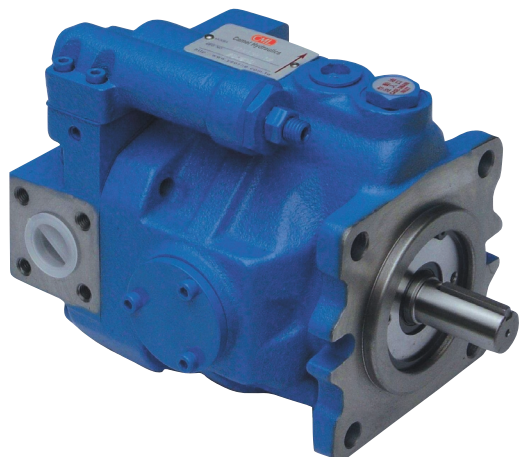
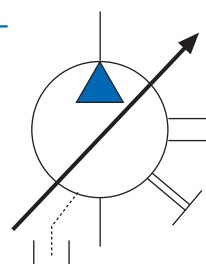


V Series 系列



SYMBOL



油壓記號

Model Code/ 型號說明

V	15	A	1	R	B	S	- A	10	
									Port Threading 配管牙型
									10: PT
									40: BSPP (G)
									50: NPT
									60: SAE (O-Ring)
									Voltage 電壓
									A: AC100V(50/60Hz)
									B: AC110V(60Hz)
									C: AC200V(50/60Hz)
									D: AC220V(60Hz)
									E: DC12V
									F: DC24V
									Shaft type 軸心形式
									None: 平鍵 Key
									S: 花鍵 Spline SAE. J4986
									Direction of pipe connections 配管方向
									None: side port 兩側出入口
									B: Axial port 軸方出油
									Shaft rotation 迴轉方向
									R: clockwise 順時針方向
									L: counterclockwise 逆時針方向
									Pressure adjusting 壓力調整方式
									1: 8~70 kgf/cm ²
									2: 15~140 kgf/cm ²
									3: 20~210 kgf/cm ²
									4: 20~250 kgf/cm ²
									Control types 控制方式
									Refers to page 3,4 參照第3,4頁
									Displacement 流量
									15, 18, 23, 25, 38, 42, 50, 70 (cm ³ /rev)
									V: 系列號碼

Feature:

1. Combining special internal designs and strict engineering disciplines has reduced noise level to new lows in whole pressure zones.
2. Depending on variety of application needs multiple optional unique control methods are available. It does not only reduce a number of unnecessary hoses, pipes and control valves but also increase efficiency and save horsepower, and cost.
3. Less capacity reservoirs can be selected and applied because of performances of low pressure loss and less head generation.
4. Wide application ranges: it is very suitable for machine tools, plastic injection molding machines, forging machines and other industrial machines etc..
5. Mounting flanges are made to SAE A or B 2-bolt (V15, 18, 23, 38 types) and SAE-C 2 & 4-bolt (V50, V70 types).

特性

1. V系列柱塞泵，以獨特設計斜盤變化角度功能，廣泛應用於各種場所。
2. 特殊設計，在全壓力區內，保持低噪音性能。
3. 由多種控制方式整合，能形成系統，具有省能源、小型化、低成本功能。
4. 功能損失小，減低油溫上升，可選配較小型油箱。
5. 廣泛應用於工具機、機床、鍛壓、塑膠成型機。

Specifications

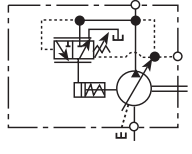
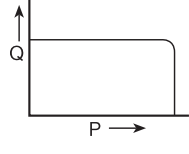
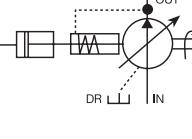
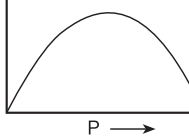
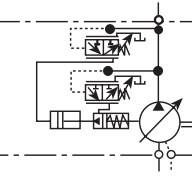
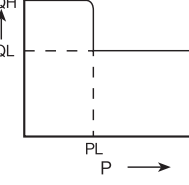
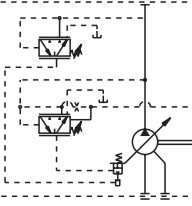
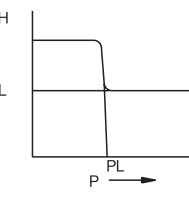
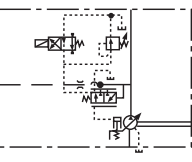
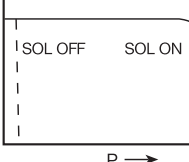
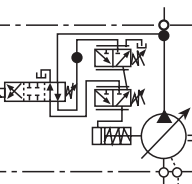
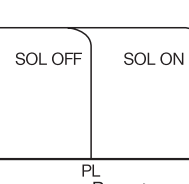
規格表

Model 形 式	Max. Pressure 最高使用壓力 kgf/cm ² (psi)	Displacement 吐出量 c.c./rev (in ³ /rev)	Displacement Under Unloading Conditions 無負荷量時之吐出量 l/min(GPM)		Pressure Adj. Range 壓力調整範圍 kgf/cm ² (psi)	Input Speed Range 回轉數(rpm)		Weight 重量 kg(lb)
			1500rpm	1800rpm		最低 Min	最高 Max	
V15	250(3500)	15(0.90)	22.5(5.78)	27.0(7.05)	A1: 8~70(115~1000) A2: 15~140(210~2000) A3: 20~210(280~3000) A4: 20~250(280~3500)	500	1800	11.5(25.3)
V18	140(2000)	17.8(1.09)	26.7(7.05)	32.0(8.45)				11.5(25.3)
V23	250(3500)	23.0(1.40)	35.4(9.11)	41.4(10.94)				20.0(50.7)
V38	250(3500)	37.8(2.31)	56.7(14.98)	68.0(17.96)				23.0(50.7)
V50	250(3500)	51.5(3.14)	77.2(20.37)	92.7(24.49)				50.0(110)
V70	250(3500)	69.7(4.25)	104.5(27.60)	125.4(33.13)				55.0(121)
15-15	250(3500)	15/15	22.5/22.5	27/27				24(52.8)
23-23	250(3500)	23.0/23	35.4/35.4	41.4/41.4				40(88.0)
15-38	250(3500)	15/37.8	22.5/34.5	27/68				36.5(80.3)
38-38	250(3500)	37.8/37.8	56.7/56.7	68/68				49(107)
15-70	250(3500)	15/69.7	22.5/104.5	27/125.4				69.5(153)
38-70	250(3500)	37.8/69.7	56.7/104.5	68/125.4				78(172)

Variable Displacement Piston Pumps

可變柱塞幫浦

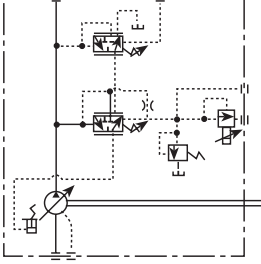
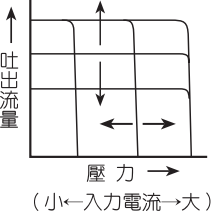
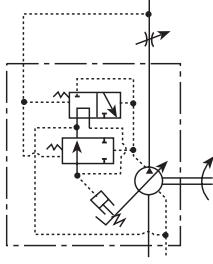
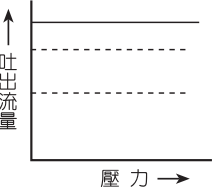
Control Types 控制方式:

Control Type 名稱	JIS Symbols 液壓符號	Characteristics 性能曲線	Feature 特性
A Type: Pressure compensator control A型式: 壓力補償控制			- When system pressure reaches setting pressure, flow decreased automatically and pressure is maintain steady. - Flow and pressure setting manually. 1. 系統壓力增高接近設定壓力時，幫浦流量自動下降，壓力保持恆定。 2. 流量及設定壓力可手動調整。
B Type: Multi-stage Flow & Single-stage Pressure Control Type (With Cylinder) B型式: 無段變速，靠外援油缸，流量可任意變化			- Flow could be adjusted from min. to max flow and pressure is maintaining steady. - Absorbing impact and vibration which caused by up and down motion of actuators. 1. 流量可從最大調到最小，做多段變化，壓力保持在設定值。 2. 使機械在上升、下降具有緩衝作用，防止衝撞、震動。
C Type: 2-stage Pressure & Flow Control Type C型式: 單泵兩段壓力，兩流量自壓式			- Lo-consumption electric motor can be selected to save energy because of functions of high flow at low pressure and low flow at high pressure. - When pressure increase and reach preset pressure "PH", flow is reduced to "QL". - Pressure "PH, PL", and Flow "QH, QL" can be adjusted optionally. - It is applied to actuators requiring long unloaded or short loaded strokes. Speedy and horsepower efficient. 1. 具低壓大流量，高壓小流量之功能，適用於高低壓系統節省馬達功率。 2. 當系統壓力接近預調的"PH"設定壓時，泵的流量自動降到"QL"。 3. 壓力"PH, PL"及流量"QH, QL"可分別任意調整。 4. 適用於空行程長，加壓行程短之機械，速度快，省馬力。
CG Type: 2-stage remote Pressure & Flow Control Type CG型式: 單泵遙控兩段壓力，兩流量自壓式			- Similar to "C" type control - Pressure setting could be controlled by remote controller. - When combined with proportional pressure valves, pressure setting could be electronic controlled. 1. 功能同"C"型兩段壓力，兩流量（直動式）。 2. 可結合遙控閥調整壓力範圍。 3. 可配合比例壓力閥，達成電控比例壓力控制。
D Type: Solenoid Controlled Pressure Compensating Type With Unloading Device D型式: 低壓卸載，壓力補償控制			- Same as Type A and unloading function added. - It is applied to systems requiring longterm unloading operation. - When solenoid is turned off, pump operates under unloading conditions. This results in less noise and heat generation. 1. 功能同"A"型壓力補償控制並具有卸壓機能。 2. 適用於卸壓時間長的情況。 3. 系統待機時，通過幫浦的卸壓機能，油溫和噪音可保持較低水平。
E Type: Dual Pressure Control E型式: 電控兩段壓力補償型式			- High and low pressure can be controlled by switching directions of solenoid control valves. - This type is applied to actuators requiring 2-stage pressures with single speed. - One of "PL" and "PH" relief valves can optionally be high pressure. 1. 利用電磁換向閥，控制高低兩個不同的設定壓力。 2. 適用在恆定速度下，設定兩段工作壓力時使用。 3. 可任選"PL"或"PH"閥作為高壓控制閥。

Control Types 控制方式:

Control Type 名稱	JIS Symbols 液壓符號	Characteristics 性能曲線	Feature 特性
EG Type: Dual & Remote Pressure Control EG型式: 電控遙控兩段壓力補償型式			1. Similar to 'E' type control. 2. Pressure setting could be controlled by remote controller. 3. When combined with proportional pressure valves, pressure setting could be electronic controlled. 1. 功能同電控兩段壓力補償形式"E"型。 2. 可結合遙控閥調整壓力範圍。 3. 可配合比例壓力閥，達成電控比例壓力控制。
F Type: 2 flow, 2 pressure controlled by solenoid operated valve F型式: 電控單泵兩段壓力，兩段流量控制			1. Actuators can be shafted slowly (high pressure & low flow) or quickly (high flow & low pressure) by switching direction of solenoid valve. 2. Pressure 'PL', 'PH' and Flow 'QL', 'QH' could be adjusted manually. 3. Pressure 'PL', 'PH' and flow 'QL', 'QH' can be adjusted optionally. 1. 可依電磁換向閥控制低壓大流量及高壓小流量的功能。 當電磁通電時，壓力升高至PH，流量降至QL。 2. 壓力PL，PH及流量QL，QH可任意調整。 3. 適用於快速近給轉變慢速進給之機床設備等。
FG Type: 2 flow, 2 pressure controlled by solenoid operated valve FG型式: 電控單泵兩段壓力，兩段流量控制			1. Actuators can be shafted slowly (high pressure & low flow) or quickly (high flow & low pressure) by switching direction of solenoid valve. 2. Pressure 'PL', 'PH' and Flow 'QL', 'QH' could be adjusted manually. 1. 功能同"F"型幫浦，電磁閥控制兩段壓力，兩段流量。 2. 可結合遙控閥調整壓力範圍。 3. 可配合比例壓力閥，達成電控比例壓力控制
G Type: Remote pressure compensator control G型式: 遠程壓力補償型式			1. Same as Type A. 2. Pressure can be adjusted remotely by integrated remote pressure control valve. 1. 同壓力補償 "A" 形式。 2. 可做遙控調整壓力，並由遙控閥調整壓力範圍。
H Type: Power matching control H型式: 功率負載調整控制			An ideal energy conservation system, "Power matching system", can be configured by combining the proportional directional control valves with this control system. 1. 此幫浦與比例換向閥並用，能形成理想的省能源系統。 2. 具補償功能，控制幫浦吐出流量，降低油溫，節省馬達功率。
HK Type: Proportional Electro - hydraulic Load Sensing Type HK型式: 電源比例壓力、流量負載感應控制。			1. Best solution of energy saving. 2. With two load sensing valve controlled setting pressure and flow to reaching maximum energy saving. 3. When Combine with electric amplifier PC board, flow & cut-off pressure transfer into input current for proportional control for pressure and flow. 1. 最理想的節能形幫浦控制系統。 2. 具有雙閥式負載感應控制閥驅動所輸入的壓力及流量，達到最佳的能源節約效能。 3. 配合功率放大器，使流量和全載流壓力按功率放大器的輸入電流形成比例式壓力、流量控制。

Control Types 控制方式:

Control Type 名稱	JIS Symbols 液壓符號	Characteristics 性能曲線	Feature 特性
HJ Type: Electro-Hydraulic Proportional Pressure & Flow Control Type HJ型式: 功率負載電磁比例控制		 (小←入力電流→大)	Electro-Hydraulic proportional Pressure & Flow Control Type This is an energy-saving type control which regulates the pump flow and load pressure to be at absolute minimum necessary level to operate the actuator. Pump flow rate and cut-off pressure are controlled proportional to the input current to the control device on the pump and the input current is regulated by the specific amplifier. 1. 具備"H"形幫浦之特性外，再增加壓力負載感應。 2. 裝配電磁比例壓力後，依入力電流比例控制，達到節省能源及馬力的功能。
HL Type: Load Sensing Compensator HL型式: 負載感應控制			Load Sensing Compensator The "HL" compensator is used for load sensing circuits and is a true load sensor. This is the "B" compensator with a pin in the compensator. The pin prevents pilot flow from entering the circuit which will eliminate creeping of the load. The "HL" compensator will let the pump deliver a constant flow rate to the circuit by providing an adjustable "P" across the customers orifice or valve. The pump will operate at 17.2-27.5bar (250-400 PSI) above "Load Pressure". 1. 利用流量控制閥前後壓差的定值，控制幫浦流量。 2. 當控制負載壓力固定時，流量大小由節流閥控制，幫浦自動感應並輸出恆定流量，達到省能源功能。

Cautions:

1. Hydraulic oil

- ◎In case hydraulic pressure is under 6.9MPa (70 krf/cm²), use hydraulic oil which is corresponding to ISO VG32-60 in viscosity grade or wear resisting hydraulic oil.
- ◎In case hydraulic pressure is over 6.9MPa (70kgf/cm²), use wear resisting hydraulic oil which is corresponding to ISO VG32-68 in viscosity grade.
- ◎In case the following oils are used, please consult with sales representative such as Phosphate ester family, Fatty acid ester family, Water+Glycol family, Water-in-oil emulsion, HWBF

2. Viscosity and oil temperature

- ◎Oil viscosity ranging from 15mm²/s to 400mm²/s and oil temperature ranging from 0°C to 60°C are recommended.

