

磁力驅動泵浦 MAGNETIC DRIVE PUMP

KUOBAO



ZST

Expanded fields of application owing to improved corrosion resistance...
化工界最頂尖—耐酸鹼的權威

A new level of pump performance.

展現泵浦性能新境界

ZIYI
MP / MPH series



日益電機(股)公司秉持 "創新突破、技術領先" 的理念，矢志鑽研泵浦性能及化學成分，經過專業設計，開發製造各式耐酸鹼泵浦，憑著卓越傑出的經驗與理論基礎，日益電機(股)公司將為您提供創新信賴的泵浦，滿足您不同的使用需求。

日益電機(股)公司自創立以來，不斷致力於市場的拓展，多年來對於國際市場的努力耕耘，目前已在國際市場上建立綿密的行銷據點，受到國際客戶的一致推崇，日益電機(股)公司誓要成為品質卓越、世界第一的泵浦新典範。

Based on the company's philosophy of "Innovative Design, Technology Leadership", Zi Yi is totally dedicated to the research of pump performance and chemical composition. For over years we have designed and manufactured a wide range of acid/alkaline resistant pumps. Based on our extensive experience combined with theoretical basis, Zi Yi will provide you the innovative and dependable pumps to meet your specific applications.

Since the company established, Zi Yi has spent great efforts in developing global market. Through the years of efforts, Zi Yi has set up a comprehensive sales networks around the world. Zi Yi pumps have been fully satisfied to all customers. Look to future, Zi Yi will keep moving toward the target of becoming a world class pump manufacturer.



◎專業顧問

專業泵浦選型諮詢，日益電機(股)公司提供最適材質及最佳性能的泵浦給客戶，讓客戶更能了解及滿足自己的需求。

◎創新研發

日益電機(股)公司擁有堅強的研發陣容，追求創新技術的執著精神，不斷改進泵浦性能，以求在市場上提供更加優質的產品。

◎技術領先

豐富的生產經驗，配合渾厚的專業技術，日益電機(股)公司不斷生產製造出應用範圍最廣泛的耐酸鹼泵浦。

◎品質卓越

嚴格的品管制度，是日益電機(股)公司的一貫傳統，每一台泵浦在出廠前，都需經過嚴格的品質檢驗，包括泵浦性能、壓力、水量及測漏等重重試驗，以確保日益泵浦的優異品質。

◎服務至上

日益電機(股)公司有效率的組織與生產流程，能快速交貨給客戶，並提供最快速、最可信賴的售後服務，不論是在出貨前後都能讓客戶大大滿意。

◎PROFESSIONAL CONSULTANCY

Zi Yi engineers are ready to help you to select the correct models of pump. Zi Yi provides the most suitable pump materials and the best possible pumps to fully meet your requirements.

◎INNOVATIVE R&D

At Zi Yi we have outstanding R&D team who are dedicated to pursuing the new technology. In addition, our R&D engineers constantly improve pump performance to provide the best possible pumps for our customers.

◎TECHNOLOGY LEADERSHIP

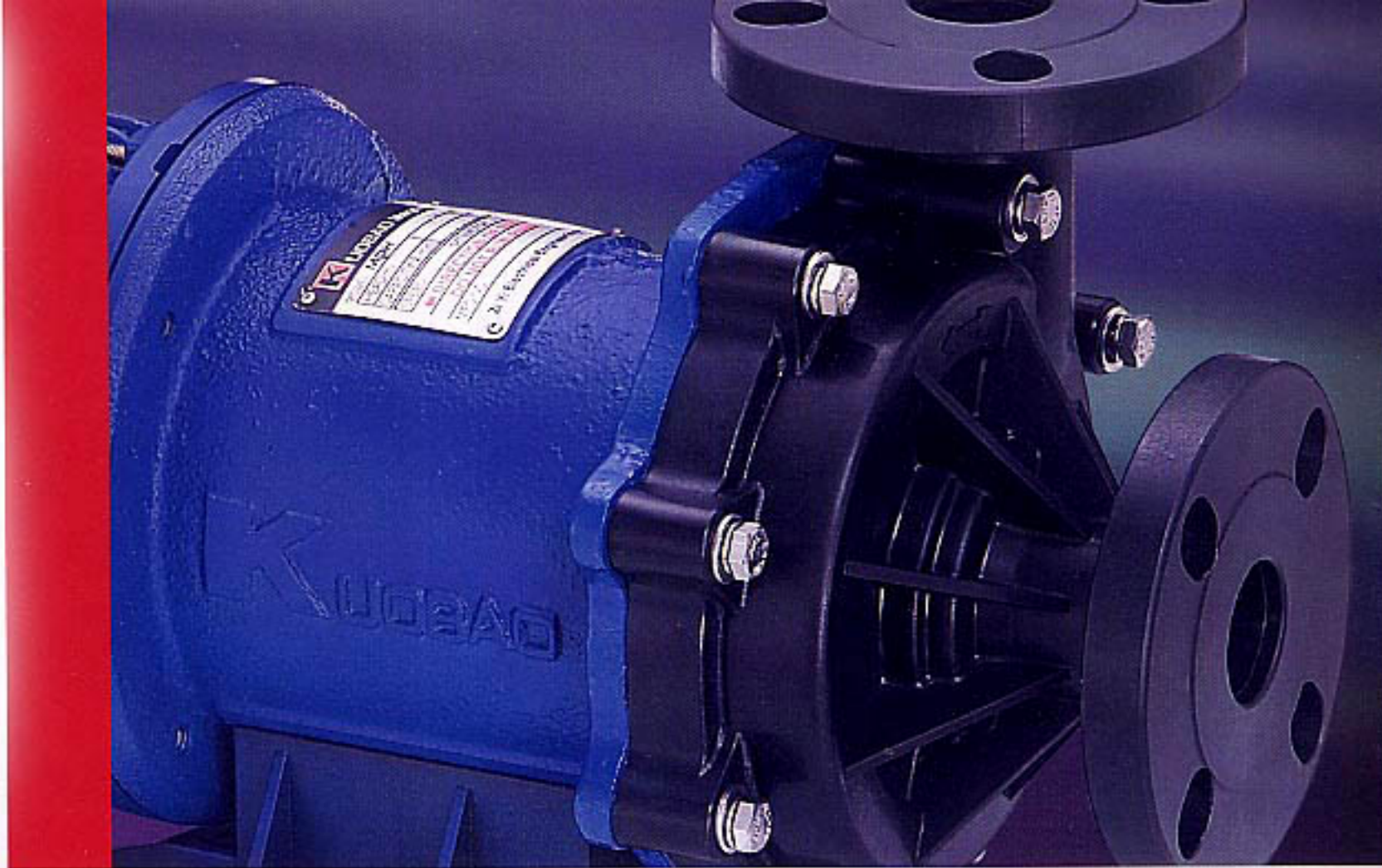
With the extensive manufacturing experience and professional technology background, Zi Yi offers the most comprehensive range of acid/alkaline resistant pump.

◎SUPERIOR QUALITY

Rigorous quality control is a tradition at Zi Yi. Each pump is subject to rigorous quality inspection prior to shipment. The comprehensive tests include pump performance, pressure, flow and leakage, etc. All these tests will ensure the maximum dependability for each pump from Zi Yi.

◎FOREMOST SERVICE

Zi Yi's efficient company organization and production process ensure prompt delivery. Furthermore we also offer the efficient and dependable services before and after sales.



