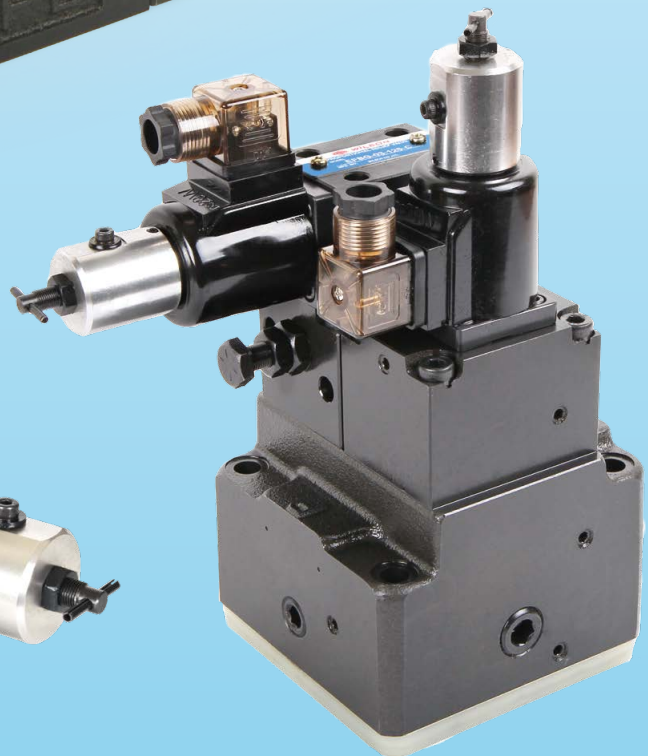
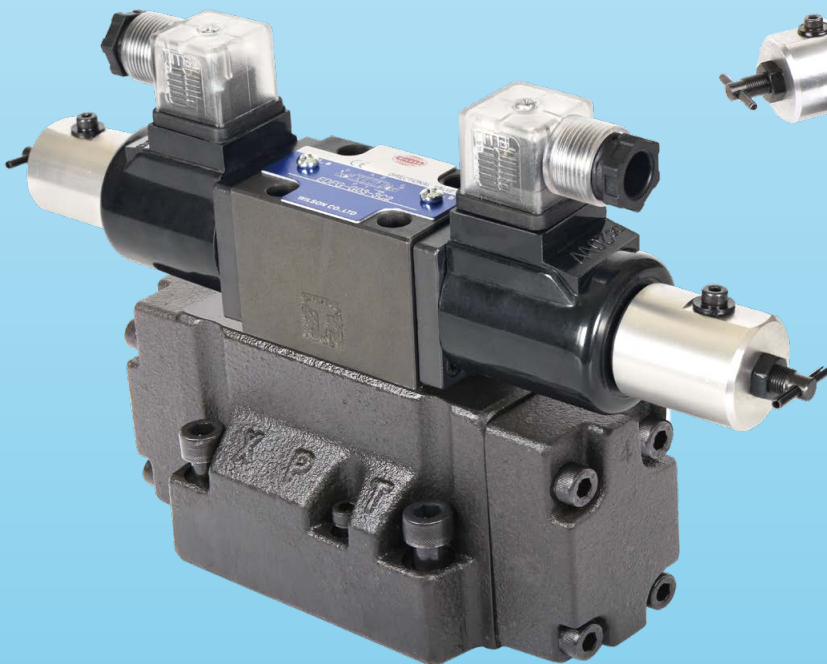




# 偉順空油壓股份有限公司 Wilson Hydraulic Co., Ltd.

比例閥  
電磁換向閥  
各式閥件

Proportional Valves  
Solenoid Operated Directional Valves  
Hydraulic Valves



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## 比例閥 PROPORTIONAL VALVES

|   |                                    |    |
|---|------------------------------------|----|
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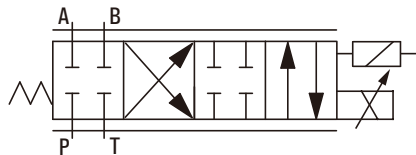
## 各式閥件 HYDRAULIC VALVES

|   |   |    |
|---|---|----|
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# 高速響應比例閥

## High Response Proportional Flow and Directional Control Valve

### ELVDT-G02



- 具有相當於電液伺服閥的高頻率響應功能。
- 用高輸出比例電磁閥直接驅動滑閥。
- 由差動變壓器進行的小反饋準確地決定滑閥位置。
- 放大器的電源關閉時或接線斷開時，返回全口區域的位置。(失效保險功能)
- 金屬製的滑閥與套筒，使用壽命長。



#### 型號說明 ORDER CODES

| ELVDT -          | G02 -                     | H                                   | 5                                       | 20   |
|------------------|---------------------------|-------------------------------------|---|--|
| 型號<br>Model Name | 閥門口徑<br>Thread Connection | 作動方式<br>Action Mode                 | 安全位置的流路狀態<br>Relieve Position Flow Path | 額定流量<br>Rated Flow   |
| ELVDT            | G02 : 1/4"                | H : 彈簧偏置型<br>H : Spring Biased Type | 5 : 所有口關閉<br>5 : All Ports Closed       | 10 : 10 l/min<br>20 : 20 l/min<br>35 : 40 l/min<br>閥壓力下降7MPa (71kgf/cm <sup>2</sup> )<br>Pressure Drop 7MPa (71kgf/cm <sup>2</sup> ) |

#### 注意事項 HANDLING

1. 放大器與閥體在出廠時已相應調整過。
  2. 滑閥軸線呈水平安裝。
  3. 在3個油口使用時或通過流量多方向時，建議採用P→A→B→T的流向。(P→A比P→B的極限差壓高)
  4. 試運行前請充分進行沖洗。
  5. 本閥體與主機執行器的配管請使用鋼管，並請盡可能縮短鋼管尺寸。
  6. 無需排出空氣。
  7. 以礦物類操作油為標準，請使用R&O型和耐抗磨型ISOVG32、46、68的產品。請在黏度20~140mm<sup>2</sup>/s、油溫30~60°C兩種條件範圍內使用。
  8. 過濾精度請保持在NAS9級以內。
  9. 放大器和閥體之間的電氣接線長度請在30m以內，電磁線圈採用 VCTF2mm<sup>2</sup> 2蕊屏蔽線，差動變壓器採用 VCTF0.5mm<sup>2</sup> 4蕊屏蔽線。
  10. 分解閥體後，請於導座內注滿液壓油再行安裝。  
鎖緊力矩: 5~7N·M (51~71kgf·cm)
1. The amplifier and valve have been adjusted to match at the factory.
  2. Install position: Horizontal.
  3. In the case of 3-port applications and for the direction that throughflow is most common, use of the following flow is recommended P→A→B→T. P→A limit differential pressure is greater than that of P→B.
  4. Be sure to perform sufficient flushing before a testing run.
  5. Use steel piping for this valve and the main actuator, and keep piping as short as possible.
  6. There is no air bleeding.
  7. Mineral oil hydraulic operating fluid is standard. Use an R&O type and wearresistant type of ISO VG32, 46, or 68 or equivalent.
  8. Cleanness of the operating Oil should be apply to Nas 9 or cleaner level.
  9. Electrical wiring between the amp and valve should be no longer than 30 meters. For the solenoid valve use VCTF 2mm<sup>2</sup> 2-conductor shielded wire, and for the differential transformer use VCTF 0.5mm<sup>2</sup> 4-conductor shielded wire.
  10. After disassembling the valve, be sure to fill the inside of the guide with operating fluid before reassembling.  
Tightening Torque : 5 to 7N · m (51 to 71kgf · cm)



規格 SPECIFICATION

| 型號 Model   | ELVDT-G02-H510                      | ELVDT-G02-H520                   | ELVDT-G02-H535                    |
|--|-------------------------------------|----------------------------------|-----------------------------------|
| 最高使用壓力 P, A, B<br>Max. Operational Pressure  | 32 MPa (327 kgf/cm <sup>2</sup> )   |                                  |                                   |
| T口容許背壓<br>Allowable Back Pressure of T Port  | 2.5 MPa (25.5 kgf/cm <sup>2</sup> ) |                                  |                                   |
| 額定流量 (閥壓力下降7MPa時)<br>Rated Flow ( Pressure Drop 7MPa (71kgf/cm <sup>2</sup> ) )            | 10 l/min                            | 20 l/min                         | 40 l/min                          |
| 最大控制流量<br>Max. Operational Flow  | 22 l/min                            | 35 l/min                         | 50 l/min                          |
| 極限閥壓力降下<br>Max. Pressrue Drop  | 32 MPa (327 kgf/cm <sup>2</sup> )   | 21MPa (214 kgf/cm <sup>2</sup> ) | 14 MPa (143 kgf/cm <sup>2</sup> ) |
| 磁滯<br>Magnetic Hysteresis  | < 0.5%                              |                                  |                                   |
| 階梯響應 (0→100%變位)<br>Step Response ms (0→100% Displacement)                                  | < 16 ms *                           |                                  |                                   |
| 頻率響應 (90°相位達10%變位)<br>Frequency Response Hz (90° Phase Delay ±10% Displacement)            | > 80 Hz                             |                                  |                                   |
| 中立點偏移<br>Center Drift  | 供給壓力<br>Supply Pressure             | < 0.5% / FS (Δp=25 MPa)          |                                   |
|  | 油溫<br>Fluid Temperature             | < 1.5% / FS (ΔT=40°C)            |                                   |
| 過濾精度<br>Filtration Finenes   | NAS9級以內                             |                                  |                                   |
| 使用油溫範圍 / 建議油溫範圍<br>Operating Fluid Temperature Range / Recommended Fluid Temperature Range | 30 ~ 60°C                           |                                  |                                   |
| 防水係數<br>Waterproof   | IP53                                |                                  |                                   |
| 重量<br>Weight   | 2.3 kg                              |                                  |                                   |

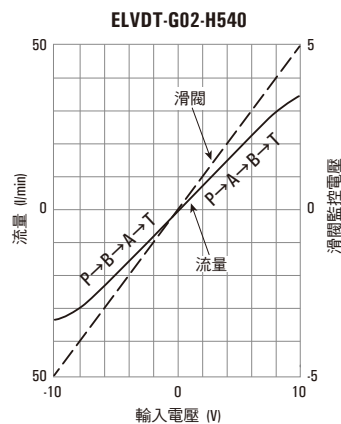
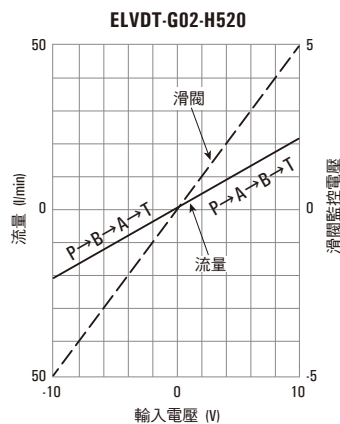
\* 備註: 階梯響應和頻率響應是供給壓力7MPa (71kgf/cm<sup>2</sup>)、油溫40°C(液壓油黏度40mm<sup>2</sup>/s)的代表值。

\* Note: Step response is typical value for a supply pressure of 7MPa (71kgf/cm<sup>2</sup>) and uid temperature of 40°C (kinematic viscosity: 40mm<sup>2</sup>/s).

性能曲線 PERFORMANCE CURVES

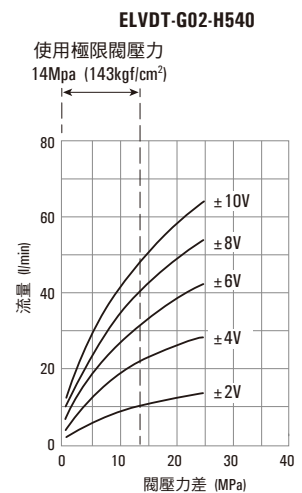
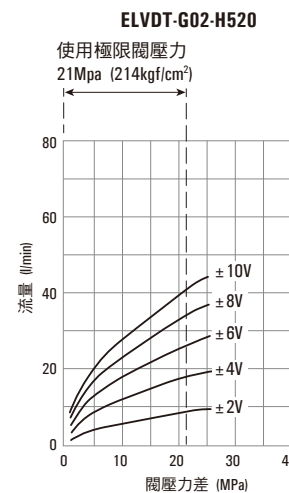
輸入電壓-流量 性能曲線

Input Voltage - Flow Rate Characteristics



閥壓力差-流量 性能曲線

Valve Differential Pressure - Flow Rate Characteristics

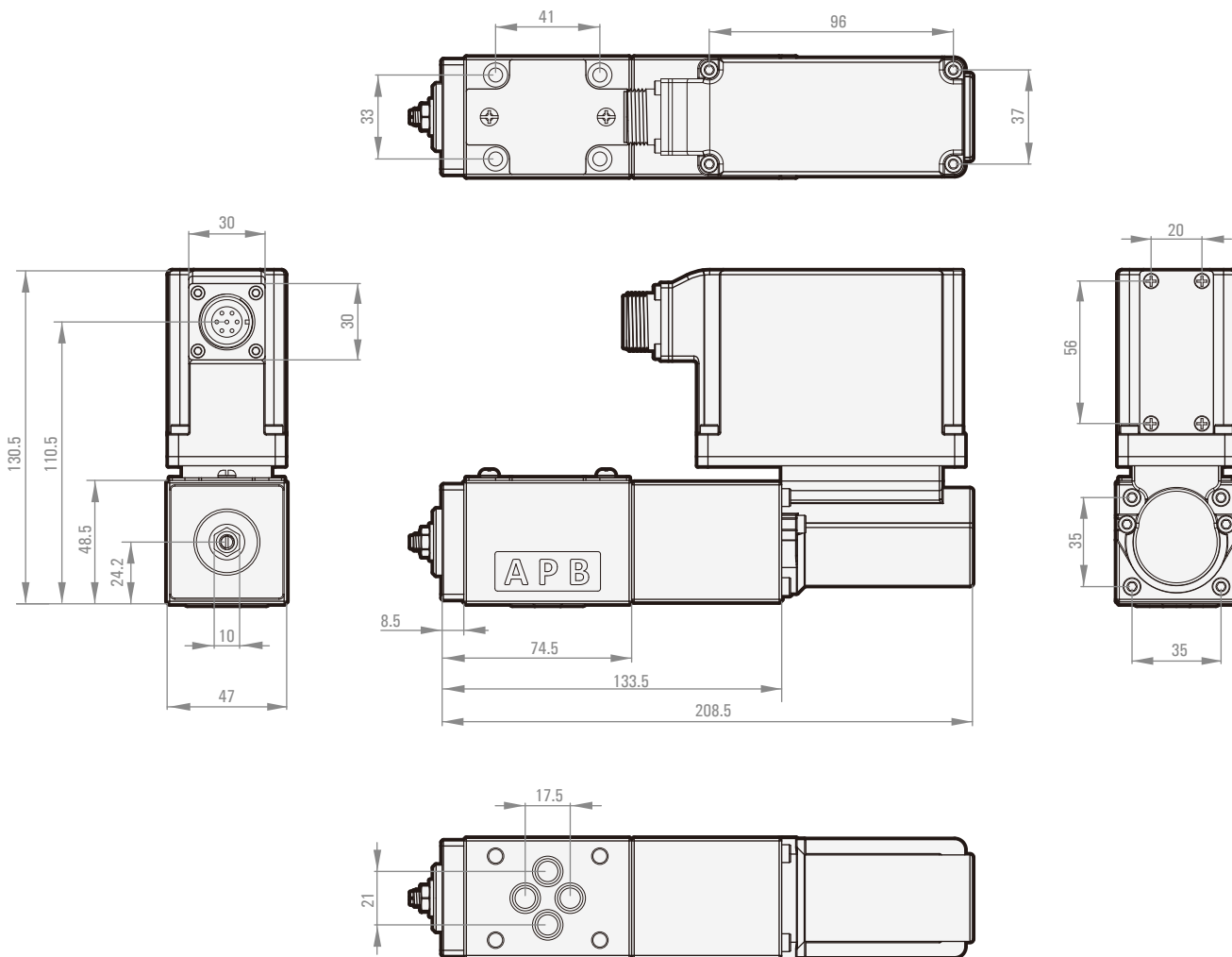


比例閥

電磁換向閥

各式閥件

尺寸圖 DIMENSION (UNIT:MM)



比例  
閥

電磁  
換向  
閥

各式  
閥件

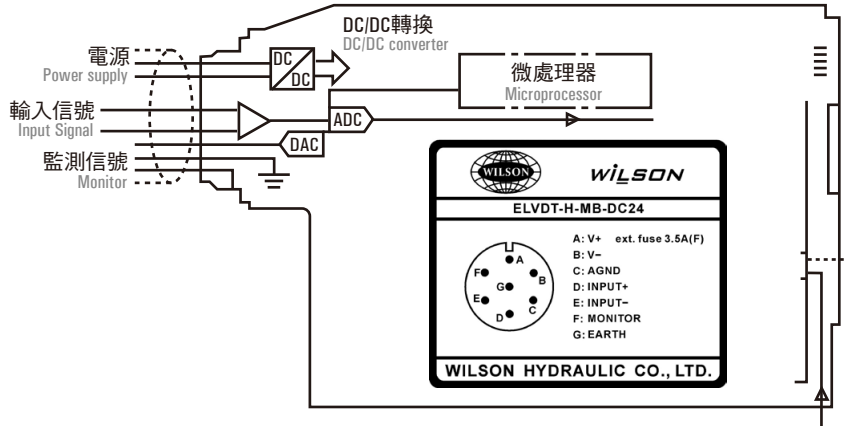
# 高速響應比例閥機板

Amplifier of High Response Proportional Flow and Directional Control Valve

## ELVDT-H-MB-DC24

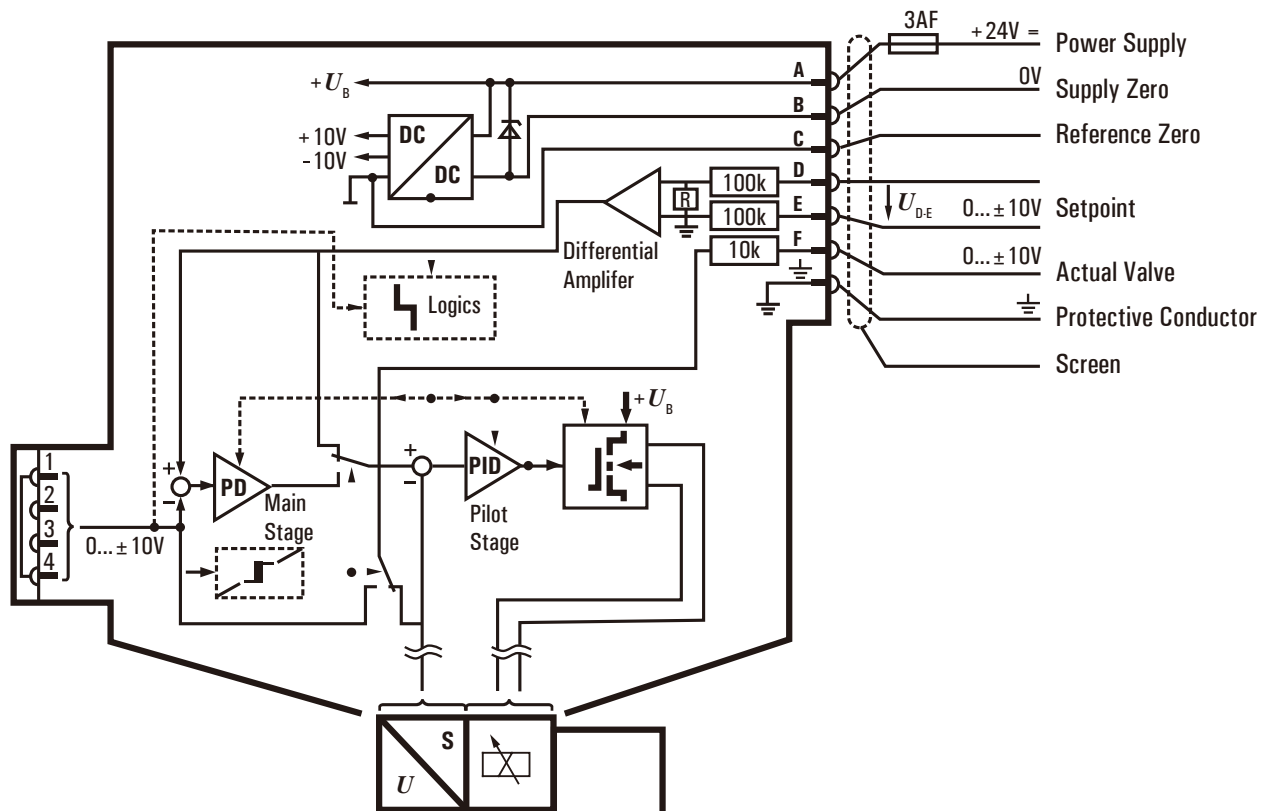
接線圖

|   |                                     |        |
|---|-------------------------------------|--------|
| A | 電源電壓 +<br>Power supply voltage +    | DC 24V |
| B | 電源電壓 -<br>Power supply voltage -    | DC 24V |
| C | 閥開關信號<br>Enable                     | DC 24V |
| D | 輸入指令信號 +<br>Input signal terminal + | +10V   |
| E | 輸入指令信號 -<br>Input signal terminal - | -10V   |
| F | 監測信號輸出<br>Monitor terminal          |        |
| G | 接地<br>Ground                        |        |



\* D, E: 數位訊號輸入接腳 (0~10V) · E, F: 監測信號。  
精密電子產品不可調整。  
Terminal D, E: Input signal terminals (0~10V)  
Terminal E, F: Monitor  
Precise electronic product which should not be adjusted.

配電說明 INSTRUCTION



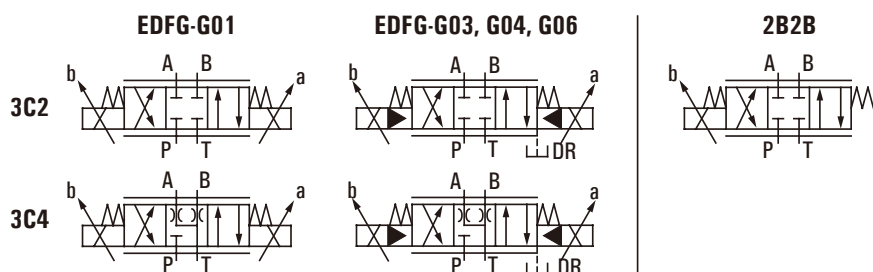
比例閥  
電磁換向閥  
各式閥件



# 電液比例流量及換向控制閥

## Electro-Hydraulic Proportional Flow & Directional Control Valve

# EDFG-G01, G03, G04, G06, G10



EDFG-G01



EDFG-G03, G04, G06, G10

EDFG系列可變緩衝速度設定電磁方向閥，及最大流量調整機能速度。搭配專用電子放大器，調整速度及控制方向，達成油壓迴路簡單化與遠隔操作。

\* 差動型用於油缸面積比1:2

### 型號說明 ORDER CODES

| EDFG -           | G03 -  | 3C2 -              | XY  |
|------------------|--|--------------------|---|
| 型號<br>Model Name | 閥門口徑<br>Thread Connection  | 心軸形式<br>Spool Type | 洩油形式<br>Drain Type  |
| EDFG             | G01 : 1/4"<br>G03 : 3/8"<br>G04 : 1/2"<br>G06 : 3/4"<br>G10 : 1-1/4" | 3C2<br>3C4<br>2B2B | XY : 外部引導，外部洩油<br>無記號：內部引導，內部洩油<br>XY : external pilot and external drain<br>none : internal pilot and internal drain |

### 注意事項 HANDLING

1. 排出空氣：為了進行穩定的流量控制，首次使用時要扭鬆排氣口排出空氣。
2. T口配管：配管時請考慮T口 (G03、G04、G06型為控制T口)能經常保持配管內充滿液壓油。
3. 手動調整螺絲：首次調整或因電器故障等原因閥中無輸入電流時，可以將手動調整螺絲向右轉動，使閥的流量增加。平時，必須使手動調整螺絲全部扭回左方並扭緊。
4. 閥的安裝方式：閥芯軸線成水平安裝。
5. 與壓力補償的組合：需要進行更高精度的流量控制時，或用於高壓時，推薦與壓力補償組件的組合。
6. 壓力控制：(EDFG-G03, G04, G06) 超過92kgf/cm<sup>2</sup> (9MPa)時，請使用疊加型P口減壓閥 (MBRV-02-P-1)設定壓力為20kgf/cm<sup>2</sup> (2MPa)
7. 在減速時需要大的制動壓力的系統，或在使用直立油缸的系統中，請設置平衡閥等。另外，使用單閥杆油缸使閥杆出口通分減速時，請在閥杆側設置平衡閥。
8. 液壓油的清潔度在NAS9級內。
9. 操作油選擇：  
油溫：-20 to 70°C 黏度：12 to 400mm<sup>2</sup>/s  
推薦黏度範圍：15 to 60mm<sup>2</sup>/s
1. Air Bleeding : In order to ensure stable control, loosen the air vent and bleed air from the valve before starting operation.
2. T Port Piping : When configuring piping, ensure that the T port (pilot valve T port for the G03, G04, and G06 sizes) is filled with operational fluid.
3. Manual Adjusting Screw : For the initial adjustment or when there is no input current to the valve due to an electrical problem or some other reason, the valve can be operated and valve pressure can be increased by rotating the manual adjustment screw clockwise (rightward). Normally, the manual adjusting screw should be rotated back fully to the left (counterclockwise).
4. Valve Mounting Orientation : Install the valve so the spool axis line is horizontal.
5. Combining with a Pressure Compensation Valve : Use of the optional pressure compensation kit is recommended when higher precision flow rate control is required or in high-pressure applications.
6. If pilot pressure exceeds 92 kgf/cm<sup>2</sup> (9 MPa) use a modular type P port reduction valve (MBRV-02-P-1) at a setting of 20 kgf/cm<sup>2</sup> (2 MPa) (only for EDfg-G03, G04, G06).
7. On a system that requires large brake pressure during deceleration or a system that uses a vertical cylinder, equip a counter balance valve. Use a single rod, if the rod exit is not slowed sufficiently, use a counter balance valve on the rod.
8. Maintain hydraulic operational fluid contamination so it is at least Class 9.
9. Use an operating fluid that conforms to the both of the following.  
Oil temperature: -20 to 70°C. Viscosity: 12 to 400mm<sup>2</sup>/s.  
The recommended viscosity range is 15 to 60mm<sup>2</sup>/s.





