

HD-\*\*\*-G03-DL-\*\*-AC(單頭)



HD-\*\*\*-G03-LW-\*\*-DC(雙頭)

## 型號說明 Description of Model

HD - 3C2 - G03 - LW - B - S - A

| HD                                                                                         | - | 3C2                                              | - | G03                     | - | LW                                                   |
|--------------------------------------------------------------------------------------------|---|--------------------------------------------------|---|-------------------------|---|------------------------------------------------------|
| HD                                                                                         |   | ***                                              |   | G03                     |   | LW/DL                                                |
| 方向切換閥<br>Direction conversion valve                                                        |   | 軸心回路種類<br>Spool Type                             |   | 閥體口徑尺寸<br>Valve size    |   | 接現形式代號<br>Wiring Connection type                     |
| 油浸式電磁方向閥<br>Flow oil Dipping Solenoid<br>Directional control valve<br>(plug-in board type) |   | 請參閱軸心表<br>Refer to The<br>List Of Spool Function |   | G03 3/8"<br>(D05)(NG10) |   | LW :<br>接線盒形式<br>Box type<br>DL :<br>插頭式<br>Din type |

| B                                                                                                     | -                                                                    | S                                           | -                                        | A                                                        |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------|------------------------------------------|----------------------------------------------------------|
| *                                                                                                     |                                                                      | *                                           |                                          | *                                                        |
| 設計代號<br>Design No.                                                                                    |                                                                      | 切換頻率代號<br>Conversion Frequency              |                                          | 手動切換定位調整型<br>Adjustment Type                             |
| B :<br>高效率低電流<br>電磁方向閥<br>High efficiency<br>and Low current<br>Solenoid Directional<br>control valve | E :<br>大流量<br>電磁方向閥<br>Standard High<br>Flow Wet Pin<br>design valve | 無 :<br>標準型<br>No Mark :<br>Standard<br>type | S :<br>無衝擊型<br>S :<br>Soft shift<br>type | RF :<br>交直流轉換型<br>RF :<br>Rectified coil<br>type         |
|                                                                                                       |                                                                      |                                             |                                          | A :<br>A邊定位型<br>A :<br>A Port<br>Adjustment<br>type      |
|                                                                                                       |                                                                      |                                             |                                          | B :<br>B邊定位型<br>B :<br>B Port<br>Adjustment<br>type      |
|                                                                                                       |                                                                      |                                             |                                          | AB :<br>AB邊定位型<br>AB :<br>A&B Port<br>Adjustment<br>type |



# 高效率低電流值電磁方向閥

| 型號 Model<br>參數 Specification             |                     | AC                  |      |      |      | DC     |      | RF     |      |
|------------------------------------------|---------------------|---------------------|------|------|------|--------|------|--------|------|
|                                          |                     | HD-G03              |      |      |      | HD-G03 |      | HD-G03 |      |
| 使用電壓(V) Voltage(V)                       |                     | 110                 |      | 220  |      | 12     | 24   | 110    | 220  |
|                                          |                     | 50                  | 60   | 50   | 60   |        |      |        |      |
| 保持電流(A)<br>Holding Current(A)            | 新B型<br>New B-type   | 0.62                | 0.69 | 0.27 | 0.33 | 2.03   | 1.48 | 0.54   | 0.27 |
|                                          | 舊F型<br>Older F-type | 0.72                | 0.83 | 0.32 | 0.41 | 3.80   | 1.90 |        |      |
| 啟動電流(A)<br>Start Current(A)              | 新B型<br>New B-type   | 3.41                | 4.14 | 1.58 | 1.95 |        |      |        |      |
|                                          | 舊F型<br>Older F-type | 2.42                | 4.55 | 1.75 | 2.51 |        |      |        |      |
| 防護等級<br>Protection Class                 |                     | IP65                |      |      |      |        |      |        |      |
| 線圈使用銅線等級<br>Insulation Class             |                     | PEWH級<br>PEWH class |      |      |      |        |      |        |      |
| 線圈耐溫程度<br>Maxlimum Tolerable Temperature |                     | 180℃                |      |      |      |        |      |        |      |

