

變量葉片泵
Variable
Displacement
Vane Pump



特性

- 高壓力、高效率、運轉平順。
- 低噪音、低振動，符合低噪音工作環境要求。
- 反應靈敏，動作精確度高。
- 容易操作及維護。
- 結構穩固，使用壽命長。

應用

- 適用於數控機床，如CNC車床、CNC銑床、CNC磨床、夾治具等。
- 適用於多類專用機械、圓鋸機、加工機、內外徑研磨機等。
- 製鞋類液壓機械應用。

FEATURE

- High efficiency, high-pressure, smooth operation.
- Extremely low vibration and noise level.
- Instant and stable response for precise machining.
- Easy adjustment in handling and maintenance.
- Sturdy structure for high efficiency and long service life.

APPLICATION

- Suitable for CNC machine tools, such as CNC lathes, CNC milling machines, CNC grinders, fixtures, etc.
- Applicable to various types of machinery, circular sawing machines, processing machines, inner and outer diameter grinding machines, etc.
- Application of shoemaking machinery hydraulics.

技術資料

TECHNICAL DATA

型式 Model	泵流量 (無負荷時) Delivery At No Load (L / min)		壓力調整範圍 Pressure Adjustment Range(bar)	容許回轉速 Shaft Speed Range (rpm)		最高壓力 MAX. Pressure (bar)	重量 Weight (kg)
	1800rpm	1500rpm		最高 MAX.	最低 MIN.		
低壓變量葉片泵 Low Pressure Variable Displacement Vane Pump SF							
SF - 12AS	12	10	5 - 10	1800	800	10	5.5
SF - 12A			10 - 20			20	5.5
SF - 12B			15 - 35			35	5.5
SF - 12C			30 - 55			55	5.5
SF - 12D			50 - 70			70	5.5
SF - 20AS	20	17	5 - 10	1800	800	10	5.5
SF - 20A			10 - 20			20	5.5
SF - 20B			15 - 35			35	5.5
SF - 20C			30 - 55			55	5.5
SF - 20D			50 - 70			70	5.5
SF - 30AS	30	25	5 - 10	1800	800	10	9.5
SF - 30A			10 - 20			20	9.5
SF - 30B			15 - 35			35	9.5
SF - 30C			30 - 55			55	9.5
SF - 30D			50 - 70			70	9.5
SF - 40AS	40	35	5 - 10	1800	800	10	9.5
SF - 40A			10 - 20			20	9.5
SF - 40B			15 - 35			35	9.5
SF - 40C			30 - 55			55	9.5
SF - 40D			50 - 70			70	9.5
防止回型變量葉片泵 Variable Vane Pump with Built-in Check Valve SFC							
SFC - 30A	40	35	10 - 20	1800	800	20	9.6
SFC - 30B			15 - 35			35	9.6
SFC - 30C			30 - 55			55	9.6
SFC - 30D			50 - 70			70	9.6
SFC - 40A	40	35	10 - 20	1800	800	20	9.6
SFC - 40B			15 - 35			35	9.6
SFC - 40C			30 - 55			55	9.6
SFC - 40D			50 - 70			70	9.6
中壓變量葉片泵 Medium Pressure Variable Displacement Vane Pump SM							
SM - 30A	30	25	15 - 35	1800	800	35	10
SM - 30B			20 - 70			70	10
SM - 30C			50 - 105			105	10
SM - 30D			70 - 140			140	10
SM - 40A	40	35	15 - 35	1800	800	35	10
SM - 40B			20 - 70			70	10

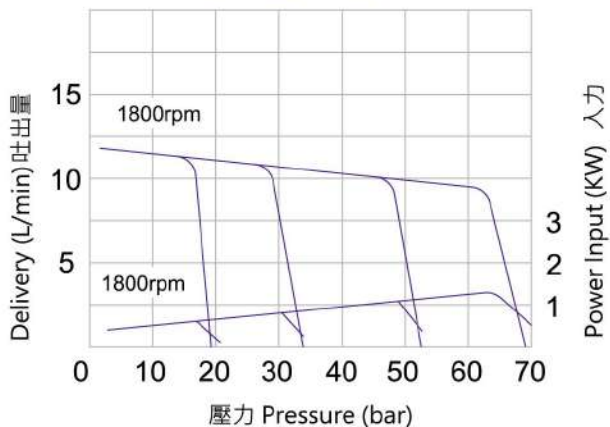
備註 / Remark: 壓力在5-10bar的AS系列無冷卻循環泵(CG)的搭配, 泵流量為1800rpm下的測試數值。

Low pressure pump with Code AS (5-10 bar) does not have a cooling circulation pump (CG). The pump displacement is the test value at 1800rpm.

