Superior Performance
Unbeatable Pricing
Pride in Workmanship
Energy Efficient
Rugged Construction

SUPER 塑寶牌

SM Magnetic Drive sealless Pump

Operation Manual

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1. Review prior to installation

1.1 Check the outline of pump for any damage might cause during transportation.
1.2 Rotate the motor cooling fan to make sure it can rotate normally or the pump might get damage during transportation.
1.3 Contact the forwarder and distributor for refund and replacement if the pump was damaged.
1.4 Check the data on the label to make sure it meets with your order and application.

2. Notes for operation

2.1 Dry-Running
2.1.1 The pump cools itself by the transferred fluid. Hence the heat caused by dry-running will damage the pump seriously.
2.1.2 Shutdown the pump right away if dry-running occurs. Leave it for cooling for at least 1-hour period to prime again. Or the pump might get damage.
2.1.3 Dry-running protector is recommended to avoid the pump from damage.

2.2 Operating temperature
2.2.1 Temperature might change the viscosity, vapor pressure and corrosiveness. Take care of it.
2.2.2 This pump can work with water from 5℃~90℃ depending on the structure material. Discuss with the distributor to make sure appropriate temperature range.
2.2.3 Recommended ambient temperature: 5℃~40℃

2.3 Concentration, Viscosity and Specific Gravity
2.3.1 Viscosity, specific gravity as well as corrosiveness might vary with the change of concentration.
2.3.2 The brake power, flow rate as well as head will vary with the fluids of different viscosity and specific gravity.

2.4 Particle (Sludge)
2.4.1 The particle and sludge will greatly shorten the service life of pump. It varies with the particle amount, size and hardness.
2.4.2 Particles can be caught by magnet are absolutely forbidden for magnetic pump.

Installation and piping

3.1 Inlet Piping

3.1.1 General Requirements

3.1.1.1 Lower the inlet as much as possible with straight and short piping.

3.1.1.2 Do not support the piping by the pump primarily.

3.1.1.3 Consider the influence of thermal stress to the support.

3.1.1.4 Connect the pipe and elbow perfectly to eliminate sucking in air.

3.1.1.5 Keep the piping slope as 0.01~0.02 toward the pump to eliminate the air remaining in the piping.

3.1.1.6 No elbow should be set within 1 feet close to the in-outlet also elbow with a larger radial is recommended.

3.1.2 Inlet Piping

3.1.2.1 Keep the suction end of piping far away the tank wall to avoid whirlpool.

3.1.2.2 Keep the suction end of piping below the water level as much as possible.

3.1.2.3 Set a strainer at the end of piping to eliminate the whirlpool and air to be sucked in.

3.1.3 Foot Valve

4.1.3.1 Set a foot valve if lift suction is used.

3.1.4 Self-Priming Chamber

4.1.4.1 Set a chamber for lift suction to enable self-priming..

4.1.4.2 The liquid line in the chamber should be at least 0.5M higher than the pump datum (Inlet pipe).

3.1.5 Shut off Valve

3.1.5.1 Set a shut off valve for maintenance or repairs. Never close it while pump is running

3.1.6Filter

3.1.6.1 Filter in the suction end will increase the system resistance and even blocked and cause dry-running.

3.1.6.2 Clean the filter periodically if it has to be applied to.

3.1.7 Vacuum Gauge

3.1.7.1 Vacuum gauge should be corrosion resistant or a diaphragm is recommended to protect the gauge.

3.1.7.2 Vacuum gauge reading fluctuates means air sucked into the system or cavitation comes out.

3.2 Outlet Piping

3.2.1 General Requirements

3.2.1.1 Do not support the outlet piping weight by the pump casing or it might get crack.

3.2.1.2 For lift suction, set a priming piping to fill the pump with liquid or it will get dry-running at start-up.

3.2.2 Priming Piping

3.2.2.1 Either priming piping or self-priming chamber is necessary for lift suction.

3.2.3 Pressure Gauge

3.2.3.1 Pressure gauge should be corrosion resistant or a diaphragm is recommended to protect the gauge.

3.2.3.2 Set a valve before pressure gauge to extend the service life of gauge.

3.2.3.3 Pressure gauge reading fluctuates means air sucked into the system or cavitation comes out.

3.2.4 Check Valve

3.2.4.1 Both pumps share the same outlet piping system must set check valve for each pump.

3.2.4.2 Check valve can eliminate the damage caused by back flow (water hammer).

3.3 Operation

3.3.1 Cautions prior to start-up

3.3.1.1 Make sure the pump and the piping are fastened.

3.3.1.2 Prime the pump with liquid, as well as the suction piping.

3.3.1.3 Make sure the suction valve is open.

3.3.2 Start Up

3.3.2.1 Run the pump in a very short time to check the rotation direction is correct. If not, change any two of the wiring.

