

MXH 2,4,8,16 60 Hz

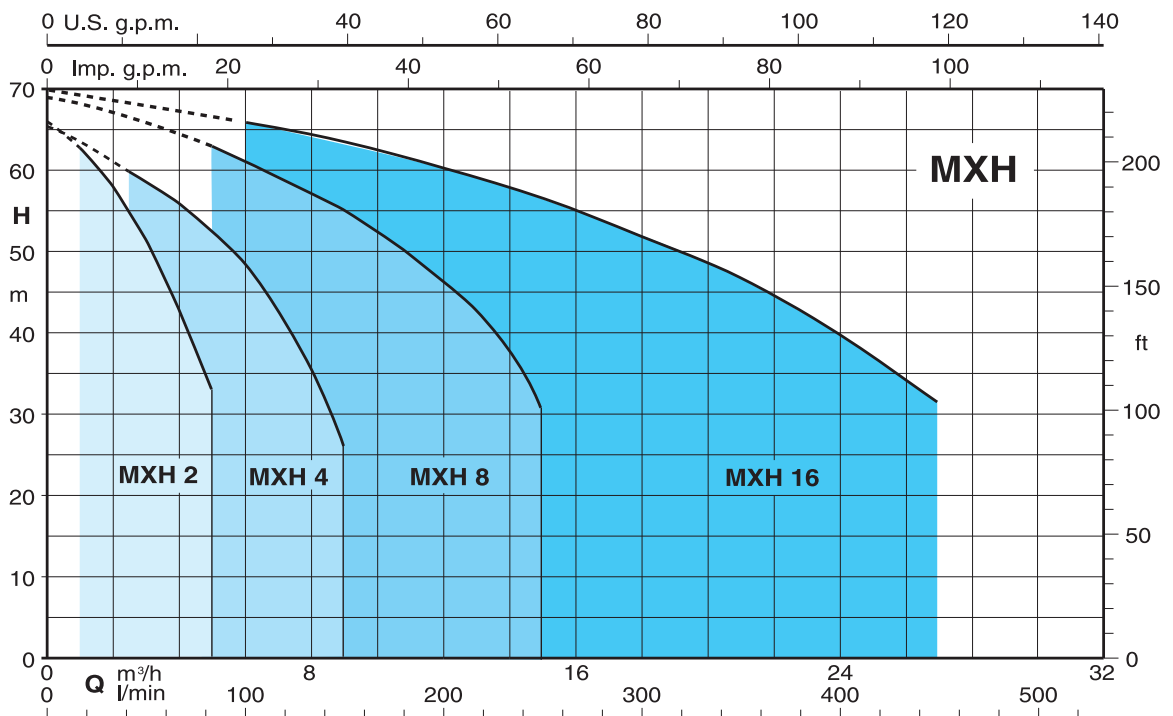


Horizontal multi-stage close coupled pumps in stainless steel
 臥式多段直結式泵浦



Coverage chart - 性能總表

n ≈ 3450 rpm



Construction

Horizontal multi-stage close coupled pumps in **chrome-nickel stainless steel**.

Compact and robust construction, without protruding flange and with single-piece lantern bracket and base.

Single-piece barrel casing, with front suction port above pumps axis and radial delivery at top.

Filling and draining plugs on the middle of the pump, accessible from any side (like the terminal box).

Version with frequency converter (on request)

Applications

For water supply.

For clean liquids, without abrasives, which are non-aggressive for stainless steel (with suitable seal materials, on request).

Universal pump, for domestic use, for civil and industrial applications, for garden use and irrigation.

Operating conditions

Liquid temperature from - 15 °C to + 110 °C.

Ambient temperature up to 40 °C.

Maximum permissible pressure in the pump casing: 8 bar.

Continuous duty.

Motor

2-pole induction motor, 60 Hz (n = 3450 rpm).

