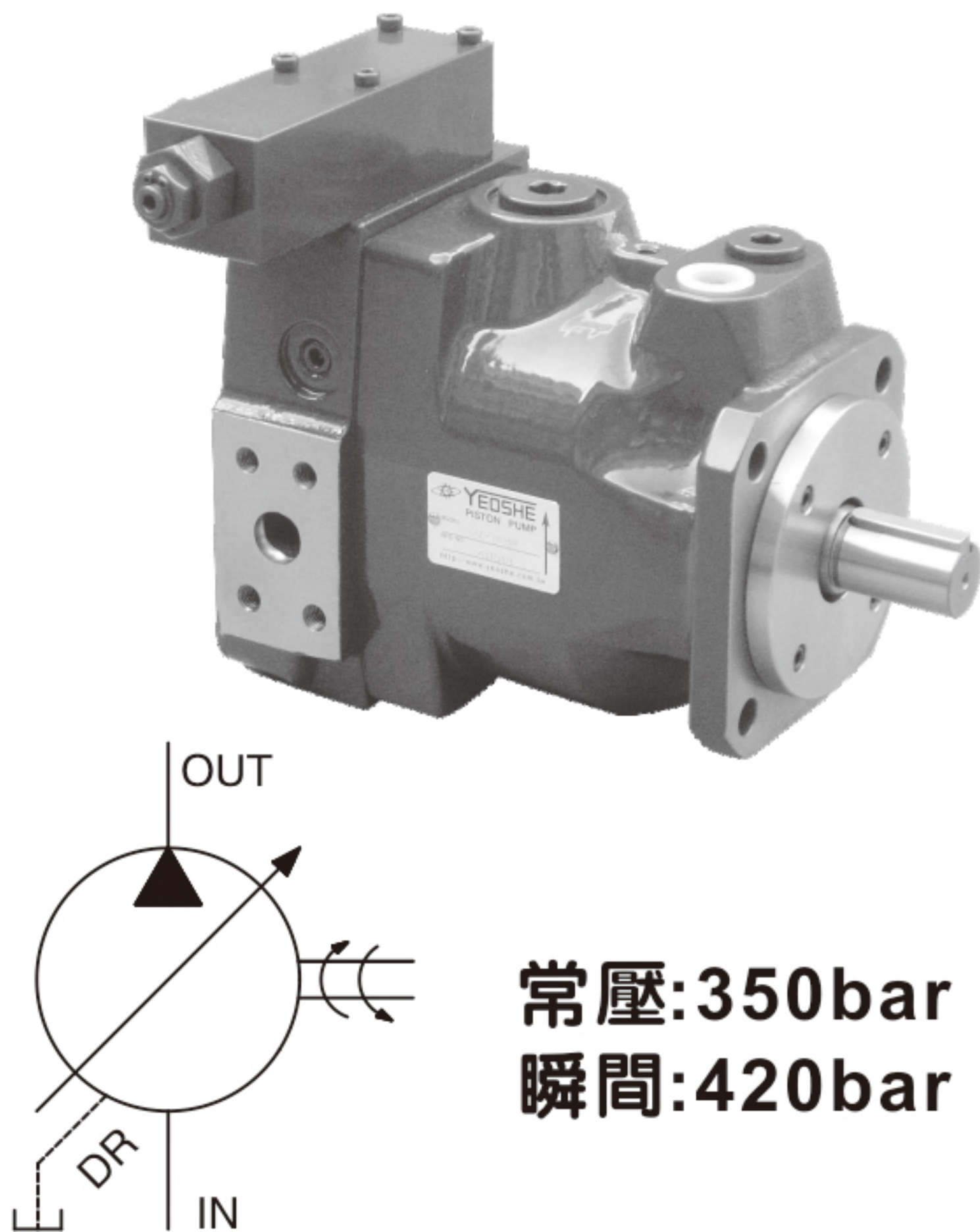


PV 系列可變量軸向柱塞泵  
PV Series Axial Piston Pump



- 1.新式斜板轉軸結構、大型補償活塞、使震動噪音、流量震動大幅改善。
- 2.鋼性的結構和高轉速低摩擦的構造，使油泵的壽命、效率更佳理想化。
- 3.使用模組化設計，使控制機構更加多元化，設計者容易自行變化控制功能。
- 4.強力的通軸設計，可雙聯、多聯或與其他油泵連接。
- 5.經由省能源泵控制系統的應用，可大幅改善電力消耗、油溫的上升、系統精度與壽命。
- 6.廣泛應用於車輛工業、船舶、鍛壓、輪胎機、注塑機、機床、專用機。

- 1.New type of swash plate and large servo pistons with strong bias spring achieve fast response, reduce the noise due to active decompression of system at down stroke.
- 2.Nine piston and new precompression technology(precompression filter volume) result in unbeaten low outlet flow pulsation.  
Complete compensator program.
- 3.Rigid and FEM-optimized body design for lowest noise level.
- 4.Thru drive for 100% nominal torque.
- 5.Pump combinations(tandem pumps) of same size and model and mounting interface for basically all metric or SAE mounting interfaces.

規格表 Quick Reference Data Chart

| 型式<br>Model | 吐出量 Displacement                                        |                   | 吐出量 Pump Delivery(7Bar)100 PSI |                                                             |              |                    |          |           |       |
|-------------|---------------------------------------------------------|-------------------|--------------------------------|-------------------------------------------------------------|--------------|--------------------|----------|-----------|-------|
|             |                                                         |                   | 1200 RPM                       |                                                             | 1500 RPM     |                    | 1800 RPM |           |       |
|             | cc/rev                                                  | ln3/rev           | LPM                            | U.S.GPM                                                     | LPM          | U.S.GPM            | LPM      | U.S.GPM   |       |
| PV016       | 16                                                      | 0.98              | 19.2                           | 5.1                                                         | 24           | 6.3                | 28.8     | 7.6       |       |
| PV020       | 20                                                      | 1.2               | 24                             | 6.3                                                         | 30           | 7.9                | 36       | 9.5       |       |
| PV023       | 23                                                      | 1.4               | 27.6                           | 7.3                                                         | 34.5         | 9.1                | 41.4     | 10.9      |       |
| PV032       | 32                                                      | 19                | 38.4                           | 10.1                                                        | 48           | 12.7               | 57.6     | 15.2      |       |
| PV040       | 40                                                      | 2.4               | 48                             | 12.7                                                        | 60           | 15.9               | 72       | 19        |       |
| PV046       | 46                                                      | 2.8               | 55.2                           | 14.6                                                        | 69           | 18.2               | 82.8     | 21.9      |       |
| PV063       | 63                                                      | 3.8               | 75.6                           | 20                                                          | 94.5         | 25                 | 113.4    | 30        |       |
| PV071       | 71                                                      | 4.3               | 85.8                           | 22.7                                                        | 107          | 28.3               | 128.7    | 34        |       |
| PV080       | 80                                                      | 4.8               | 96                             | 25.4                                                        | 120          | 31.7               | 144      | 38        |       |
| PV092       | 92                                                      | 5.6               | 110.4                          | 29.2                                                        | 138          | 36.5               | 165.6    | 43.8      |       |
| PV140       | 140                                                     | 8.5               | 168                            | 44.4                                                        | 210          | 55.5               | 252.1    | 66.6      |       |
| PV180       | 180                                                     | 11                | 216                            | 57.1                                                        | 270          | 71.3               | 324      | 85.6      |       |
| PV270       | 270                                                     | 16.5              | 324                            | 85.6                                                        | 405          | 107                | 486      | 128.4     |       |
| 型式<br>Model | 噪音等級 APPROX.Noise Levels<br>Db(A)Full Flow and 1500 RPM |                   |                                | 輸入馬力 Input House Power,<br>Max.Displacement&345bar(5000PSI) |              | 轉速 Operating Speed |          | 重量 Weight |       |
|             | 70 bar<br>(1KSI)                                        | 207 bar<br>(3KSI) | 343 bar<br>(5KSI)              | 1500RPM                                                     | 1800RPM      | Max.               | Min.     |           |       |
|             |                                                         |                   |                                | KW(hp)                                                      | KW(hp)       | RPM                | RPM      | KG        | LB    |
| PV016       | 56                                                      | 60                | 68                             | 15.5(20.8)                                                  | 18.5(24.8)   | 2750               | 300      | 19        | 41.8  |
| PV020       |                                                         |                   |                                | 19.5(26.1)                                                  | 23.4(31.4)   |                    |          |           |       |
| PV023       |                                                         |                   |                                | 22.5(30.2)                                                  | 25.1(33.6)   |                    |          |           |       |
| PV032       | 59                                                      | 62                | 69                             | 31(41.6)                                                    | 35.1(47.1)   | 2400               |          | 30        | 66    |
| PV040       |                                                         |                   |                                | 39(52.3)                                                    | 46.5(62.3)   |                    |          |           |       |
| PV046       |                                                         |                   |                                | 45(60.3)                                                    | 50.2(67.3)   |                    |          |           |       |
| PV063       | 66                                                      | 70                | 74                             | 61.5(82.4)                                                  | 70.1(94)     | 2100               |          | 60        | 132   |
| PV071       |                                                         |                   |                                | 70(93.8)                                                    | 80(107.2)    | 2100               |          |           |       |
| PV080       |                                                         |                   |                                | 78(104.6)                                                   | 89.2(119.6)  | 2000               |          |           |       |
| PV092       |                                                         |                   |                                | 89.5(120)                                                   | 136.8(183.4) | 1900               |          |           |       |
| PV140       | 70                                                      | 74                | 76                             | 136(182.3)                                                  | 149.4(200.3) | 2200               |          | 90        | 198   |
| PV180       | 71                                                      | 75                | 77                             | 175(235)                                                    | 210(282)     | 2200               |          |           |       |
| PV270       | 77                                                      | 79                | 81                             | 263(353)                                                    | 298(400)     | 1800               |          | 172       | 378.4 |

- 1.油泵使用安裝位置，洩油口朝上，管路背壓低於 2bar 單獨回油箱。
- 2.最高壓力使用，每一循環運轉時間不超過 6 秒、液壓油清潔規範，請參見使用說明書。
- 3.油昇提供多聯油泵，亦可與其他型式油泵連結，聯結方式採用標準的公制連接尺寸和 SAE 連接尺寸。

- 1. Installation outlet port top, the pipe have to less than 2bar.
- 2. The use of max. pressure override 6 min, hydraulic oil clean that see General Installation Information.
- 3. Yeoshe offer tandem pumps, and other pumps connection, the connection type use metric veesion and SAE version dimensions.



PV 軸向柱塞泵



型號說明  
Order No.



PV 系列  
Series

063 規格排量  
Size and Displacement

GT 調節器  
Compensator

R 旋轉方向  
Rotation

M 連接  
Mounting

1 螺紋  
Threads

A 通軸裝配  
Thru drive & 2nd pump

電壓  
Voltage

油封  
Seals

設計番號  
Design No.

PV系列高壓型可變排量軸向柱塞泵  
Axial piston pump variable displacement high pressure version

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| 代號 code                                  | 調節器 Compensator                                                                                |
|------------------------------------------|------------------------------------------------------------------------------------------------|
| 標準型壓力調節器 Standard Type                   |                                                                                                |
| A2                                       | 10 ~ 140bar,心軸+鎖母                                                                              |
| A3                                       | 40 ~ 210bar,心軸+鎖母                                                                              |
| A4                                       | 70 ~ 350bar,心軸+鎖母                                                                              |
| 遙控型調節器 Remote Type                       |                                                                                                |
| GT                                       | 遙控型調節器 Remote Pressure compensator                                                             |
| GM                                       | 疊式遙控型調節器 Remote Pressure compensator allows a pilot valve                                      |
| GA                                       | 疊式遙控型調節器(含溢流閥) Remote Pressure compensator allows a pilot valve(valve included)                |
| GJ                                       | 疊式遙控型調節器(含比例閥) Layer Proportional pressure compensator(valve included)                         |
| 電控卸載型調節器 Electrical unloading Type       |                                                                                                |
| GR                                       | 電控卸載型調節器 Electrical unloading                                                                  |
| GB                                       | 兩段壓力調節器Dual pressure control                                                                   |
| GC                                       | 兩段壓力調節器+電控卸載調節器Dual pressure+electrical unloading                                              |
| 負載感應型調節器 Load-sensing Type               |                                                                                                |
| HL                                       | 負載感應型調節器Load-sensing Type                                                                      |
| HM                                       | 疊式負載感應型調節器Load-sensing Type                                                                    |
| HJ                                       | 疊式雙閥負載感應型調節器2-valve load-sensing Type(valve included)                                          |
| HA                                       | 疊式雙閥負載感應型調節器(含溢流閥)2-valve load-sensing Type                                                    |
| HK                                       | 負載感應+比例壓力比例流量調節器Proportional electro-hydraulic load sensing type                               |
| HQ                                       | 負載感應+比例流量調節器Load-sensing & Proportional flow control                                           |
| 比例流量調節器 Proportionable displacement Type |                                                                                                |
| FV                                       | 比例流量調節器Proportionable displacement control                                                     |
| FR                                       | 比例流量、壓力調節器Proportionable displacement control with pressure                                    |
| FG                                       | 比例流量、壓力、壓力感應調節器Proportionable displacement control with pressure control                       |
| 定馬力調節器Horse power Type                   |                                                                                                |
| PA <input type="checkbox"/>              | 疊式定馬力調節器Horse power compensator                                                                |
| PM <input type="checkbox"/>              | 疊式定馬力調節器(含溢流閥)Horse power compensator,pilot flow internal pressure pilot valv (valve included) |
| PG <input type="checkbox"/>              | 定馬力外接遙控調節器Horse power compensator,pilot flow internal                                          |
| PL <input type="checkbox"/>              | 定馬力+外控壓力+負載感應調節器Horse power compensator, Load-sensing compensator                              |
| PH <input type="checkbox"/>              | 疊式定馬力+負載感應Horse power compensator,pilot flow external for load-sensing                         |

| 代號 code | 規格排量 Displacement cm3/rev(In3/rev) |
|---------|------------------------------------|
| 016     | 16(0.98)                           |
| 020     | 20(1.2)                            |
| 023     | 23(1.4)                            |
| 032     | 32(1.9)                            |
| 040     | 40(2.4)                            |
| 046     | 46(2.8)                            |
| 063     | 63(3.8)                            |
| 071     | 71(4.3)                            |
| 080     | 80(4.8)                            |
| 092     | 92(5.6)                            |
| 140     | 140(8.5)                           |
| 180     | 180(10.9)                          |
| 270     | 270(16.5)                          |

| 代號 code | 旋轉方向 Rotation                                                                                          |
|---------|--------------------------------------------------------------------------------------------------------|
| R       | clockwise         |
| L       | counterclockwise  |

| 代號 code | 馬力 Horse power | PV016 ~ PV023 | PV032 ~ PV046 | PV063 ~ PV092 | PV140 | PV180 | PV270 |
|---------|----------------|---------------|---------------|---------------|-------|-------|-------|
|         |                |               |               |               |       |       |       |
| A       | 3KW            | ●             |               |               |       |       |       |
| B       | 4KW            | ●             |               |               |       |       |       |
| C       | 5.5KW          | ●             | ●             |               |       |       |       |
| D       | 7.5KW          | ●             | ●             |               |       |       |       |
| E       | 11KW           | ●             | ●             | ●             |       |       |       |
| F       | 15KW           |               | ●             | ●             |       |       |       |
| G       | 18.5KW         |               | ●             | ●             | ●     |       |       |
| H       | 22KW           |               | ●             | ●             | ●     | ●     |       |
| I       | 30KW           |               |               | ●             | ●     | ●     |       |
| J       | 37KW           |               |               | ●             | ●     | ●     | ●     |
| K       | 45KW           |               |               | ●             | ●     | ●     | ●     |
| L       | 55KW           |               |               |               | ●     | ●     | ●     |
| M       | 75KW           |               |               |               |       | ●     | ●     |
| N       | 90KW           |               |               |               |       | ●     | ●     |
| O       | 110KW          |               |               |               |       |       | ●     |
| P       | 132KW          |               |               |               |       |       | ●     |



PV Axial Piston Pump

YEOSHE

型號說明  
Order No.

PV

系列

Series

063

規格排量

Size and Displacement

GT

調節器

Compensator

R

旋轉方向

Rotation

M

連接

Mounting

1

螺紋

Threads

A

通軸裝配

Thru drive & 2nd pump

電壓

Voltage

油封

Seals

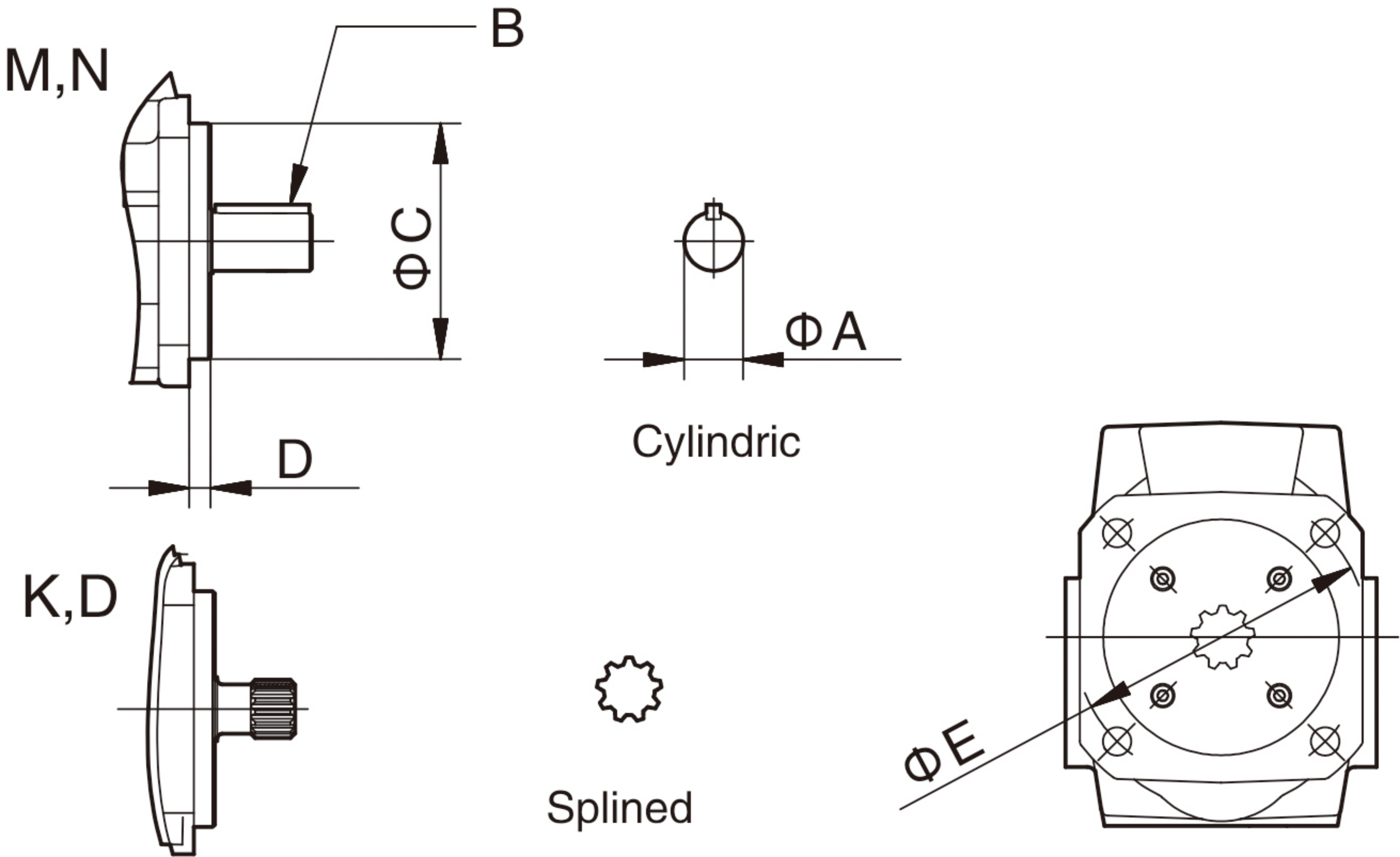
設計番號

Design No.

| 代號 code       | 連結方式 Mounting |                            |
|---------------|---------------|----------------------------|
| ※ M(standard) | 公制            | ISO3019/2 Cylindric, key   |
| K             | Metric        | ISO3019/2 Splined, DIN5480 |
| N             | 英制            | ISO3019/1 Cylindric, key   |
| D             | Inch          | ISO3019/1 Splined, SAE     |

| 代號 code       | 螺紋 Threads |
|---------------|------------|
| ※ 1(standard) | BSPP(G)    |
| 2             | PT(RC)     |
| 3             | UNF        |
| 4             | NPT        |
| 7             | ISO6149    |

| 代號 code |              | 型式 model      | 軸心 shaft                       |                     | 法蘭 flange |      | 連接 mounting |
|---------|--------------|---------------|--------------------------------|---------------------|-----------|------|-------------|
|         |              |               | A                              | B                   | C         | D    | E           |
| ※ M     | 公制<br>Metric | PV016 ~ PV023 | Φ25                            | 8x7x40              | Φ100      | 9    | Φ125        |
|         |              | PV032 ~ PV046 | Φ32                            | 10x8x56             | Φ125      | 9    | Φ160        |
|         |              | PV063 ~ PV092 | Φ40                            | 12x8x80             | Φ160      | 9    | Φ200        |
|         |              | PV140 ~ PV180 | Φ50                            | 12x8x80             | Φ160      | 9    | Φ200        |
|         |              | PV270         | Φ65                            | 12x8x80             | Φ200      | 9    | Φ250        |
| K       | 公制<br>Metric | PV016 ~ PV023 | W25x1.5x15x8f DIN5480          |                     | Φ100      | 9    | Φ125        |
|         |              | PV032 ~ PV046 | W32x1.5x20x8f DIN5480          |                     | Φ125      | 9    | Φ160        |
|         |              | PV063 ~ PV092 | W40x1.5x25x8f DIN5480          |                     | Φ160      | 9    | Φ200        |
|         |              | PV140 ~ PV180 | W50x2x24x9g DIN5480            |                     | Φ160      | 9    | Φ200        |
|         |              | PV270         | W60x2x28x9g DIN5480            |                     | Φ200      | 9    | Φ250        |
| N       | 英制<br>Inch   | PV016 ~ PV023 | Φ1"                            | 0.25" x0.25" x1.6"  | Φ4"       | 3/8" | Φ5"         |
|         |              | PV032 ~ PV046 | Φ1-1/4"                        | 5/16" x5/16" x2.2"  | Φ5"       | 1/2" | Φ6.37"      |
|         |              | PV063 ~ PV092 | Φ1-3/4"                        | 7/16" x7/16" x3.15" | Φ6"       | 1/2" | Φ9"         |
|         |              | PV140 ~ PV180 | Φ2"                            | 1/2" x1/2" x2.95"   | Φ6"       | 1/2" | Φ9"         |
|         |              | PV270         | Φ2"                            | 1/2" x1/2" x2.95"   | Φ6.5"     | 5/8" | Φ12.5"      |
| D       | 英制<br>Inch   | PV016 ~ PV023 | Splined 15T 16/32DP ANSI B92.1 |                     | Φ4"       | 3/8" | Φ5"         |
|         |              | PV032 ~ PV046 | Splined 14T 12/24DP ANSI B92.1 |                     | Φ5"       | 1/2" | Φ6.37"      |
|         |              | PV063 ~ PV092 | Splined 13T 8/16DP ANSI B92.1  |                     | Φ6"       | 1/2" | Φ9"         |
|         |              | PV140 ~ PV180 | Splined 15T 8/16DP ANSI B92.1  |                     | Φ6"       | 1/2" | Φ9"         |
|         |              | PV270         | Splined 15T 8/16DP ANSI B92.1  |                     | Φ6.5"     | 5/8" | Φ12.5"      |





PV 軸向柱塞泵



型號說明  
Order No.

|                          |                                   |                          |                          |                          |                          |                          |                          |                          |                          |
|--------------------------|-----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PV 系列                    | 063 規格排量                          | GT 調節器                   | R 旋轉方向                   | M 連接                     | 1 螺紋                     | A 通軸裝配                   | 電壓                       | 油封                       | 設計番號                     |
| Series                   | Size and Compensator Displacement | Regulator                | Rotation                 | Mounting                 | Threads                  | Thru drive& 2nd pump     | Voltage                  | Seals                    | Design No.               |

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|                                                |                                     |                          |
|------------------------------------------------|-------------------------------------|--------------------------|
| 代號 code                                        | 通軸方式 Thru drive&2nd pump            |                          |
| A(standard)                                    | 單泵 Single pump                      |                          |
| B                                              | 單泵(附通軸孔)<br>Prepared for thru drive |                          |
| 單泵(附通軸孔、連結附件)<br>With adaptor for 2nd pump     |                                     |                          |
| C                                              | 英制<br>Inch                          | SAE AA,Φ2" (Φ50.8mm)     |
| D                                              |                                     | SAE A,Φ3-1/4" (Φ82.55mm) |
| E                                              |                                     | SAE B,Φ4" (Φ101.6mm)     |
| F                                              |                                     | SAE C,Φ5" (Φ127mm)       |
| G                                              |                                     | SAE D,Φ6" (Φ152.4mm)     |
| H                                              |                                     | SAE E,Φ6.5" (Φ165.1mm)   |
| I                                              | 公制<br>Metric                        | Metric,Φ63               |
| J                                              |                                     | Metric,Φ80               |
| K                                              |                                     | Metric,Φ100              |
| L                                              |                                     | Metric,Φ125              |
| M                                              |                                     | Metric,Φ160              |
| N                                              |                                     | Metric,Φ200              |
| 其他規格泵浦可接受訂購<br>Other pump are acceptable order |                                     |                          |

| 代號 code | 電壓 Voltage      |
|---------|-----------------|
| 0       | 無電壓控制           |
| A       | AC100V(50-60Hz) |
| B       | AC110V(60Hz)    |
| C       | AC200V(50-60Hz) |
| D       | AC220V(60Hz)    |
| E       | DC12V           |
| F       | DC24V           |

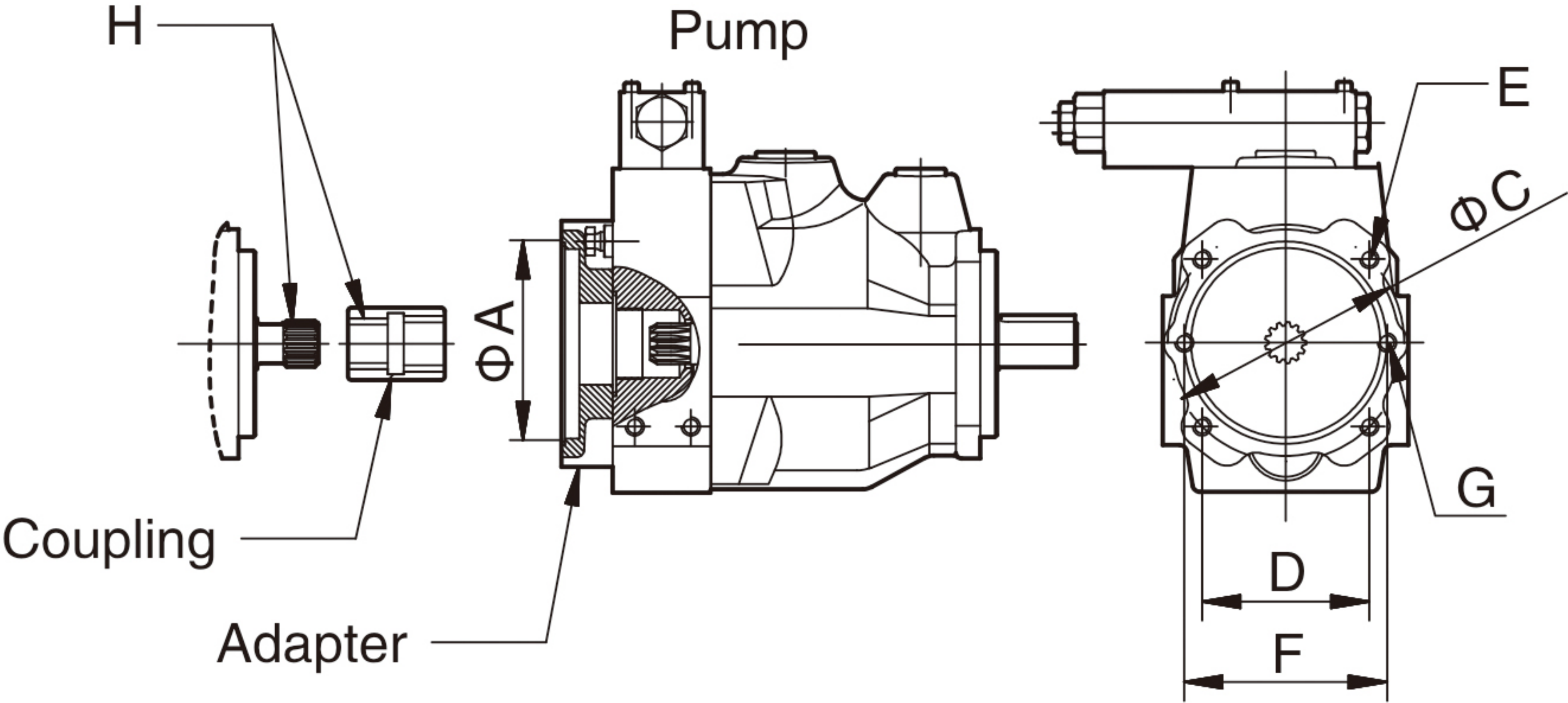
訂貨時不需要  
Not require  
for order

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| 代號 code | 油封 Seals                  |
|---------|---------------------------|
| N       | 丁腈橡膠<br>NBR               |
| V       | 氟橡膠<br>FPM                |
| E       | 乙烯-丙烯<br>Ethylen-propylen |

| 單泵(附通軸孔、連結附件)Thru drive&2nd pump |              |                           |                  |      |                  |          |                   |           |                              |
|----------------------------------|--------------|---------------------------|------------------|------|------------------|----------|-------------------|-----------|------------------------------|
| 代號 code                          |              | 型式 Model                  | ΦA               | ΦC   | D                | E        | F                 | G         | H                            |
| C                                | 英制<br>Inch   | SAE AA, Φ2" (Φ50.8mm)     | Φ2" (Φ50.8)      |      |                  |          | 3.25" (82.55mm)   | 5/16" -18 | 9T 20/40 DP                  |
| D                                |              | SAE A, Φ3-1/4" (Φ82.55mm) | Φ3-1/4" (Φ82.55) |      |                  |          | 4.188" (106.3mm)  | 3/8" -16  | 9T 16/32 DP                  |
| E                                |              | SAE B, Φ4" (Φ101.6mm)     | Φ4" (Φ101.6)     |      | 3.536" (89.8mm)  | 1/2" -13 | 5.75" (146.05mm)  | 1/2" -13  | 13T 16/32 DP<br>15T 16/32 DP |
| F                                |              | SAE C, Φ5" (Φ127mm)       | Φ5" (Φ127)       |      | 4.508" (114.5mm) | 1/2" -13 | 7.125" (180.98mm) | 5/8" -11  | 14T 12/24 DP<br>15T 16/32 DP |
| G                                |              | SAE D, Φ6" (Φ152.4mm)     | Φ6" (Φ152.4)     |      | 6.364" (161.6mm) | 5/8" -11 | 9" (228.6mm)      | 5/8" -11  | 13T 8/16 DP<br>15T 8/16 DP   |
| H                                |              | SAE E, Φ6.5" (Φ165.1mm)   | Φ6.5" (Φ165.1)   |      | 8.839" (224.5mm) | 3/4" -10 |                   |           | 15T 8/16 DP                  |
| I                                | 公制<br>Metric | Metric, Φ63               | Φ63              | Φ85  |                  | M8       | 100               | M8        |                              |
| J                                |              | Metric, Φ80               | Φ80              | Φ103 |                  | M8       | 109               | M10       |                              |
| K                                |              | Metric, Φ100              | Φ100             | Φ125 |                  | M10      | 150               | M12       | W25x1.5x15x8f                |
| L                                |              | Metric, Φ125              | Φ125             | Φ160 |                  | M12      | 180               | M16       | W32x1.5x20x8f                |
| M                                |              | Metric, Φ160              | Φ160             | Φ200 |                  | M16      | 224               | M20       | W40x1.5x25x8f<br>W50x2x24x9g |
| N                                |              | Metric, Φ200              | Φ200             | Φ250 |                  | M20      |                   |           | W50x2x24x9g                  |

| 聯軸器 Coupling |               |    |               |
|--------------|---------------|----|---------------|
| 代號 code      | 泵浦 pump       | H  |               |
| A-D1         | PV016 ~ PV023 | D1 | 9T 20/40 DP   |
| A-D2         |               | D2 | 9T 16/32 DP   |
| A-D3         |               | D3 | 13T 16/32 DP  |
| A-D4         |               | D4 | 15T 16/32 DP  |
| A-W1         |               | W1 | W25x1.5x15x8f |
| B-D2         | PV032 ~ PV046 | D2 | 9T 16/32 DP   |
| B-D3         |               | D3 | 13T 16/32 DP  |
| B-D4         |               | D4 | 15T 16/32 DP  |
| B-D5         |               | D5 | 14T 12/24 DP  |
| B-W1         |               | W1 | W25x1.5x15x8f |
| B-W2         | PV063 ~ PV092 | W2 | W32x1.5x20x8f |
| C-D2         |               | D2 | 9T 16/32 DP   |
| C-D3         |               | D3 | 13T 16/32 DP  |
| C-D4         |               | D4 | 15T 16/32 DP  |
| C-D5         |               | D5 | 14T 12/24 DP  |
| C-D6         | PV140 ~ PV180 | D6 | 13T 8/16 DP   |
| C-D7         |               | D7 | 15T 8/16 DP   |
| C-W1         |               | W1 | W25x1.5x15x8f |
| C-W2         |               | W2 | W32x1.5x20x8f |
| C-W3         |               | W3 | W40x1.5x25x8f |
| C-W4         | PV270         | W4 | W50x2x24x9g   |
| D-D2         |               | D2 | 9T 16/32 DP   |
| D-D3         |               | D3 | 13T 16/32 DP  |
| D-D4         |               | D4 | 15T 16/32 DP  |
| D-D5         |               | D5 | 14T 12/24 DP  |
| D-D6         | PV270         | D6 | 13T 8/16 DP   |
| D-D7         |               | D7 | 15T 8/16 DP   |
| D-W1         |               | W1 | W25x1.5x15x8f |
| D-W2         |               | W2 | W32x1.5x20x8f |
| D-W3         |               | W3 | W40x1.5x25x8f |
| D-W4         | PV270         | W4 | W50x2x24x9g   |
| E-D2         |               | D2 | 9T 16/32 DP   |
| E-D3         |               | D3 | 13T 16/32 DP  |
| E-D4         |               | D4 | 15T 16/32 DP  |
| E-D5         |               | D5 | 14T 12/24 DP  |
| E-D6         | PV270         | D6 | 13T 8/16 DP   |
| E-D7         |               | D7 | 15T 8/16 DP   |
| E-W1         |               | W1 | W25x1.5x15x8f |
| E-W2         |               | W2 | W32x1.5x20x8f |
| E-W3         |               | W3 | W40x1.5x25x8f |
| E-W4         | PV270         | W4 | W50x2x24x9g   |
| E-W5         |               | W5 | W60x2x28x9g   |