3.3.3 Cautions in operating

3.3.3.1 Shut down the pump in case of cavitation or dry-running occurred.

3.3.3.2 If de-coupling should occur, shut down the pump or the magnet strength will diminish.

3.3.3.3 Shut off the pump power supply during power outage.

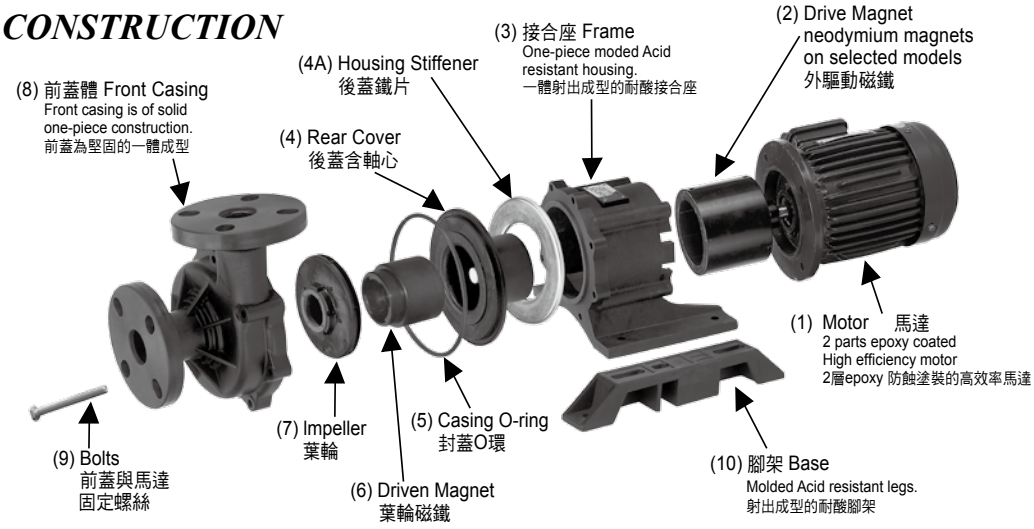
3.3.3.4 Set a heater to keep the liquid warm if it may crystallize at cold temperature.

4 Maintenance and Repair

Problem	Caused	Remedy
Motor is too hot.	1. Specific gravity or viscosity is too high. 2. Motor bearings are damaged. 3. Wear ring worn off.	1. Change to a bigger model or lower the impeller size. 2. Change it. 3. Replace it.
No flow or flow is low.	1. Decoupling of the magnetic drive. 2. Excessive wear on bearing and thrust rings. 3. Dry-running. 4. Something stuck the impeller. 5. Suction end is blocked.	1. Call service. 2. Replace it. 3. Set a check valve or foot valve to keep liquid full in the pump. 4. Remove it. 5. Clean it or change a bigger strainer.
Vibration and noise.	1. Cavitation. 2. Air sucked in. 3. Something stuck the impeller. 4. Wear ring worn off.	1. NPSHa is too low. Do something to increase NPSHa. 2. Check the leakage. 3. Set a tee strainer instead of foot strainer. 4. Replace it.
Leakage	1. Deformation of the o-ring. 2. Housing crack or corroded. 3. Crack caused by dry-running.	1. Replace it or change material. 2. Change material of housing. 3. Set a check valve.
Parts is worn.	1. Liquid contains particle.	1. Set a filter.