MXH: three-phase 220/380 V, 220/440 V, up to 3 kW;
380/660 V, from 3,7 to 4 kW;

MXHM: single-phase 110 V, 127 V, 220 V, 110/220 V.
with thermal protector up to 1.1 kW only 220V.
Capacitor inside the terminal box.

Insulation class F.

Protection IP 54.

Motor suitable for operation with frequency converter from 1,8 kW.

Classification scheme IE2 for three-phase motor from 0,75 kW.

Constructed in accordance with EN 60034-1, EN 60034-30,
EN 60335-1, EN 60335-2-41.

Special features on request

- Other voltages.
- Protection IP 55.
- Special mechanical seal
- Seal rings in FPM.
- Higher or lower liquid or ambient temperatures.
- Motor suitable for operation with frequency converter up to 1,5 kW.

Materials

Component	Material
Pump casing	Cr-Ni steel 1.4301 EN 10088 (AISI 304)
Stage casing	Cr-Ni steel 1.4301 EN 10088 (AISI 304)
Wear ring	PTFE
Impeller	Cr-Ni steel 1.4301 EN 10088 (AISI 304)
Casing cover	Cr-Ni steel 1.4301 EN 10088 (AISI 304)
Spacer sleeve	Cr-Ni steel 1.4301 EN 10088 (AISI 304)
Pump shaft	Cr-Ni steel 1.4305 EN 10088 (AISI 303)
Plug	Cr-Ni steel 1.4305 EN 10088 (AISI 303)
Mechanical seal ISO 3069 - KU	Ceramic alumina, carbon, EPDM (Other materials on request)

結構

臥式多段直結式不銹鋼泵浦

簡潔堅固的結構，托架與底座一體成形，無突出法蘭口外殼一體成形，入口端高於泵浦軸心，出口端至於泵浦頂部。

注水及排水孔位於泵浦中心位置，明顯容易操作（如接線盒）。

搭配變頻器（依需求提供）

應用

- 供水系統

- 無雜質、不具腐蝕性之乾淨液體，非侵蝕性液體採用不銹鋼材質（依需求搭配特殊軸封材質）。

- 廣泛型泵浦，適用於家庭、民生及工業應用。

- 園藝及農業灌溉之應用。

操作條件

液體溫度-15°C至+110°C。

周圍溫度至40°C。

泵浦本體可承受最大壓力值為8 bar。

連續運轉。

馬達

2極感應電動馬達，60Hz(n=3450rpm)

MXH: 三相 220/380V, 220/440V, 3kW以下
380/660V 3.7至4kW

MXHM: 單相 110V, 127V, 220V, 110/220V
1.1kW以下僅有220V配置過熱保護器。
接線盒內有電容器。

絕緣等級：F

保護等級：IP54

1.8kW以上之馬力可直接搭配變頻器使用。

三相馬達0.75kW以上為歐盟效能指標高效率IE2。

結構設計符合EN 60034-1; EN 60034-30.

EN 60335-1, EN 60335-2-41之規範。

特殊需求

- 其他電壓。
- 保護等級IP55。
- 特殊機械軸封。
- 可更換FPM材質之泵浦外殼墊片。
- 更高/低液體或周遭溫度需求。
- 馬達與1.5kW以下之變頻器運作。

材質

零件	零件
泵浦外殼	不鏽鋼1.4301 EN 10088 (AISI 304)
導葉輪	不鏽鋼1.4301 EN 10088 (AISI 304)
磨損環	鐵氟龍PTFE
葉片	不鏽鋼1.4301 EN 10088 (AISI 304)
泵浦外殼	不鏽鋼1.4301 EN 10088 (AISI 304)
軸套	不鏽鋼1.4301 EN 10088 (AISI 304)
泵浦軸心	不鏽鋼1.4305 EN 10088 (AISI 303)
塞頭	不鏽鋼1.4305 EN 10088 (AISI 303)
機械軸封	陶瓷、碳精、EPDM
依據ISO 3069 - KU	(依需求供應其他材質)

Pumps with frequency converter

The **MXH EI** pumps are available with power from 0,55 kW up to 4 kW, the pumps are equipped with **I-MAT** installed on board which allows to realize a variable-speed system extremely compact and efficient, ideal in applications of water supply and in the distribution of hot and cold water.