## 調節器 Compensator

### Stand Type 標準型

|   |                               |          |
|---|-------------------------------|----------|
| A | Standard Pressure compensator | 標準型壓力調節器 |
|---|-------------------------------|----------|

### Remote Type 遙控型

|    |                                                                                                                 |               |
|----|-----------------------------------------------------------------------------------------------------------------|---------------|
| GT | Remote Pressure compensator                                                                                     | 遙控型調節器        |
| GM | Remote Pressure compensator allows a pilot valve                                                                | 疊式遙控型調節器      |
| GA | Remote Pressure compensator allows a pilot valve with NG6 interface (Relief valve included)Pressure compensator | 疊式遙控型調節器 +溢流閥 |
| GJ | Layer Proportional pressure compensator (Proportional valve included)                                           | 疊式遙控型調節器 +比例閥 |

### Electrical unloading Type 電控卸載型

|    |                                     |                 |
|----|-------------------------------------|-----------------|
| GR | Electrical unloading                | 電控卸載型調節器        |
| GD | Electrical unloading with remote    | 電控卸載型調節器 +外接遙控  |
| GB | Dual pressure control               | 電控兩段壓力調節器       |
| GE | Dual pressure control with remote   | 電控兩段壓力調節器 +外接遙控 |
| GC | Dual pressure+ electrical unloading | 兩段壓力+電控卸載調節器    |
| L  | Dual Flow compensator               | 電控兩段流量調節器       |

### Load-sensing Type 負載感應型

|    |                                                                |                   |
|----|----------------------------------------------------------------|-------------------|
| HL | Load-sensing compensator                                       | 負載感應型調節器          |
| HM | Load-sensing compensator with NG6 interface                    | 疊式負載感應型調節器        |
| HW | Load-sensing compensator (Relief valve included)               | 疊式負載感應型調節器 +溢流閥   |
| HP | Load-sensing compensator (Proportional valve included)         | 疊式負載感應型調節器 +比例閥   |
| HJ | 2-valve load-sensing compensator with NG6 interface            | 疊式雙閥負載感應型調節器      |
| HA | 2-valve load-sensing compensator (Relief valve included)       | 疊式雙閥負載感應型調節器 +溢流閥 |
| HR | 2-valve load-sensing compensator (Proportional Valve included) | 疊式雙閥負載感應型調節器 +比例閥 |



## 調節器 Compensator

## Proportional Pressure, flow Type 比例壓力、流量型

|    |                                                                              |                     |
|----|------------------------------------------------------------------------------|---------------------|
| HQ | Load-sensing & Proportional flow control                                     | 負載感應+比例流量調節器        |
| HF | 2-valve load-sensing & Proportional flow control                             | 雙閥負載感應+比例流量調節器      |
| HK | Load-sensing & Proportional Pressure ,Proportional flow control              | 負載感應+比例壓力+比例流量調節器   |
| HZ | 2-valve load-sensing & Proportional pressure ,Proportional flow control      | 雙閥負載感應+比例壓力+比例流量調節器 |
| B  | Multi-stage Flow & Single-stage Pressure Compensator Control (With Cylinder) | 油壓缸型 無段流量變速控制       |

## Horse power Type 恆功率、定馬力型

|    |                                                                                               |                    |
|----|-----------------------------------------------------------------------------------------------|--------------------|
| PA | Horse power compensator with NG6 interface                                                    | 疊式定馬力調節器           |
| PM | Horse power compensator with NG6 interface (Relief valve included)                            | 疊式定馬力調節器 +溢流閥      |
| PG | Horse power compensator with remote                                                           | 定馬力+外控壓力調節器        |
| PL | Horse power compensator with remote & Load-sensing compensator                                | 定馬力+外控壓力+負載感應調節器   |
| PH | Horse power compensator with NG6 interface (Relief valve included) & Load-sensing compensator | 疊式定馬力 +溢流閥+負載感應調節器 |

## Proportional compensation Type 比例回饋型

|    |                                                                                                 |                         |
|----|-------------------------------------------------------------------------------------------------|-------------------------|
| FV | Proportional displacement with flow compensation                                                | 比例流量+流量回饋控制             |
| FR | Proportional pressure, proportional displacement with flow compensation                         | 比例壓力+比例流量+流量回饋控制        |
| FG | Proportional pressure, proportional displacement with pressure compensation & flow compensation | 比例壓力+比例流量+壓力回饋控制+流量回饋控制 |



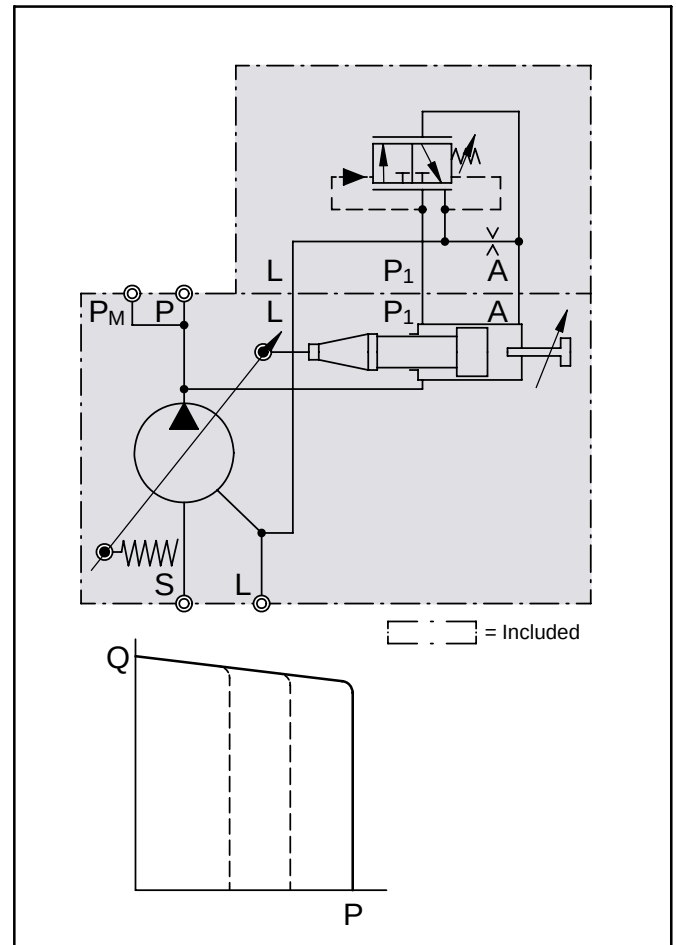
## A 標準型壓力調節器 Standard Pressure compensator

標準的壓力調節器代號A  
滿足泵浦排量的實際消耗並使預先設定的系統壓力保持不變。  
只要泵的出口壓力P低於設定壓力（調節閥的彈簧所調定的值），調節閥的工作油口A就與油箱相通並且調節活塞面積大的一端失壓。重定彈簧使泵保持在全流量狀態。  
當系統壓力達到調節器的彈簧所調定的值時，調節閥的P1與A相通並在調節活塞上產生一個壓力使擺角減小，從而調節排量直接地滿足系統要求的設定壓力。

The standard pressure compensator adjusts the pump displacement according to the actual need of the system in order to keep the pressure constant.

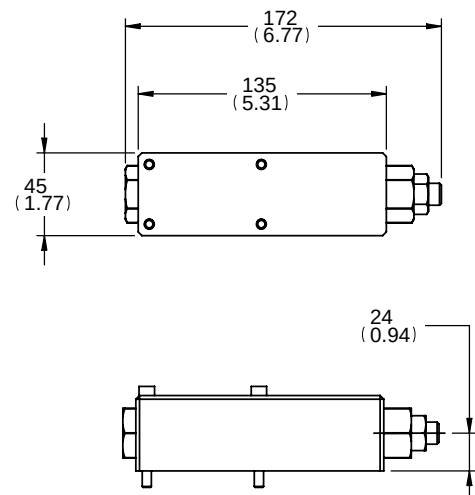
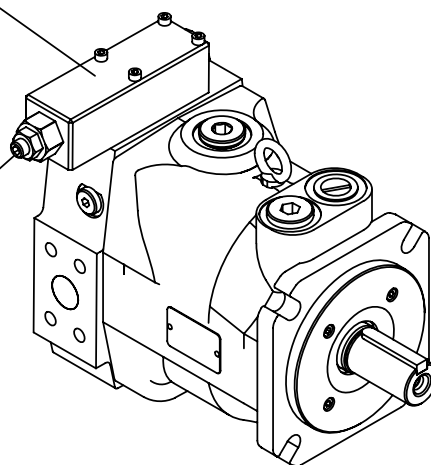
As long as the system pressure at outlet port P is lower than the set pressure (set as spring preload of the compensator spring) the working port A of the compensator valve is connected to the case drain and the piston area is unloaded. Bias spring and system pressure on the annulus area keep the pump at full displacement.

When the system pressure reaches the set pressure the compensator valve spool connects port P1 to A and builds up a pressure at the servo piston resulting in a down stroking of the pump. The displacement of the pump is controlled in order to match the flow requirement of the system.



標準型壓力調整器  
Standard pressure compensator

壓力調整螺絲  
Control screw





## GT 遙控型調節器 Remote Pressure compensator

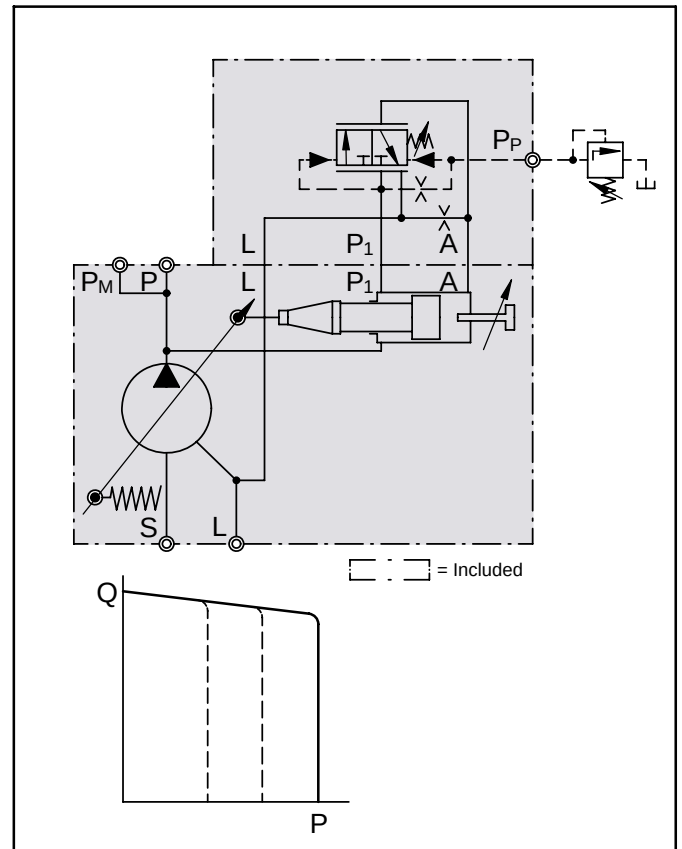
可遙控的壓力調節器代號GT  
相對於標準的壓力調節器，在調節器上直接進行壓力調節。GT遙控型壓力調節器可以在調節器的遙控接口PP連接一個壓力先導閥來進行先導控制。控制壓力之液壓油來自調節器的內部。  
控制油流約為1-1.5 l/min。

先導閥也可以距離調節器更遠地進行安裝，比如可以從系統控制台進行壓力調節。遙控型壓力調節器比標準型壓力調節器反應更快且精度更高，同時可以解決在臨界應用狀態時使用標準型壓力調節器出現的不穩定現象。  
當然先導閥也可以採用電控式（比例-壓力閥）或者組合換向閥用於低壓操作（無壓回路）。

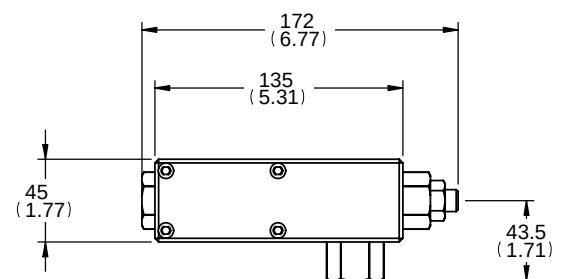
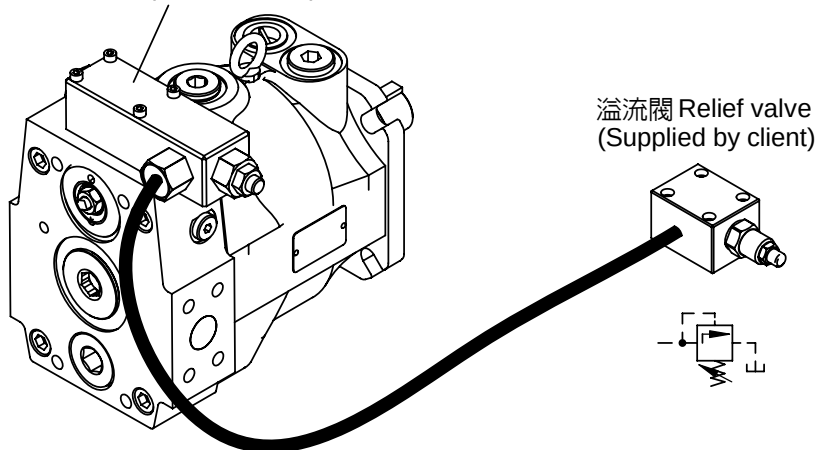
While at the standard pressure compensator the pressure is set directly at the compensator spring, the setting of the remote pressure compensator can be achieved by any suitable pilot pressure valve connected to pilot port PP. The pilot flow supply is internal through the valve spool.

The pilot flow is 1-1.5 l/min. The pilot valve can be installed remote from the pump in some distance. That allows pressure setting e.g. from the control panel of the machine. The remote pressure compensator typically responds faster and more precisely than the standard pressure compensator and is able to solve instability problems that may occur with a standard pressure compensator in critical applications.

The pressure pilot valve can also be electronically controlled (proportional pressure valve) or combined with a directional control valve for low pressure standby operation.

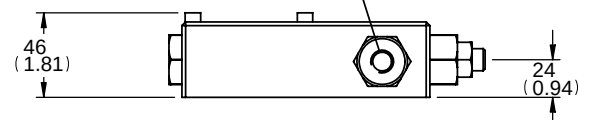


遙控型壓力調整器  
Remote pressure compensator



遙控接口 Remote port

G 1/4 BSPP (threads code: 1)  
7/16-20 UNF (threads code: 3)  
M12xP1.5 ISO 6149-1 (threads code: 7)





## GM 疊式遙控型調節器

Remote Pressure compensator allows a pilot valve with NG6 interface

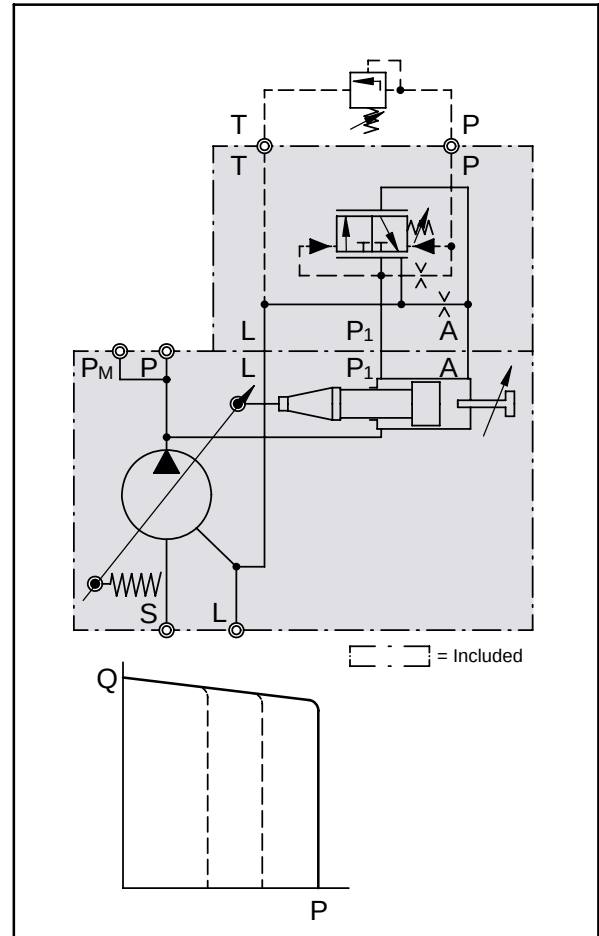
### GM 疊式遙控型調節器

在其調節閥的上方預留一個NG6的介面。  
在此介面上可以直接安裝一個先導閥。除了採用手動調節以外，電液調節也可以實現連續的壓力控制。  
油昇提供多種配裝在調節器的附件。疊式遙控型調節器有約15bar的出廠設定壓力。在泵浦出油口的壓力會先導閥的調節值之上。

若在NG6介面配裝上油昇比例壓力閥，即可達成電控比例控制。

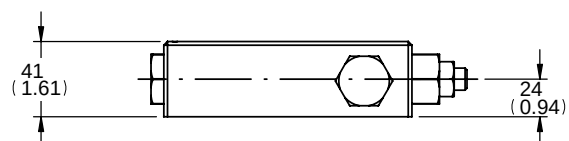
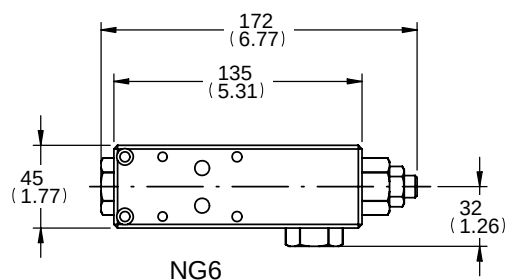
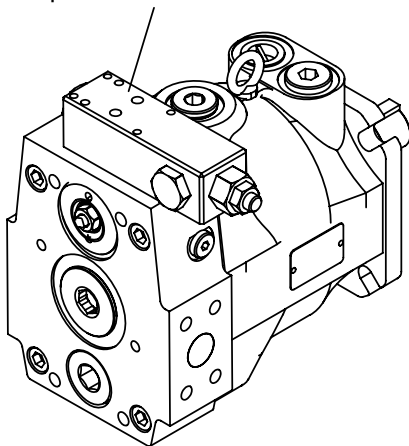
Version GM of the remote pressure compensator provides on its top side an interface NG6, DIN24340 (CETOP 03 at RP35H, NFPA D03).

This interface allows a direct mounting of a pilot valve. Beside manual or electrohydraulic operated valves it is also possible to mount complete multiple pressure circuits directly on the compensator body. YEOSHE offers a variety of these compensator accessories ready to install. All remote pressure compensator have a factory setting of 15 bar differential pressure. With this setting, the controlled pressure at the pump outlet is higher than the pressure controlled by the pilot valve.



### 疊式遙控型調節器

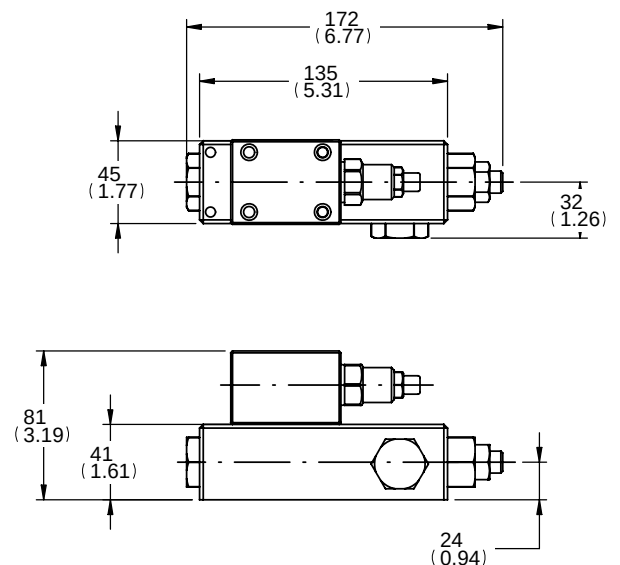
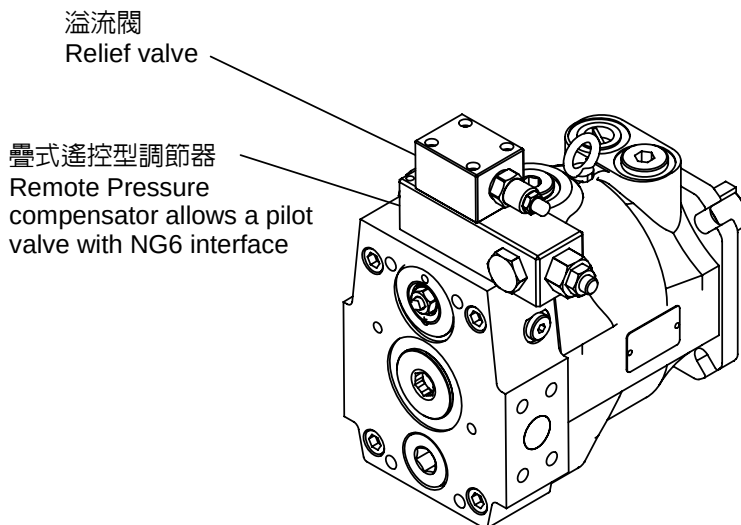
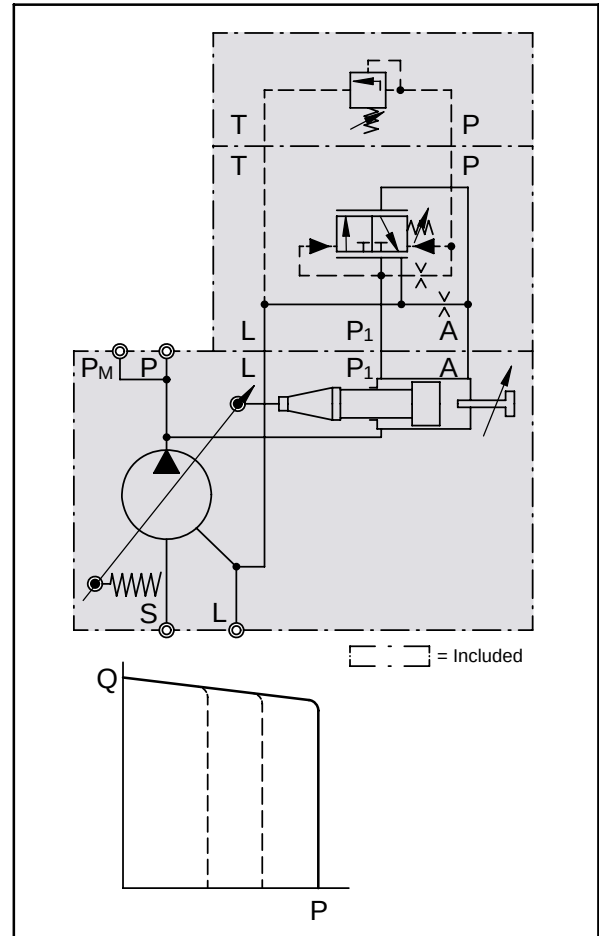
Remote Pressure compensator allows a pilot valve with NG6 interface





## GA 疊式遙控型調節器 + 溢流閥 Remote Pressure compensator allows a pilot valve with NG6 interface (Relief valve included)

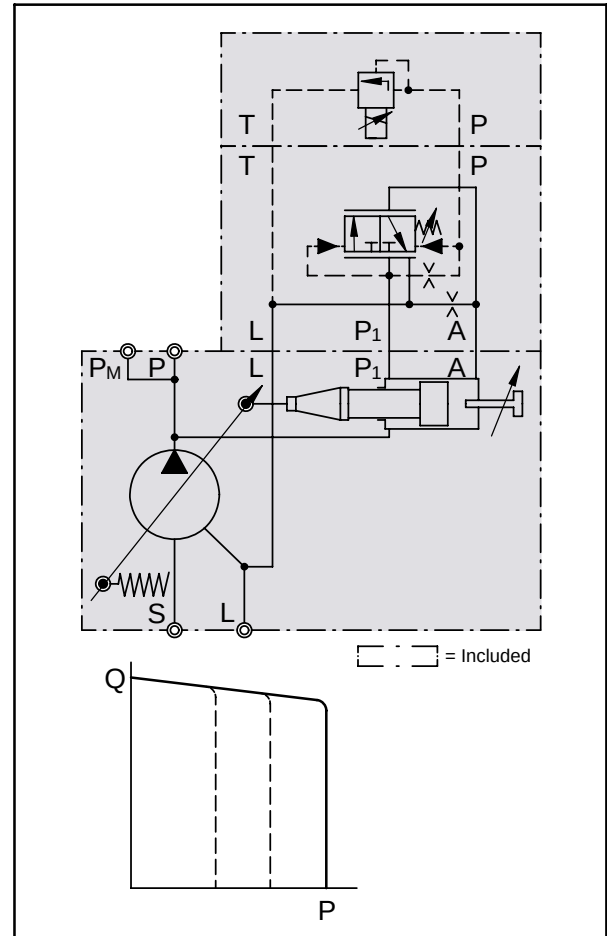
GA 疊式遙控型調節器+溢流閥  
滿足泵浦排量的實際消耗並使預先設定的系統壓力  
保持不變。並在其調節閥的上方安裝一個先導溢流  
閥，增加一個壓力先導調節功能。





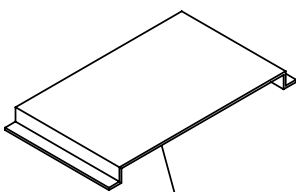
## GJ 疊式遙控型調節器 +比例閥 Layer Proportional pressure compensator (Proportional valve included)

GJ疊式遙控型調節器+比例閥  
滿足泵浦排量的實際消耗並使預先設定的系統壓力  
保持不變。並在其調節閥的上方安裝一個油昇比例  
壓力閥，實現電控比例壓力控制。

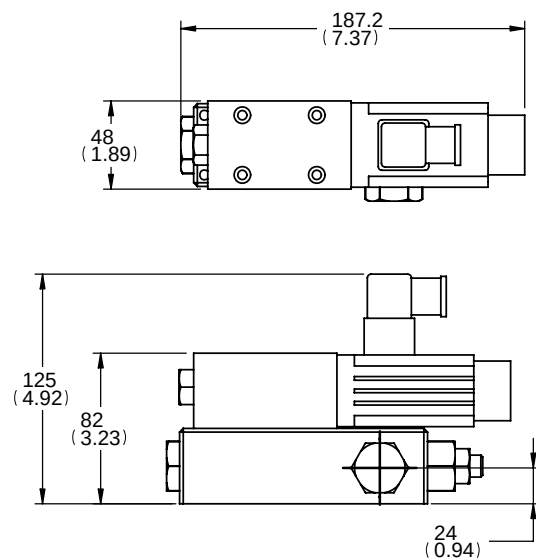


比例閥  
Proportional Polot Relief valve

疊式遙控型調節器  
Remote Pressure  
compensator allows a pilot  
valve with NG6 interface



電子控制電路板(放大器)  
Electronic Amplifier P-C Board

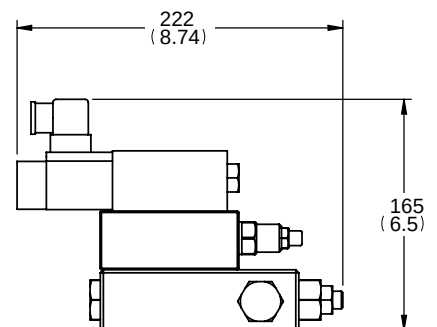
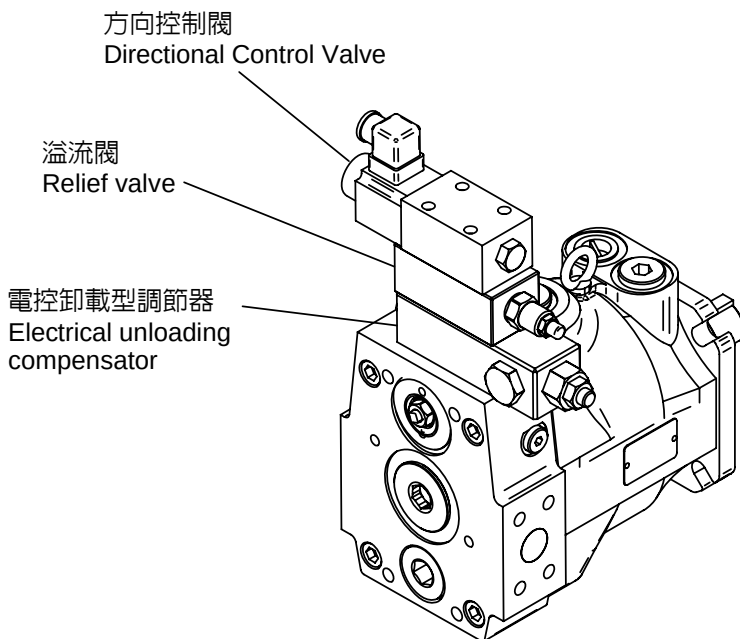
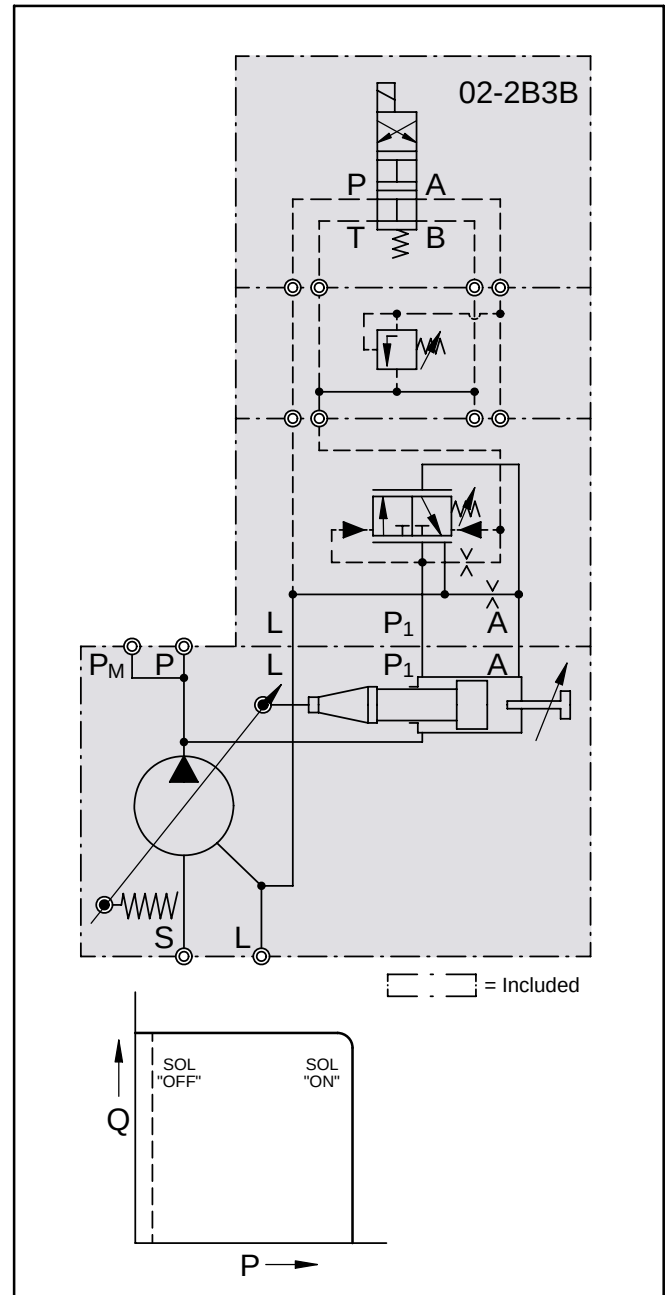




## GR 電控卸載型調節器 Electrical unloading

GR電控卸載型調節器  
在其調節器上方加裝一個溢流閥及電磁式方向控制閥，增加壓力先導調節功能，及電控卸載機能。

適用於卸壓時間長的情況。  
系統停機時，通過泵的卸壓運轉，油溫和噪音可保持較低水平。





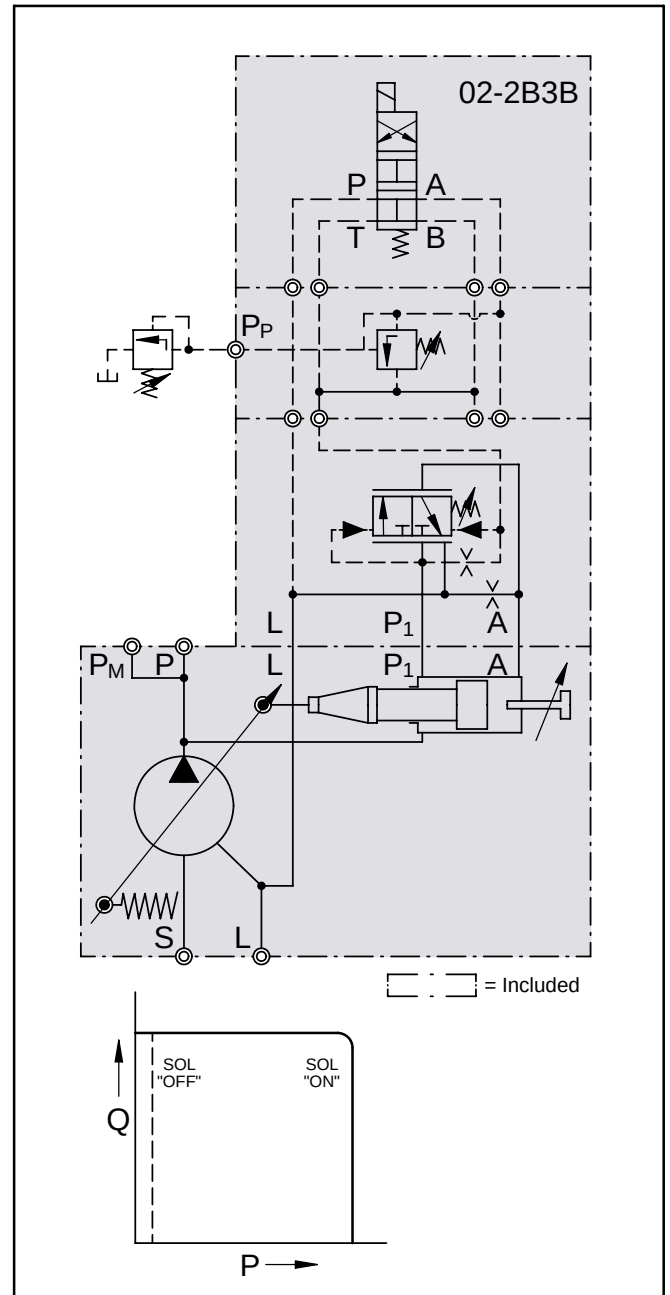
## GD 電控卸載型調節器 + 外接遙控 Electrical unloading with remote