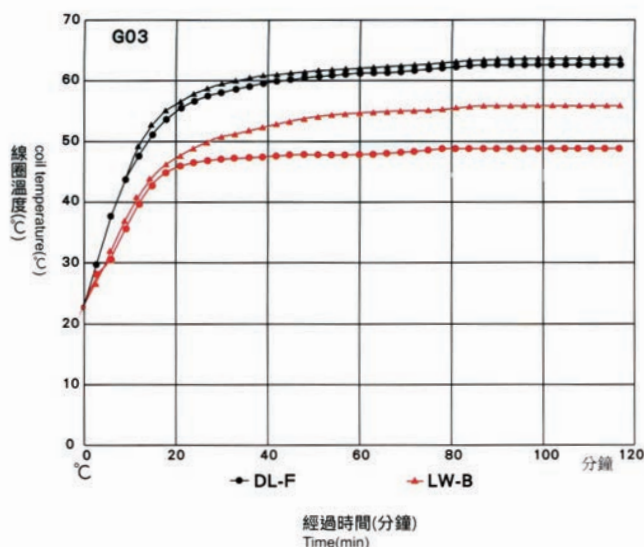
附註：

- 1.使用電壓有±10%的操作範圍。
- 2.本公司線圈備有其他電壓提供。

Notes：

- 1.Within ±10% application of rated voltage.
- 2.If you have special voltage requirements,please contact with us.

新B型VS.F型電磁線圈溫升表現 New B type VS.Old F type temperature rise performance



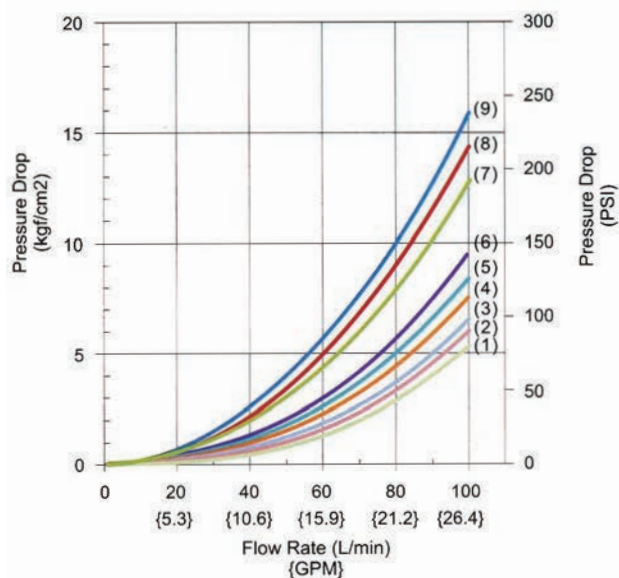
1. 線圈溫度測試時之操作壓力為100gf/cm<sup>2</sup>。
2. 此線圈溫度側是在實驗室恒溫22°C。
3. 以AC220V型線圈為例。

1. The operational pressure in the test of the coil temperature is 100kgf/cm<sup>2</sup>
2. The coil temperature test at a constant temperature of 22 degrees in the laboratory.
3. AC220V coil type,example.

B型系列，E型系列電磁閥之優點 B-type,E-type Valve Feature

1. 本體采雙回油溝設計，將各油溝加大，使其通往流量增加並提升高使用壓力。
  2. 新加裝防及襯墊能使本體承受更高的壓力，讓本體不易變形。
  3. 採用最新型的電磁線圈與電磁管組合，電磁閥在運作過程中之線圈能有效降低溫升，以符合使用者的需求。
  4. 線圈採用最新型特殊設計，能有效達到低耗能、高效率並且降低電流值，能提供與F型的電磁閥相同的大出力與使用壓力。
  5. 產品特性與外觀尺寸與F型電磁閥皆相同，能可與F型電磁閥皆可替換性。
  6. 新B型電磁閥各項產品特性及資料，皆優於F型電磁閥，固可完整取代F型。
  7. 本公司以新B型電磁閥提論，不僅讓貴公司水準提升，產品品質及競爭力優質首選。
1. Dual line tank design reduces the pressure drop resulting in better flow characteristics.
  2. The installation of anti-shock gasket enables the main body to withstand higher pressure and the main body will not deformation easily.
  3. New type of magnetic coil and tube combination,enable the solenoid valve can lower the temperature effectively during operation.
  4. New special design type of coil can lower current and temperature effectively,even energy-saving. Can reach the high flow and pressure as the same as F-type.
  5. The valve's feature and dimension are as the same as F-type and totally interchangeable with F-type solenoid valves.
  6. New B-type solenoid valve will totally interchangeable with F-type solenoid valve in the future.
  7. The new B-type solenoid valve will improve your product quality and increase the company's competitiveness.