3. Alignment and installation of pumps

- ◎Eccentricity between the driving shaft and pump shaft should be under 0.05 TIR, and operate the pump in such a way that the pump shaft is not subjected to orthogonal force. If centering between the driving shaft and pump shaft is incorrect, the bearing and oil seal may be damaged and noise and vibration may occur, which cause trouble with the pump.
- ◎Avoid driving the pump in the lateral direction by belt, chain or gears. (This may cause noise and damage the bearing.)
- ◎The pump can be operated with its shaft mounted perpendicularly.

使用注意事項：

一、液壓油選擇注意事項

1. 壓力在70kgf/cm²以下時，請選擇ISO粘度標準在VG32-68的液壓油或抗磨液壓油。
2. 使用壓力在70kgf/cm²以上時，請選擇ISO粘度標準在VG 32-68相當的耐磨耗液壓油。
3. 使用以下液壓油時，磷酸酯系、脂肪酸酯系水—甘醇系、W/O乳液、HWBF，請和銷售人員諮詢。

二、粘度和油溫

- ◎請在粘度15-40 mm²/S，油溫0-60°C兩條件範圍內使用。

三、泵的安裝和偏心

- ◎驅動軸和泵軸的偏心在0.05mm以下，在泵軸上不能有徑向力。
- ◎當軸心不一致時，會產生軸承、O形環會損傷、噪音、震動，以及造成泵浦故障原因。
- ◎避免皮帶鏈條齒輪等傳動方式，側向驅動泵浦。(這是產生噪音和軸承損壞的原因)。

4. Piping work

- ◎ Use parallel thread pipe joints for the suction inlet and discharge outlet. Do not use taper thread piping joints, or air may intrude or abnormal noise be produced.
- ◎ In case where steel pipes are used, lay piping with care so as not to put force on the pump.
- ◎ Eccentricity of a pump being forced by piping may cause serious trouble with noise.

5. Drain piping

- ◎ Lay the drain piping independently not joined with other return lines, in such a way that the pump internal pressure is under 0.04MPa (0.35kgf/cm²).
- ◎ Lay the oil return piping under the oil level of the tank and as far as possible from the suction piping. (refer to the table below)

6. Cautions for starting

- ◎ Before starting the pump, fill the pump case with hydraulic oil using the case drain charging port on the pump body.
- ◎ Do not operate the pump at full speed right away. Instead, turn the motor input switch on - off several times so as to extract air from the piping, then operate it continuously. At the start, be sure to reduce the pressure or operate it unloaded.

7. Revolution direction

- ◎ Shaft rotation is clockwise viewed from the end of pump shaft. In case reverse revolution is required, indicate it by Model No. at a time of your order.

8. Suction pressure

- ◎ Adjust suction pressure to within -16.7kPa (-125mmHg).
- ◎ High suction pressure may cause cavitation, damage of parts, noise and vibration which greatly shorten the life of pumps.

9. Filter

- ◎ Deterioration of the hydraulic oil may cause trouble with the pump and shorten its life. Carefully control the quality of the oil so as to maintain the deterioration of the oil within Grade NAS9.
- ◎ Be sure to attach a suction filter of 150 mesh to the suction side and a line filter of 25 to the return line of the discharge side.

10. Max. working pressure

- ◎ Operating period at maximum working pressure should be under 10% of one cycle and the retaining period should be under 6 seconds. working pressure are described in the operation manual.

四、油管的安裝

- ◎ 吸油口和排油口的管接頭，必須用於管壁平的螺紋，如用錐螺紋時，需注意空氣混入，產生異常噪音。
- ◎ 還有，以鋼管配管時注意不要硬性的使泵偏心。
- ◎ 接管強制性的偏心，是產生噪音的最大原因。

五、洩漏油管

- ◎ 洩漏油管，與其他的回油管不能合流。要單獨回油，保持泵殼內壓力在0.35kgf/cm²以下。
- ◎ 回油管請插入油箱液面以下，並盡量遠離吸油管。

六、啟動時注意點

- ◎ 啟動泵前，將泵體注油口注入液壓油，當泵殼充滿油後再啟動。
- ◎ 啟動時，不要急速昇至全速轉動，起初使電動機開關反覆ON-OFF，待管中的空氣排出後再連續運轉。務必降壓在無負載迴路狀態起動。

七、迴轉方向

- ◎ 以泵軸端方向、順時針是標準方向，反轉時，訂購時請指出特定記號“L”。

八、吸油壓力

- ◎ 吸油壓力請保持-125mmHg以內。
- ◎ 吸油壓力-高，則產生氣蝕。元件易損壞，產生噪音、震動，壽命降低。

九、濾油器

- ◎ 液壓油的污染，是泵出故障以及壽命降低的原因，請充分注意液壓油的污染，控制污染度在NAS 9級以內。
- ◎ 在吸油口使用150目的吸油濾清器。主回油管上務必使用25u以下的濾油器。140kgf/cm²以上的場合，請使用10u的濾油器。

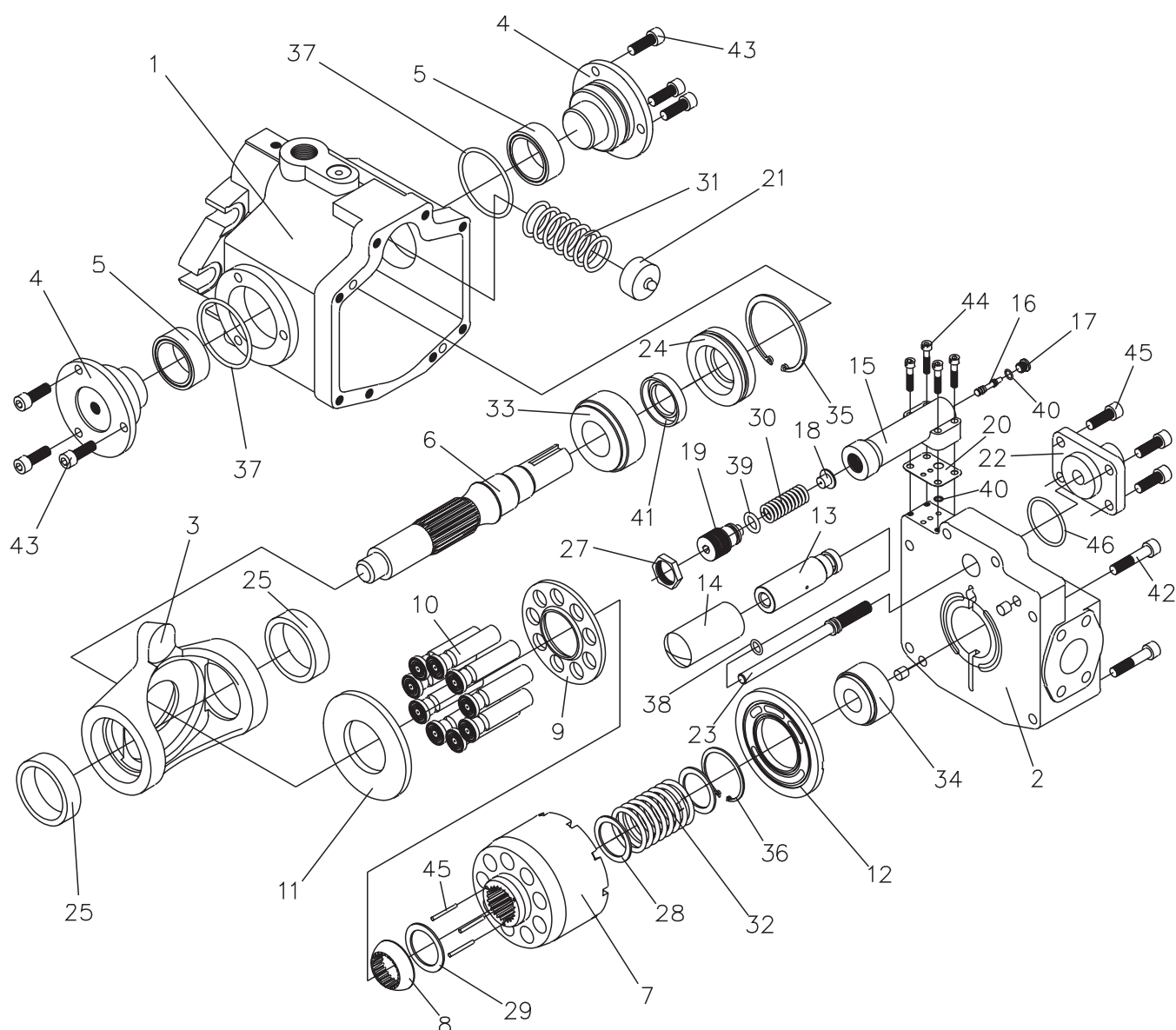
十、最高使用壓力

- ◎ 最高壓力下運轉的時間，作為一個循環10%以下，保持時間在6秒以內。
- ◎ 關於最高使用壓力運轉時間的限制，請參照使用說明。

項目 \ 規格	V15, V18, V23	V38	V50, V70
Size of pipe joints 接油管尺寸	3/8 (I.D. 8.5 or more) (內徑 ϕ 8.5以上)	1/2 (I.D. 12 or more) (內徑 ϕ 12以上)	3/4 (I.D. 16 or more) (內徑 ϕ 16以上)
I.D of pipes 油管內徑	Dia. 12 or more, ϕ 12以上	Dia 15 or more ϕ 15以上	Dia. 19 or more ϕ 19以上
Length of drain pipes 洩漏管長	Under 1m 1m以下	Under 1m 1m以下	Under 1m 1m以下

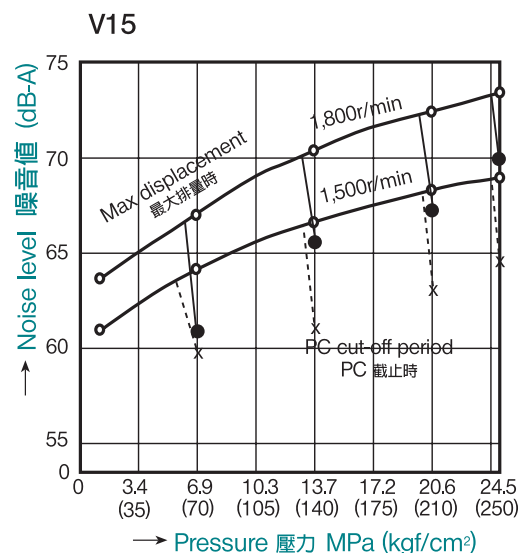
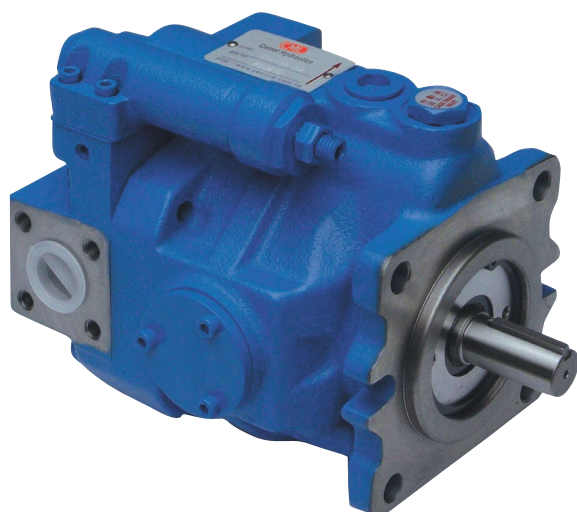
Variable Displacement Piston Pumps

可變柱塞幫浦

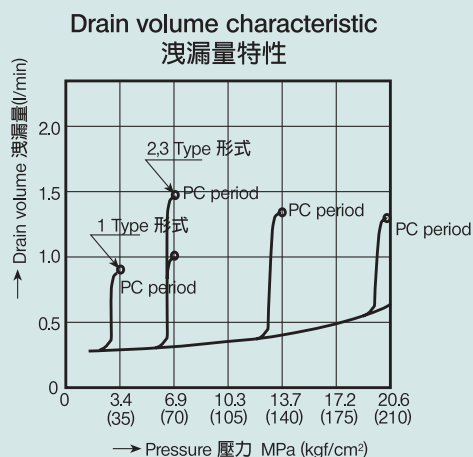
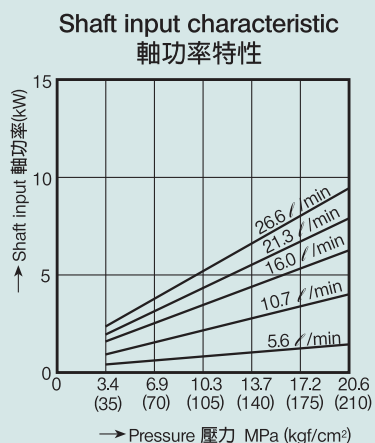
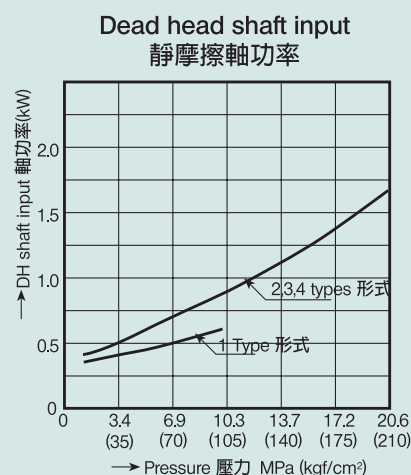
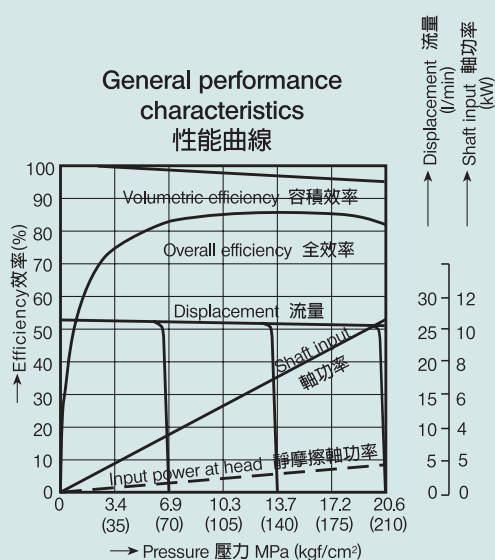


1. pump body	本體	24. pilot cover	軸蓋
2. pump body, end cove	本體蓋	25. sleeve, swash plate	曲柄襯套
3. swash plate	曲柄轉座	26. Bolt	螺絲
4. swash shaft	曲柄軸心	27. lock nut	螺帽
5. sleeve, swash plate	曲柄軸套	28. washer cylinder	華司
6. shaft	軸心	29. washer cylinder	華司
7. cylinder block	活塞缸體	30. control spring	控制彈簧
8. cylinder block holder	半圓球	31. servo spring	伺服彈簧
9. slipper retainer	滑靴定位板	32. retainer spring	定位彈簧
10. piston and slipper, crimp	活塞組	33. bearing front	體軸承
11. slipper plate	滑靴片	34. bearing rear	後蓋軸承
12. valves plate	導油板	35. snap ring	扣環
13. sleeve piston	活塞套軸	36. snap ring for bore	缸體扣環
14. servo piston sleeve	伺服活塞管	37. o-ring	油封
15. pressure compensater	調壓器	38. o-ring	油封
16. compensater spool	調壓軸心	39. o-ring	油封
17. port plug	塞頭	40. o-ring	油封
18. spring seat	彈簧頂座	41. shaft seal	軸心油封
19. screw	螺絲	42. bolt-end cover	蓋螺絲
20. gasket	墊片	43. bolt-side cover	曲柄螺絲
21. servo spring seat	彈簧伺服頂座	44. bolt-compensater	調壓螺絲
22. cover-flow controller	流量調整蓋板	45. bolt-flow controller	螺絲
23. flow adjusting screw	流量螺絲	46. o-ring	油封