GD電控卸載型調節器+外接遙控

在其調節器上方加裝一個溢流閥及電磁式方向控制閥，增加壓力先導調節功能，及電控卸載機能。並可於PP遙控接口，連接一個先導閥，遠距離的進行壓力調節。

適用於卸壓時間長的情況。

系統停機時，通過泵的卸壓運轉，油溫和噪音可保持較低水平。

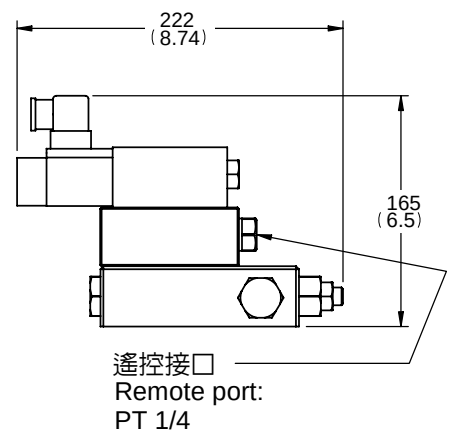
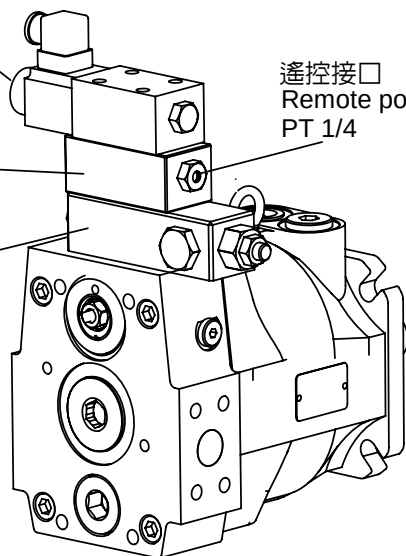


方向控制閥  
Directional Control Valve

溢流閥  
Relief valve

兩段壓力調節器  
Dual pressure compensator

遙控接口  
Remote port:  
PT 1/4



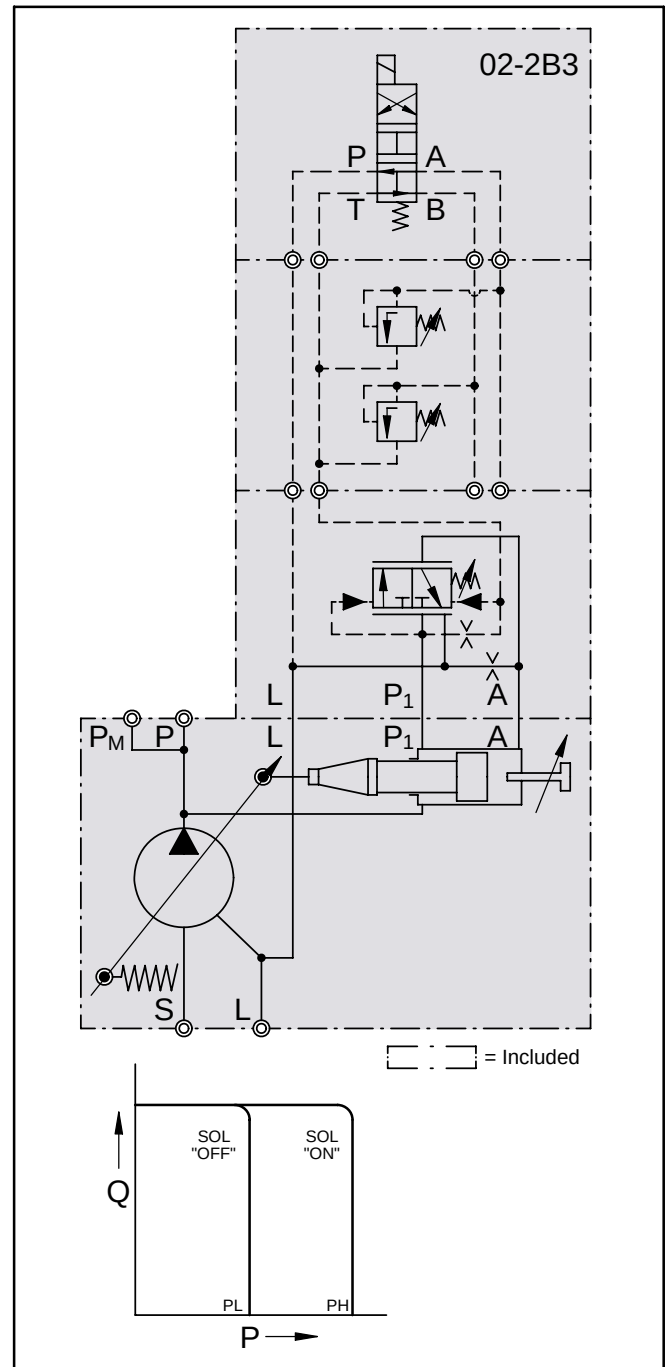


## GB 電控兩段壓力調節器 Dual pressure control

GB電控兩段壓力調節器  
在其調節器上方加裝一個兩段壓力溢流閥及電磁式方向控制閥，可調節高低兩個不同的限壓壓力，並且達到電控兩段壓力變換。

適用於油壓缸在恒定速度下，設定兩段工作壓力時使用。

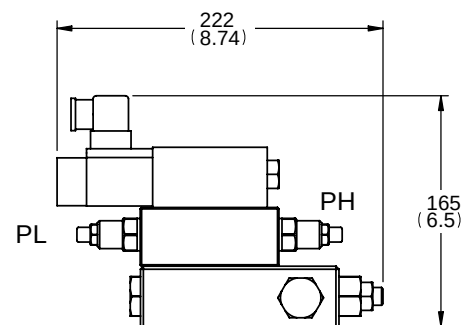
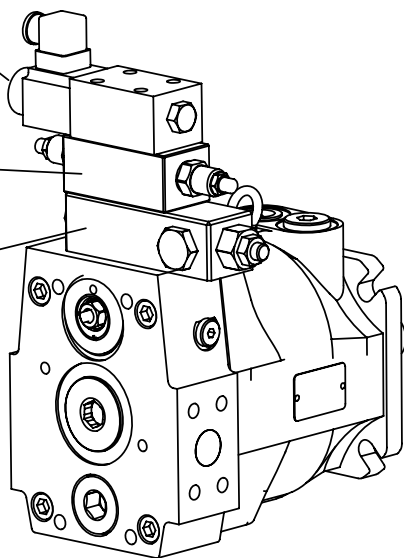
PL與PH閥可任選一方作為高壓。



方向控制閥  
Directional Control Valve

溢流閥  
Relief valve

兩段壓力調節器  
Dual pressure compensator

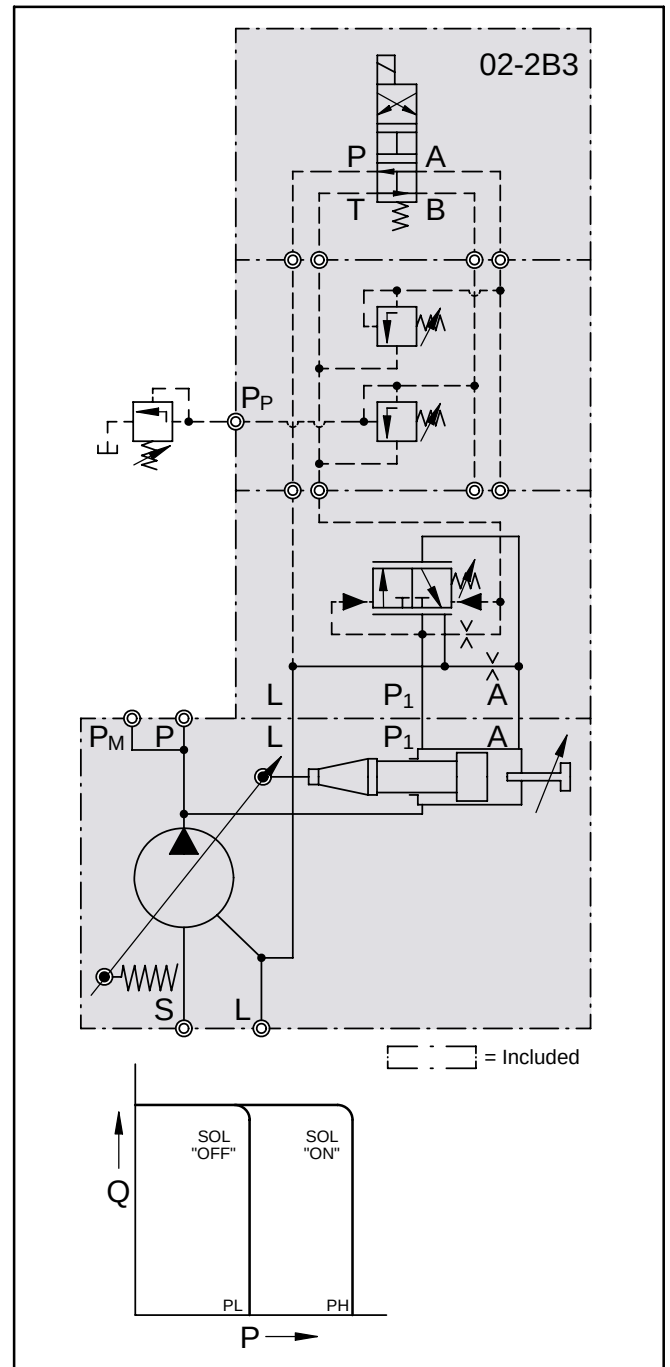




## GE 電控兩段壓力調節器+外接遙控 Dual pressure control with remote

GE電控兩段壓力調節器+外接遙控  
再其調節器上方加裝一個兩段壓力溢流閥及電磁  
式方向控制閥，可調節高低兩個不同的限壓壓力  
，達到電控兩段壓力變換，並可於PP遙控接口，  
連接一個壓力先導閥來進行先導控制。

適用於油壓缸在恒定速度下，設定兩段工作壓力  
時使用。  
PL與PH閥可任選一方作為高壓。

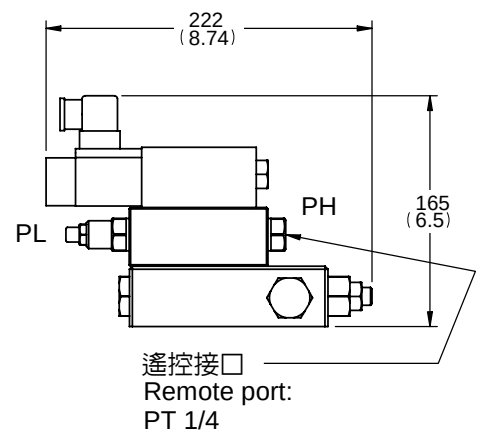


方向控制閥  
Directional Control Valve

溢流閥  
Relief valve

兩段壓力調節器  
Dual pressure compensator

遙控接口  
Remote port:  
PT 1/4





## GC 兩段壓力+電控卸載調節器 Dual pressure +electrical unloading

### GC兩段壓力+電控卸載調節器

利用電磁式方向控制閥，控制高低兩個不同的限壓壓力，並追加卸載機能，系統停機時，利用泵浦的卸載，可保持較低的油溫和噪音。

適用於油壓缸在恒定速度下，設定兩段工作壓力，及卸壓時間長的情況下使用。  
PL與PH閥可任選一方作為高壓。

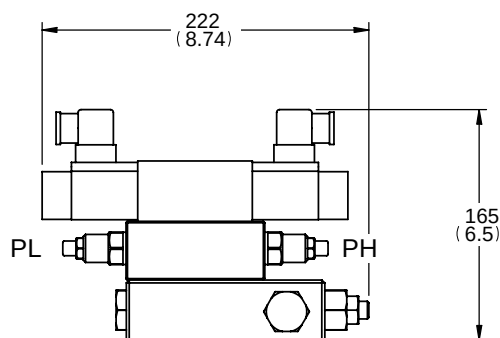
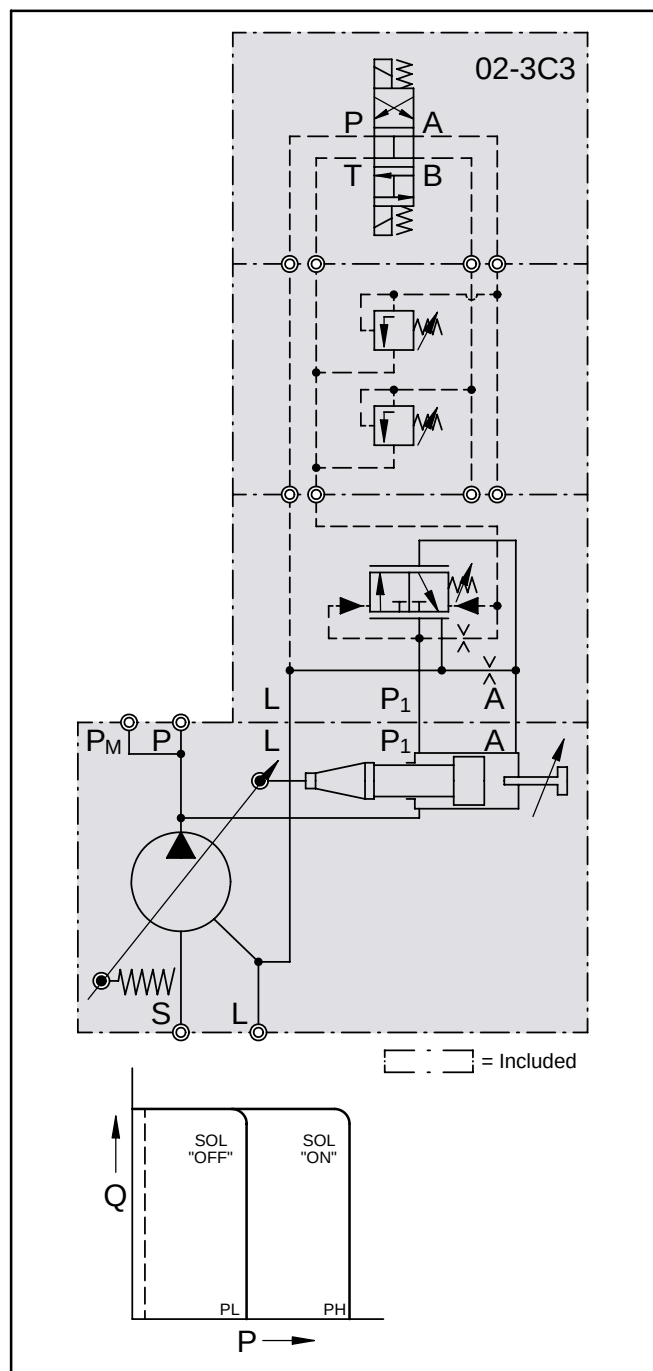
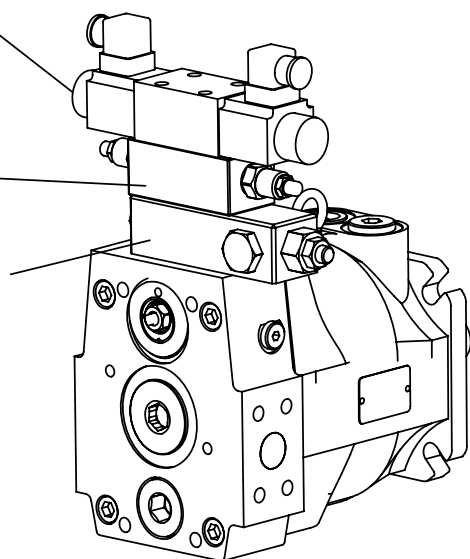
PV pump with fast response remote pressure control, relief valve with 2 pressure stages, electrical pressure selection, nitrile seals, spindle adjustment, 24 VDC solenoid, plug to DIN 46350 accessories fitted.

Usable for horsepower control and proportional volume control, too.

方向控制閥  
Directional Control Valve

溢流閥  
Relief valve

兩段壓力調節器  
Dual pressure compensator





## HL 負載感應型調節器 Load-sensing compensator

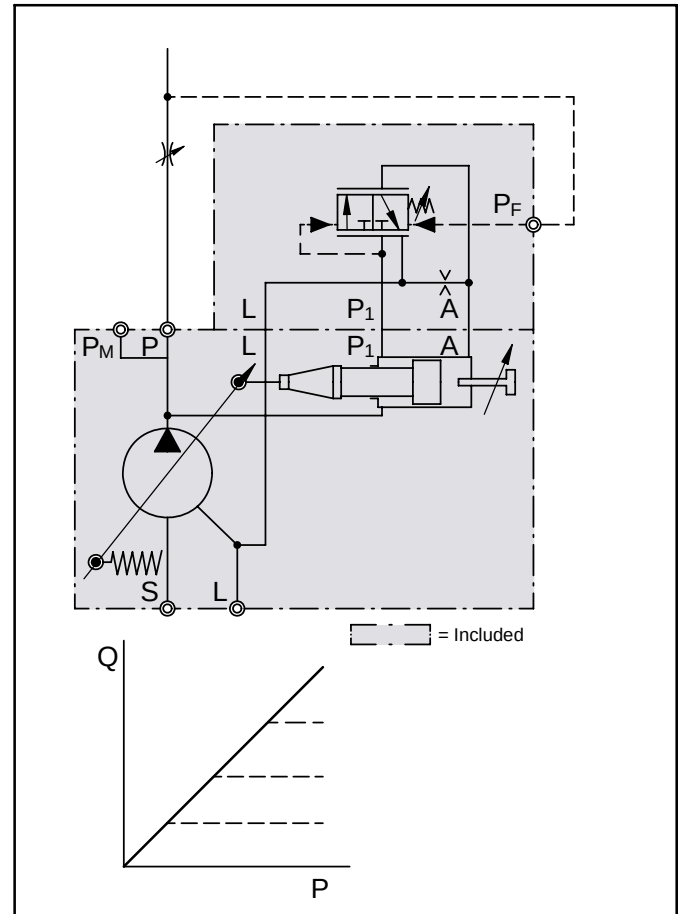
### HL 負載感應型調節器

負載感應型調節器，控制壓力油從外部回饋。調節器有約10bar的由廠家調節的壓差。壓差可做為主回路上的控制信號。因為調節器的壓差保持主油路的阻力不變，以此實現在第一條管路上對泵的流量進行調節。

當傳動轉速發生變化或負載發生波動時，在一個較寬的工作範圍內不會影響執行元件的速度。

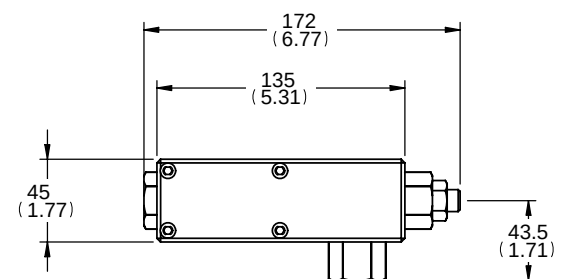
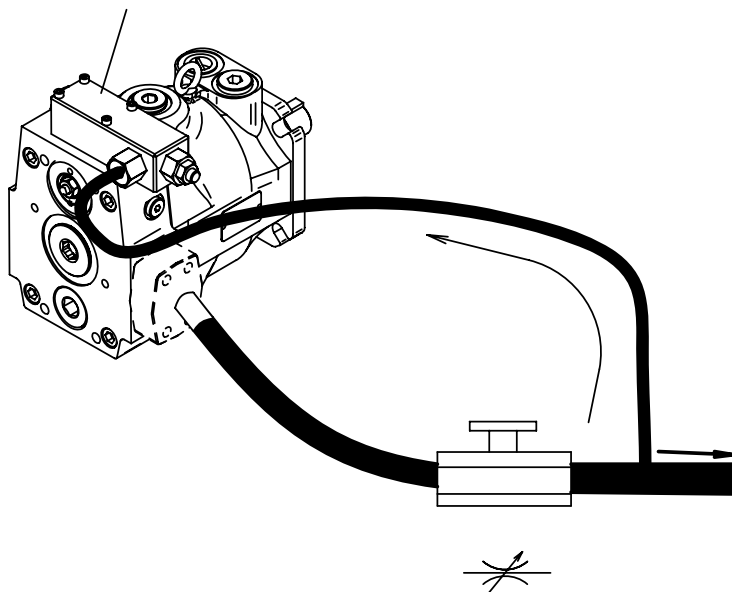
通過加一個節流孔（直徑0.8mm）和一個壓力-先導閥可增加一個壓力調節功能。此型式為簡單式之負載感應。

The load-sensing compensator has an external pilot pressure supply. Factory setting for the differential pressure is 10 bar. The input signal to the compensator is the differential pressure at a main stream resistor. A load-sensing compensator represents mainly a flow control for the pump output flow, because the compensator keeps the pressure drop at the main stream resistor constant. A variable input speed or a varying load (-pressure) has consequently no influence on the output flow of the pump and speed of the actuator. By adding a pilot orifice ( $\psi 0.8\text{mm}$ ) and a pressure pilot valve pressure compensation can be added to the flow control function. See the circuit diagram below, left.



負載感應型調節器

Load-sensing compensator

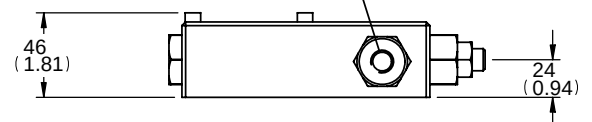


負載感應接口 Load-sensing port

G 1/4 BSPP (threads code: 1)

7/16-20 UNF (threads code: 3)

M12xP1.5 ISO 6149-1 (threads code: 7)



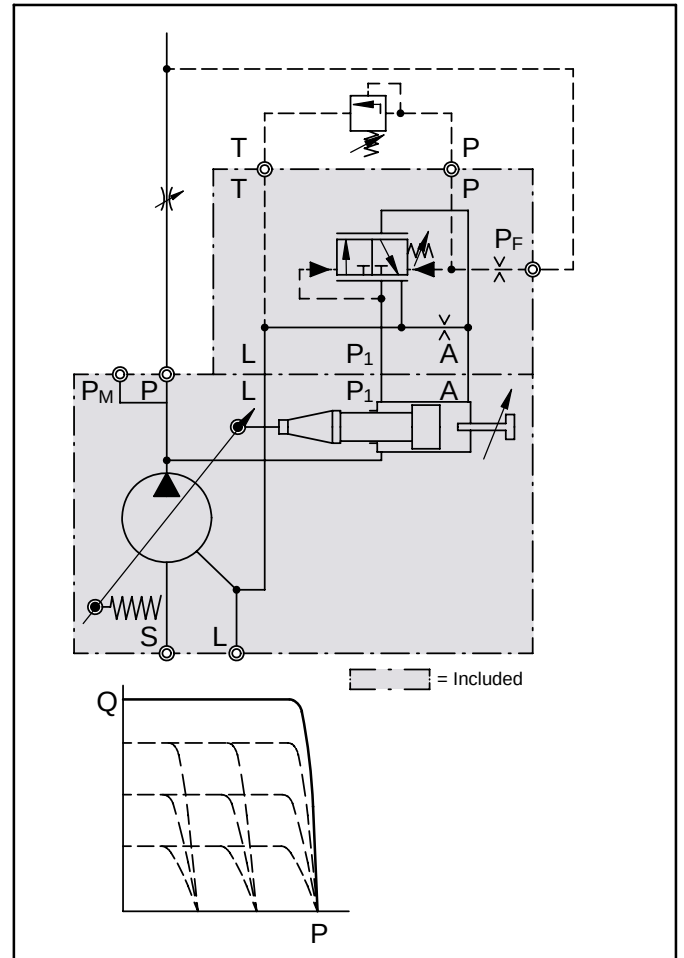


## HM 疊式負載感應型調節器 Load-sensing compensator with NG6 interface

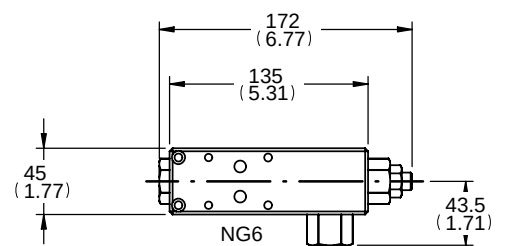
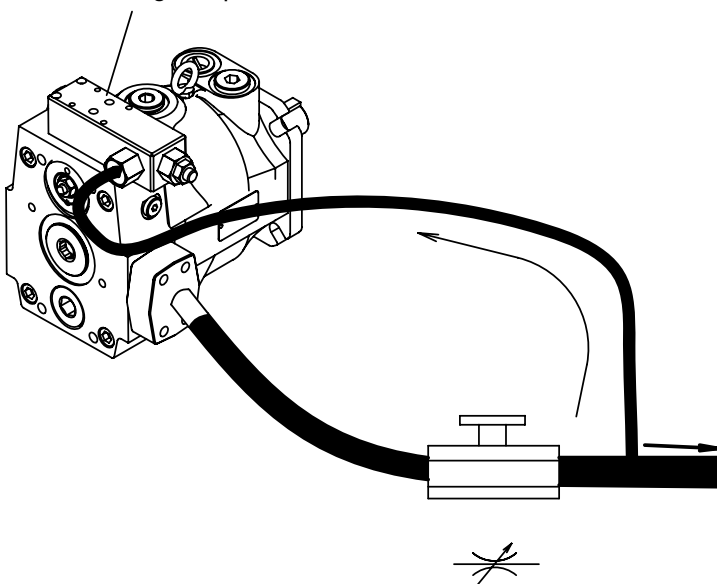
HM 疊式負載感應型調節器  
在其調節閥的上方預留一個NG6的介面。

疊式負載感應型調節器，控制壓力油從外部回饋。調節器有約10bar的由廠家調節的壓差。壓差可做為主回路上的控制信號。因為調節器的壓差保持主油路的阻力不變，以此實現在第一條管路上對泵的流量進行調節。當傳動轉速發生變化或負載發生波動時，在一個較寬的工作範圍內不會影響執行元件的速度。

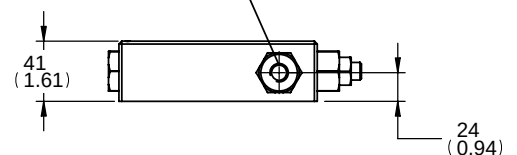
若在NG6介面加裝一個先導閥，則可增加一個壓力調節功能。  
若在NG6介面加裝一個油昇比例壓力閥，則可達成電控比例壓力控制。



疊式負載感應型調節器  
Load-sensing compensator with NG6 interface



負載感應接口 Load-sensing port  
G 1/4 BSPP (threads code: 1)  
7/16-20 UNF (threads code: 3)  
M12xP1.5 ISO 6149-1 (threads code: 7)

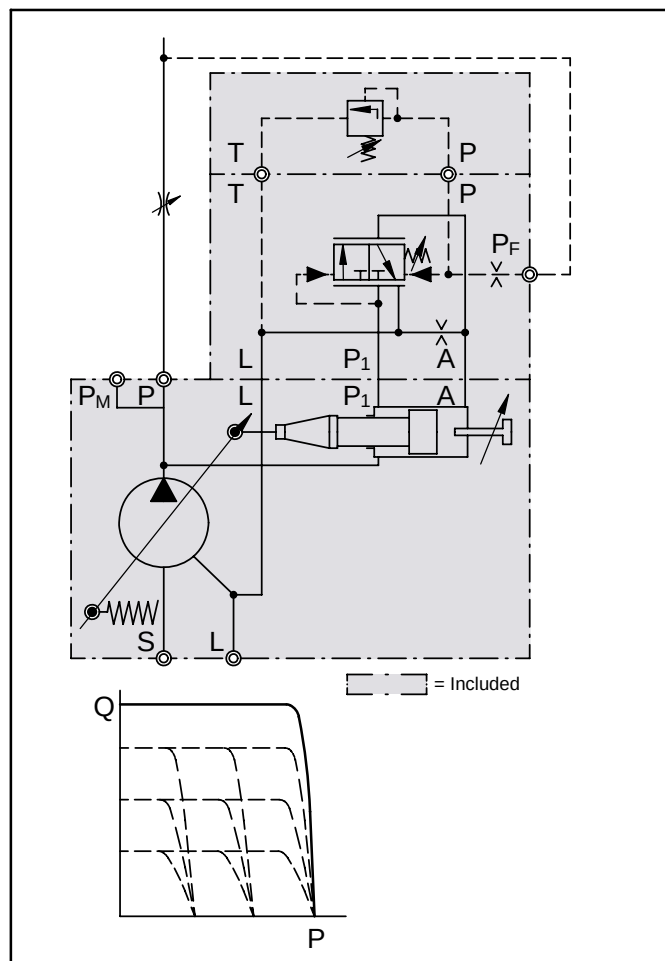




**HW 疊式負載感應型調節器 + 溢流閥**  
Load-sensing compensator (Relief valve included)

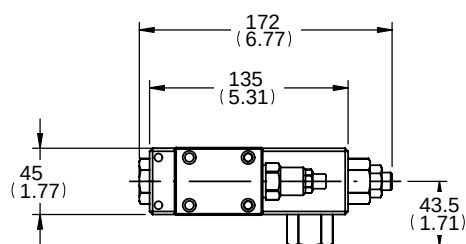
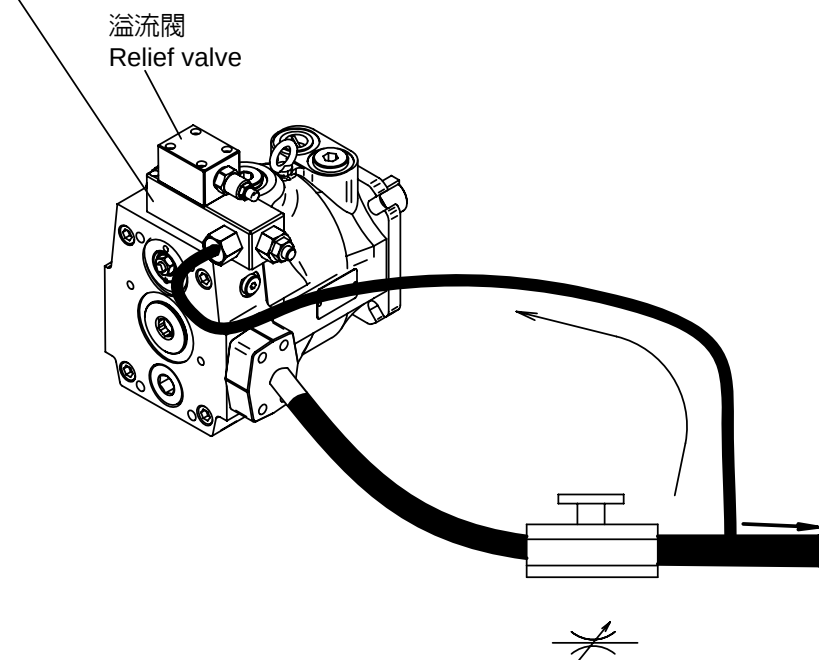
HW疊式負載感應型調節器+溢流閥

疊式負載感應型調節器，控制壓力油從外部回饋。調節器有約10bar的由廠家調節的壓差。壓差可做為主回路上的控制信號。因為調節器的壓差保持主油路的阻力不變，以此實現在第一條管路上對泵的流量進行調節。當傳動轉速發生變化或負載發生波動時，在一個較寬的工作範圍內不會影響執行元件的速度。先導溢流閥，可進行力調節功能。



## 疊式負載感應型調節器

### Load-sensing compensator with NG6 interface

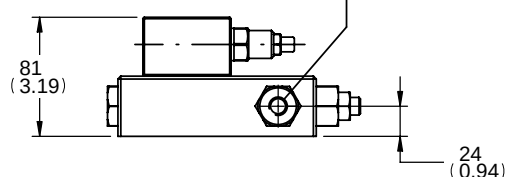


負載感應接□ Load-sensing port

G 1/4 BSPP(threads code: 1)

7/16-20 UNF (threads code: 3)