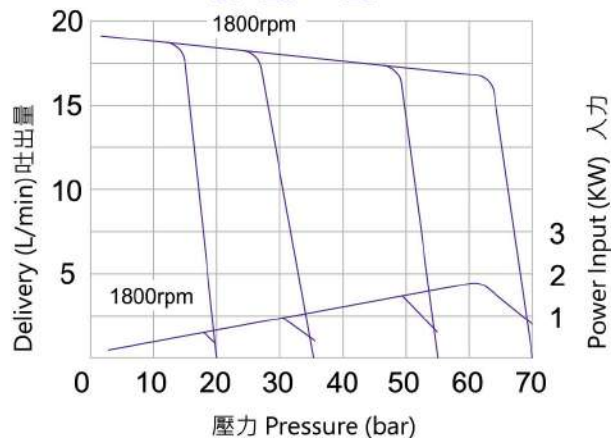
性能曲線

PERFORMANCE CURVE

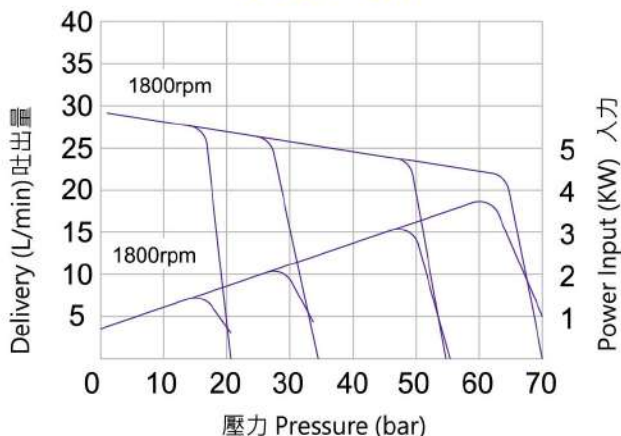
SF-12 * -10



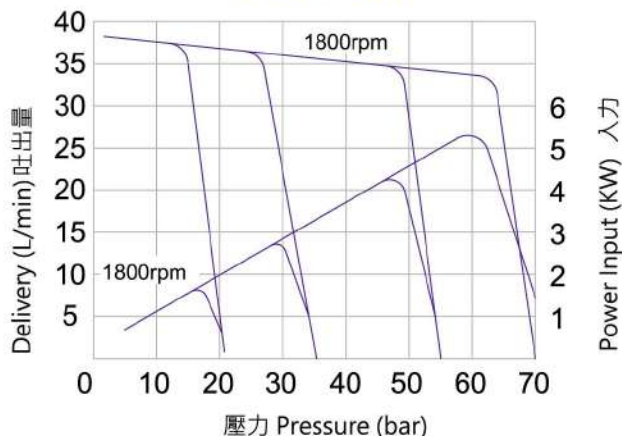
SF-20 * -10



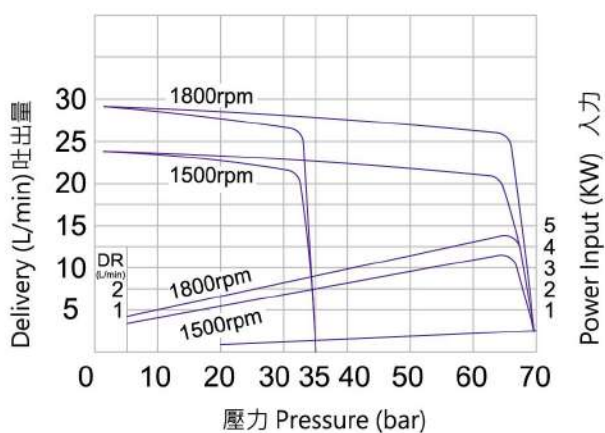
SF-30 * -20



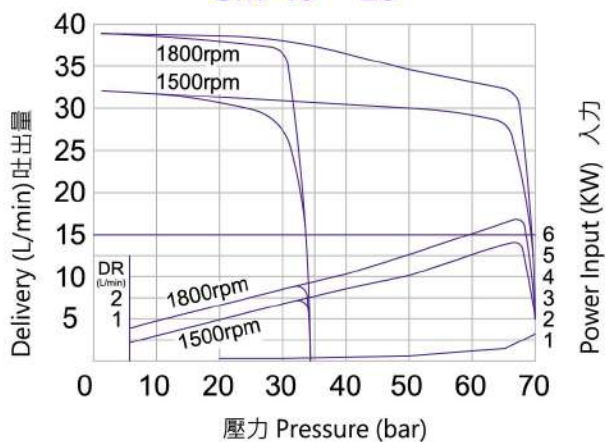
SF-40 * -20



SM-30 * -20



SM-40 * -20



測試條件 Testing condition

液壓油等級 Hydraulic oil : ISO VG46

油溫 Oil temperature : 40 °C ± 5°C

形式編碼 MODEL CODE

變量葉片泵

Variable Displacement Vane Pump

VCM SF 20 C 2 0 *

軸心型式 Shaft Type

無：標準型 None: Standard

A: 7T

B: 9T 30,40 L 僅供應 B Type(9T) / 30,40 liter only for B Type(9T)

本體牙規 Body Thread

0: 斜牙PT 1: 直牙BSPP 2: 管牙NPT

軸心尺寸 Shaft Size

SFC: 1: Ø19.05mm

SM: 2: Ø19.05mm

SF: 12/20

1: Ø12.7mm

2: Ø12.7mm 無調流 (No Flow Adjust)

3: Ø15.875mm

4: Ø15.875mm 無調流 (No Flow Adjust)

30/40

2: Ø19.05mm

壓力範圍 Pressure Range (bar)

SFC: A: 10 - 20

B: 15 - 35

C: 30 - 55

D: 50 - 70

SF: AS: 5 - 10

A: 10 - 20

B: 15 - 35

C: 30 - 55

D: 50 - 70

SM: 30 A: 15 - 35

B: 20 - 70

C: 50 - 105

D: 70 - 140

SM: 40 A: 15 - 35

B: 20 - 70

泵流量 Displacement (L/min)

SFC: 30/40

SF: 12/20/30/40

SM: 30/40

系列號碼 Serial No.