V15 Series 系列



Typical performance characteristics 性能特性

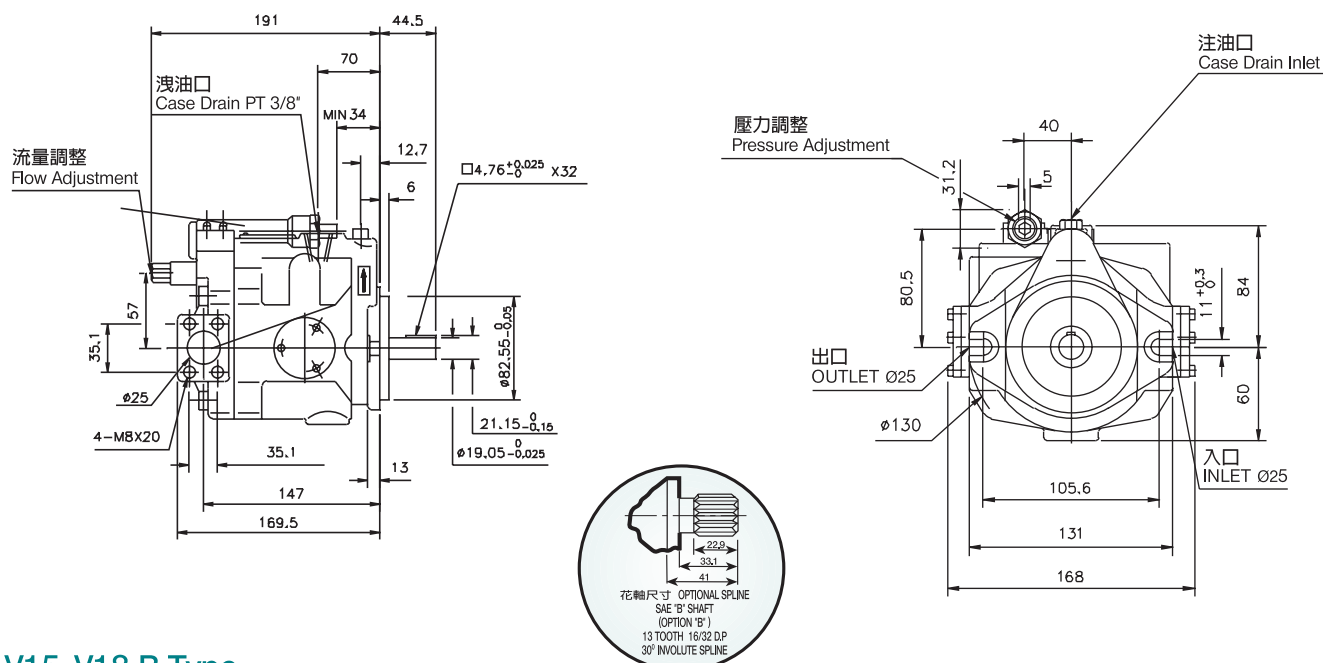


- * Input speed 軸轉速 : 1,800r/min
- * Oil 使用油 : ISO VG32
- * Oil temperature 油溫 : 50°C

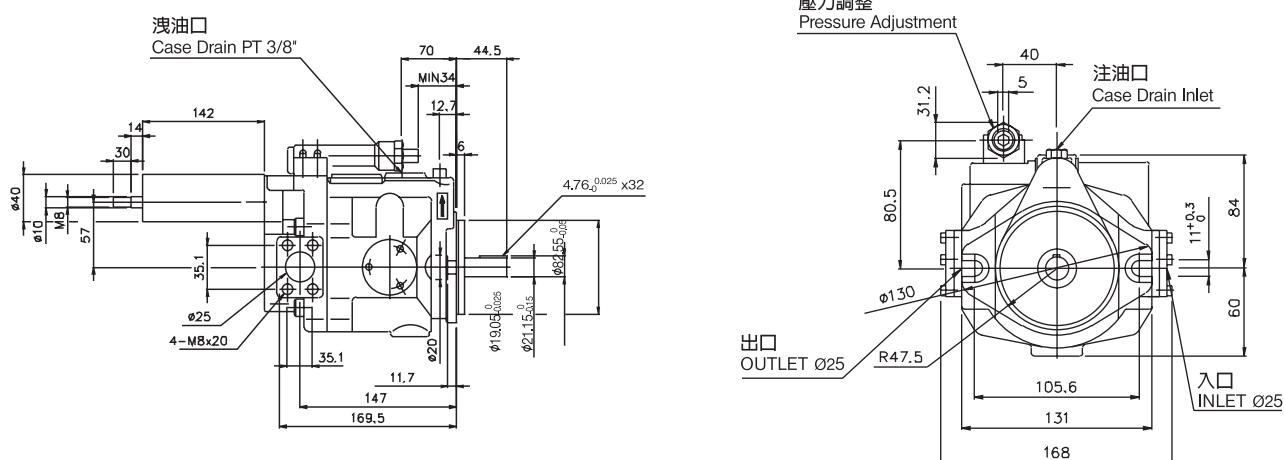
Unit 單位: mm

■ Dimensions 外型尺寸圖 : (Mounting Surface: SAE "A" 2-bolt)

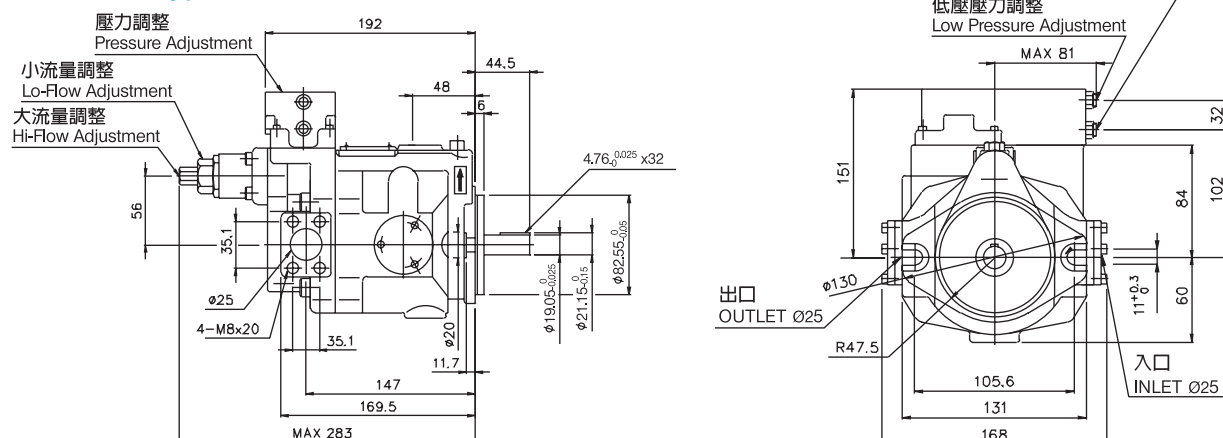
V15, V18 A Type



V15, V18 B Type



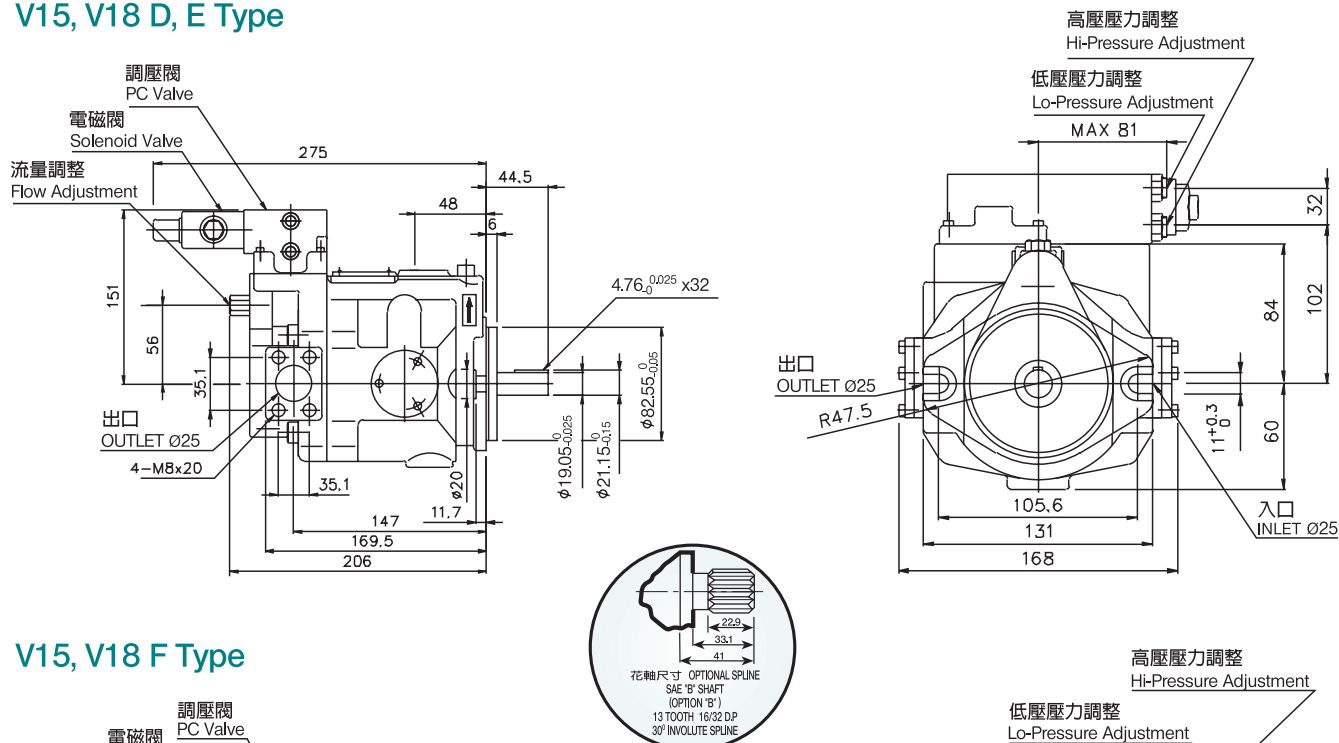
V15, V18 C Type



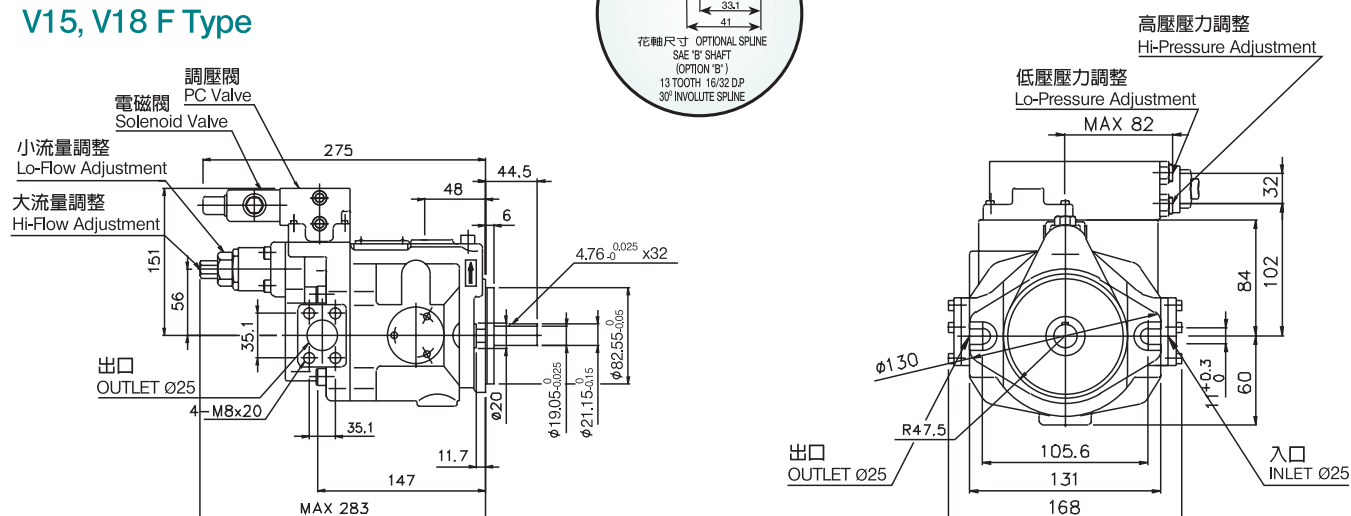
Unit 單位: mm

■ Dimensions 外型尺寸圖 : (Mounting Surface: SAE "A" 2-bolt)