特 性：

◎ 耐酸鹼權威

泵浦材質分為 GFRPP (Glass Fiber Filled Polypropylene)、PVDF (Natural PVDF)、CFRETFE (Carbon Fiber Filled ETFE)，依藥液酸鹼濃度性質選用泵浦本體材質，其中 GFRPP 可耐溫 75°C，PVDF 可耐溫 90°C，CFRETFE 可耐溫 100°C，在各種運用需求中，幾乎所有化學藥液均可以被安全的利用傳送。

◎ 抗腐蝕

泵浦之主要零件均具備有優良的抗腐蝕能力，如泵浦軸心材質有陶瓷、SiC 及鈦，其中陶瓷可用於一般低腐蝕性液體，SiC 可抗高腐蝕性液體，另外特殊的鈦金屬材料，專用於化金線上使用，以避免軸心上附著異物，導致葉輪卡死，致使泵浦嚴重損壞的情形出現。

◎ 無軸封無洩漏

高性能磁力驅動泵浦，捨棄一般傳統泵浦機械軸封設計，達到泵浦完全性的密封，不因泵浦損壞而造成週遭環境嚴重污染。

◎ 裝配簡易

磁力驅動無軸封泵浦內部零件規格化，裝配簡易，結構精巧性能高，在分解組裝過程中不需要任何特殊工具即可輕易更換零件，所以保養、拆卸、檢查均非常容易完成，方便又省時。

◎ 耐久性能高

MP 系列裝備的馬達均備有溫度保護器，防止因過載所產生高溫導致馬達損壞，MPH 系列採用超強力永久希土類磁鐵，具有優異性能及耦合能力。

◎ 應用範圍廣泛

磁力驅動無軸封泵浦分為小型 MP 系列(45W~260W) 及大型 MPH 系列(0.37Kw~3.75Kw) 的機型，可運用在低流量-高揚程或高流量-低揚程，針對多種工業製程(如：PCB 製程、化學工業、過濾循環、蝕刻、電鍍、表面處理、汙水處理等)之廣泛運用，能發揮極佳的性能及耐用性。

FEATURES :

◎ Outstanding Acid/Alkaline Resisting Capability

The material of pump body has three kinds to choose from, including GFRPP (Glass Fiber Filled Polypropylene), PVDF (Natural PVDF) and CFRETFE (Carbon Fiber Filled ETFE). Correct choice of pump body material depends on acid/alkaline density of solution. The GFRPP material can resist temperature up to 75°C. The PVDF material can resist temperature up to 90°C. The CFRETFE material can resist temperature up to 100°C. In application almost all solutions can be transferred with safety.

◎ Corrosion Resisting

The major parts of the pump feature outstanding corrosion-resist capability. For example the pump shaft can be made from ceramic, SiC and titanium. The ceramic shaft is generally applied for low corrosion liquid. The SiC shaft is excellent for high corrosion liquid. The titanium shaft is especially applied for chemical gold lines. It may prevent shaft from adhering object causing impellers jamming which may result in serious damage on the pump.

◎ Sealless & No Leakage

Eliminate the mechanical shaft seal design on the conventional pump, the high performance magnetic drive pump features complete seal. It fully eliminates the problem of environmental pollution due to pump damage.

◎ Easy to Assemble

The internal parts of a magnetic drive seamless pump are fully standardized for easy assembling completely constructed with high performance. Parts replacement is easy to made without need of any specially tool. It features convenient maintenance, dismantling and inspection for time-saving service.

◎ Maximum Durability

The MP series pump motor is equipped with temperature protection device which avoids motor damage due to high temperature caused by overload.

The MPH series pump employs extra powerful permanent magnet featuring outstanding performance and coupling capability.

◎ Versatile Applications

The magnetic drive sealless pump provides light duty MP series (45W~260W) and heavy duty MPH series (0.37kw~3.75kw) to choose from. They are ideal for low capacity with high head or high capacity with low head applications. Both series are widely applied in various industrial processes, such as PCB process, chemical industry, circulated filtering, etching, plating, surface treatment, polluted water treatment, etc. These pumps assure outstanding performance and maximum durability.

**Expanded fields of application
owing to improved corrosion
resistance...**

化工界最頂尖——耐酸鹼的權威

MP/MPH series



動作原理：

MP/MPH系列之磁力驅動泵浦，係由裝設於葉輪與馬達軸心間的一對磁鐵所驅動，利用磁鐵異性相吸原理，當馬達帶動驅動磁鐵旋轉時，與葉輪上的被動磁鐵結合產生耦合轉矩，提供足夠的動力驅動葉輪旋轉，從而實現液體之輸送。無軸封結構並不像傳統離心式泵浦，驅動磁鐵與被動磁鐵之間被耐腐蝕性強的後蓋隔開，可避免洩漏、汙染、腐蝕等問題發生。

WORKING PRINCIPLE :

The MP/MPH series magnetic drive pump is driven by a pair of magnet, equipped between the impeller and the motor shaft. Based on the principle of different polarity attract each other, when the motor operating to make the drive magnet running, it combines with the magnet capsule on the impeller to produce a coupling torque. This provides sufficient power to start impeller running for delivering liquid. Unlike the conventional centrifugal pump, the sealless design on the magnetic drive pump has a corrosion-resistant rear casing that separates the drive magnet and the magnet capsule. This may avoid liquid leakage, pollution or corrosion problems.

MP Series



MPH Series



MAGNETIC DRIVE PUMP

磁力驅動泵浦

型號說明 MODEL IDENTIFICATION :

| | | | | | | | | | | | | | | | | |
|-----------|------------|------------------|----------|------------------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|------------|
| MP | - | F | - | 20 | - | 4 | - | S | - | C | - | V | - | 6 | - | V38 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | | | | | | |
| 1. 機型編號 | MODEL | | | : MP | | | | | | | | | | | | |
| 2. 泵浦材質 | MATERIAL | : F-GFRPP | | P-PVDF | | E-CFRETFE | | | | | | | | | | |
| 3. 出入口徑 | IN-OUTLET | : 20-3/4" | | 25-1" | | | | | | | | | | | | |
| 4. 功率 | POWER | : 3-45W | | 4-65W | | 5-90W | | | | | | | | | | |
| | | 7-180W | | 8-260W | | | | | | | | | | | | |
| 5. 出入連接 | CONNECTION | : S-牙口SCREW | | H-軟管HOSE | | | | | | | | | | | | |
| 6. 泵軸材質 | SPINDLE | : C-陶磁CERAMIC | | T-鈦TITANIUM(Ti) | | | | | | | | | | | | |
| | | S-碳化矽SIC | | | | | | | | | | | | | | |
| 7. 橡膠材質 | RUBBER | : V-VITON | | E-EPDM | | | | | | | | | | | | |
| 8. 頻率 | FREQUENCY | : 5-50Hz | | 6-60Hz | | | | | | | | | | | | |
| 9. 電壓 | VOLTAGE | : V11-110V/1ø | | V22-220V/240V/1ø | | | | | | | | | | | | |
| | | V38-220V/380V/3ø | | | | | | | | | | | | | | |

