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AME Series AME 系列



榮獲多國發明專利，請參閱協磁官網內容

Patented in Multiple Countries,
Please refer to our website for details.

Specifications

Horizontal, single-stage, centrifugal pump
Magnetic drive, seal-less, close-coupled
Wetted Material: PFA, ETFE (some models)
Power Range: 1.5 — 30 kW (2 to 40 hp)
Maximum Capacity: 180 m³/h
Maximum Head: 88 m

規格一覽表

臥式單段離心泵
直接耦合，磁力驅動，無軸封
接液材質：PFA，ETFE(特定機型)
馬力範圍：1.5 – 30 kW (2 – 40 hp)
最大流量：180 m³/h
最高揚程：88 m

AME-Series Pumps AME 系列泵浦

AME-series pumps are heavy-duty process pumps designed with a metallic armor and high purity PFA-lining to handle the toughest applications and for transferring high purity aggressive chemicals.

These magnetic drive pumps are designed to be reliable and leak-free for applications with temperatures up to 150 °C through a combination of material selection and strong structural design.

The AME-Series pumps are designed to ISO 2858 standards.

AME 系列泵浦是依照 ISO 2858 設計規格，專為高負荷製程所設計。高剛性金屬外殼搭配高純淨度 PFA 內襯，適用於最嚴苛的製程條件，亦適用於對潔淨度有高度要求的化學藥液輸送。

透過適當的材質選用，以及高強度的結構設計，AME 系列磁力驅動無軸封泵浦可在高達 150 °C 的製程條件下可靠且零洩漏的運轉。

How do magnetic drive pumps work? 磁力驅動泵浦操作原理

Magnetic pumps work by using a set of magnetic coupling to transfer the mechanical energy from the motor to the pump's impeller. A drive magnet is attached to the motor shaft. On the pump side, an inner magnet is attached to the pump impeller. The magnetic flux between the drive and inner magnets pass through the pump containment shell, forming the magnetic coupling. The magnetic coupling allows the pump to be hermetically sealed for leak-free operation.

磁力驅動泵浦是使用一組磁耦合器將動能從馬達傳送至泵浦葉片。在馬達端，驅動磁鐵安裝在馬達軸心上。在泵浦端，內磁鐵與泵浦葉片相接。驅動磁鐵與內磁鐵的磁力線迴路透過泵浦後蓋形成磁耦合器，達成泵浦無需軸封並能完全密封的運轉狀態。

Where can I use AME-Series pumps? AME 系列的運用領域

- Chemicals where leakage must be avoided, including corrosive, toxic, and strong oxidizing agents.
- Potentially flammable and explosive chemicals.
- Highly volatile chemicals harmful to the environment.
- Chemicals that react when exposed to atmosphere or chemicals that can degrade with atmospheric exposure.
- Chemicals that are very expensive.
- Pure chemicals
- 絕對不能洩漏之化學藥液，譬如：腐蝕性、有毒性以及強氧化劑
- 易燃或有爆炸可能性之化學藥液
- 對環境有害之高揮發性化學藥液
- 容易與空氣反應或暴露於空氣會造成裂解的化學藥液
- 昂貴之藥水
- 需高純淨度藥水

Limitations of AME-Series pumps? AME 泵浦的注意事項

- Should not be used for chemicals with large amounts of solids.
- Dry-running should be avoided.
- Cavitation should be avoided.
- Operating temperature
PFA material: 0 - 150 °C
ETFE material: 0 - 95 °C
(ETFE Material available for AME-HT only)
- 不可用於含有大量雜質液體
- 嚴禁空轉
- 避免空蝕
- 操作溫度範圍
PFA 材質：0 - 150 °C
ETFE 材質：0 - 95 °C
(ETFE 材料僅適用於 AME-HT)

The Makings of a Heavy-Duty Pump 高負荷泵浦的特性

Rigid Shaft Support

Double-ended, metal reinforced shaft support should be used. Traditional plastic chemical pumps have either single sided rear support or use only plastic for the double-ended shaft support. Under high temperatures and pressures, the shaft support weakens, resulting in deflection of the shaft, causing vibrations and wear of the pump parts, greatly reducing the pump's service life.

Reinforced Impeller

The impeller should be reinforced. In applications where pure material such as ETFE or PFA is used, the impeller will tend to deform under high pressure or temperatures, resulting in damages or reduced performance.

A one-piece impeller and magnet design with metallic structure extended from the magnet capsule to the impeller blade will ensure operational stability. It is common practice to have a separate impeller and inner magnet. However, under high temperatures and pressures, there is a risk of the impeller loosening from the magnet.

High Strength Magnetic Coupling

For high-temperature applications, Samarium Cobalt (SmCo) rare earth material should be used for the inner magnet. SmCo can withstand operating temperatures above 350 °C without experiencing a significant loss of magnetic strength. On the other hand, the drive magnet can be made of neodymium (NdFeB) rare earth metals to hold high magnetic strengths.