SFC: 附止回型變量葉片泵

Variable Vane Pump with
Built-in Check Valve

SF: 低壓變量葉片泵

Low Pressure Variable
Displacement Vane Pump

SM: 中壓變量葉片泵

Medium Pressure Variable
Displacement Vane Pump

產品系列 Product Series

VCM: 葉片泵系列 Vane Pump Series

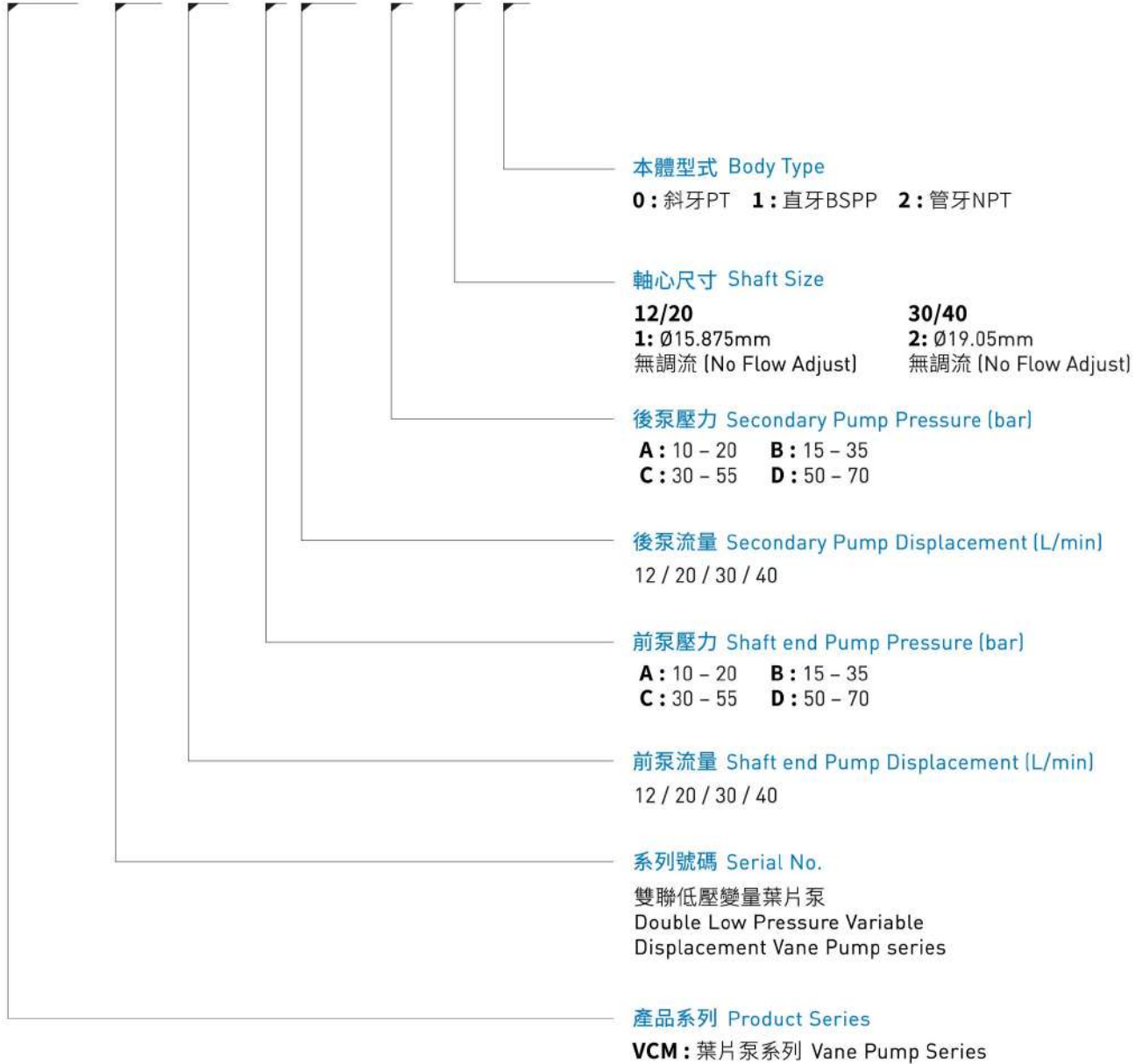
形式編碼

MODEL CODE

雙聯低壓變量葉片泵系列

Double Low Pressure Variable Displacement Vane Pump series

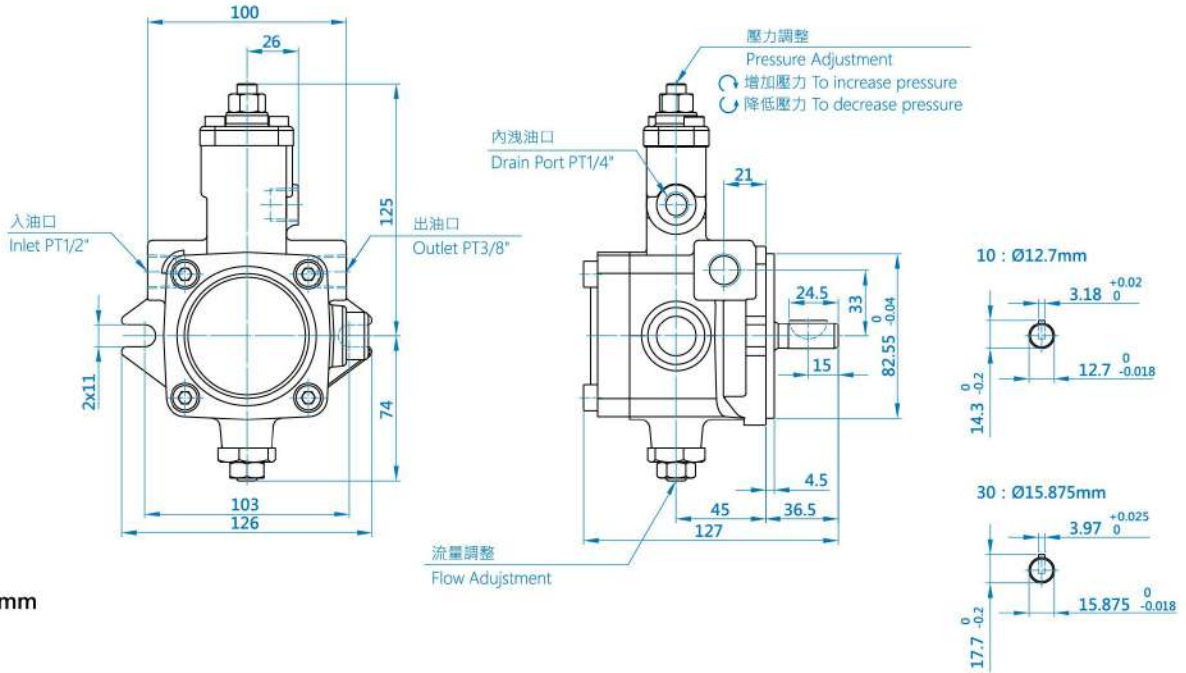
VCM DF 30 B 30 B 1 0



備註 / Remark: 泵流量為1800rpm下的測試數值。
The pump displacement is the test value at 1800rpm