## 高效率低電流值電磁方向閥

壓力曲線表 Pressure drop curve(measured at  $v=38\text{mm}^2/\text{s}$  and  $\text{temp.}=50^\circ\text{C}$ )

| Model Numbers | Pressure Drop Curve Number |     |     |     |     |
|---------------|----------------------------|-----|-----|-----|-----|
|               | P→A                        | B→T | P→B | A→T | P→T |
| HD-2B2-G03    | (8)                        | (9) | (3) | (3) | -   |
| HD-2B3-G03    | (7)                        | (8) | (1) | (1) | -   |
| HD-2B8-G03    | (4)                        | -   | (5) | -   | -   |
| HD-3C2-G03    | (3)                        | (3) | (3) | (3) | -   |
| HD-3C3-G03    | (1)                        | (1) | (1) | (1) | (5) |
| HD-3C4-G03    | (3)                        | (2) | (3) | (2) | -   |
| HD-3C40-G03   | (3)                        | (3) | (3) | (3) | -   |
| HD-3C60-G03   | (4)                        | (5) | (4) | (5) | (9) |
| HD-3C9-G03    | (1)                        | (3) | (1) | (3) | -   |
| HD-3C10-G03   | (3)                        | (2) | (3) | (3) | -   |
| HD-3C11-G03   | (1)                        | (3) | (3) | (3) | -   |
| HD-3C12-G03   | (3)                        | (3) | (3) | (2) | -   |
| HD-2D2-G03    | (6)                        | (7) | (4) | (4) | -   |

產品特性表 Description of feature

| 閥尺寸 Model           | HD-G03                                            |                                                           |                             |                                                                                  |                                                        |                                                       |
|---------------------|---------------------------------------------------|-----------------------------------------------------------|-----------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------|
| 參數<br>Specification | 最高使用壓力<br>(kgf/cm <sup>2</sup> )<br>Max. Pressure | 容許背壓<br>(kgf/cm <sup>2</sup> )<br>Allowable Back pressure | 最大流量<br>(L/min)<br>Max flow | 切換頻率(回/分)<br>Conversion frequency<br>(Cycle/min)                                 | 液壓油<br>溫度範圍<br>(°C)<br>Hydraulic oil temperature range | 液壓油<br>黏度範圍<br>(cst)<br>Hydraulic oil viscosity range |
|                     | 315                                               | 70~160                                                    | 100                         | AC、DC型：240<br>RC型：120<br>RS型：120<br>AC、DC type：240<br>RC type：120<br>RD type：120 | -15~+70                                                | 10~400<br>(ISO VG46、68)                               |

附註：

最大流量、最大壓力、容許背壓隨回路而異。

Notes：

Max.flow,max.pressure&amp;allowable back pressure will be varied to different circuits.