高剛性軸心支撐

泵浦使用雙邊金屬強化的軸心支撐設計。傳統的化工泵浦有單邊後支撐設計或使用塑膠材質的前後雙邊支撐設計，在高溫高壓的條件下，軸心支撐容易使剛性降低，偏移，造成泵浦振動以及零件的磨耗，連帶的降低了泵浦的使用壽命。

強化葉片

泵浦的葉片必須強化。當使用 ETFE 或 PFA 這種較軟的高純度材料時，葉片容易與高溫高壓條件下變形，進而導致泵浦受損或影響性能。市面上常看到的組合式葉片與內輪，在高溫高壓條件下有鬆脫的風險。因此，我們 AME 系列採用一件式葉片與內輪設計，葉片內以金屬做支撐，能確保在最嚴苛的操作條件下能穩定運轉。

高強度磁耦合器

釷鈷稀土類磁鐵 (SmCo) 具有耐高溫之特性，可承受高達 350 °C 高溫不造成磁力衰退。因此，為了讓泵浦能夠承受高溫操作，內磁鐵採用釷鈷稀土磁鐵。驅動磁鐵則選用高磁能積的釹鐵硼稀土磁鐵 (NdFeB) 來提供高傳動扭矩。

A. Rigid Shaft Support 高剛性軸心支撐

The metallic front shaft support is an integral part of the casing armor. The rear of the shaft is supported in the containment shell, reinforced by a metal support ring and high-strength carbon fiber composite cover.

金屬前軸心支撐與泵浦金屬外殼為一體，軸心後支撐緊固於透過金屬環與高強度碳纖維複合材料做加強的後蓋。

B. Vacuum Resistant Lining 可承受高負壓內襯

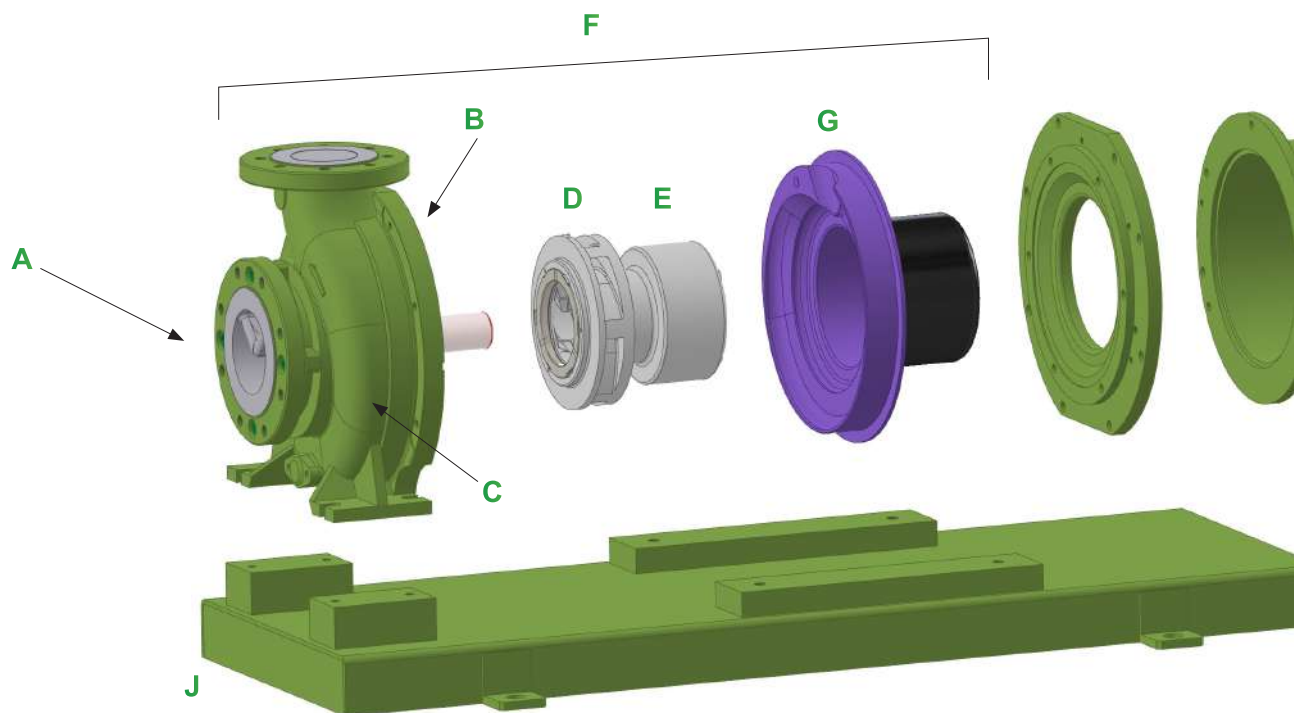
The PFA lining is formed directly onto the metal armor with designs to ensure the PFA material adheres to the armor even under low absolute pressure.

PFA 內襯直接形成在金屬泵殼上的設計，確保在高負壓條件下運轉也不會剝離。

C. Load-Balanced Volute 推力平衡渦卷流道

The casing volute is designed to have an evenly distributed hydraulic pressure, providing a balanced radial loading on the impeller.

渦卷流道採取平均分散壓力設計，可平衡葉輪的徑向推力。



F. Simple Construction 簡單構造

Stationary shaft design allows for a very simple construction which makes maintenance and repairs very easy, requiring no special tools to service the pump.

簡單固定軸的構造與設計，安裝與維護無需特殊工具，充分考量後續維修、保養的便利性。

G. Reinforced Containment Shell 加強的後蓋外罩

The plastic containment shell is reinforced with a carbon fiber composite cover. There is no eddy current loss, so no additional heating of the pumped chemical.