## 規格 SPECIFICATION

| 型號 Model                                    | EDFG-G01                              | EDFG-G03   | EDFG-G04                            | EDFG-G06                            |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| 最大作動壓力<br>Max. Operational Pressure         | 225 kgf/cm <sup>2</sup><br>( 25 MPa ) |  |                                     |                                     |
| 額定流量<br>Rated Flow                          | 10/25 l/min                           | 40/80 l/min  | 140 l/min                           | 250 l/min                           |
| 引導壓力<br>Pilot Pressure                      | -                                     | >10 kgf/cm <sup>2</sup> ( 1.0 MPa )  | >10 kgf/cm <sup>2</sup> ( 1.0 MPa ) | >10 kgf/cm <sup>2</sup> ( 1.0 MPa ) |
| 引導流量<br>Pilot Flow                          | -                                     | >2 l/min   | >3 l/min                            | >5 l/min                            |
| T口容許背壓<br>Allowable Back Pressure of T port | 25.5 kgf/cm <sup>2</sup> ( 2.5 MPa )  | 25.5 kgf/cm <sup>2</sup> ( 2.5 MPa )<br>214 kgf/cm <sup>2</sup> ( 21 MPa ) |                                     |                                     |
| 額定電流<br>Rated Current                       | 850 mA                                |  |                                     |                                     |
| 線圈阻抗<br>Coil Resistance                     | 20Ω ( 20°C )                          |  |                                     |                                     |
| 磁滯<br>Magnetic Hysteresis                   | <5%                                   |  |                                     |                                     |
| 再現性<br>Repeatability                        | 0.04 sec                              | 0.05 sec   | 0.08 sec                            | 0.1 sec                             |
| 放大器型號<br>Amplifier No.                      | TW9820 series                         |  |                                     |                                     |
| 重量<br>Weight                                | 2.2 kg                                | 6.6 kg   | 7.8 kg                              | 12.9 kg                             |

## \* 備註:

1. 是 P口→A口 和 P口→B口 的壓力下降量，當 $\Delta P = 1.0\text{MPa}$  (10kgf/cm<sup>2</sup>)時的數值。
2. 各口之間通過流量的最大值。
3. 控制口、油箱口和回油口的壓差。
4. 流量零到額定流量的反應時間假設為 0.1秒時
5. 該數據為使用本公司專用功率放大器時的數值 (TW9820-2 附顫震功能)。
6. 反應時間在操作壓力 143kgf/cm<sup>2</sup> (14MPa)，油溫40°C，操作油黏度 40mm<sup>2</sup>/s。

## \* Note:

1. Value when pressure drop volume to P→A and P→B is  $\Delta P = 10 \text{ kgf/cm}^2$  (1.0 MPa).
2. Indicates maximum throughput volume value between each port.
3. Indicates differential between the pilot port and tank port, or drain port.
4. Value when 0.1 second is assumed for the response time from zero to the rated flow volume.
5. Value when a WILSON amplifier TW9820-2 is used.
6. Response time is typical value for a supply pressure of 143 kgf/cm<sup>2</sup> (14 MPa) and fluid temperature of 40°C (kinematic viscosity: 40 mm<sup>2</sup>/s).

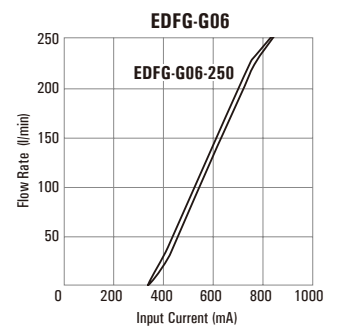
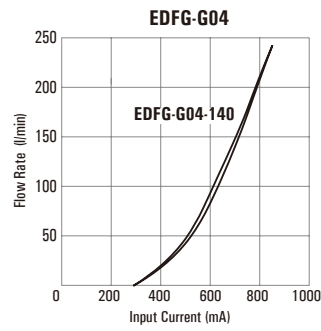
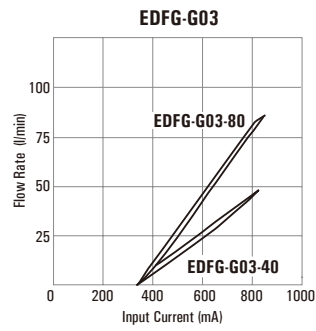
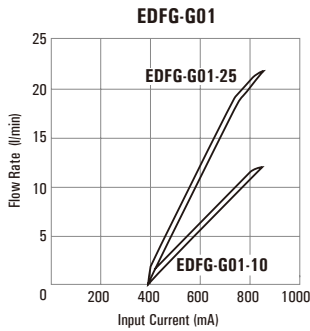
## 附件 BUNDLED ACCESSORIES

| 型號 Model | 安裝螺絲<br>Mounting Bolts | 數量<br>Q'ty |
|----------|------------------------|------------|
| EDFG-G01 | M5 x L45               | 4          |
| EDFG-G03 | M6 x L35               | 4          |
| EDFG-G04 | M6 x L45               | 2          |
|          | M10 x L50              | 4          |
| EDFG-G06 | M120 x L60             | 6          |

性能曲線 PERFORMANCE CURVES

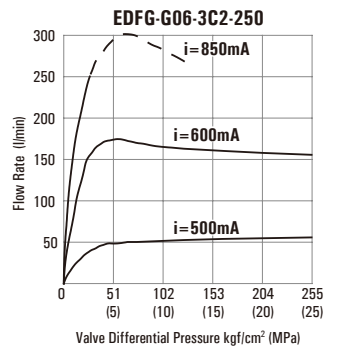
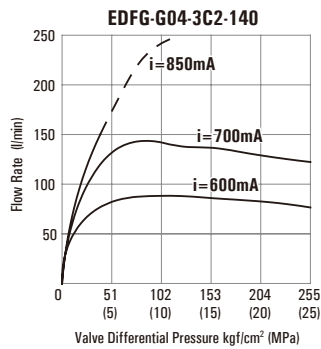
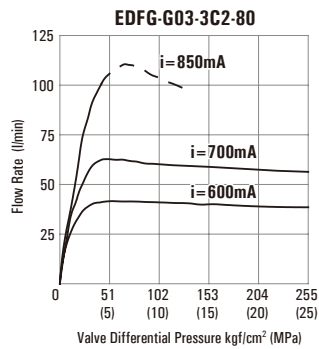
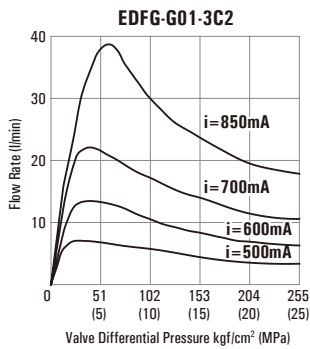
輸入電流-流量 性能曲線

Input Current - Flow Rate Characteristics



壓力-流量 性能曲線

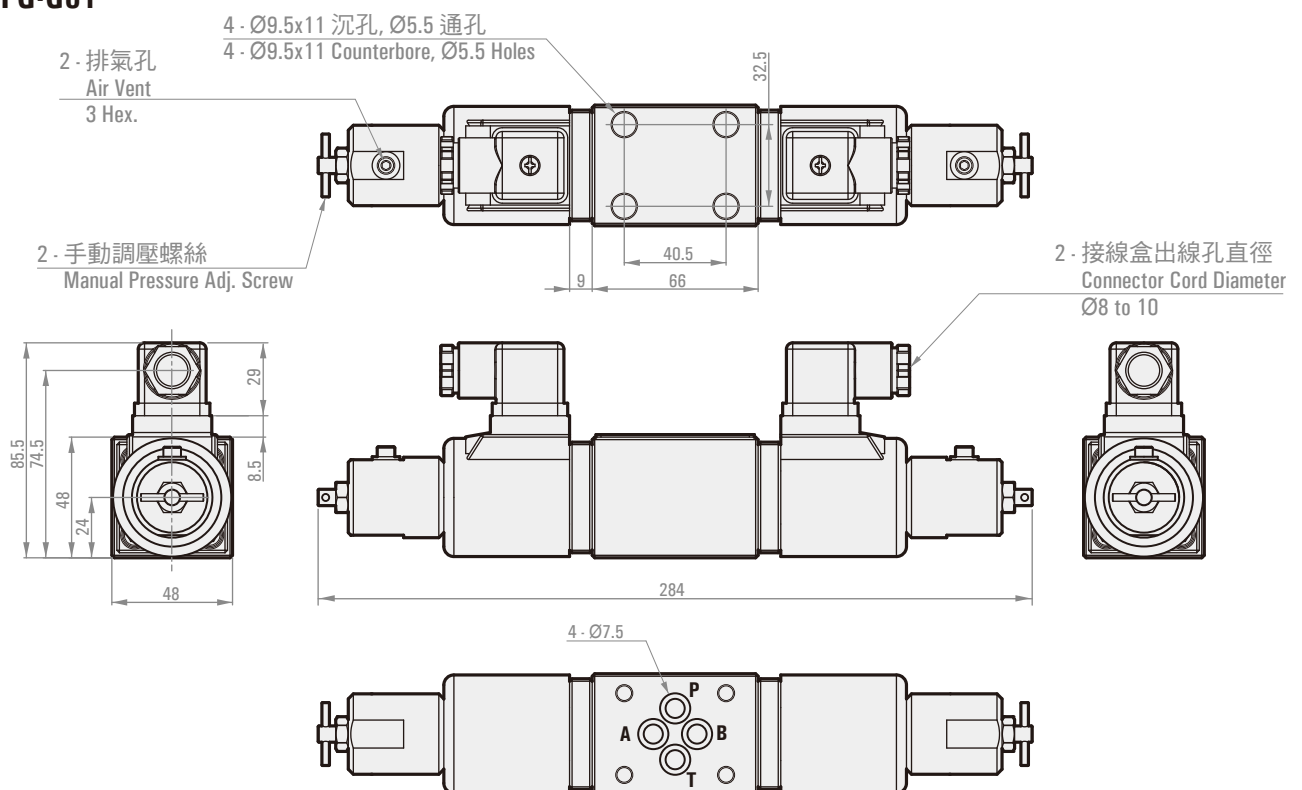
Input Current - Flow Rate Characteristics



\* 操作油黏度 32mm<sup>2</sup>/s  
Hydraulic Operating Fluid Viscosity 32mm<sup>2</sup>/s

尺寸圖 DIMENSION (UNIT:MM)

EDFG-G01

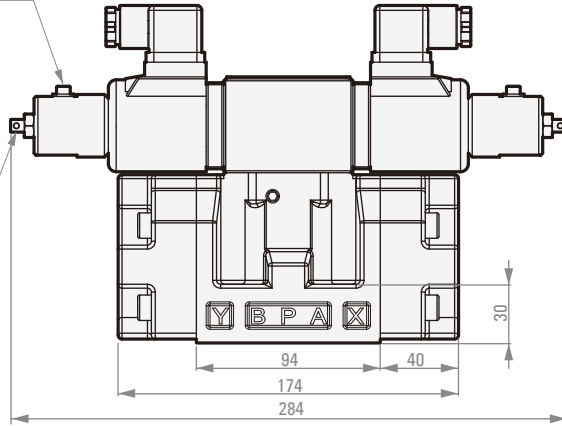


尺寸圖 DIMENSION (UNIT:MM)

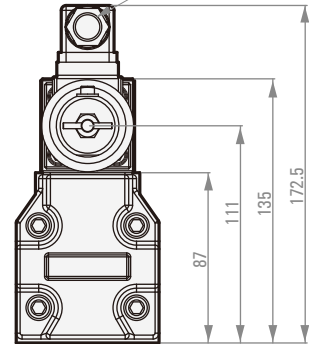
**EDFG-G03**

2 · 排氣孔  
Air Vent  
3 Hex.

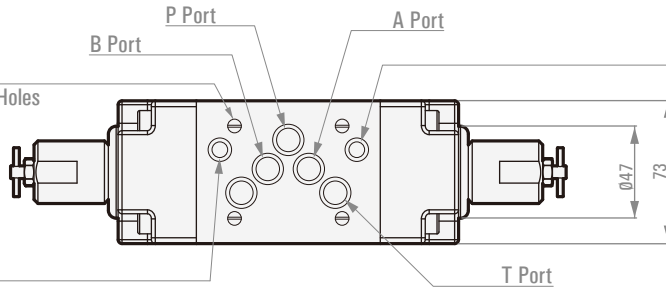
2 · 手動流量調整螺絲  
2 · Manual Flow Rate  
Adjusting Screw



2 · 接線盒出線孔直徑  
Connector Cord Diameter  
Ø8 to 10



4 · Ø11x11 沉孔, Ø6.8 通孔  
4 · Ø11x11 Counterbore, Ø6.8 Holes



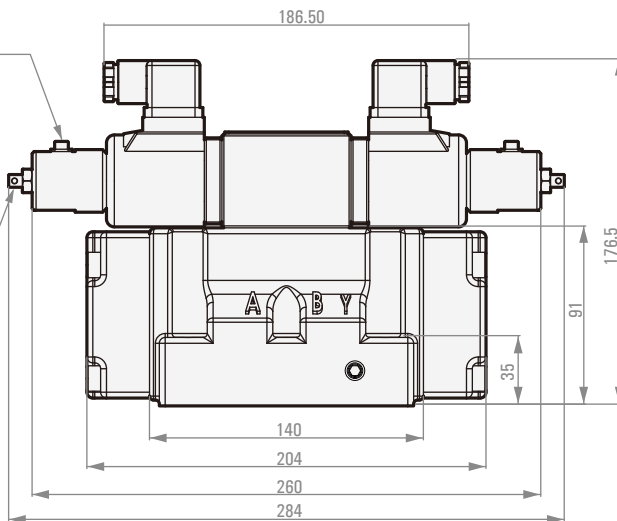
PP Port  
外部先導口  
Used in the case of external pilot port

DR Port  
外部回油口  
Used in the case of external drain

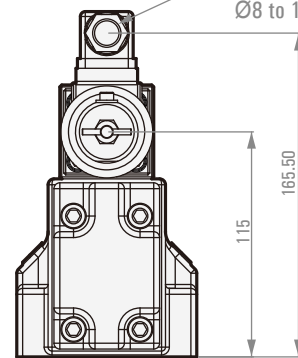
**EDFG-G04**

2 · 排氣孔  
Air Vent  
3 Hex.

2 · 手動流量調整螺絲  
Manual Flow Rate  
Adjusting Screw



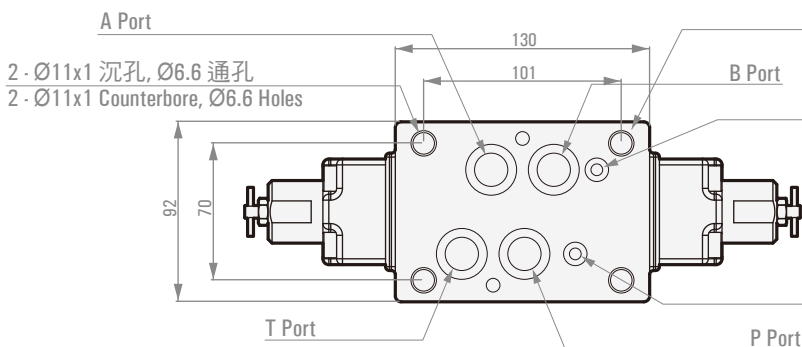
2 · 接線盒出線孔直徑  
Connector Cord Diameter  
Ø8 to 10



4 · Ø17.5x1 沉孔, Ø11 通孔  
4 · Ø17.5x1 Counterbore, Ø11 Holes

DR Port  
外部回油口  
Used in the case of external drain

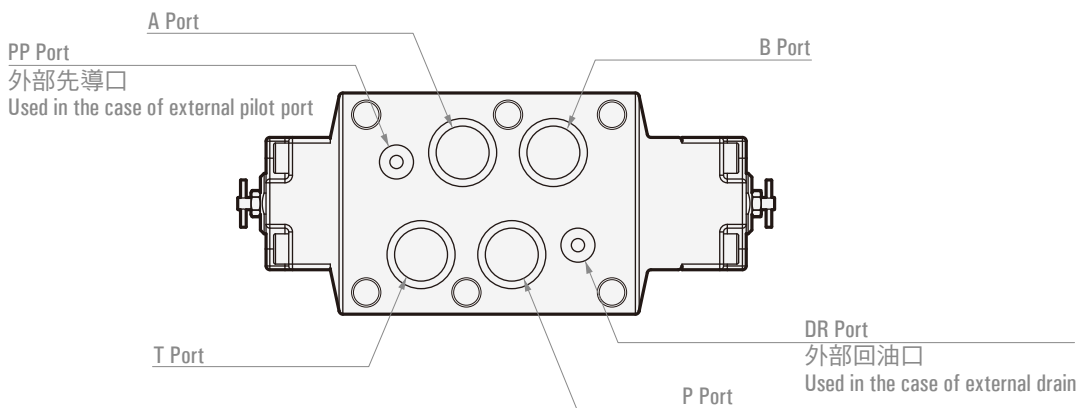
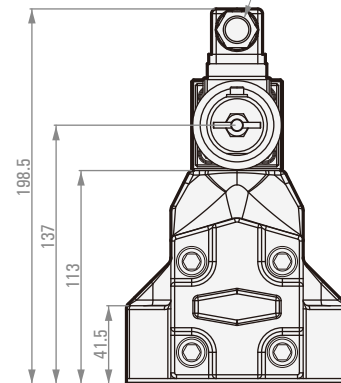
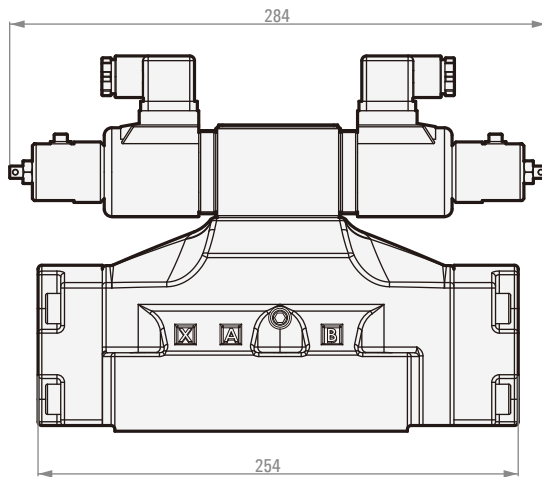
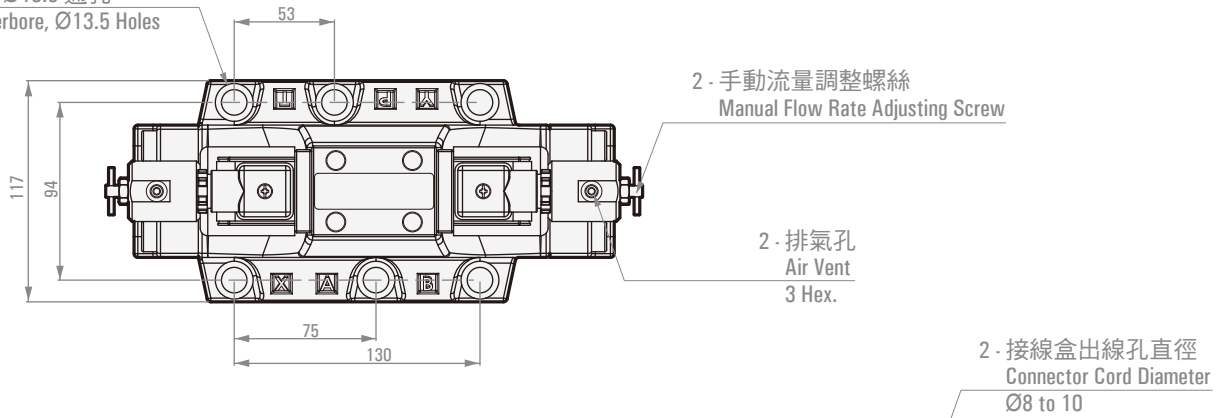
PP Port  
外部先導口  
Used in the case of external pilot port



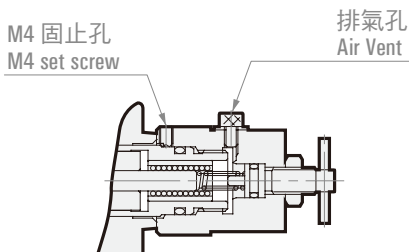
尺寸圖 DIMENSION (UNIT:MM)

EDFG-G06

6 · Ø20x2 沉孔, Ø13.5 通孔  
6 · Ø20x2 Counterbore, Ø13.5 Holes

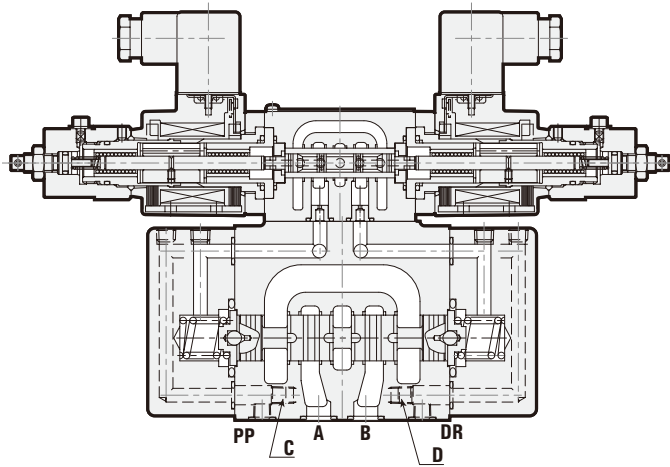


手動調整部  
Manual Adjustment Section  
(EDFG-G03, G04, G06, G10)



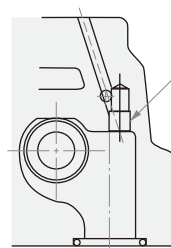
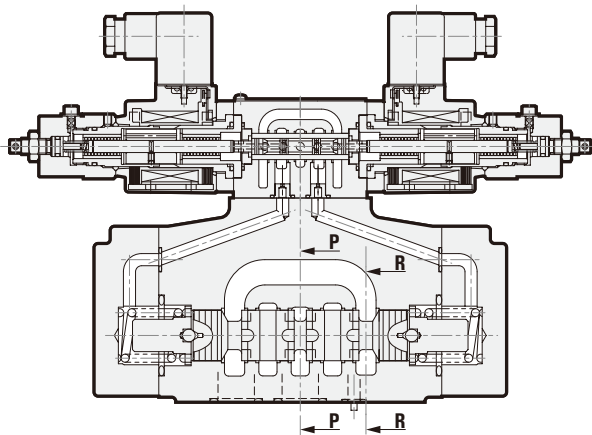
剖面圖 CROSS SECTIONAL VIEW

EDFG-G03



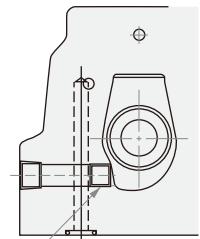
| 變換後的方式 |    | 各部位的六角槽旋塞 |
|--------|----|-----------|
| 液壓控制   | 內部 | C部位改成PP口  |
|        | 外部 | PP口改到C部位  |
| 洩油     | 內部 | D部位改成DR口  |
|        | 外部 | DR口改到D部位  |

EDFG-G04



Section X-X

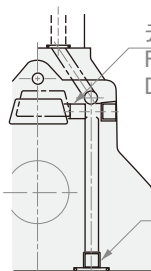
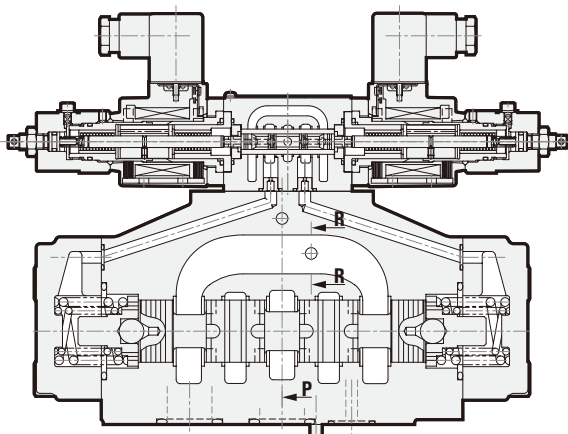
去除塞頭 內部引導  
Removed for Internal Pilot Model (Pipe Plug)



Section Y-Y

去除塞頭 內部洩油  
Removed for Internal Drain Model (Pipe Plug)

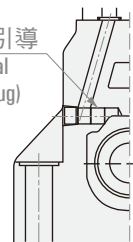
EDFG-G06



Section X-X

去除塞頭 內部洩油  
Removed for Internal Drain Model (Pipe Plug)

去除塞頭 內部引導  
Removed for Internal Pilot Model (Pipe Plug)

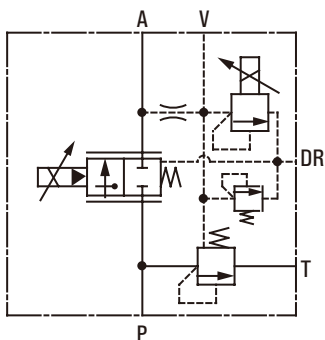


Section Y-Y

# 油壓電磁比例壓力&流量感應複合閥

## Electro-Hydraulic Proportional Relief & Flow Control Valve

### EFBG-03, 06



#### 型號說明 ORDER CODES

| EFBG -           | 03 -                      | 125 -                     | C -  | R2   |
|------------------|---------------------------|---------------------------|--|--|
| 型號<br>Model Name | 閥門口徑<br>Thread Connection | 最大流量<br>Max. Flow         | 最大操作壓力<br>Max. Operational Pressure                        | 壓力控制範圍<br>Pressure Control Range   |
| EFBG             | 03 : 3/8"<br>06 : 3/4"    | 60/125 l/min<br>250 l/min | C : 140 kgf/cm <sup>2</sup><br>H : 255 kgf/cm <sup>2</sup> | R1 : 12.2~71 kgf/cm <sup>2</sup> (1.2~7MPa)<br>R2 : 14.3~143 kgf/cm <sup>2</sup> (1.4~14MPa)<br>R3 : 16.3~214 kgf/cm <sup>2</sup> (1.6~21MPa)<br>R4 : 16.3~255 kgf/cm <sup>2</sup> (1.6~25MPa) |

#### 注意事項 HANDLING

1. 排出空氣：為了進行穩定的流量控制，首次使用時要扭鬆排氣口排出空氣。
2. 手動調整螺絲：首次調整或因電器故障等閥中無輸入電流時，可以透過手動調整螺絲向右轉動增加流量。平時，必須把螺絲全部旋回左邊，並請鎖緊螺母。
3. 回油管儘量減少壓力，單獨使用一條管路直接插入油箱油面以下。
4. 安全閥的設定壓力：有電磁比例液控溢流閥的安全閥設定為最低壓力（3.5MPa以下），帶電磁閥比例液控溢流閥的安全閥是在最高壓力上加算1.5MPa的設定壓力，實際使用時，請設定與使用液壓迴路一致的壓力。
5. 壓力控制時最少溢流：當到閥體T口的溢流流量少，設定壓力有時會不穩定，因此公稱直徑03, 06時的溢流流量請使用 10 l/min 以上。
6. 閥的安裝形式：帶電磁比例液控溢流閥的本閥垂直面安裝，如果採取液控溢流閥的線圈部分朝下的形式來安裝時，液控溢流閥的空氣不能順利排出，因此，不宜採用這種形式安裝。
7. 操作油選擇：  
油溫: -20 to 70°C 黏度: 12 to 400mm<sup>2</sup>/s  
推薦黏度範圍: 15 to 60mm<sup>2</sup>/s

- input current to the valve due to an electrical problem or some other reason, pressure or flow rate can be increased by rotating the manual adjustment screw clockwise (rightward). Normally, this adjusting screw should be returned completely to its original position and secured with the lock nut.
3. Please minimize the oil pressure in the return line, and make sure that the output of independent tube must be under the oil surface in the tank.
4. Safety Valve Setting Pressure : For a safety valve without an electro-hydraulic proportional pilot relief valve, safety valve pressure is set to minimum pressure 35.7kgf/cm<sup>2</sup> (3.5MPa max.) In the case of a safety valve with an electrohydraulic proportional pilot relief valve, the safety valve setting pressure is set to the minimum adjustment pressure plus 15.3kgf/cm<sup>2</sup> (1.5MPa). When actually using the valve, adjust in accordance with hydraulic circuit pressure.
5. Minimum Relief Flow Rate During Pressure Control : Setting pressure can become unstable when the relief flow rate to the valve's T port is small. Because of this, use a relief flow rate of at least 10 l/min with a nominal diameter of 03 or 06.
6. Valve Mounting Orientation : When an electro-hydraulic proportional pilot relief valve main valve is mounted on a vertical surface with the pilot relief valve part facing downwards make it difficult to bleed air from the pilot relief valve. Because of this, you should not use this type of mounting orientation.
7. Use an operating fluid that conforms to the both of the following.  
Oil temperature: -20 to 70°C. Viscosity: 12 to 400mm<sup>2</sup>/s.  
The recommended viscosity range is 15 to 60mm<sup>2</sup>/s.