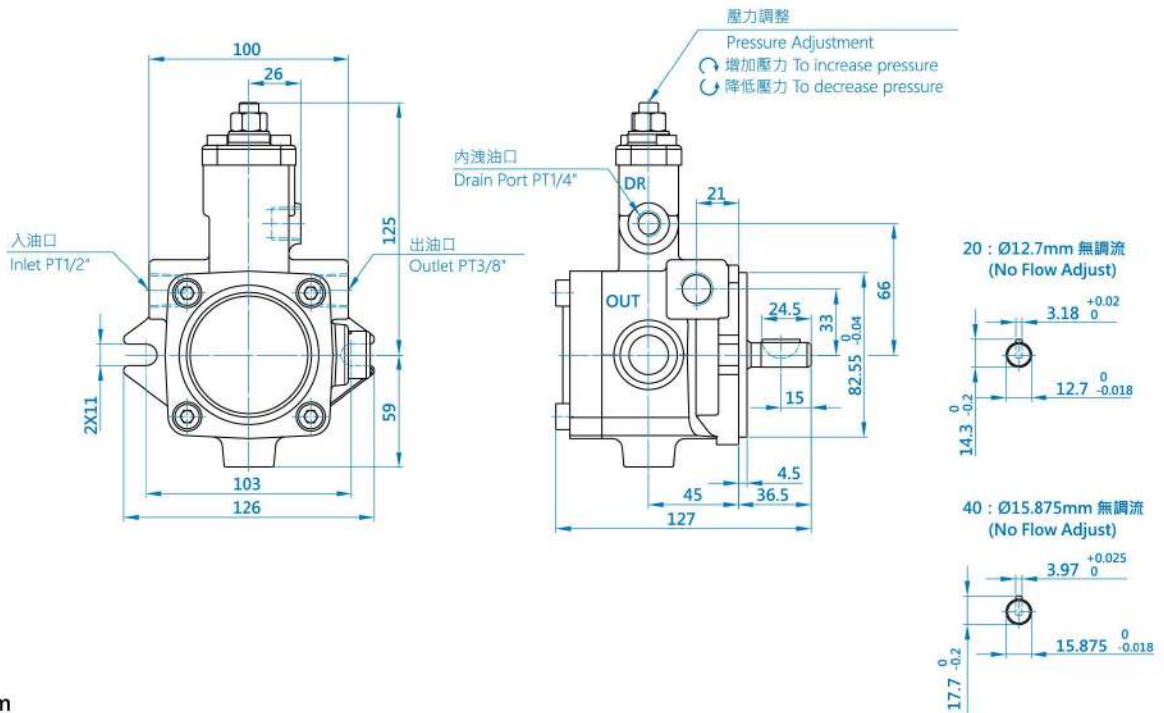
外型尺寸 MEASUREMENT

VCM-SF-12-20-* - 10-30



單位Unit: mm

VCM-SF-12-20-* - 20-40

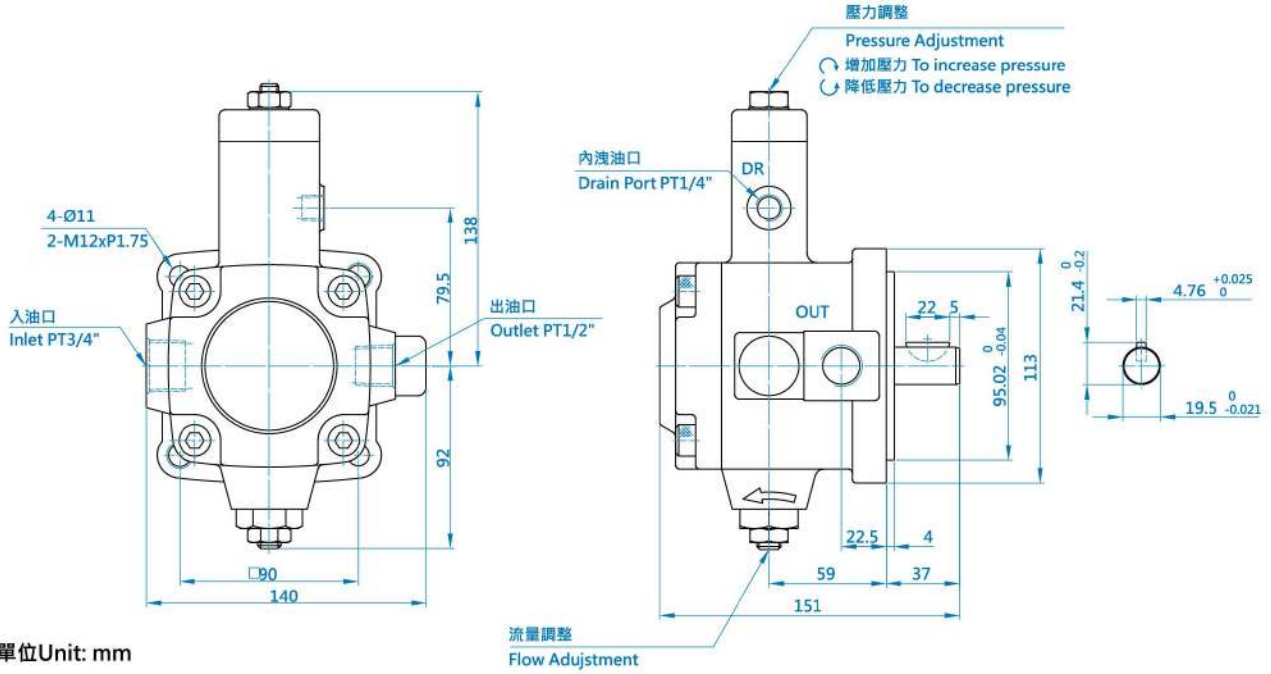


單位Unit: mm

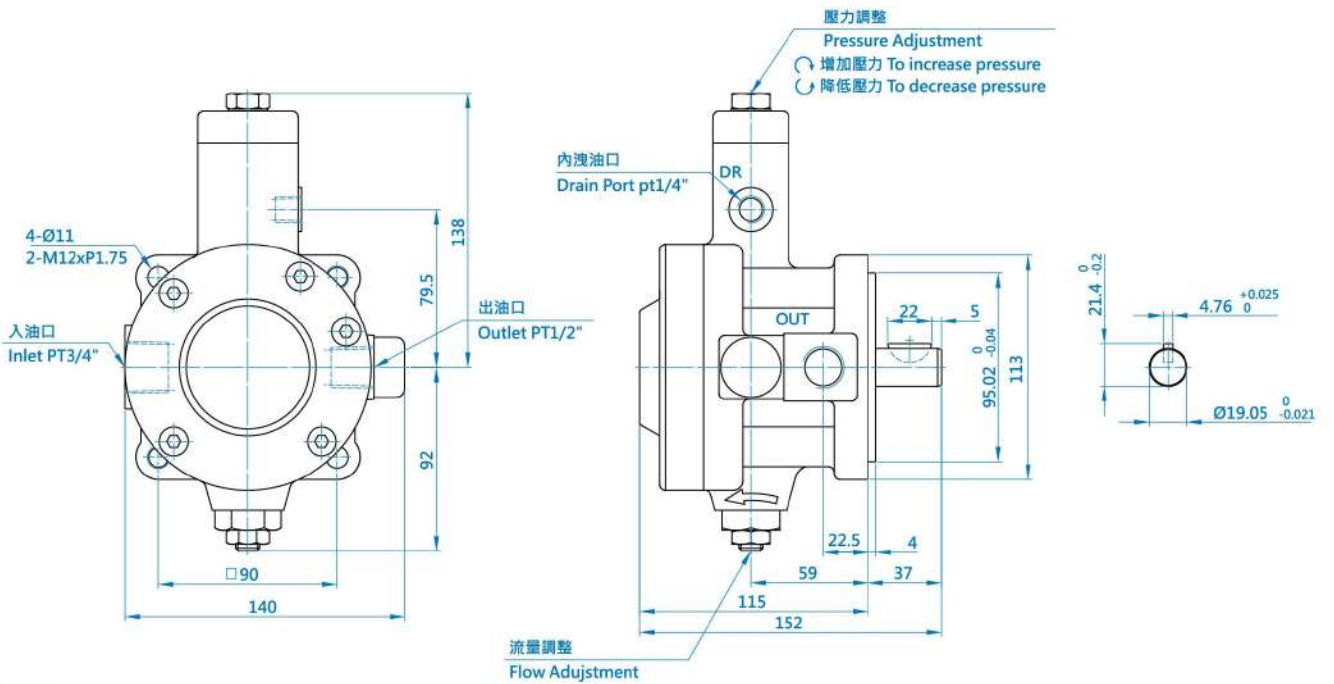
外型尺寸

MEASUREMENT

VCM-SF- $\frac{30}{40}$ -*-10