泵浦的塑膠後蓋使用高強度碳纖維複合材料外罩支撐，無渦電流的產生，避免渦電流所產生的能量損失與對藥液加熱。

D. One-Piece Impeller 一體式葉輪

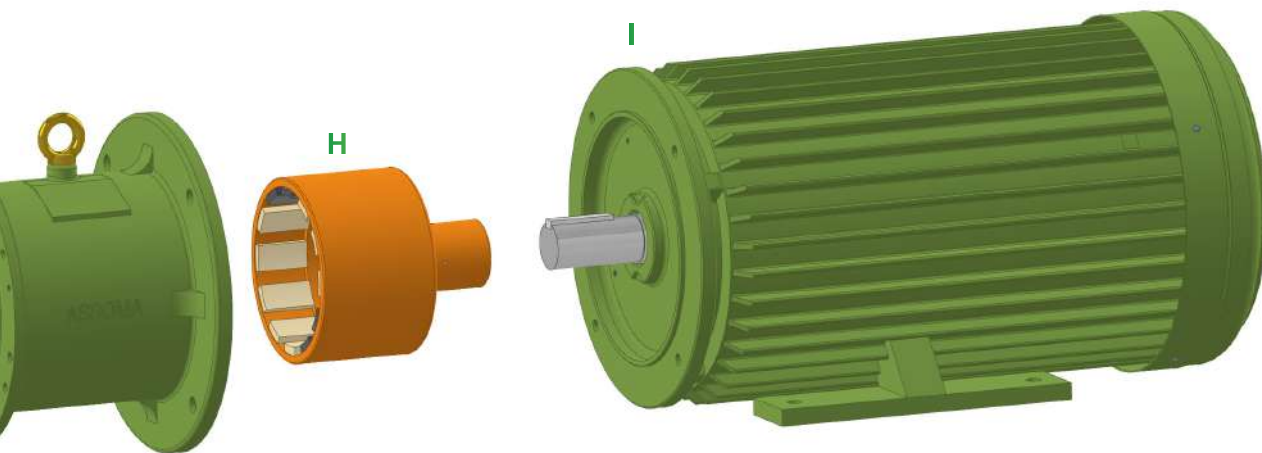
The impeller and the magnet capsule is formed in one piece, eliminating the possibility of the impeller loosening under high temperatures and pressures.

一件式的葉片與內輪設計，避免葉片在高溫高壓下鬆脫的可能性。

E. Metal Embedded Impeller 金屬加強葉片

The metallic structure is extended from the magnet capsule to the impeller blade to provide rigid support to the impeller.

內磁鐵的金屬結構延伸至葉輪與葉片，提供葉片高強度的支撐。



I. Back Pull-Out 背拉式設計

Easy to remove the motor and pump for maintenance and repairs without the need to remove the pump casing from the piping.

泵浦無需拆卸配管就能輕易的執行泵浦與馬達的維修與保養。

H. SmCo for High Temperatures 耐高溫釷鈷磁鐵

SmCo inner magnet is used for high-temperature applications to resist demagnetization. High strength NdFeB is used for the drive magnet to provide high torque transmission.