1. Air Bleeding : In order to ensure stable control, loosen the air vent and bleed air from the valve before starting operation.
2. Manual Adjusting Screw : For the initial adjustment or when there is no





規格 SPECIFICATION

| 型號 Model                            |   | EFBG-03   | EFBG-06                                      |
|-------------------------------------|---|---|--|
| 最大操作壓力<br>Max. Operational Pressure |   | 255 kgf/cm <sup>2</sup><br>(25 MPa)   |  |
| 最大流量<br>Max. Flows                  |   | 60/125 l/min  | 250 l/min                                    |
| 流量系統<br>Flowing System              | 流量調整範圍<br>Flow Adjusting Range              | 1~60 l/min<br>1~125 l/min   | 5~250 l/min                                  |
|                                     | 閥門內部阻抗<br>Internal Resistance of This Valve | 5.1 kgf/cm <sup>2</sup><br>(0.5 MPa) <note1>  | 7.1 kgf/cm <sup>2</sup><br>(0.7 MPa) <note1> |
|                                     | 定額電流<br>Rated Current                       | 800 mA  |  |
|                                     | 線圈阻抗<br>Coil Resistance                     | 20Ω (20°C)  |  |
|                                     | 磁滯<br>Magnetic Hysteresis                   | <3% <note2>   |  |
|                                     | 再現性<br>Repeatability                        | <1%   |  |
| 壓力系統<br>Pressure System             | 壓力控制範圍<br>Pressure Control Range            | R1 : 12.2~71 kgf/cm <sup>2</sup> (1.2~7 MPa)<br>R2 : 14.3~143 kgf/cm <sup>2</sup> (1.4~14MPa)<br>R3 : 16.3~214 kgf/cm <sup>2</sup> (1.6~21MPa)<br>R4 : 16.3~255 kgf/cm <sup>2</sup> (1.6~25MPa) |  |
|                                     | 最大操作壓力<br>Max. Operational Pressure         | C : 140 kgf/cm <sup>2</sup><br>H : 255 kgf/cm <sup>2</sup>  |  |
|                                     | 額定電流<br>Rated Current                       | C : 700 mA<br>H : 800 mA  |  |
|                                     | 線圈阻抗<br>Coil Resistance                     | 20Ω (20°C)  |  |
|                                     | 磁滯<br>Magnetic Hysteresis                   | <3%   |  |
|                                     | 再現性<br>Repeatability                        | <1%   |  |
| 放大器型號<br>Amplifier No.              |   | TW9820 series   |  |
| 重量<br>Weight                        |   | 14 kg   | 28 kg  |

\* 備註:

1. 為閥體P口和A口之間的壓力差。
2. 該數據為使用本公司專用功率放大器時的數值 (TW9820-2 附顫震功能)。
3. 該規格適用帶電磁比例液控溢流閥。
4. 無電磁比例液控溢流閥時，最高調整壓力為255kgf/cm<sup>2</sup> (25 MPa)。出廠時設定為最低輸出35.7kgf/cm<sup>2</sup> (3.5MPa max.)以下。請設定與使用液壓迴路一致的壓力。

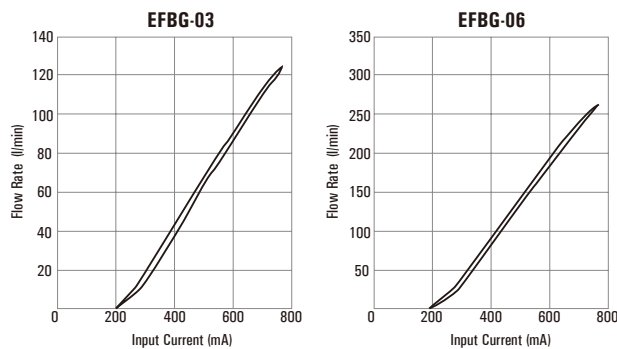
\* Note:

1. Indicates the pressure differential between the valve P port and A port. The left chart is complied with our standard electronic control circuit board TW9820-2, and is the single valve test result.
2. Value when a WILSON amplifier TW9820-2 is used (with dithering).
3. These specifications apply to valves that include an electro-hydraulic proportional pilot relief valve.
4. The maximum adjustment pressure is 255kgf/cm<sup>2</sup> (25MPa max.) for a valve that does not include an electro-hydraulic proportional pilot relief valve. Factory default is minimum output 35.7kgf/cm<sup>2</sup> (3.5MPa max.) Set this value in accordance with the pressure of the hydraulic circuit being used.

性能曲線 PERFORMANCE CURVES

輸入電流-流量 性能曲線

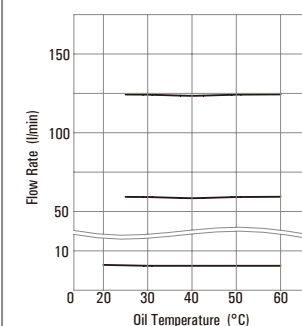
Input Current - Flow Rate Characteristics



\* 操作油黏度 32mm<sup>2</sup>/s  
Hydraulic Operating Fluid Viscosity 32mm<sup>2</sup>/s

油溫-控制流量 性能曲線

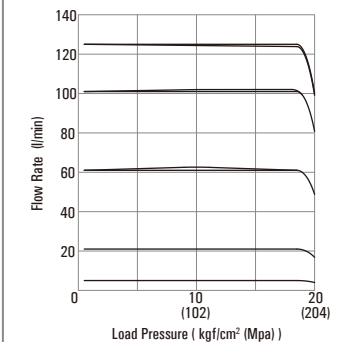
Fluid Temperature - Control Flow Rate Characteristics



Load Pressure : 102kgf/cm<sup>2</sup> (10Mpa)  
Operational Fluid : VG32  
Fluid Temperature : 40°C  
Value when a WILSON amplifier TW9820-2 is used.  
(with dithering)

壓力-控制流量 性能曲線

Pressure - Control Flow Rate Characteristics



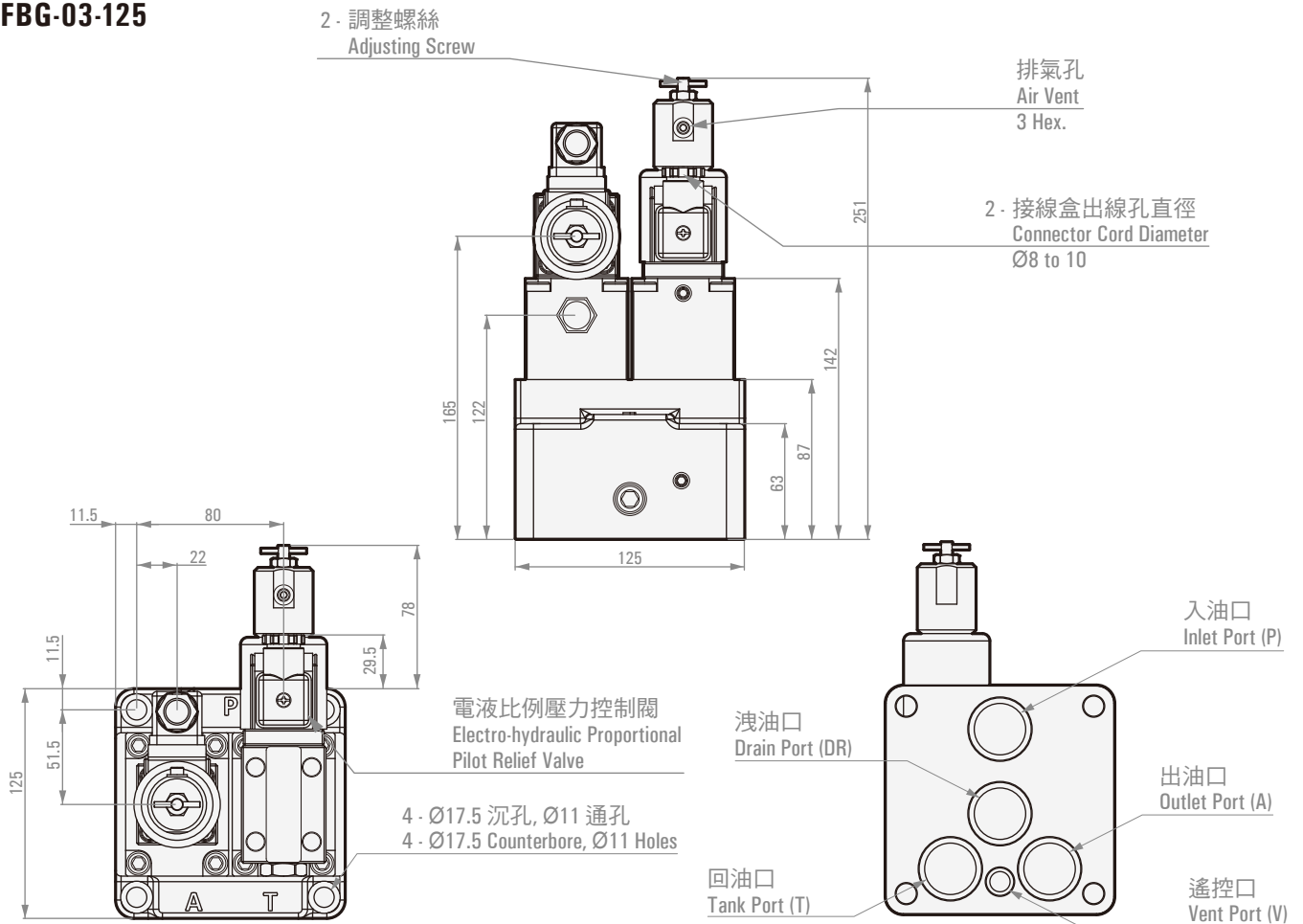
Electro-hydraulic Proportional Pilot Relief Valve Setting Pressure : 214.2kgf/cm<sup>2</sup> (21Mpa)  
Operational Fluid : VG32  
Fluid Temperature : 40°C  
Value when a WILSON amplifier TW9820-2 is used.  
(with dithering)

附件 BUNDLED ACCESSORIES

| 型號<br>Model | 安裝螺絲<br>Monuting Bolts | 數量<br>Q'ty | 型號<br>Model | 安裝螺絲<br>Monuting Bolts | 數量<br>Q'ty |
|-------------|------------------------|------------|-------------|------------------------|------------|
| EFBG-03     | M10 x L75              | 2          | EFBG-06     | M16 x L100             | 2          |
|             | M10 x L90              | 2          |             | M16 x L135             | 2          |

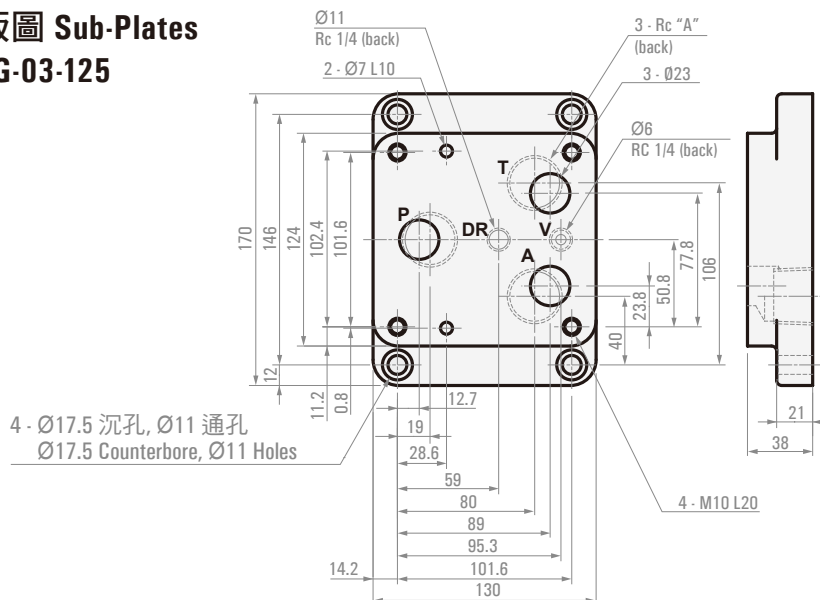
尺寸圖 DIMENSION (UNIT:MM)

EFBG-03-125



底版圖 Sub-Plates

EFBG-03-125

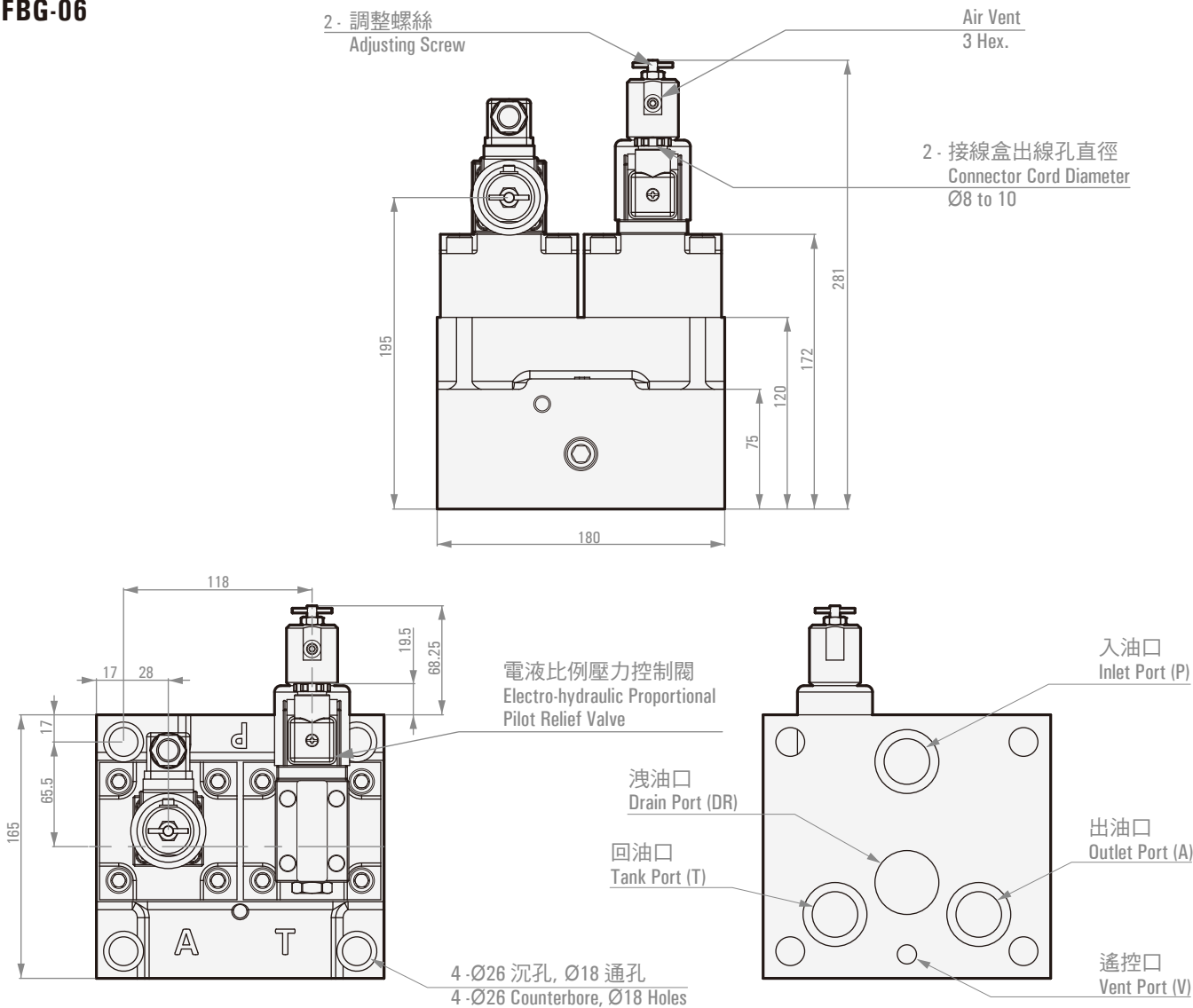


| 型號<br>Model | MSP-03Y | MSP-03Z |
|-------------|---------|---------|
| A           | 3/4     | 1       |



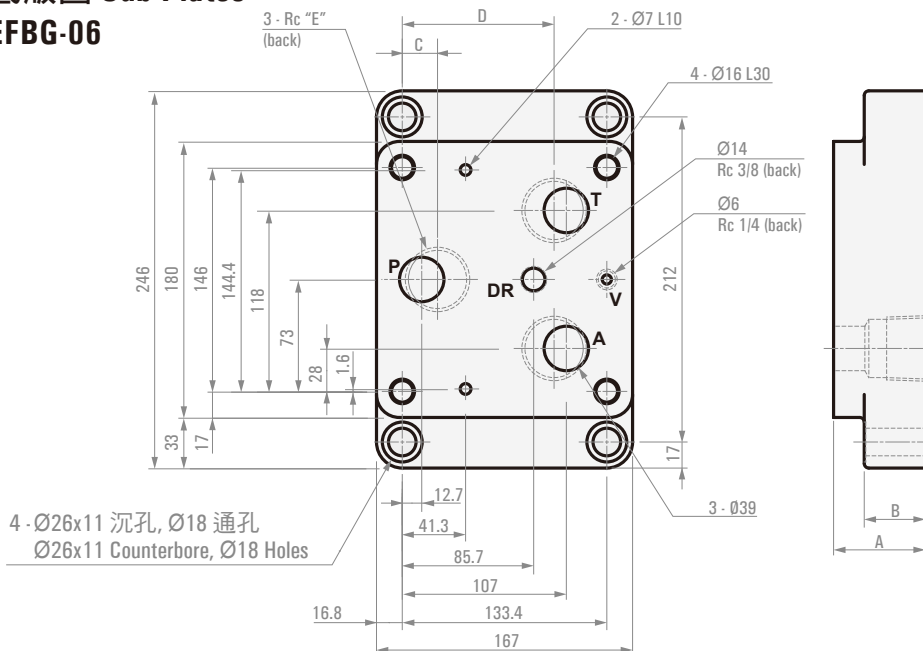
尺寸圖 DIMENSION (UNIT:MM)

EFBG-06



底版圖 Sub-Plates

EFBG-06

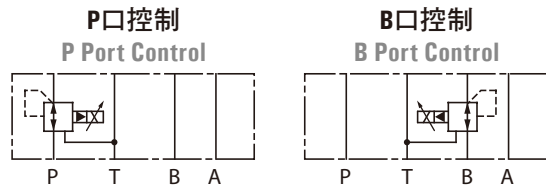


| 型號<br>Model | MSR-06X | MSR-06Y |
|-------------|---------|---------|
| A           | 95      | 60      |
| B           | 25      | 40      |
| C           | 16      | 23      |
| D           | 107     | 99      |
| E           | 1       | 5/4     |

# 疊加式電磁比例減壓閥

## Modular Type Electro-hydraulic Proportional Reducing Valve

### EOG-G01



電磁比例減壓閥採用容易使用的疊加閥優點，對液壓系統內的壓力，與輸入電流成比例地進行減壓控制，最適合用於磨床工件夾具、壓力的連續比例控制等工作機台在內的小型液壓系統。另外，由於備有溢流功能，所以具有優良的壓力響應性能。

#### 型號說明 ORDER CODES

| EOG -            | G01 -                     | P                        | 1  |
|------------------|---------------------------|--------------------------|--|
| 型號<br>Model Name | 閥門口徑<br>Thread Connection | 控制口<br>Control Port      | 壓力調整範圍<br>Pressure Adjusting Range   |
| EOG              | G01 : 1/4"                | P : P Port<br>B : B Port | B : 3.1~25.5 kgf/cm <sup>2</sup> (0.3~2.5 MPa)<br>1 : 4~71 kgf/cm <sup>2</sup> (0.4~7 MPa)<br>2 : 6~143 kgf/cm <sup>2</sup> (0.6~14 MPa) |

#### 規格 SPECIFICATION

| 型號 Model                                    | EOG-G01  |
|---|--|
| 最大操作壓力<br>Max. Operational Pressure         | 255 kgf/cm <sup>2</sup><br>(25 MPa)  |
| 最大流量<br>Max. Flows                          | 30 l/min   |
| 壓力調整範圍<br>Pressure Adjusting Range          | B : 3.1~25.5 kgf/cm <sup>2</sup> (0.3~2.5 MPa)<br>1 : 4~71 kgf/cm <sup>2</sup> (0.4~7 MPa)<br>2 : 6~143 kgf/cm <sup>2</sup> (0.6~14 MPa) |
| T口容許背壓<br>Allowable Back Pressure of T port | <25 kgf/cm <sup>2</sup><br>( <2.5 MPa )  |
| 定額電流<br>Rated Current                       | 850 mA   |
| 線圈阻抗<br>Coil Resistance                     | 20Ω (20° C)  |
| 磁滯<br>Magnetic Hysteresis                   | <3% <note1>  |
| 放大器型號<br>Amplifier No.                      | TW2085   |
| 重量<br>Weight                                | 3.6 kg   |

\* 備註：該數據為使用本公司專用功率放大器時的數值 (TW2085附顫震功能)。

\* Note: Value when a WILSON amplifier TW2085 is used (with dithering).

#### 注意事項 HANDLING

1. 排出空氣：為了進行穩定的壓力控制，首次使用時要扭鬆排氣口排出空氣，並使電磁閥內注滿液壓油。
2. 手動壓力調整螺栓：初次調整或因電器故障等原因閥中無輸入電流時，可以將手動調整螺栓向右轉動，使壓力上昇。平時，必須將手動調整螺栓全部扭回左方並扭緊。
3. 最低控制壓力：由於是內部洩油型式，所以最低控制壓力受到T口背壓影響。
4. 負荷容量：負荷容量 (閥OUT側容量)設置0.5L以上
5. 操作油選擇：  
油溫：-20 to 70°C 黏度：12 to 400mm<sup>2</sup>/s  
推薦黏度範圍：15 to 60mm<sup>2</sup>/s

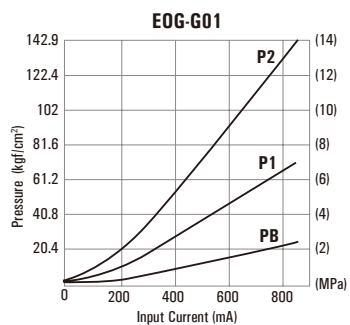
1. Air Bleeding : To enable proper pressure control, loosen the air vent when starting up the pump in order to bleed any air from the pump, and fill the inside of the solenoid with hydraulic operating fluid.
2. Manual Pressure Adjusting Screw : For the initial adjustment or when there is no input current to the valve due to an electrical problem or some other reason, valve pressure can be increased by rotating the manual adjustment screw clockwise (rightward). Normally, the manual adjusting screw should be rotated back fully to the left (counterclockwise) and secured with the lock nut.
3. Minimum Control Pressure : Since this valve has an internal drain system, T port back pressure has an effect on minimum control pressure.
4. Load Capacity : Make load capacity (valve OUT side capacity) at least 0.5L
5. Use an operating fluid that conforms to the both of the following.