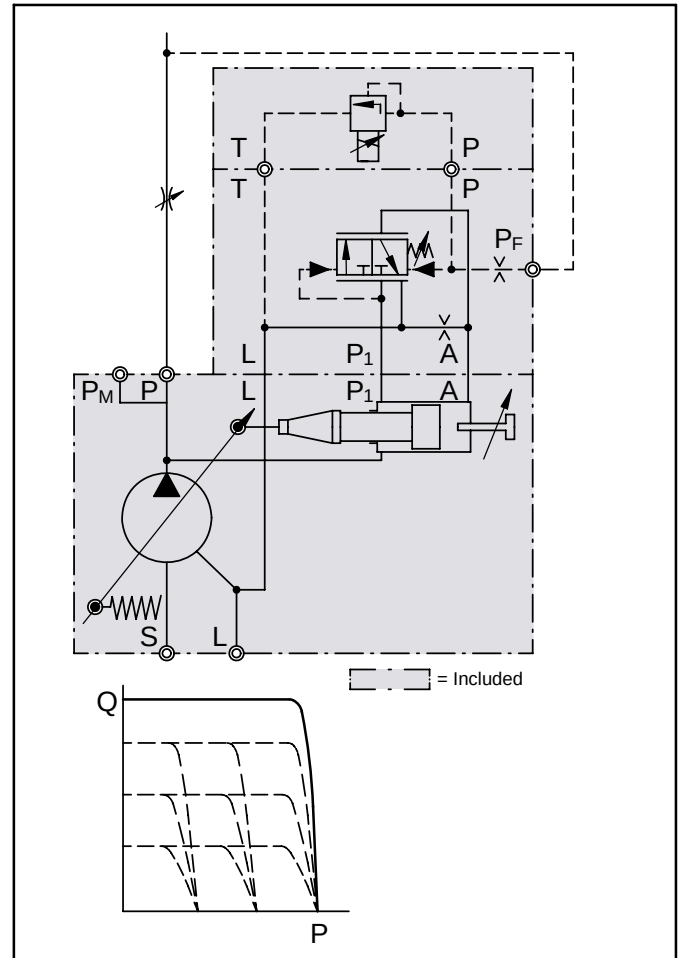
M12xP1.5 ISO 6149-1 (threads code: 7)





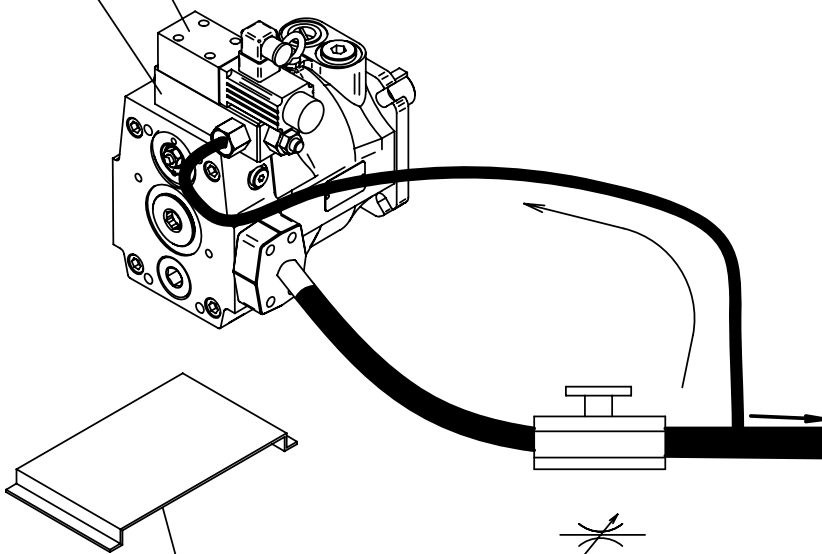
## HP 疊式負載感應型調節器 +比例閥 Load-sensing compensator (Proportional valve included)

HP 疊式負載感應型調節器+比例閥  
疊式負載感應型調節器，控制壓力油從外部回饋。調節器有約10bar的由廠家調節的壓差。壓差可做為主回路上的控制信號。因為調節器的壓差保持主油路的阻力不變，以此實現在第一條管路上對泵的流量進行調節。  
當傳動轉速發生變化或負載發生波動時，在一個較寬的工作範圍內不會影響執行元件的速度。先導比例壓力閥，可進行電控比例壓力控制。

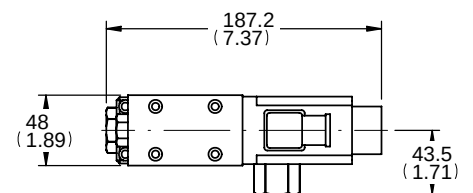


疊式負載感應型調節器  
Load-sensing compensator with NG6 interface

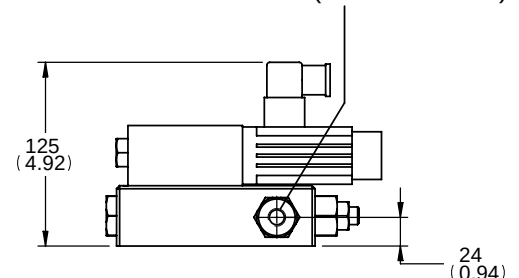
比例閥  
Proportional valve



電子控制電路板(放大器)  
Electronic Amplifier P-C Board



負載感應接口 Load-sensing port  
G 1/4 BSPP (threads code: 1)  
7/16-20 UNF (threads code: 3)  
M12xP1.5 ISO 6149-1 (threads code: 7)

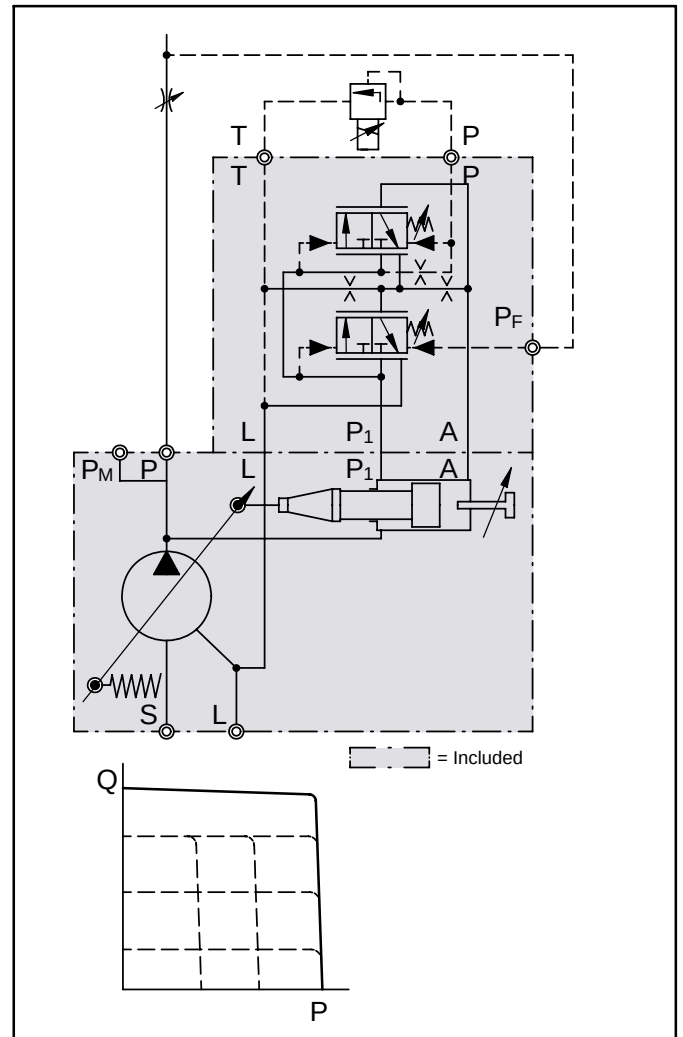




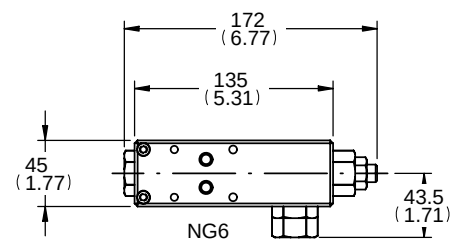
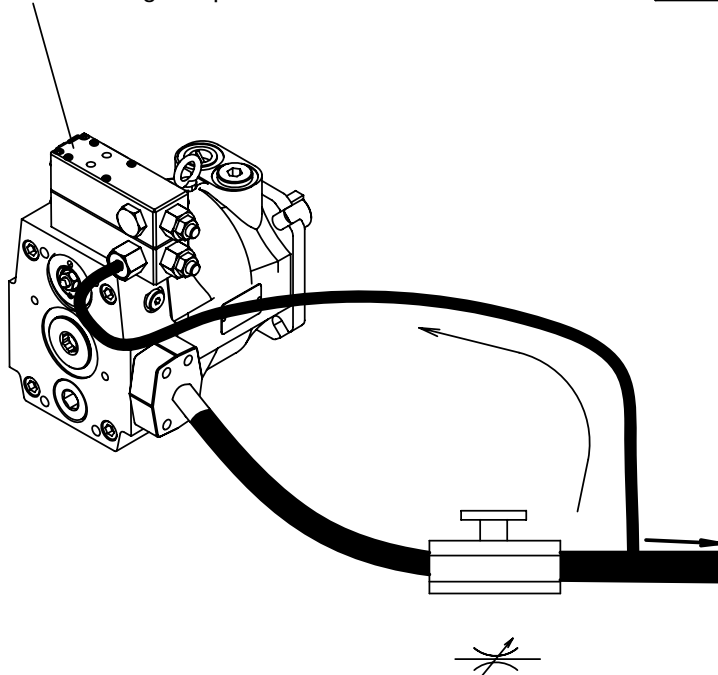
## HJ 疊式雙閥負載感應型調節器 2-valve Load-sensing compensator with NG6 interface

HJ疊式雙閥負載感應型調節器  
如果希望準確的限制壓力，可以選擇疊式雙閥負載傳感調節器。回路示意圖如右圖所示。  
為了消除壓力與流量相互影響，使用兩個分開的調節閥用於流量調節和壓力調節。

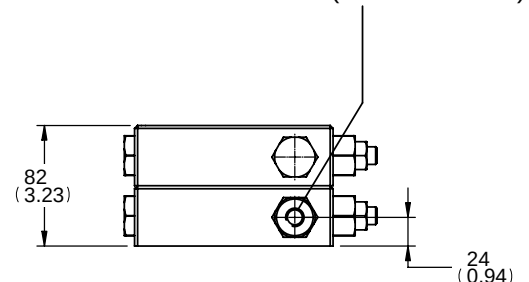
疊式雙閥負載感應型調節器，在其調節閥的上方，預留一個NG6的介面。  
若在NG6介面加裝一個先導閥，則可增加一個壓力調節功能。  
若在NG6介面加裝一個油昇比例壓力閥，則可達成電控比例壓力控制。



疊式雙閥負載感應型調節器  
2-valve Load-sensing compensator with NG6 interface



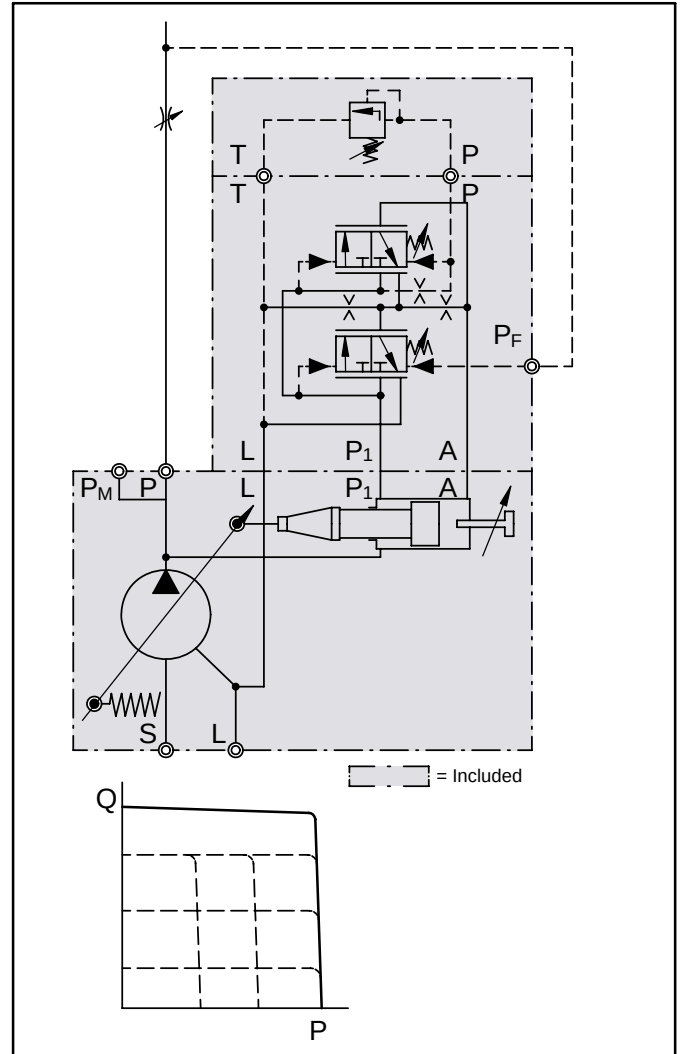
負載感應接口 Load-sensing port  
G 1/4 BSPP (threads code: 1)  
7/16-20 UNF (threads code: 3)  
M12xP1.5 ISO 6149-1 (threads code: 7)



## HA 疊式雙閥負載感應型調節器 + 溢流閥 2-valve Load-sensing compensator with NG6 interface (Relief valve included)

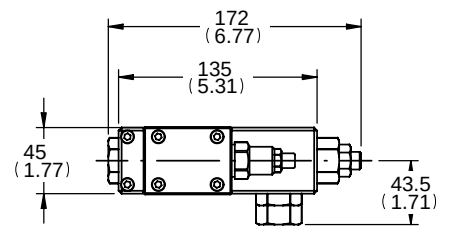
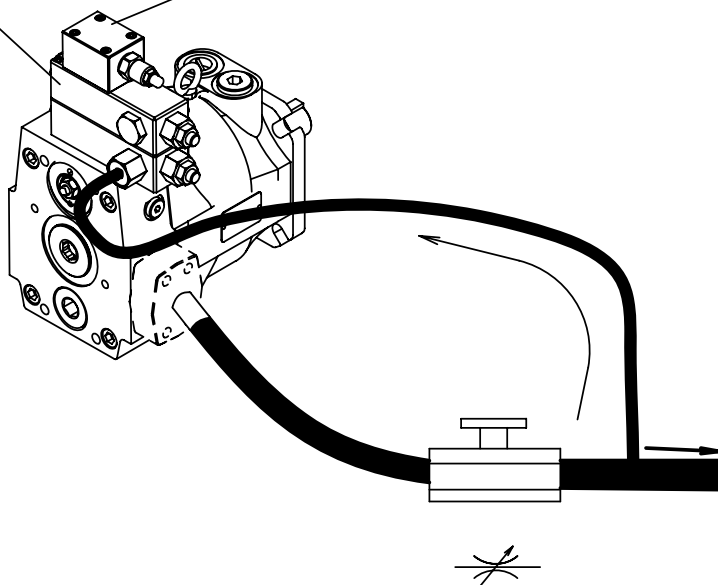
HA 疊式雙閥負載感應型調節器+溢流閥  
如果希望準確的限制壓力，可以選擇疊式雙閥負載  
傳感調節器。回路示意圖如右圖所示。  
為了消除壓力與流量相互影響，使用兩個分開的調  
節閥用於流量調節和壓力調節。

疊式雙閥負載感應型調節器，在其調節閥的上方，  
加裝一個先導閥，增加一個壓力調節功能。

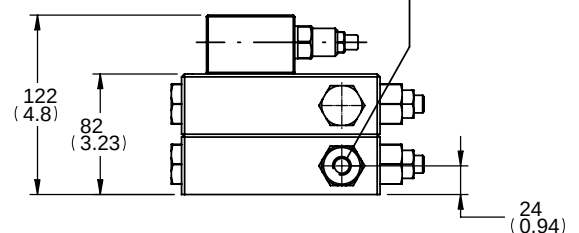


疊式雙閥負載感應型調節器  
2-valve Load-sensing  
compensator with NG6 interface

溢流閥  
Relief valve



負載感應接口 Load-sensing port  
G 1/4 BSPP (threads code: 1)  
7/16-20 UNF (threads code: 3)  
M12xP1.5 ISO 6149-1 (threads code: 7)

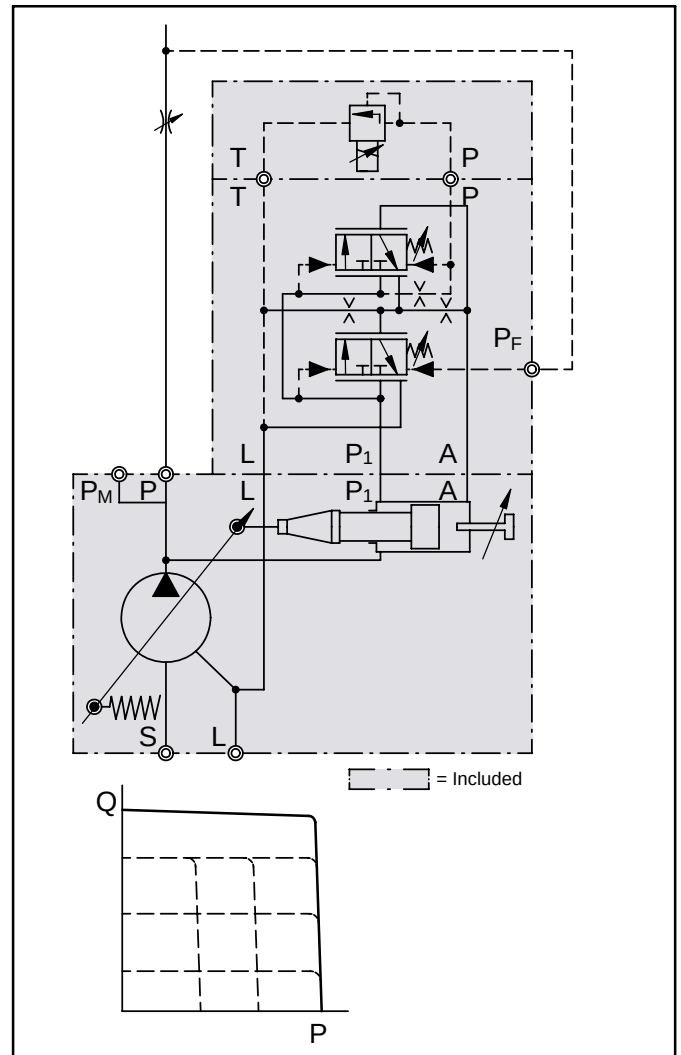




## HR 疊式雙閥負載感應型調節器 +比例閥 2-valve Load-sensing compensator with NG6 interface (Proportional valve included)

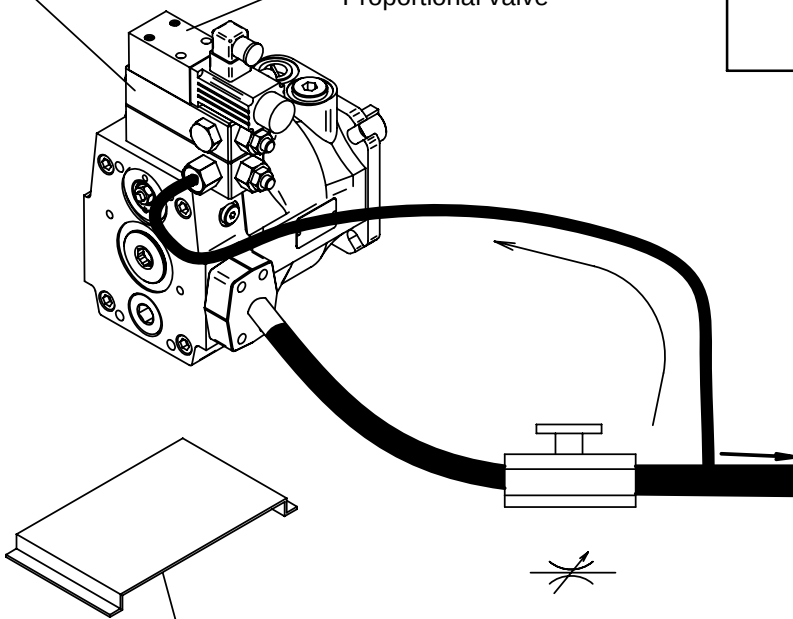
HY 疊式雙閥負載感應型調節器+比例閥  
如果希望準確的限制壓力，可以選擇疊式雙閥負載  
傳感調節器。回路示意圖如右圖所示。  
為了消除壓力與流量相互影響，使用兩個分開的調  
節閥用於流量調節和壓力調節。

疊式雙閥負載感應型調節器，在其調節閥的上方，  
加裝一個油昇比例壓力閥，達到電控比例壓力控制的  
目的。

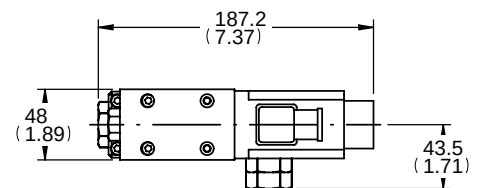


疊式雙閥負載感應型調節器  
2-valve Load-sensing  
compensator with NG6 interface

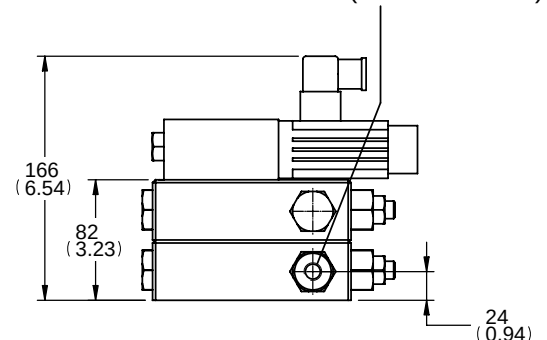
比例閥  
Proportional valve



電子控制電路板(放大器)  
Electronic Amplifier P-C Board



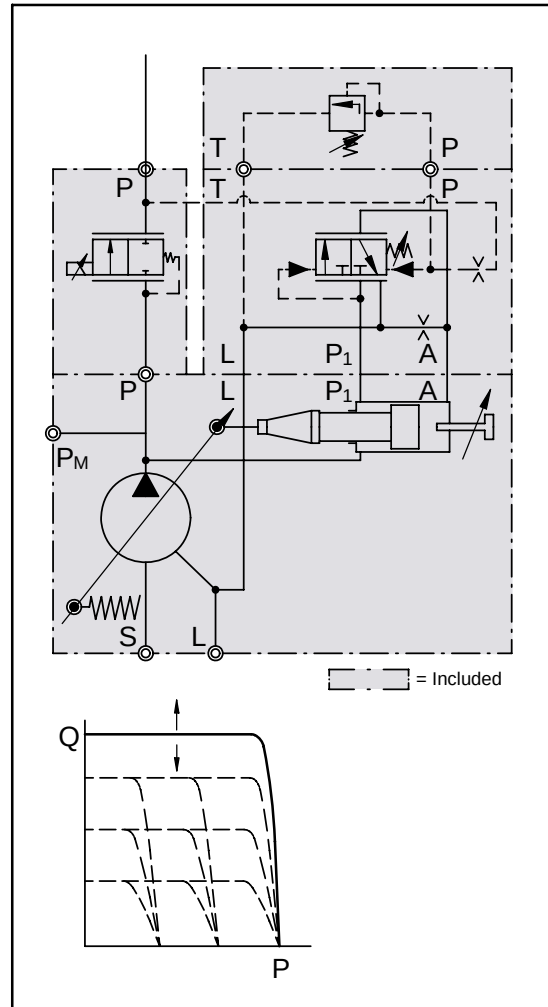
負載感應接口 Load-sensing port  
G 1/4 BSPP (threads code: 1)  
7/16-20 UNF (threads code: 3)  
M12xP1.5 ISO 6149-1 (threads code: 7)



## HQ 負載感應型 +比例流量調節器 Load-sensing & Proportional flow control

### HQ負載感應型+比例流量調節器

負載感應型+比例流量調節器，控制壓力油從外部回饋。調節器有約10bar的由廠家調節的壓差。壓差可做為主回路上的控制信號。因為調節器的壓差保持主油路的阻力不變，以此實現在第一條管路上對泵的流量進行調節。  
當傳動轉速發生變化或負載發生波動時，在一個較寬的工作範圍內不會影響執行元件的速度。  
加裝一個油昇比例流量閥，可達成電控比例流量。



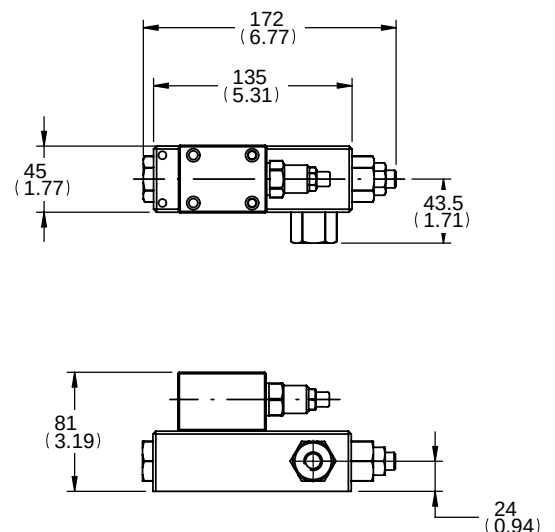
### 疊式負載感應型調節器

Load-sensing compensator with NG6 interface

溢流閥  
Relief valve

比例流量閥  
Proportional flow control

電子控制電路板(放大器)  
Electronic Amplifier P-C Board

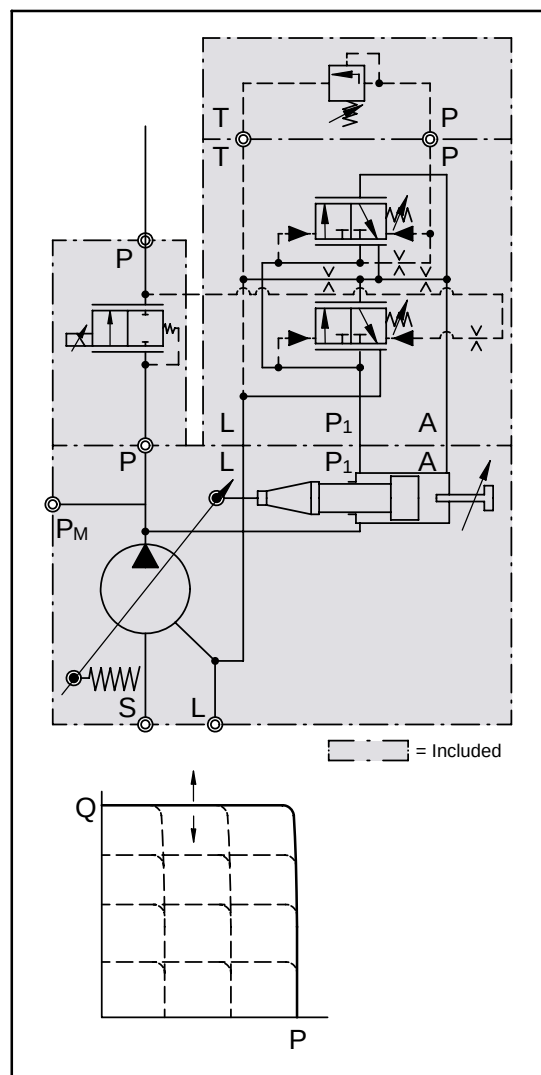




**HF** 雙閥負載感應型 + 比例流量調節器  
2- Valve Load-sensing & Proportional flow control

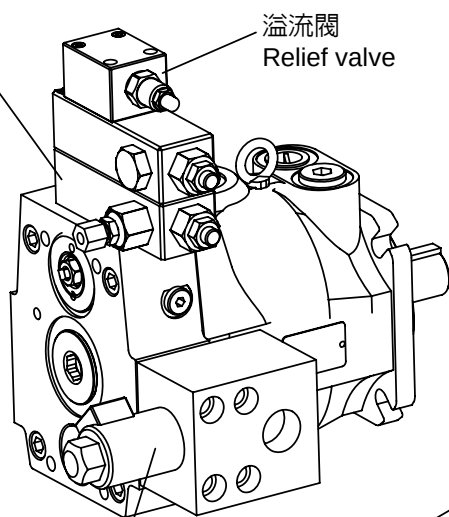
## HF雙閥負載感應型+比例流量調節器

雙閥負載感應型比例流量調節器，能夠更精確的限制壓力。控制壓力油從外部回饋。調節器有約10bar的由廠家調節的壓差。壓差可做為主回路上的控制信號。因為調節器的壓差保持主油路的阻力不變，以此實現在第一條管路上對泵的流量進行調節。當傳動轉速發生變化或負載發生波動時，在一個較寬的工作範圍內不會影響執行元件的速度。加裝一個油壓比例流量閥，可達成電控比例流量。

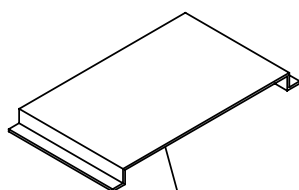


## 雙閥負載感應型調節器

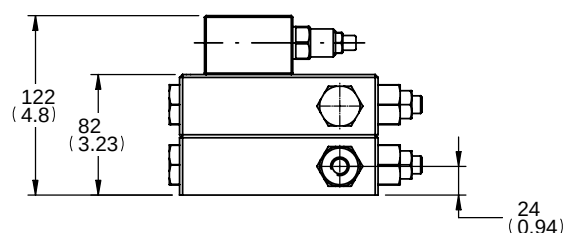
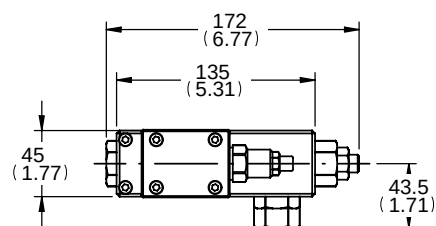
Load-sensing compensator with NG6 interface



比例流量閥  
Proportional flow control



電子控制電路板(放大器)  
Electronic Amplifier P-C Board



## HK 負載感應型 +比例壓力 +比例流量調節器 Load-sensing & Proportional Pressure, Proportional flow control

HK負載感應型+比例壓力+比例流量調節器

HK型具有節能的特性，它可依系統要求，提供所需的最小壓力和流量，可節省不必要的能源耗費。

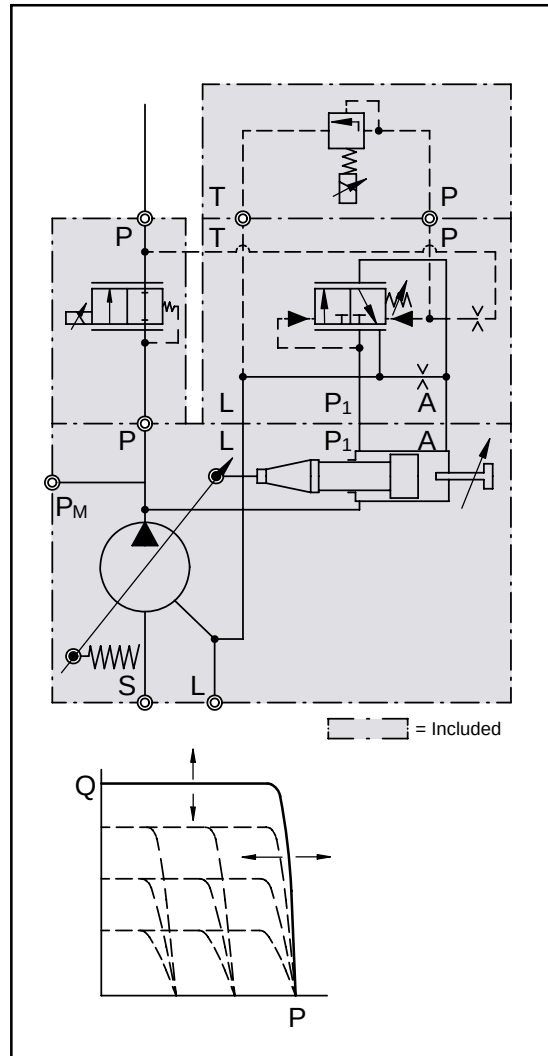
當待機時柱塞泵吐出流量近似零，電機功率損耗輸出近似零；當系統壓力升高到設定值時，柱塞泵的流量會自動減少，只補充系統所需流量，而壓力維持不變大幅減低油溫上升。

與一般葉片泵、齒輪泵+PQ閥所配合的油路相互比較約可節省電力30%~50%能源。油箱容積亦可較小。

負載感應型+比例流量調節器，控制壓力油從外部回饋。調節器有約10bar的由廠家調節的壓差。壓差可做為主回路上的控制信號。因為調節器的壓差保持主油路的阻力不變，以此實現在第一條管路上對泵的流量進行調節。

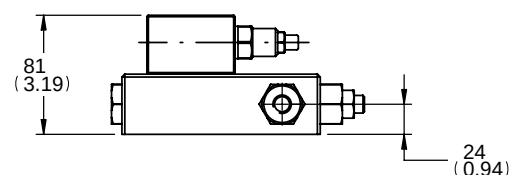
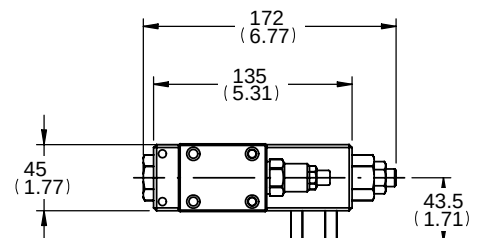
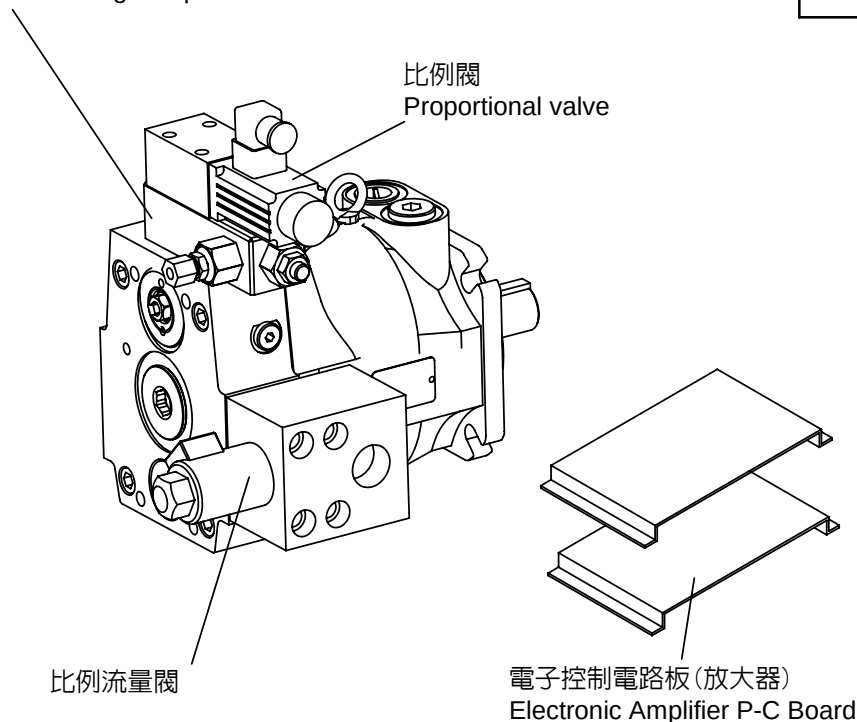
當傳動轉速發生變化或負載發生波動時，在一個較寬的工作範圍內不會影響執行元件的速度。