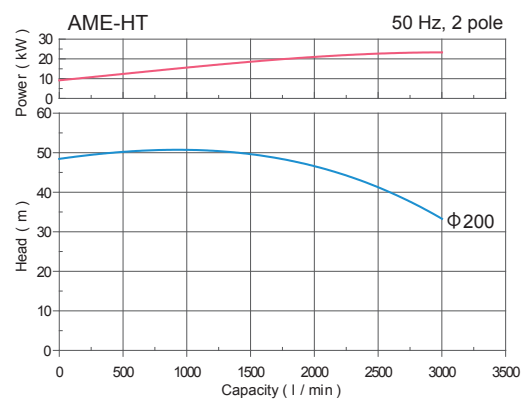
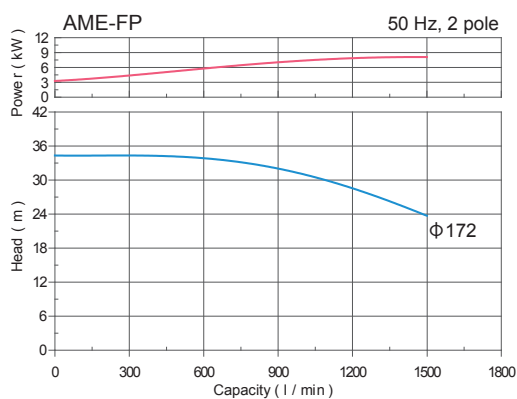
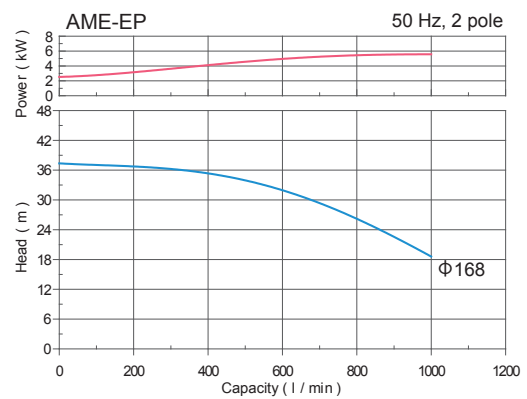
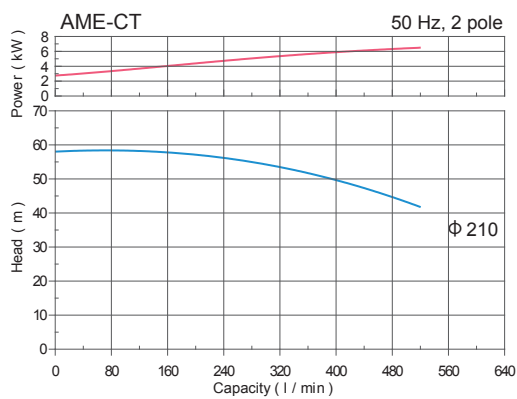
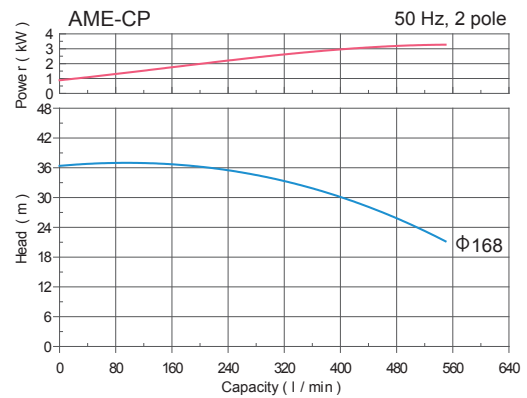
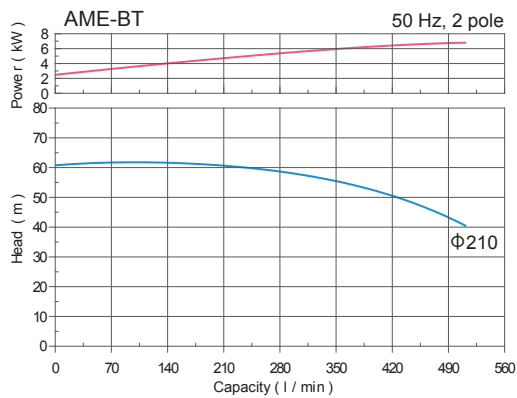
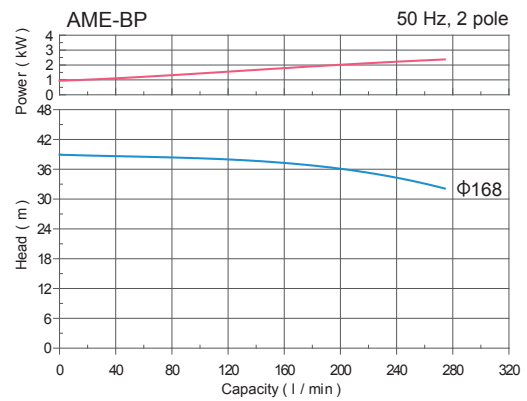
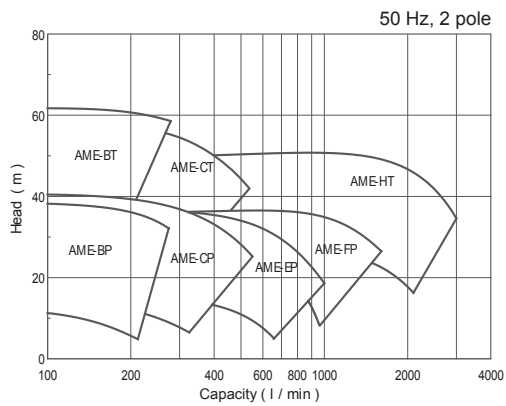
內輪使用釷鈷磁鐵，可耐高溫、抗消磁，適合高溫操作條件。外輪使用高強度的釹鐵硼磁鐵來提供高扭矩傳輸。