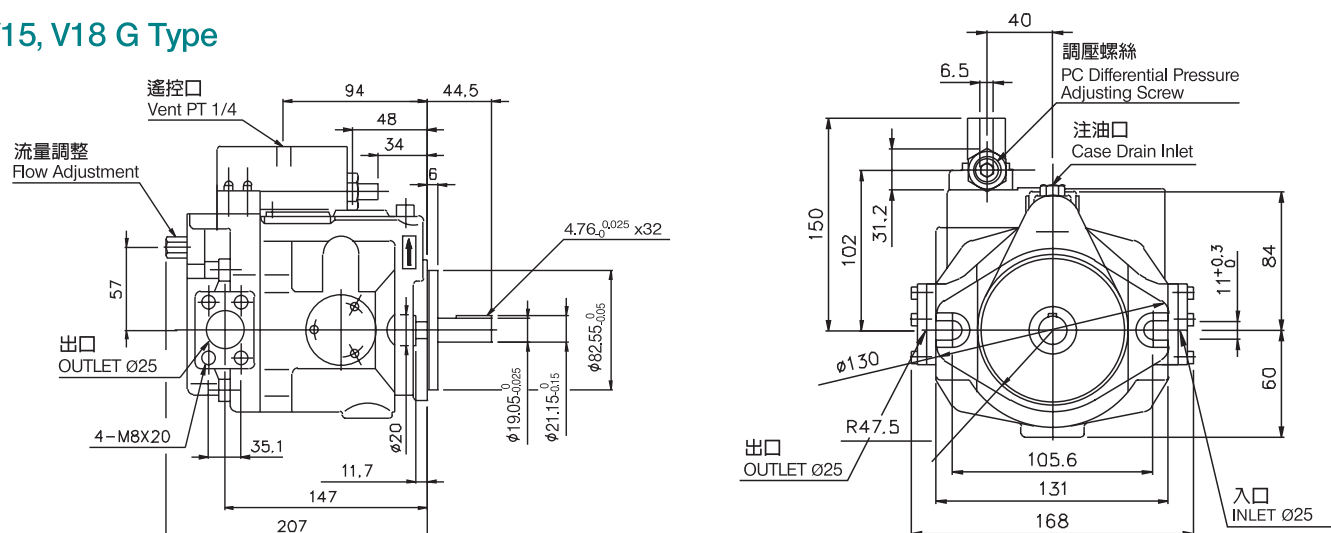
V15, V18 D, E Type



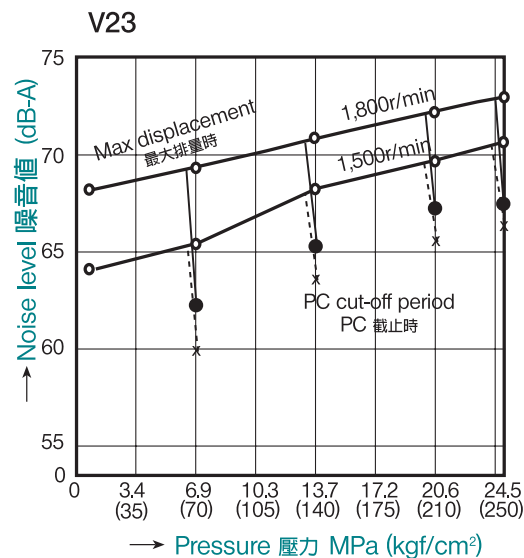
V15, V18 F Type



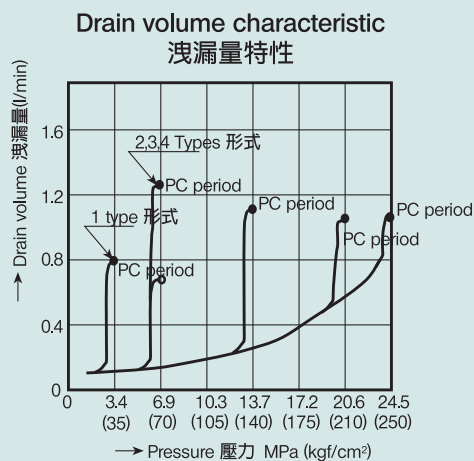
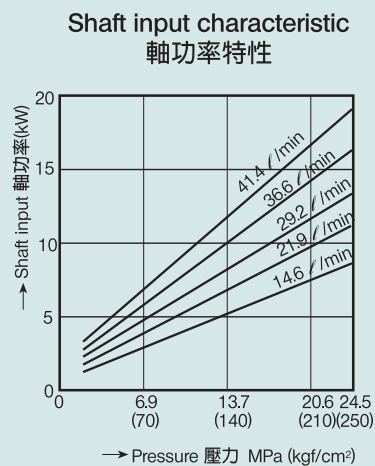
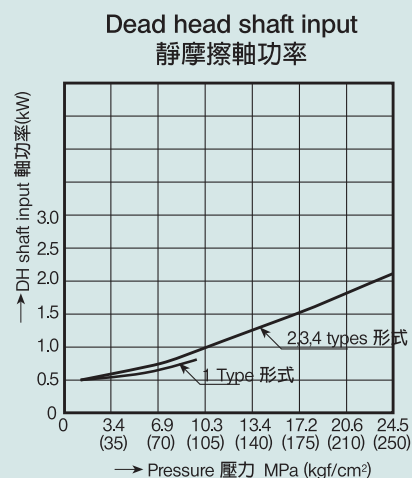
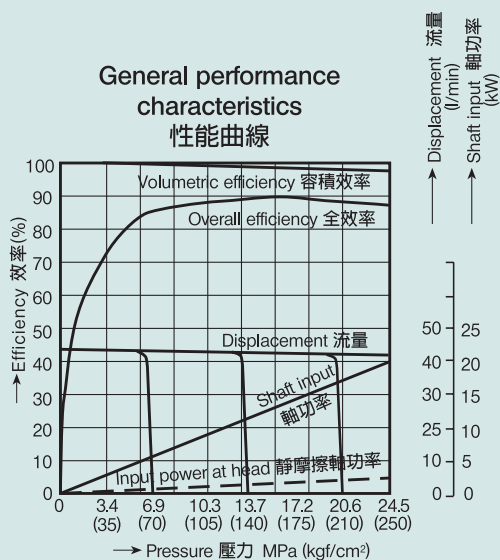
V15, V18 G Type



V23 Series 系列



Typical performance characteristics 性能特性

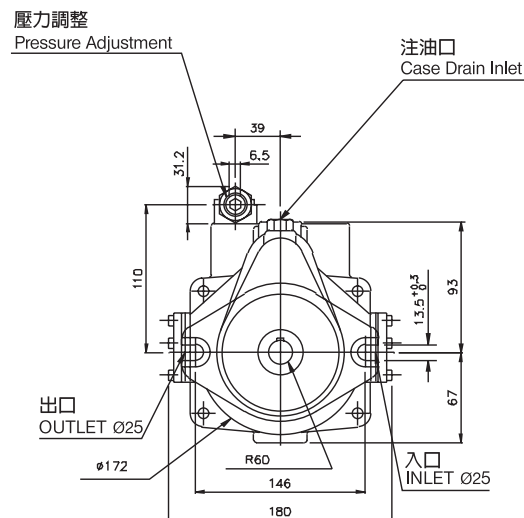
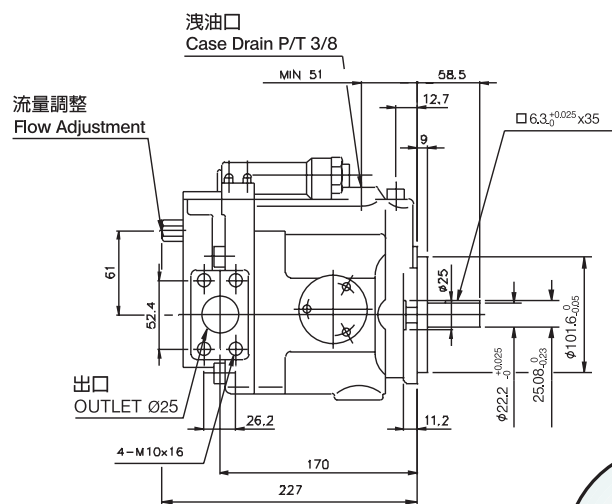


* Input speed 軸轉速 : 1,800r/min
 * Oil 使用油 : ISO VG32
 * Oil temperature 油溫 : 50°C

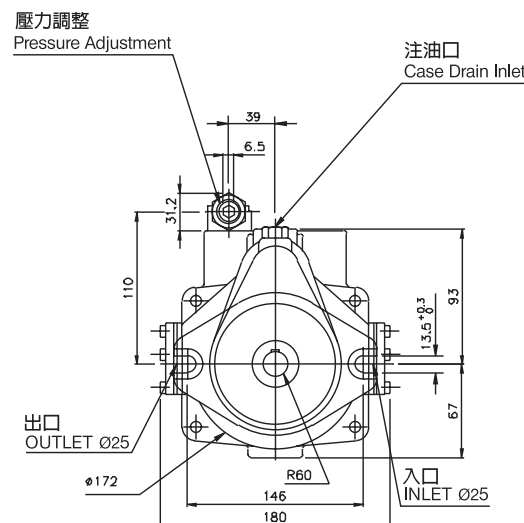
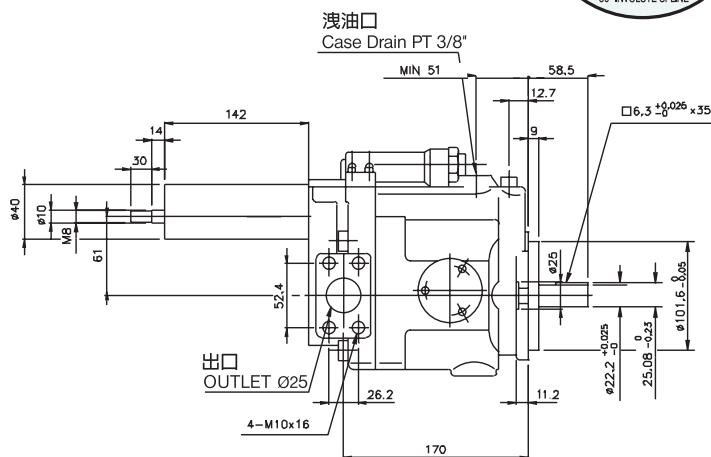
Unit 單位: mm

■ Dimensions 外型尺寸圖 : (Mounting Surface: SAE "B" 2-bolt)

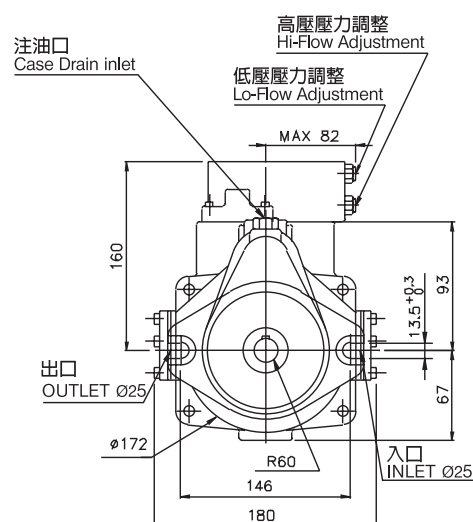
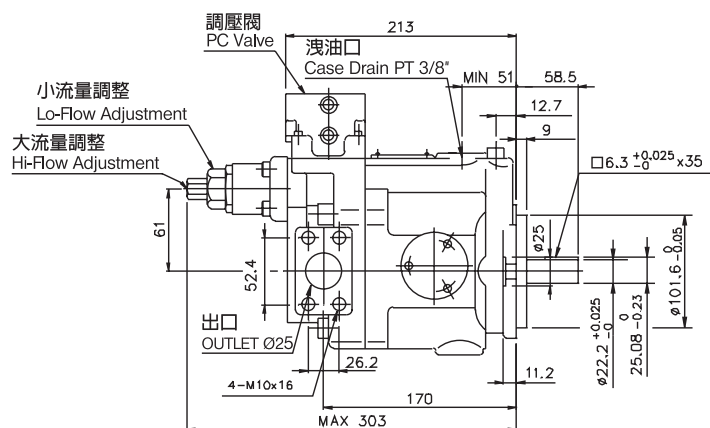
V23 A Type



V23 B Type



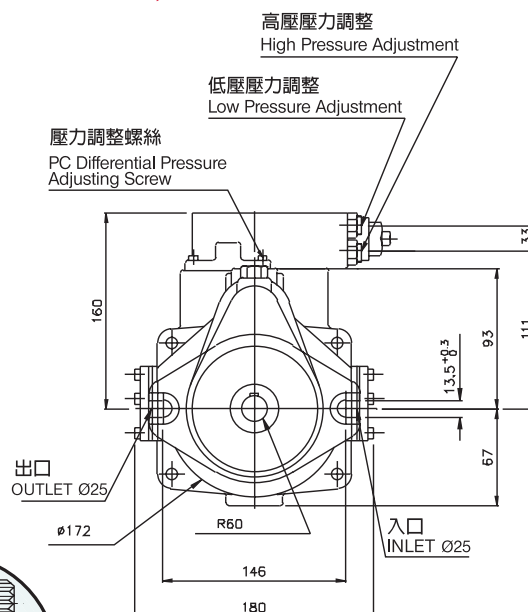
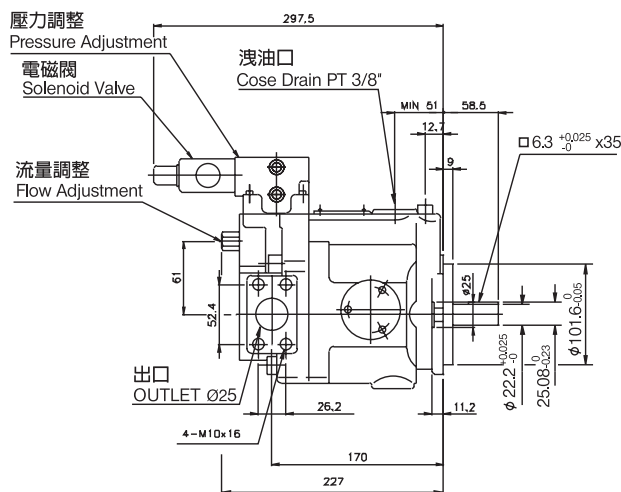
V23 C Type



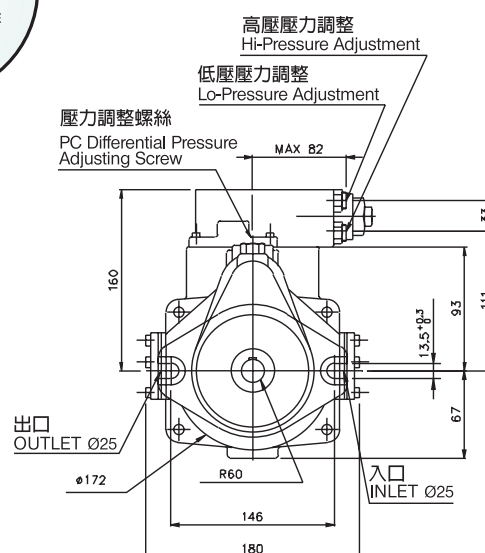
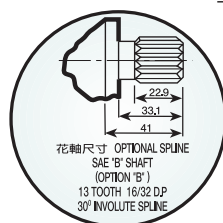
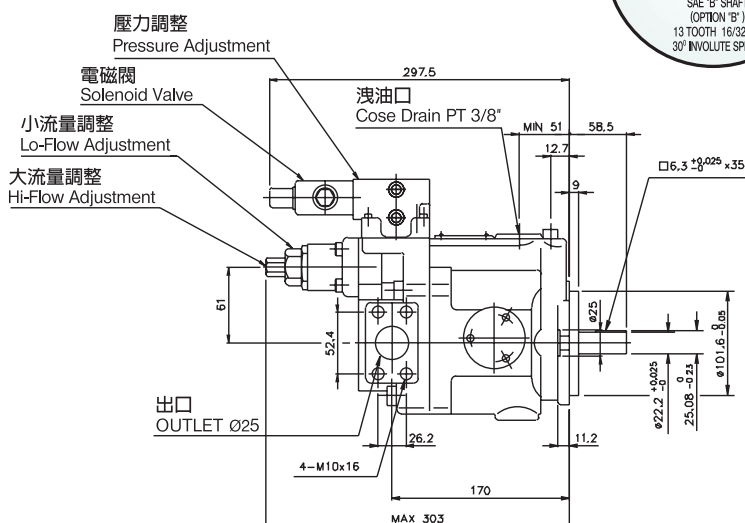
Unit 單位: mm

Dimensions 外型尺寸圖 : (Mounting Surface: SAE "B" 2-bolt)