七、SM型立體系統圖與零件對照表

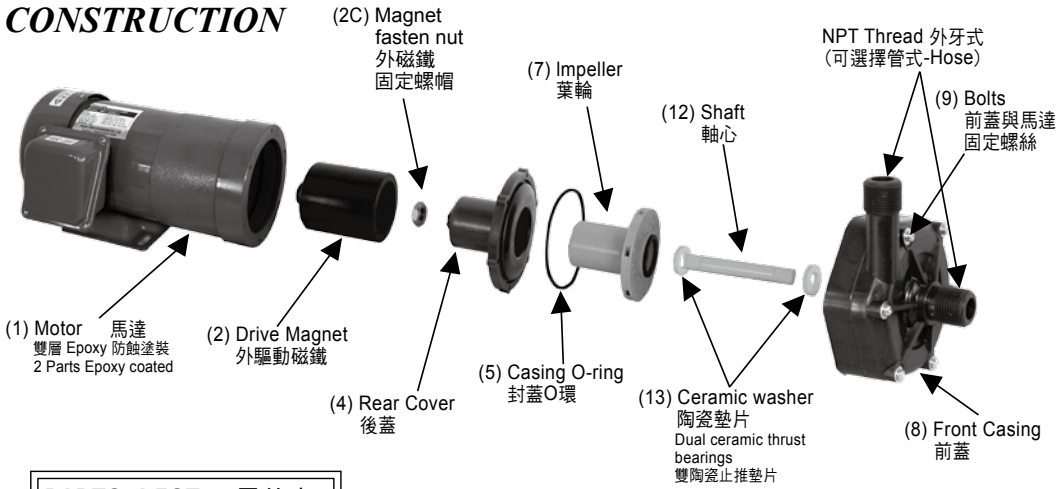
CONSTRUCTION



PARTS LIST 零件表

Parts No. 零件編號	1	2	3	4	4A	5	6	7	8	9	10
Description 零件名稱	Motor 馬達	Drive Magnet 外驅動磁鐵	Frame 接合座	Rear Cover 後蓋含軸心	Housing Stiffener 後蓋鐵片	Casing O-ring 封蓋O環	Driven Magnet 葉輪磁鐵	Impeller 葉輪	Front Casing 前蓋	Bolts 前蓋與馬達固定螺絲	Base 腳架
Material 零件材質	高效率馬達	Magnet 磁鐵	FRPP	FRPP/PVDF Ceramic	鍍鋅鐵片 Zinc plated iron	NBR/EPDM VITON	FRPP/PVDF	FRPP/PVDF	FRPP/PVDF	SUS304	FRPP

CONSTRUCTION



PARTS LIST 零件表

Parts No. 零件編號	1	2	2C	4	5	7	8	9	12	13
Description 零件名稱	Motor 馬達	Drive Magnet 外驅動磁鐵	Magnet fasten nut 外磁鐵固定螺帽	Rear Cover 後蓋	Casing O-ring 封蓋O環	Impeller 葉輪	Front Casing 前蓋	Bolts 前蓋與馬達固定螺絲	Shaft 軸心	Ceramic washer 陶瓷墊片
Material 零件材質	防蝕塗裝馬達	Magnet 磁鐵	SUS304	FRPP/PVDF	NBR/EPDM VITON	FRPP/PVDF	FRPP/PVDF	SUS304	Ceramic/Ti	Ceramic

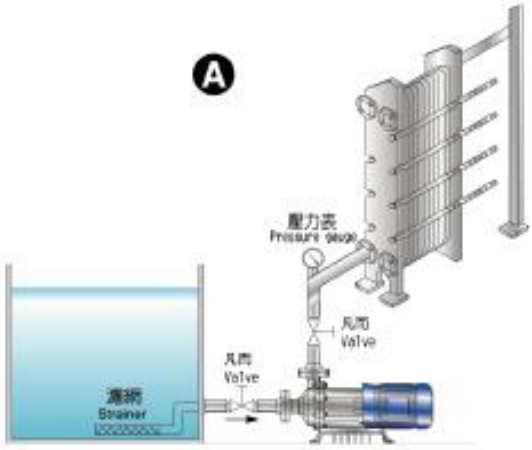
EXAMPLES
EXAMPELS

Exampel A　For Heat exchanger

1. While applied to heat-exchanger, install a pressure gauge at the outlet to make sure no clog inside the pipeline.
2. Install a strainer at the inlet to stop articles or objects enterring the pump. It also reduce the appearance of bubble.
3. Install valves at the inlet and outlet for easy maintenance.
4. The diameter of each hole in the strainer should be approximately 5-7m/m and the total mesh area of the strainer should be 5-10 times the area of the imlet.