在調節器的上方，加裝一個油昇比例壓力調節器，達到電控比例壓力，P口加裝一個油昇比例流量閥可達成電控比例流量。



疊式負載感應型調節器

Load-sensing compensator with NG6 interface





## HZ 雙閥負載感應型 +比例壓力 +比例流量調節器 2 Valve Load-sensing & Proportional Pressure, Proportional flow control

HZ 雙閥負載感應型+比例壓力+比例流量調節器  
雙閥壓力調節器，能夠更精確的控制限制壓力。

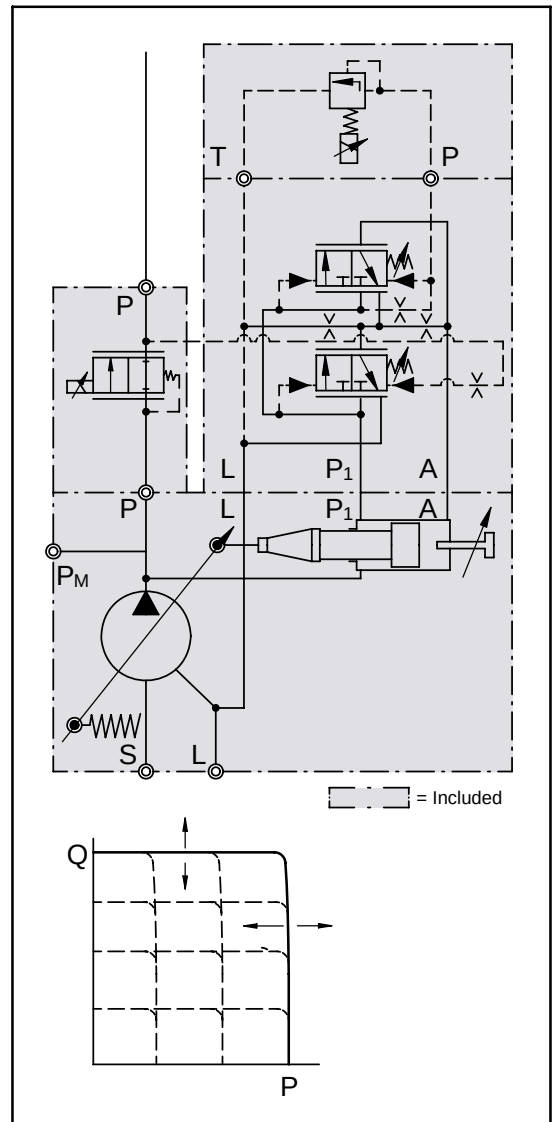
與HK型同樣具有節能的特性，它可依系統要求，提供所需求的最小壓力和流量，可節省不必要的能源耗費。

當待機時柱塞泵吐出流量近似零，電機功率損耗輸出近似零；當系統壓力升高到設定值時，柱塞泵的流量會自動減少，只補充系統所需流量，而壓力維持不變大幅減低油溫上升。

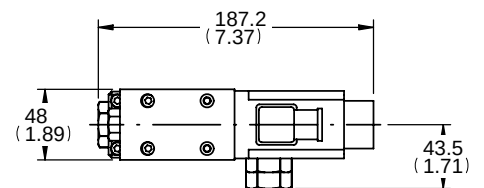
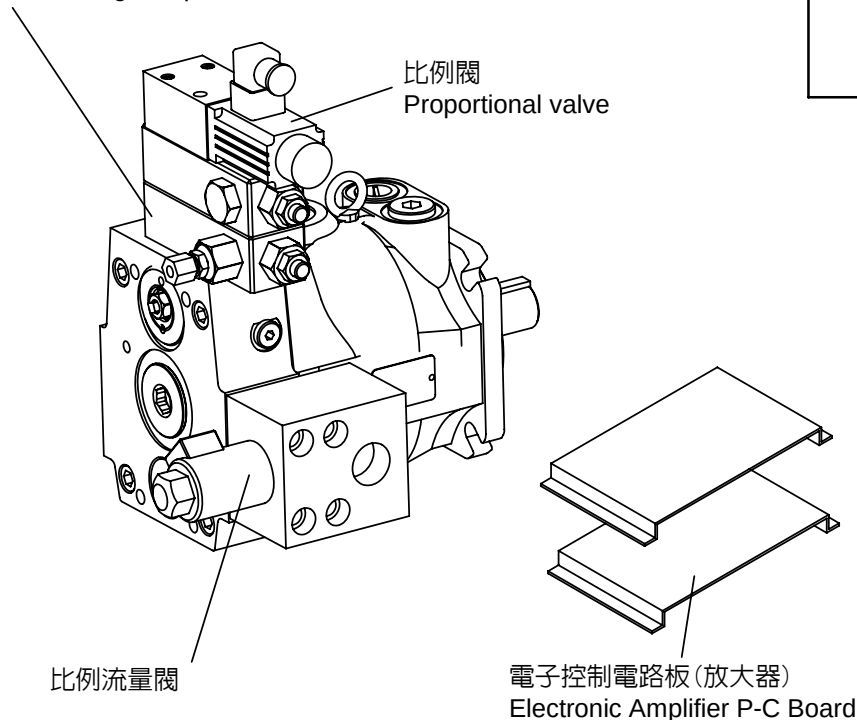
與一般葉片泵、齒輪泵+PQ閥所配合的油路相互比較約可節省電力30%~50%能源。油箱容積亦可較小。

負載感應型+比例流量調節器，控制壓力油從外部回饋。調節器有約10bar的由廠家調節的壓差。壓差可做為主回路上的控制信號。因為調節器的壓差保持主油路的阻力不變，以此實現在第一條管路上對泵的流量進行調節。  
當傳動轉速發生變化或負載發生波動時，在一個較寬的工作範圍內不會影響執行元件的速度。

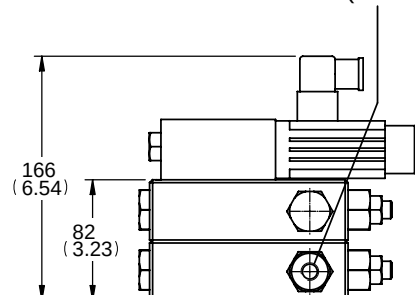
在調節器的上方，加裝一個油昇比例壓力調節器，達到電控比例壓力，P口加裝一個油昇比例流量閥可達成電控比例流量。



雙閥疊式負載感應型調節器  
Load-sensing compensator with NG6 interface



負載感應接口 Load-sensing port  
G 1/4 BSPP (threads code: 1)  
7/16-20 UNF (threads code: 3)  
M12xP1.5 ISO 6149-1 (threads code: 7)



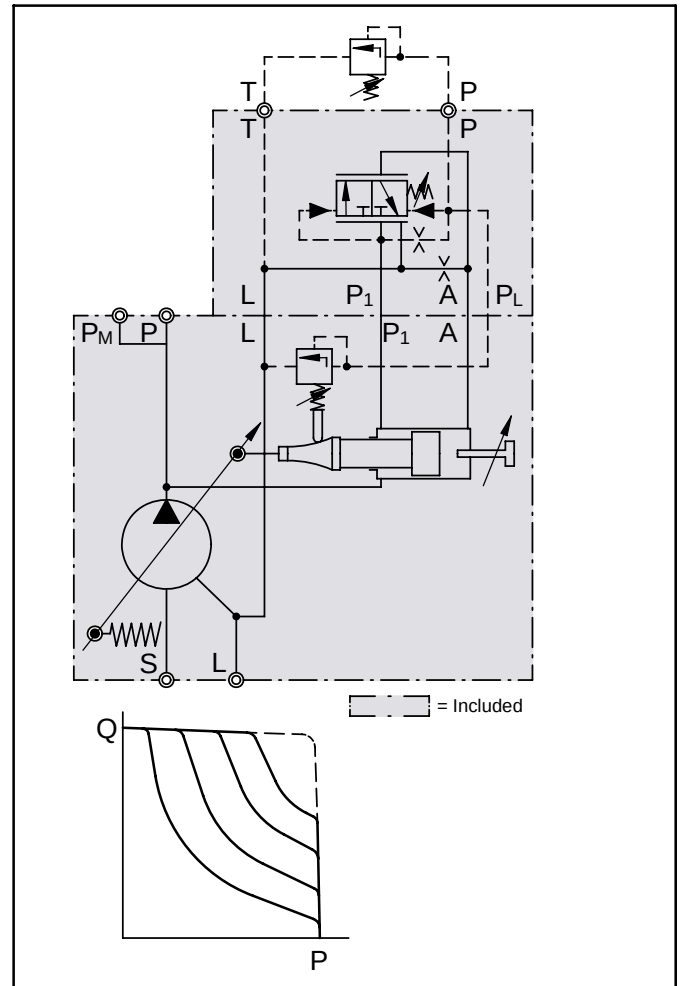
## PA 疊式定馬力調節器 Horse power compensator with NG6 interface

### PA疊式定馬力調節器

恆定馬達功率，是由定馬力調節器和先導閥進行調節，泵浦內部液壓做動產生機械式調節，泵浦排量與壓力之間產生穩定的聯繫。大排量時的作用壓力低於小排量時的作用壓力。進而達到恆定馬達功率的作用。

訂貨時可選擇所需的額定功率。（請參照訂購型號說明）

疊式定馬力調節器，於調節器上方預留一個NG6介面，可裝配油昇壓力先導閥，進行壓力調節。若裝配油昇比例壓力閥，則可達到電控比例壓力控制。

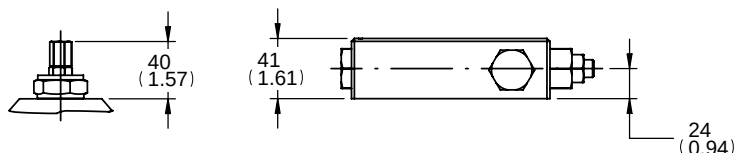
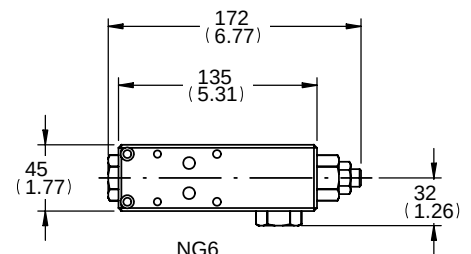
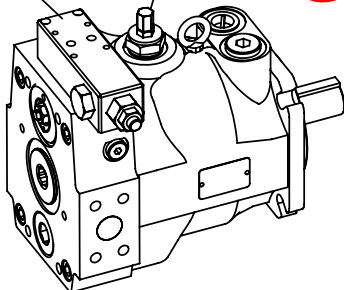


定馬力調節器  
Horse power  
compensator

馬力調節  
Horse power control



嚴禁調整  
Warning don't adjust





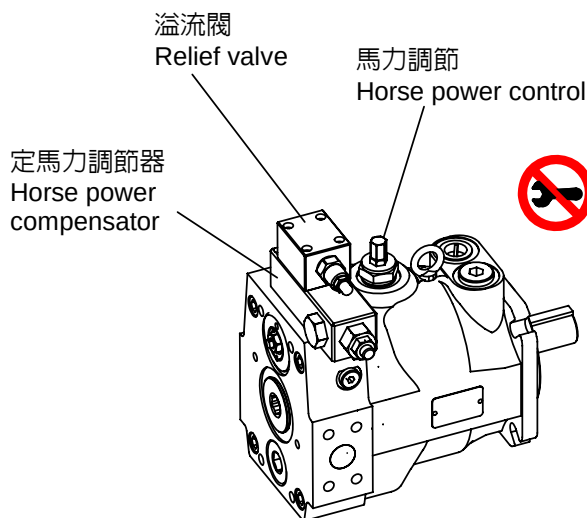
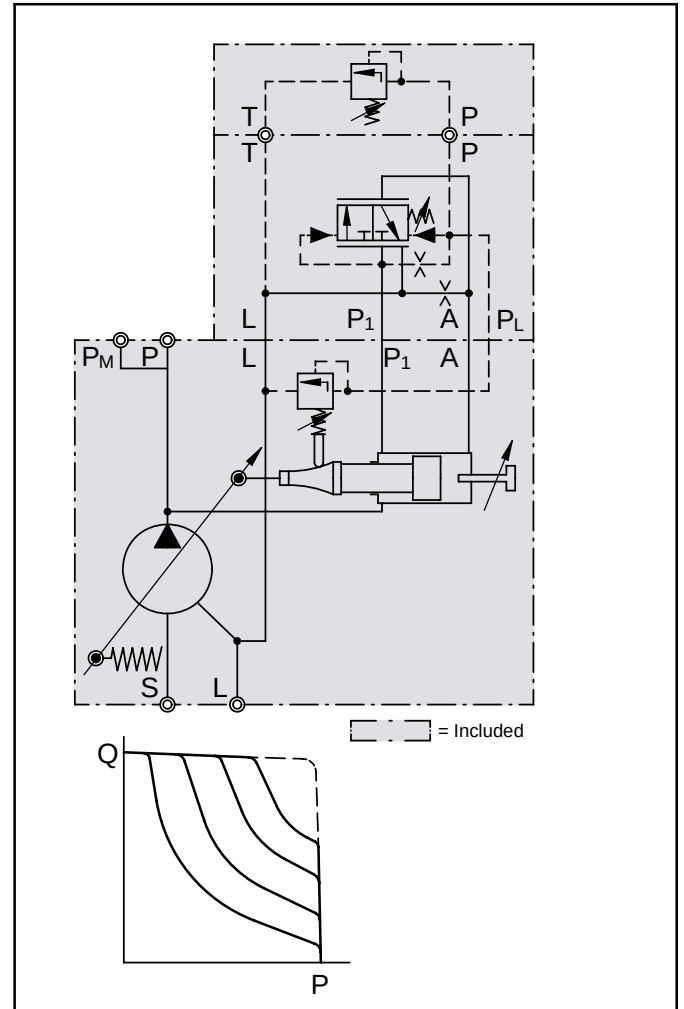
## PM 疊式定馬力調節器 + 溢流閥 Horse power compensator with NG6 interface (Relief valve included)

### PM 疊式定馬力調節器+溢流閥

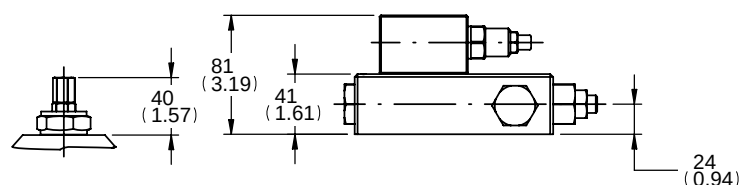
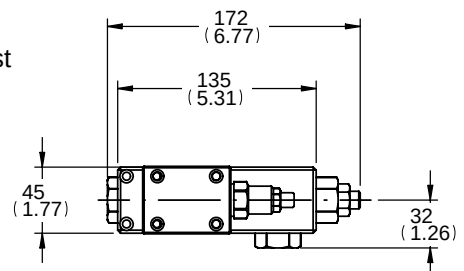
恆定馬達功率，是由定馬力調節器和先導閥進行調節，泵浦內部液壓做動產生機械式調節，泵浦排量與壓力之間產生穩定的聯繫。大排量時的作用壓力低於小排量時的作用壓力。進而達到恆定馬達功率的作用。

訂貨時可選擇所需的額定功率。（請參照訂購型號說明）

疊式定馬力調節器，於調節器上方裝配油昇壓力先導閥，可進行壓力先導調節。若裝配油昇比例壓力閥，則可達到電控比例壓力控制。



嚴禁調整  
Warning don't adjust



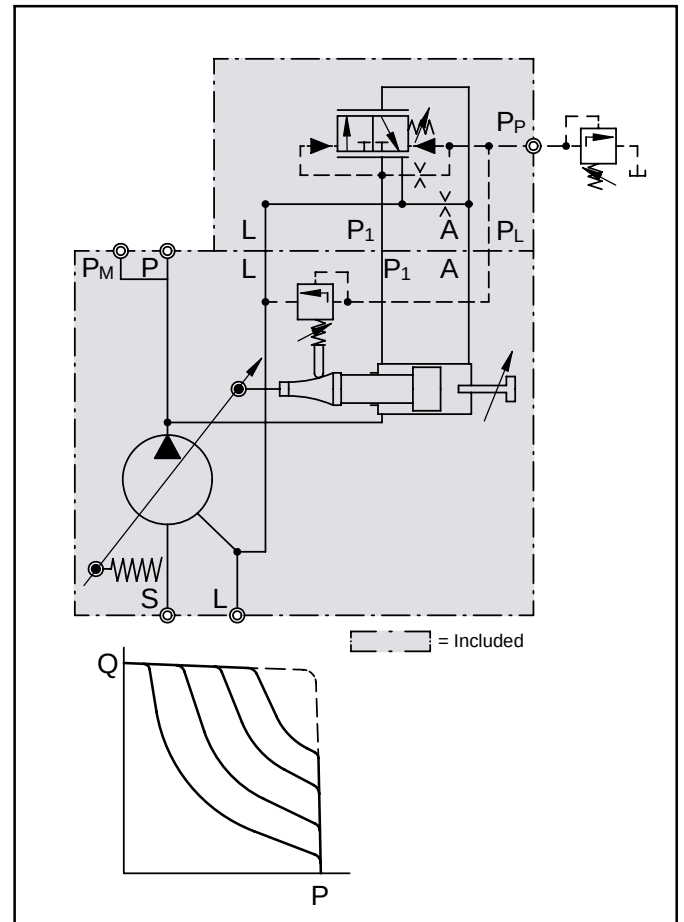
## PG 定馬力 +外控壓力調節器 Horse power compensator with remote

### PG定馬力外接遙控調節器

恆定馬達功率，是由定馬力調節器和先導閥進行調節，泵浦內部液壓做動產生機械式調節，泵浦排量與壓力之間產生穩定的聯繫。大排量時的作用壓力低於小排量時的作用壓力。進而達到恆定馬達功率的作用。

訂貨時可選擇所需的額定功率。(請參照訂購型號說明)

定馬力外接遙控調節器，可以在調節器的遙控接口PP，連接一個壓力先導閥來進行先導控制，可遠距離的安裝於機台上進行調節。



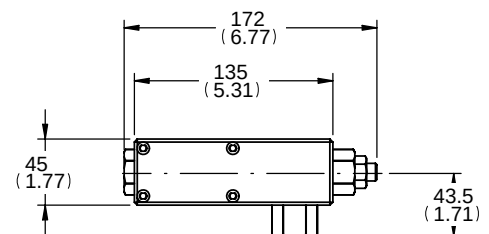
定馬力調節器  
Horse power compensator

馬力調節  
Horse power control



嚴禁調整

Warning don't adjust

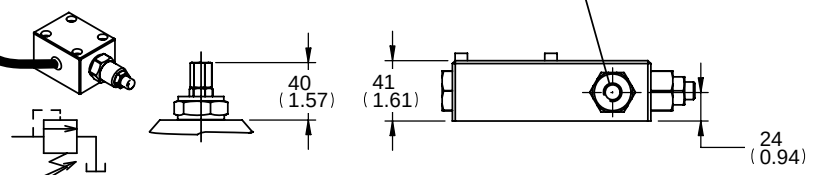


遙控接口 Remote port

G 1/4 BSPP (threads code: 1)

7/16-20 UNF (threads code: 3)

M12xP1.5 ISO 6149-1 (threads code: 7)





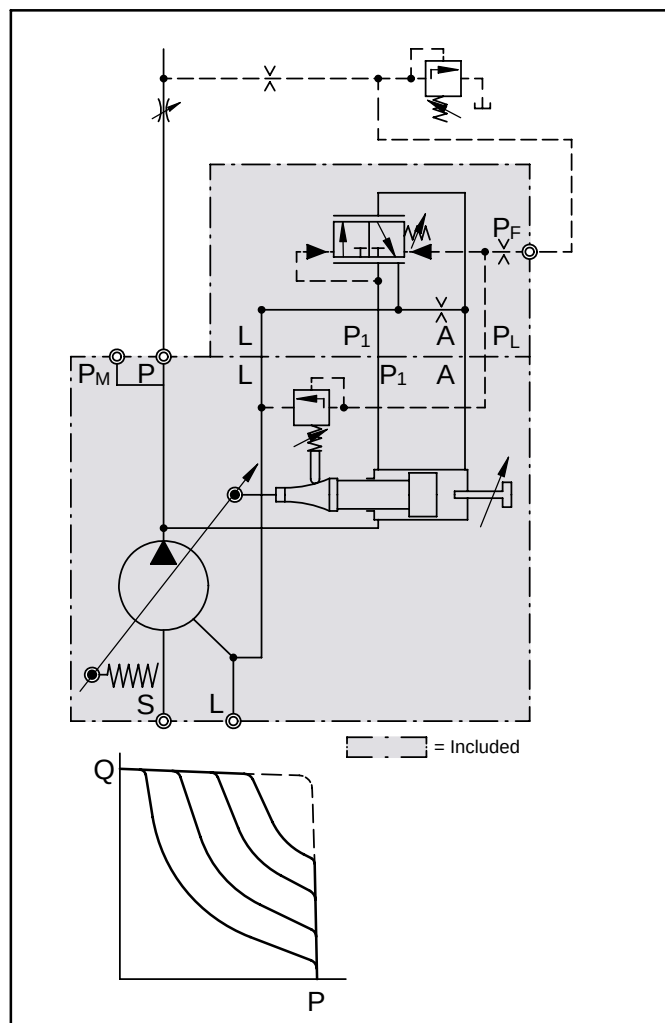
**PL** 定馬力+外控壓力+負載感應調節器  
Horse power compensator with remote & Load-sensing compensator

PL定馬力+外控壓力+負載感應調節器

恆定馬達功率，是由定馬力調節器和先導閥進行調節，泵浦內部液壓做動產生機械式調節，泵浦排量與壓力之間產生穩定的聯繫。大排量時的作用壓力低於小排量時的作用壓力。進而達到恆定馬達功率的作用。

訂貨時可選擇所需的額定功率。(請參照訂購型號說明)

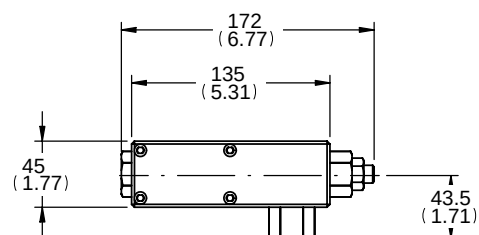
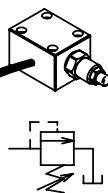
定馬力+外控壓力+負載感應調節器，在調節器的負載感應接口PF，連接外部回饋，作為主回路上的控制信號實現在第一條管路上對泵的流量進行調節，並可在回饋管線上加裝一壓力先導閥來進行先導控制。



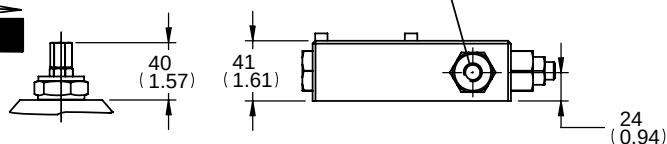
定馬力調節器  
Horse power  
compensator

馬力調節  
Horse power control

嚴禁調整  
Warning don't adjust



負載感應接□ Load-sensing port  
G 1/4 BSPP(threads code: 1)  
7/16-20 UNF (threads code: 3)  
M12xP1.5 ISO 6149-1 (threads code: 7)



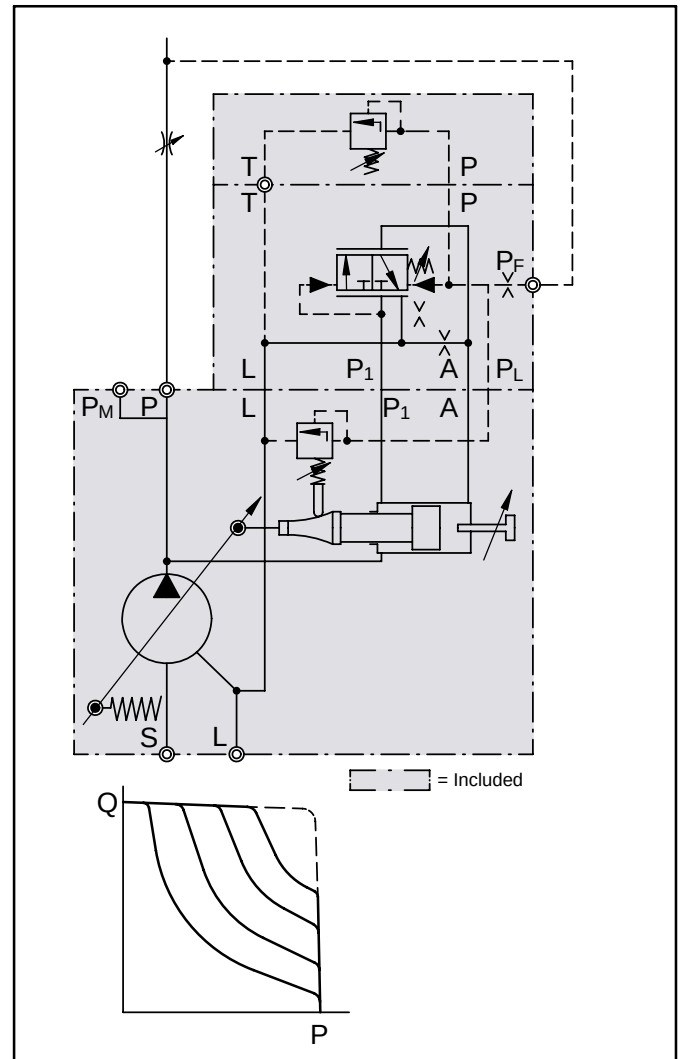
## PH 疊式定馬力+溢流閥+負載感應調節器 Horse power compensator with NG6 interface (Relief valve included) & Load-sensing compensator

PH 疊式定馬力+溢流閥+負載感應調節器

恆定馬達功率，是由定馬力調節器和先導閥進行調節，泵浦內部液壓做動產生機械式調節，泵浦排量與壓力之間產生穩定的聯繫。大排量時的作用壓力低於小排量時的作用壓力。進而達到恆定馬達功率的作用。

訂貨時可選擇所需的額定功率。(請參照訂購型號說明)

疊式定馬力+溢流閥+負載感應調節器，在其調節器的上方，加裝一個先導閥，增加壓力調節的功能。並在調節器的負載感應接口PF，連接外部回饋，作為主回路上的控制信號實現在第一條管路上對泵的流量進行調節。



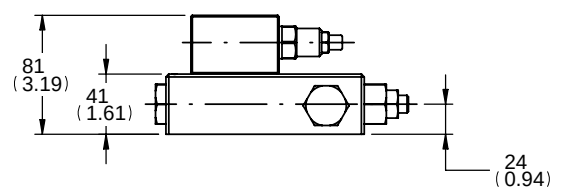
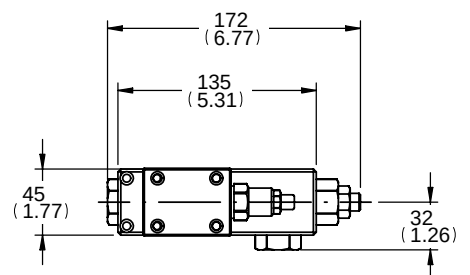
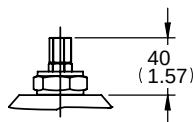
定馬力調節器  
Horse power compensator

溢流閥  
Relief valve

馬力調節  
Horse power control



嚴禁調整  
Warning don't adjust





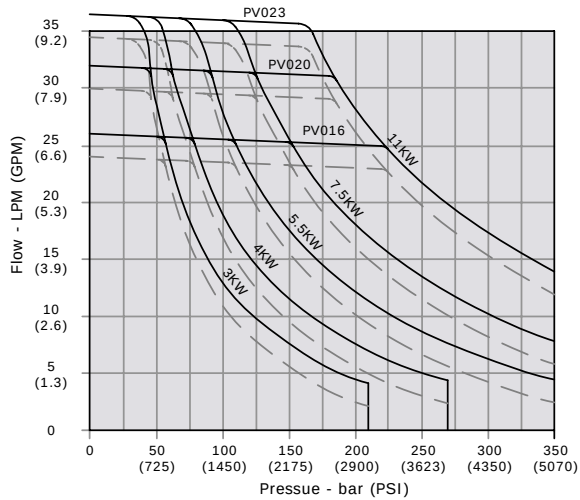
# PV Axial Piston Pump

YEOSHE

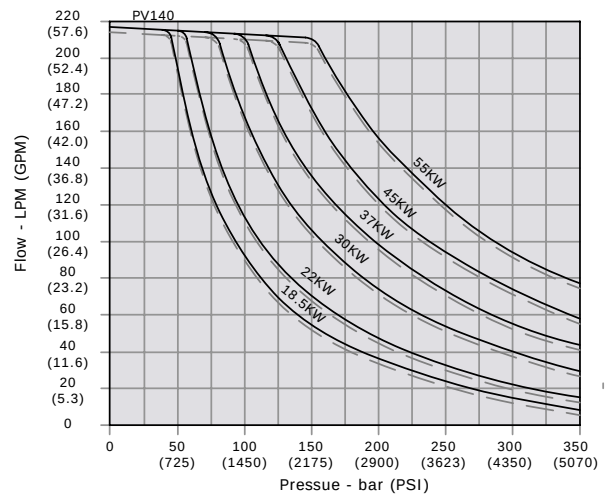
## 定馬力調節器/功率曲線圖

Horse Power Compensator, diagrams

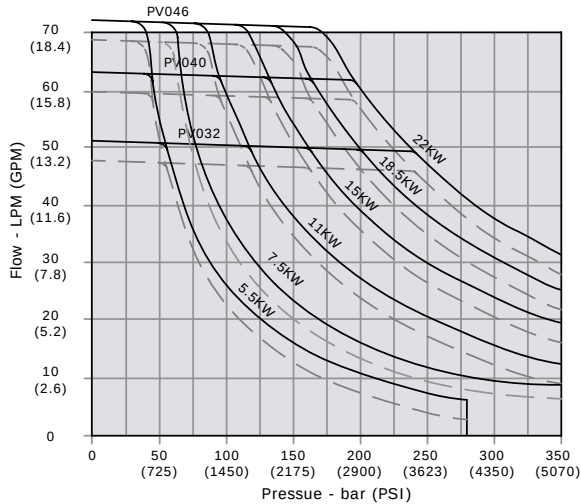
PV016 ~ PV023



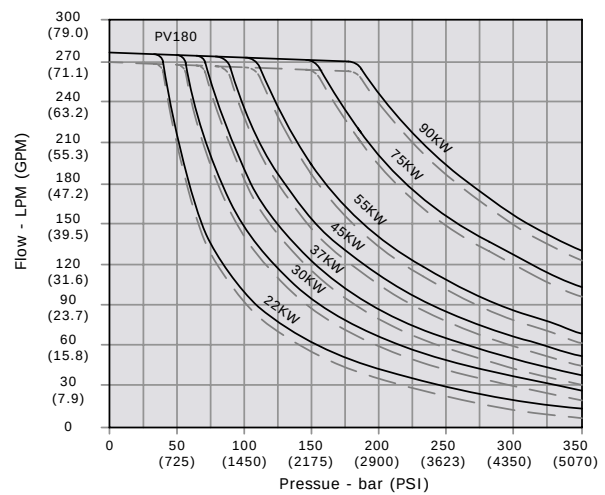
PV140



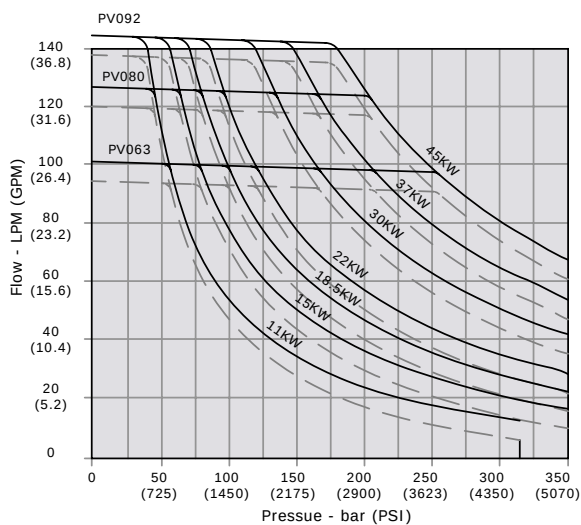
PV032 ~ PV046



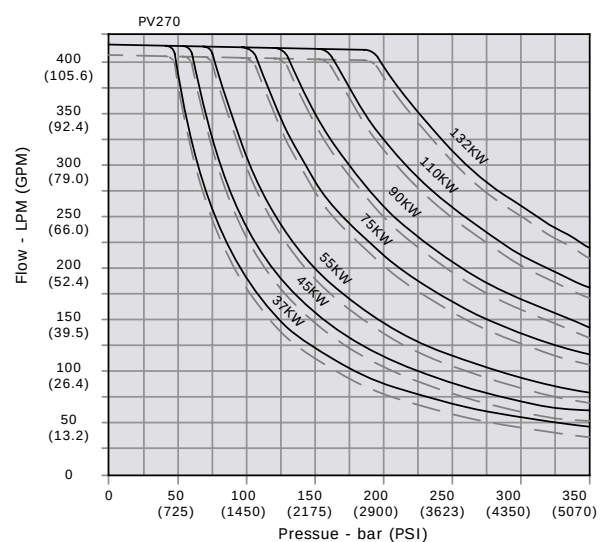
PV180



PV063 ~ PV092



PV270



所畫出的曲線適用於下列狀況：

速度：1500(— — —)和1800(———)