The pump is equipped with transducers suitable for operation and is already programmed at the factory.

Advantages

- Energy saving
- Compact design
- Easy to use
- Programmable to suit the system requirements
- Reliability

Costruction

The system comprises of:

- Pump
- Induction motor
- I-MAT Frequency converter
- Motor adapter for the motor mounting of the frequency converter
- Connection cable between frequency converter and induction motor
- Transducers

Main features

- Rated motor power output from 0,55 kW to 4 kW
- Control range from 1750 to 3450 rpm (2-pole)
- Protection against dry running
- Protection against operations with closed valve ports
- Protection against system leakages
- Protection against overcurrent in the motor
- Protection against overvoltage and undervoltage of the power supply
- Protection against current unbalances between phases

Operating modes



Constant pressure mode

with pressure transducer

In this mode, the system maintains the preset pressure when the flow required by the installation changes.



Proportional pressure mode

with pressure transducer

In this mode the system changes the working pressure according to the required flow rate.



Constant flow mode

with flow meter

In this mode the system maintains a constant flow rate value in a point of the installation according to the required pressure.



Fixed speed mode

with setting of the speed preferential rotation.

In this mode, by changing the working frequency, you may choose any operational curve included within the working range.



Constant temperature mode

with temperature transducer

In this mode the system keeps the temperature constant inside a system by changing the speed of the pump.

泵浦搭配變頻器

MXH EI 泵浦規格從0.55kW到4kW，在泵浦上配置**I-MAT**變頻器使系統更有效率，應用於供水設備及冷熱水設備。泵浦已裝有感應器，適用於各項操作，且完成程式設定。



優點

- 節能
- 簡潔設計
- 操作簡單
- 可依系統需求編輯程式
- 可靠

結構

該系統包括：

- 泵浦
- 電動馬達
- I-MAT變頻器
- 馬達固定座(變頻器安裝於馬達使用)
- 連接電纜(於變頻器及馬達之間)
- 壓力傳送器

主要特色

馬達額定輸出功率：0.55kW至4kW

控制範圍：1750至3450rpm(2極)

防乾轉保護裝置

防止系統在閥門於關閉情況下操作

防止系統漏水

馬達過電流保護裝置

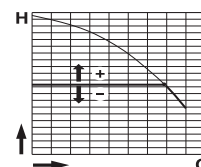
防止欠相保護

操作模式

恆壓模式

與壓力感應器

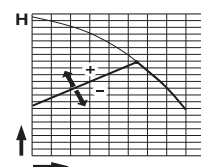
此模式依水量變化來維持壓力設定值。



比例壓力模式

與壓力感應器

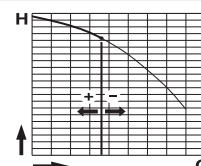
此模式依據流量來更變系統運轉壓力。



定量模式

與流量計

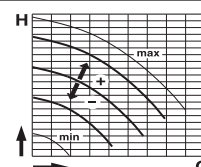
此模式依據需求壓力來維持流量值。



定速模式

與設定先取速度旋轉

此模式須選擇操作曲線包括運準範圍。



恆溫模式

與溫度感應器

依照泵浦速度變換，維持系統內部溫度。

Performance - 性能

n ≈ 3450rpm

3 ~	1 ~	P ₂		Q m ³ /h l/min	H m									
		kW	HP		0	1	1,5	2	2,5	3	3,5	4	4,5	5
MXH 201-60E	MXHM 201-60E	0,25	0,34	H m	16	15,2	14,5	13,7	13	12	10,7	9,6	8,5	7
MXH 202-60/A	MXHM 202-60/A	0,55	0,75		33	31	30	28,5	27	25,5	23,5	21	19	16
MXH 203-60/A	MXHM 203-60/A	0,75	1		49,5	47	45,5	43,5	41	38,5	35,5	32	28,5	24
MXH 204-60/B	MXHM 204-60	1,1	1,5		66	63	60,5	58	55	51,5	47,5	43	38,5	33