範例 A　使用於熱交換器

1. 當使用於熱交換器時，於出口加裝壓力錶，以確定管路中有沒有阻塞。
2. 於入口加裝濾網，以阻止外物進入泵浦，也會減少氣泡的出現。
3. 於出入口的管路中加裝凡而，以便維護。
4. 濾網網孔的直徑應為約 5-7mm，且濾網孔的面積應為入口管徑之 5-10倍。

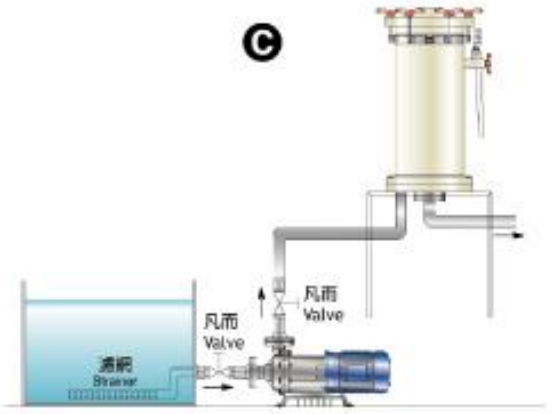


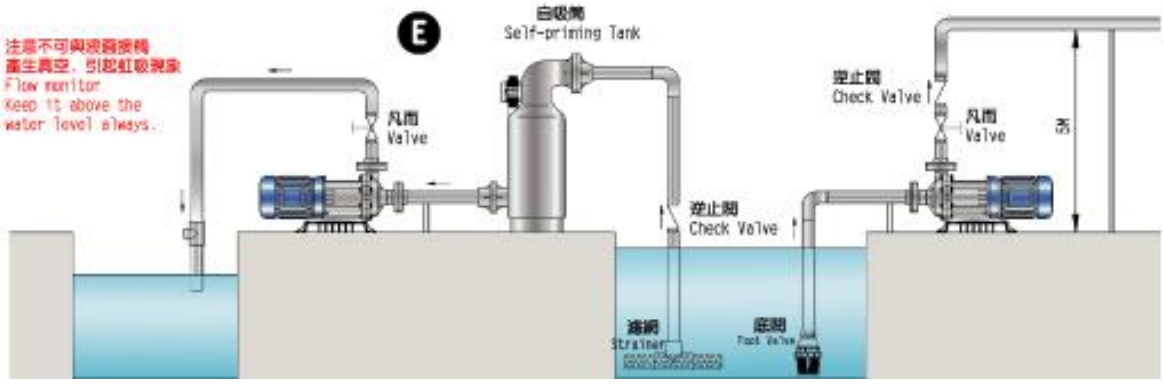
Example C　For Chamber

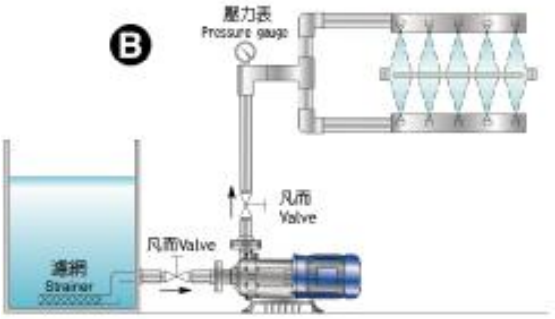
1. Install a strainer at the inlet to stop articles or objects enterring the pump. It also reduce the appearance of bubble.
2. Install valves at the inlet and outlet for easy maintenance.
3. The diameter of each hole in the strainer should be approximately 5-7m/m and the total mesh area of the strainer should be 5-10 times the area of the inlet.
4. Replace the cartridge periodically to avoid Block of flow.