J. ISO Standards ISO 設計標準

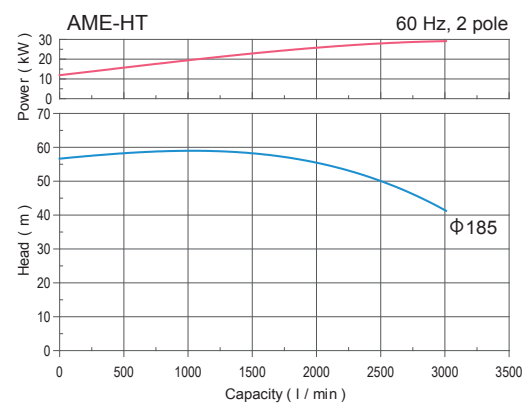
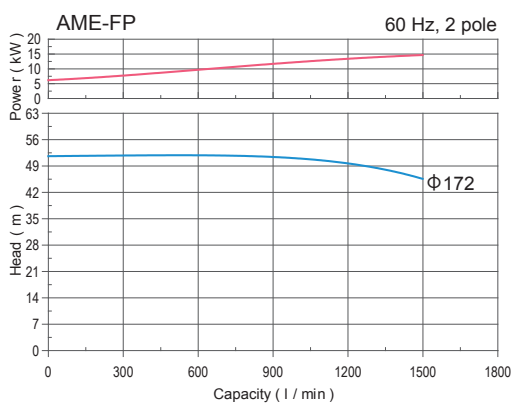
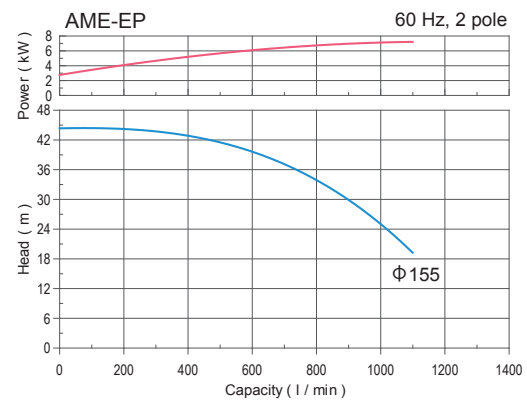
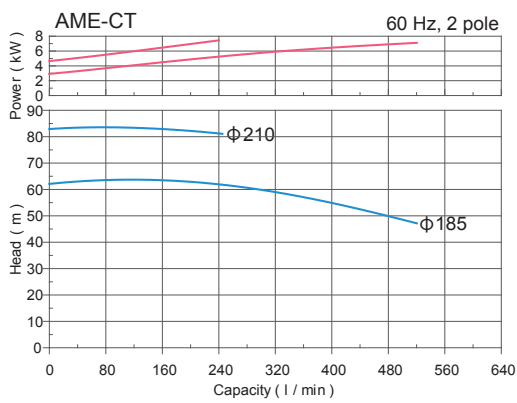
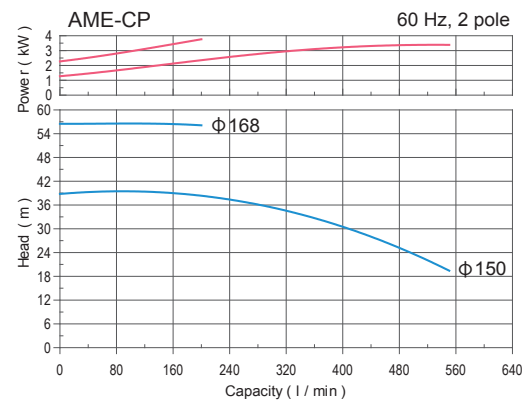
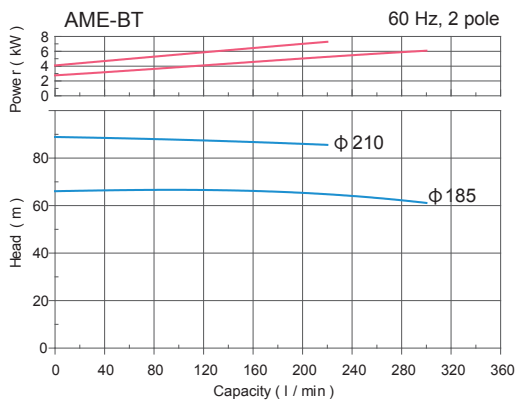
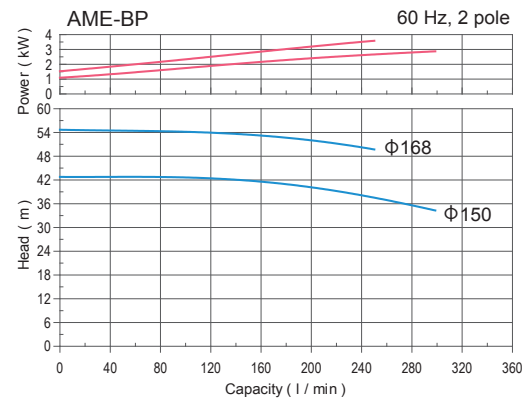
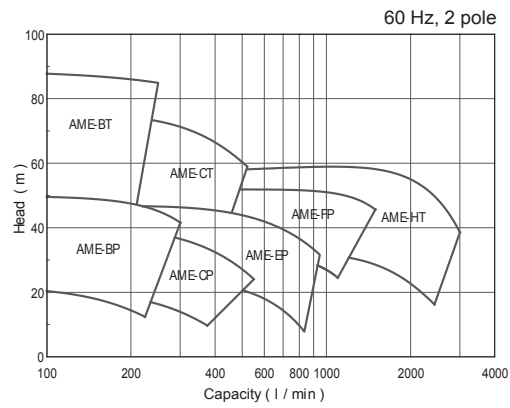
Designed to ISO 2858, ISO 5199, ISO 15783, and EN 809 standards.