Oil temperature: -20 to 70°C. Viscosity: 12 to 400mm<sup>2</sup>/s.  
The recommended viscosity range is 15 to 60mm<sup>2</sup>/s.

性能曲線 PERFORMANCE CURVES

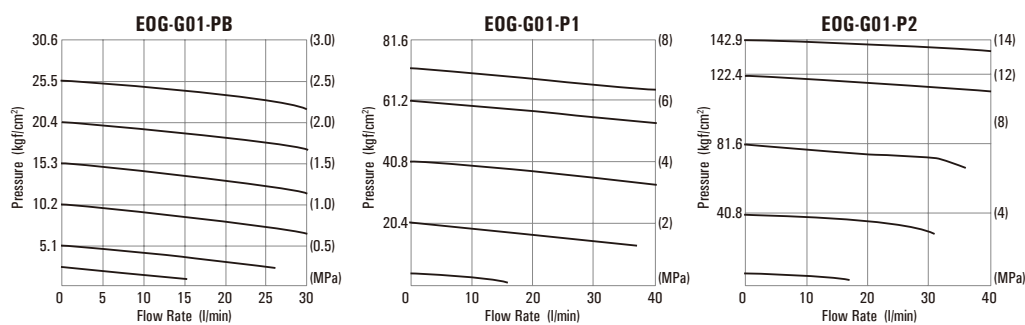
輸入電流-壓力 性能曲線

Input Current - Pressure Characteristics



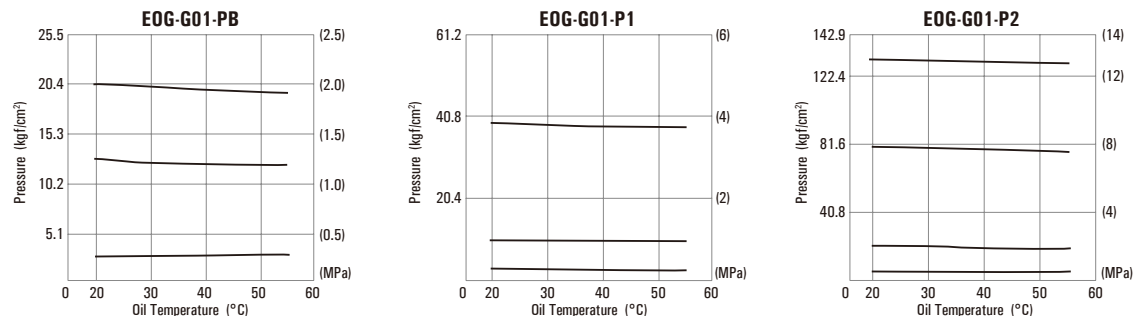
流量-壓力 性能曲線

Flow Rate - Pressure Characteristics



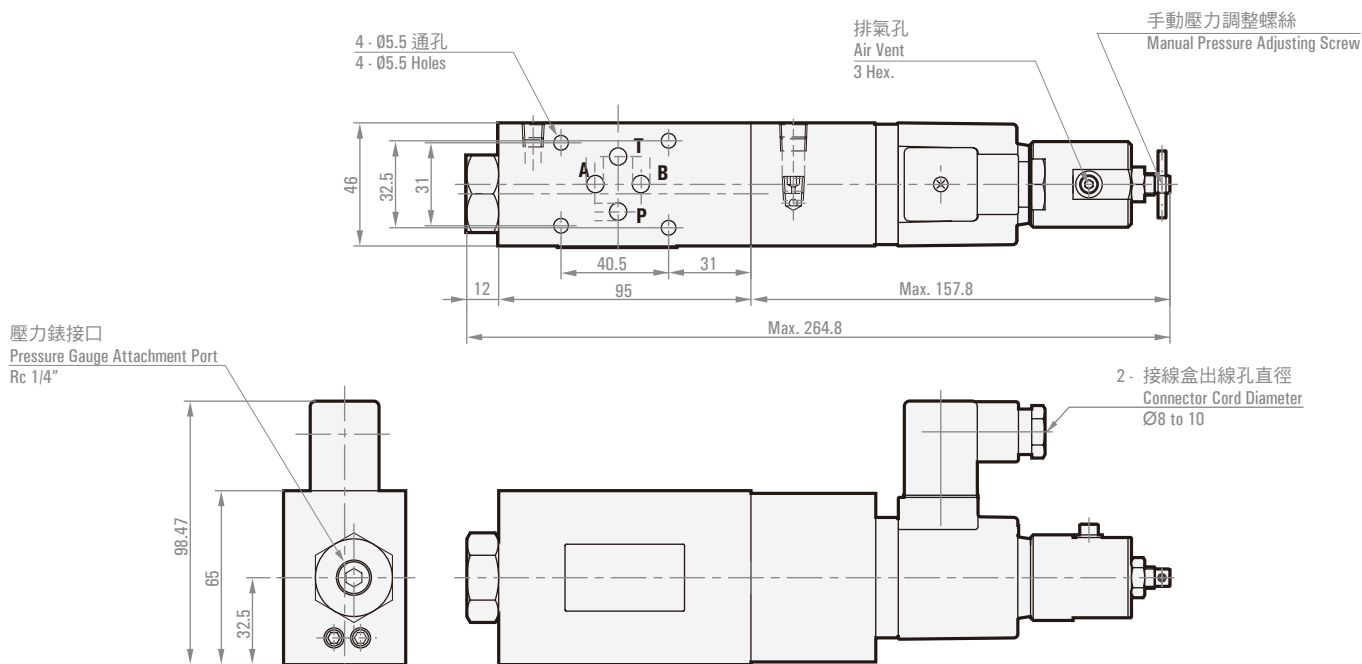
油溫 性能曲線

Fluid Temperature Characteristics



\* 操作油黏度 32mm<sup>2</sup>/s  
Hydraulic Operating Fluid Viscosity 32mm<sup>2</sup>/s

尺寸圖 DIMENSION (UNIT:MM)



比例閥

電磁換向閥

各式閥件

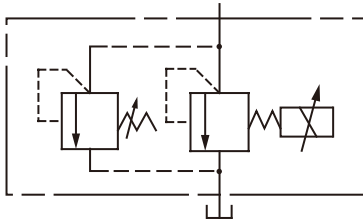
# 電液比例先導溢流閥

## Electro-Hydraulic Proportional Pilot Relief Valve

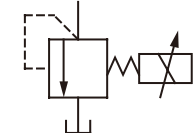
### EDG-G01



帶安全閥  
With safety valve



不帶安全閥  
Without safety valve



EDG-G01是由一小型直流電磁鐵與一直動式溢流閥組成。它可以用作小流量液壓系統的電液比例控制先導閥，根據輸入電流成比例地調節壓力。使用時需搭配適合的功率放大器一同使用。

#### 型號說明 ORDER CODES

| EDG -            | G01 -                     | H2 -   | D1 -                    | R  |
|------------------|---------------------------|--|-------------------------|--|
| 型號<br>Model Name | 閥門口徑<br>Thread Connection | 壓力調整範圍<br>Pressure Adjusting Range   | 線圈電阻<br>Coil Resistance | 安全閥有無<br>Safety Valve  |
| EDG              | G01 : 1/4"                | H1 : 10 ~ 143 kgf/cm <sup>2</sup> ( 1.0 ~ 14 MPa )<br>H2 : 15.3 ~ 214 kgf/cm <sup>2</sup> ( 1.5 ~ 21 MPa )<br>H3 : 15.3 ~ 286 kgf/cm <sup>2</sup> ( 1.5 ~ 28 MPa )<br>H4 : 20 ~ 357 kgf/cm <sup>2</sup> ( 2.0 ~ 35 MPa ) | D1 : 10Ω<br>D2 : 20Ω    | R : 帶安全閥<br>none : 不帶安全閥<br>R : with safety valve<br>none : without safety valve |

#### 注意事項 HANDLING

1. 排出空氣：為了有良好的壓力控制，啟動時請先鬆開壓力口進行排氣，並將電磁閥先注滿液壓油。排氣端口根據M4固定螺絲的鬆緊、外殼的轉動情況，其位置可以改變。
2. 安裝方法：若安裝在垂直面上則最低壓力均提高2kgf/cm<sup>2</sup> (0.2MPa)。
3. 手動調整螺絲：首次調整或因電器故障等閥中無輸入電流時，可以將手動調整螺絲向右轉動以增加流量。平時，必須把螺絲全部旋回左邊，並請鎖緊螺母。
4. 回油管儘量減少壓力，單獨使用一條管路直接插入油箱油面以下。
5. 最小溢流流量：流量過小時，設定壓力可能不夠穩定，所以應將流量控制在0.3 l/min以上。
6. 負荷容量：通過主閥直接控制迴路壓力時，請將負荷容量 (閥P口測的容量) 設在40 cm<sup>3</sup>以上。
7. 操作油選擇：  
油溫: -20 to 70°C 黏度: 12 to 400mm<sup>2</sup>/s  
推薦黏度範圍: 15 to 60mm<sup>2</sup>/s
1. Air Bleeding : To enable proper pressure control, loosen the air vent when starting up the pump in order to drain any air from the pump, and fill the inside of the solenoid with hydraulic operational fluid. The position of the air vent can change by loosening the M4 screw and rotating the cover.
2. Mounting Method : Mounting on a vertical surface causes minimum pressure to increase by 2 kgf/cm<sup>2</sup> (0.2 MPa).
3. Manual Pressure Adjusting Screw : For the initial adjustment or when there is no input current to the valve due to an electrical problem or some other reason, valve pressure can be increased by rotating the manual adjustment screw clockwise (rightward). Normally, the manual adjusting screw should be rotated back fully to the left (counterclockwise) and secured with the lock nut.
4. Please minimize the oil pressure in the return line, and make sure that the output of independent tube must be under the oil surface in the tank.
5. Minimum Relief Flow Rate : A small flow rate can cause setting pressure to become unstable. Use a flow rate of at least 0.3 l/min.
6. Load Capacity : When using this valve to control direct circuit pressure, make sure the load volume (P port side volume) is at least 40 cm<sup>3</sup>.
7. Use an operating fluid that conforms to the both of the following.  
Oil temperature: -20 to 70°C. Viscosity: 12 to 400mm<sup>2</sup>/s.  
The recommended viscosity range is 15 to 60mm<sup>2</sup>/s.





規格 SPECIFICATION

| 型號 Model                           | EDG-G01  |
|------------------------------------|--|
| 最大流量<br>Max. Flows                 | 1.2 l/min  |
| 壓力調整範圍<br>Pressure Adjusting Range | H1 : 10~143 kgf/cm <sup>2</sup> ( 1.0~14MPa )<br>H2 : 15.3~214 kgf/cm <sup>2</sup> ( 1.5~21MPa )<br>H3 : 15.3~286 kgf/cm <sup>2</sup> ( 1.5~28MPa )<br>H4 : 20~357 kgf/cm <sup>2</sup> ( 2.0~35MPa ) |
| 定額電流<br>Rated Current              | 800 mA   |
| 線圈阻抗<br>Coil Resistance            | 10Ω or 20Ω ( 20°C )  |
| 磁滯<br>Magnetic Hysteresis          | < 3%   |
| 再現性<br>Repeatability               | < 1%   |
| 放大器型號<br>Amplifier No.             | TW2085   |
| 重量<br>Weight                       | 1.6 kg   |

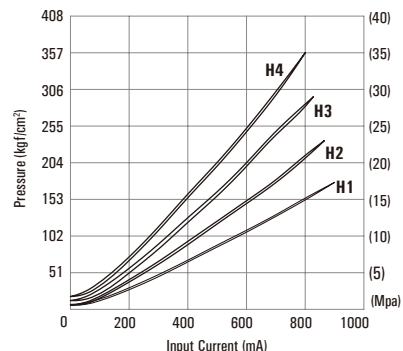
\* 備註: 該數據為使用本公司專用功率放大器時的數值 (TW2085 附顫震功能)。

\* Note: Value when a WILSON amplifier TW2085 is used (with dithering).

性能曲線 PERFORMANCE CURVES

輸入電流-壓力 曲線

Input Current - Pressure Characteristics



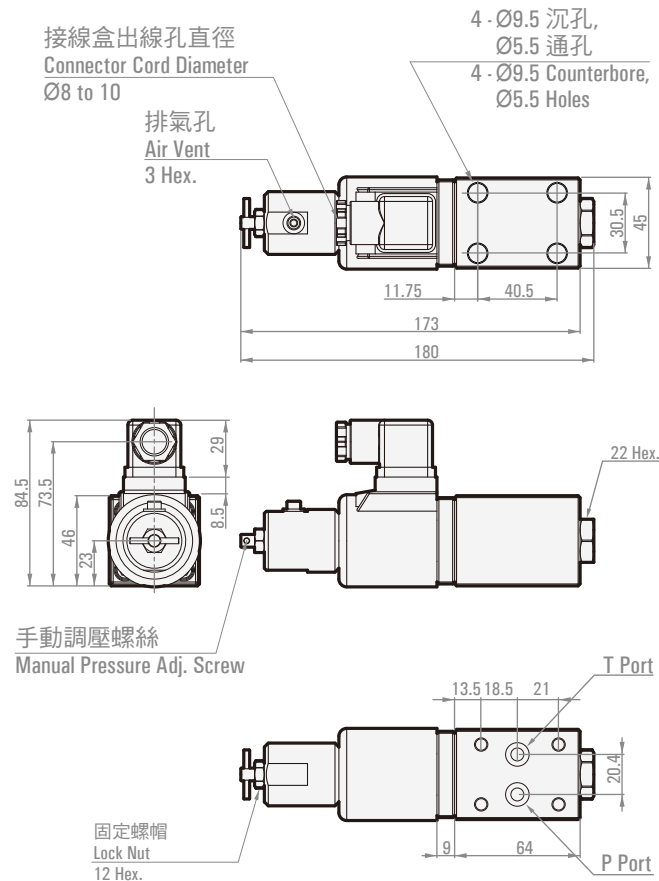
\* 操作油黏度 32mm<sup>2</sup>/s  
Hydraulic Operating Fluid Viscosity 32mm<sup>2</sup>/s

附件 BUNDLED ACCESSORIES

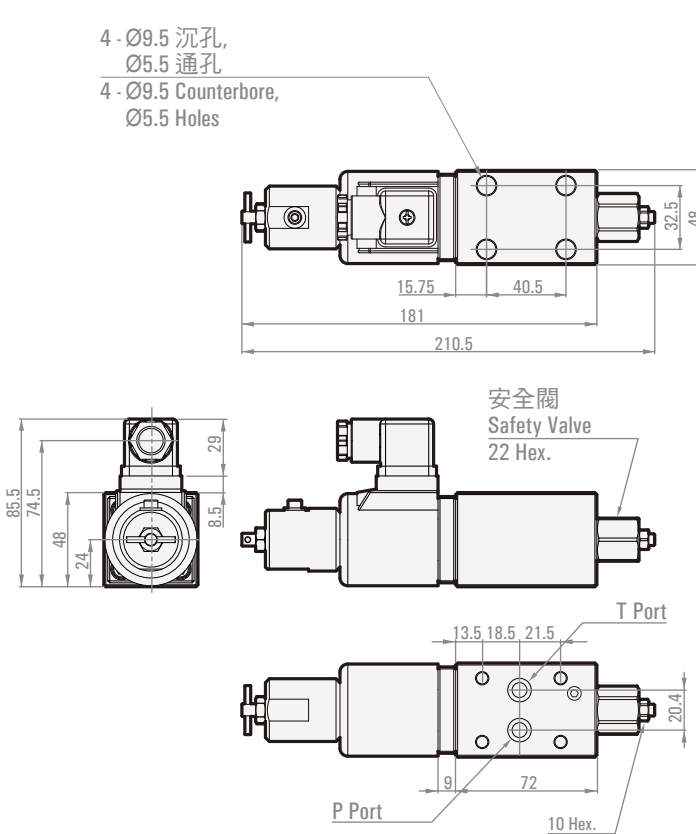
| 型號 Model | 安裝螺絲<br>Monuting Bolts | 數量<br>Q'ty |
|----------|------------------------|------------|
| EDG-G01  | M5 x L45               | 4          |

尺寸圖 DIMENSION (UNIT:MM)

EDG-G01

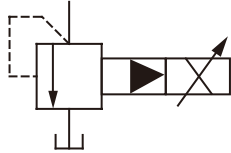


EDG-G01-R



## 電液比例先導溢流閥 Electro-Hydraulic Proportional Pilot Relief Valve

# EBG-G03, G06



EBG系列由電液比例先導溢流閥和低噪音研製的主閥體組成。由於採用特殊緩衝機構，能使壓力的控制更加精密與穩定。



### 型號說明 ORDER CODES

| EBG -            | G03 -                     | H2 -   | D2                      |
|------------------|---------------------------|--|-------------------------|
| 型號<br>Model Name | 閥門口徑<br>Thread Connection | 壓力調整範圍<br>Pressure Adjusting Range   | 線圈電阻<br>Coil Resistance |
| EBG              | G03 : 3/8"<br>G06 : 3/4"  | H1 : 10~143 kgf/cm <sup>2</sup> ( 1.0~14 MPa )<br>H2 : 15.3~214 kgf/cm <sup>2</sup> ( 1.5~21 MPa )<br>H3 : 15.3~286 kgf/cm <sup>2</sup> ( 1.5~28 MPa )<br>H4 : 20~357 kgf/cm <sup>2</sup> ( 2.0~35 MPa ) | D1 : 10Ω<br>D2 : 20Ω    |

### 注意事項 HANDLING

1. 排出空氣：要進行良好的壓力控制，一開始運行前要扭鬆排氣口，充分抽出空氣，電磁閥內需注滿液壓油。
  2. 手動調整螺絲：首次調整或因電器故障等閥中無輸入電流時，可以透過手動調整螺絲向右轉動以增加流量。平時，必須把螺絲全部旋回左邊，並請鎖緊螺母。
  3. 回油管儘量減少壓力，單獨使用一條管路直接插入油箱油面以下。
  4. 安全閥的設定壓力：安全閥的設定是在最高調整壓力上加上 15.3~20.4kgf/cm<sup>2</sup> (1.5~2.0MPa)的壓力。實際使用時，請按照實際使用壓力進行調整。
  5. 操作油選擇：  
油溫: -20 to 70°C 黏度: 12 to 400mm<sup>2</sup>/s  
推薦黏度範圍: 15 to 60mm<sup>2</sup>/s
1. Air Bleeding : To enable proper pressure control, loosen the air vent when starting up the pump in order to bleed any air from the pump, and fill the inside of the solenoid with hydraulic operational fluid.
  2. Manual Pressure Adjusting Screw : For the initial adjustment or when there is no input current to the valve due to an electrical problem or some other reason, valve pressure can be increased by rotating the manual adjustment screw clockwise (rightward). Normally, the manual adjusting screw should be rotated back fully to the left (counterclockwise) and secured with the lock nut.
  3. Please minimize the oil pressure in the return line, and make sure that the output of independent tube must be under the oil surface in the tank.
  4. Safety Valve Setting Pressure : The safety valve is set to maximum adjustment pressure plus 15.3 to 20.4 kgf/cm<sup>2</sup> (1.5 to 2.0 MPa). When actually using the valve, adjust in accordance with actual pressure.
  5. Use an operating fluid that conforms to the both of the following.  
Oil temperature: -20 to 70°C. Viscosity: 12 to 400mm<sup>2</sup>/s.  
The recommended viscosity range is 15 to 60mm<sup>2</sup>/s.



規格 SPECIFICATION

| 型號 Model                           | EBG-G03  | EBG-G06                   |
|------------------------------------|--|---------------------------|
| 最大流量<br>Max. Flows                 | 100 l/min<br>( 26.4 gpm )  | 200 l/min<br>( 52.8 gpm ) |
| 壓力控制範圍<br>Pressure Adjusting Range | H1 : 10~143 kgf/cm <sup>2</sup> ( 1.0~14MPa )<br>H2 : 15.3~214 kgf/cm <sup>2</sup> ( 1.5~21MPa )<br>H3 : 15.3~286 kgf/cm <sup>2</sup> ( 1.5~28MPa )<br>H4 : 20~357 kgf/cm <sup>2</sup> ( 2.0~35MPa ) |                           |
| 定額電流<br>Rated Current              | 800 mA   |                           |
| 線圈阻抗<br>Coil Resistance            | 20Ω ( 20°C )   |                           |
| 磁滯<br>Magnetic Hysteresis          | < 3%   |                           |
| 再現性<br>Repeatability               | < 1%   |                           |
| 放大器型號<br>Amplifier No.             | TW2085   |                           |
| 重量<br>Weight                       | 6.6 kg   | 7.8 kg                    |

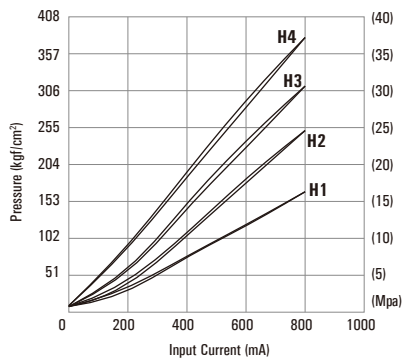
\* 備註: 該數據為使用本公司專用功率放大器時的數值 (TW2085 附顫震功能)。

\* Note: Value when a WILSON amplifier TW2085 is used (with dithering).

性能曲線 PERFORMANCE CURVES

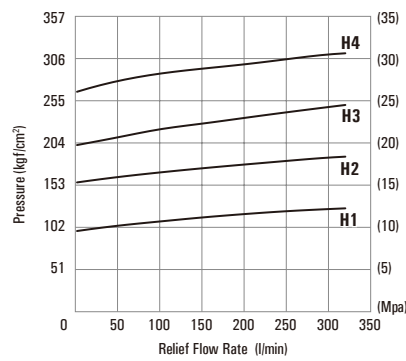
輸入電流-壓力 性能曲線

Input Current - Pressure Characteristics



流量-壓力 性能曲線

Flow Rate - Pressure Characteristics



\* 操作油黏度 32mm<sup>2</sup>/s  
Hydraulic Operating Fluid Viscosity 32mm<sup>2</sup>/s

附件 BUNDLED ACCESSORIES

| 型號 Model | 安裝螺絲<br>Monuting Bolts | 數量<br>Q'ty | 型號 Model | 安裝螺絲<br>Monuting Bolts | 數量<br>Q'ty |
|----------|------------------------|------------|----------|------------------------|------------|
| EBG-G03  | M12 x L35              | 4          | EBG-G06  | M16 x L45              | 4          |

比例  
閥

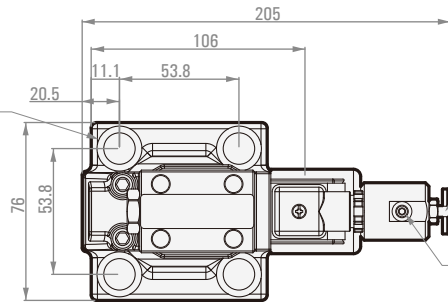
電  
磁  
換  
向  
閥

各  
式  
閥  
件

尺寸圖 DIMENSION (UNIT:MM)

EBG-G03

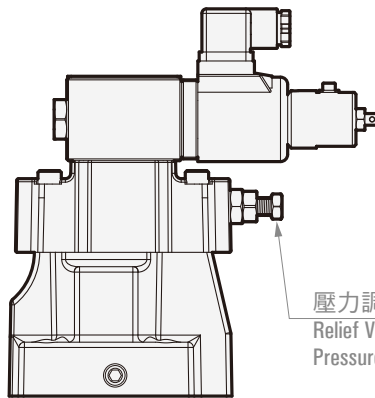
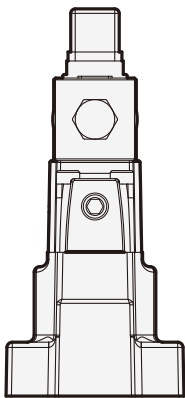
- 4 · Ø22.8x1 沉孔  
Ø13.4 通孔
- 4 · Ø22.8x1 Counterbore  
Ø13.4 Holes



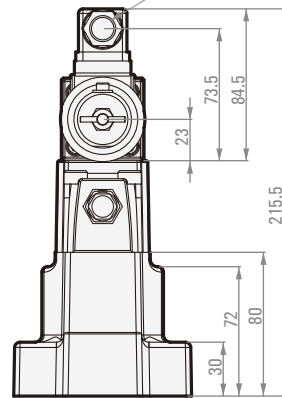
手動調壓螺絲  
Manual Pressure Adj. Screw

排氣孔  
Air Vent  
3 Hex.

接線盒出線孔直徑  
Connector Cord Diameter  
Ø8 to 10

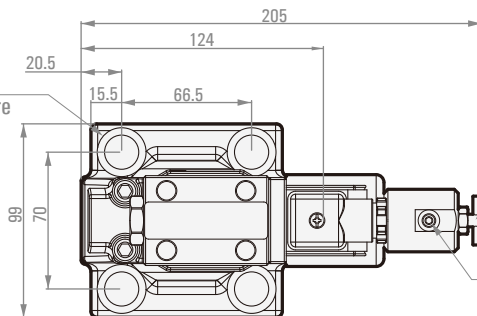


壓力調節螺絲  
Relief Valve  
Pressure Adjusting Bolt



EBG-G06

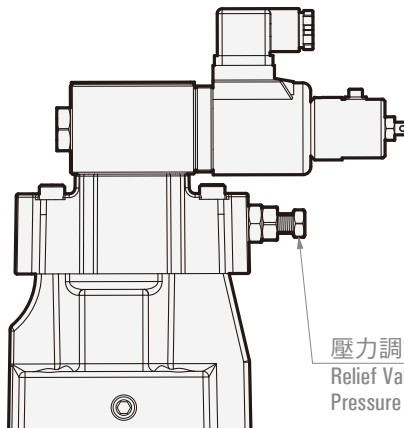
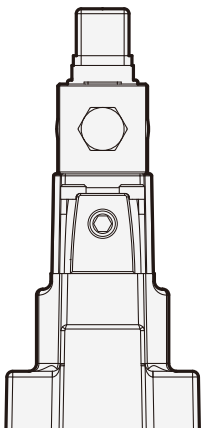
- 4 · Ø22.8x1 沉孔  
Ø13.4 通孔
- 4 · Ø22.8x1 Counterbore  
Ø13.4 Holes



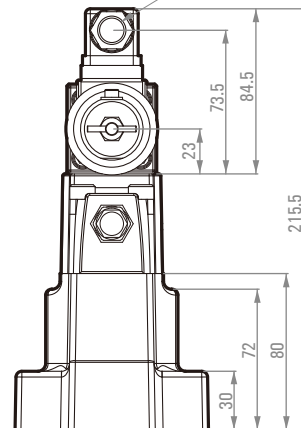
手動調壓螺絲  
Manual Pressure Adj. Screw

排氣孔  
Air Vent  
3 Hex.