MAGNETIC DRIVE PUMP

磁力驅動泵浦

型號說明 MODEL IDENTIFICATION :

| | | | | | | | | | | | | | | | | | | |
|------------|-----------------|--------------------|----------|------------------|----------|------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|------------|-----------|----------|
| MPH | - | F | - | 44 | - | 0 | - | C | - | C | - | V | - | 6 | - | V38 | - | A |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | | |
| 1. 機型編號 | MODEL | : MPH | | | | | | | | | | | | | | | | |
| 2. 泵浦材質 | MATERIAL | : F-GFRPP | | P-PVDF | | E-CFRETFE | | | | | | | | | | | | |
| 3. 出入口徑 | IN-OUTLET | : 44-40x40mm | | 45-40x50mm | | | | | | | | | | | | | | |
| 4. 馬力 | POWER | : 0-1/2HP | | 1-1HP | | 2-2HP | | 3-3HP | | 5-5HP | | | | | | | | |
| 5. 泵軸材質 | SPINDLE | : C-陶磁CERAMIC | | T-鈦TITANIUM(Ti) | | | | | | | | | | | | | S-碳化矽SIC | |
| 6. 軸承材質 | BEARING | : A-陶磁CERAMIC | | C-碳素CARBON | | | | | | | | | | | | | P-鐵弗龍PTFE | |
| | | S-碳化矽SIC | | | | | | | | | | | | | | | | |
| 7. 橡膠材質 | RUBBER | : V-VITON | | E-EPDM | | | | | | | | | | | | | | |
| 8. 頻率 | FREQUENCY | : 5-50Hz | | 6-60Hz | | | | | | | | | | | | | | |
| 9. 電壓 | VOLTAGE | : V38-220V/380V/3ø | | V41-208V/415V/3ø | | V44-220V/440V/3ø | | | | | | | | | | | | |
| 10. 藥液比重 | SPECIFIC WEIGHT | : 50Hz : | | A-1.2 | | B-1.5 | | C-2.0 | | | | | | | | | | |
| | | 60Hz : | | D-1.2 | | E-1.5 | | F-2.0 | | | | | | | | | | |

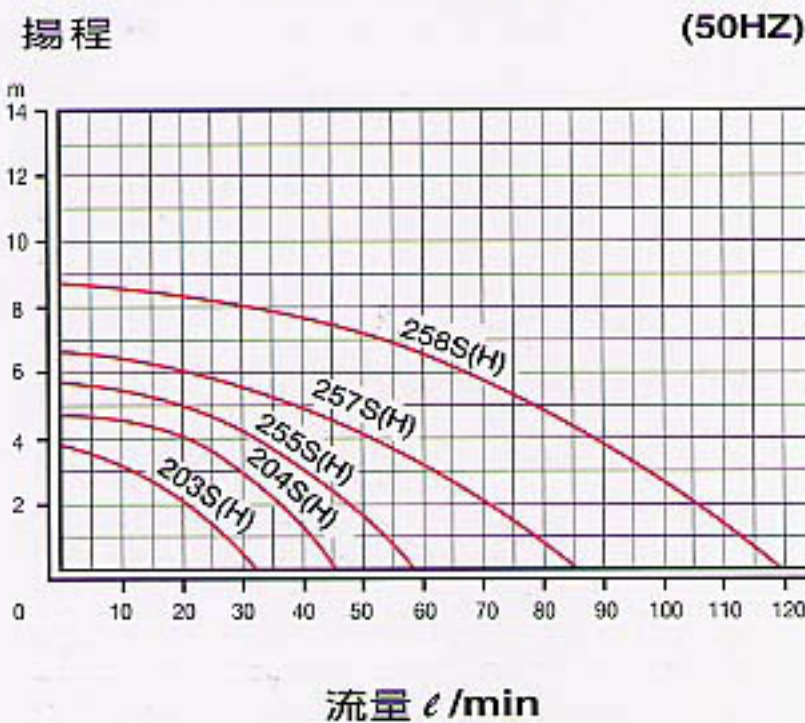
MP Series

MP 系列規格 / MP SERIES SPECIFICATIONS

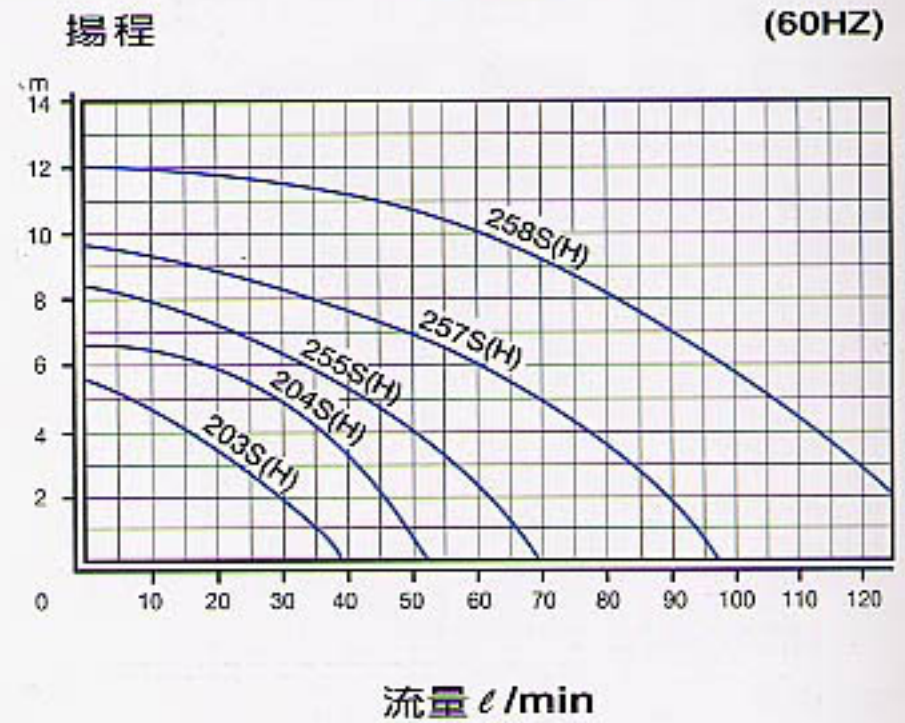
| 型 式 MODEL | | MP-203S(H) | MP-204S(H) | MP-255S(H) | MP-257S(H) | MP-258S(H) |
|------------------------------|-----------------|------------|------------|------------|------------|------------|
| 比重限制 S.G. * | | 1.3 | 1.1 | 1.2 | 1.0 | 1.2 |
| 套管式口徑 Hose Connected | 入口 IN (mm) | 20 | 20 | 26 | 26 | 26 |
| | 出口 OUT (mm) | 20 | 20 | 26 | 26 | 26 |
| 外牙式口徑 Screwed | 入口 IN (inch) | 3/4 | 3/4 | 1 | 1 | 1 |
| | 出口 OUT (inch) | 3/4 | 3/4 | 1 | 1 | 1 |
| 全流量 Max. Capacity | 50Hz (L/min) | 32 | 45 | 60 | 86 | 120 |
| | 60Hz (L/min) | 38 | 52 | 70 | 97 | 135 |
| 全揚程 Max. Head | 50Hz (M) | 3.8 | 4.6 | 5.6 | 6.7 | 8.6 |
| | 60Hz (M) | 5.4 | 6.5 | 8.2 | 9.7 | 11.9 |
| 標準輸出量 Standard Duty Point | 50Hz (M-L/min) | 2.5-16 | 4-22 | 4-30 | 4-50 | 6.5-60 |
| | 60Hz (M-L/min) | 2.5-24 | 4-34 | 4-45 | 4-72 | 9-70 |
| 馬達 Motor | 輸出功率 OUTPUT (W) | 45 | 65 | 90 | 150 / 180 | 255 / 265 |
| | 輸入功率 INPUT (W) | 60 / 80 | 90 / 130 | 130 / 170 | 210 / 300 | 245 / 365 |
| 50Hz/60Hz | 相數 PHASE (φ) | 1 | 1 | 1 | 1 or 3 | 1 or 3 |