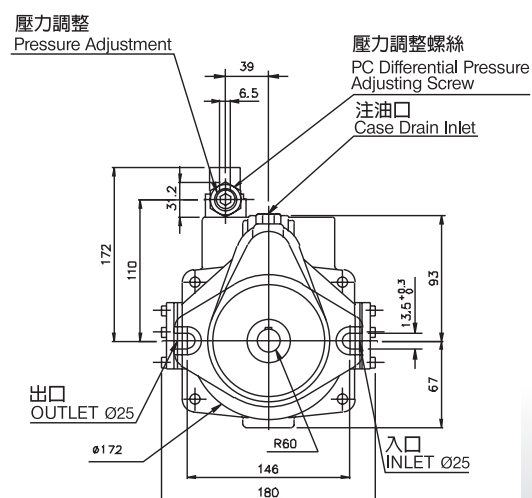
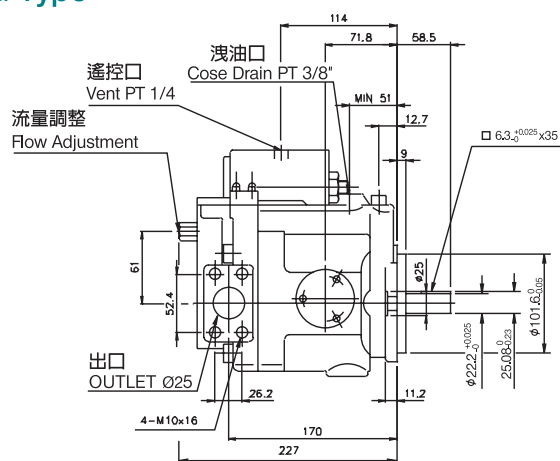
V23 D,E Type



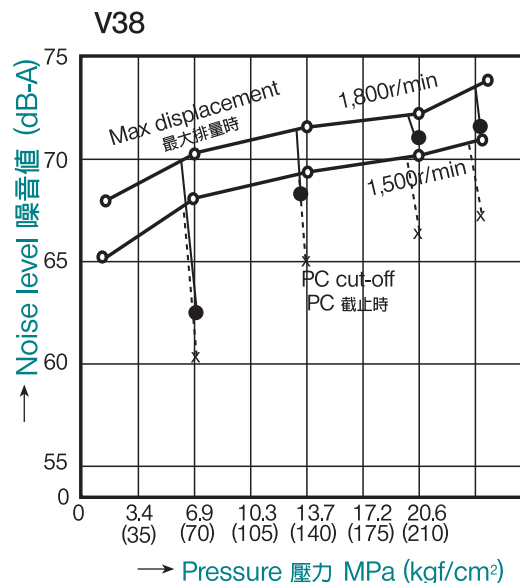
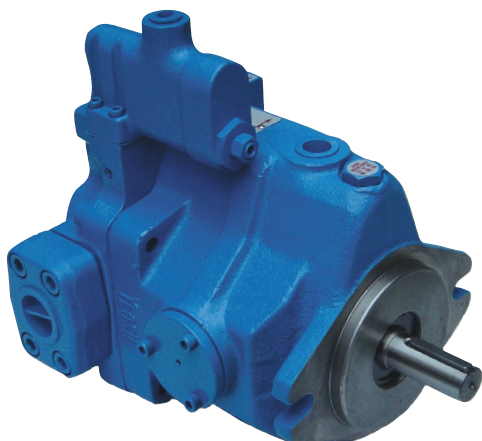
V23 F Type



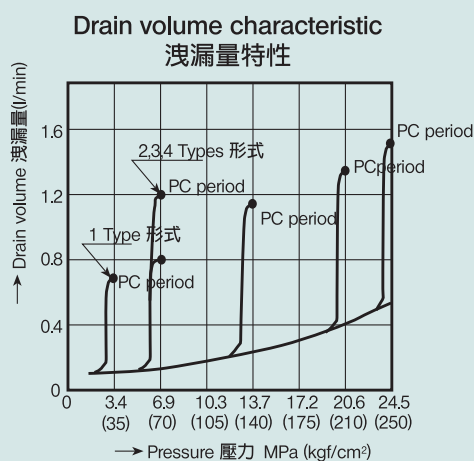
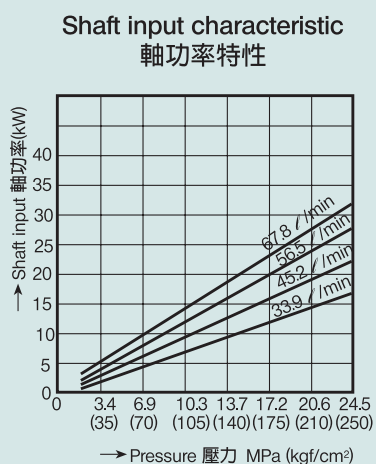
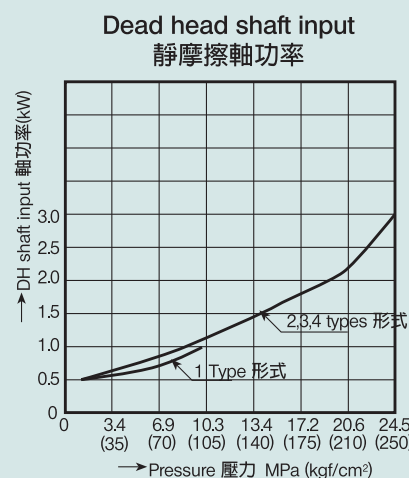
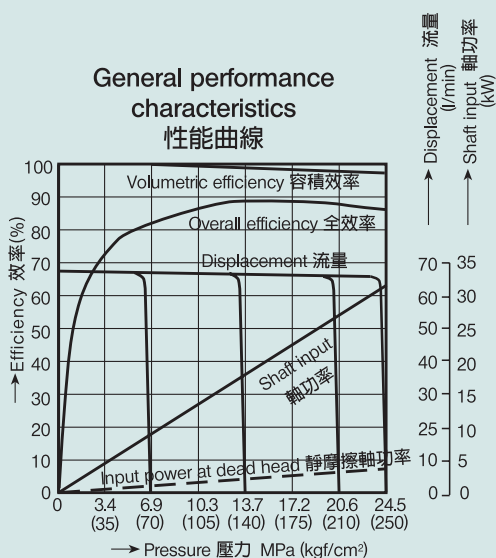
V23 G Type



V38 Series 系列



Typical performance characteristics 性能特性



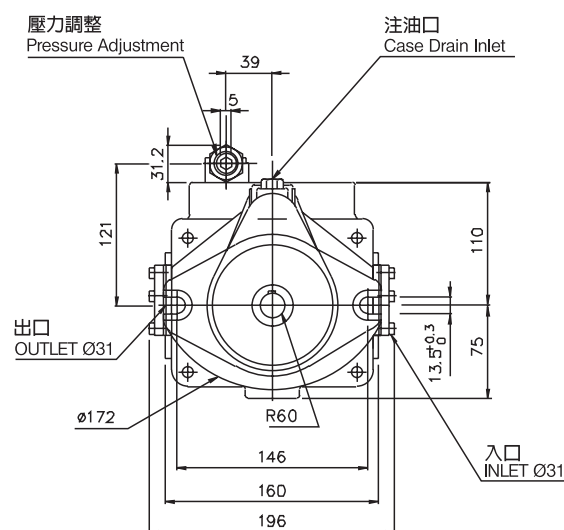
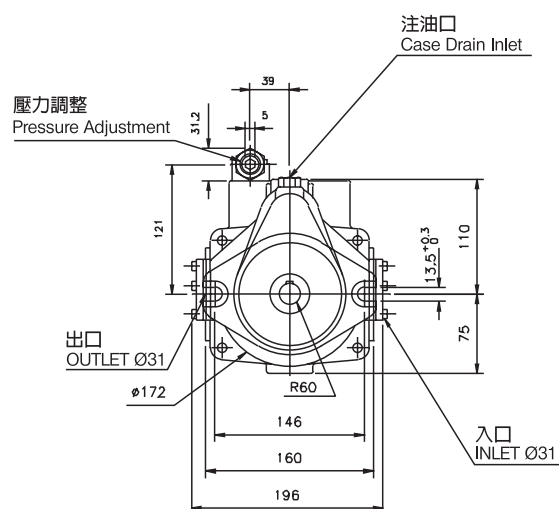
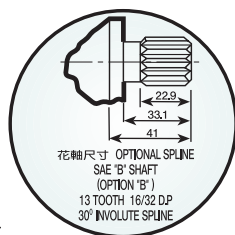
- * Input speed 軸轉速 : 1,800r/min
- * Oil 使用油 : ISO VG32
- * Oil temperature 油溫 : 50°C

■ Dimensions 外型尺寸圖 : (Mounting Surface: SAE "B" 2-bolt)

Technical drawing of the front view of a hydraulic cylinder. The drawing shows a cylindrical body with a central rod extending to the right. Key features include a 'Case Drain PT 1/2"' at the top, a '流量調整' (Flow Adjustment) screw on the left, and an 'OUTLET Ø31' at the bottom left. Dimensions are provided in millimeters: overall width 233, body diameter Ø101.6, rod diameter Ø25, and various mounting and adjustment dimensions. Tolerances are indicated for the rod diameter and the flow adjustment screw.

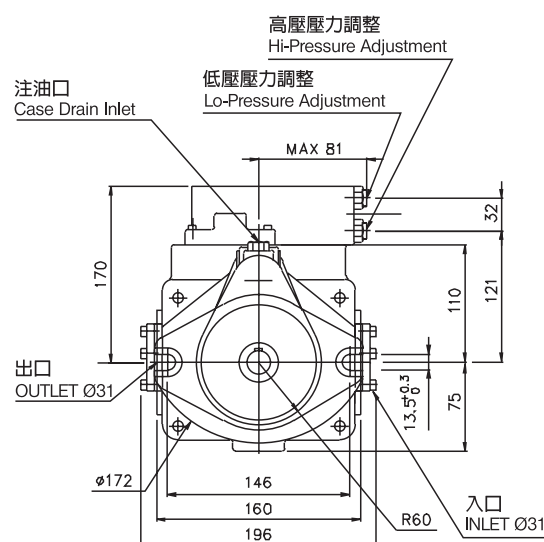
Dimensions and Tolerances:

- Overall Width: 233
- Body Diameter: Ø101.6_{+0.05}
- Rod Diameter: Ø25
- Flow Adjustment Screw: 4-M10X16
- Outlet Diameter: Ø31
- Case Drain PT: 1/2"
- Flow Adjustment: 流量調整
- Flow Adjustment Tolerance: 6.3^{+0.025}₀ x35
- Flow Adjustment Tolerance: 22.2^{+0.025}₀
- Flow Adjustment Tolerance: 25.08_{0.023}
- Flow Adjustment Tolerance: 11.2
- Flow Adjustment Tolerance: 30.2
- Flow Adjustment Tolerance: 56.7
- Flow Adjustment Tolerance: 73.0
- Flow Adjustment Tolerance: 51
- Flow Adjustment Tolerance: 58.5
- Flow Adjustment Tolerance: 12.7
- Flow Adjustment Tolerance: 9.0



Technical drawing of the PC Valve (Model 308) showing dimensions and labels:

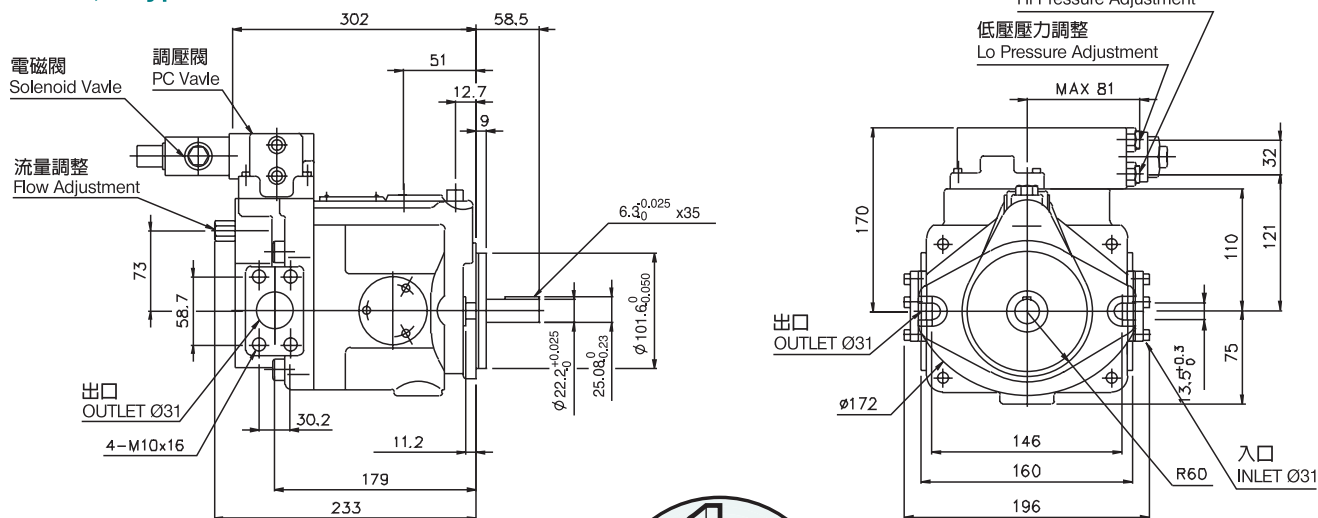
- Dimensions:**
 - Overall width: 218
 - Overall height: 58.5
 - Top flange width: 51
 - Top flange thickness: 12.7
 - Top flange offset: 9
 - Top flange hole diameter: $\phi 6.3^{+0.025}_0 \times 35$
 - Top flange hole offset: 25.08 ± 0.23
 - Top flange hole diameter: $\phi 22.2^{+0.025}_0$
 - Top flange hole offset: 101.6 ± 0.005
 - Top flange hole diameter: $\phi 101.6^{+0.005}_0$
 - Top flange hole offset: 11.2
 - Top flange hole diameter: $\phi 30.2$
 - Top flange hole offset: 179
 - Top flange hole diameter: MAX 308
 - Top flange hole offset: 73
 - Top flange hole diameter: 58.7
 - Top flange hole offset: 4-M10x16
 - Top flange hole diameter: OUTLET $\phi 31$
 - Top flange hole offset: 30.2
 - Top flange hole diameter: 11.2
 - Top flange hole offset: 179
 - Top flange hole diameter: MAX 308
- Labels:**
 - 調圧閥 (Pressure Valve)
 - PC Valve
 - 小流量調整 (Lo-Flow Adjustment)
 - Lo-Flow Adjustment
 - 大流量調整 (Hi-Flow Adjustment)
 - Hi-Flow Adjustment
 - 出口 (Outlet)
 - OUTLET $\phi 31$



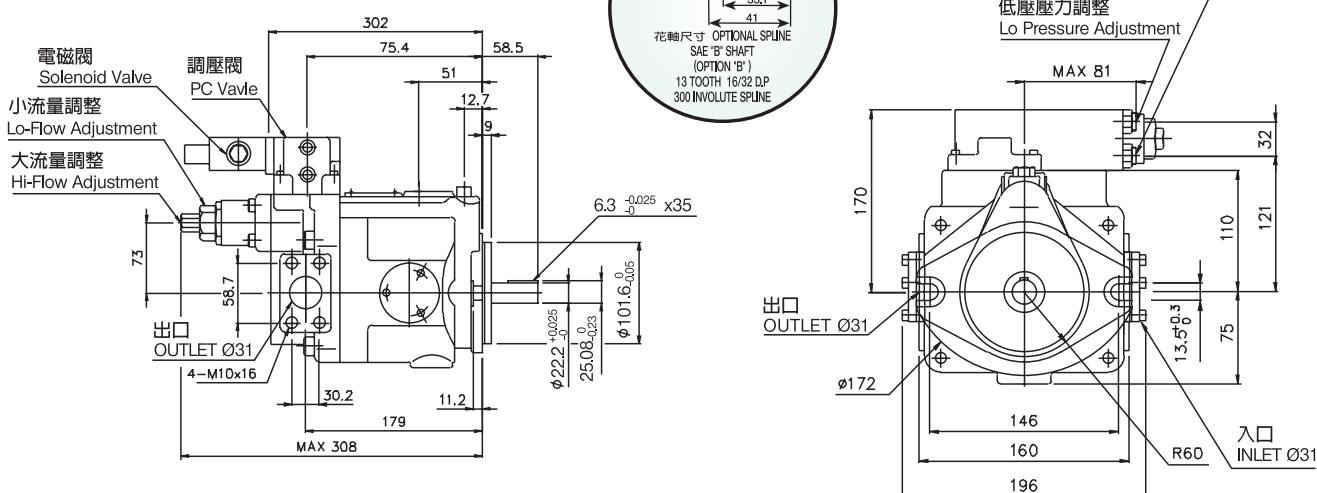
Unit 單位: mm

■ Dimensions 外型尺寸圖 : (Mounting Surface: SAE "B" 2-bolt)