溫度：t=50℃

介質：HLP, ISO VG46

黏度：V=46mm<sup>2</sup>/s, 40℃時

The diagrams shown are only valid for the following working conditions:

speed: n=1500 (— — —) and 1800 (———) rev/min

temperature: t=50℃

fluid: mineral oil HLP, ISO VG46

viscosity: v=46 mm<sup>2</sup>/s at 40℃

## FV 比例流量 + 流量回饋控制 Proportional displacement with flow compensation

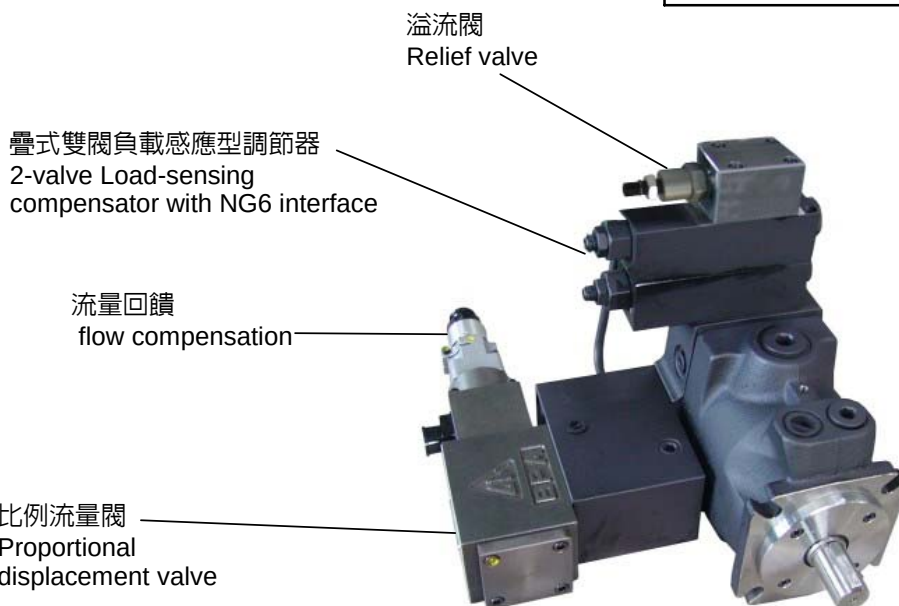
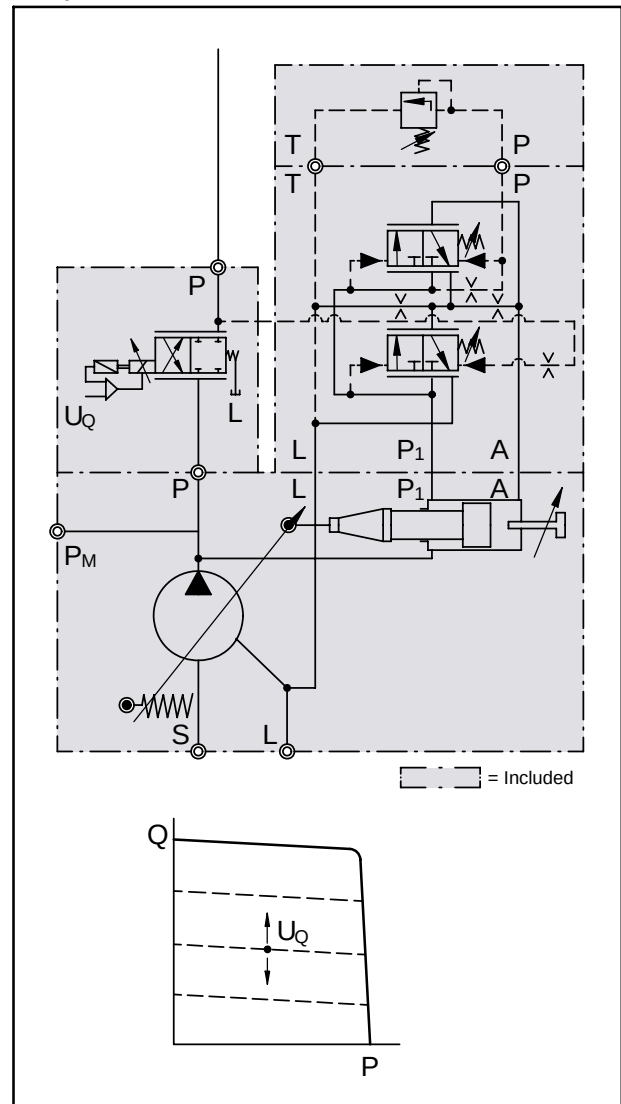
### FV比例流量+流量回饋控制

準確的限制壓力，使用疊式雙閥負載傳感調節器。  
回路示意圖如右圖所示。  
為了消除壓力與流量相互影響，使用兩個分開的調節閥用於流量調節和壓力調節。

疊式雙閥負載感應型調節器，在其調節閥的上方，加裝一個先導閥，增加一個壓力調節功能。

採用超高響應電溢比例流量閥，除了可以無段電控流量外，可以感測流量控制器位置，連續不斷的將位置數據回饋予電控箱，與預先給定值進行比較，偏差值產生控制電流信號進行流量調節，達到實際流量準確符合給定流量。

此控制型式可使用在精確控制系統上，精準的流量控制可達到精密行程控制。





## FR 比例壓力 +比例流量 +流量回饋控制 Proportional pressure, proportional displacement with flow compensation

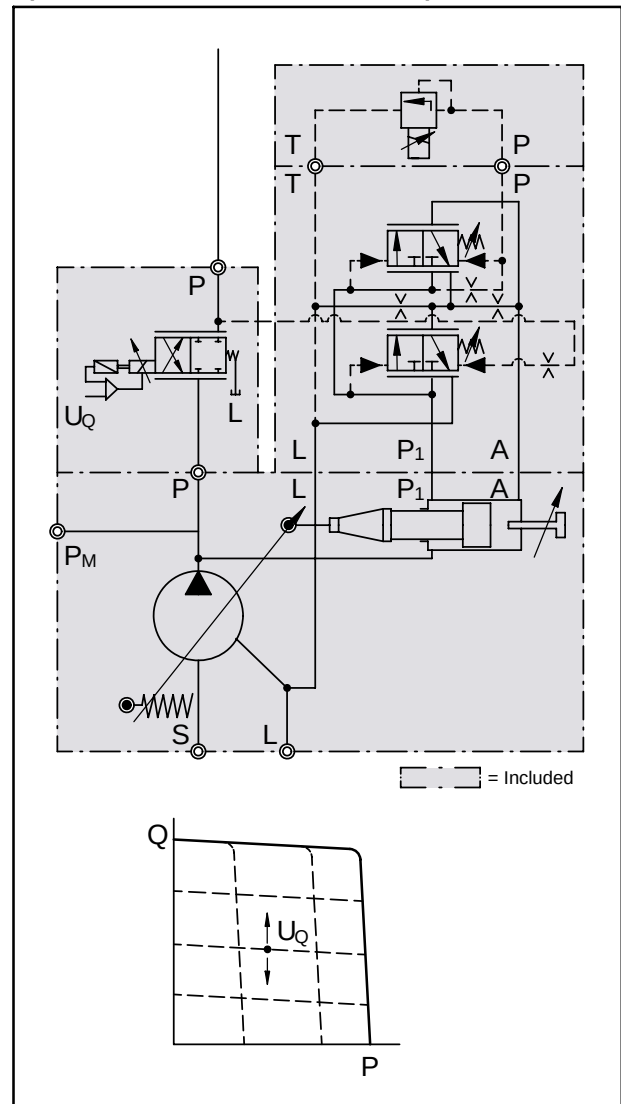
### FR比例流量+流量回饋控制

準確的限制壓力，使用疊式雙閥負載傳感調節器。  
回路示意圖如右圖所示。  
為了消除壓力與流量相互影響，使用兩個分開的調節閥用於流量調節和壓力調節。

疊式雙閥負載感應型調節器，在其調節閥的上方，加裝一個油昇比例壓力閥，達到電控比例壓力控制的目的。

採用超高響應電溢比例流量閥，除了可以無段電控流量外，可以感測流量控制器位置，連續不斷的將位置數據回饋予電控箱，與預先給定值進行比較，偏差值產生控制電流信號進行流量調節，達到實際流量準確符合給定流量。

此控制型式可使用在精確控制系統上，精準的流量控制可達到精密行程控制。

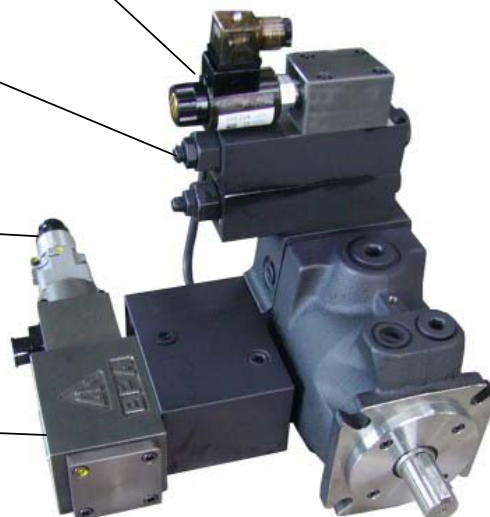


比例壓力閥  
Proportional pressure valve

疊式雙閥負載感應型調節器  
2-valve Load-sensing compensator with NG6 interface

流量回饋  
flow compensation

比例流量閥  
Proportional displacement valve



## B 油壓缸型 無段流量變速控制 Multi-stage Flow & Single-stage Pressure Compensator Control (With Cylinder)

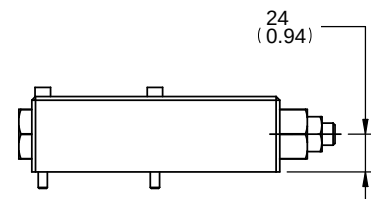
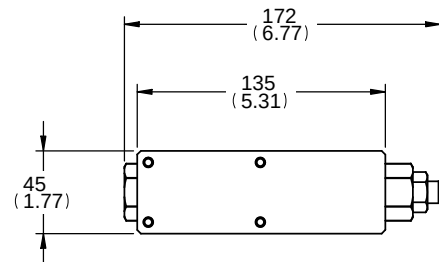
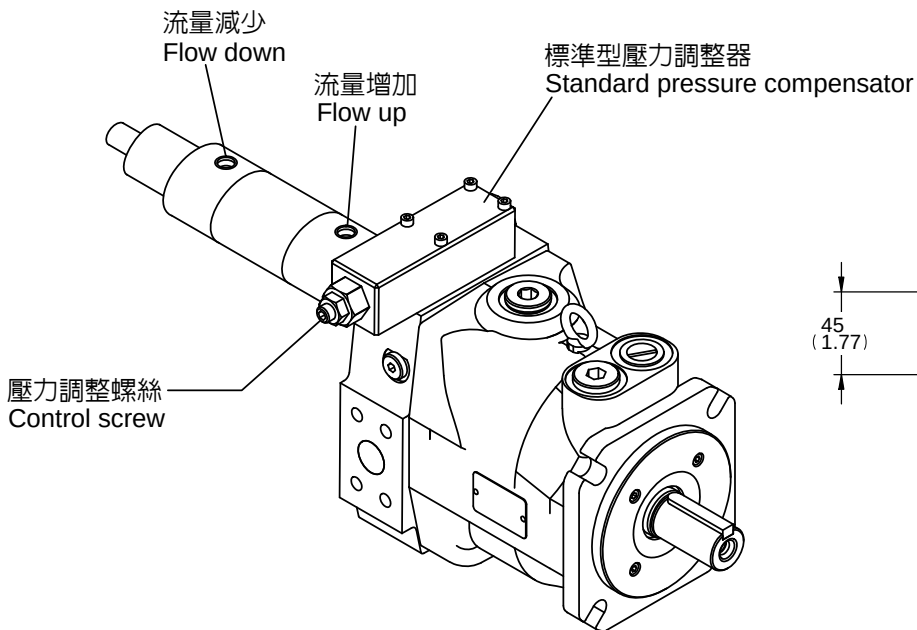
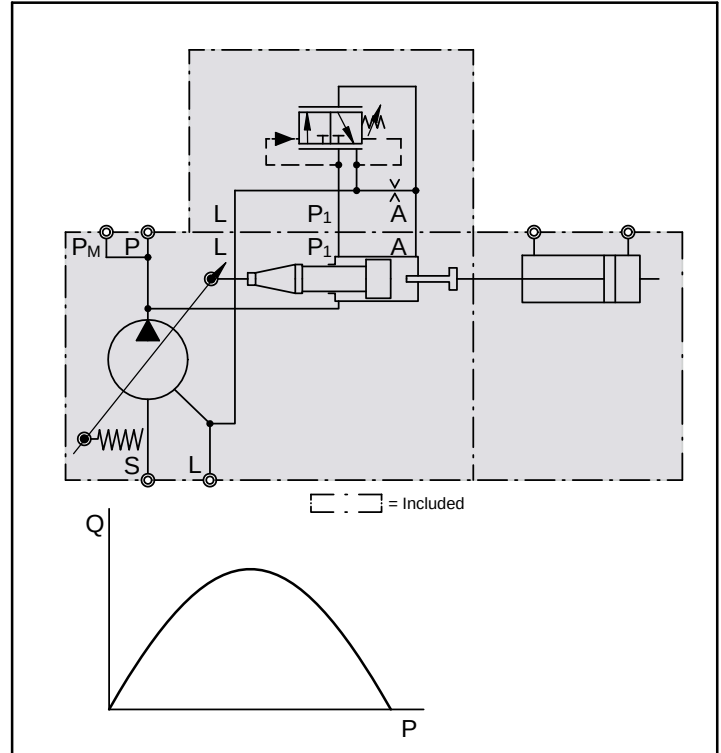
油壓缸型 無段流量變速控制代號B

利用加載油壓缸，由外部油壓缸控制前進後退，推動泵浦斜盤角度變化大小，可達到無變流量變速控制。

流量可從零調至最大，作多段變化，壓力保持在設定壓力。

機械作動的流量控制，相對於電磁式比例流量，價格較低，維護容易。

外部控制若利用電磁方向閥或手動換向閥，可使整個系統更自動化。



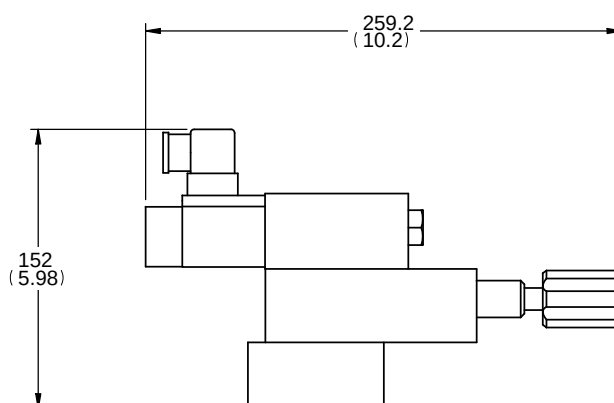
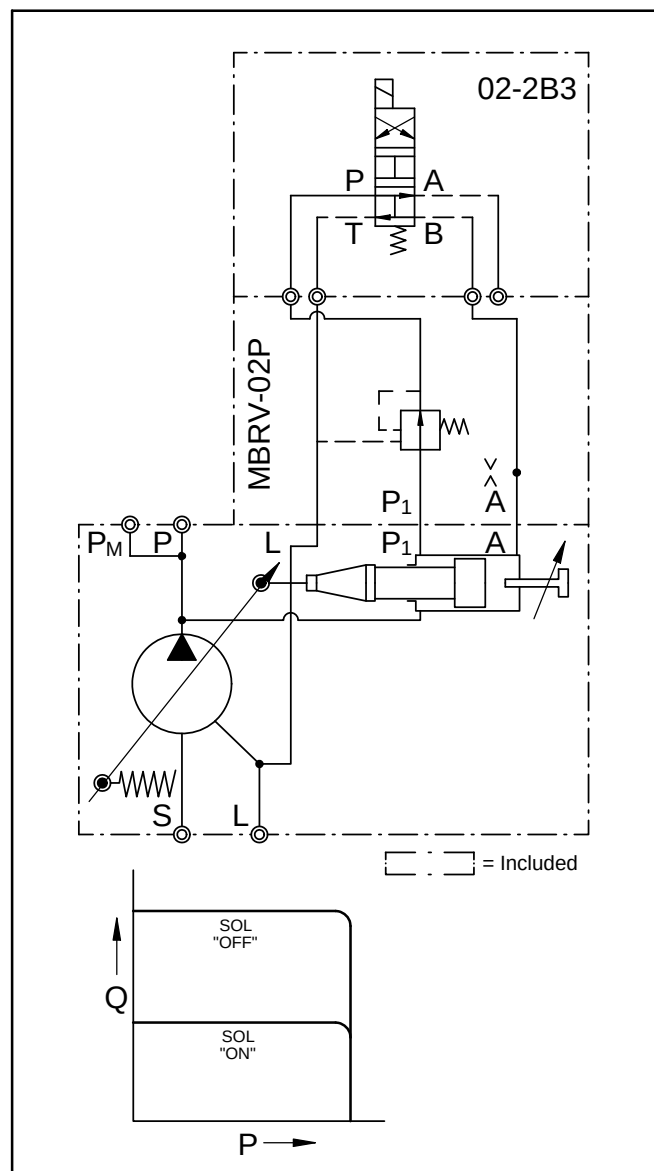
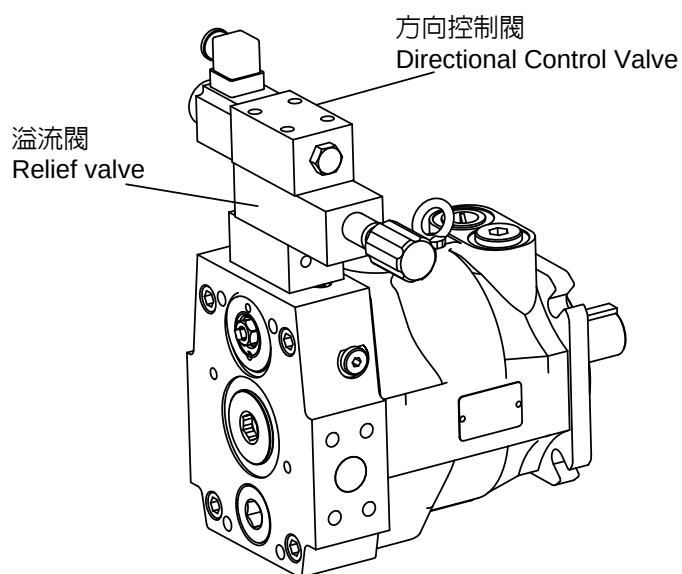