3 ~	1 ~	P ₂		Q m ³ /h l/min	H m									
		kW	HP		0	2,5	3	3,5	4	5	6	7	8	9
MXH 401-60E	MXHM 401-60E	0,33	0,45	H m	16	14,5	14	13,5	13	11,7	10,2	8,5	6,5	4
MXH 402-60/A	MXHM 402-60/A	0,75	1		32,5	29,5	29	28,5	27,5	26	23,5	20,5	17	12,5
MXH 403-60/B	MXHM 403-60	1,1	1,5		49	45,5	44,5	43,5	42	39,5	36	31,5	26,5	20
MXH 404-60	MXHM 404-60	1,5	2		65,5	60	59	57,5	56	52,5	48,5	42,5	35,5	26

3 ~	1 ~	P ₂		Q m ³ /h l/min	H m									
		kW	HP		0	5	6,5	8	10	11	12	13	14	15
MXH 801-60/A	MXHM 801-60/A	0,55	0,75	H m	16,5	15,6	14,4	14	12,3	11,3	10	8,8	7,3	5,6
MXH 802-60	MXHM 802-60	1,5	2		33,5	31,3	30,4	29	26,5	25	23	20,5	18	15
MXH 803-60/A	MXHM 803-60	1,8	2,5		51	47	45	42,5	38,5	36,5	33,5	30,5	26,5	22,5
MXH 804-60/A		2,2	3		69	63	60	57,5	53	50,5	47	43	38	31

3 ~		P ₂		Q m ³ /h l/min	H m									
		kW	HP		0	6	9	12	15	18	21	24	27	
MXH 1602-60/A		2,2	3	H m	35	33	31,8	30,2	28,3	26	23,5	20	15,8	
MXH 1603-60/A		3	4		52,5	49,5	47,7	45,3	42,5	39	35,2	30	23,7	
MXH 1604-60/A		4	5,5		70	66	63,5	60,4	56,5	52	47	40	31,5	

P₂ Rated motor power output. 馬達額定輸出功率。
 Tolerances according to UNI EN ISO 9906:2012. 誤差值依據UNI EN ISO 9906:2012之標準。
 + 0,5 m security margin on NPSH-value is necessary. 需在NPSH值+ 0,5 m安全邊際。

Test results with clean cold water, without gas content.
 測試結果以無氣體含量之乾淨冷水所得的數據。

Rated currents - 額定電流

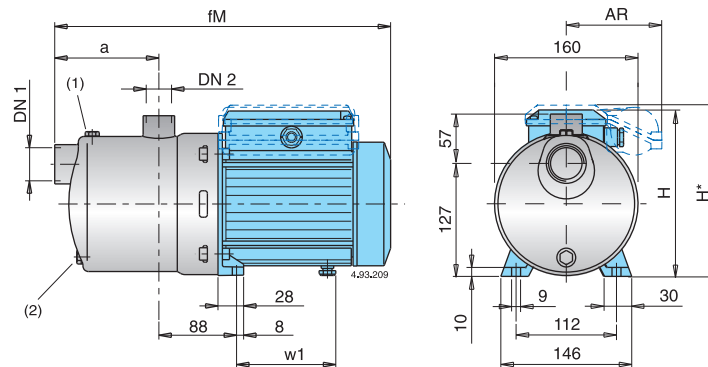
P ₂		single-phase - 單相 1~					
kW	HP	220V I _N A	127V I _N A	110V I _N A	110/220V I _N A	I _A /I _N	
0,25	0,34	2,3	4	4,6	-	1,8	
0,33	0,45	2,8	4,8	5,6	-	2,7	
0,55	0,75	5	8,7	10	9,2/4,7	3,1	
0,75	1	6,2	10,7	12,4	12,5/6,4	2,9	
1,1	1,5	8,5	14,7	17	-	3	
1,5	2	10,6	18,4	-	-	3,8	
1,8	2,5	13,5	-	-	-	4,5	