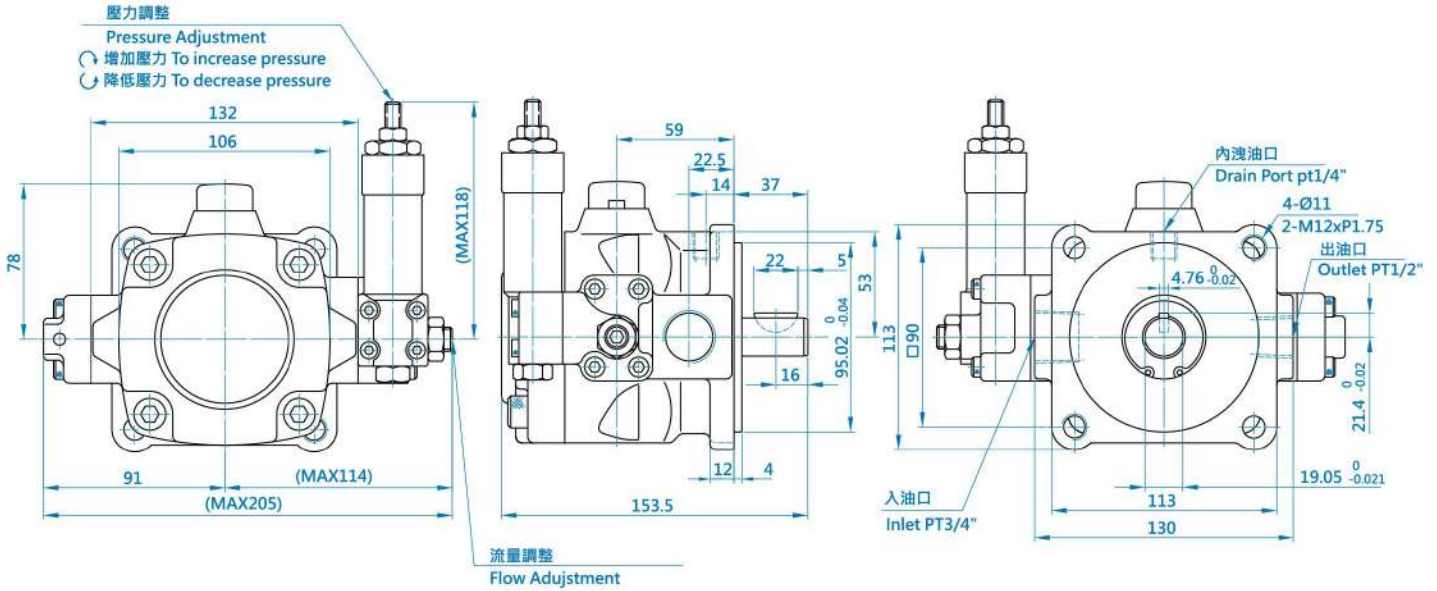


VCM-SF- $\frac{30}{40}$ -*-20



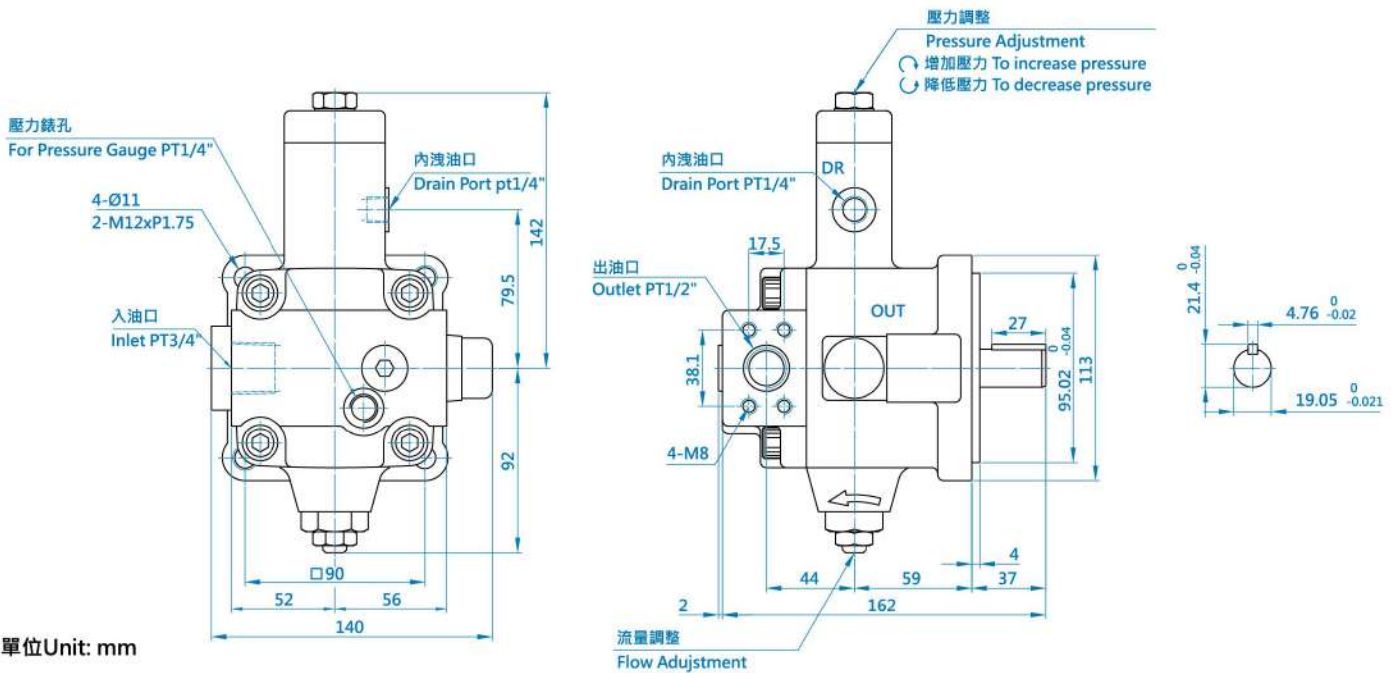
外型尺寸 MEASUREMENT

VCM-SM-30-20
40



單位Unit: mm

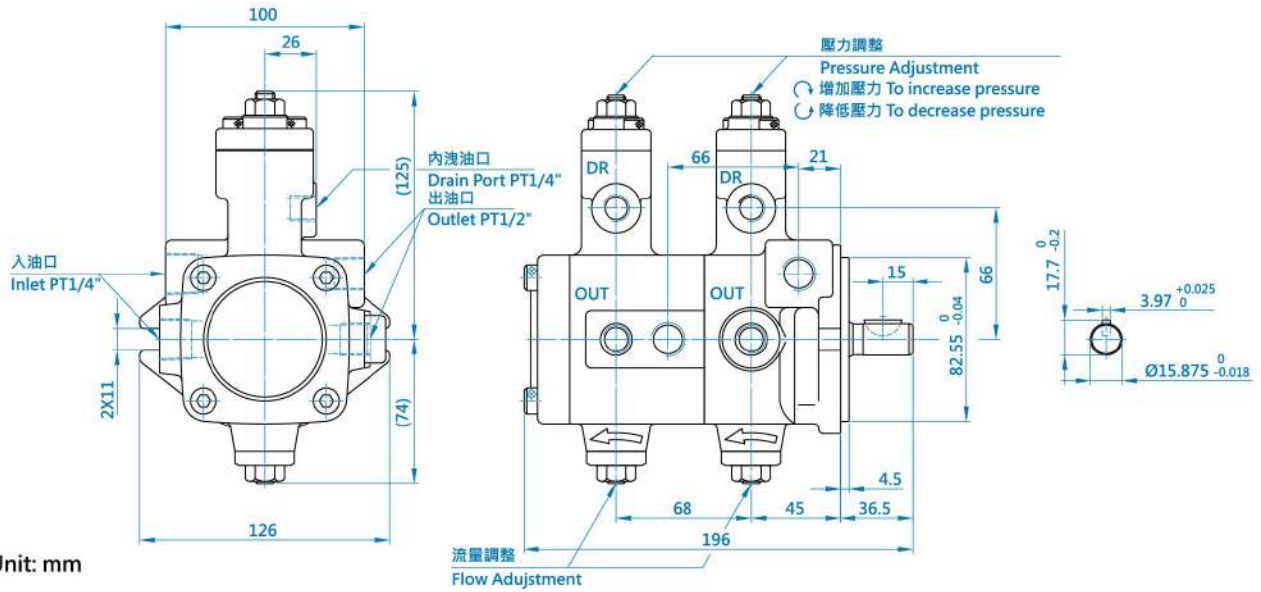
VCM-SFC-30-* -10
40



單位Unit: mm