性能曲線圖 PERFORMANCE CURVE CHART

MP203~MP258



MP203~MP258



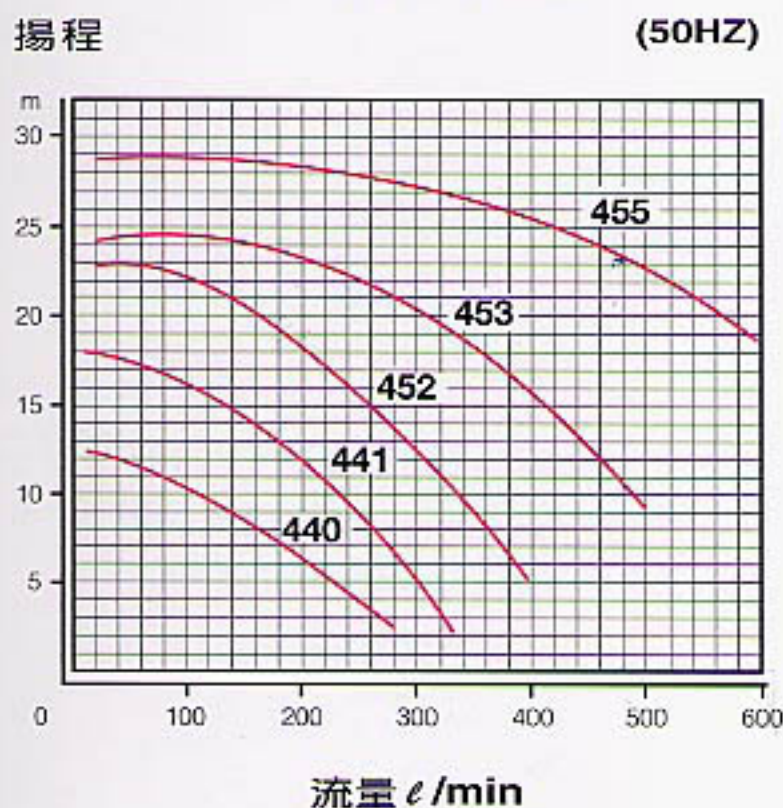
MPH Series

MPH 系列規格 / MPH SERIES SPECIFICATIONS

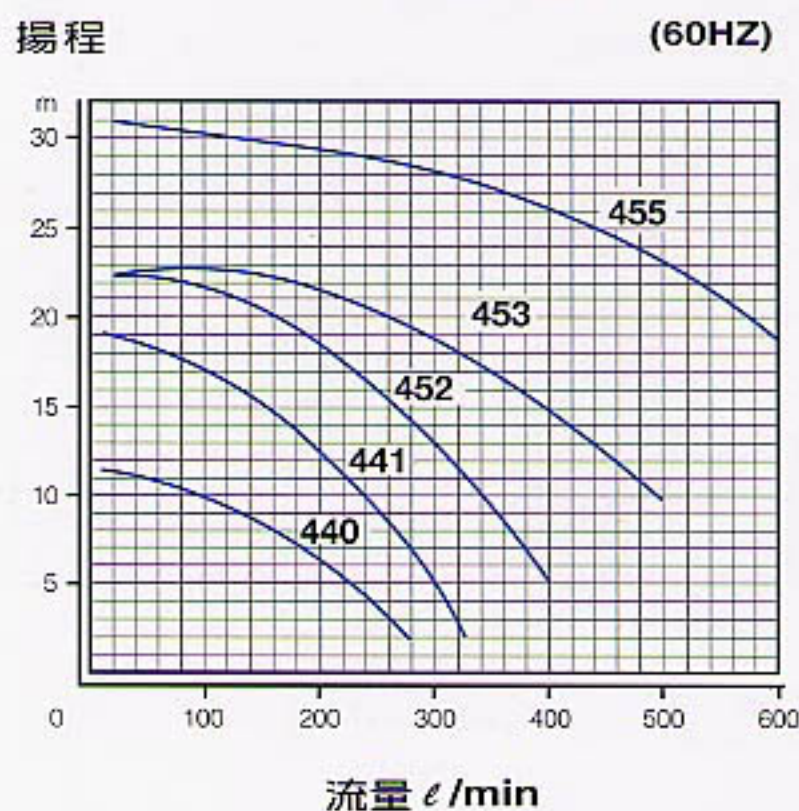
| 型 式 MODEL | | MPH-440 | MPH-441 | MPH-452 | MPH-453 | MPH-455 |
|------------------------------|---------------------|---------|----------|----------|----------|----------|
| 比重限制 S.G. * | | 1.0 | 1.0 | 1.2 | 1.2 | 1.0 |
| 出入口徑 In-Outlet Diameter | 入口 IN (mm) | 40 | 40 | 50 | 50 | 50 |
| | 出口 OUT (mm) | 40 | 40 | 40 | 40 | 40 |
| 全流量 Max. Capacity | 50Hz (L/min) | 280 | 330 | 400 | 500 | 600 |
| | 60Hz (L/min) | 280 | 320 | 400 | 500 | 600 |
| 全揚程 Max. Head | 50Hz (M) | 12.5 | 18 | 23 | 24 | 29 |
| | 60Hz (M) | 11.5 | 18.5 | 22 | 22.5 | 31 |
| 標準輸出量 Standard Duty Point | 50Hz (M-L/min) | 8.5-150 | 12-200 | 18.5-200 | 20.5-300 | 25.5-400 |
| | 60Hz (M-L/min) | 8.5-150 | 12.5-200 | 18.5-200 | 19-300 | 26.5-400 |
| 馬達 Motor | 輸出功率 Output (KW) | 0.37 | 0.75 | 1.50 | 2.20 | 3.75 |