## L 電控兩段流量調節器 Dual Flow compensator

電控兩段流量調節器L

利用方向控制閥來控制油路改變，達到大流量與小流量的切換。

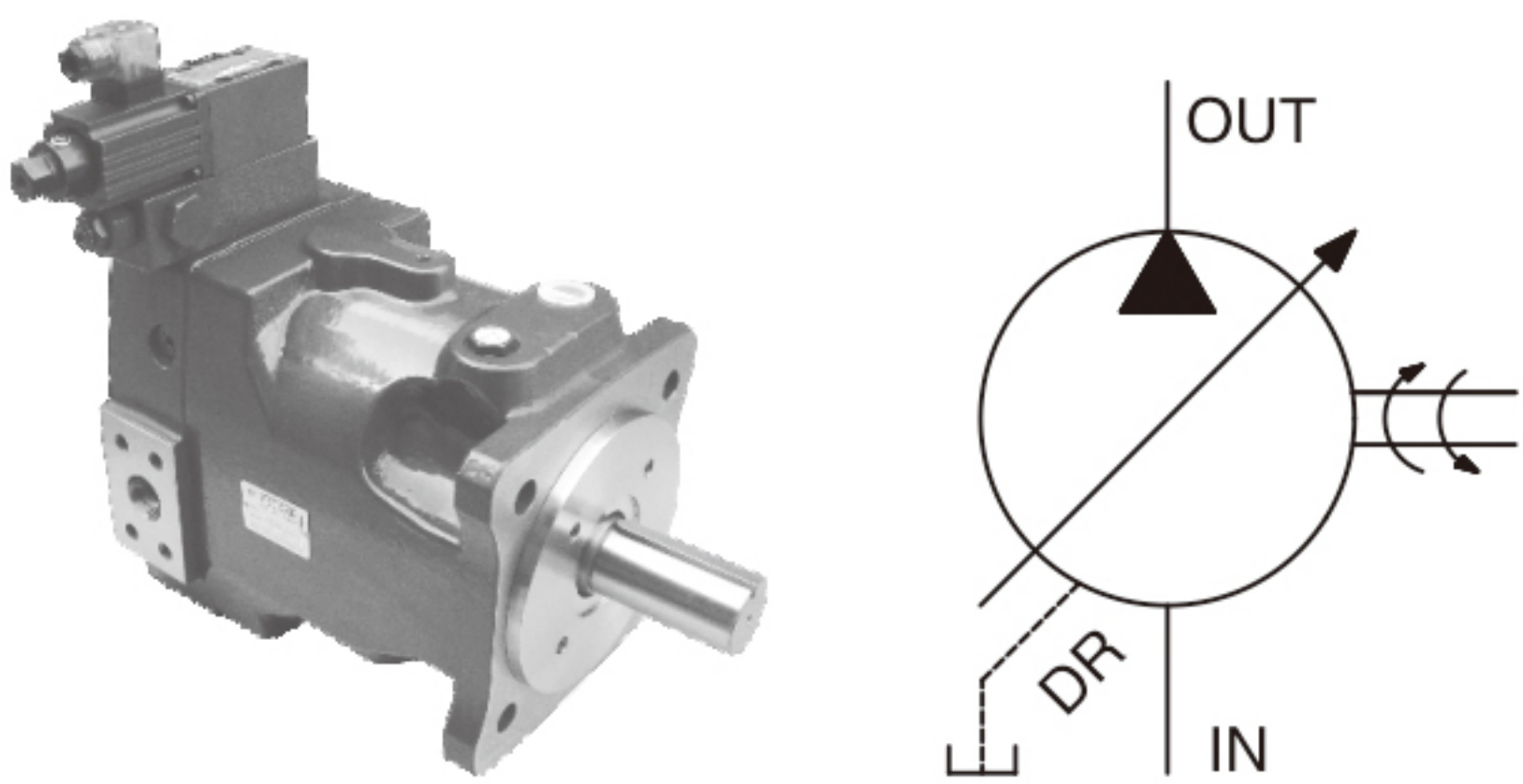
適用於兩段行程，速度不同的系統使用。



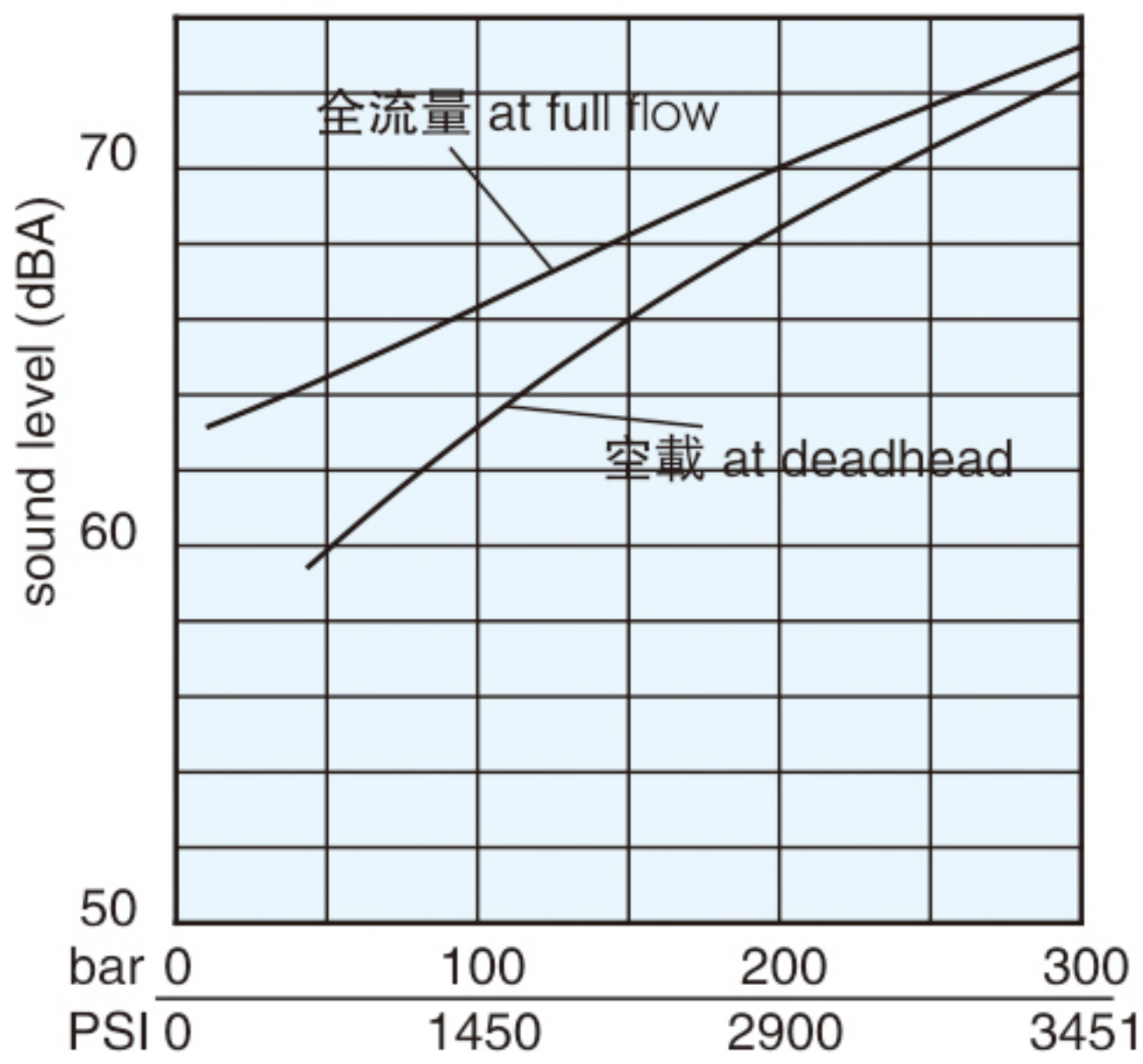




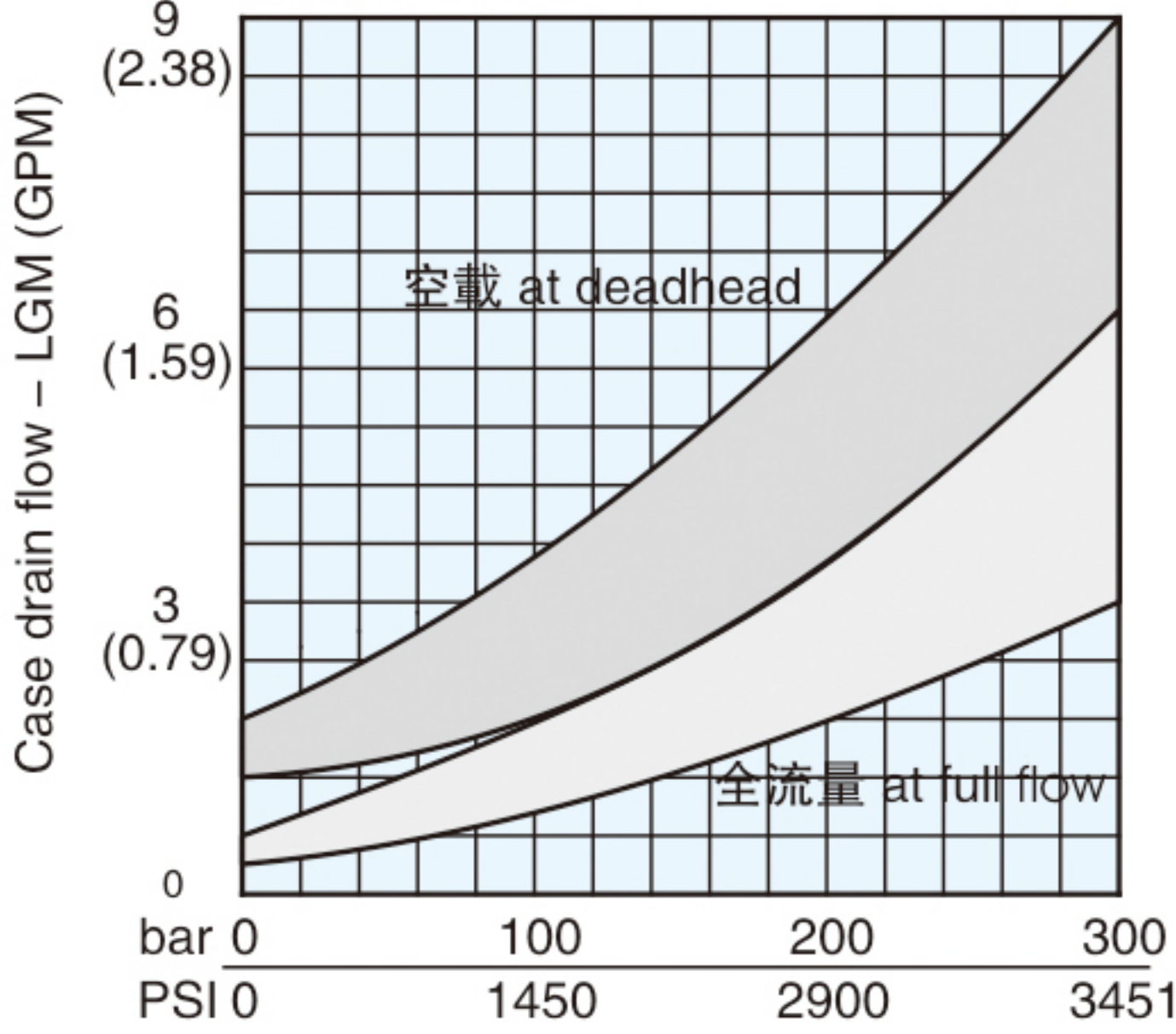
PV063~PV092



噪音級PV016~PV023



洩漏油特性PV016~PV023

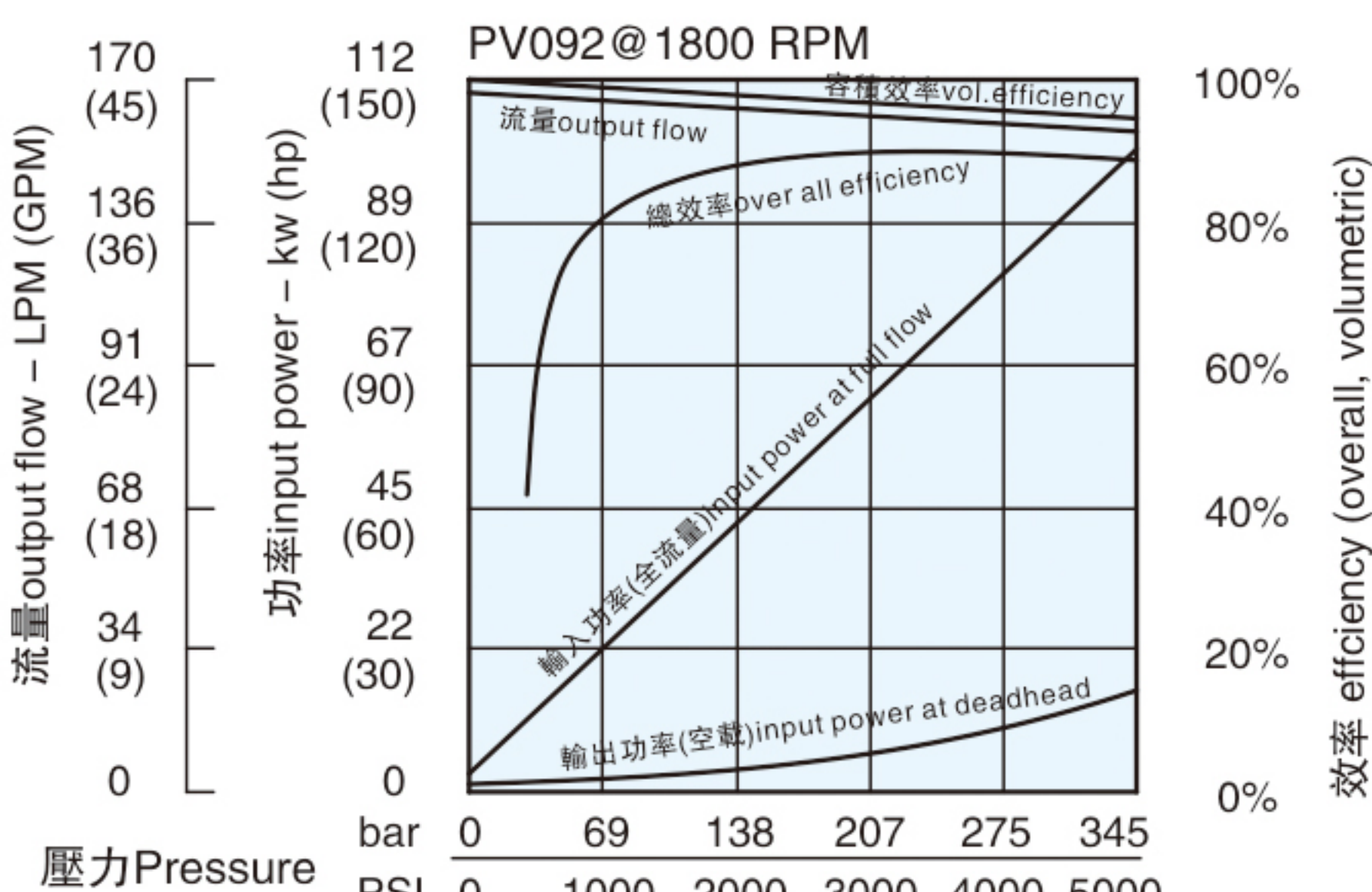
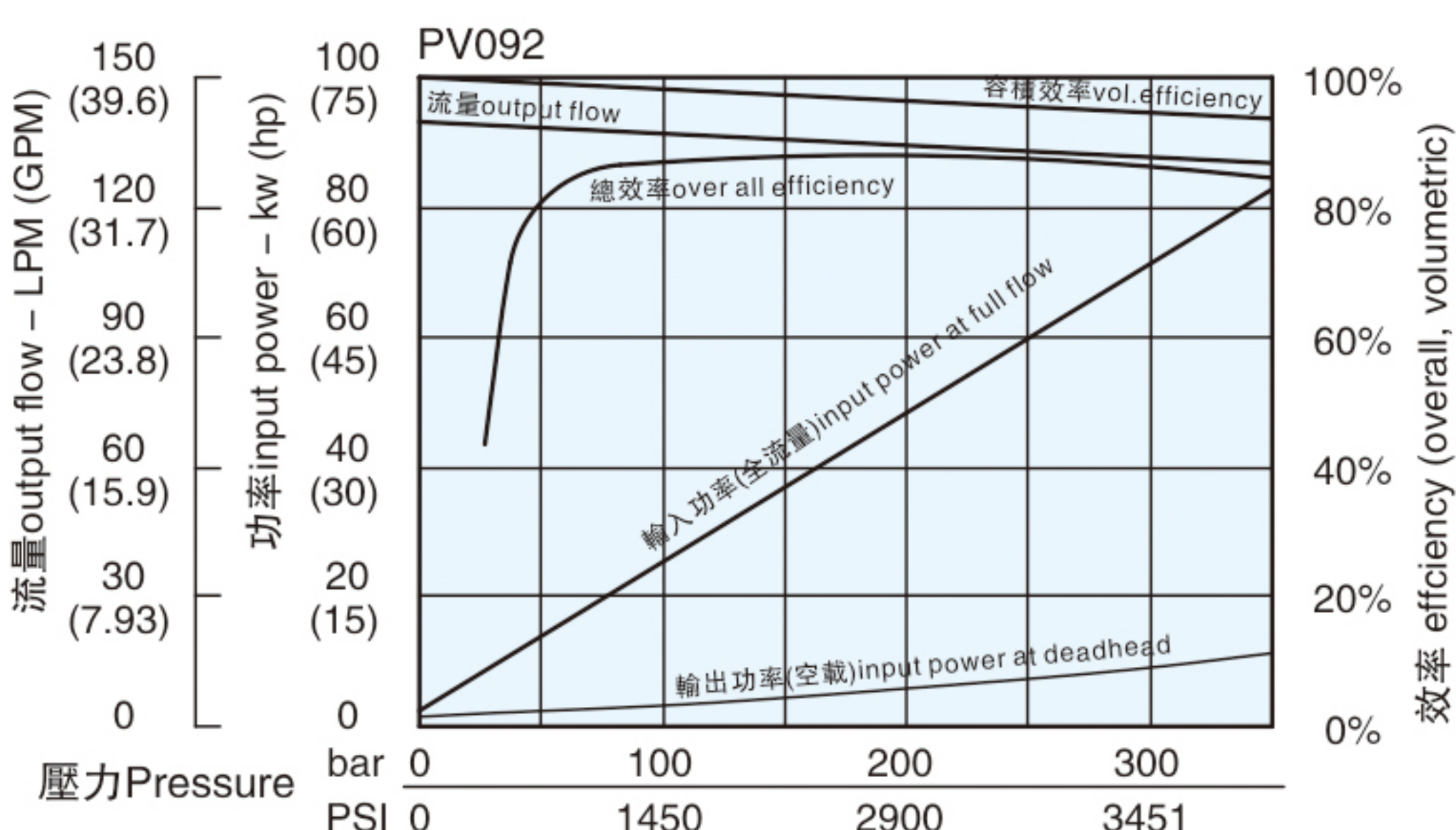
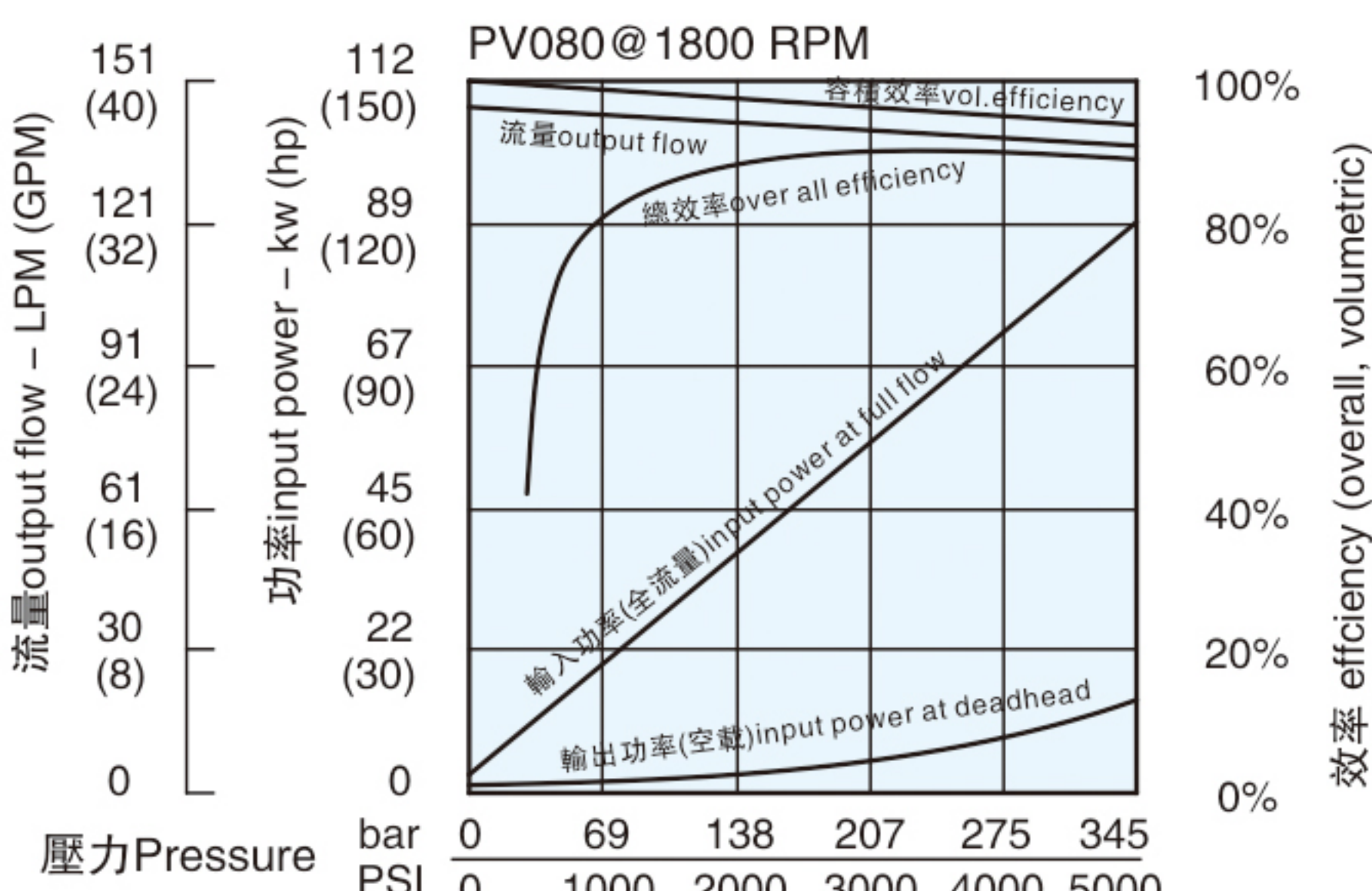
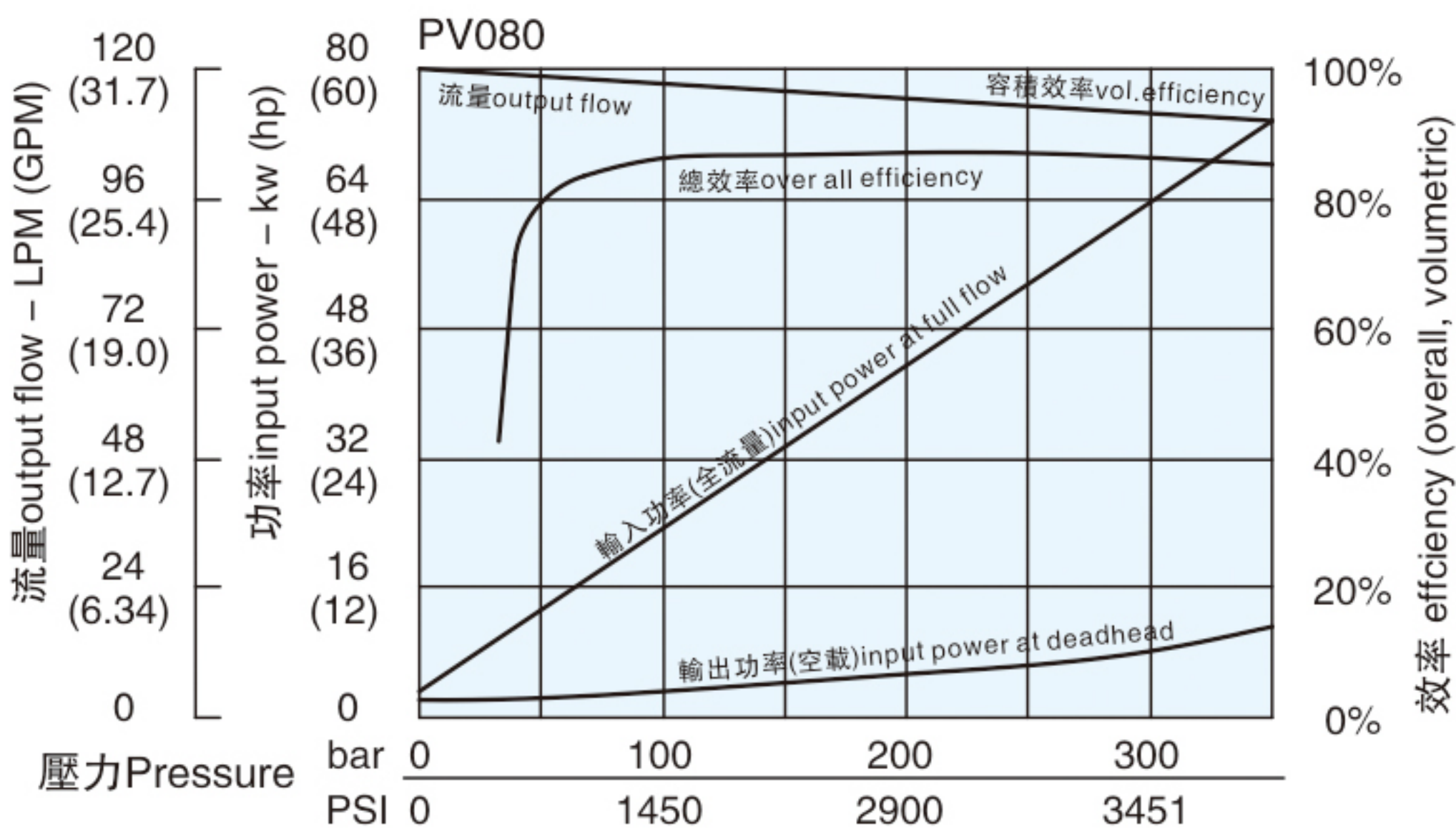
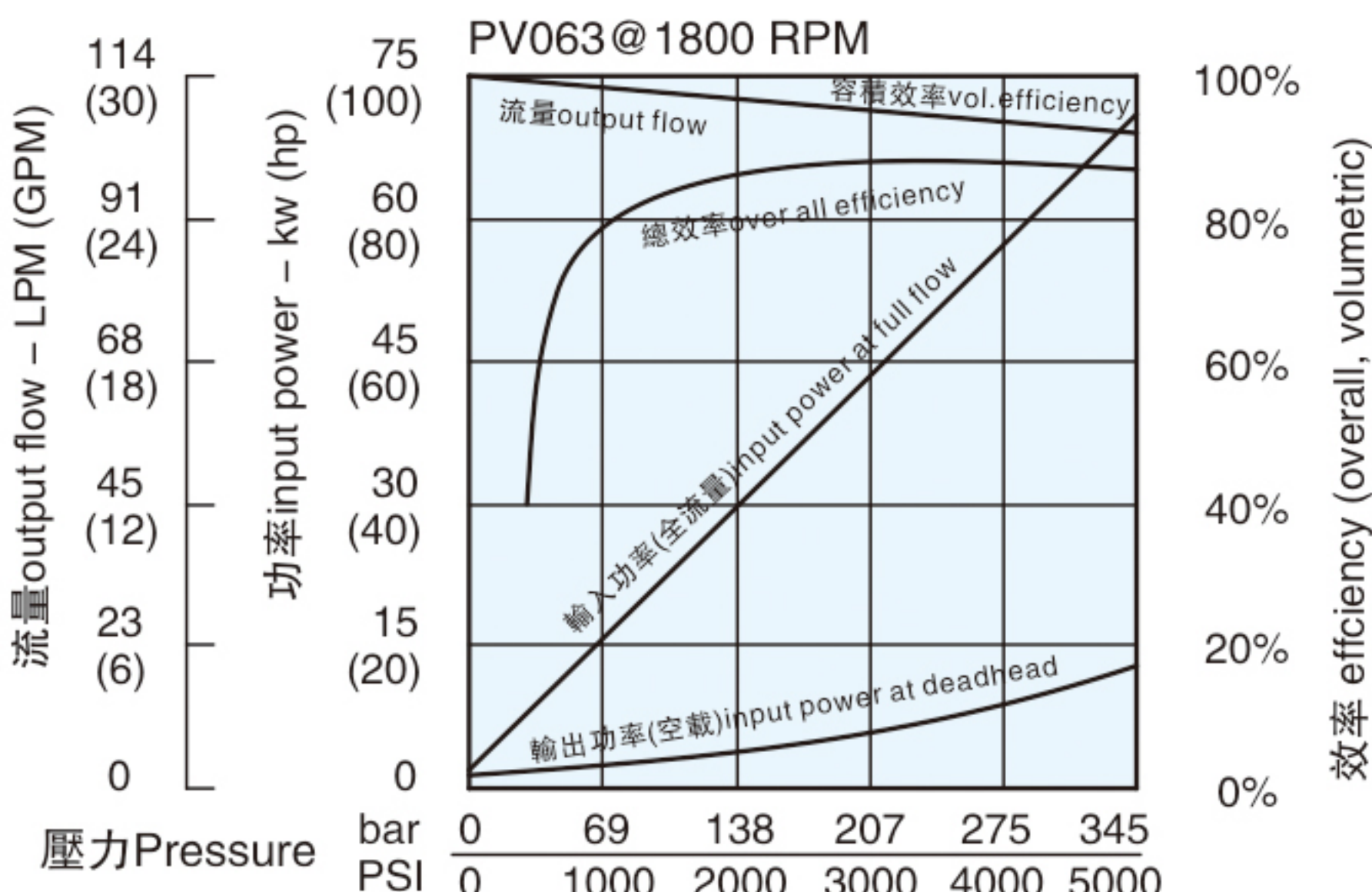
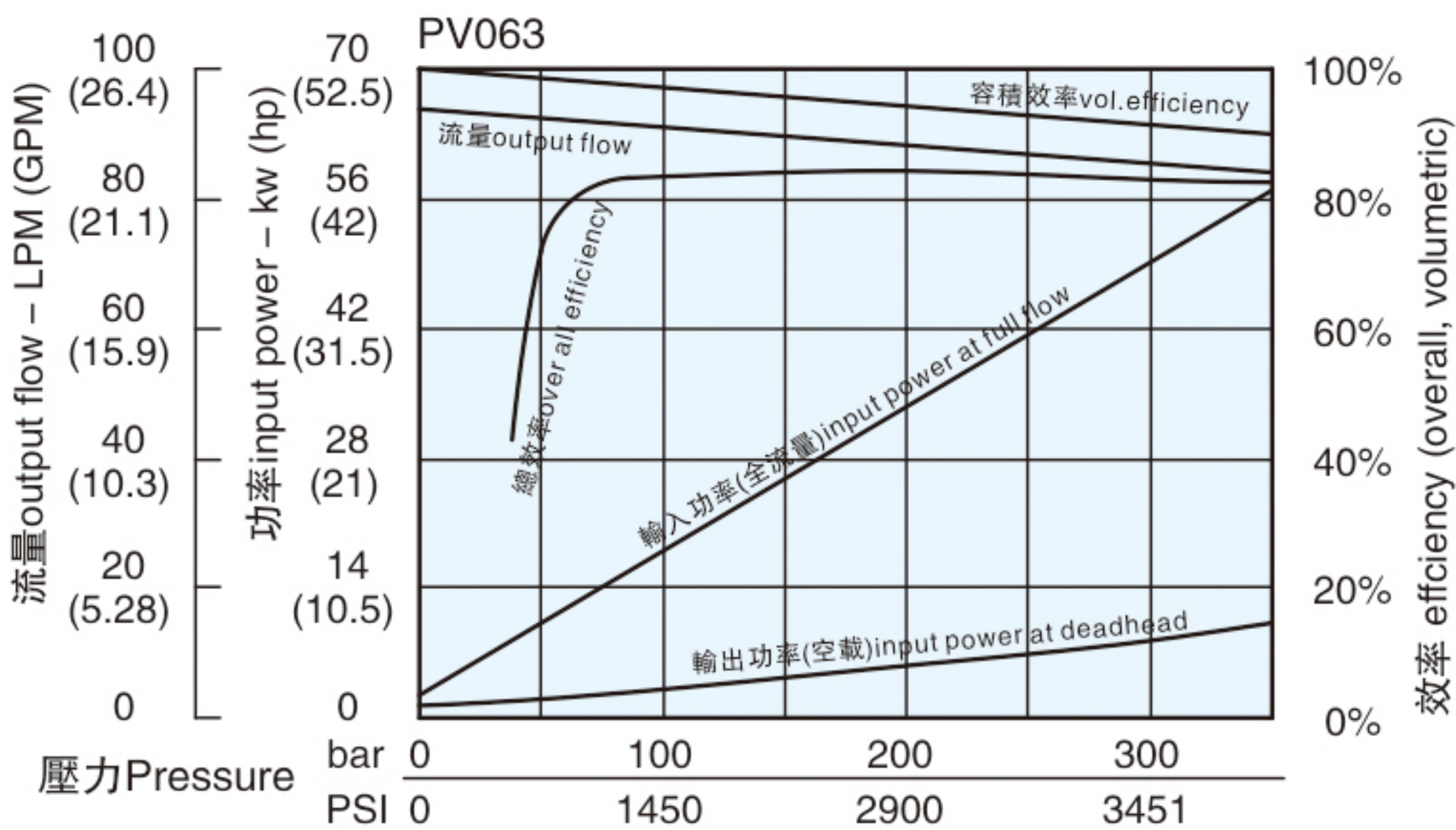


效率和洩漏油特性  
PV063, PV080, PV092

效率特性曲線是在傳動轉速 $n=1500\text{min}^{-1}$ ，溫度為 $40^{\circ}\text{C}$ 和油液粘度為 $46\text{mm}^2/\text{s}$ 時測定的。  
泵體洩漏油和調節器的控制油流通過泵的洩漏油口流回油箱。對於先道式調節器（代號G\*，H\*，功率調節器和P-Q調節器）來講，如果先道閥的控制油也同樣地流入泵體的話，那麼所表示的值將高出1-1.2 l/ min。  
請您注意：下面所表示的洩漏值只適用於靜態。當為動態載荷時，通過快速調節器過程，控制活塞所排出的油液也同樣地經過泵的洩漏油口流回油箱。該動態調節的流量瞬時可達80 l/ min。  
所以洩漏油管路的橫截面應為所有接口的橫截面並盡可能直接及短地與油箱相連。

Efficiency and Case drain flows  
PV063, PV080, PV092

The efficiency and power graphs are measured at an input Speed of  $n = 1500\text{min}^{-1}$ , a temperature of  $40^{\circ}\text{C}$  and a fluid viscosity of  $46\text{mm}^2/\text{s}$ .  
Case drain flow and compensator control flow leave via the drain port of the pump. To the valves shown are to be added 1 to 1.2l/min, if at pilot operated compensator (code G\*, H\* horse power compensator and P/Q-control ) the control flow of the pressure pilot valve also goes through the pump.  
Please note: The valves shown below are only valid for Static operation. Under dynamic conditions and at rapid compensator of the pump the volume displaced by the servo piston also leaves the case drain port.  
This dynamic control flow can reach up to 80l/min !  
Therefore the case drain line is to lead to the reservoir at full size and without restrictions at short and direct as possible.

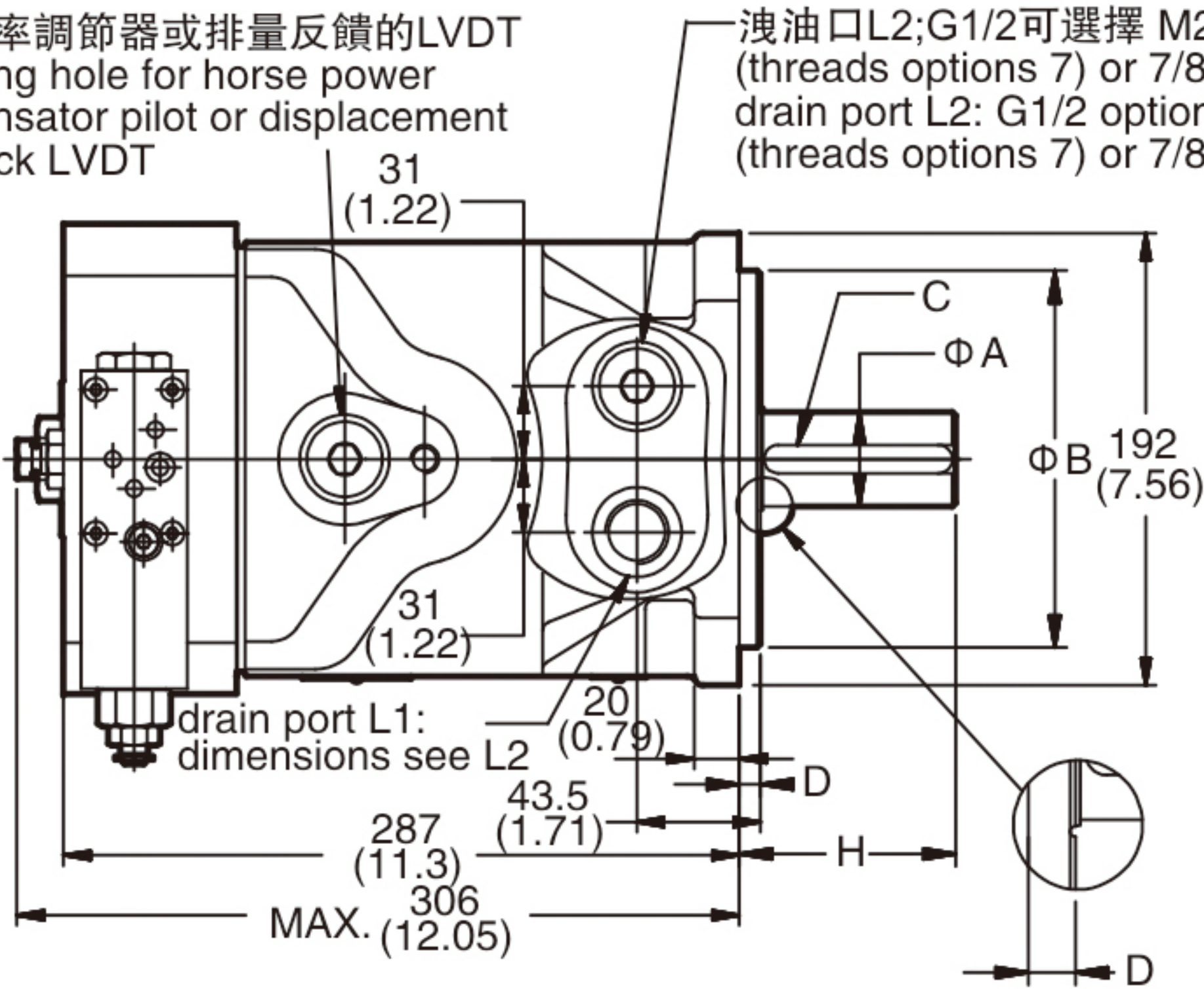




PV063~PV092

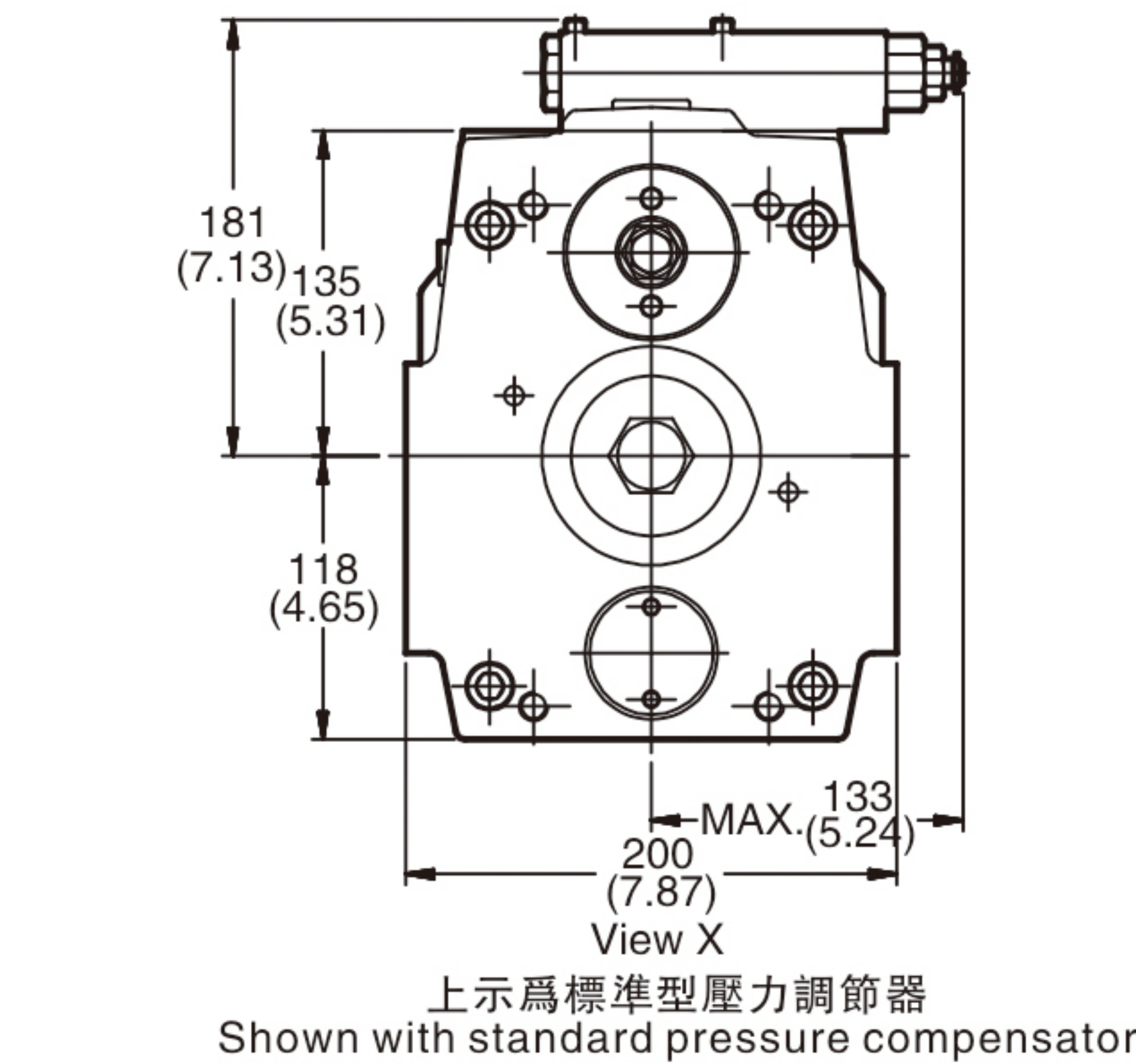
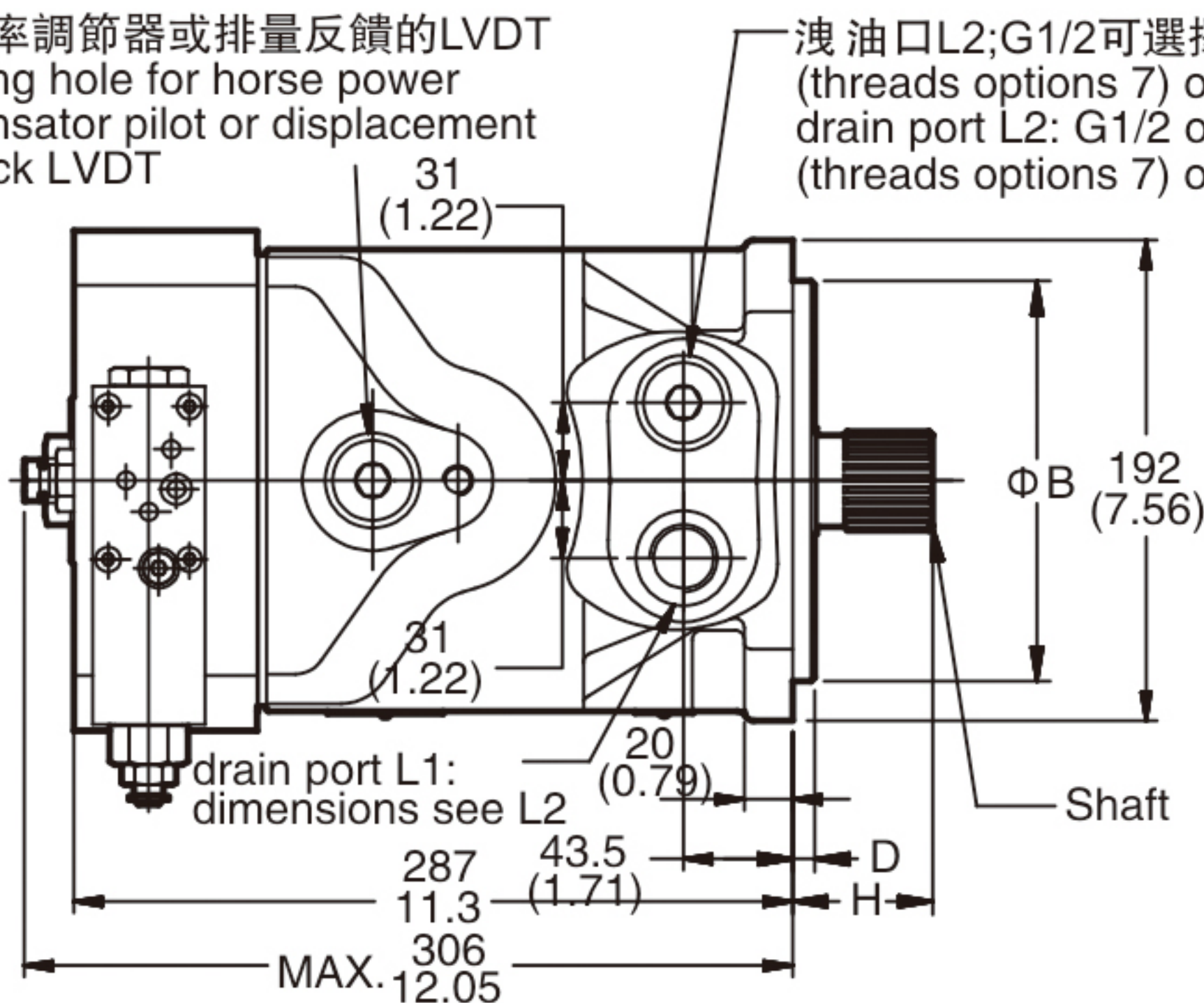
連結型式Mounting:M,N

用於功率調節器或排量反饋的LVDT  
mounting hole for horse power  
compensator pilot or displacement  
feedback LVDT



連結型式Mounting:K,D

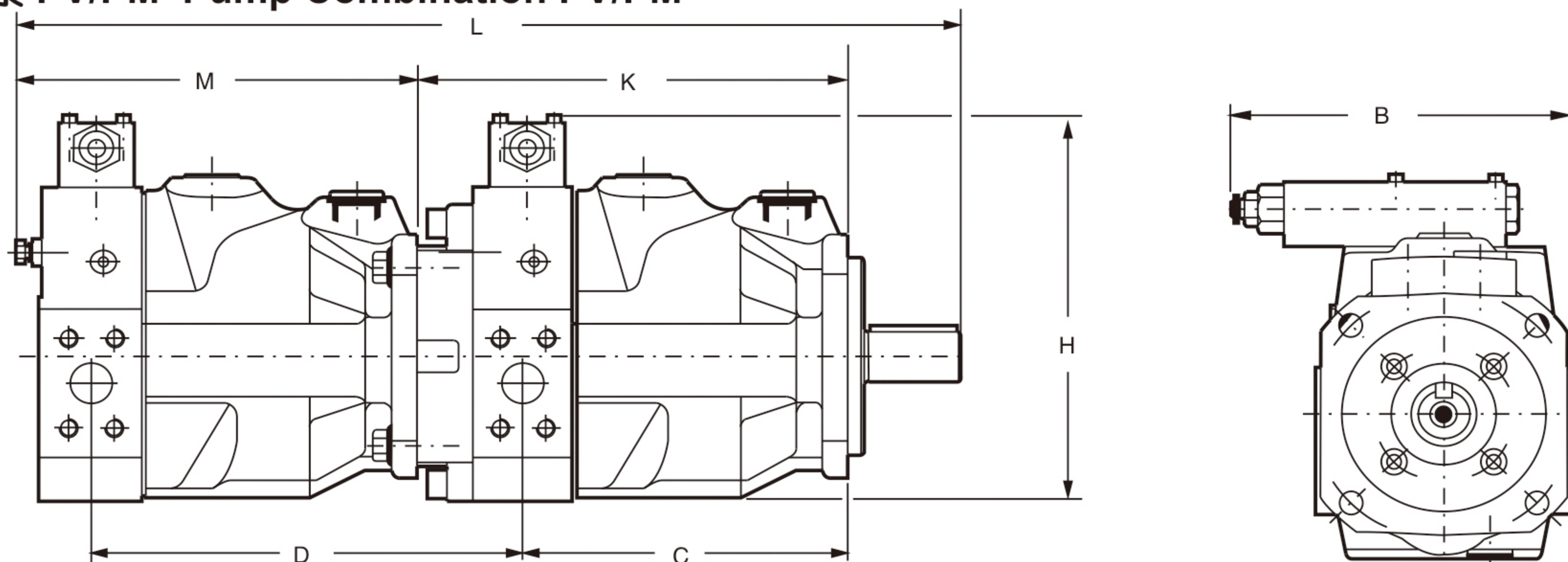
用於功率調節器或排量反饋的LVDT  
mounting hole for horse power  
compensator pilot or displacement  
feedback LVDT



| PV063 ~ PV092 規格 Dimensions |           |                           |                                                    |              |                         |             |            |              |            |
|-----------------------------|-----------|---------------------------|----------------------------------------------------|--------------|-------------------------|-------------|------------|--------------|------------|
| Mounting                    |           |                           | Φ A                                                | Φ B          | C                       | D           | Φ E        | F            | H          |
| M(standard)                 | 公制 Metric | ISO3019/2 Splined,DIN5480 | Φ 40                                               | Φ 160 h8     | 12x8x80                 | 9           | 200        | 18           | 92         |
| N                           | 英制 Inch   | ISO3019/2 Cylindric,key   | Φ 44.45(1.75" )                                    | Φ 152.4(6" ) | 11.11x11.11x80 (7/16" ) | 12.7(0.5" ) | 228.6(9" ) | 20.6(0.81" ) | 90(3.54" ) |
| Mounting                    |           |                           | Shaft                                              |              | Φ B                     | D           | Φ E        | F            | H          |
| K(standard)                 | 公制 Metric | ISO3019/2 Cylindric,key   | Splined W40x1.5x25x8f DIN 5480                     |              | Φ 160 h8                | 9           | 200        | 18           | 56         |
| D                           | 英制 Inch   | ISO3019/1 Splined,SAE     | Splined 15T 16/32 DP,flat root,side fit ANSI B92.1 |              | Φ 152.4(6" )            | 12.7(0.5" ) | 228.6(9" ) | 20.6(0.81" ) | 75(2.95" ) |