範例 C　使用於過濾器

1. 於入口加裝濾網，以阻止外物進入泵浦，也會減少氣泡的出現。
2. 於出入口的管路中加裝凡而，以便維護。
3. 濾網網孔的直徑應為約 5-7mm，且濾網孔的面積應為入口管徑之 5-10倍。
4. 使用於過濾器，要定期保養濾材，避免阻塞。





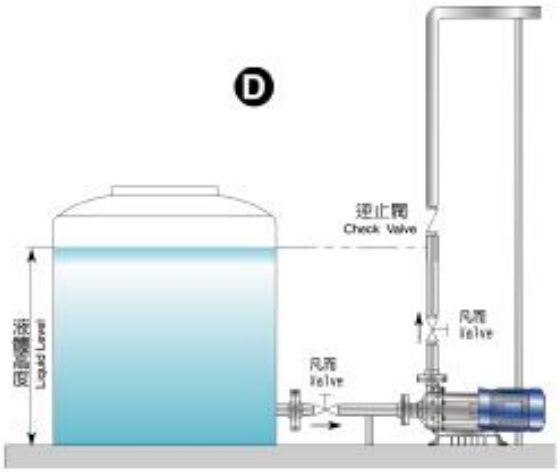


Exampel B For PCB etching

1. To eliminate damage caused by dry-running, please install a safety shutoff.
2. The diameter of each hole in the strainer should be approximately 5-7m/m and the total mesh area of the strainer should be 5-10 times the area of the inlet.
3. Install valves at the inlet and outlet for easy maintenance.

範例 B 使用於曝洗蝕刻機

1. 請加裝保護斷電器以避免因空轉損壞。
2. 濾網網孔的直徑應為約 5-7mm, 且濾網孔的面積應為入口管徑之 5-10倍。
3. 於出入口的管路中加裝凡而, 以便維護。



Example D

1. While applied to pumping chemicals from the storage tank, please have a valve set at the inlet for the safety and convenience during maintenance.
2. Please monitor the level of the liquid in the tank to avoid dry-running.
3. Please install a check valve at the outlet while the height of piping exceeds 8M.
4. Please fasten in-outlet pipes and install a valve.
5. The motor shield must be applied while the pump is installed outdoors or in harsh chnditions.

範例 D

1. 當使用於抽送儲存槽中之化學藥水時, 請於入口加裝閥門, 以維安全及維護上之便利。
2. 請監視槽內液體高度, 以避免空轉。
3. 當配管高度大於8米時, 請於出口加裝逆止閥。
4. 請將出入口管線固定好, 並加裝凡而。
5. 當泵浦裝於戶外或惡劣環境中, 馬達必需加蓋護罩。

Example E

1. To stop articles or objects enter the pump, install a foot valve or strainer.
2. To prevent the inlet from sucking in bubble, please keep liquid level at least 30cm above the inlet strainer.
3. Check valve must be installed if the height of piping exceeds 8M.
4. To avoid dry-running, please install a safety shutoff.
5. For the safety of repair, the valve must be installed at the outlet.
6. This model cannot do self-priming. Make sure the pump and inlet piping are full fil with liquid before pumping underground tank or install a self-priming tank to get it.

範例 E

1. 加裝底閥或濾網, 以防止外物進入泵浦。
2. 請保持液位最少高於入口濾網30cm以上, 以防止吸入氣泡。
3. 當配管高度大於8米時, 必需加裝逆止閥。
4. 請加裝保護斷電器, 以防止泵浦空轉。
5. 為了維護安全, 出口必需加裝凡而。
6. 本機型無自吸能力, 抽取地下槽之前, 需確認泵浦及管線中充滿液體, 並加裝自吸筒及底閥以獲得自吸能力。

Quality Guarantee

Model：

Serial No.：

All the **SUPER GIANT** products have passed strict quality control and fulfill the filtration standard stated in our catalogue. They will run in excellent condition under proper operation and good maintenance.

1. Please store this guarantee properly and show it when necessary.
2. Super Giant Enterprise company will charge for repair under the following conditions.
   - The damage is caused by non-permitted repair, or improper maintenance or operation.
   - The product is broken by natural disasters such as earthquake or fire.
3. The consumable parts and accessories are not covered in the guarantee.
4. Guarantee period: 1 year after delivery

If you have any question, please contact our dealer or Super Giant Enterprise directly.