## 高效率低電流值電磁方向閥

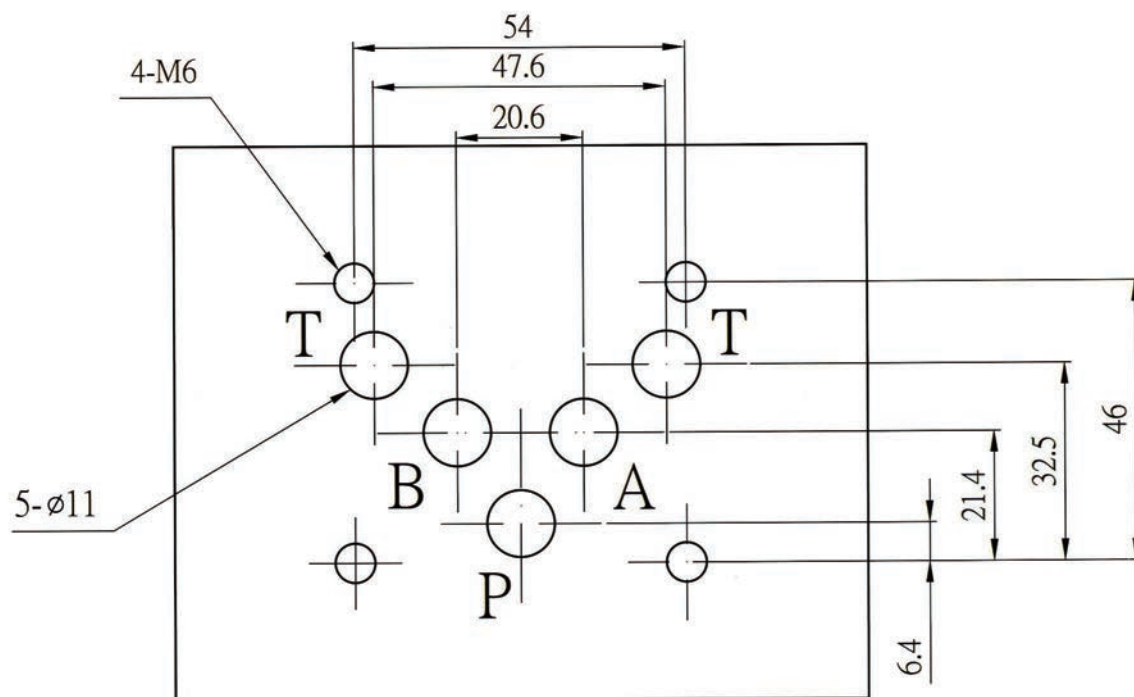
## 注意事項 Notice

1. 無彈簧複歸型以水準安裝為佳。
  2. 安裝面請保持3.2z的表面粗度以下。
  3. F型電磁管與新B、E行不建議互換。
  4. 軸心尺寸不同，不可互換。
1. Springless type valve should be installed horizontally.
  2. Installation surface and valve surface should be keep under 3.2z surface roughness.
  3. F-type tube are not interchangeable with the new B,E-type.
  4. If the spool's sizes are different, that can not interchangeable.

## 附件 Accessories

1. G03：閥本體固定內六角螺絲M6x35x4支。
  2. DL型線圈接頭皆附保護蓋。
  3. 閥本體附上保護底板。
1. G03：Screw of main body M6x35L.....4pcs.
  2. DL-type coil socket with protective cover.
  3. Main body with sub plate.

## 外觀尺寸圖及產品結構圖 View&amp;Component

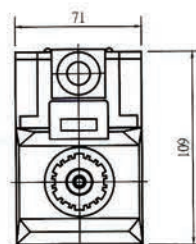
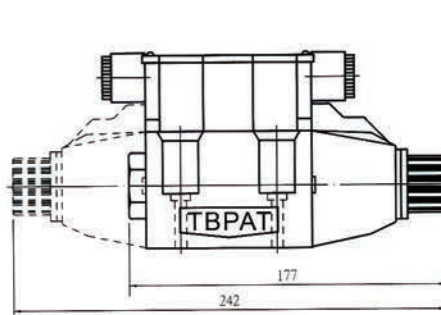


# 高效率低電流值電磁方向閥

## 外觀尺寸圖 (CAD) Notice

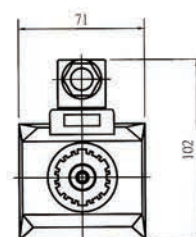
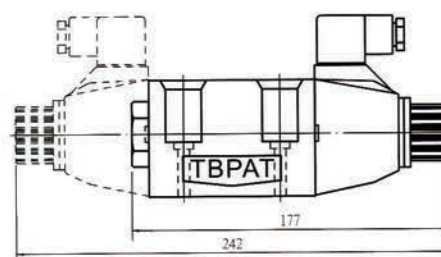
### 03LW-AC

LW-AC-單頭：重量(Weight) 3.6 kg  
LW-AC-雙頭：重量(Weight) 4.4 kg



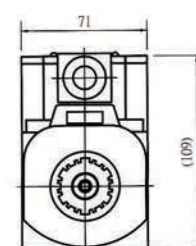
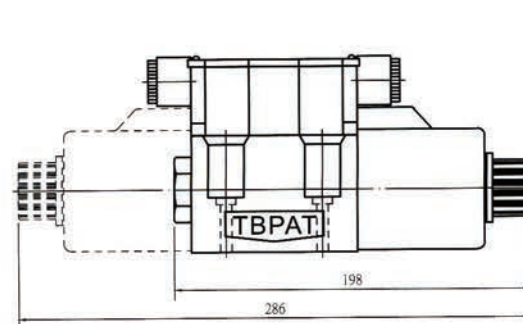
### 03DL-AC

DL-AC-單頭：重量(Weight) 3.4 kg  
DL-AC-雙頭：重量(Weight) 4.3 kg



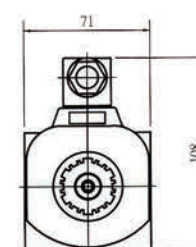
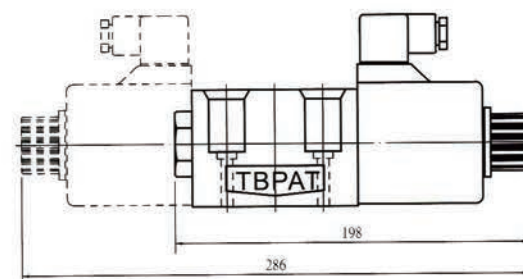
### 03LW-DC