性能曲線圖 PERFORMANCE CURVE CHART

MPH440~MPH455



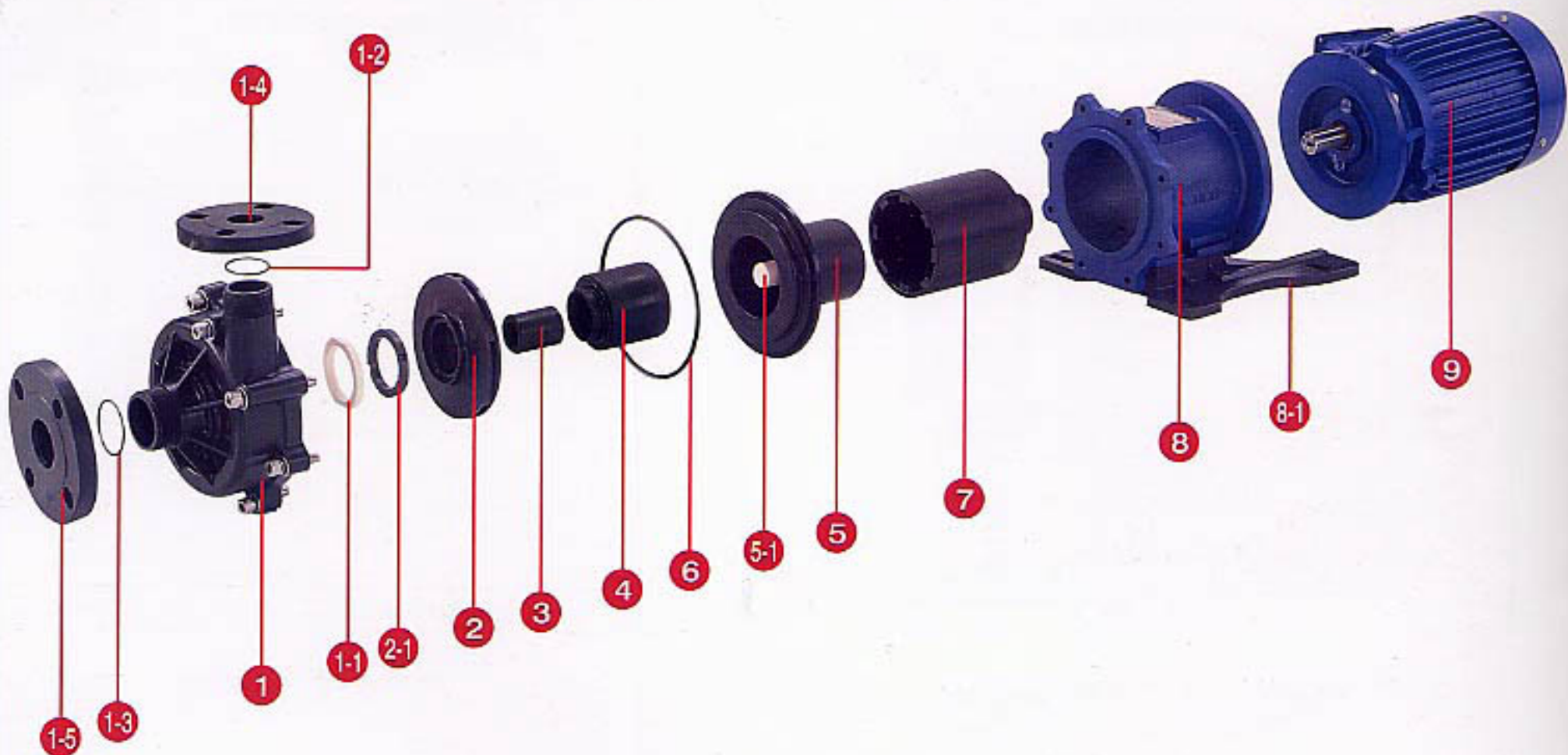
MPH440~MPH455



MP Series



MPH Series



CONSTRUCTION

零件圖表

| NO | 零件名稱 | Description | 材質 Material | | |
|-----|------|---------------|-------------------|--------------------|-------------|
| | | | MP-F Series | MP-P Series | MP-E Series |
| 1 | 前蓋 | Front Casing | GFRPP | PVDF | CFRETFE |
| 1-1 | 軸承 | Bearing | Rulon | Rulon / SIC | SIC |
| 1-2 | 止推環 | Thrust Ring | Ceramic | Ceramic / SIC | |
| 2 | 葉輪 | Impeller | GFRPP | PVDF | CFRETFE |
| 2-1 | 耐磨圈 | Mouth Ring | Rulon | | |
| 2-2 | 軸承 | Bearing | Rulon | Rulon / SIC | SIC |
| 3 | 軸心 | Spindle | Ceramic / Ti | Ceramic / Ti / SIC | |
| 4 | 後蓋 | Rear Casing | GFRPP | PVDF | CFRETFE |
| 5 | 後蓋鐵圈 | Retainer Ring | SUS 304 | | |
| 6 | 密封O環 | O-ring | EPDM / VITON | | |
| 7 | 驅動磁鐵 | Drive Magnet | Isotropic Ferrite | | |
| 8 | 馬達 | Motor | | | |

CONSTRUCTION

零件圖表

| NO | 零件名稱 | Description | 材質 Material | | | | | | | | | |
|-----|------|----------------|-------------------|------|---------|--------|--------------------|---------|--------|-----|----|-------------|
| | | | MP-F Series | | | | MP-P Series | | | | | MP-E Series |
| | | | CC | CP | CA | TC | CC | CP | CA | TC | SS | SS |
| 1 | 前蓋 | Front Casing | GFRPP | | | | PVDF | | | | | CFRETFE |
| 1-1 | 止推環 | Thrust Ring | Ceramic | | | | | SIC | | | | |
| 1-2 | 出口O環 | Outlet O-ring | EPDM / VITON | | | | | | | | | |
| 1-3 | 入口O環 | Inlet O-ring | | | | | | | | | | |
| 1-4 | 出口法蘭 | Outlet Flange | | | | | | | | | | CFRETFE |
| 1-5 | 入口法蘭 | Inlet Flange | GFRPP | | | | PVDF | | | | | |
| 2 | 葉輪 | Impeller | | | | | | | | | | |
| 2-1 | 耐磨圈 | Mouth Ring | PTFE | | | | | | | SIC | | |
| 3 | 軸承 | Bearing | Carbon | PTFE | Ceramic | Carbon | PTFE | Ceramic | Carbon | SIC | | |
| 4 | 被動磁鐵 | Magnet Capsule | PP | | | | PVDF | | | | | CFRETFE |
| 5 | 後蓋 | Rear Casing | GFRPP | | | | | | | | | |
| 5-1 | 軸心 | Spindle | Ceramic / Ti | | | | Ceramic / Ti / SIC | | | | | SIC |
| 6 | 密封O環 | O-ring | EPDM / VITON | | | | | | | | | |
| 7 | 驅動磁鐵 | Drive Magnet | Isotropic Ferrite | | | | | | | | | |
| 8 | 基座 | Baseplate | FC | | | | | | | | | |
| 8-1 | 腳架 | Frame | PP / SUS | | | | | | | | | |
| 9 | 馬達 | Motor | | | | | | | | | | |