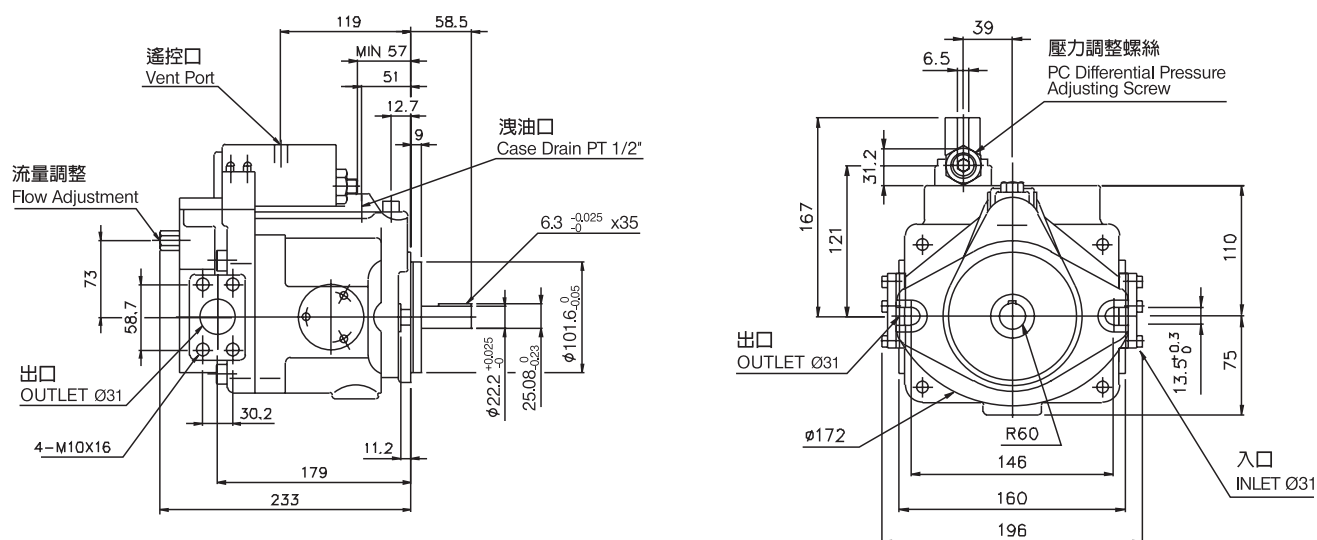
V38 D,E Type



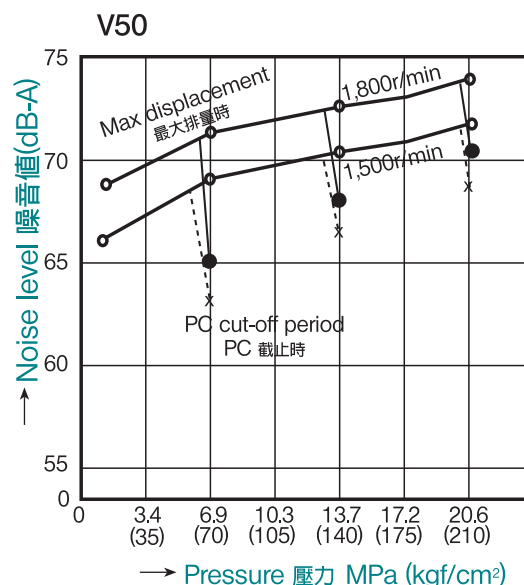
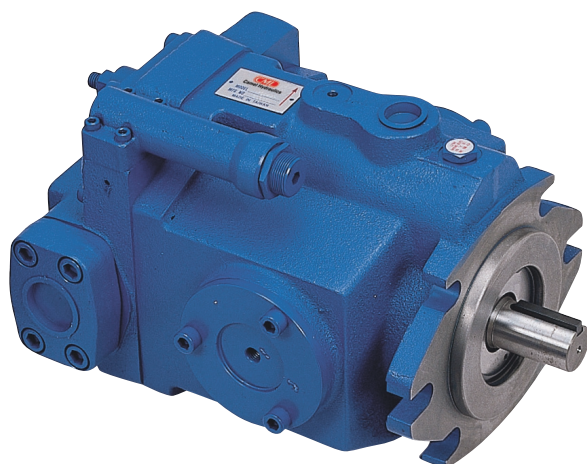
V38 F Type



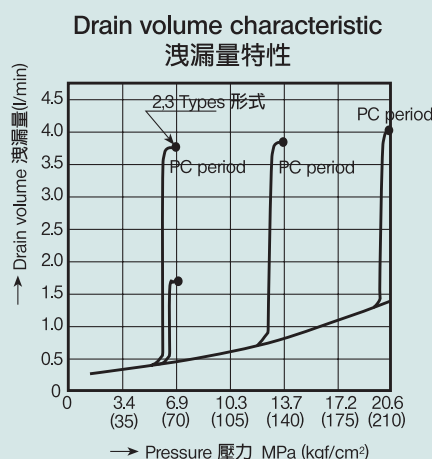
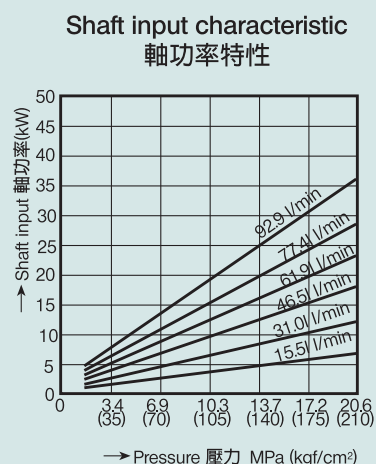
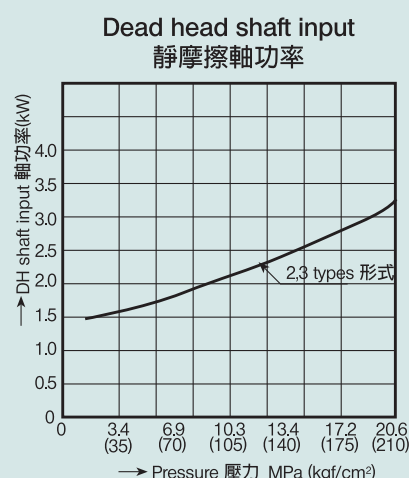
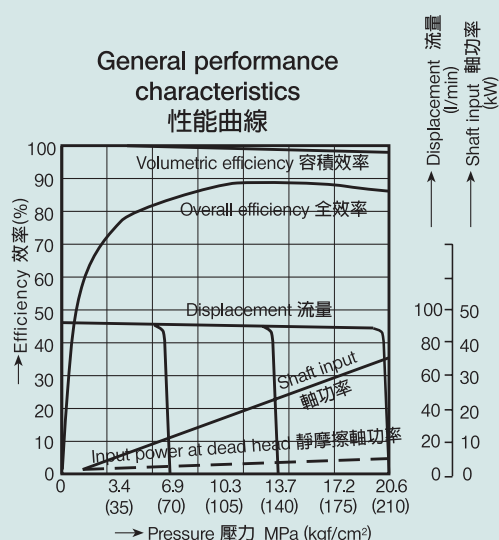
V38 G Type



V50 Series 系列



Typical performance characteristics 性能特性

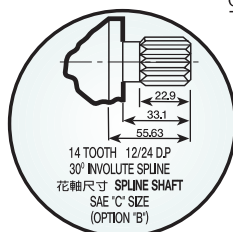
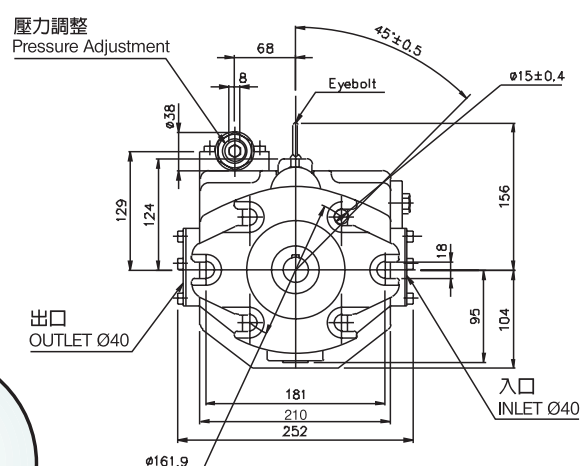
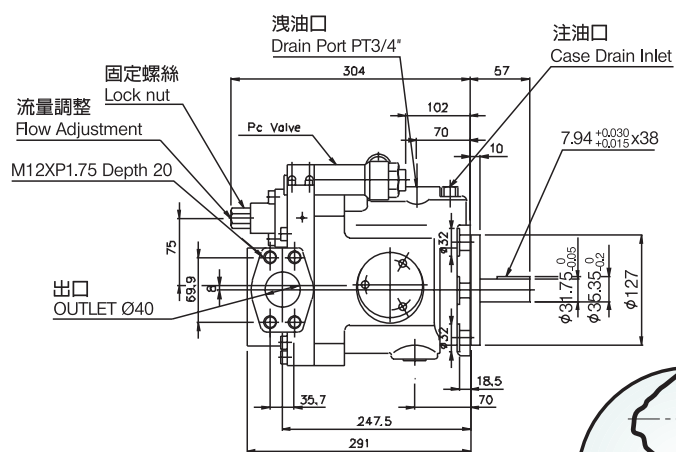


* Input speed 軸轉速 : 1,800r/min
 * Oil 使用油 : ISO VG32
 * Oil temperature 油溫 : 50°C

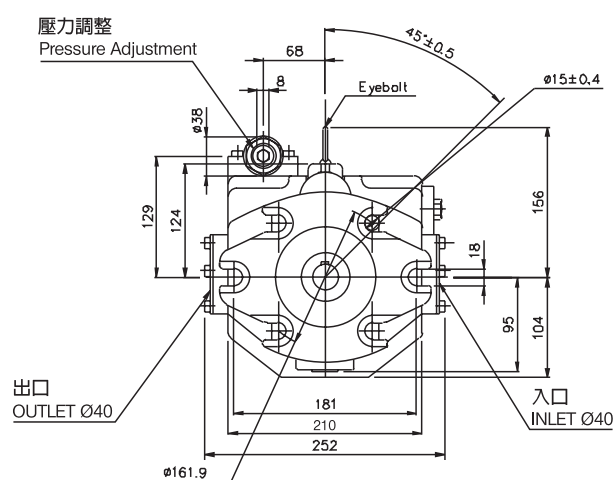
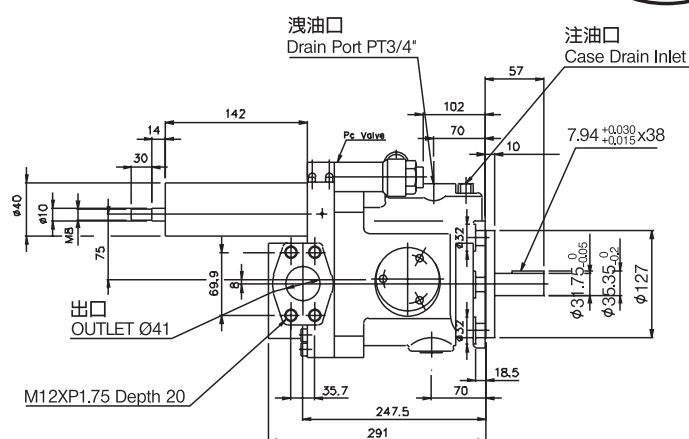
Unit 單位: mm

■ Dimensions 外型尺寸圖 : (Mounting Surface: SAE "C" 2-bolt & 4-bolt)

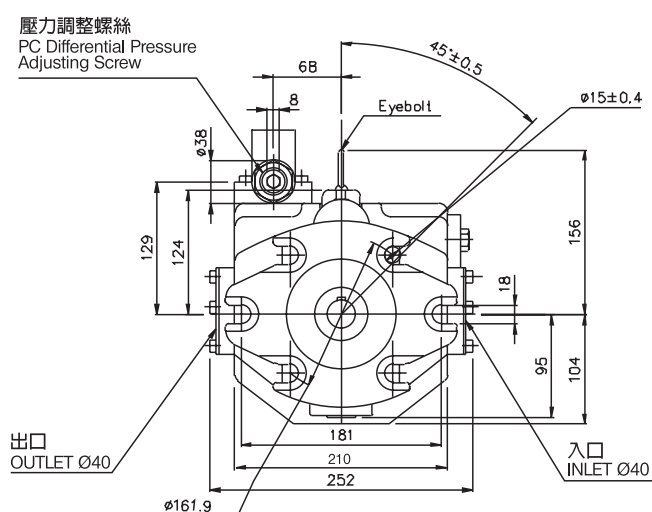
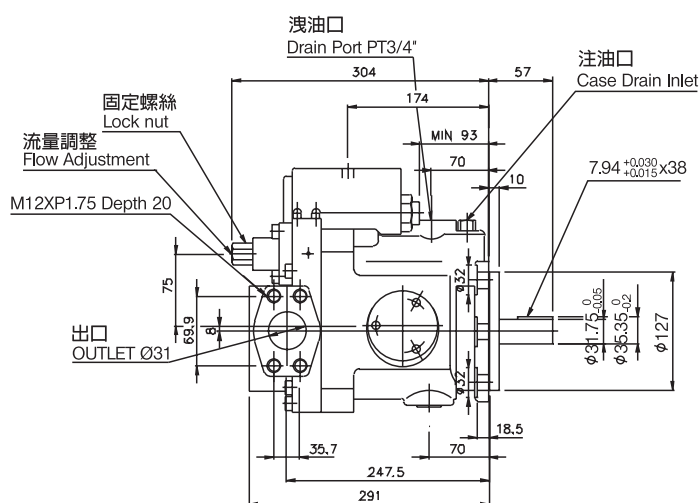
V50 A Type