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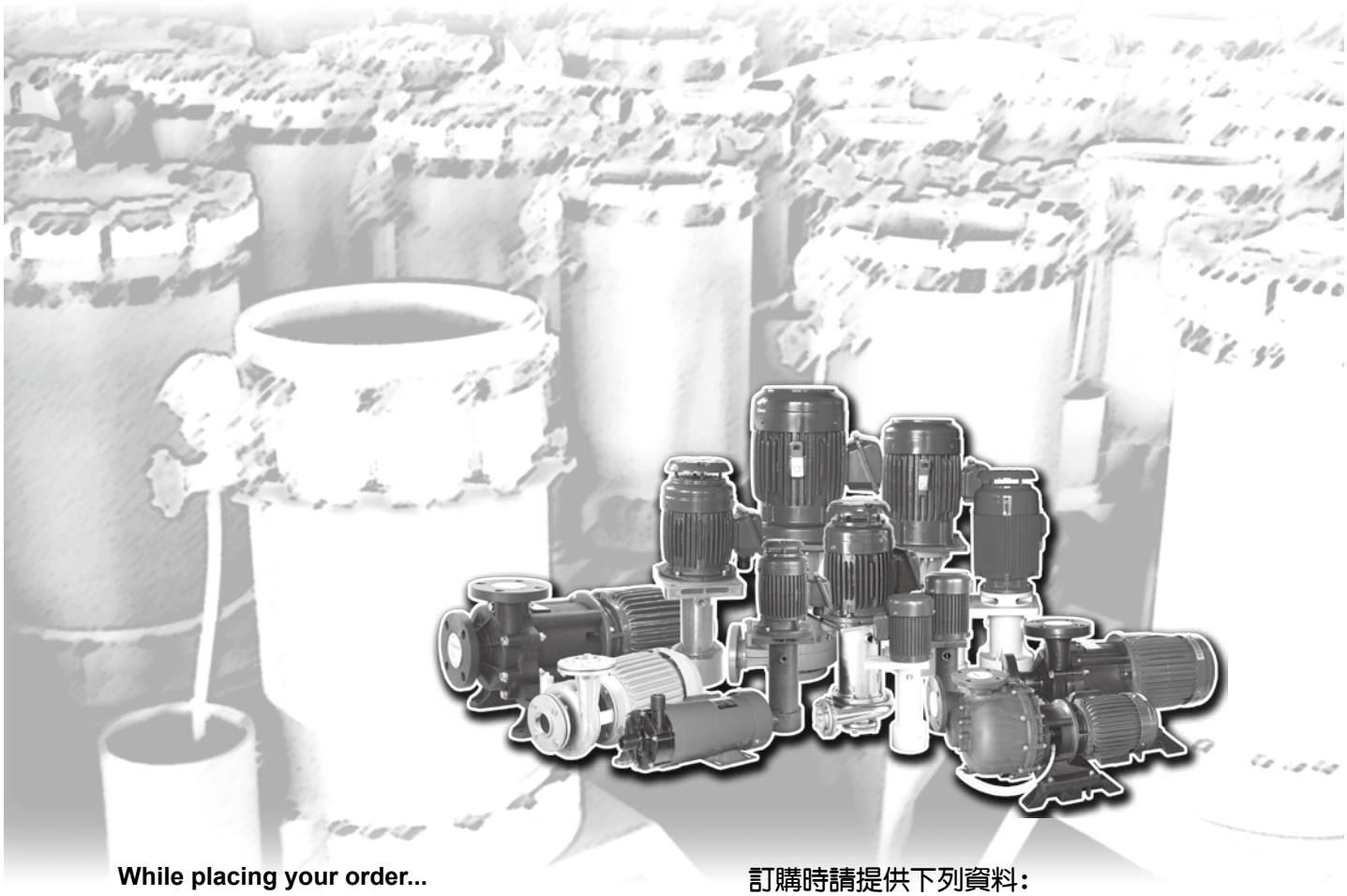

While placing your order...
Please kindly provide us the following information.

1. Chemical: Name/Concentration/Temperature/ Specific Gravity/Viscosity
2. Capacity needed:_____L/min
3. Head needed:_____M
4. Power: Voltage/Frequency

訂購時請提供下列資料：

1. 藥液條件：名稱/溫度/濃度/比重/黏度
2. 需求流量：_____L/min
3. 需求揚程：_____M
4. 馬達：電壓/頻率

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