接線盒出線孔直徑  
Connector Cord Diameter  
Ø8 to 10



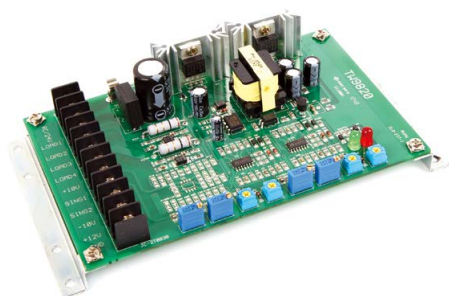
壓力調節螺絲  
Relief Valve  
Pressure Adjusting Bolt



# 功率放大器

## Electronic Amplifier P-C Board

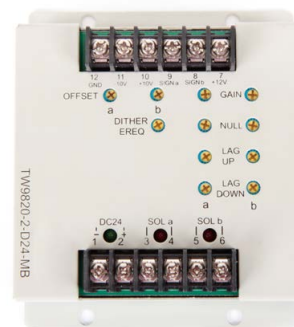
# TW9820, TW2085, TW9820-2



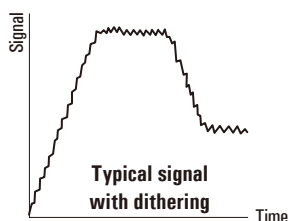
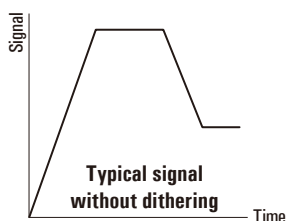
**TW9820**  
(without dithering)



**TW2085**  
(with dithering)



**TW9820-2**  
(with dithering)



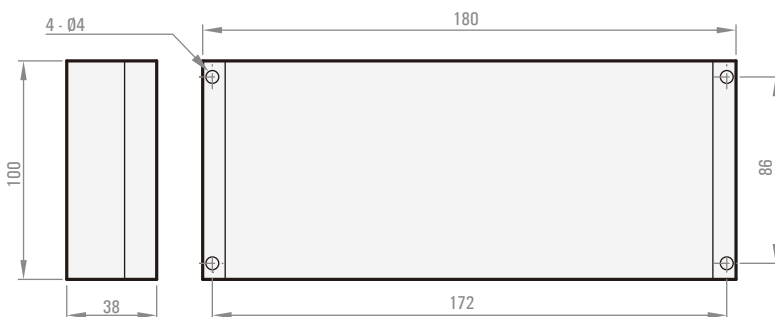
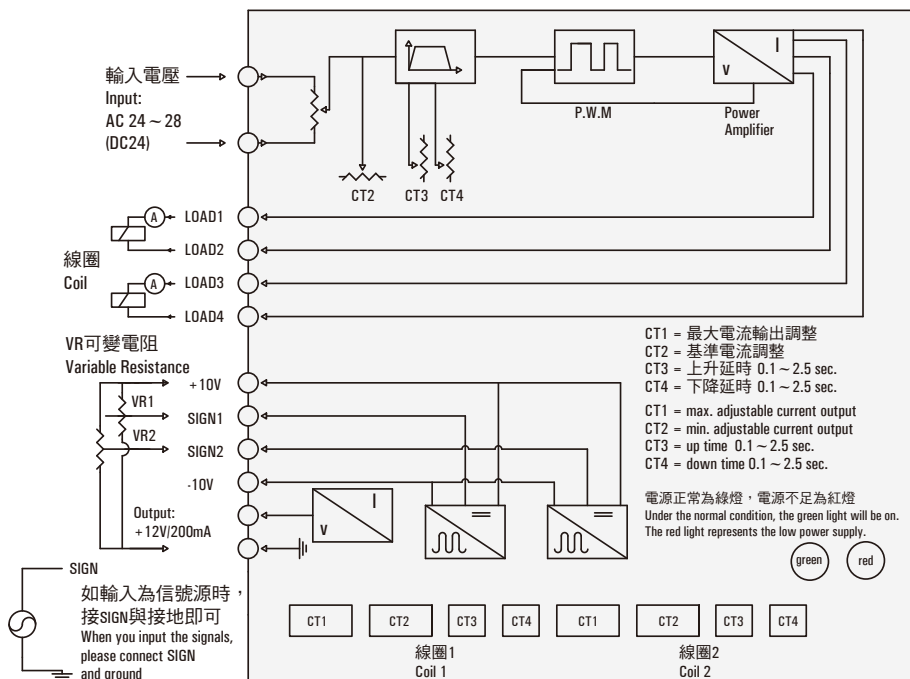
調整顫震頻率主要是可以有效的抵銷遲滯，使閥的反應死區縮短。  
The effect used to vibrate a proportional valve spool is called dither. Dithering can offset the hysteresis. The dither frequency is specific to each valve and application, and the valve amplifier, or controller, will have an adjustable dither frequency. Hence, please purchase our amplifier together with the proportional valves.

### 規格 SPECIFICATION

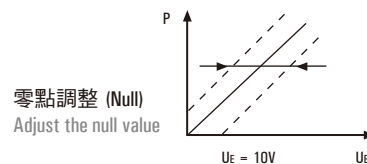
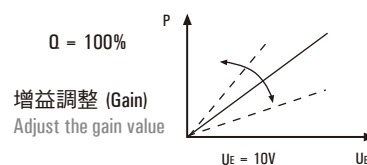
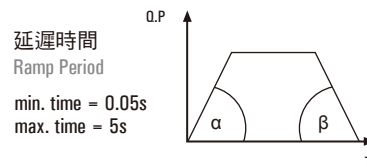
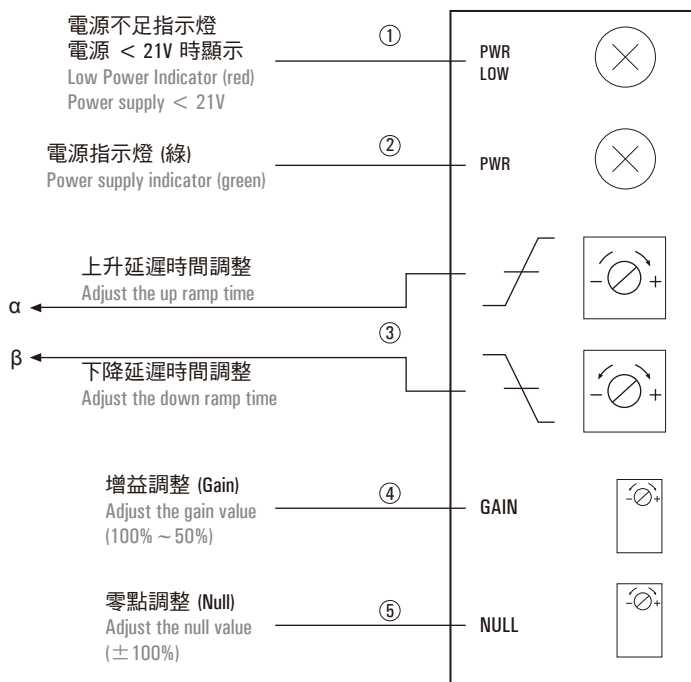
| 型號 Model   | TW9820              | TW2085              | TW9820-2       |
|--|---------------------|---------------------|----------------|
| 電源供應<br>Supply Voltage                           | AC28V ±20%<br>DC24V | DC24V               | DC24V          |
| 保險絲<br>Fuse                                      | 2A                  | 2A                  | 2A             |
| 負載阻抗<br>Load Coil Resistance                     | 20Ω<br>(20°C)       | 10Ω / 20Ω<br>(20°C) | 20Ω<br>(20°C)  |
| 輸入控制電壓<br>Input Control Voltage                  | 0V ~ +10V           | 0V ~ +10V           | 0V ~ +10V      |
| 最大電流輸出範圍<br>Max. Current Output Range            | 0 ~ 900 mA          | 0 ~ 900 mA          | 0 ~ 900 mA     |
| 零點調整 (Null)<br>Adjust the Null Value             | 0 ~ 900 mA          | 0 ~ 900 mA          | 0 ~ 900 mA     |
| 增益調整 (Gain)<br>Adjust the Gain Value             | 0 ~ 900mA/2.5V      | 0 ~ 900mA/2.5V      | 0 ~ 900mA/2.5V |
| 上升延時 / 下降延時<br>Up Ramp Period / Down Ramp Period | 0.1 ~ 2.5 sec.      | 0.1 ~ 2.5 sec.      | 0.1 ~ 2.5 sec. |
| 溫度誤差<br>Temperature Drift                        | 0.2mA / 1° C        | 0.1mA / 1°C         | 0.2mA / 1°C    |
| 工作溫度<br>Work Temperature                         | 0 ~ 50° C           | 0 ~ 50°C            | 0 ~ 50°C       |
| 最大消耗電力<br>Max. Power Requirement                 | 30VA                | 15VA                | 30VA           |
| 重量<br>Weight                                     | 0.21 kg             | 0.21 kg             | 0.21 kg        |

配電說明 & 尺寸圖 ELECTRIC DISTRIBUTION & DIMENSION (UNIT:MM)

TW9820



配電說明 INSTRUCTION

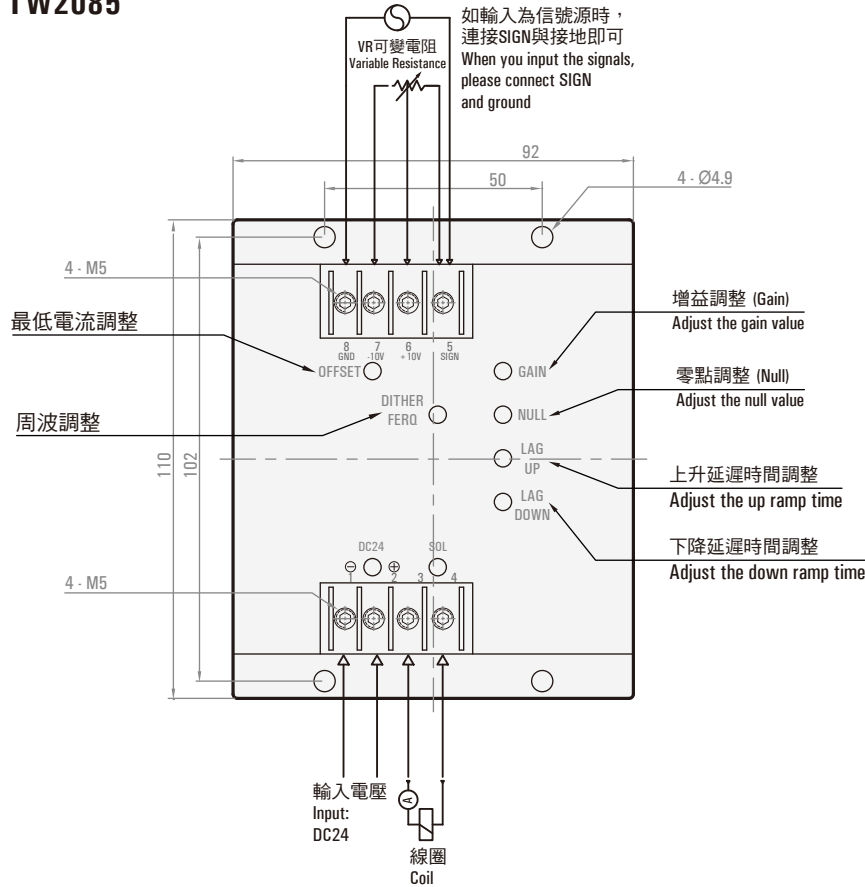






配電說明 & 尺寸圖 ELECTRIC DISTRIBUTION & DIMENSION (UNIT-MM)

TW2085

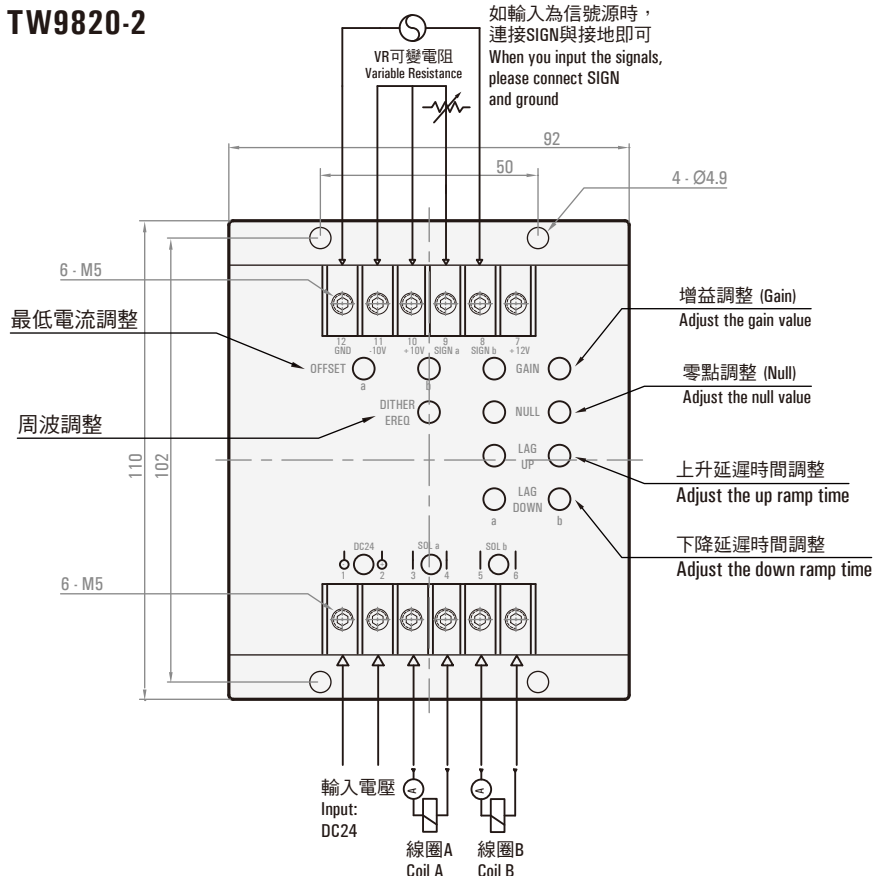


接線圖 Wiring instruction

|   |                                  |        |
|---|----------------------------------|--------|
| 1 | 電源電壓 -<br>Power supply voltage - | DC 24V |
| 2 | 電源電壓 +<br>Power supply voltage + |        |
| 3 | 閥線圈 SOL<br>Solenoid coil SOL     |        |
| 4 | 閥線圈 SOL<br>Solenoid coil SOL     |        |
| 5 | 訊號輸入點<br>Input signal terminal   |        |
| 6 | +10V                             |        |
| 7 | -10V                             |        |
| 8 | 接地 -<br>Ground                   |        |

\* 5, 8 : 數位訊號輸入接腳 (0~10V)  
5, 6, 7 : 可變電阻輸入接腳  
\* Terminal 5, 8 : Input signal terminals (0~10V)  
Terminal 5, 6, 7 : Adjustable resistor terminals.

TW9820-2



接線圖 Wiring instruction

|    |                                    |        |
|----|------------------------------------|--------|
| 1  | 電源電壓 -<br>Power supply voltage -   | DC 24V |
| 2  | 電源電壓 +<br>Power supply voltage +   |        |
| 3  | 閥線圈 SOL a<br>Solenoid coil SOL a   |        |
| 4  | 閥線圈 SOL a<br>Solenoid coil SOL a   |        |
| 5  | 閥線圈 SOL b<br>Solenoid coil SOL b   |        |
| 6  | 閥線圈 SOL b<br>Solenoid coil SOL b   |        |
| 7  | +12V                               |        |
| 8  | 訊號輸入點 b<br>Input signal terminal b |        |
| 9  | 訊號輸入點 a<br>Input signal terminal a |        |
| 10 | +10V                               |        |
| 11 | -10V                               |        |
| 12 | 接地 -<br>Ground                     |        |

\* 8/9, 12 : 數位訊號輸入接腳 (0~10V)  
8/9, 10, 11 : 可變電阻輸入接腳  
\* Terminal 8/9, 12 : Input signal terminals (0~10V)  
Terminal 8/9, 10, 11 : Adjustable resistor terminals.

# 電磁換向閥

## Solenoid Operated Directional Valve

# DSG-02, DSG-03



DSG - ※※ - ※※※ - ※※N



DSG - ※※ - ※※※ - ※※



DSG - ※※ - ※※※ - ※※C

### 型號說明 ORDER CODES

| DSG -            | 02 -                                | 3C2 -                                      | A2  | N  |
|------------------|-------------------------------------|--|---|--|
| 型號<br>Model Name | 閥門口徑<br>Thread Connection           | 心軸形式<br>Spool Type                         | 線圈電壓<br>Power Source  | 接線方式<br>Solenoid Appearance  |
| DSG              | 02 : 1/4" (NG6)<br>03 : 3/8" (NG10) | 請參照閥軸型號<br>Please refer to the symbol list | A1 : AC110V<br>A3 : AC380V<br>D1 : DC12V<br>R1 : RF110V<br>A2 : AC220V<br>AC24 : AC24V<br>D2 : DC24V<br>R2 : RF220V | N : 插頭型<br>無 : 接線盒型<br>C : 出線式<br>N : DIN connector<br>None : Terminal box type<br>C : Wiring type |

### 規格 SPECIFICATION

| 型號 Model  | DSG-02                                       | DSG-03   |
|---|--|--|
| 最大使用壓力 (P, A, B孔)<br>Max. Pressure (P, A, B Port) | 31.5 MPa                                     | 31.5 MPa                                       |
| 一般形式<br>normal type                               |  |  |
| 心軸形式: 3C5, 3C60<br>spool type: 3C5, 3C60          | 25 MPa                                       | 25 MPa   |
| 最大背壓 (T孔)<br>Permissible Back Pressure (T Port)   | 16 MPa                                       | 16 MPa   |
| 最高換向頻率<br>Max. Switch Frequency                   | AC, DC : 240 cycle/min<br>RF : 120 cycle/min | AC, DC : 240 cycle/min<br>RF : 120 cycle/min   |
| 最大流量<br>Max. Flow                                 | 60 l/min                                     | 80 l/min                                       |
| 溫度範圍<br>Operating Fluid Temp. Range               | 5 ~ 60 °C<br>40 ~ 140 °F                     | 5 ~ 60 °C<br>40 ~ 140 °F                       |
| 油黏度<br>Viscosity Range                            | 20 ~ 300 cSt                                 | 20 ~ 300 cSt                                   |
| 過濾精度<br>Filtration Required                       | 25µm   | 25µm   |
| 重量 (kgs)<br>Weight                                | 單頭 1 Solenoid<br>雙頭 2 Solenoids              | AC : 3.6 DC, RF : 4.3<br>AC : 4.6 DC, RF : 5.6 |
| 附件螺栓<br>Screw Bolt                                | M5x45 x4pcs or<br>3/16"x1-3/4" x4pcs         | M6x35 x4pcs or<br>1/4"x1-1/2" x4pcs            |



閥軸型號 SYMBOLS

| 單頭二位 彈簧復位<br>Single Coil, Two Positions<br>with Spring Return (standard) |  | 單頭二位 彈簧復位<br>Single Coil, Two Positions<br>with Spring Return (reverse) |  | 單頭二位 彈簧復位<br>Single Coil, Two Positions<br>with Spring Return (standard) |  | 單頭二位 彈簧復位<br>Single Coil, Two Positions<br>with Spring Return (reverse) |  |
|--|--|---|--|--|--|---|--|
| 2B2A   |  | 2B2AL   |  | 2B2B   |  | 2B2BL   |  |
| 2B3A   |  | 2B3AL   |  | 2B3B   |  | 2B3BL   |  |
| 2B4A   |  | 2B4AL   |  | 2B4B   |  | 2B4BL   |  |
| 2B40A  |  | 2B40AL  |  | 2B40B  |  | 2B40BL  |  |
| 2B5A   |  | 2B5AL   |  | 2B5B   |  | 2B5BL   |  |
| 2B60A  |  | 2B60AL  |  | 2B60B  |  | 2B60BL  |  |
| 2B7A   |  | 2B7AL   |  | 2B7B   |  | 2B7BL   |  |
| 2B8A   |  | 2B8AL   |  | 2B8B   |  | 2B8BL   |  |
| 2B9A   |  | 2B9AL   |  | 2B9B   |  | 2B9BL   |  |
| 2B10A  |  | 2B10AL  |  | 2B10B  |  | 2B10BL  |  |
| 2B11A  |  | 2B11AL  |  | 2B11B  |  | 2B11BL  |  |
| 2B12A  |  | 2B12AL  |  | 2B12B  |  | 2B12BL  |  |
| 雙頭三位 彈簧復中<br>Double Coils,<br>Three Positions, with Spring               |  | 雙頭三位 機械定位<br>Double Coils,<br>Two Positions, without Spring             |  | 雙頭三位 機械定位<br>Double Coils,<br>Two Positions, without Spring              |  |   |  |
| 3C2  |  | 2D2   |  | 2D2A   |  |   |  |
| 3C3  |  | 2D3   |  | 2D3A   |  |   |  |
| 3C4  |  | 2D7   |  | 2D4A   |  |   |  |
| 3C40   |  | 2D8   |  | 2D40A  |  |   |  |
| 3C5  |  | 單頭二位 彈簧復位<br>Single Coil, Two Positions<br>with Spring Return (standrd) |  | 2D5A   |  |   |  |
| 3C60   |  |   |  | 2D7A   |  |   |  |
| 3C7  |  | 2B2   |  | 2D9A   |  |   |  |
| 3C8  |  | 2B3   |  | 2D10A  |  |   |  |
| 3C9  |  | 2B8   |  | 2D11A  |  |   |  |
| 3C10   |  | 單頭二位 彈簧復位<br>Single Coil, Two Positions<br>with Spring Return (reverse) |  | 2D12A  |  |   |  |
| 3C11   |  |   |  |  |  |   |  |
| 3C12   |  | 2B2L  |  |  |  |   |  |
|  |  | 2B3L  |  |  |  |   |  |
|  |  | 2B8L  |  |  |  |   |  |

比例閥

電磁換向閥

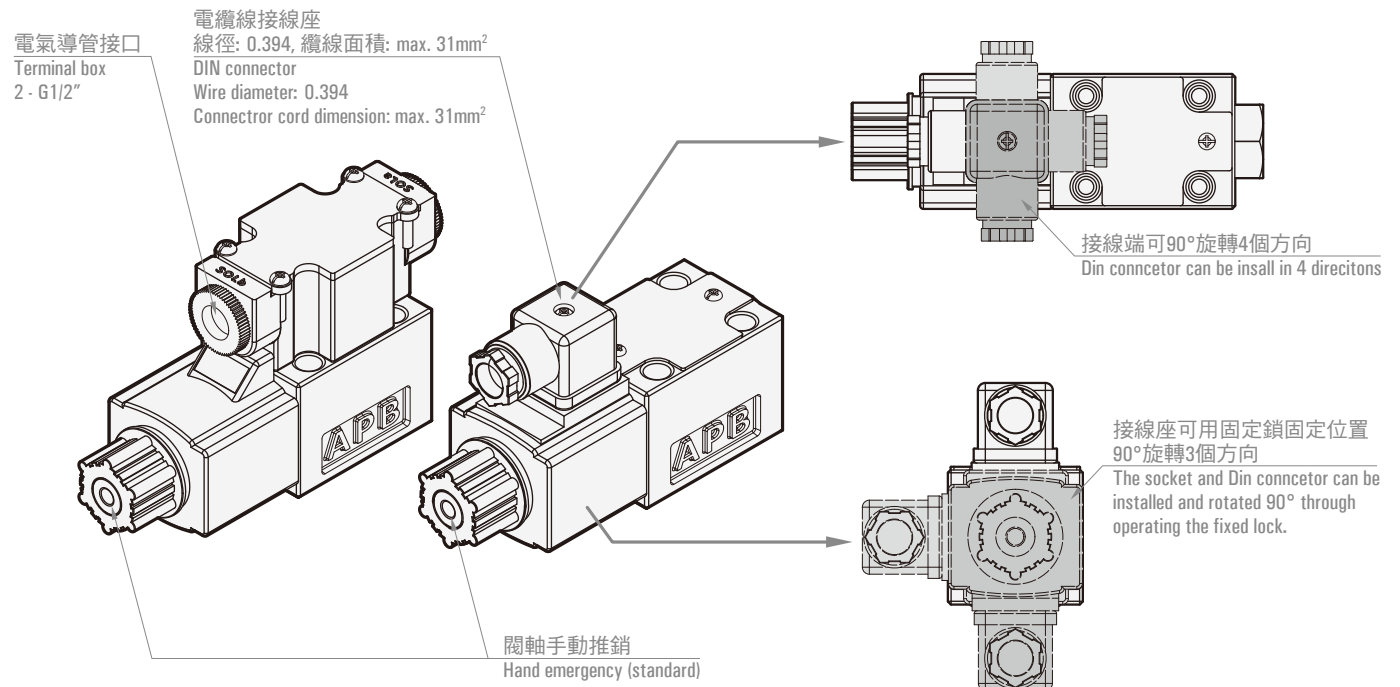
各式閥件

線圈規格 SPECIFICATIONS & PROPERTIES OF SOLENOIDS

| 電壓 Voltage   |                         | AC     |      |        |      |       | DC    |       |        |      |        |      |
|--------------|-------------------------|--------|------|--------|------|-------|-------|-------|--------|------|--------|------|
|              |                         | AC110V |      | AC220V |      | AC24V | DC12V | DC24V | RF110V |      | RF220V |      |
| 頻率 Frequency |                         | 50Hz   | 60Hz | 50Hz   | 60Hz | 50Hz  | -     | -     | 50Hz   | 60Hz | 50Hz   | 60Hz |
| DSG-02       | 啟動電流<br>In-rush Current | 2.1    | 1.96 | 1.05   | 0.95 | 1.45  | -     | -     | -      | -    | -      | -    |
|              | 保持電流<br>Holding Current | 0.6    | 0.56 | 0.3    | 0.27 | 0.41  | 2.7   | 1.3   | 0.52   | 0.52 | 0.19   | 0.26 |
| DSG-03       | 啟動電流<br>In-rush Current | 2.8    | 2.66 | 1.4    | 1.33 | -     | -     | -     | -      | -    | -      | -    |
|              | 保持電流<br>Holding Current | 0.8    | 0.76 | 0.4    | 0.38 | -     | 3.8   | 1.5   | 0.68   | 0.68 | 0.32   | 0.34 |

使用電壓範圍 Voltage Tolerance: 定額電壓 ±10% Sol. can used for nom. volt. with ±10% of the coil.