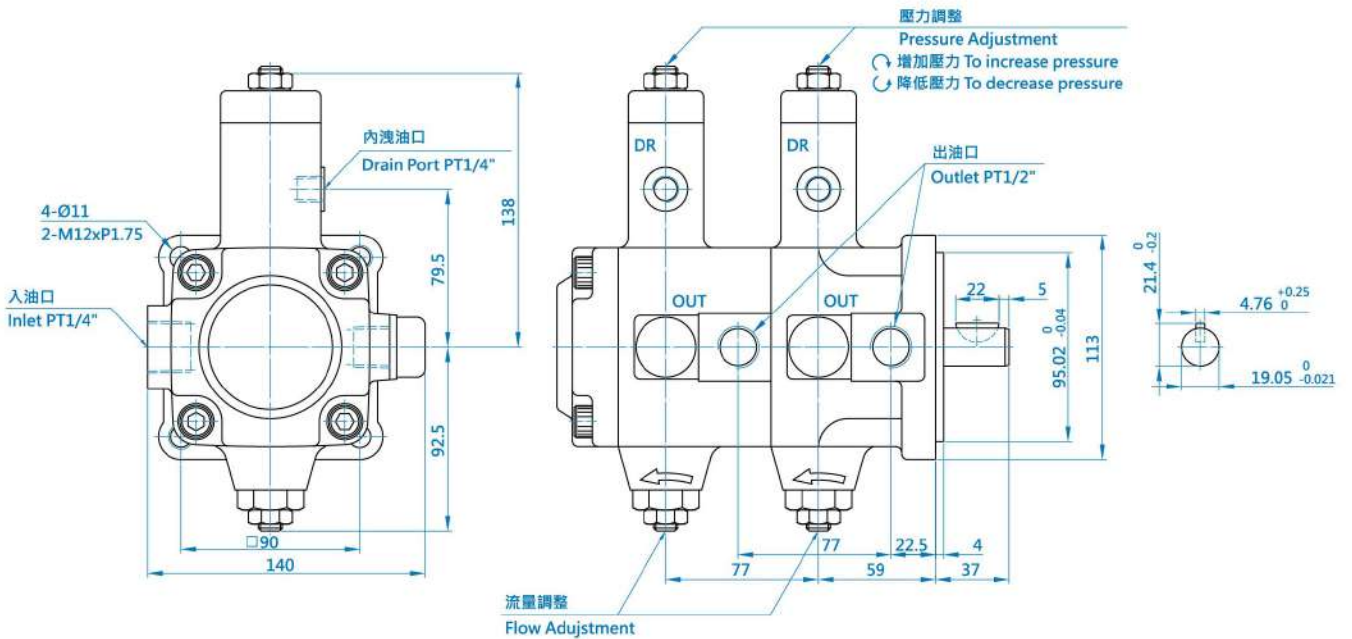
外型尺寸 MEASUREMENT

VCM-DF-12-*
20-12-*
20-10



單位Unit: mm

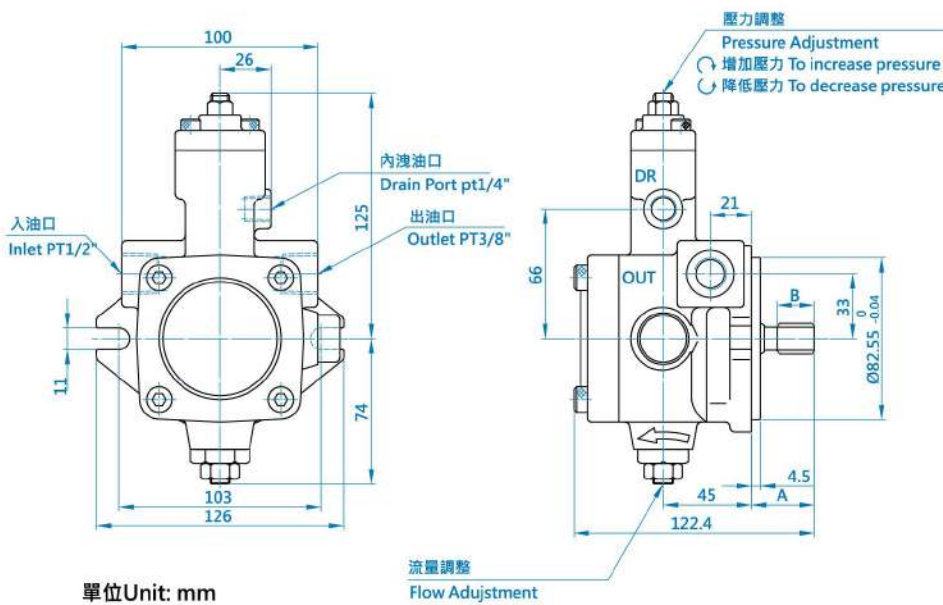
VCM-DF-30-*
40-30-*
40-20



單位Unit: mm

外型尺寸 MEASUREMENT

VCM-SF- $\frac{12}{20}$ - * -10 $\frac{A}{B}$ (7T/9T 外花鍵 Splined Shaft)



單位 Unit: mm

備註: 此產品僅有7齒型的軸心附聯軸器, 9齒沒有附。

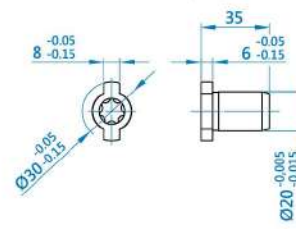
Remark: only 7 teeth shaft will supply coupling

依美國 ANSI B92.1規範 精度等級:5級
According to the US ANIS B92.1 specifications
Class of accuracy: Class 5