P ₂		three-phase - 三相 3~				
kW	HP	220/380V I _N A	380/660V I _N A	220/440V I _N A	I _A /I _N	
0,25	0,34	1,7/1	-	1,8/1,1	4,7	
0,33	0,45	2/1,2	-	2,2/1,3	4	
0,55	0,75	3,3/1,9	-	3,5/2,0	4,3	
0,75	1	4,5/2,6	-	4,7/2,7	6,8	
1,1	1,5	5,7/3,3	-	6,0/3,5	5,5	
1,5	2	7,4/4,3	-	7,8/4,5	6,6	
1,8	2,5	9/5,2	-	9,4/5,5	6	
2,2	3	11,1/6,4	-	11,6/6,7	7,3	
3	4	13,4/7,7	-	14,0/8,1	8,4	
4	5,5		11,2/6,5		7,8	

P₂ Rated motor power output.
 馬達額定輸出功率。

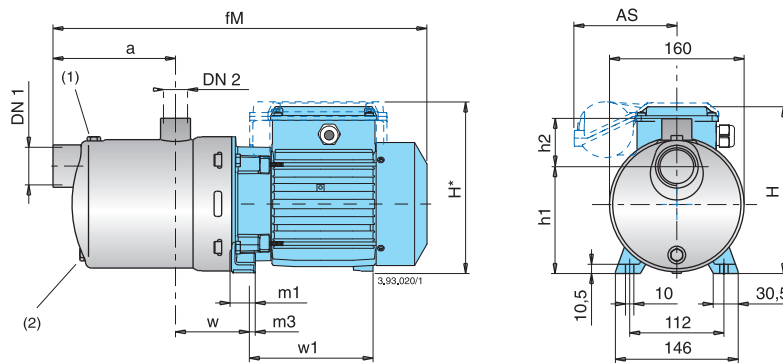
I_A/I_N D.O.L. starting current / Rated current
 啟動電流 / 額定電流。

Dimensions and weights - 尺寸與重量



TYPE 型號	DN1	DN2	mm										kg	
			ISO 228		fM	a	H	w1	H*	220V	127V	110V	110/220V	MXH
MXH 201-60E - MXHM 201-60E	G 1 1/4	G 1	331	94	176	98,5	-	●	●	●	□	6,6	6,7	
MXH 202-60/A - MXHM 202-60/A	G 1 1/4	G 1	357	94	192	112	197	●	●	●	116	9,1	10,1	
MXH 203-60/A - MXHM 203-60/A	G 1 1/4	G 1	357	94	192	112	197	●	116	116	131	10,5	11,5	
MXH 401-60E - MXHM 401-60E	G 1 1/4	G 1	331	94	176	98,5	-	●	●	●	□	6,6	6,7	
MXH 402-60/A - MXHM 402-60/A	G 1 1/4	G 1	357	94	192	112	197	●	116	116	131	10	11	
MXH 801-60/A - MXHM 801-60/A	G 1 1/2	G 1	381	118	192	112	197	●	●	●	116	9,7	10,5	