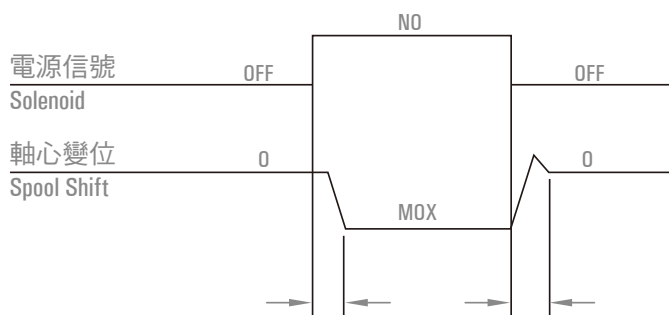
絕緣電阻 Insulation Resistance: 超過100MΩ (DC 500V絕緣測試) Over than 100MΩ mega-ohms



緩衝型(RF)電磁閥特點 PROPERTIES OF SOLENOID DIRECTIONAL VALVE WITH CUSHION FUNCTION

1. 電磁緩衝型電磁閥磨耗少，使用壽命長。
2. 油浸式電磁鐵心切換音極小，動作震動小。
3. 高壓、大容量內部壓力損失小，徹底反應流體反力補償壓力損失，最高使用壓力300 kgf/cm<sup>2</sup>。
4. 線圈使用壽命長，替換容易，吸力強，CE認證。
5. 電磁閥附緩衝，可減少噪音震動，客製化產品如圖。

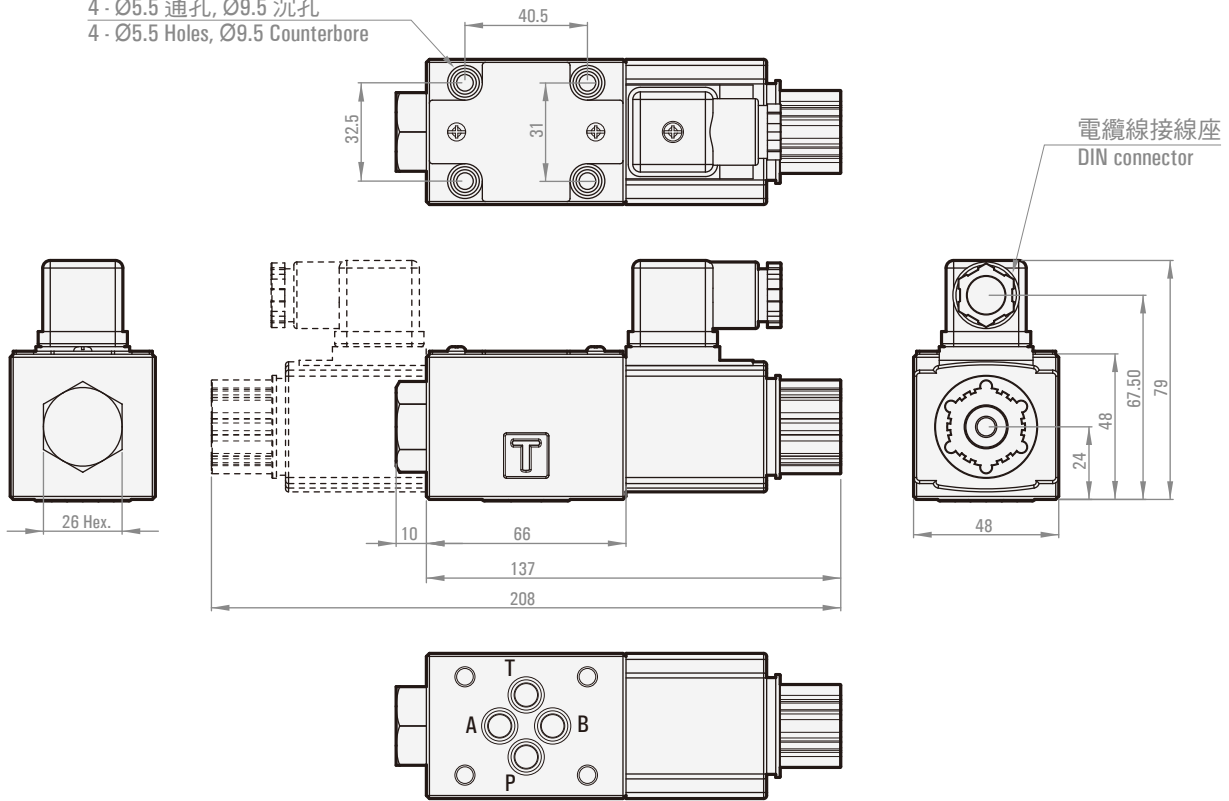
1. The moveable pins are immersed in oil it can reduce the wear of impact and ensure the longer lifespan.
2. Low switching noise, less shock.
3. High pressure, large capacity, with minimal pressure loss. Comprehensive fluid reaction force compensation and low pressure compensation construction provide large capacity and less pressure drop. The max. operation pressure is 300 kgf/cm<sup>2</sup>。
4. Our solenoid coils equip durable, easy to replace, sufficient switching power and CE certified.
5. The solenoid directional valves with cushion function can significantly reduce noise and shock. Please see the drawing as below.



尺寸圖 DIMENSION (UNIT:MM)

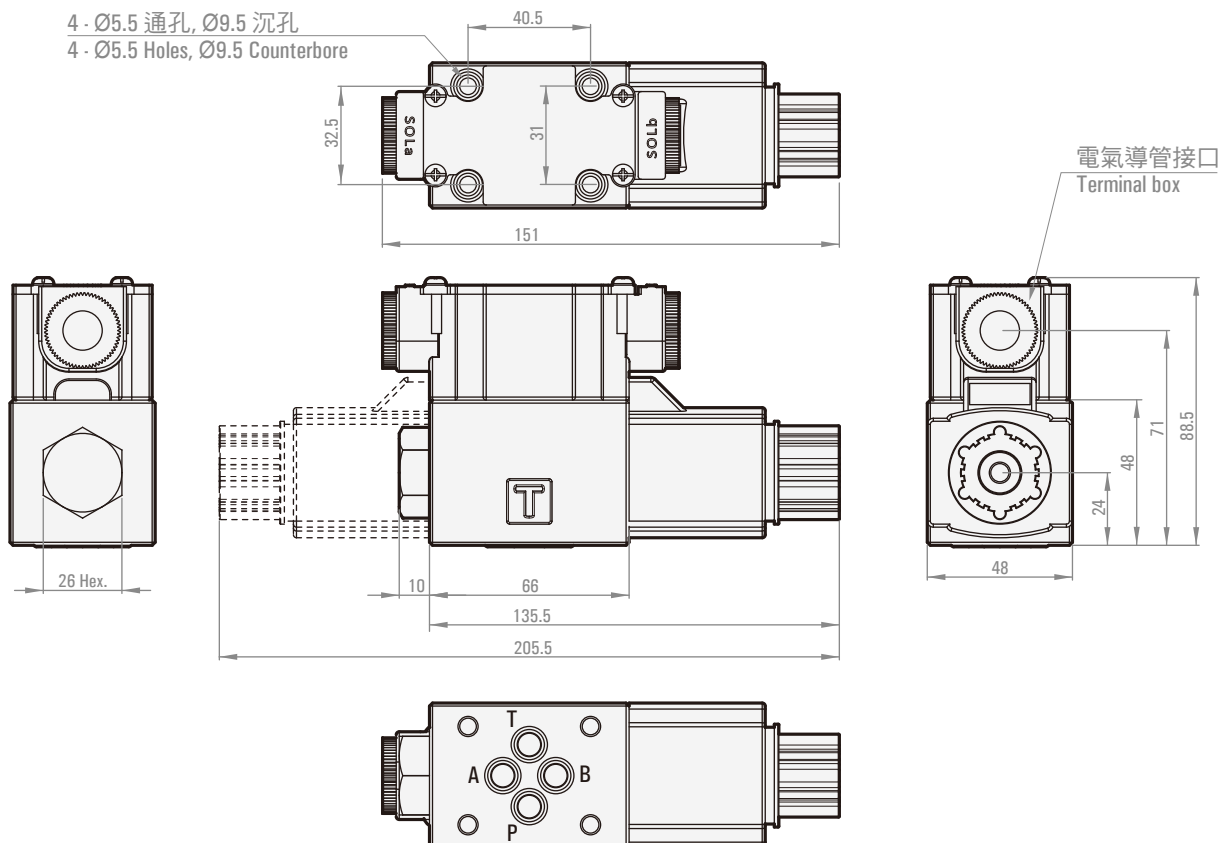
DSG-02-※※※-A※N

4 - Ø5.5 通孔, Ø9.5 沉孔  
4 - Ø5.5 Holes, Ø9.5 Counterbore



DSG-02-※※※-A※

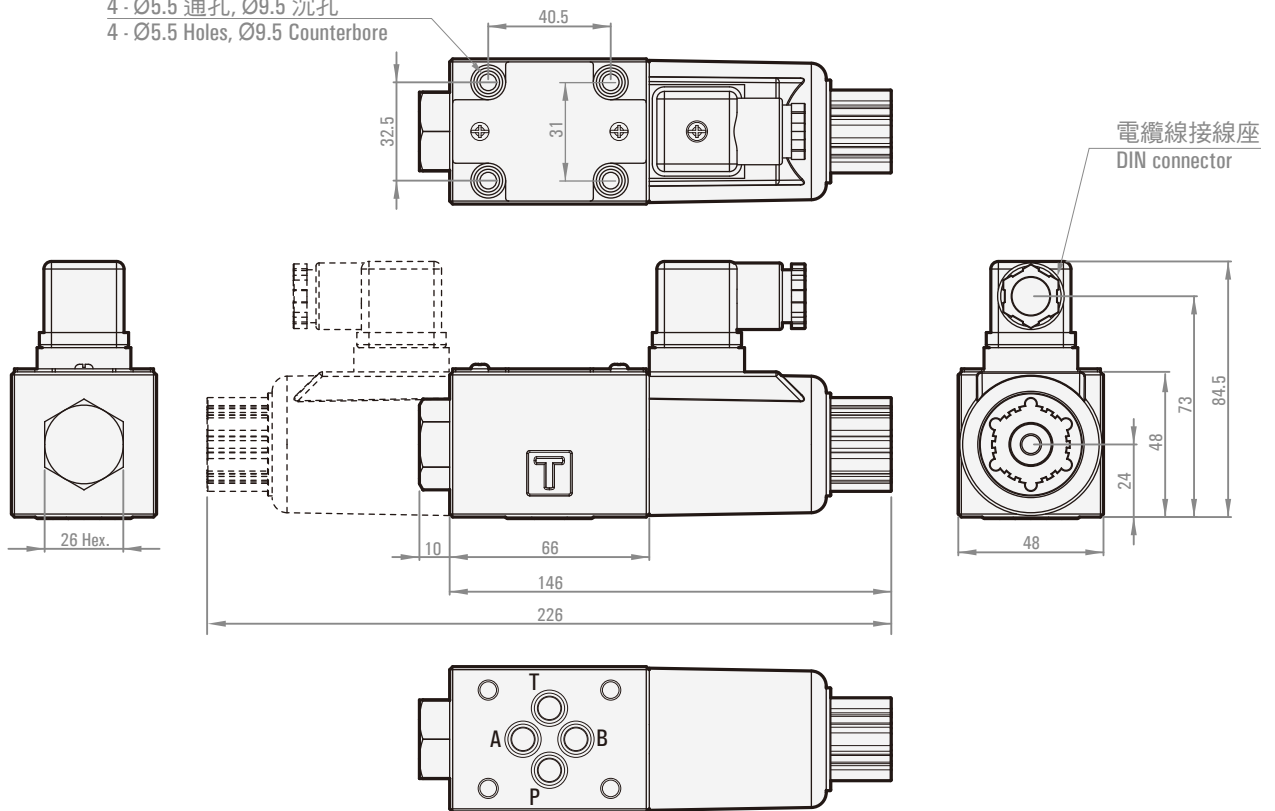
4 - Ø5.5 通孔, Ø9.5 沉孔  
4 - Ø5.5 Holes, Ø9.5 Counterbore



尺寸圖 DIMENSION (UNIT:MM)

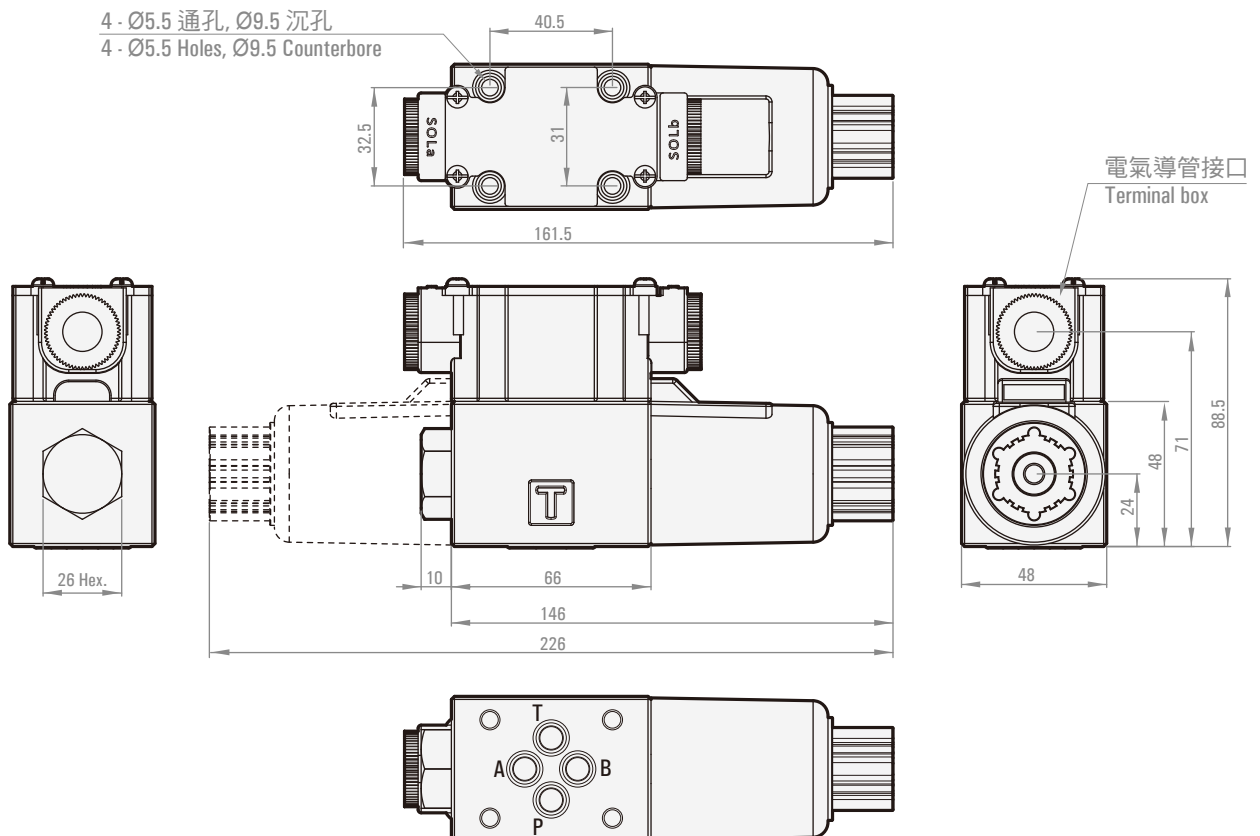
DSG-02-\*\*\*-D\*N, DSG-02-\*\*\*-R\*N

4 - Ø5.5 通孔, Ø9.5 沉孔  
4 - Ø5.5 Holes, Ø9.5 Counterbore



DSG-02-\*\*\*-D\*, DSG-02-\*\*\*-R\*

4 - Ø5.5 通孔, Ø9.5 沉孔  
4 - Ø5.5 Holes, Ø9.5 Counterbore



比例圖

電磁換向閥

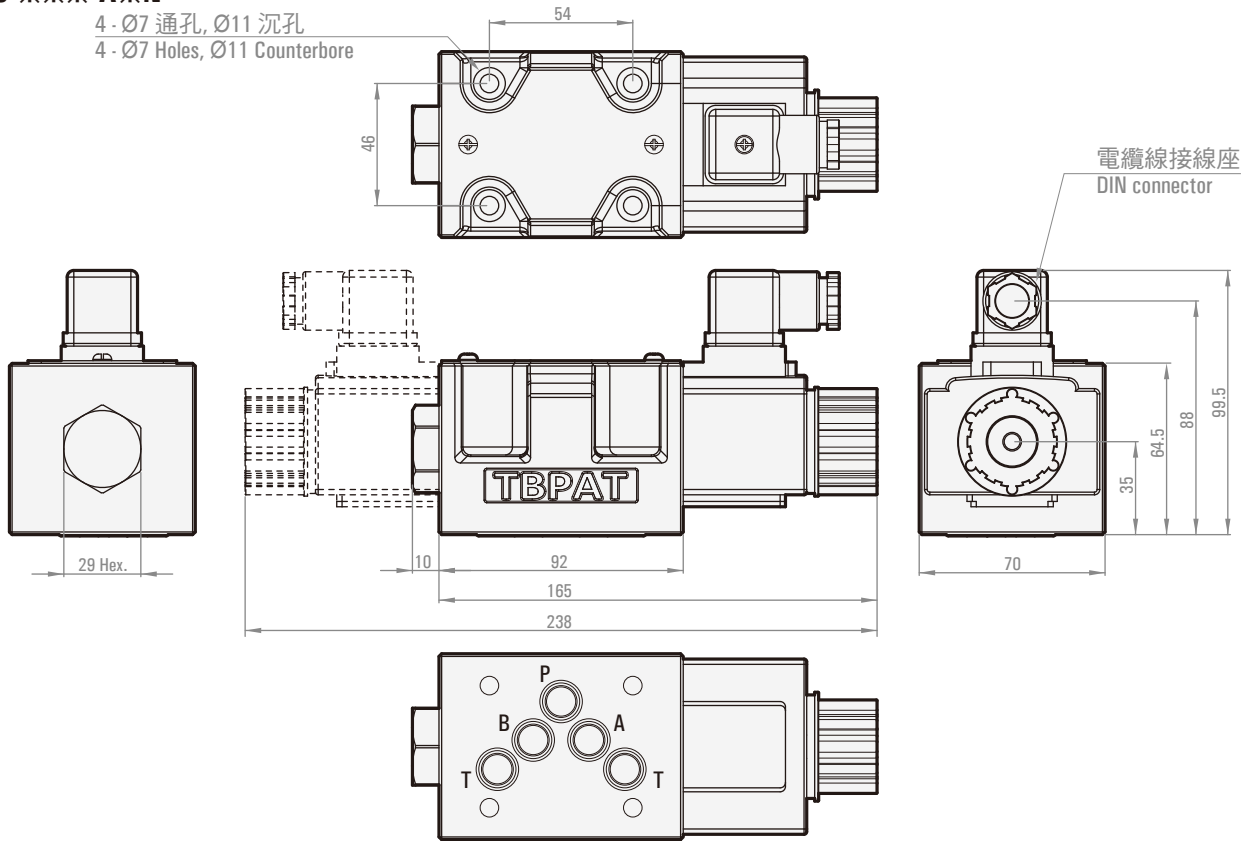
各式閥件



尺寸圖 DIMENSION (UNIT:MM)

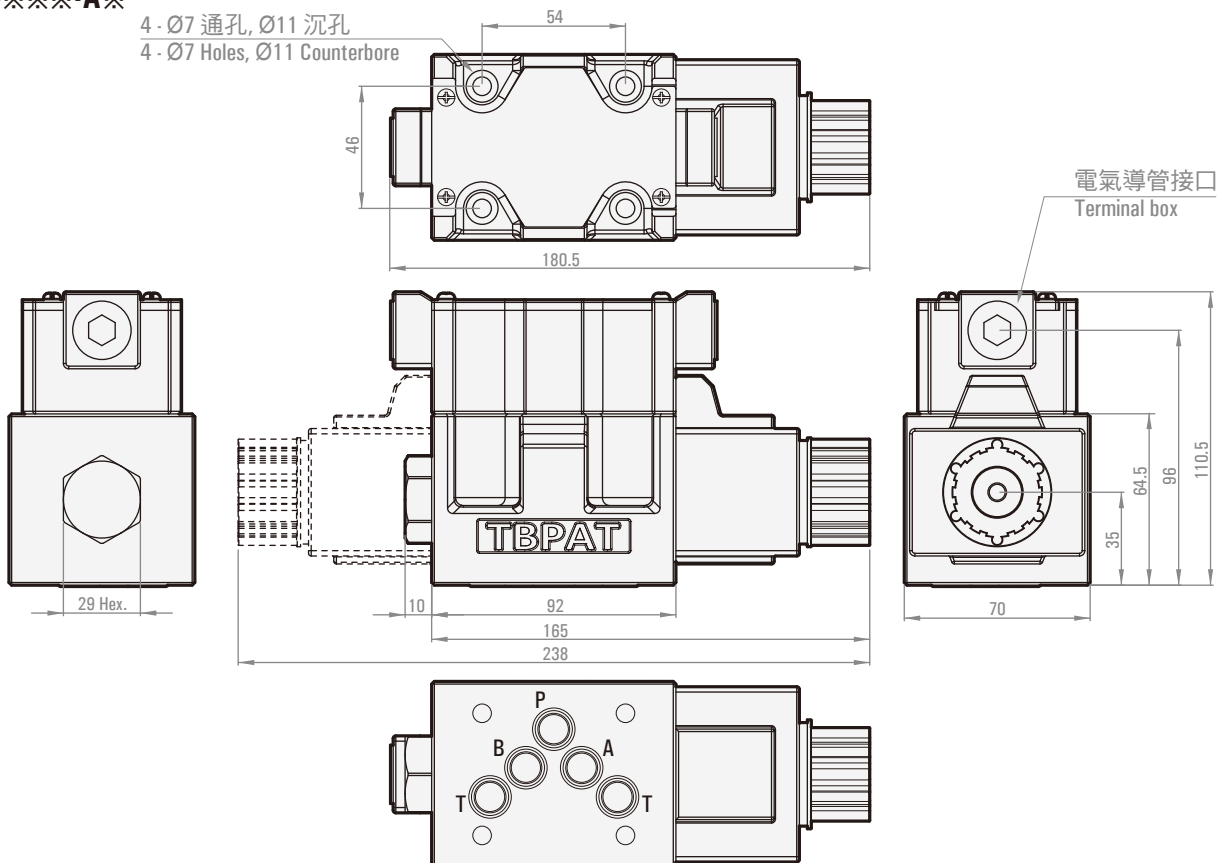
DSG-03-※※※-A※N

4-Ø7 通孔, Ø11 沉孔  
4-Ø7 Holes, Ø11 Counterbore



DSG-03-※※※-A※

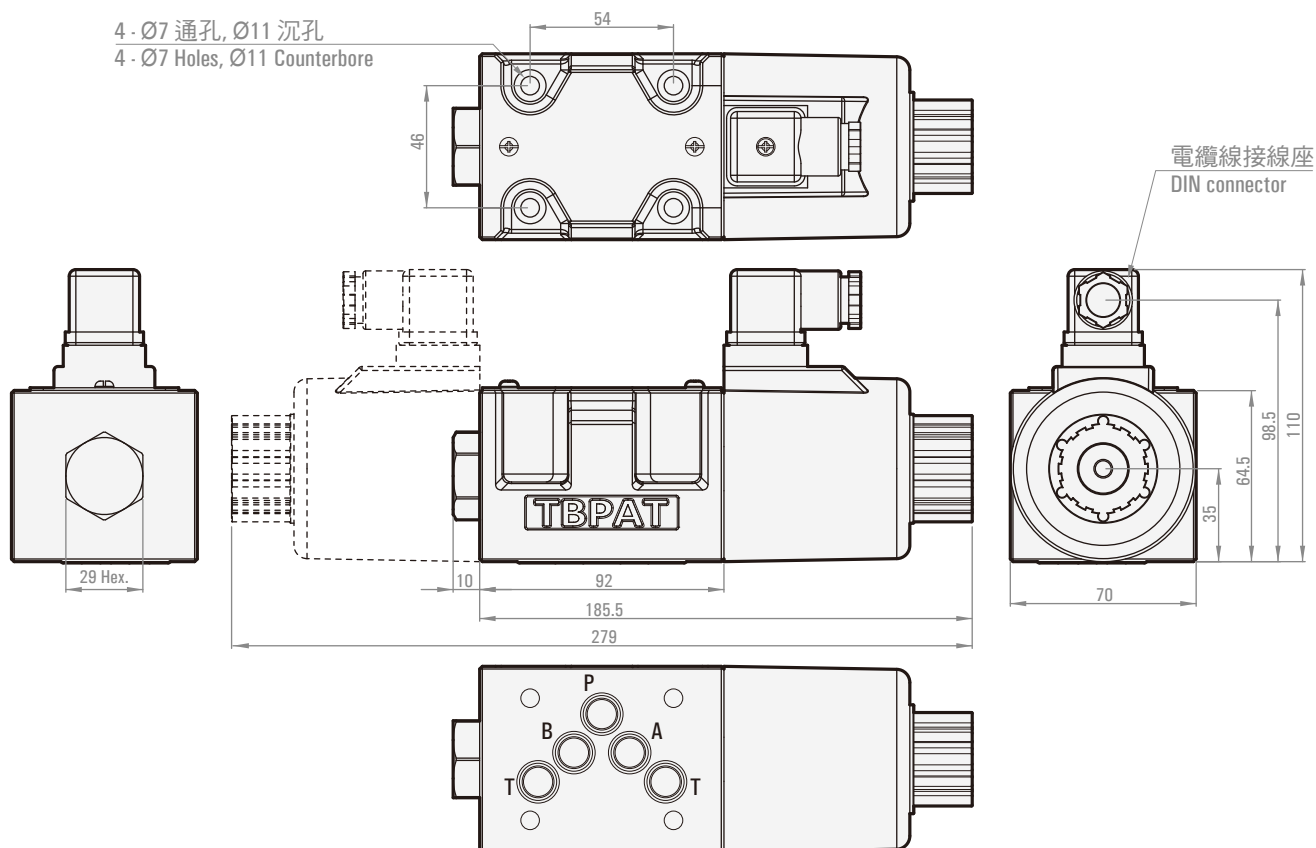
4-Ø7 通孔, Ø11 沉孔  
4-Ø7 Holes, Ø11 Counterbore