LW-DC-單頭：重量(Weight) 4.0 kg  
LW-DC-雙頭：重量(Weight) 5.4 kg

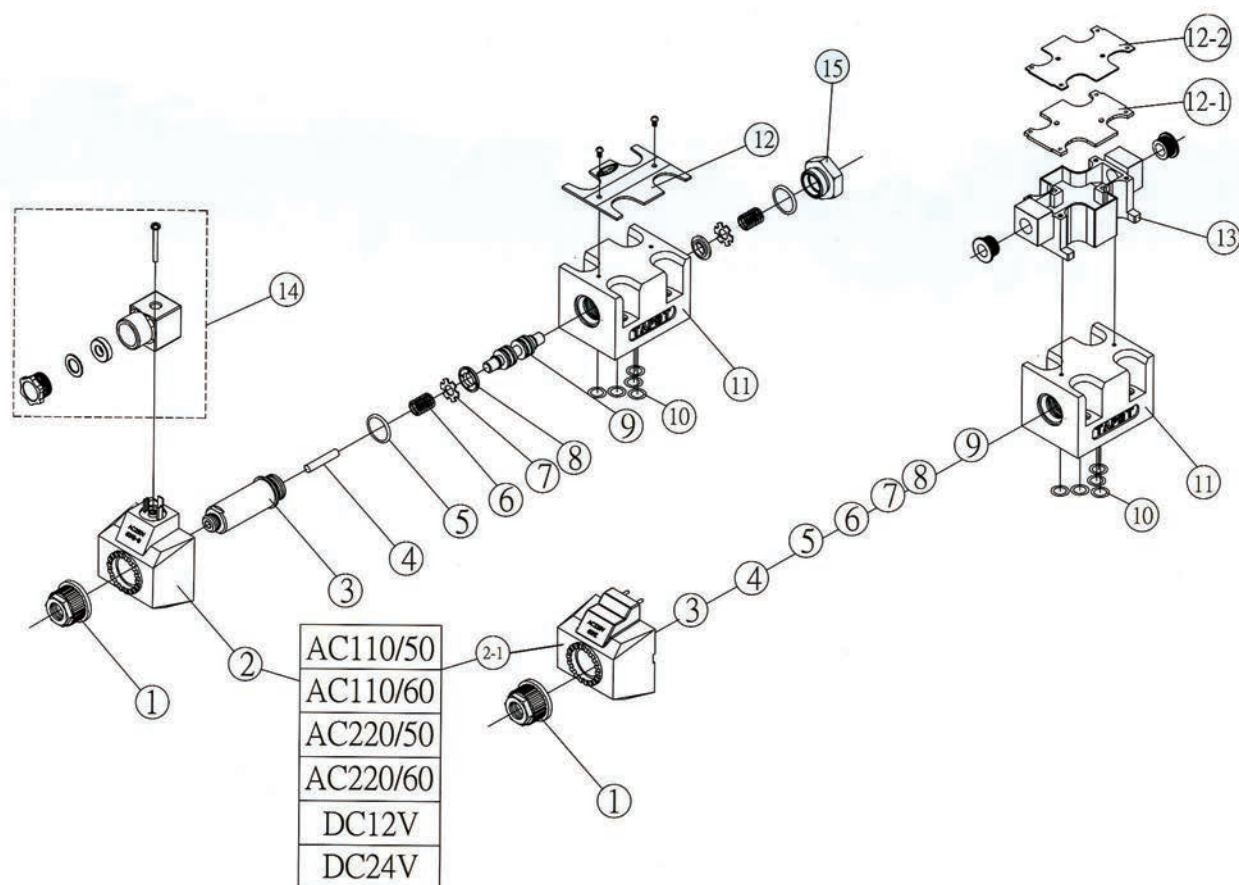


### 03DL-DC

DL-DC-單頭：重量(Weight) 4.1 kg  
DL-DC-雙頭：重量(Weight) 5.2 kg



產品結構圖 (CAD)