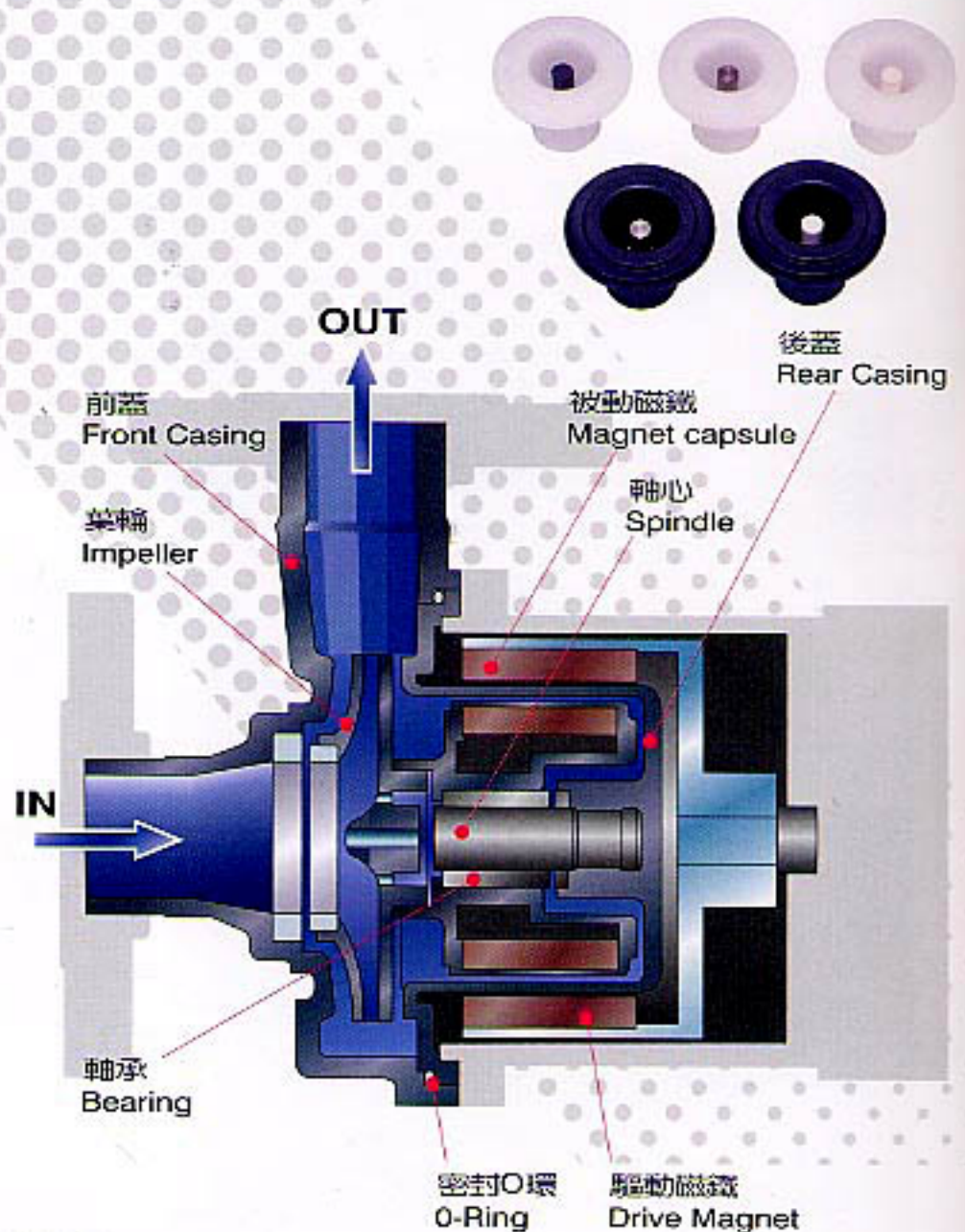
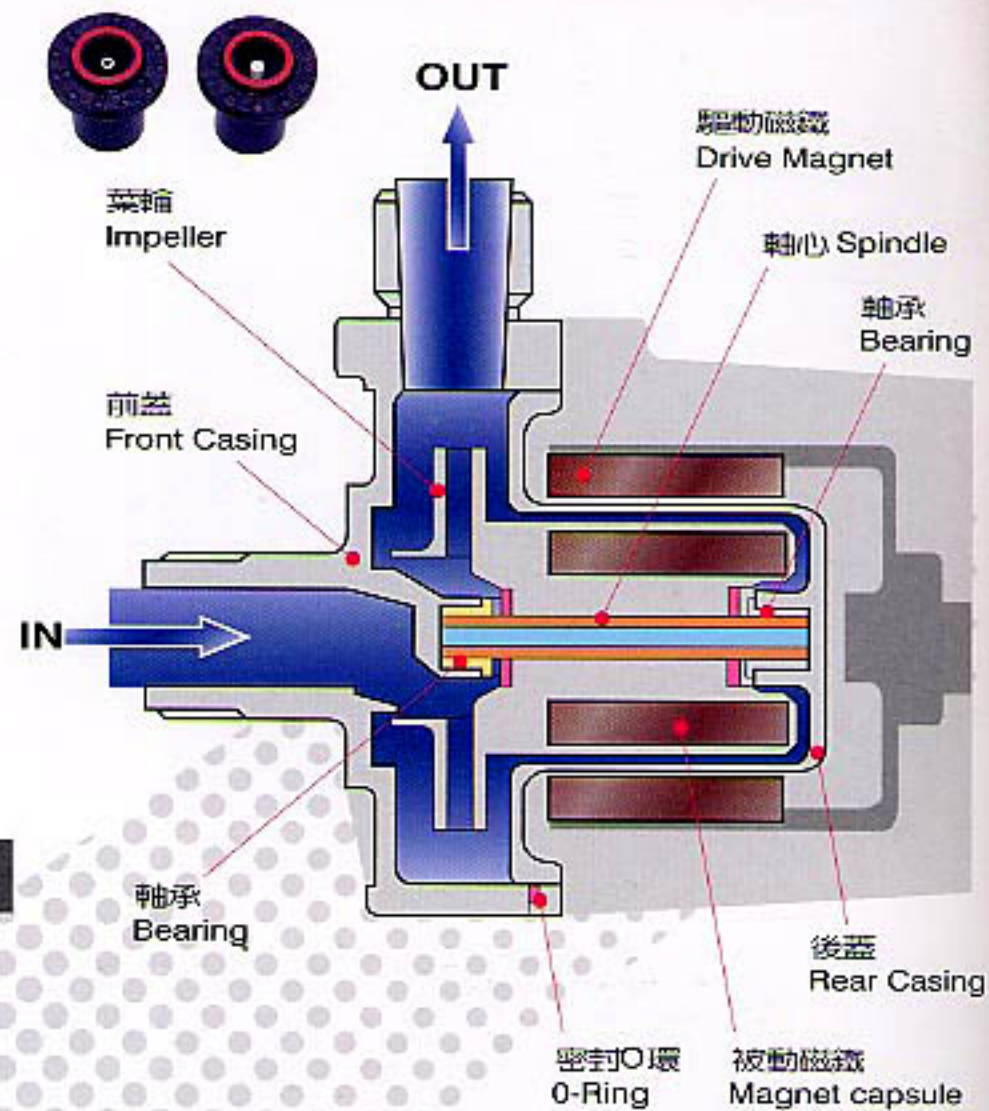
重要零件特色：

- ◎ **前蓋**—MP/MPH系列的泵浦前蓋，係以耐腐蝕材料一體充模形成，MPH前蓋的出入口為牙口式，可依需求選擇銜接法蘭或由任；MP前蓋的出入口為牙口式及套管式，可依需求選擇銜接由任或軟管。
- ◎ **軸承**—軸承材質有CARBON、PTFE、CERAMIC及SIC，依據藥液特性，搭配泵體材質加以選用，以適合於各種工業製程上。
- ◎ **葉輪**—葉輪的材質採用耐酸鹼的GFRPP、PVDF、CFRETFE，葉輪的尺寸係依據藥液比重和電壓頻率所設計，以達成所需的表現及性能。
- ◎ **軸心**—軸心的材質有CERAMIC、Ti及SIC，MPH系列的軸心係一體形成於後蓋，並在軸心上套覆軸承；MP系列的軸心係一體形成於葉輪，MPH/MP系列的軸心結構可增加泵浦性能並減低氣蝕餘量(NPSHr)。
- ◎ **後蓋**—MPH/MP系列的泵體後蓋係以耐腐材料一體充模形成，馬達與泵腔內部被後蓋加以隔開，可避免洩漏汙染環境的問題發生。
- ◎ **密封O環**—密封O環的材質採用EPDM及VITON，具有優良的抗腐蝕性。
- ◎ **被動磁鐵**—裝設於葉輪上，超強磁鐵完全密封在塑料材質內，可防止鏽蝕，並提供足夠的轉矩。
- ◎ **驅動磁鐵**—裝設於馬達軸心上，驅動磁鐵的超強磁性與葉輪上的被動磁體產生耦合轉矩，進而驅動葉輪轉動。
- ◎ **馬達**—MP系列均採用過熱保護裝置，MPH系列採用全閉式屋內式，可依客戶需求選用更高防爆等級馬達。