● Standard dimensions - 標準尺寸
 □ Cannot constructed - 無法製造提供



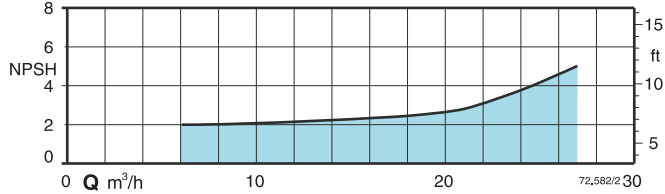
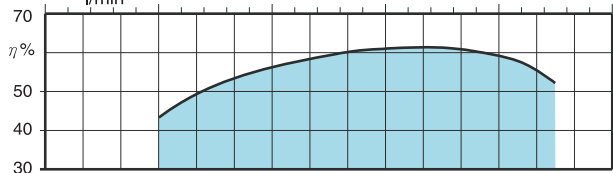
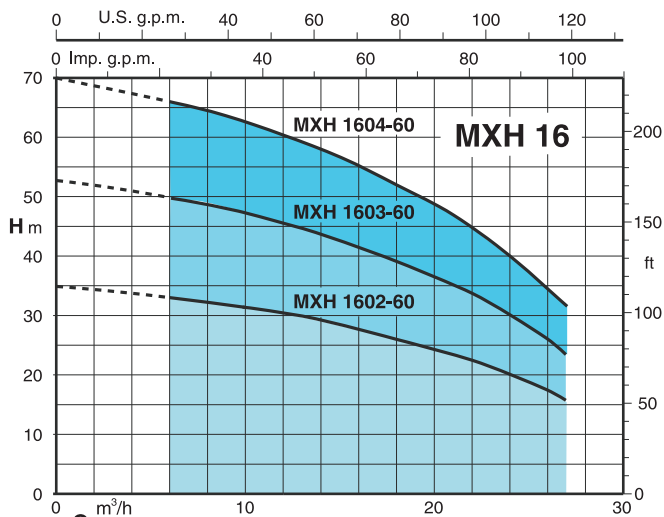
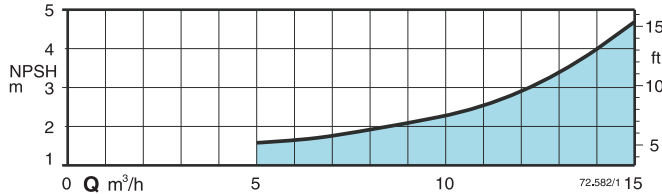
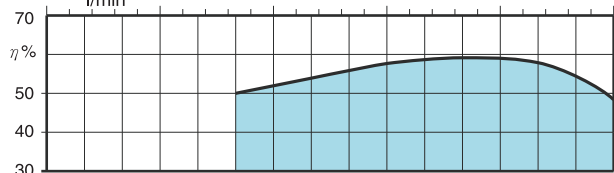
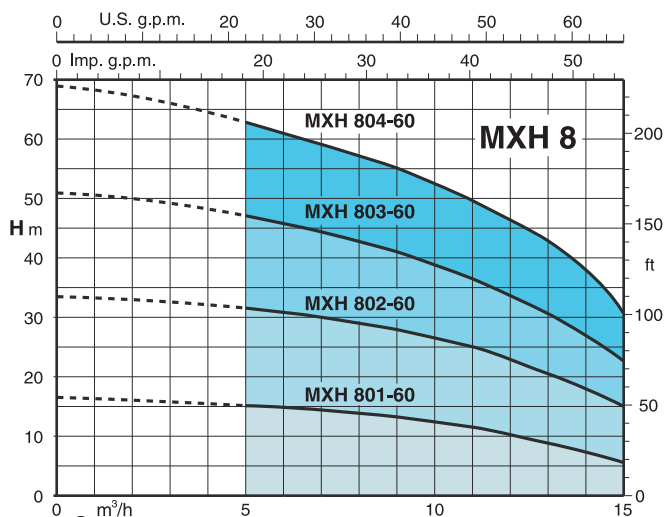
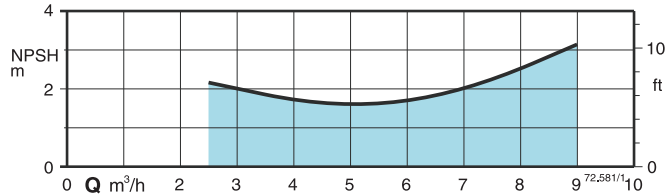
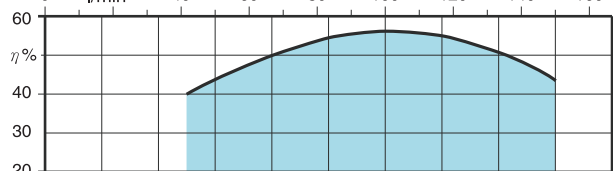
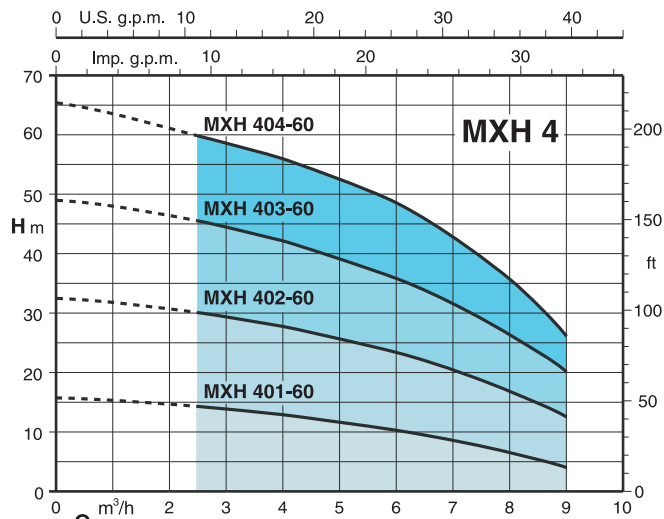
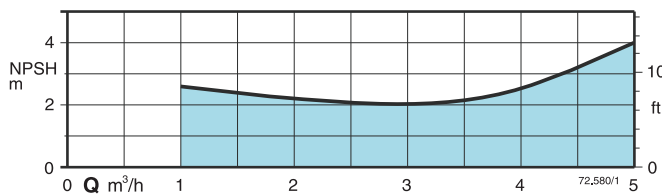
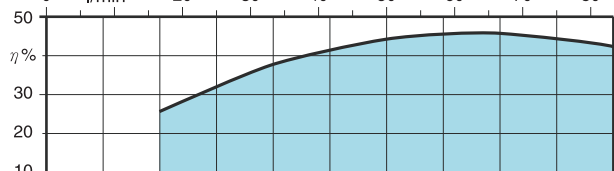
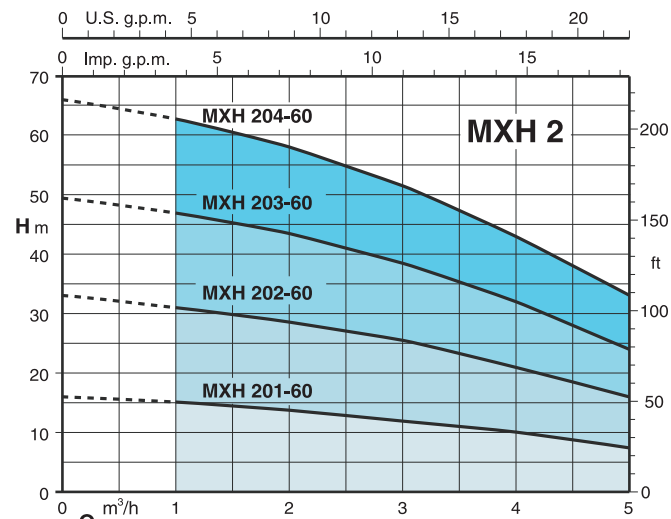
TYPE 型號	DN1	DN2	mm														kg	
			ISO 228		fM	a	w	m1	m3	h1	h2	H	w1	H*	220V	127V	110V	110/220V
MXH 204-60/B - MXHM 204-60	G 1 1/4	G 1	453	118	88	31	10	127	57	210	167	215	●	131	131	□	-	17,7
MXH 403-60/B - MXHM 403-60	G 1 1/4	G 1	453	118	88	31	10	127	57	210	167	215	●	131	131	□	-	17,2
MXH 404-60 - MXHM 404-60	G 1 1/4	G 1	453	118	88	31	10	127	57	210	167	215	●	131	□	□	18,5	19,2
MXH 802-60 - MXHM 802-60	G 1 1/2	G 1	453	118	88	31	10	127	57	210	167	215	●	131	□	□	18	18,9
MXH 803-60/A - MXHM 803-60	G 1 1/2	G 1	493	118	88	31	10	127	57	210	167	215	131	□	□	□	18,3	19,3
MXH 804-60/A	G 1 1/2	G 1	522	148	88	31	10	127	57	210	167	-	-	-	-	-	19,8	-
MXH 1602-60/A	G 2	G 1 1/2	504	128	101	31	10	117	70	210	167	-	-	-	-	-	18,3	-
MXH 1603-60/A	G 2	G 1 1/2	575	128	113	45	12	132	70	235	232	-	-	-	-	-	30	-
MXH 1604-60/A	G 2	G 1 1/2	612	166	113	45	12	132	70	235	232	-	-	-	-	-	31	-