設計參照 ISO 2858, ISO 5199, ISO 15783 以及 EN 809 國際規範。

Performance Curves 性能曲線圖



Performance Curves 性能曲線圖



Specifications 規格表

機型 Model	入口 x 出口 口徑 Inlet x Outlet Bore size (mm)	50Hz				60Hz				馬達輸出功率 Motor output (kW)
		葉輪尺寸 Impeller diameter (mm)	流量 Capacity (l/min)	全揚程 Total head (m)	軸功率 Shaft power (kW)	葉輪尺寸 Impeller diameter (mm)	流量 Capacity (l/min)	全揚程 Total head (m)	軸功率 Shaft power (kW)	
AME-BP	40 x 25	168	180	34.4	1.8	150	180	37.0	2.4	1.5, 2.2 or 3.7
		140	180	18.0	1.3	120	180	21.9	1.4	
AME-BT	40 x 25	210	180	61.1	4.3	185	180	65.7	4.8	5.5 or 7.5
AME-CP	50 x 32 50 x 40	168	333	35.6	3.3	140	333	35.3	3.4	1.5, 2.2 or 3.7
		140	250	22.6	1.7	120	250	22.2	1.8	
		130	250	19.6	1.5	110	250	18.7	1.6	
AME-CT	50 x 32 50 x 40	210	400	49.5	6.0	185	400	54.8	6.4	5.5 or 7.5
AME-EP	65 x 50	165	500	32.0	4.8	150	500	35.6	5.6	5.5 or 7.5
		150	500	25.8	3.7	135	500	26.7	4.2	
AME-FP	80 x 65	170	833	32.0	6.5	170	1000	48.1	12.1	5.5, 7.5, 11, 15 or 18.5
		140	833	21.7	4.0	140	1000	32.5	7.5	
AME-HT	100 x 80	200	2500	43.3	24.1	185	2500	52.2	28.0	11, 15, 18.5, 22 or 30
		170	2000	26.0	12.1	155	1500	34.9	13.4	
		160	1500	25.0	9.4	145	1500	26.5	11.7	

Pump identification 型式表示

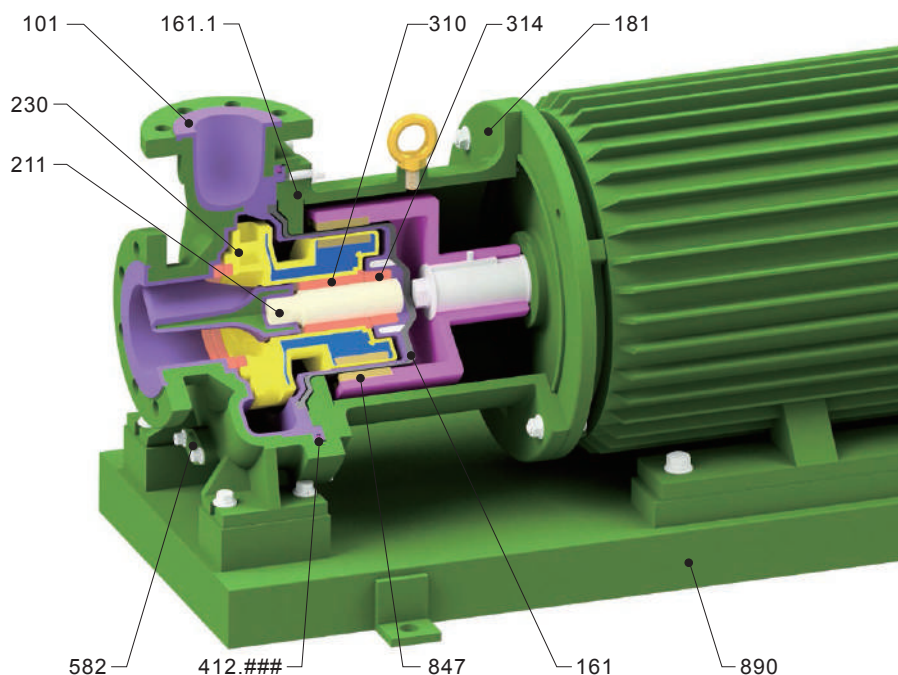
AME-HT F A S S V - 185 1

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① 泵浦系列 Series	AME 系列 AME Series
② 機型表示 Pump model	對應 ISO 2858 之泵浦命名 Pump designation according to ISO 2858 BP : 40-25-160 BT : 40-25-200 EP : 65-50-160 CP : 50-32(40)-160 CT : 50-32(40)-200 FP : 80-65-160 HT : 100-80-200
③ 配管形式 Type of Connection	F : 法蘭 Flange
④ 本體內襯材質 Casing lining Material	A : PFA T : ETFE(HT Casing Only)
⑤ 軸心 / 後止推環材質 Shaft/rear thrust ring Material	S : SSiC / SSiC T : 995 Al ₂ O ₃ / PTFE+CF V : SSiC / PTFE+CF
⑥ 軸承材質 Bearing Material	S : SSiC R : PTFE+CF C : CARBON

⑦ 密封材質 Sealing Material	E : EPDM V : FKM F : FKM +FEP
⑧ 馬力數 Motor Power	015 : 1.5 kW (2 hp) 022 : 2.2 kW (3 hp) 037 : 3.7 kW (5 hp) 055 : 5.5 kW (7.5 hp) 075 : 7.5 kW (10 hp) 110 : 11 kW (15 hp) 150 : 15 kW (20 hp) 185 : 18.5 kW (25 hp) 220 : 22 kW (30 hp) 300 : 30 kW (40 hp)
⑨ 馬達型式 Motor Type	0 : IP54 1 : IP55 2 : eG3 安全增防爆 Explosion proof eG3 3 : d2G4 耐壓防爆型 Explosion proof d2G4 S : 特殊馬達 Special motor

Material 材質構造圖



編號 Part code	名稱 Part name		可選用材質 Available Materials
101	前蓋組 Pump casing assembly	前蓋 Pump casing	FCD450+PFA / FCD450+ETFE
		前止推環 Front thrust ring	995 Al ₂ O ₃ / SSiC
161	後蓋護體組 Rear casing with cover		PFA , CARBON FRP
161.1	後蓋背板 Backup plate		FCD450
181	托架 Bracket		FC
211	軸心 Shaft		995 Al ₂ O ₃ / SSiC
230	葉輪磨損環組 Impeller wear ring assembly	葉輪組 Impeller	PFA , Sm-Co
		前磨損環 Front wear ring	SSiC / PTFE+CF*** / CARBON***
310	軸承 Bearing		SSiC / PTFE+CF*** / CARBON***
314	後止推環 Rear thrust ring		SSiC / PTFE+CF**
582	排洩蓋 Drain cap		FC
847	外輪 Drive magnet		Nd-Fe-B
890	底座 Base plate		SUS304
412.###	O 形環 O-ring*		EPDM / FKM / FKM+FEP

備註 Note :

* AFLAS 及全氟化橡膠密封件可依客戶需求提供。

AFLAS & FFKM are available by request.