FEATURES OF CRITICAL PARTS：

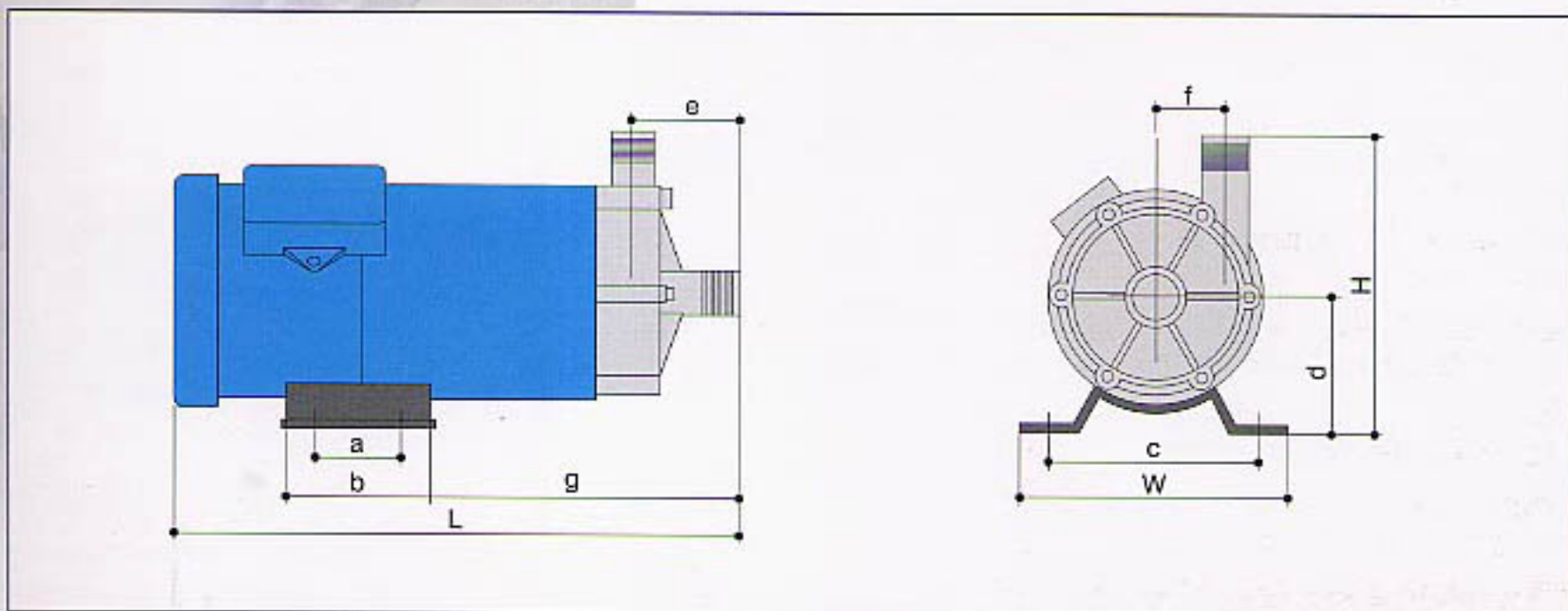
- ◎ **FRONT CASING:** The front casing of MP/MPH series pump is integral molded by corrosion-resistant material. The front casing on MPH series is screwed for connecting with a flange or union. The front casing on MP series is screwed or hose type for connecting with a union or flexible hose.
- ◎ **BEARING:** The bearing provide various materials to choose from, such as carbon, PTFE, ceramic and SIC to suit various types of liquid, properly select bearing material combined with correct pump body material according to your industrial processing.
- ◎ **IMPELLER:** The impeller is manufactured from acid/alkaline resistant GFRPP, PVDF or CFRETFE material. Impeller sizes are designed according to solution specific weight, voltage and frequency to achieve the outstanding performance.
- ◎ **SHAFT:** The shaft material provides ceramic, Ti and SIC to choose from. On the MPH series pump, the shaft is integral fabricated to the rear casing and the bearing is mounted on it. The shaft on the MP series is integral fabricated to the impeller. Both types of shaft on the MPH/MP series are specially designed to boost pump performance while reducing NPSHr.
- ◎ **REAR CASING:** The rear casing of MPH/MP series pump is integral molded by corrosion resistant material. The motor and pump interior are separated by the rear casing to eliminate environmental pollution problem caused by liquid leakage.
- ◎ **O-RING:** The EPDM and VITON O-ring features outstanding corrosion resistance.
- ◎ **MAGNET CAPSULE:** The magnet capsule is mounted on the impeller, the extra powerful magnet is totally enclosed in the plastic material to avoid rusting or corrosion. And the driven magnet can provide sufficient torque.
- ◎ **DRIVE MAGNET:** The drive magnet is mounted on the motor shaft. It's powerful magnetism combined with the magnet capsule on the impeller produce a coupled torque for driving impeller running.
- ◎ **MOTOR:** The motor used on the MP series pump features over-heat protection. The MPH series pump employs TEFC indoor type motor. Upon request, an explosion-proof motor is available.