● Standard dimensions - 標準尺寸
 □ Cannot constructed - 無法製造提供

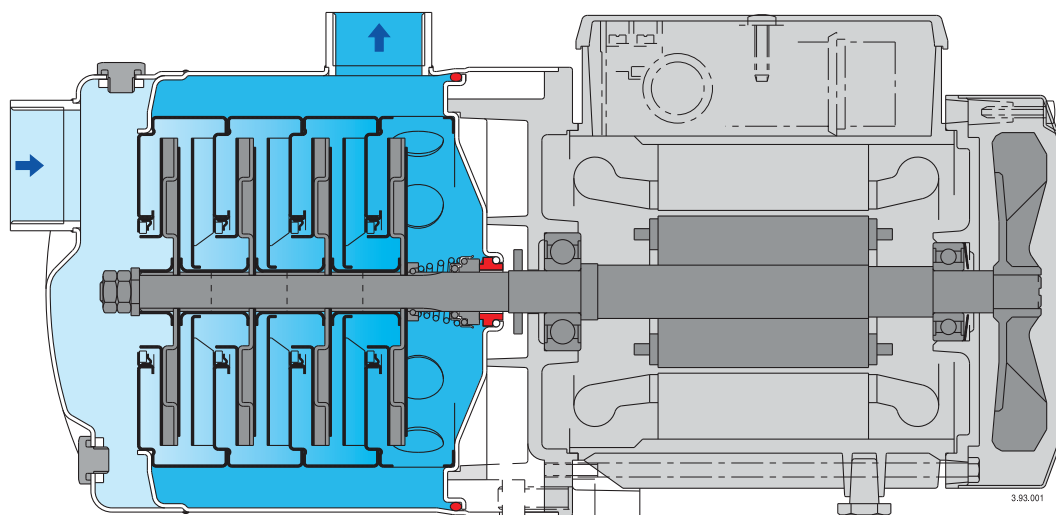
(1) Filling 注水孔
 (2) Draining 排水孔

Characteristic curves - 性能曲線

$n \approx 3450$ rpm



Features - 特色



Extra safety

against running dry, with the suction port above pump axis.

更加安全

吸入端位於泵浦中心線上方，可放防乾轉。

Reliable

All hydraulic parts in contact with the pumped liquid are of stainless steel.

For liquids from -15°C to 110°C .

可靠

不銹鋼結構，液體溫度可達 -15°C 至 $+110^{\circ}\text{C}$ 。

Robust

Single-piece, thick barrel casing.

堅固

一體成型，堅固耐用外殼之構造。

Compact

Single-piece lantern bracket and base.

Without protruding flange.

簡潔

托架及底座一體成型，無突出的法蘭口。

Greater protection

Against leakage, with the pump casing cover separated from the motor shield.

Possibility of inspecting the seal through the side apertures between the two walls.

Greater protection against water entering the motor from outside provided by an extension of the pump casing around the lantern bracket.

保護加倍

泵浦外殼與馬達分開，可預防漏水。

可從兩外殼間縫隙，檢查軸封之狀態。

托架上加長型泵浦外殼，可避免外部的水流入馬達內。