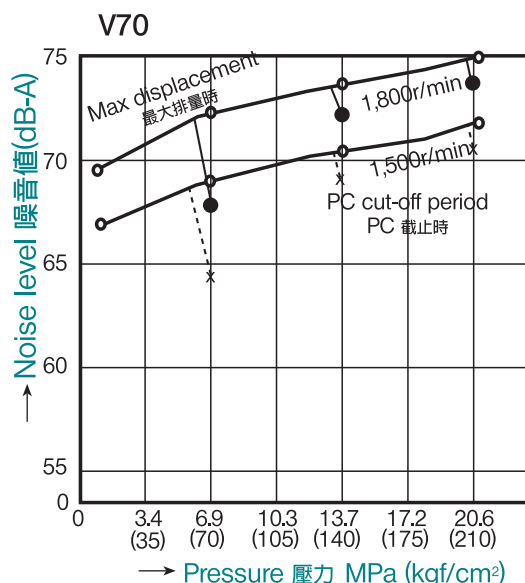
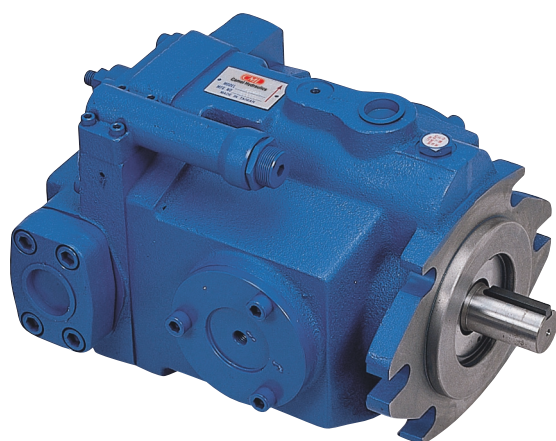
V50 B Type



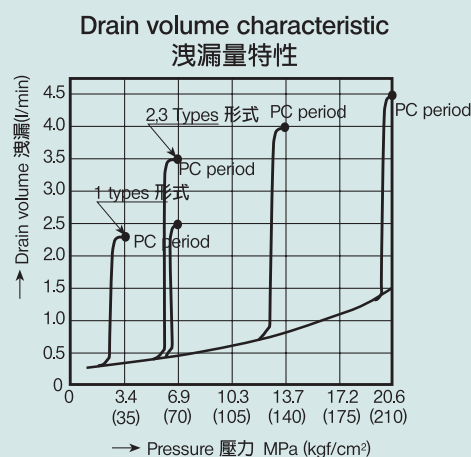
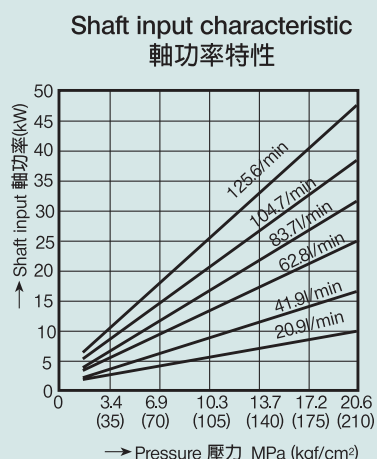
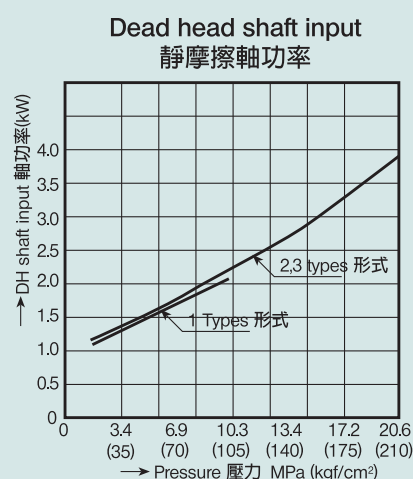
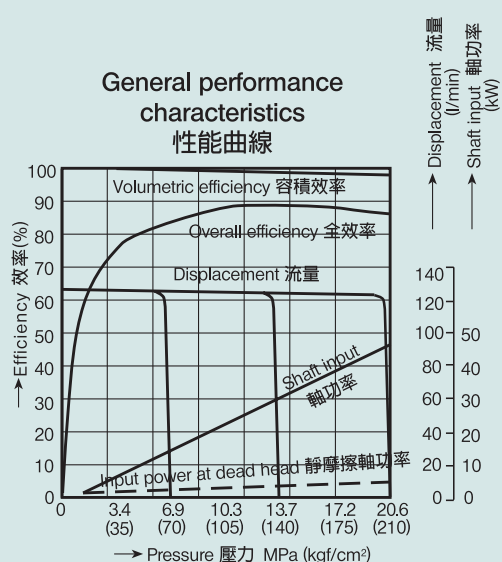
V50 G Type



V70 Series 系列



Typical performance characteristics 性能特性



* Input speed 軸轉速 : 1,800r/min
 * Oil 使用油 : ISO VG32
 * Oil temperature 油溫 : 50°C

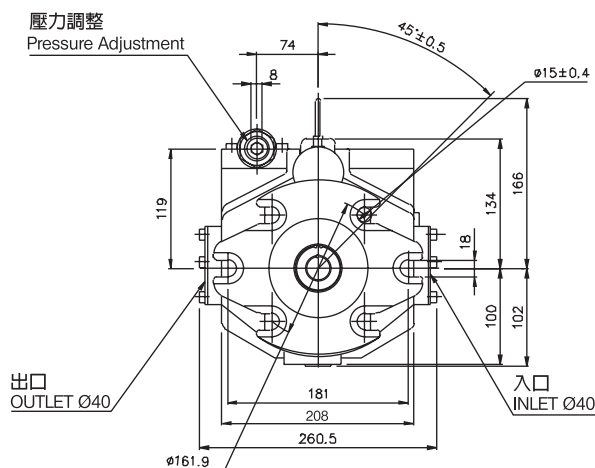
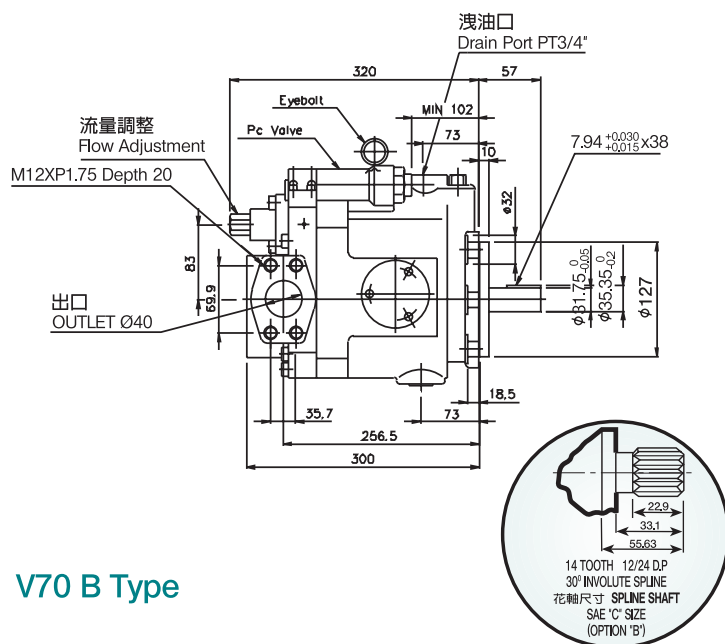
Variable Displacement Piston Pumps

可變柱塞幫浦

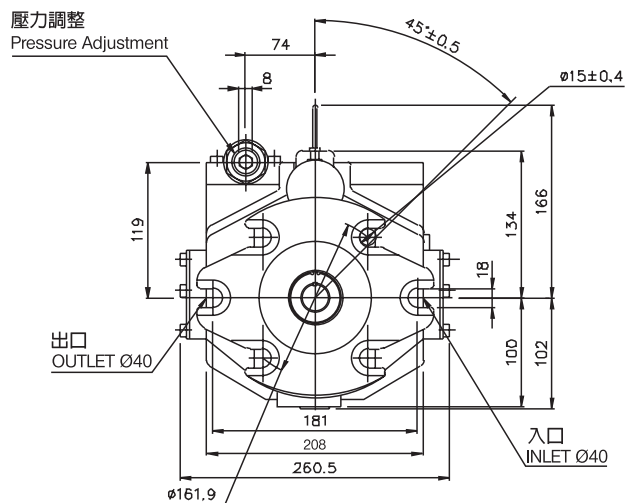
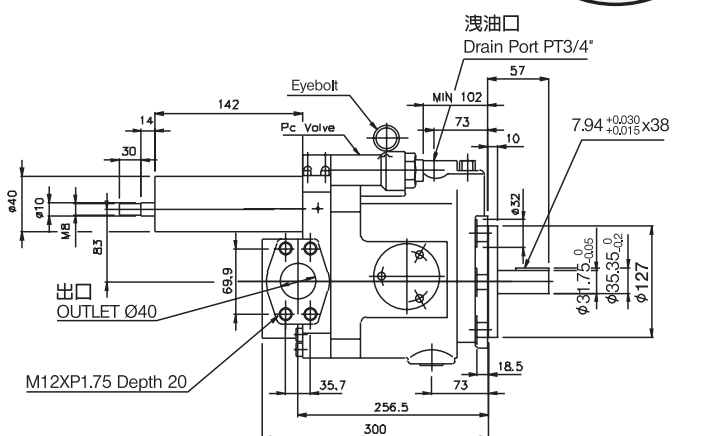
Unit 單位: mm

■ Dimensions 外型尺寸圖 : (Mounting Surface: SAE "C" 2-bolt & 4-bolt)

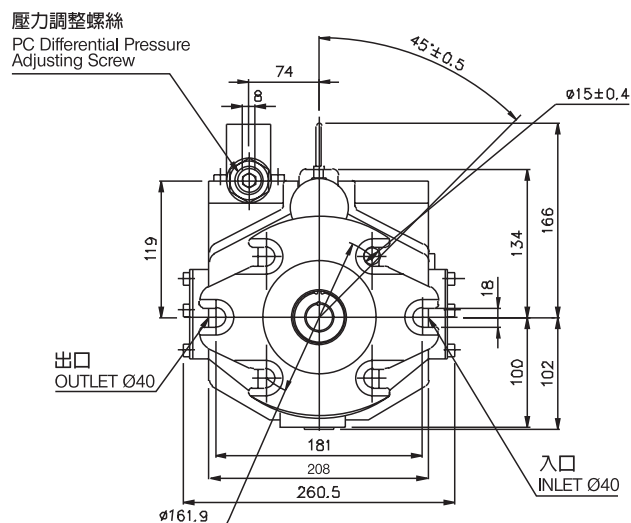
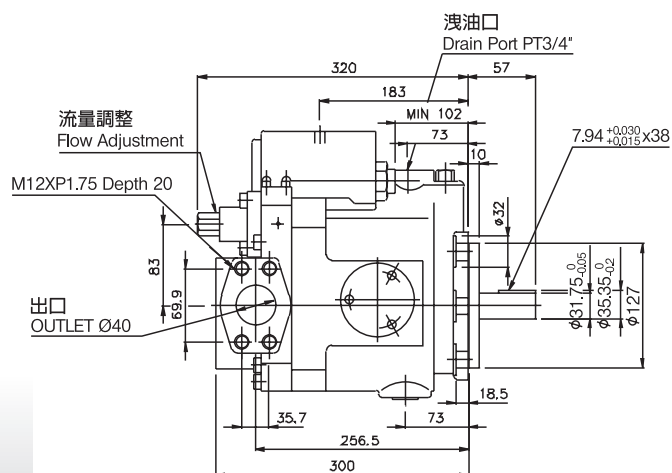
V70 A Type