內部剖面圖： INTERIOR PARTS：

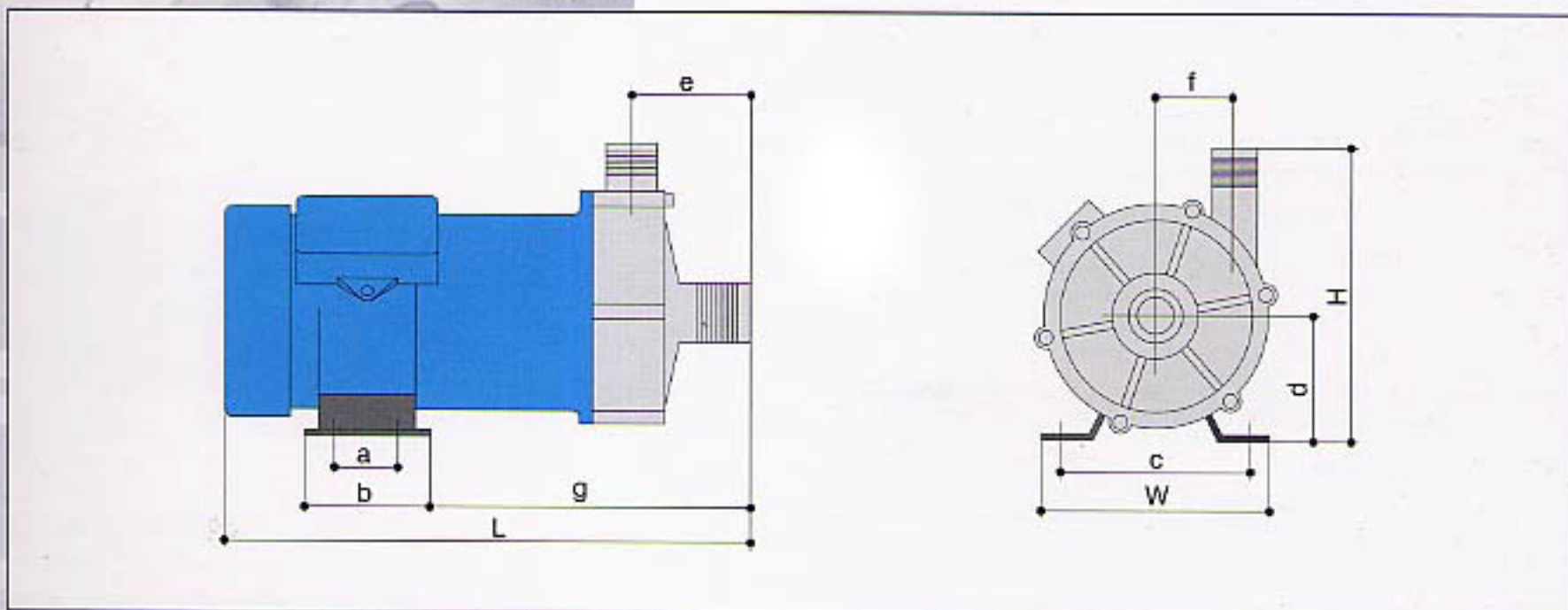


MP Series

Dimensions 外觀尺寸圖



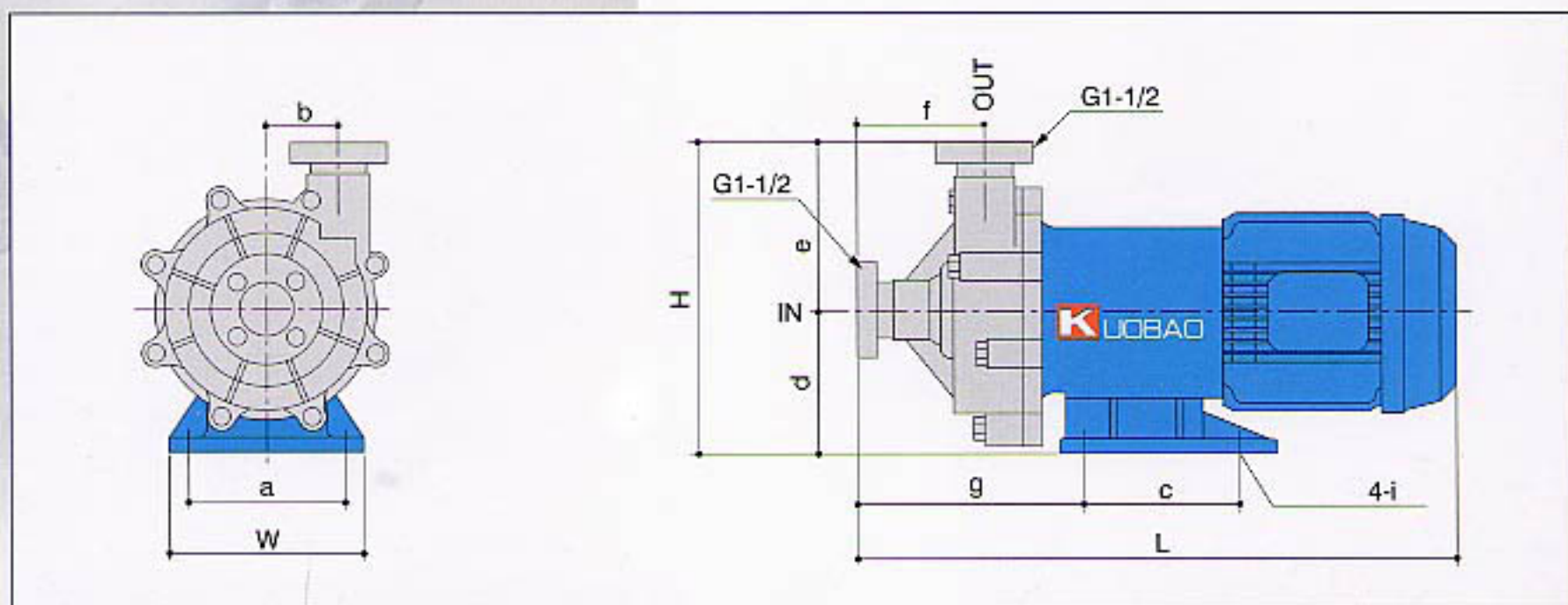
| 型號 Model | W | H | L | a | b | c | d | e | f | g |
|----------|-----|-----|-----|----|----|-----|----|----|----|-----|
| MP-203 | 120 | 132 | 281 | 40 | 64 | 100 | 60 | 48 | 31 | 136 |
| MP-204 | 120 | 132 | 281 | 40 | 64 | 100 | 60 | 48 | 31 | 136 |



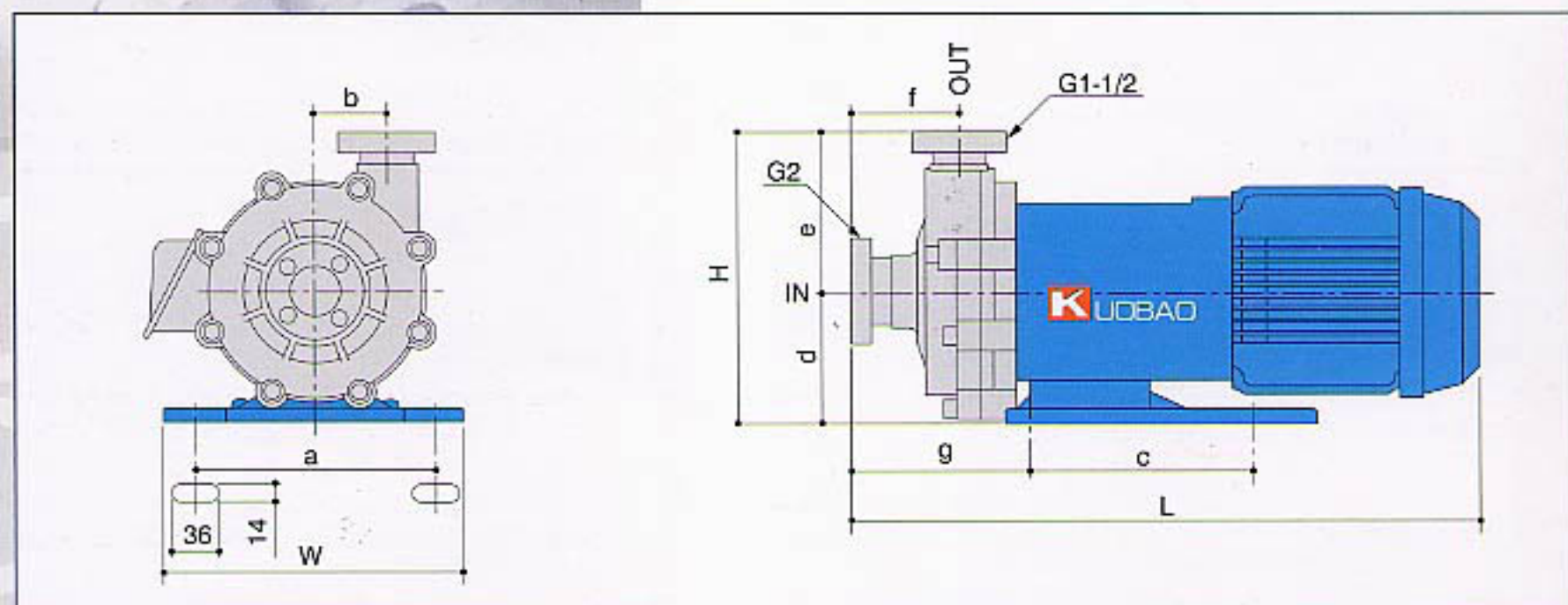
| 型號 Model | W | H | L | a | b | c | d | e | f | g |
|----------|-----|-------|-----|----|-----|-----|----|------|------|-----|
| MP-255 | 120 | 155 | 300 | 40 | 64 | 100 | 63 | 63 | 40 | 167 |
| MP-257 | 130 | 157 | 279 | 40 | 60 | 100 | 65 | 52 | 43.5 | 145 |
| MP-258 | 156 | 169.5 | 334 | 70 | 100 | 110 | 70 | 64.8 | 43.5 | 147 |

MPH Series

Dimensions 外觀尺寸圖



| 型號 Model | W | H | L | a | b | c | d | e | f | g | i |
|----------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|--------|
| MPH-440 | 140 | 217 | 460 | 110 | 51 | 98 | 96 | 121 | 85 | 138 | O.D.12 |
| MPH-441 | 160 | 253 | 535 | 130 | 57.5 | 130 | 115 | 138 | 106 | 183 | O.D.12 |



| 型號 Model | W | H | L | a | b | c | d | e | f | g |
|----------|-----|-----|-----|-----|----|-----|-----|-----|----|-----|
| MPH-452 | 260 | 255 | 600 | 208 | 65 | 200 | 115 | 140 | 89 | 160 |
| MPH-453 | 260 | 255 | 600 | 208 | 65 | 200 | 115 | 140 | 89 | 160 |
| MPH-455 | 260 | 275 | 660 | 230 | 65 | 261 | 135 | 140 | 89 | 160 |