尺寸圖 DIMENSION (UNIT:MM)

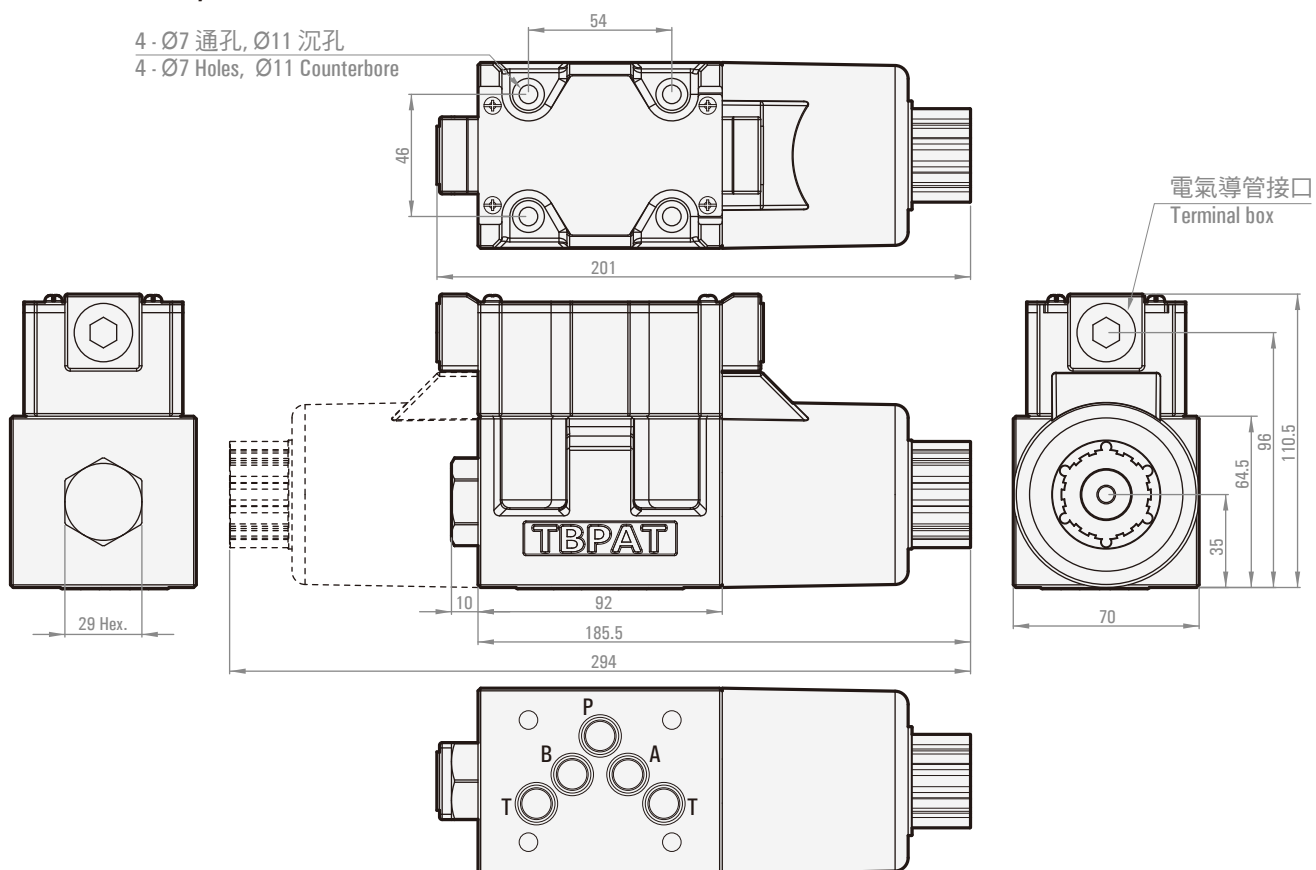
**DSG-03-\*\*\*-D\*N, DSG-03-\*\*\*-R\*N**

4 · Ø7 通孔, Ø11 沉孔  
4 · Ø7 Holes, Ø11 Counterbore



**DSG-03-\*\*\*-D\*, DSG-03-\*\*\*-R\***

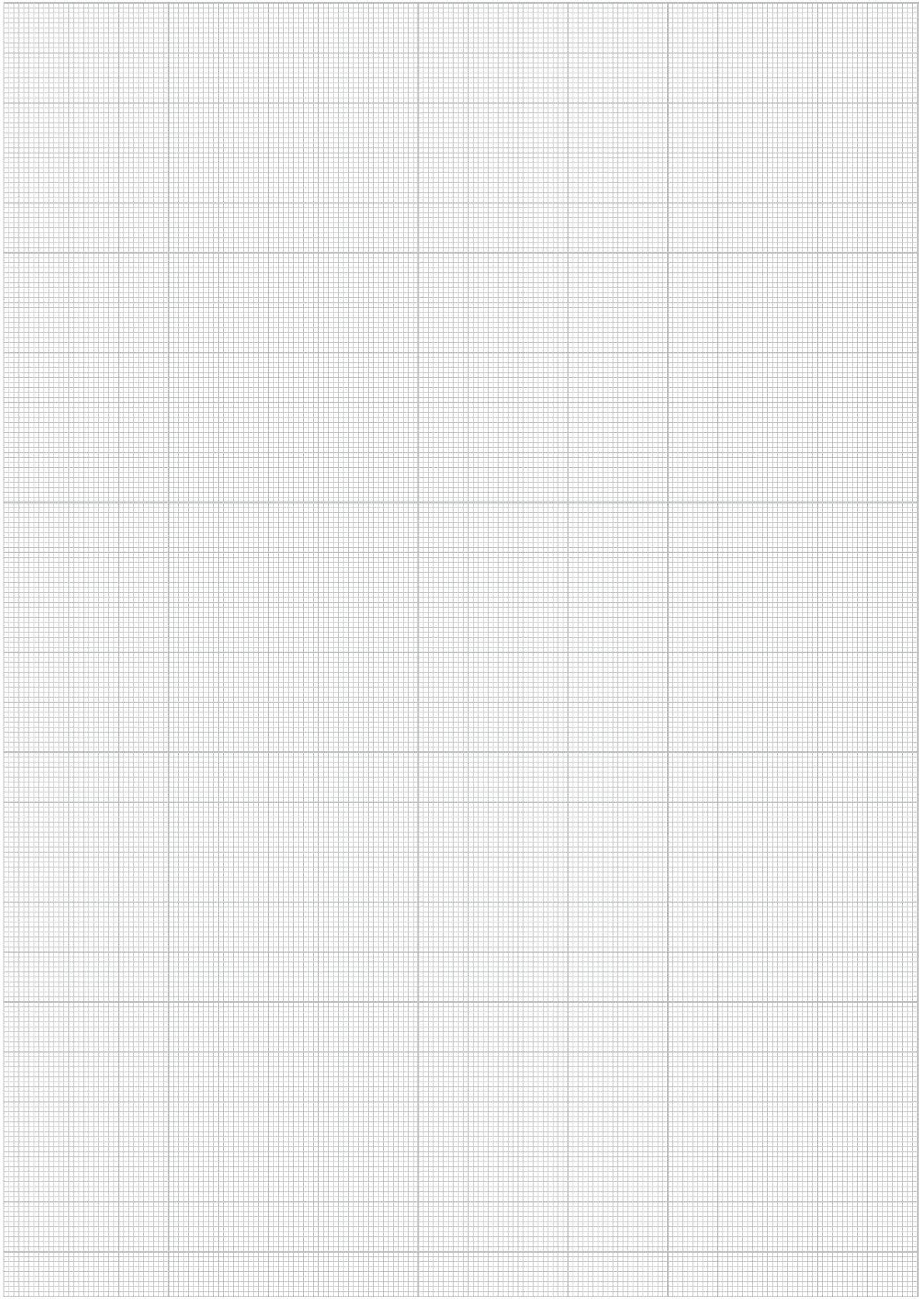
4 · Ø7 通孔, Ø11 沉孔  
4 · Ø7 Holes, Ø11 Counterbore



比例圖

電磁換向閥

各式閥件



比例  
圖

電  
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閥

各  
式  
閥  
件

# 引導換向閥

## Pilot Operated Directional Valve

# DHG



DHG-04



DHG-06

### 型號說明 ORDER CODES

| DHG -            | 06 -                         | 3C2   | ET -  | AB   |
|------------------|------------------------------|---|---|--|
| 型號<br>Model Name | 口徑<br>Thread Connection      | 心軸型式<br>Spool Type                                | 洩油形式<br>Drain Type  | 調整把手<br>Adjustable Stroke  |
| DHG              | 04 : PT 1/2"<br>06 : PT 3/4" | 請參照符號<br>列表<br>Please refer to<br>the symbol list | 無 : 內部控制油供給, 內部控制油洩油<br>T : 內部控制油供給, 外部控制油洩油<br>ET : 外部控制油供給, 外部控制油洩油<br>E : 外部控制油供給, 內部控制油洩油<br><br>none : pilot oil supply internal, pilot oil drain internal<br>T : pilot oil supply internal, pilot oil drain external<br>ET : pilot oil supply external, pilot oil drain external<br>E : pilot oil supply external, pilot oil drain internal | 無 : 標準型式<br>AB : AB側加可調整把手<br>A : A側加可調整把手<br>B : B側加可調整把手<br><br>none : standard type<br>AB : both side with adjustable strokes<br>A : port A side with adjustable strokes<br>B : port B side with adjustable strokes |

### 規格 SPECIFICATION

| 型號<br>Model | 最大流量<br>Max. Flow<br>(l/min) | 最大<br>使用壓力<br>Max. Operating<br>Pressure<br>(kgf/cm <sup>2</sup> ) | 最高<br>引導壓力<br>Max. Pilot<br>Pressure<br>(kgf/cm <sup>2</sup> ) | 最低<br>引導壓力<br>Min. Pilot<br>Pressure<br>(kgf/cm <sup>2</sup> ) | T 孔最高背壓<br>Max. T-Line Back Pressure<br>(kgf/cm <sup>2</sup> ) |                    | 最高換向頻率<br>Max. Change Over<br>Frequency (cycles/min) |     | 重量<br>Weight<br>(kg) |
|-------------|------------------------------|--|--|--|--|--------------------|--|-----|----------------------|
|             |                              |  |  |  | 外部洩油<br>EXT. Drain   | 內部洩油<br>INT. Drain | AC   | DC  |                      |
| DHG-04      | 300                          | 315  | 250  | 8  | 210  | 140                | 120  | 120 | 6.1                  |
| DHG-06      | 500                          | 315  | 250  | 8  | 210  | 140                | 120  | 120 | 12.0                 |

### 附件 BUNDLED ACCESSORIES

| 型號<br>Model | 安裝螺絲<br>Monuting Bolts | 數量<br>Q'ty | 型號<br>Model | 安裝螺絲<br>Monuting Bolts | 數量<br>Q'ty |
|-------------|------------------------|------------|-------------|------------------------|------------|
| DHG-04      | M6 x L40               | 2          | DHG-06      | M12 x L45              | 6          |
|             | M10 x L45              | 4          |             |                        |            |

比例閥

電磁換向閥

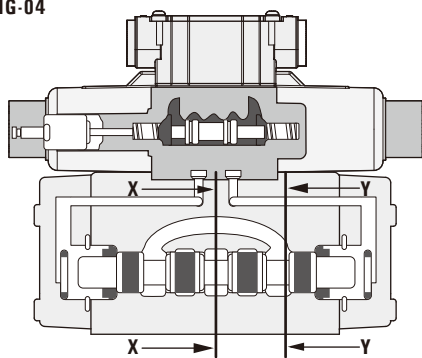
各式閥件

符號 SYMBOLS

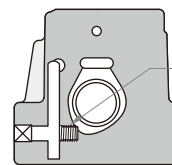
| 三位<br>Three Positions |  | 二位<br>Two Positions |  |           |  |
|-----------------------|--|---------------------|--|-----------|--|
|                       |  |                     |  |           |  |
| DHG-3C2               |  | DHG-2B2A            |  | DHG-2B2B  |  |
| DHG-3C3               |  | DHG-2B3A            |  | DHG-2B3B  |  |
| DHG-3C4               |  | DHG-2B4A            |  | DHG-2B4B  |  |
| DHG-3C40              |  | DHG-2B40A           |  | DHG-2B40B |  |
| DHG-3C5               |  | DHG-2B5A            |  | DHG-2B5B  |  |
| DHG-3C60              |  | DHG-2B60A           |  | DHG-2B60B |  |
| DHG-3C7               |  | DHG-2B7A            |  | DHG-2B7B  |  |
| DHG-3C9               |  | DHG-2B9A            |  | DHG-2B9B  |  |
| DHG-3C10              |  | DHG-2B10A           |  | DHG-2B10B |  |
| DHG-3C11              |  | DHG-2B11A           |  | DHG-2B11B |  |
| DHG-3C12              |  | DHG-2B12A           |  | DHG-2B12B |  |

PILOT(P) 與 DRAIN(D) 功能的選擇 PILOT(P) & DRAIN(D) SPECIFICATIONS

DHG-04



X-X 截面  
Cross-sectional View X-X



Y-Y 截面  
Cross-sectional View Y-Y

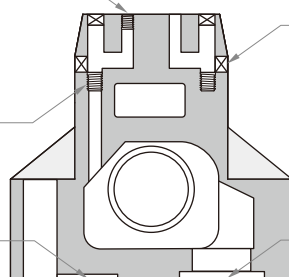
內部導引時，  
需將螺塞拆除  
If you need the internal pilot,  
please take of the plug.

內部回油時，  
需將螺塞拆除  
If you need the internal drain,  
please take of the plug.

DHG-06

外部導引時，需將1.5mm節流螺塞拆除  
If you use external pilot, please unplug the oil stopper.

內部導引時，需將螺塞拆除  
If you need the internal pilot, please take of the plug.



內部回油時，需將螺塞拆除  
If you need the internal drain, please take of the plug.

X孔 (外部導引用)  
合用內部導引時，閥座上之X孔毋需鑽孔  
X port (External pilot) If you use external and internal pilot,  
you do not need to drig an orifice on the main stage of X port.

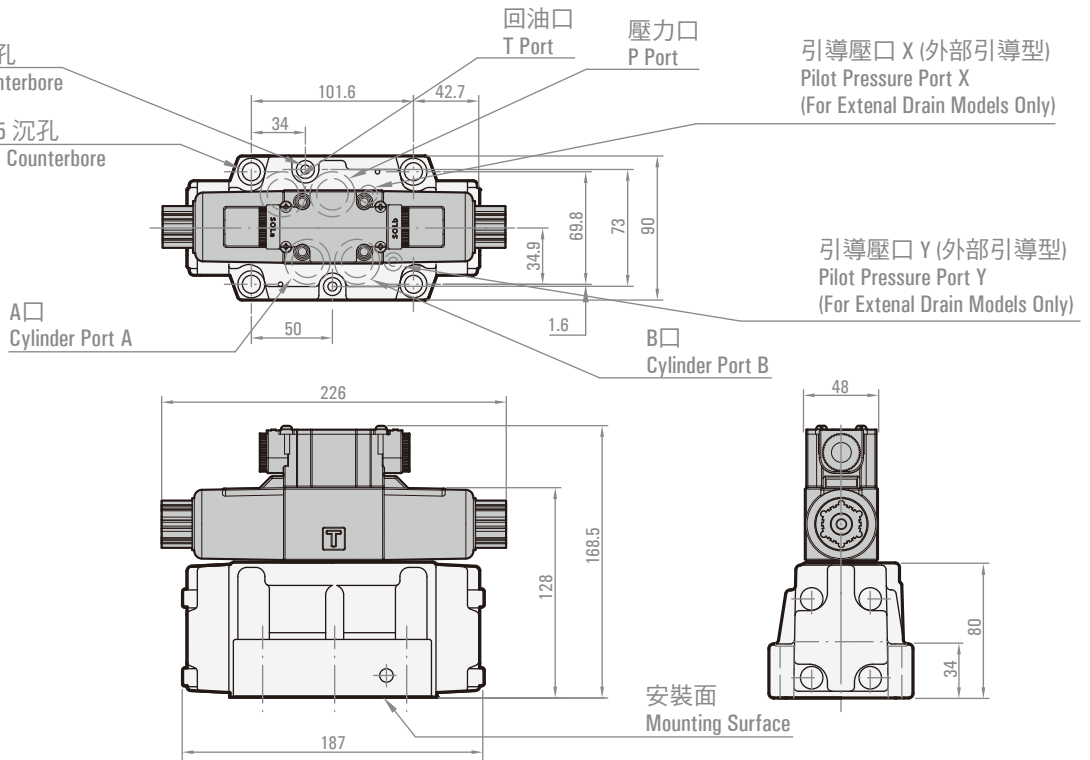
Y孔 (外部回油)  
使用內部回油時，閥座上之Y孔毋需鑽孔  
Y port (External drain) If you use external and internal drain,  
you do not need to drig an orifice on the main stage of Y port.

尺寸圖 DIMENSION (UNIT:MM)

DHG-04

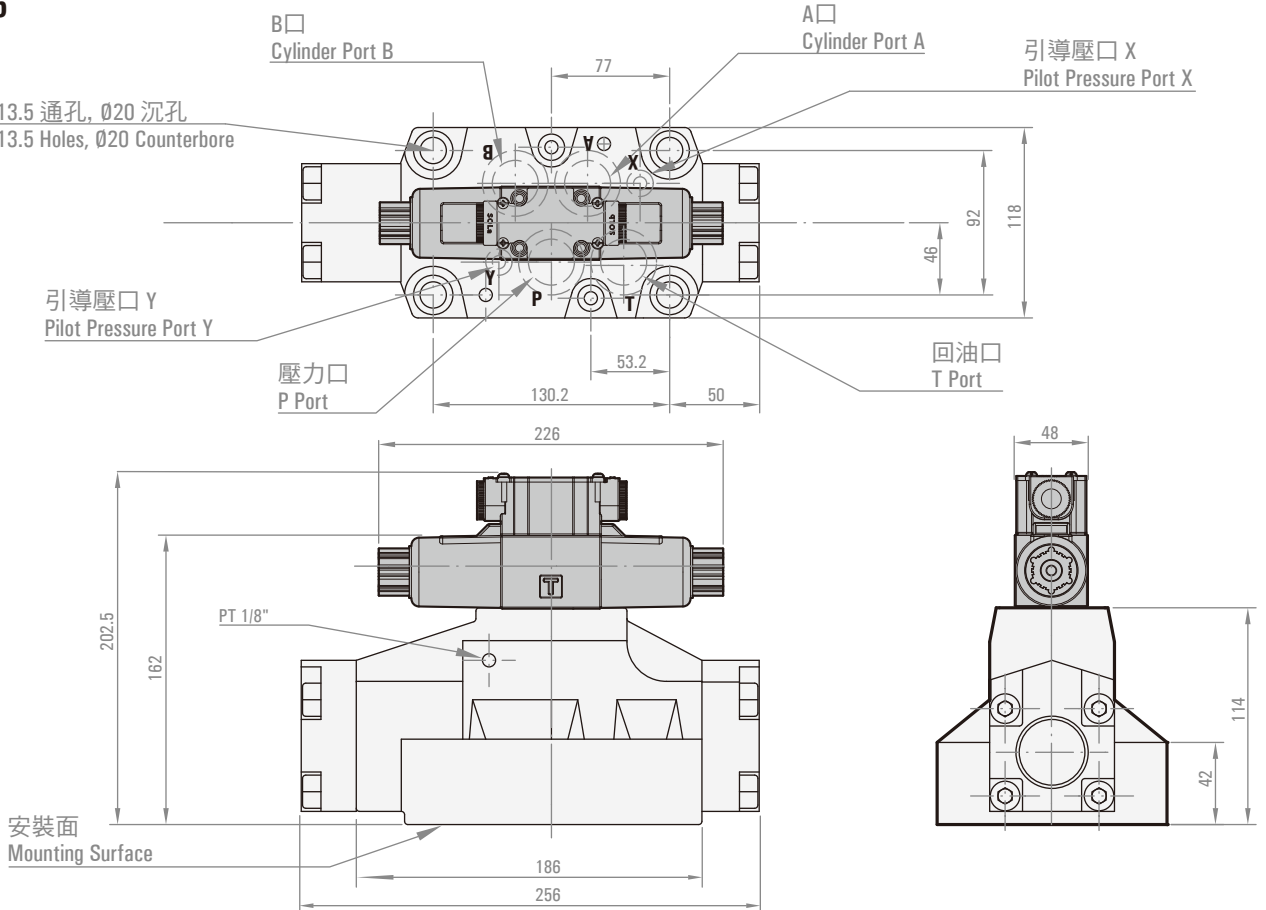
2 - Ø7 通孔, Ø11 沉孔  
Ø7 Holes, Ø11 Counterbore

4 - Ø11 通孔, Ø17.5 沉孔  
Ø11 Holes, Ø17.5 Counterbore



DHG-06

6 - Ø13.5 通孔, Ø20 沉孔  
Ø13.5 Holes, Ø20 Counterbore



\* 電磁閥需另購  
Solenoid directional valve is sold separately

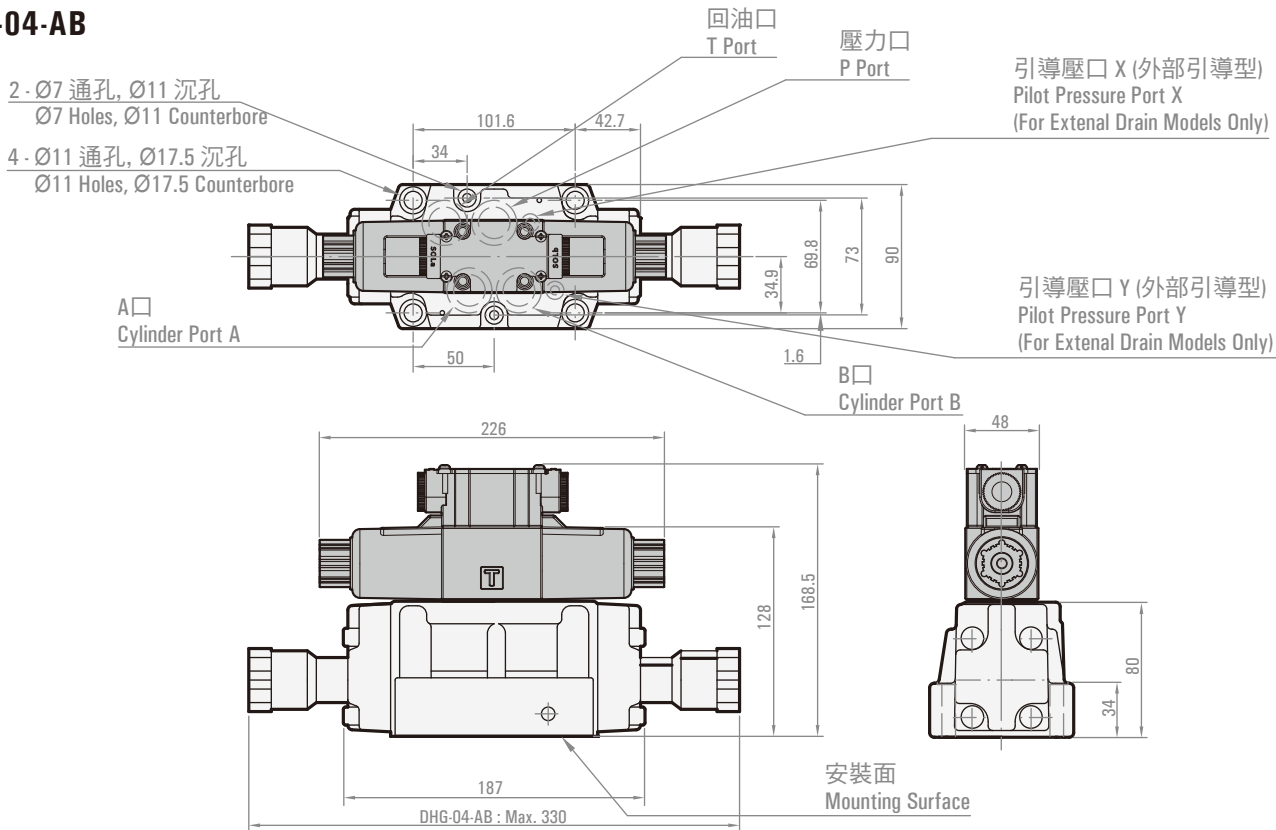
比例閥

電磁換向閥

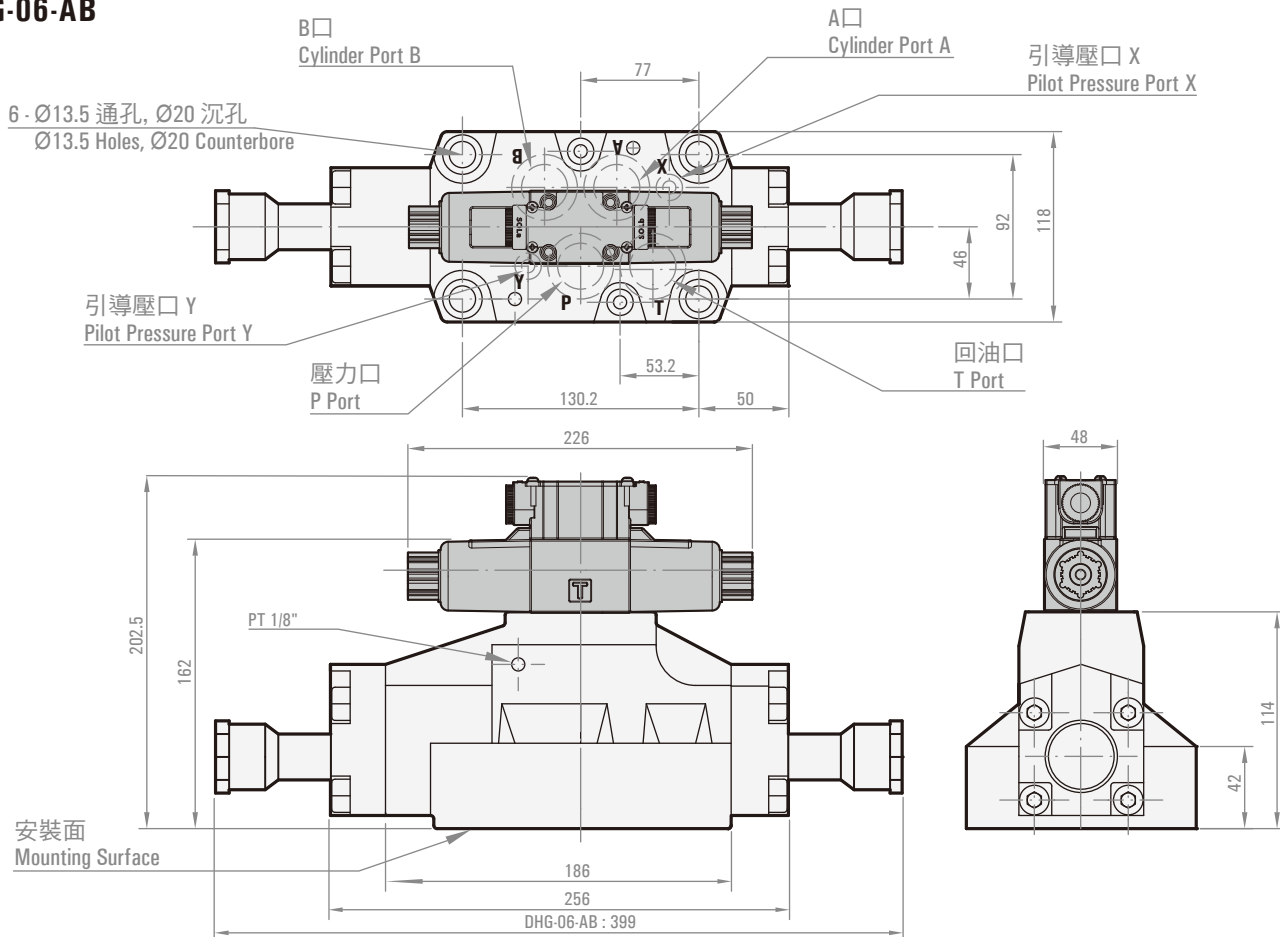
各式閥件

尺寸圖 DIMENSION (UNIT:MM)