V70 B Type



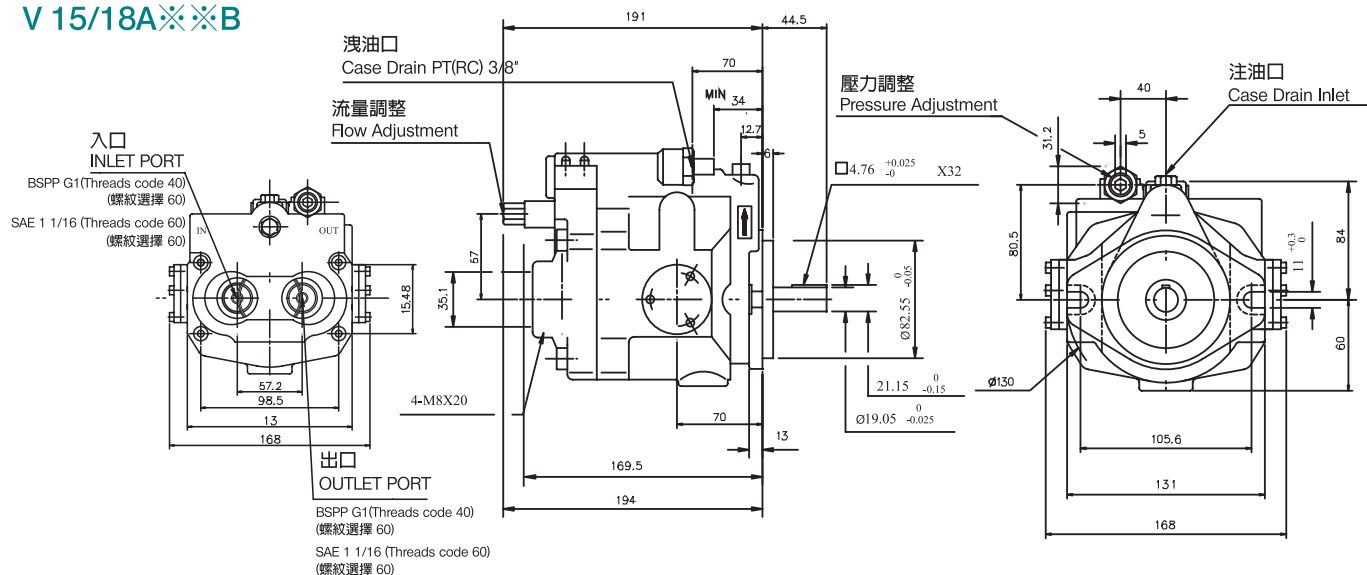
V70 G Type



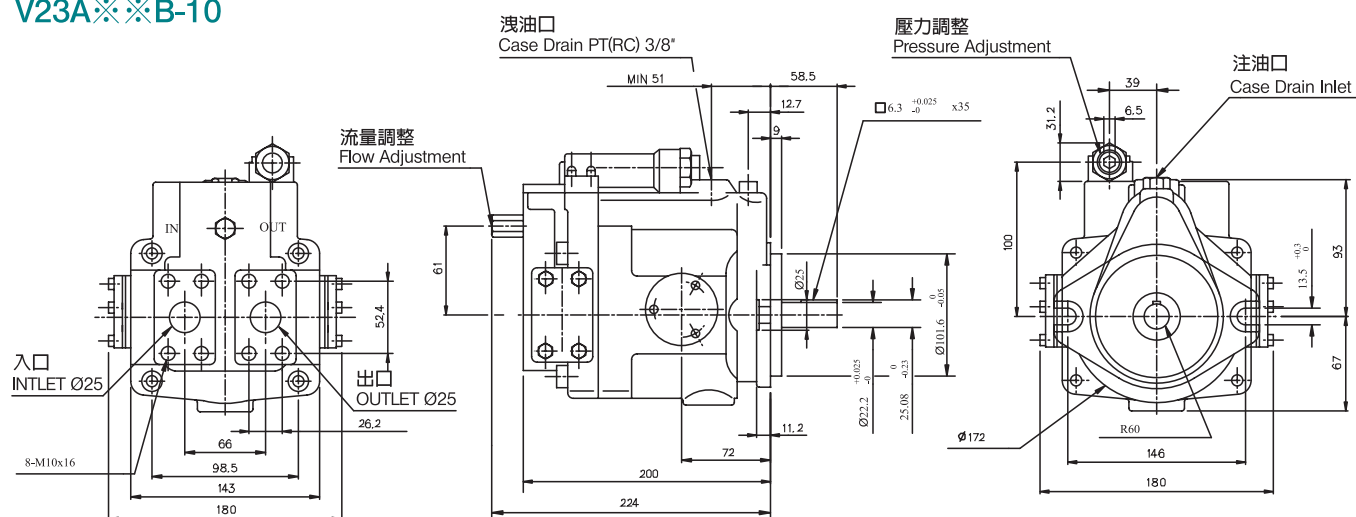
■Dimensions 外型尺寸圖 : Axial Port 軸向後方出油型

Unit 單位: mm

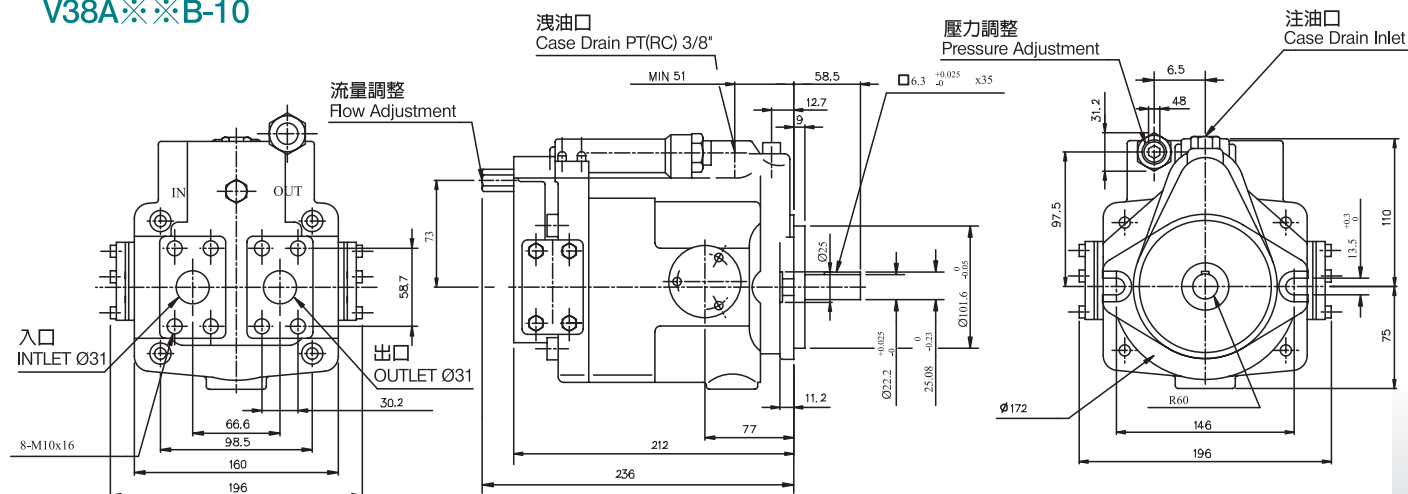
V 15/18A※※B



V23A※※B-10



V38A※※B-10

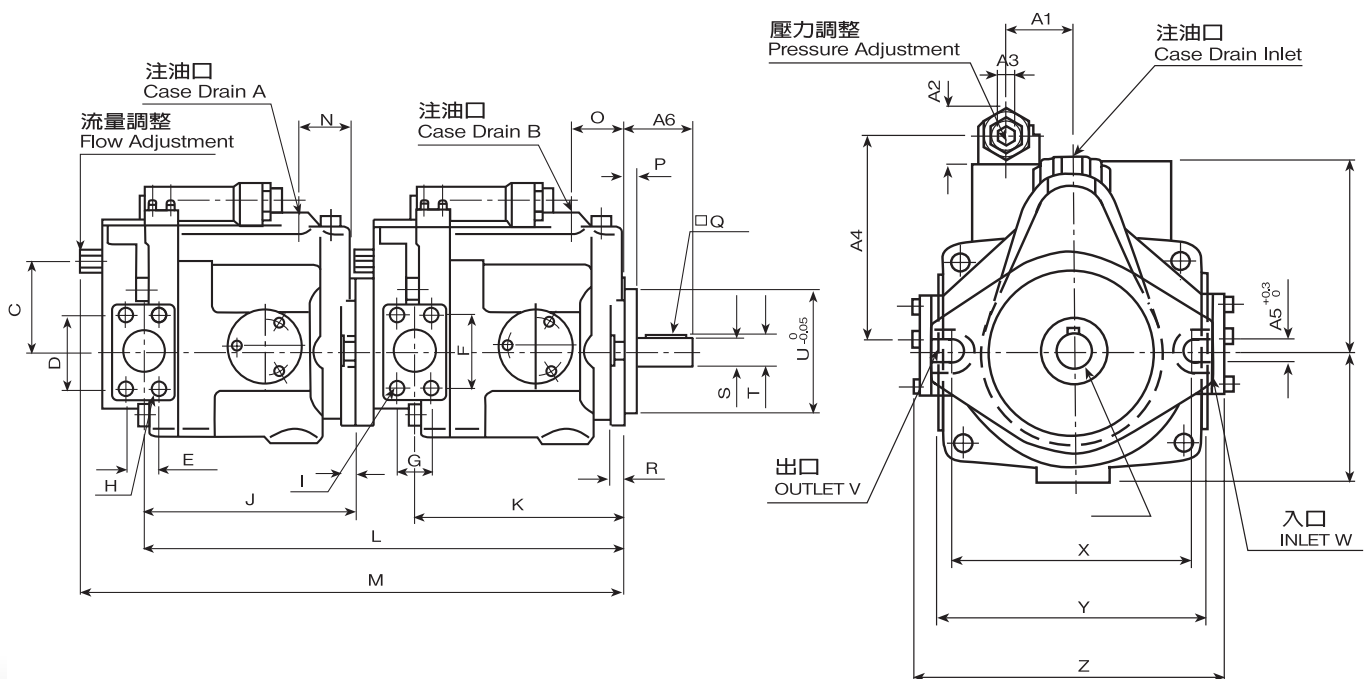


V Variable Displacement Piston Pumps

可變柱塞幫浦

Piston Double Pump Type V系列柱塞雙聯幫浦:

Model	V15x15	V23x23	V15x38	V23-38	V38x38	V15x70	V23x70	V38x70
A	3/8-PT	3/8-PT	3/8-PT	3/8-PT	1/2-PT	3/8-PT	3/8-PT	1/2-PT
B	3/8-PT	3/8-PT	1/2-PT	1/2-PT	1/2-PT	3/4-PT	3/4-PT	3/4-PT
C	57	61	57	61	73	57	61	73
D	35.1	52.4	35.1	52.4	58.7	35.1	52.4	58.7
E	35.1	26.2	35.1	26.2	30.2	35.1	26.2	30.2
F	35.1	52.4	58.7	58.7	58.7	69.9	69.9	69.9
G	35.1	26.2	30.2	30.2	30.2	35.7	35.7	35.7
H	M8x20	M10x16	M8x20	M10x16	M10x16	M8x20	M10x16	M10x16
I	M8x20	M10x16	M10x16	M10x16	M10x16	M12x20	M12x20	M12x20
J	147	170	147	170	170	147	170	179
K	147	170	179	179	179	256.5	256.5	256.5
L	335	393	373	404	413	447	470	479
M	381	443	419	454	465	493	520	531
N	34	51	34	34	51	34	51	51
O	34	51	51	51	51	73	73	73
P	6	9	9	9	9	10	10	10
Q	4.76x32	6.5x35	6.5x35	6.5x35	6.5x35	7.94x38	7.94x38	7.94x38
R	13	13	13	13	13	18.5	18.5	18.5
S	φ 19.05	φ 22.22	φ 22.22	φ 22.22	φ 22.22	φ 31.75	φ 31.75	φ 31.75
T	21.15	25.08	25.08	25.08	25.08	35.35	35.35	35.35
U	φ 82.55	φ 101.6	φ 101.6	φ 101.6	φ 101.6	φ 127	φ 127	φ 127
V	φ 24	φ 25	φ 31	φ 31	φ 31	φ 40	φ 40	φ 40
W	φ 24	φ 25	φ 31	φ 31	φ 31	φ 40	φ 40	φ 40
X	106	146	146	146	146	181	181	181
Y	131	145.5	160	160	160	208	208	208
Z	168	180	196	196	196	260.5	260.5	260.5
A1	40	39	39	39	39	74	74	74
A2	31.2	31.2	31.2	31.2	31.2	40	40	40
A3	5	5	5	5	5	8	8	8
A4	80.5	110	121	121	121	119	119	119
A5	11	13.5	13.5	13.5	13.5	18	18	18
A6	44.5	58.5	58.5	58.5	58.5	57	57	57



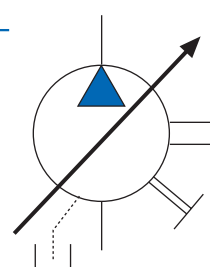
*Available to supply pump with anti-clockwise rotation. Consult for details.

*迴轉方式可反轉，視客戶之需求提供

AR Series 系列



SYMBOL



油壓記號

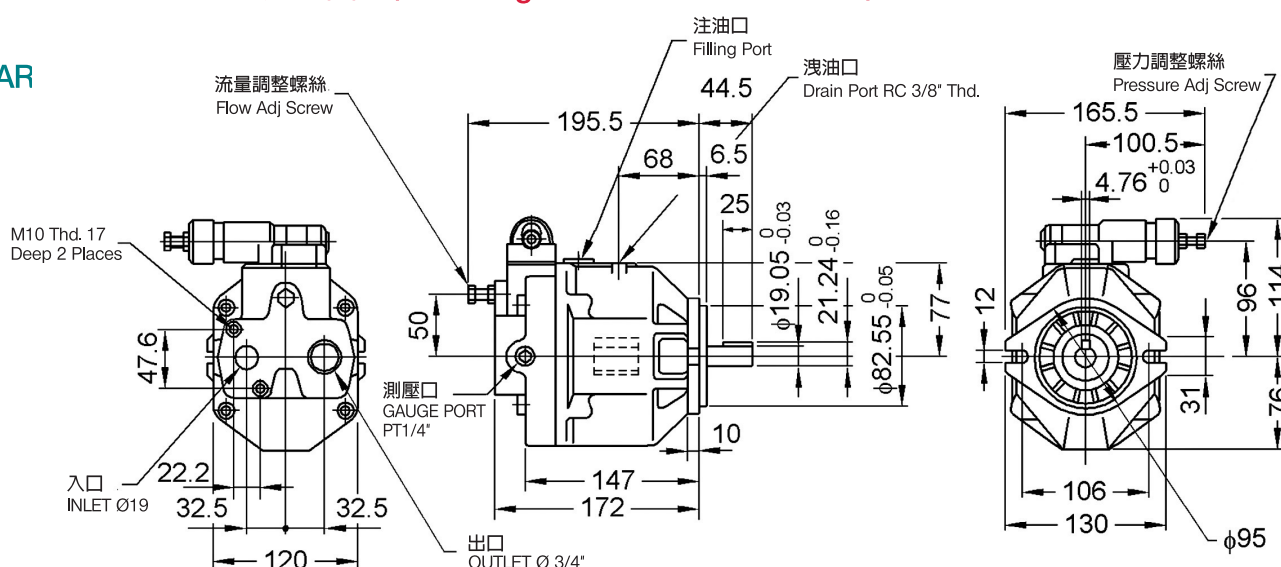
Model Code/ 型號說明

AR16	F	R	01	C	S	K	10	
								Threads Code 配管牙型
								10: PT(RC) theard PT牙
								40: BSPP(G) theard BSPP牙
								50: NPT theard NPT牙
								Shaft Type 軸心形式
								K: Keyed 平行鍵
								G: 16/32 DP-13T
								T: 16/32 DP-9T
								In/Out Port Position 出入口方向
								None: Axial Position 無:軸向
								S: Side Position S:側向
								Pres. Adj. Range (kgf/cm ²) 壓力調整範圍
								B:12~70
								C:12~160
								Control Type 控制型式
								01: Pressure Compensator Type 壓力補償型
								HL: Load Sensing Compensator 感應補償型
								G: Remote Pressure Compensator 遙控壓力補償型
								Direction of Rotation 迴轉方向
								Viewed from Shaft End 軸向視角
								R: Clockwise (Standard)
								L: Counterclockwise
								Mounting 安裝型式
								F: Flange 法蘭安裝
								Series Number 系列號碼
								AR16(15.8cm ³ /rev)
								AR22(22.2cm ³ /rev)

Unit 單位: mm

Dimensions 外型尺寸圖 : (Mounting Surface: SAE "A" 2-bolt)

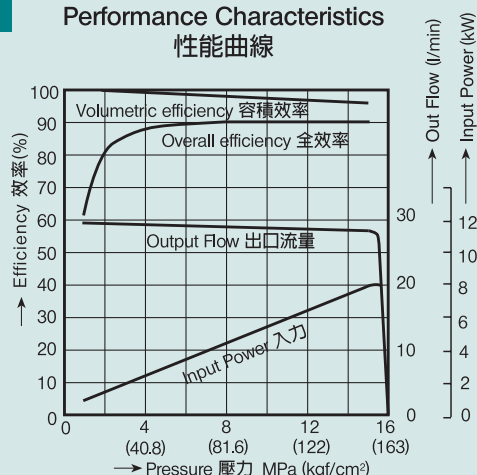
AR



Typical performance characteristics 性能特性

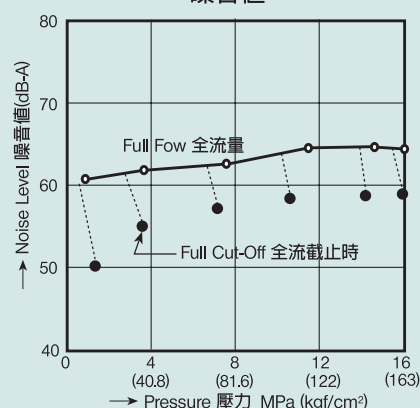
AR16

Performance Characteristics 性能曲線



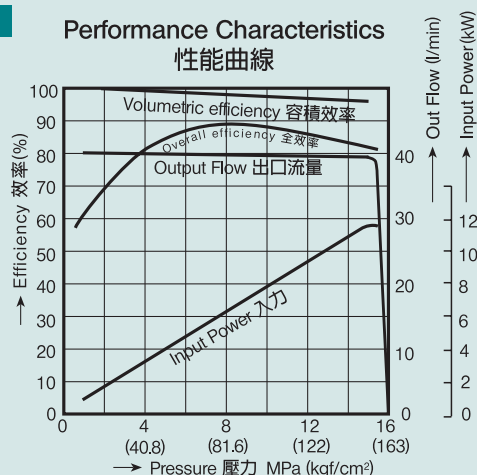
Noise Level

(1m horizontally away from pump head cover)
噪音值



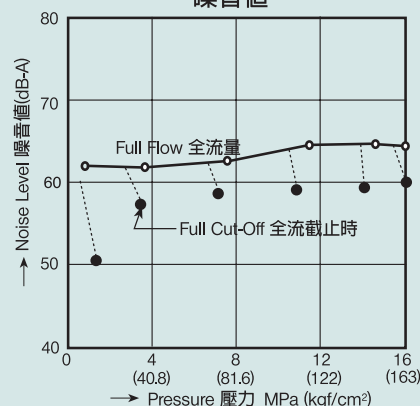
AR22

Performance Characteristics 性能曲線



Noise Level

(1m horizontally away from pump head cover)
噪音值



* Input speed 軸轉速 : 1,800r/min

* Oil 使用油 : ISO VG32

* Oil temperature 油溫 : 50°C