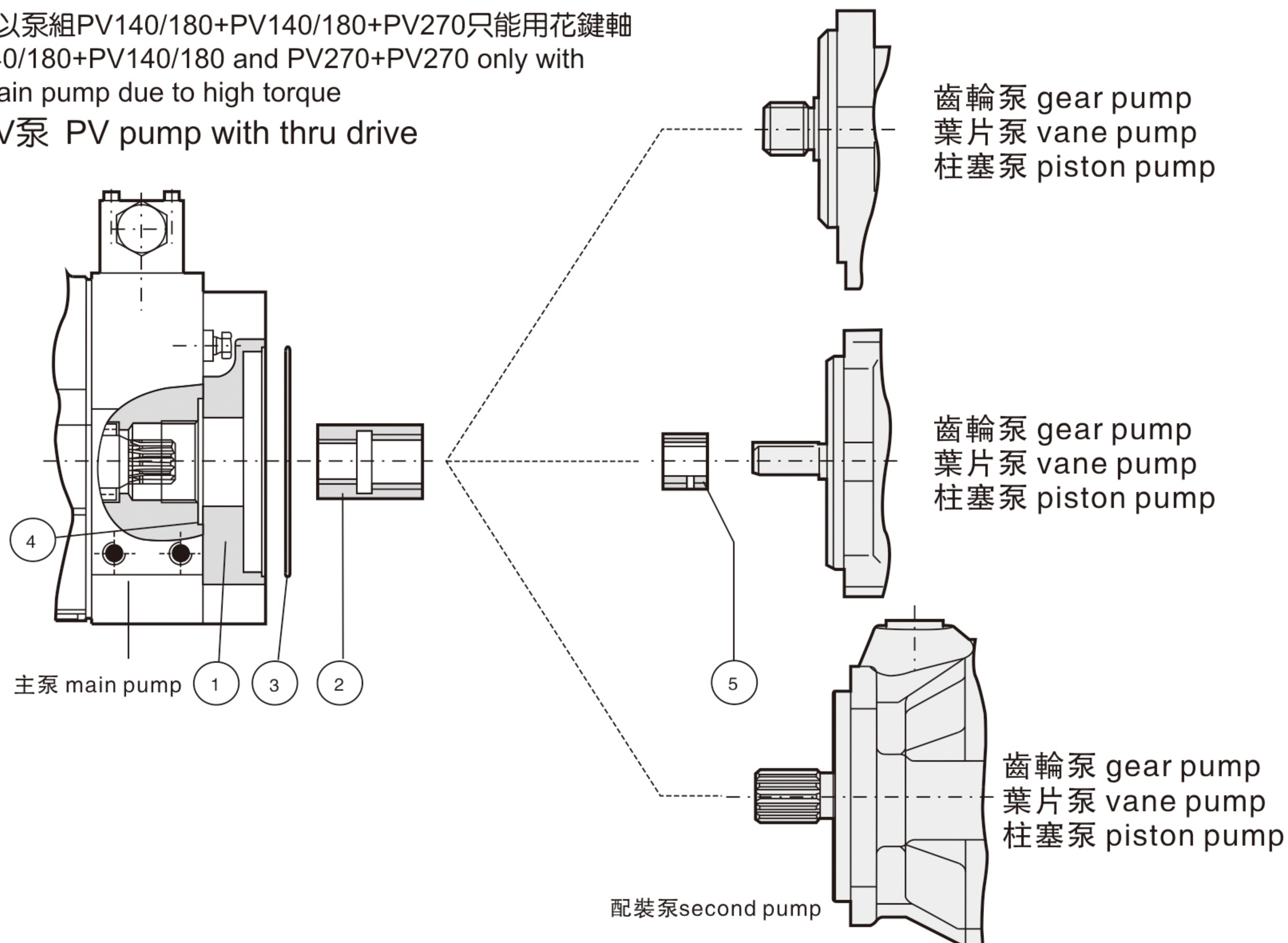
## 多聯泵 PV/PM Pump Combination PV/PM



| 主泵 main pump | 配裝泵second pump                                               | 安裝法蘭inter face main pump | L                                 | B                               | C                               | D                                       | H                               | K                                         | M                               |
|--------------|--------------------------------------------------------------|--------------------------|-----------------------------------|---------------------------------|---------------------------------|-----------------------------------------|---------------------------------|-------------------------------------------|---------------------------------|
| PV16,20或23   | PV16,20或23                                                   | 100 B4 HW                | 489                               | 196                             | 170.5                           | 225                                     | 220                             | 225                                       | 212                             |
| PV32,40或46   | PV16,20或23<br>PV32,40或46                                     | 125 B4 HW                | 541<br>574                        | 208<br>208                      | 197<br>197                      | 235.5<br>261                            | 245<br>245                      | 261<br>261                                | 212<br>245                      |
| PV63,80或92   | PV16,20或23<br>PV32,40或46<br>PV63,80或92                       | 160 B4 HW                | 630<br>663<br>724                 | 232<br>232<br>232               | 252<br>252<br>252               | 244.5<br>271<br>326                     | 299<br>299<br>299               | 326<br>326<br>326                         | 212<br>245<br>306               |
| PV140或180    | PV16,20或23<br>PV32,40或46<br>PV63,80或92<br>PV140或180          | 160 B4 HW                | 719<br>752<br>813<br>878          | 230<br>230<br>230<br>230        | 305<br>305<br>305<br>305        | 280.5<br>307<br>362<br>415              | 349<br>349<br>349<br>349        | 415<br>415<br>415<br>415                  | 212<br>245<br>306<br>385        |
| PV270        | PV16,20或23<br>PV32,40或46<br>PV63,80或92<br>PV140或180<br>PV270 | 200 B4 HW                | 860<br>893<br>954<br>1033<br>1134 | 255<br>255<br>255<br>255<br>255 | 403<br>403<br>403<br>403<br>403 | 299<br>325.5<br>380.5<br>433.5<br>531.5 | 406<br>406<br>406<br>406<br>406 | 531.5<br>531.5<br>531.5<br>531.5<br>531.5 | 212<br>245<br>306<br>385<br>510 |

由於扭矩較大，所以泵組PV140/180+PV140/180+PV270只能用花鍵軸  
Combination PV140/180+PV140/180 and PV270+PV270 only with  
splined shaft on main pump due to high torque

帶通軸結構的PV泵 PV pump with thru drive



圖片表示出使用油昇泵可能的連接方式，對於絕大多數設備來說，聯系方式採用標準的公制連接尺寸和SAE連接尺寸。



通軸結構，軸上的載荷限制 Thru drive,shaft load limitations

不同的軸最大允許扭矩(Nm) 為 The max.transferable torque in Nm for the different shafts options are:

| 軸的代號<br>shaft code | PV 16-23 | PV 32-46 | PV 83-92 | PV 140-180 | PV 270 |
|--------------------|----------|----------|----------|------------|--------|
| N                  | 300      | 550      | 1320     | 2000       | 2000   |
| D                  | 300      | 610      | 1218     | 2680       | 2680   |
| F                  | -        | -        | -        | 1320       | -      |
| G                  | -        | -        | -        | 1640       | -      |
| M                  | 300      | 570      | 1150     | 1900       | 2850   |
| K                  | 405      | 675      | 1400     | 2650       | 3980   |

重要提示Important notice

不能超過傳動軸的最大允許扭矩。當為雙聯泵時沒有問題，為100%通軸傳動。然而，當為三聯（和多聯）組合時會超過傳動軸的扭矩。因此，必須弄清總載荷并與允許的極限值進行比較。

The max.allowable torque of the individual shaft must not be exceeded.For 2-pump combinations there is no problem because PV series offers 100% thru torque.For 3-pump combinations(and more)the limit torque could be reached or exceeded.

Therefore it is necessary to calculate the torque factor and compare it with the alloed torque limit factor in the table.

條件:所算出的載荷值 < 極限值勤  
Required:calculated torque factor  
< torque limit factor

為了盡可能簡便地對允許的總載荷進行必要的復核，所以在表中給出了各自的泵和軸的結構所規定的極限值。

To make the necessary calculations easier and more user friendly it is not required to calculate actual torque requirements in Nm and compare them with the shaft limitations.The table on the right shows limit factors that include material specification, safety factors and conversion factors.

所算出的總載荷應是各個泵載荷值的總和。  
The total torque factor is represented by the sum of the individual torque factors of all pumps in the complete pump combination.

每一個單個泵的載荷值可以由最大工作壓力P(bar)乘以最大排量Vg(cm³/rev)而得到。

The torque factor of each individual pump is calculated by multiplying the max.operating pressure p of the pump (in bar)with the max.displacement Vg of the pump(in cm³/rev)

| 泵pump       | 軸shaft | 極限值<br>torque limit factor |
|-------------|--------|----------------------------|
| PV016-PV023 | N      | 17700                      |
|             | D      | 17700                      |
|             | M      | 17700                      |
|             | K      | 20130                      |
| PV032-PV046 | N      | 32680                      |
|             | D      | 36380                      |
|             | M      | 33810                      |
|             | K      | 40250                      |
| PV063-PV092 | N      | 77280                      |
|             | D      | 72450                      |
|             | M      | 67620                      |
|             | K      | 83720                      |
| PV140-PV180 | N      | 118400                     |
|             | D      | 158760                     |
|             | F      | 78750                      |
|             | G      | 97650                      |
|             | M      | 113400                     |
|             | K      | 157500                     |
| PV270       | N      | 119000                     |
|             | D      | 159700                     |
|             | M      | 170100                     |
|             | K      | 236250                     |

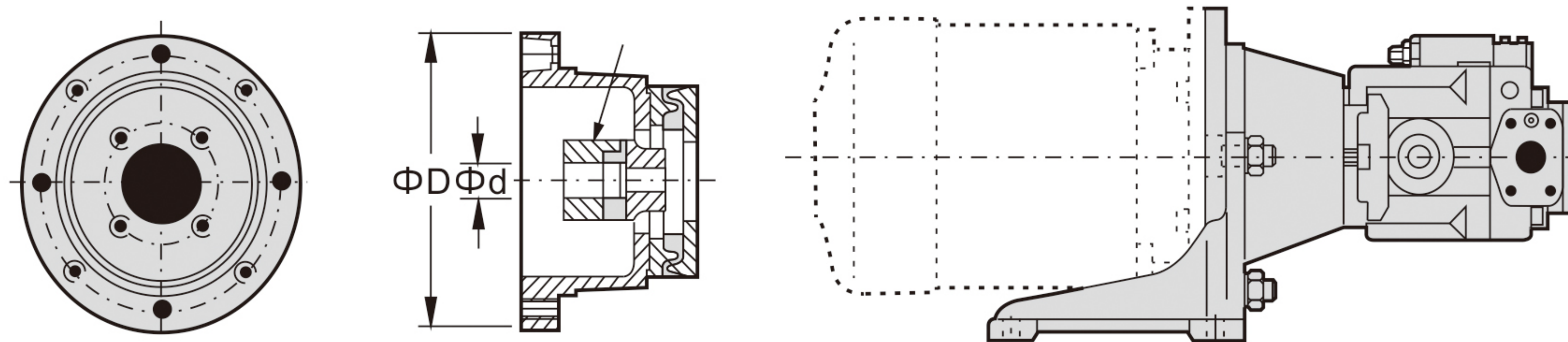
多聯泵的總載荷=各個泵載荷的總和  
Total torque factor of the comination=  
sum of individual torque factors of all pumps

單個泵的載荷值=p x Vg  
Torque factor of any pump=p x Vg  
(pressure in bar x displacement in cm³/rev)



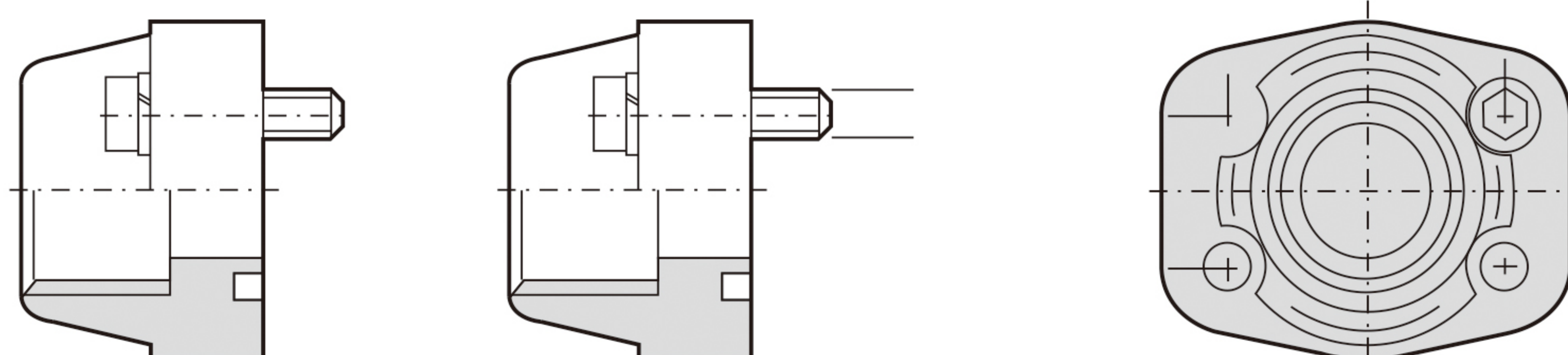
## 附件 Accessories

泵支架，聯軸器和腳架法蘭 Bell housing, coupling and foot flange



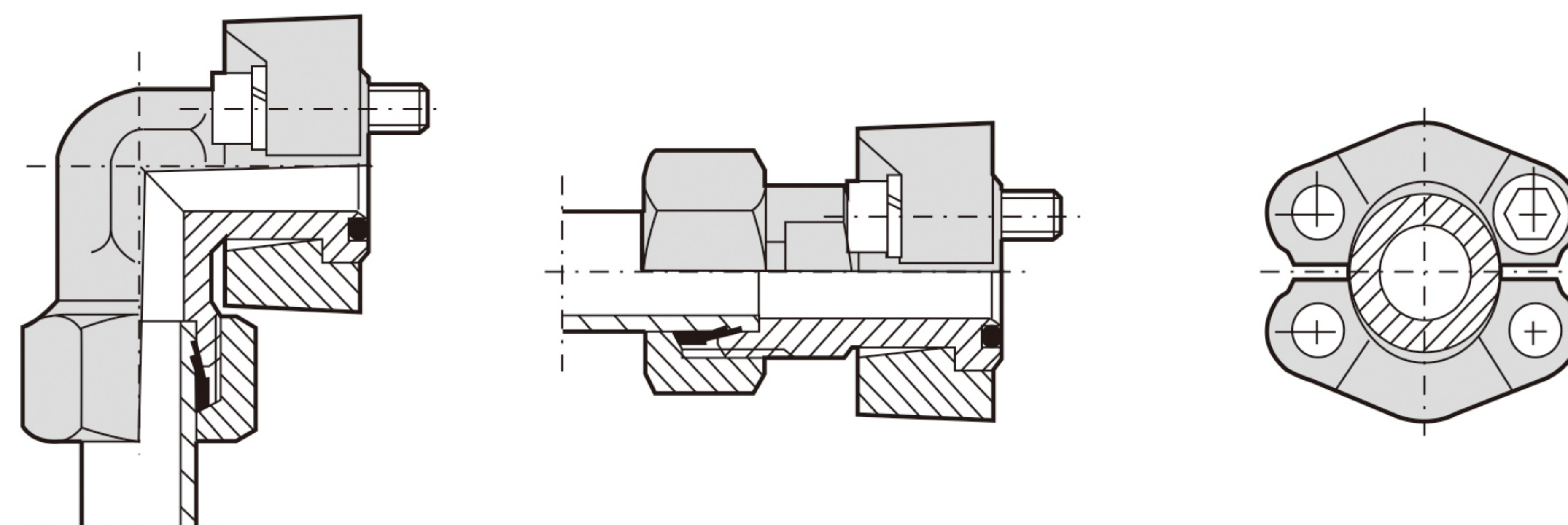
焊接式法蘭 Welding flange

螺栓緊固式法蘭 Threaded flange



SAE-法蘭連接，管接頭，依照DIN2353標準

SAE-flange connections, pipe connection in accordance to DIN-2353

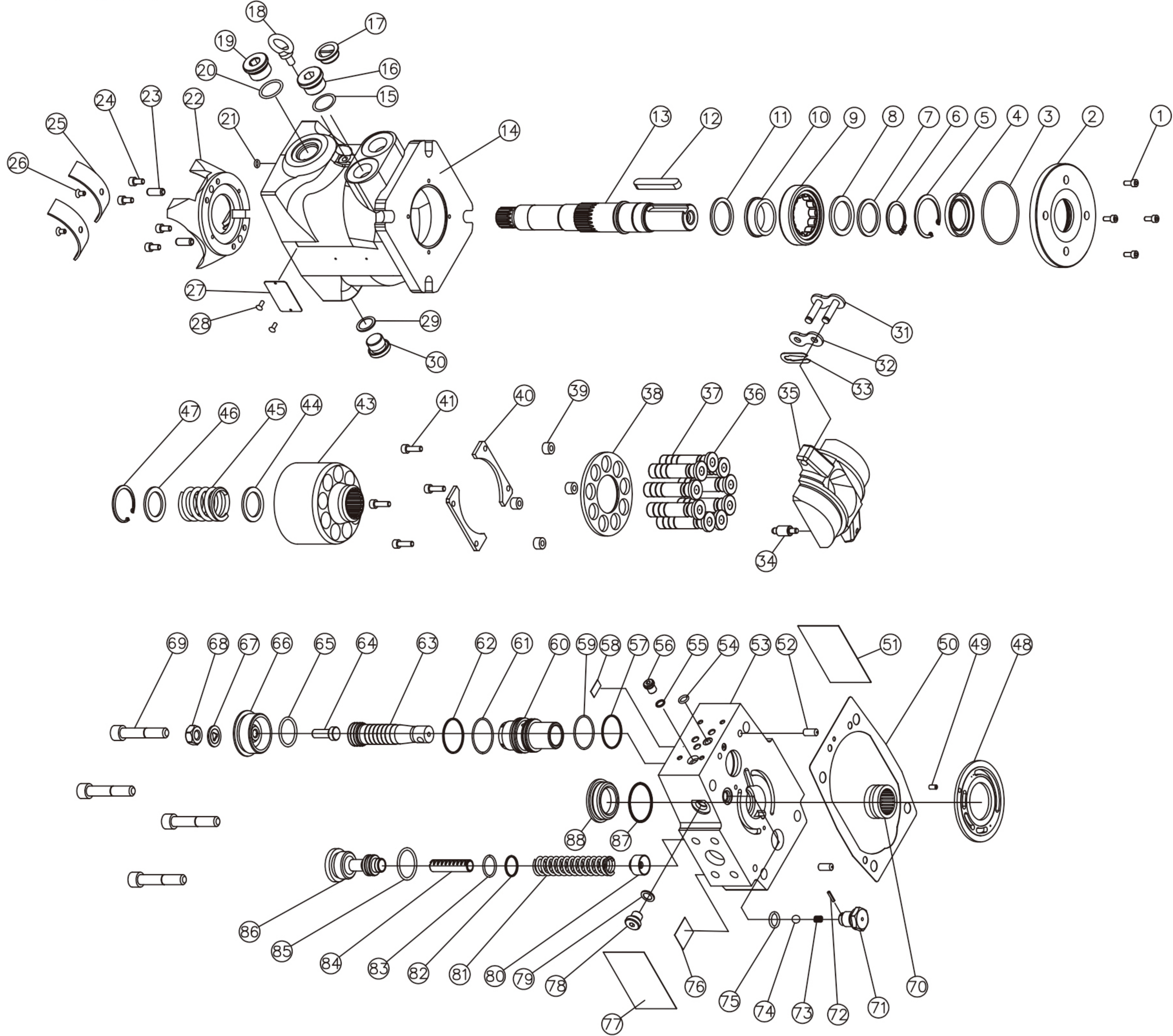


直角式SAE-法蘭連接 WFS  
Elbow SAE-flange connection WFS

直角式SAE-法蘭連接 GFS  
Straight SAE connection GFS



PV內部構造圖



| No. | DescriptionIm        | Quantity | No. | DescriptionIm            | Quantity | No. | DescriptionIm           | Quantity | No. | DescriptionIm             | Quantity |
|-----|----------------------|----------|-----|--------------------------|----------|-----|-------------------------|----------|-----|---------------------------|----------|
| 1   | 軸蓋螺絲Head cap screw   | 4        | 23  | 彈簧銷Pin                   | 2        | 46  | 九孔座上下頂片Washer           | 1        | 68  | 流量調整蓋螺帽Servo spring cover | 1        |
| 2   | 軸蓋Pilot cover        | 1        | 24  | 曲柄螺絲Screw                | 4        | 47  | C型扣環Snap ring           | 1        | 69  | 面蓋螺絲Screw                 | 1        |
| 3   | O型環O-ring            | 1        | 25  | 鐵福龍片Trunnion bearing     | 2        | 48  | 銅片Valve plate           | 1        | 70  | 軸承Trunnion bearing        | 1        |
| 4   | 軸蓋油封Shaft seal       | 1        | 26  | 鐵福龍片螺絲Screw              | 2        | 49  | 銅片定位銷Pin                | 1        | 71  | 螺栓Plug                    | 1        |
| 5   | C型扣環Snap ring        | 1        | 27  | 銘牌Rotation indicator     | 1        | 50  | 面蓋牛皮紙Seal               | 1        | 72  | 彈簧銷Pin                    | 1        |
| 6   | C型扣環Snap ring        | 1        | 28  | 銘牌螺釘Rivet                | 2        | 51  | 塑膠軟片Seal                | 1        | 73  | 彈簧Spring                  | 1        |
| 7   | 軸心墊片Washer           | 1        | 29  | O型環O-ring                | 1        | 52  | 面蓋鋼針Pin                 | 1        | 74  | 鋼珠Ball                    | 1        |
| 8   | 軸承墊片Washer           | 1        | 30  | 底螺栓Plug                  | 1        | 53  | 面蓋Pump body             | 2        | 75  | O型環O-ring                 | 2        |
| 9   | 軸承(外環)Roller bearing | 1        | 31  | 鏈子Chain link             | 1        | 54  | O型環O-ring               | 1        | 76  | 貼紙Label                   | 1        |
| 10  | 軸承(內環)Roller bearing | 1        | 32  | 鏈子固定片Chain link          | 1        | 55  | O型環O-ring               | 1        | 77  | 塑膠軟片Seal                  | 1        |
| 11  | 軸心墊片Roller bearing   | 1        | 33  | 鏈子彈簧片Chain link          | 1        | 56  | 封螺栓Plug                 | 1        | 78  | 蓋邊螺栓Plug                  | 1        |
| 12  | 單頭圓鍵Key              | 1        | 34  | 頂針Connector servo spring | 1        | 57  | O型環O-ring               | 1        | 79  | O型環O-ring                 | 1        |
| 13  | 軸心Shaft              | 1        | 35  | 曲柄Swash plate            | 1        | 58  | 貼紙Label                 | 1        | 80  | 頂子Washer                  | 1        |
| 14  | 泵體Pump body          | 1        | 36  | 銅頭Piston                 | 9        | 59  | O型環O-ring               | 1        | 81  | 彈簧Spring                  | 1        |
| 15  | O型環O-ring            | 1        | 37  | 活塞Piston                 | 9        | 60  | 上蓋套筒Servo piston sleeve | 1        | 82  | O型環O-ring                 | 1        |
| 16  | 注油口螺栓Plug            | 1        | 38  | 九孔片Slipper segment       | 1        | 61  | O型環O-ring               | 1        | 83  | O型環O-ring                 | 1        |
| 17  | 塑膠塞頭Plug             | 1        | 39  | 墊套Washer                 | 4        | 62  | O型環O-ring               | 1        | 84  | 彈簧銷Pin                    | 1        |
| 18  | 吊環Ring               | 1        | 40  | 壓片Retainer segment       | 2        | 63  | 流量連桿活塞Servo spring plug | 1        | 85  | O型環O-ring                 | 1        |
| 19  | 上螺栓Plug              | 1        | 41  | 壓片螺絲Screw                | 4        | 64  | 流量調整螺絲Servo spring plug | 1        | 86  | 調整螺絲Screw                 | 1        |
| 20  | O型環O-ring            | 1        | 43  | 九孔座Cylinder block        | 1        | 65  | O型環O-ring               | 1        | 87  | O型環O-ring                 | 1        |
| 21  | O型環O-ring            | 1        | 44  | 九孔座上下頂片Washer            | 1        | 66  | 流量調整蓋Servo spring plug  | 1        | 88  | 螺帽蓋Spring cover           | 1        |
| 22  | 曲柄轉座Cradle           | 1        | 45  | 九孔彈簧Spring               | 1        | 67  | 流量調整蓋墊片Washer           | 1        |     |                           |          |



## 使用說明書

### 1、液壓油

推薦採用高品質的礦物油基液壓油，像符合DIN 51524標準中第2部分規定的H-LP油液。在50℃時，粘度應為25至50mm<sup>2</sup>/S，溫度範圍-10至70℃。對於其他的油液，像磷酸酯之類須進一步查詢。

### 2、齒封件

以礦物油基液壓油作為工作介質則採用標準的丁腈橡膠（Nitril）密封件。對於像磷酸酯之類的油液必須使用碳氟密封件。

### 3、過濾與油管配置

如果通過十分有效的過濾使得油液的清潔度符合規定的純淨度等級（例如：符合ISO 4406）的話，那麼，泵和其他元件的功能的可靠性和使用壽命會得到不同程度的提高。濾芯應符合ISO標準的品質要求。

(1)過濾精度X（μm）的最低要求，保障一般液壓設備的功能可靠性：

等級19/15，按照ISO 4406標準。

X=25μm（β<sub>25</sub>≥75）按照ISO 4572標準。

(2)保障設備具有高的功能可靠性和長的元件使用壽命：

等級16/13，按照ISO 4406標準。

X=10μm（β<sub>10</sub>≥75）按照ISO 4572標準。

推薦採用油昇為不同的使用場合和安裝方式生產的迴油過濾器或壓力油過濾器。應盡量避免使用吸油過濾器，特別是對快速響應的泵。吸油口可使用100目（149μm）濾網，濾網尺寸須大於吸口2倍以上。為達到最好的過濾效果，旁路過濾是最好的選擇。

(3)安裝和裝配

水平安裝：

吸油口和壓力油口在側面，洩漏油口朝上，或者軸轉90度，壓力油口朝上，吸油口朝下。絕對不能反過來，因為洩漏油口必須總是位於盡可能高的位置上。

垂直安裝：軸朝上。

進口（吸油端）

泵和吸油管路應這樣設置，使真空度不超過0.8 bar（絕對的）。吸油管路應盡可能的短和直。當泵安裝在油箱上時應將吸油口切成45度以改善吸油條件。注意要絕對的密封。空氣進入吸油管路會引起氣蝕，噪音和損害泵。

### 4、傳動

泵的軸和電機的軸必須在0.25 mm T.I.R.公差範圍內同軸線，最大允許角度誤差小於0.2度。應該使用帶間隙誤差補償和角度誤差補償的迴轉柔性聯軸器。必須遵守聯軸器生產廠家的安裝規定。

當傳動引起泵軸的徑向載荷時必須與廠家磋商。泵軸的軸向載荷是不允許的。

### 5、啓動

在第一次試運行時，泵（通過洩漏油管路）應該被充滿了油。當第一次啓動時，系統在無壓的狀態下運行，為的是迅速充油並且使泵和管路排氣。當全部的空氣排空時，壓力就建立起來。

短時間、關于排氣並能使泵快速充油。（注意：檢查電機的旋轉方向。）

### 6、工作噪音

泵和正常工作噪音和液壓傳動系統的工作噪音的測定與泵和整個傳動系統安裝在哪裏和怎樣安裝有關。

管路連接形式、尺寸和結構也經常會引起不應有高噪音。

泵和電機之間的連接形式和結構也經常會引起不應有的高噪音，即使受到安裝空間的限制，安裝時應該採用相應的措施和結構部件來達到最佳的降低工作噪音效果。

降低工作噪音：

結構部件通過彈性連接可以防止將泵的震動傳給其他的元件並且也可以避免泵的震動加劇。例如：

(1)泵的支架：採用硫化迷宮式封的減震法蘭。①

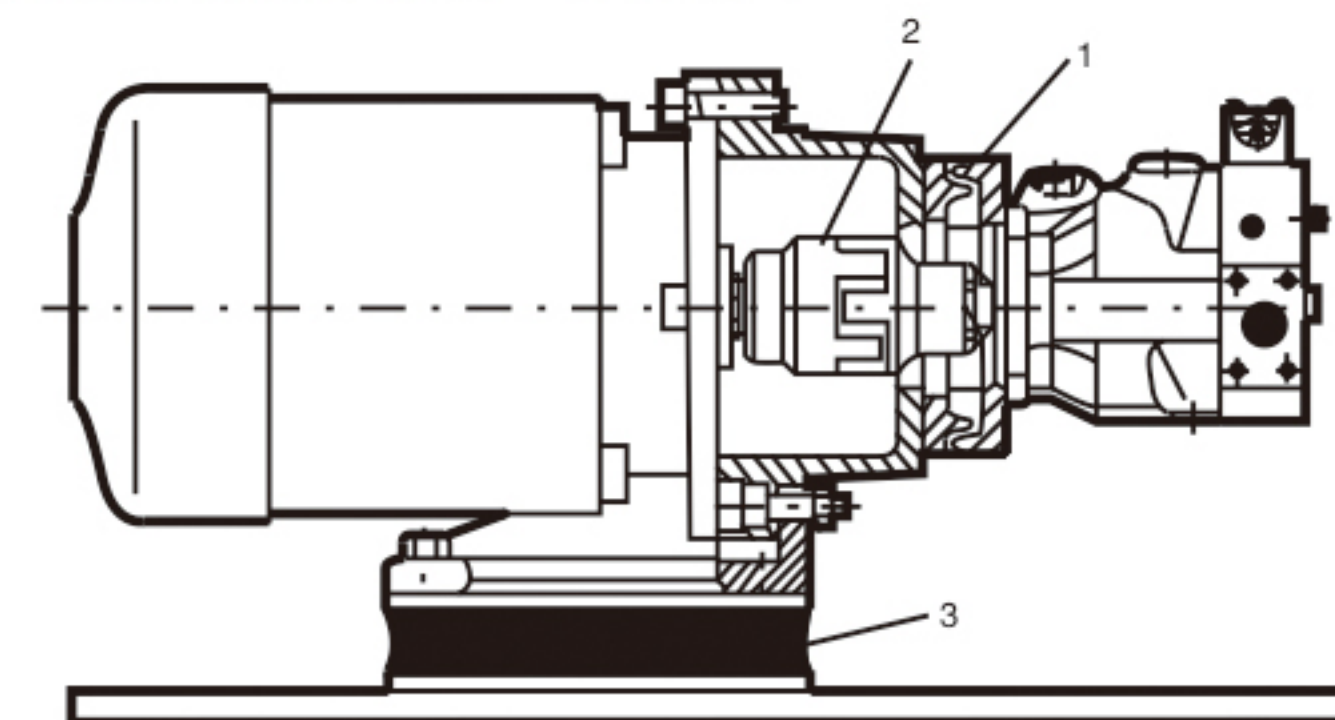
(2)旋轉彈性：聯軸器。②

(3)減震架③：或用於安裝電機的圓形支架或泵支架的腳架法蘭。

(4)泵的進口、出口和洩漏油口採用柔性的管路連接（軟管）。

(5)僅進油管路採用氣密的硬管連接。

(6)管路連接應使用盡可能大的橫截面以及相應的連接螺紋或法蘭。



### 7、洩漏油管路

洩漏油管路必須直接地和無節流地引入油箱。不能與其他的回油管路連接在一起。洩漏油管路的末端必須在油箱的最低液面以下並且盡可能遠離吸油口。借此可使在停車狀態下泵體內部油液不會排空且混有空氣的發熱油液不會重覆循環。也於同一原因，把泵安裝在油箱內部時，洩漏油管路的安裝也應保證虹吸的產生，以選取並選用有最大直徑的直速型低壓接頭，保證泵的殼體能被充滿油液。殼體-（洩漏油）-壓力不能超過1bar。管路最長2000mm，最小直徑應按接口尺寸相符並使用低壓-螺紋連接。

|        | PV016~PV023       | PV032~PV046      | PV063~PV092      | PV140~PV180    | PV270              |
|--------|-------------------|------------------|------------------|----------------|--------------------|
| 油管接管尺寸 | 3/8(Φ8.5 or more) | 1/2(Φ12 or more) | 3/4(Φ16 or more) | 1(Φ19 or more) | 1-1/4(Φ22 or more) |
| 油管内徑   | Φ12 or more       | Φ15 or more      | Φ19 or more      | Φ25 or more    | Φ32 or more        |
| 洩漏管長   | Under 1m          | Under 1m         | Under 1m         | Under 1m       | Under 1m           |