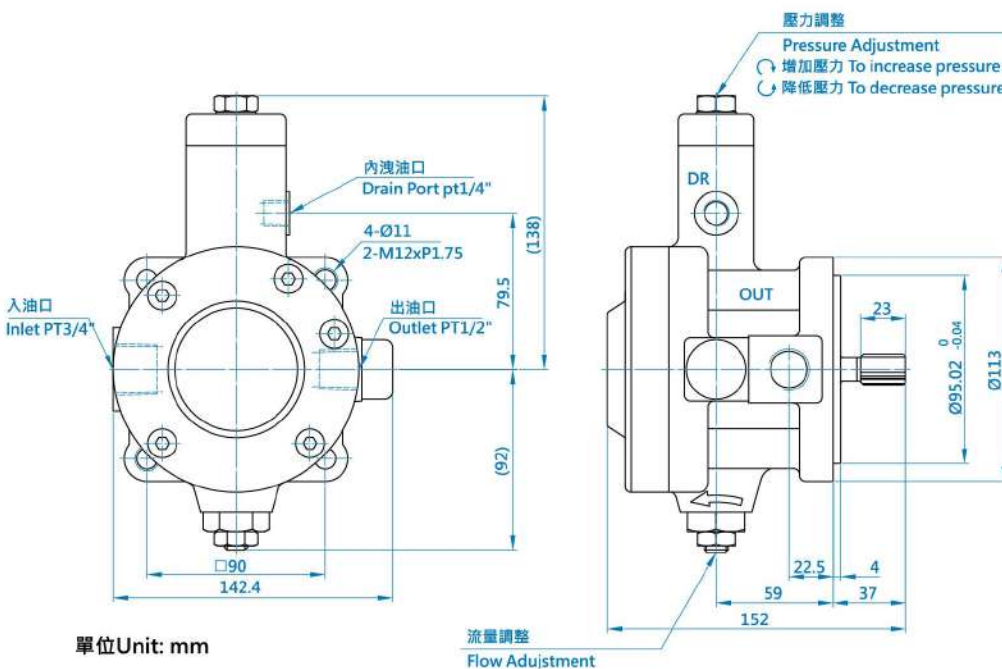
模數	Module	D.P16/32	D.P16/32
壓力角	Pressure Angle	30°	30°
尺數	Number of Teeth	7	9
節圓直徑	Pitch Diameter	$\varnothing 11.113$	$\varnothing 14.2875$
最大直徑	Maximum Diameter	$\varnothing 12.7_{-0.05}^0$	$\varnothing 15.875_{-0.05}^0$
最小直徑	Minimum Diameter	$\varnothing 3.636$ (MAX)	$\varnothing 11.811$ (MAX)

	7T	9T
A	37.1	32.1
B	26.5	19

7T聯軸器 Coupling



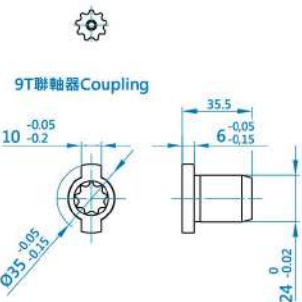
VCM-SF- $\frac{30}{40}$ - * -20 (7T/9T 外花鍵 Splined Shaft)



單位 Unit: mm

依美國 ANSI B92.1規範 精度等級:5級
According to the US ANIS B92.1 specifications
Class of accuracy: Class 5

模數	Module	D.P16/32
壓力角	Pressure Angle	30°
尺數	Number of Teeth	9
節圓直徑	Pitch Diameter	$\varnothing 14.2875$
最大直徑	Maximum Diameter	$\varnothing 15.875_{-0.05}^0$
最小直徑	Minimum Diameter	$\varnothing 11.811$ (MAX)



注意事項

Notice

一、轉動方向

- 標準油泵的回轉方向乃以從軸心方向時正視為順時針方向。

二、液壓油

- 黏度建議使用 ISO VG 32 或 ISO VG 46。

三、洩油管

- 洩油管請務必連接到油箱液面下，背壓請保持在 0.3 bar 以下。回油管請插入油箱液面下，並盡量遠離吸油口管，或以隔板隔離。

四、工作油溫

- 連續運轉溫度約為 15-60°C。

五、軸心配差

- 油泵與馬達軸心偏心誤差須在 0.05 mm 以下，角度誤差 1°，在泵軸上不能有徑向力。當軸心不一致時，會產生異音、震動、溫升，造成油泵故障原因。

六、濾油器

- 液壓油的汙染及濾油器的堵塞，是油泵故障以及壽命降低的原因，請充分注意液壓油的汙染，控制汙染度在 NAS9 級以內。(註：建議吸油濾油器的過濾精度在150目。)

七、初次使用

- 請在無負載狀況下先行反覆啟動馬達，以排除管路及油泵中的空氣，為確保油泵系統當中所含空氣已排除，請讓油泵在無負載狀況下運轉 10 分鐘。

1. Direction of rotation

- The rotation of VCM-SF pump is clockwise when viewed from the shaft end .

2. Hydraulic oil

- Suggested viscosity of oil is ISO VG 32 or ISO VG 46.

3. Drain piping

- The drain pipe is directly connected to the oil tank and the position must be below the oil level. Let the oil return pipe set under the oil level of the tank , keep it away from suction pipe or isolate them with a bulkhead .

4. Working oil temperature

- Continuous operating temperature is about 15-60 °C.

5. Alignment end insolation of pumps

- For proper alignment of pump and electric motor shaft , the eccentricity between them must be kept within 0.05 mm and the eccentric angle difference between them must be kept within 1°. If centering between the driving shaft and pump shaft is incorrect , the bearing and oil seal may be doomed and noise and vibration may occur , which cause problems to the pump .

6. Filter

- When first time operation , the pump should be at no-load state on delivery side. Repeated inching the electric motor a number of times to make sure the air have been bled out of the system. Cleaning level of NAS 9 and filtering of 150 mesh is recommended.

7. Cautions for starting

- Do not operate the pump with full speed right away , Instead , inch the motor on & off several times so as to bleed the air out of the pipes , then operate it continuously , It is suggested to run the pump without load for 10 minutes before normal pressure output .