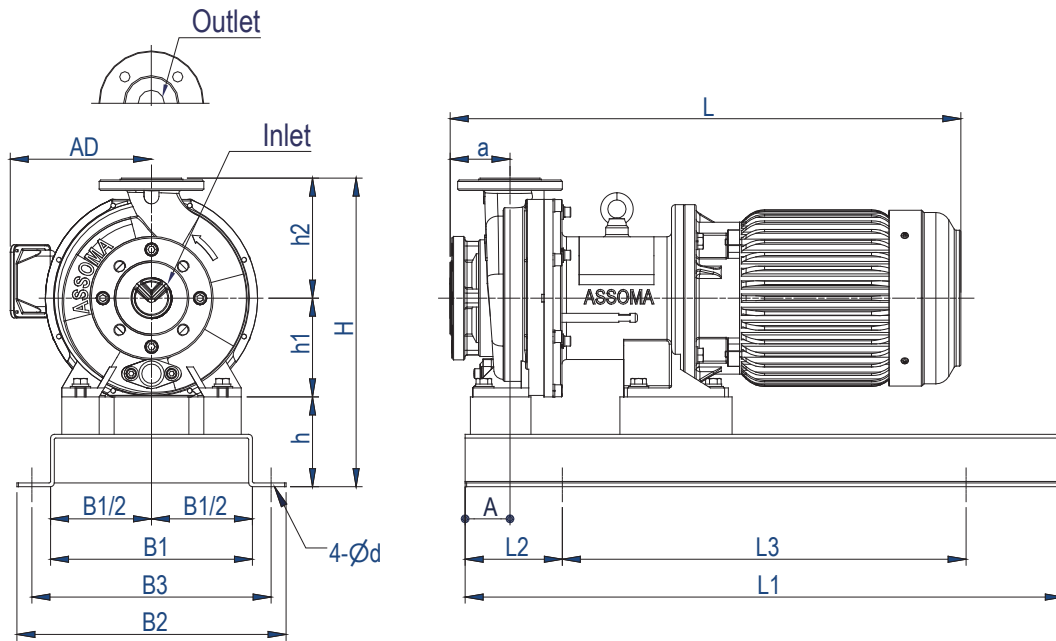
** 使用於操作溫度低於 90 °C。

Maximum allowable temperature for material is 90 °C .

*** 不適用於 AME-HT 機型或操作溫度高於 90 °C。

Not suitable for AME-HT model and for operating temperatures above 90°C .

AME-BP/BT/CP/CT/EP Dimensions 外形尺寸圖



項目 Item 形式 Model	尺寸 Dimension (mm)															法蘭 Flange (mm)		馬達輸出 功率 (kW)	馬達 規格
	A	a	AD*	B1	B2	B3	d	H	h	h1	h2	L*	L1**	L2	L3**	Inlet***	Outlet***	Motor Output	Frame size
AME-BP	60	80	143	270	360	320	18	412	120	132	160	551	800 (550)	130	540 (290)	40A	25A	1.5 kW	90S/L
			576									649						2.2 kW	
			166															3.7 kW	112M
AME-BT	60	80	168	270	360	320	18	460	120	160	180	680	800	130	540	40A	25A	5.5 kW	132S
																		7.5 kW	
AME-CP	60	80	143	270	360	320	18	412	120	132	160	551	800 (550)	130	540 (290)	50A	32A (40A)	1.5 kW	90S/L
			576									649						2.2 kW	
			166															3.7 kW	112M
AME-CT	60	80	168	270	360	320	18	460	120	160	180	680	800	130	540	50A	32A (40A)	5.5 kW	132S
																		7.5 kW	
AME-EP	60	80	168	270	360	320	18	412	120	132	160	680	800	130	540	65A	50A	5.5 kW	132S
																		7.5 kW	

Note:

* Dimensions will vary depending on the brand, type and power output of motor.
 ** A compact base plate is available for customers' request.

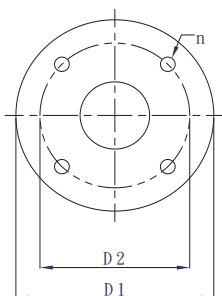
*** Flange are available with ISO, ANSI, and JIS standards upon customers' request.
 Outlet flange of AME-CP/CT provides 32A and 40A for customers' request.