DHG-04-AB



DHG-06-AB



\* 電磁閥需另購  
Solenoid directional valve is sold separately



# 積層型控制閥

## Modular Hydraulic Valve

閥體類型 MODULAR VALVE TYPE

| 型號<br>Model      | 功能<br>Function                                     | 閥體尺寸<br>Valve Sizes   |                       |                       |                       | 符號<br>Symbols |
|------------------|--|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
|                  |  | 02                    | 03                    | 04                    | 06                    |               |
| MRV              | 積層型調壓閥<br>Modular Relief Valve                     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |               |
| MBRV             | 積層型減壓閥<br>Modular Reducing Valve                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |               |
| MTV              | 積層型流量閥<br>Modular Flow Control Valve               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |               |
| MTCV-P           | 積層型流量閥<br>Modular Flow Control Valve               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |               |
| MTCV (Metre-out) | 積層型流量閥附逆止閥<br>Modular Flow Control and Check Valve | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |               |
| MTCV (Metre-in)  | 積層型流量閥附逆止閥<br>Modular Flow Control and Check Valve | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |               |
| MPCV             | 積層型引導逆止閥<br>Modular Pilot Operated Check Valve     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |               |
| MSCV             | 積層型抗衡閥<br>Modular Counter Balance Valve            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |               |
| MCV              | 積層型逆止閥<br>Modular Check Valve                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |               |



比例閥

電磁換向閥

各式閥件



### 積層型調壓閥

#### Modular Relief Valve

## MRV-02, 03, 04, 06

| 型號<br>Model    | 最大壓力<br>Max. Pressure<br>( kgf/cm <sup>2</sup> ) | 壓力調整範圍<br>Pressure Adj. Range<br>( kgf/cm <sup>2</sup> ) | 最大流量<br>Max. Flow<br>( l/min ) | 重量<br>Weight<br>( kg ) |
|----------------|--|--|--------------------------------|------------------------|
| MRV-02-P, A, B | 210  | 1: 7~70<br>2: 35~140<br>3: 70~210                        | 35                             | 1.7                    |
| MRV-02-W       |  |  | 35                             | 2.5                    |
| MRV-03-P, A, B |  |  | 70                             | 3.2                    |
| MRV-03-W       |  |  | 70                             | 4.5                    |
| MRV-04-P, A, B |  |  | 160                            | 6.7                    |
| MRV-06-P, A, B |  |  | 200                            | 11.0                   |

### 積層型減壓閥

#### Modular Reducing Valve

## MBRV-02, 03, 04, 06

| 型號<br>Model     | 最大壓力<br>Max. Pressure<br>( kgf/cm <sup>2</sup> ) | 壓力調整範圍<br>Pressure Adj. Range<br>( kgf/cm <sup>2</sup> ) | 最大流量<br>Max. Flow<br>( l/min ) | 重量<br>Weight<br>( kg ) |      |
|-----------------|--|--|--------------------------------|------------------------|------|
| MBRV-02-P, A, B | 210  | 0: 3~30<br>1: 8~70<br>2: 35~140<br>3: 70~210             | 35                             | 1.3                    |      |
| MBRV-03-P, A, B |  |  | 70                             | 3.3                    |      |
| MBRV-04-P, A, B |  |  | 120                            | 7.7                    |      |
| MBRV-06-P, A, B |  | 180  | 1: 8~70                        | 120                    | 7.7  |
|                 |  |  | 2: 35~140<br>3: 70~210         | 180                    | 11.0 |

### 積層型流量閥

#### Modular Flow Control Valve

## MTV-02, 03

| 型號<br>Model | 最大壓力<br>Max. Pressure<br>( kgf/cm <sup>2</sup> ) | 最大流量<br>Max. Flow<br>( l/min ) | 重量<br>Weight<br>( kg ) |
|-------------|--|--------------------------------|------------------------|
| MTV-02-P, T | 210  | 35                             | 1.1                    |
| MTV-03-P, T |  | 70                             | 2.6                    |

### 積層型流量閥

#### Modular Flow Control Valve

## MTCV-02, 03-P

| 型號<br>Model | 最大壓力<br>Max. Pressure<br>( kgf/cm <sup>2</sup> ) | 最大流量<br>Max. Flow<br>( l/min ) | 重量<br>Weight<br>( kg ) |
|-------------|--|--------------------------------|------------------------|
| MTCV-02-P   | 210  | 35                             | 1.1                    |
| MTCV-03-P   |  | 70                             | 2.6                    |

### 積層型流量閥附逆止閥

#### Modular Flow Control and Check Valve

## MTCV-02, 03, 04, 06

| 型號<br>Model     | 最大壓力<br>Max. Pressure<br>( kgf/cm <sup>2</sup> ) | 最大流量<br>Max. Flow<br>( l/min ) | 重量<br>Weight<br>( kg ) |
|-----------------|--|--------------------------------|------------------------|
| MTCV-02-A, B, W | 210  | 35                             | 1.4                    |
| MTCV-03-A, B, W |  | 70                             | 3.0                    |
| MTCV-04-A, B, W |  | 120                            | 6.0                    |
| MTCV-06-A, B, W |  | 180                            | 12.5                   |

### 積層型引導逆止閥

#### Modular Pilot Operated Check Valve

## MPCV-02, 03, 04, 06

| 型號<br>Model     | 最大壓力<br>Max. Pressure<br>( kgf/cm <sup>2</sup> ) | 最大流量<br>Max. Flow<br>( l/min ) | 重量<br>Weight<br>( kg ) |
|-----------------|--|--------------------------------|------------------------|
| MPCV-02-A, B, W | 210  | 35                             | 1.3                    |
| MPCV-03-A, B, W |  | 70                             | 3.0                    |
| MPCV-04-A, B, W |  | 120                            | 7.0                    |
| MPCV-06-A, B, W |  | 180                            | 12.5                   |

### 積層型抗衡閥

#### Modular Counter Balance Valve

## MSCV-02, 03

| 型號<br>Model  | 最大壓力<br>Max. Pressure<br>( kgf/cm <sup>2</sup> ) | 彈簧壓力<br>Checking Pressure<br>( kgf/cm <sup>2</sup> ) | 最大流量<br>Max. Flow<br>( l/min ) | 重量<br>Weight<br>( kg ) |
|--------------|--|--|--------------------------------|------------------------|
| MSCV-02-A, B | 210  | 1: 8~70<br>2: 35~140<br>3: 70~210                    | 35                             | 1.5                    |
| MSCV-03-A, B |  |  | 70                             | 4.1                    |

### 積層型逆止閥

#### Modular Check Valve

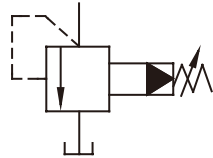
## MCV-02, 03

| 型號<br>Model          | 最大壓力<br>Max. Pressure<br>( kgf/cm <sup>2</sup> ) | 彈簧壓力<br>Checking Pressure<br>( kgf/cm <sup>2</sup> ) | 最大流量<br>Max. Flow<br>( l/min ) | 重量<br>Weight<br>( kg ) |
|----------------------|--|--|--------------------------------|------------------------|
| MCV-02-P, T, A, B, W | 210  | 05: 0.35<br>50: 3.5                                  | 35                             | 1.1                    |
| MCV-03-P, T, A, B, W |  |  | 70                             | 2.5                    |

## 低噪音型先導式溢流閥

### Low Noise Type Pilot Operated Relief Valve

# SBG



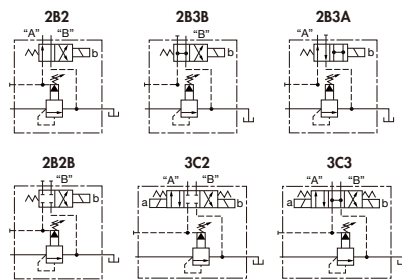
| SBG -            | 06 -   | 3 -  | R -   | 30  |
|------------------|--|--|---|---|
| 型號<br>Model Name | 口徑<br>Thread Connection                      | 壓力調整範圍<br>Pressure Adj. Range  | 調整把手方向<br>Knob Direction  | 設計編號<br>Design Number   |
| SBG              | 03 : PT 3/8"<br>06 : PT 3/4"<br>10 : PT 5/4" | 1 : 7~70 kgf/cm <sup>2</sup><br>2 : 35~140 kgf/cm <sup>2</sup><br>3 : 70~250 kgf/cm <sup>2</sup> | R : 右 P 口側標準型<br>L : 左 T 口側<br><br>R : Right ( P port side standard )<br>L : Left ( T port side ) | 30 : 標準型<br>31 : 調整把手直結型<br><br>30 : standard type<br>31 : adjust directly type |

| 型號<br>Model | 最大壓力<br>Max. Pressure<br>( kgf/cm <sup>2</sup> ) | 壓力調整範圍<br>Pressure Adj. Range<br>( kgf/cm <sup>2</sup> ) | 最大流量<br>Max. Flow<br>( l/min ) | 重量<br>Weight<br>( kg ) |
|-------------|--|--|--------------------------------|------------------------|
| SBG-03      | 250  | 1 : 7~70<br>2 : 35~140<br>3 : 70~250                     | 100                            | 5                      |
| SBG-06      |  |  | 200                            | 6.2                    |
| SBG-10      |  |  | 400                            | 11.3                   |

## 低噪音型電磁控制溢流閥

### Low Noise Type Solenoid Controlled Relief Valve

# SBSG



| SBSG -           | 06 -   | 1PN -  | 3 -  | R -   | 30  |
|------------------|--|--|--|---|---|
| 型號<br>Model Name | 口徑<br>Thread Connection                      | 作動型式<br>Vent Type  | 壓力調整範圍<br>Pressure Adj. Range  | 調整把手方向<br>Knob Direction  | 設計編號<br>Design Number   |
| SBSG             | 03 : PT 3/8"<br>06 : PT 3/4"<br>10 : PT 5/4" | 1PN : 常開式<br>1NP : 常閉式<br>1PN : normally vented<br>1NP : energized to vent | 1 : 7~70 kgf/cm <sup>2</sup><br>2 : 35~140 kgf/cm <sup>2</sup><br>3 : 70~250 kgf/cm <sup>2</sup> | R : 右 P 口側標準型<br>L : 左 T 口側<br><br>R : Right ( P port side standard )<br>L : Left ( T port side ) | 30 : 標準型<br>31 : 調整把手直結型<br><br>30 : standard type<br>31 : adjust directly type |

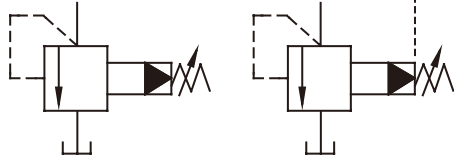
| 型號<br>Model | 最大壓力<br>Max. Pressure<br>( kgf/cm <sup>2</sup> ) | 壓力調整範圍<br>Pressure Adj. Range<br>( kgf/cm <sup>2</sup> ) | 最大流量<br>Max. Flow<br>( l/min ) | 重量<br>Weight<br>( kg ) |
|-------------|--|--|--------------------------------|------------------------|
| SBSG-03     | 250  | 1 : 7~70<br>2 : 35~140<br>3 : 70~250                     | 100                            | 5                      |
| SBSG-06     |  |  | 200                            | 6.2                    |
| SBSG-10     |  |  | 400                            | 11.3                   |



# 先導式溢流閥

## Pilot Operated Relief Valve

# BG



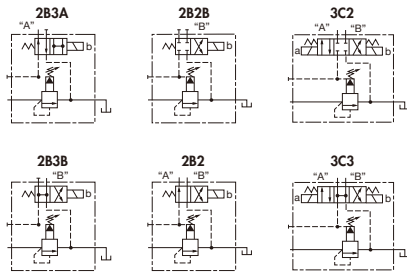
| BG -             | 06 -                                      | 3 -   | 30  |
|------------------|---|---|---|
| 型號<br>Model Name | 口徑<br>Thread Connection                   | 壓力調整範圍<br>Pressure Adj. Range   | 設計編號<br>Design Number   |
| BG               | 03: PT 3/8"<br>06: PT 3/4"<br>10: PT 5/4" | 1: 7~70 kgf/cm <sup>2</sup><br>2: 35~140 kgf/cm <sup>2</sup><br>3: 70~250 kgf/cm <sup>2</sup> | 30: 標準型<br>31: 調整把手直結型<br>30: standard type<br>31: adjust directly type |

| 型號<br>Model | 最大壓力<br>Max. Pressure<br>(kgf/cm <sup>2</sup> ) | 壓力調整範圍<br>Pressure Adj. Range<br>(kgf/cm <sup>2</sup> ) | 最大流量<br>Max. Flow<br>(l/min) | 重量<br>Weight<br>(kg) |
|-------------|---|---|------------------------------|----------------------|
| BG-03       | 250   | 1: 7~70<br>2: 35~140<br>3: 70~250                       | 100                          | 5                    |
| BG-06       |   |   | 200                          | 6.2                  |
| BG-10       |   |   | 400                          | 12.5                 |

# 電磁控制溢流閥

## Solenoid Controlled Relief Valve

# BSG



| BSG -            | 06 -                                      | 1PN -  | 3 -   | 30  |
|------------------|---|--|---|---|
| 型號<br>Model Name | 口徑<br>Thread Connection                   | 作動型式<br>Vent Type  | 壓力調整範圍<br>Pressure Adj. Range   | 設計編號<br>Design Number   |
| BSG              | 03: PT 3/8"<br>06: PT 3/4"<br>10: PT 5/4" | 1PN: 常開式<br>1NP: 常閉式<br>1PN: normally vented<br>1NP: energized to vent | 1: 7~70 kgf/cm <sup>2</sup><br>2: 35~140 kgf/cm <sup>2</sup><br>3: 70~250 kgf/cm <sup>2</sup> | 30: 標準型<br>31: 調整把手直結型<br>30: standard type<br>31: adjust directly type |

| 型號<br>Model | 最大壓力<br>Max. Pressure<br>(kgf/cm <sup>2</sup> ) | 壓力調整範圍<br>Pressure Adj. Range<br>(kgf/cm <sup>2</sup> ) | 最大流量<br>Max. Flow<br>(l/min) | 重量<br>Weight<br>(kg) |
|-------------|---|---|------------------------------|----------------------|
| BSG-03      | 250   | 1: 7~70<br>2: 35~140<br>3: 70~250                       | 100                          | 5.6                  |
| BSG-06      |   |   | 200                          | 7.1                  |
| BSG-10      |   |   | 400                          | 11.8                 |

比例閥

電磁換向閥

各式閥件

## 電磁流量控制閥

Solenoid Throttle Valve

# FKCS, FPR-MGKS



| 型號<br>Model     | 流量調整範圍<br>Flow Adj. Range<br>( l/min ) | 口徑<br>Thread Connection | 自由流量<br>Free Flow<br>( l/min ) | 最大使用壓力<br>Max. Pressure<br>( kgf/cm <sup>2</sup> ) |
|-----------------|--|-------------------------|--------------------------------|--|
| FKCS 002-02     | 0.1 - 2                                | PT 3/8"                 | 30 - 60                        | 70 - 140   |
| FKCS 004-02     | 0.1 - 4                                |                         |                                |  |
| FKCS 006-02     | 0.1 - 6                                |                         |                                |  |
| FKCS 002-03     | 0.1 - 2                                | PT 3/8"                 | 30 - 60                        | 70 - 140   |
| FKCS 004-03     | 0.1 - 4                                |                         |                                |  |
| FKCS 006-03     | 0.1 - 6                                |                         |                                |  |
| FPR-MGKS 002-03 | 0.1 - 2                                | PT 3/8"                 | 30 - 60                        | 70 - 140   |
| FPR-MGKS 004-03 | 0.1 - 4                                |                         |                                |  |
| FPR-MGKS 008-03 | 0.1 - 8                                |                         |                                |  |
| FPR-MGKS 012-03 | 0.1 - 12                               |                         |                                |  |

## 電磁流量控制閥

Solenoid Throttle Valve

# FMS-GO



| 型號<br>Model          | 流量調整範圍<br>Flow Adj. Range<br>( l/min ) | 口徑<br>Thread Connection | 自由流量<br>Free Flow<br>( l/min ) | 最大使用壓力<br>Max. Pressure<br>( kgf/cm <sup>2</sup> ) |
|----------------------|--|-------------------------|--------------------------------|--|
| FMS-GO 02-02 T, P, A | 0.1 - 2                                | PT 1/4"                 | 20                             | 70 - 140   |
| FMS-GO 04-02 T, P, A | 0.1 - 4                                |                         |                                |  |
| FMS-GO 08-02 T, P, A | 0.1 - 8                                |                         |                                |  |
| FMS-GO 02-03 T, P, A | 0.1 - 2                                | PT 3/8"                 | 30 - 60                        | 70 - 140   |
| FMS-GO 04-03 T, P, A | 0.1 - 4                                |                         |                                |  |
| FMS-GO 08-03 T, P, A | 0.1 - 8                                |                         |                                |  |
| FMS-GO 12-03 T, P, A | 0.1 - 12                               |                         |                                |  |

# 流量控制閥

## Throttle Valve

# FKC-G-A



| 型號<br>Model      | 流量調整範圍<br>Flow Adj. Range<br>(l/min) | 口徑<br>Thread Connection | 自由流量<br>Free Flow<br>(l/min) | 最大使用壓力<br>Max. Pressure<br>(kgf/cm <sup>2</sup> ) |
|------------------|--------------------------------------|-------------------------|------------------------------|---|
| FKC-G 02001-02A  | 0.1 - 1                              | PT 1/4"                 | 20                           | 70  |
| FKC-G 02002-02A  | 0.1 - 2                              |                         |                              |   |
| FKC-G 02004-02A  | 0.1 - 4                              |                         |                              |   |
| FKC-G 02001-02LA | 0.1 - 1                              | PT 1/4"                 | 20                           | 70  |
| FKC-G 02002-02LA | 0.1 - 2                              |                         |                              |   |
| FKC-G 02004-02LA | 0.1 - 4                              |                         |                              |   |
| FKC-G 002-03A    | 0.1 - 2                              | PT 3/8"                 | 30                           | 70  |
| FKC-G 004-03A    | 0.1 - 4                              |                         |                              |   |
| FKC-G 008-03A    | 0.1 - 8                              |                         |                              |   |

# 流量控制閥

## Throttle Valve

# FKC-G-B



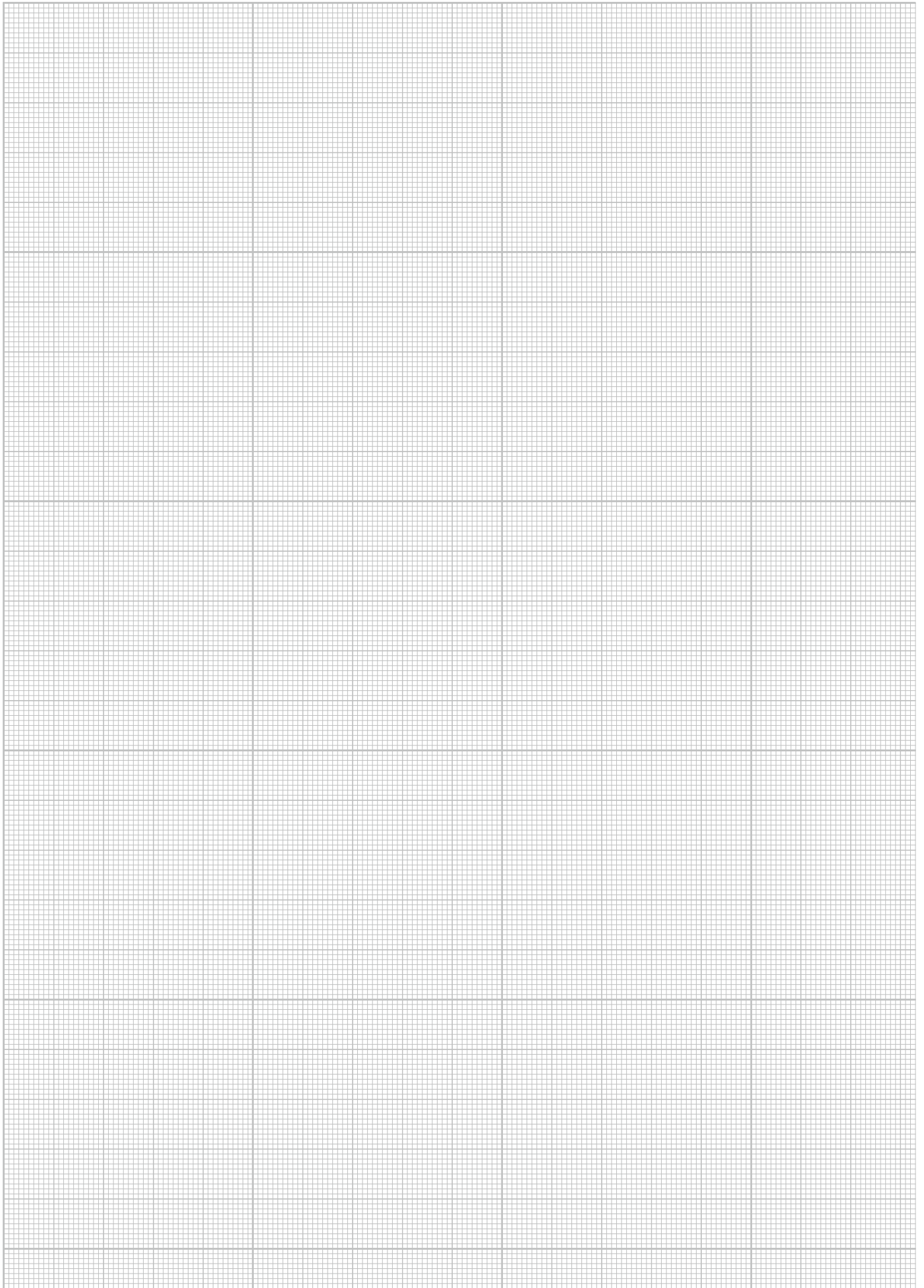
| 型號<br>Model     | 流量調整範圍<br>Flow Adj. Range<br>(l/min) | 口徑<br>Thread Connection | 自由流量<br>Free Flow<br>(l/min) | 最大使用壓力<br>Max. Pressure<br>(kgf/cm <sup>2</sup> ) |
|-----------------|--------------------------------------|-------------------------|------------------------------|---|
| FKC-G 02001-02B | 0.1 - 1                              | PT 1/4"                 | 20                           | 70  |
| FKC-G 02002-02B | 0.1 - 2                              |                         |                              |   |
| FKC-G 02004-02B | 0.1 - 4                              |                         |                              |   |
| FKC-G 002-03B   | 0.1 - 2                              | PT 3/8"                 | 30                           | 70  |
| FKC-G 004-03B   | 0.1 - 4                              |                         |                              |   |
| FKC-G 008-03B   | 0.1 - 8                              |                         |                              |   |



比例閥

電磁換向閥

各式閥件









偉順

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