR PP (Carbon fiber reinforced polypropylene)  
The main body is made of CFR PP which is used for common acid and alkali but eroded by sulfuric acid, nitric acid, hydrofluoric acid and sodium hypochlorite depending on the concentration. If necessary, consult the liquid manufacturer.
- Ceramics  
High chemical resistant and pure ceramics is adopted and used for acid and alkali.
- Sealing material  
It is possible to select the material of O-ring according to the chemical resistance. EPDM is for alkali and FPM for acid. It cannot be used for organic solvent.
- 2PNCT  
The material of the cabtyre cable is 2PNCT and can be used for acid and alkali except organic solvent.

Limit of temp

Max Temp: 104F / 40Celsius

Safety & measures

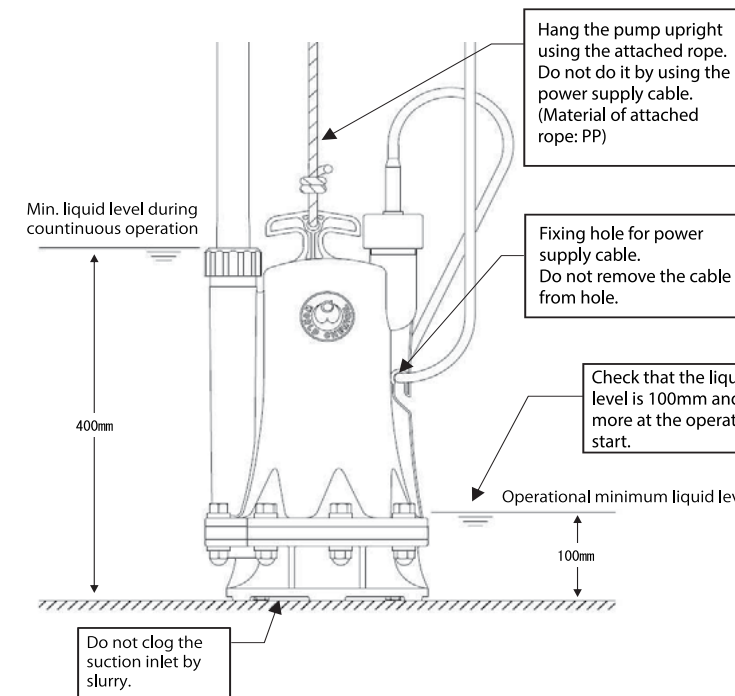
- The thermal protector may work to protect the motor depending on the operational condition and the pump stops. In this regard, stop the operation for a while and check the pump normal. Then, start the operation after securing the appropriate liquid level.
- Do not disassemble the motor and joint of the cabtyre cable. It may cause electric leakage.

Installation & operation

Minimum necessary flow rate during operation: 5L/min

Minimum liquid level during continuous operation is 400mm (at the state of the motor submerged.)

Operational minimum liquid level is 100mm. (It is possible to pump up, but the cooling of the motor is not enough. Therefore, operate it for 5 minutes or less.)



- Do not suspend the cable up with just the power supply cable.
- Make sure to connect the earth wire with the plug.
- Do not run the pump dry.
- Do not use the pump for sludge and slurry.

Measures against air lock.

If there are liquid pools in the discharge pipe when the pump stops, it may experience pumping failure by air lock at the time of the pump restart. It is also easy to be at the same state after the deadhead operation. Thus, it is recommended to install the air release valve, or make sure to release the air and pour priming liquid before operation.

If check valves are installed on the discharge pipe, put the exhaust bypass pipe beneath. (If not, it may cause air lock.)



Comprehensive Manufacturer of Environmental Equipment  
Challenging the Liquid Transfer Technology,

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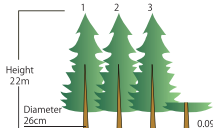
■Note:



This is printed by using a reused aluminum board  
(4.22 kg) and saves electric power, 66.77 kW.  
(CO<sub>2</sub> emission 43.09 kg)



The CO<sub>2</sub> reduction is certified and verified strictly and fair by Japan Smart Energy Co., Ltd.



Height 22m  
Diameter 26cm

CO<sub>2</sub> reduction (43.09 kg) means  
it is CO<sub>2</sub> absorbed by 3.09 Japanese cedars (Height 22 m, 26 cm diameter) which is 50 years old in a year.  
(By Forest and Forestry)

World Chemical Co., Ltd. joins a forest regeneration project (plant 3,000 trees) in Bali, Indonesia through printing by MCP.