備註：

* 尺寸依照馬達廠牌，安裝方式及馬力數之不同而有區別。

** 依客戶需求提供小尺寸底座。

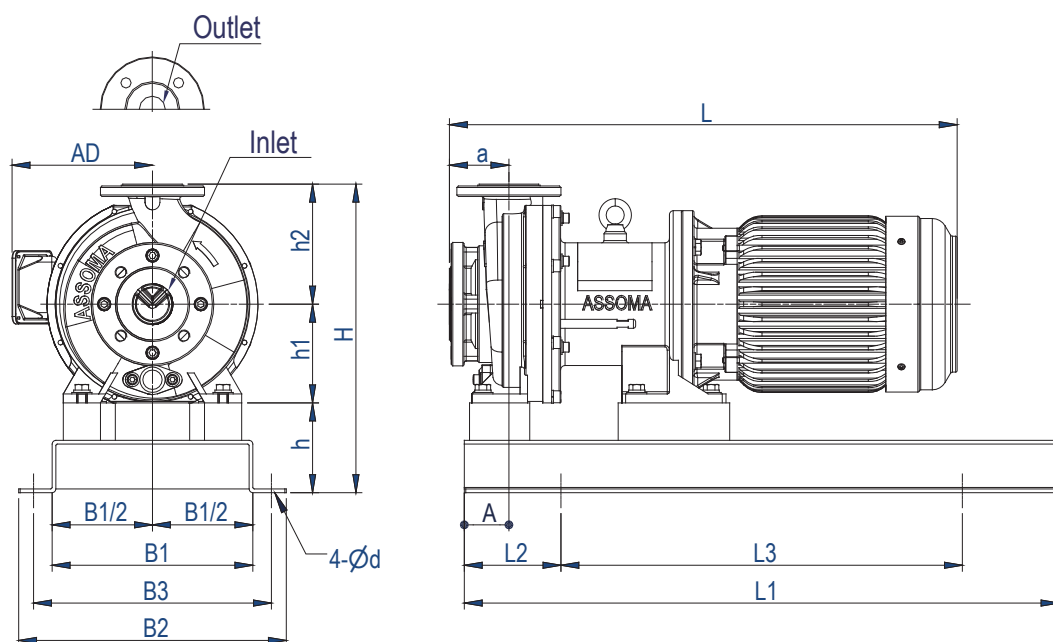
*** 泵浦出入口法蘭規格可依客戶不同規格需求 (ISO、ANSI、JIS) 承製。
 AME-CP/CT 出口法蘭規格有 32A 及 40A 供客戶選用。



DN	Standard	n	D2	D1
25A	ISO	4-M12	85	125
	JIS	4-M16	90	
	ANSI	4-M12	3 1/8"	
32A	ISO	4-M16	100	140(5 1/2")
	JIS			

DN	Standard	n	D2	D1
40A	ISO	4-M16	110	140(5 1/2")
	JIS		105	
	ANSI		3 7/8"	
50A	ISO	4-M16	125	165(6 1/2")
	JIS		120	
	ANSI		4 3/4"	

AME-HT/FP Dimensions 外形尺寸圖



項目 Item	尺寸 Dimension (mm)														法蘭 Flange (mm)		馬達輸出 功率 (kW)	馬達 規格	
	A	a	AD*	B1	B2	B3	d	H	h	h1	h2	L*	L1	L2	L3	Inlet***	Outlet***	Motor Output	Frame size
AME-HT	75	100	263	340	450	400	23	525	120	180	225	947	1000	170	660	100A	80A	11 kW	160M
			991	15 kW															
			1011	1120	190	740						18.5 kW	160L						
			1049									22 kW	180M						
			305									380	490	440	30 kW			180L	
			324	430	540	490						1179	1250	205	840			200L	
AME-FP	60	100	225	270	360	320	18	460	120	160	180	790	800	130	540	80A	65A	5.5 kW	132S
			915	7.5 kW															
			263	300	390	350	20					915	900	150	600			11 kW	160M
			960	15 kW															
												18.5 kW						160L	

Note:

- * Dimension will vary depending on the brand and type of motor.
- ** Flange are available with ISO, ANSI, and JIS standards upon customers' request.
- *** When purchasing pumps without motor for 22 kW and above, please specify the motor frame size and flange size so that the proper bracket and base can be provided. If frame size and flange size are not provided, we shall provide our standard configuration.

Standard configuration :

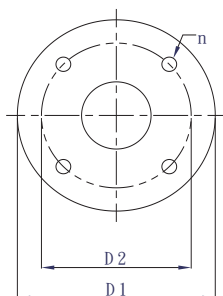
22 kW motor frame size 180M, flange size FF350; 30 kW motor frame size 200L, flange size FF350.

備註：

- * 尺寸依照馬達廠牌，安裝方式及馬力數之不同而有區別。
- ** 泵浦出入口法蘭規格可依客戶不同規格需求（ISO、ANSI、JIS）承製。
- *** 若訂購 22 kW（含）以上泵浦不含馬達，請註明馬達框號及法蘭記號，以便搭配合適的底座及托架，若未註明，則以標準配備出貨。

ASSOMA 標準配備：

22 kW 馬達框號 180M，法蘭記號 FF350；30 kW 馬達框號 200L，法蘭記號 FF350。



DN	Standard	n	D2	D1
65A	ISO	4-M16	145	185(7 1/4")
	JIS		140	
	ANSI		5 1/2"	
80A	ISO	8-M16	160	200(8")
	JIS		150	
	ANSI		6"	
100A	ISO	8-M16	180	220(8 1/2")
	JIS		175	
	ANSI		7 1/2"	



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