- |              |               |
|--------------|---------------|
| 1. 塑膠螺帽      | Screw Nut     |
| 2. DL線圈      | DL Coil       |
| 2-1 LW線圈     | LW Coil       |
| 3. 電磁管       | Tube          |
| 4. 撞擊桿       | Hitting Staff |
| 5. N-119 O型環 | N-119 O-ring  |
| 6. 彈簧        | Spring        |
| 7. 彈簧座       | Spring Set    |
| 8. 防衝擊襯墊     | Body Washer   |

- |                |                        |
|----------------|------------------------|
| 9. 軸心          | Spool                  |
| 10. 本體P-12 O型環 | Body P-12 O-ring       |
| 11. 閥體         | Main Body              |
| 12. DL銘板       | DL Nameplate           |
| 12-1 透明上蓋      | Transparent Panel      |
| 12-2 LW銘板      | LW Nameplate           |
| 13. BOX接線盒     | Plug-in pilot light    |
| 14. DIN接頭指示燈   | Terminal box connector |
| 15. 本體螺帽       | Body Screw Nut         |

## G02、G03各種軸心功能明細表



G02、G03各種軸心功能明細表 LIST OF SPOOL FUNCTIONS FOR G02、G03

| 彈簧偏心<br>3位置<br>Spring<br>off set<br>3 Position | 圖形符號<br>Graphic Symbols<br>標準組立<br>Standard |
|------------------------------------------------|---------------------------------------------|
| 3C2                                            |                                             |
| 3C3                                            |                                             |
| 3C4                                            |                                             |
| 3C40                                           |                                             |
| 3C5                                            |                                             |
| 3C6                                            |                                             |
| 3C60                                           |                                             |
| 3C7                                            |                                             |
| 3C8                                            |                                             |
| 3C9                                            |                                             |
| 3C10                                           |                                             |
| 3C11                                           |                                             |
| 3C12                                           |                                             |
| 3C25                                           |                                             |
| 3C29                                           |                                             |
| 3C48                                           |                                             |
| 3C62                                           |                                             |
| 3C64                                           |                                             |
| 3C67                                           |                                             |
| 3C89                                           |                                             |

| 彈簧偏心<br>3位置<br>Spring<br>off set<br>3 Position | 圖形符號<br>Graphic Symbols<br>標準組立<br>Standard |
|------------------------------------------------|---------------------------------------------|
| 3C94                                           |                                             |
| 3C94B                                          |                                             |
| 彈簧偏心<br>2位置<br>Spring<br>off set<br>2 Position | 圖形符號<br>Graphic Symbols<br>標準組立<br>Standard |
| 2A2                                            |                                             |
| 2A3                                            |                                             |
| 2A14                                           |                                             |
| 2A2L                                           |                                             |
| 2A3L                                           |                                             |
| 2A14L                                          |                                             |
| 2B2                                            |                                             |
| 2B2L                                           |                                             |
| 2B3                                            |                                             |
| 2B3L                                           |                                             |
| 2B8                                            |                                             |
| 2B8L                                           |                                             |
| 2B27                                           |                                             |
| 2B28                                           |                                             |
| 2B29                                           |                                             |
| 2B29L                                          |                                             |

| 彈簧偏心<br>2位置<br>Spring<br>off set<br>2 Position | 圖形符號<br>Graphic Symbols<br>標準組立<br>Standard |
|------------------------------------------------|---------------------------------------------|
| 2D2                                            |                                             |
| 2D3                                            |                                             |
| 2D4                                            |                                             |
| 2D40                                           |                                             |
| 2D7                                            |                                             |
| 2D2A                                           |                                             |
| 2D3A                                           |                                             |
| 2D4A                                           |                                             |
| 2D40A                                          |                                             |
| 2D5A                                           |                                             |
| 2D6A                                           |                                             |
| 2D60A                                          |                                             |
| 2D7A                                           |                                             |
| 2D9A                                           |                                             |
| 2D10A                                          |                                             |
| 2D11A                                          |                                             |
| 2D12A                                          |                                             |

## G02、G03各種軸心功能明細表

G02、G03各種軸心功能明細表 LIST OF SPOOL FUNCTIONS FOR G02、03

| 彈簧偏心<br>2位置<br>Spring<br>off set<br>2 Position | 圖形符號<br>Graphic Symbols |                  |
|------------------------------------------------|-------------------------|------------------|
|                                                | 標準組立<br>Standard        | 反向組立<br>Standard |
| 2B2A                                           |                         |                  |
| 2B3A                                           |                         |                  |
| 2B4A                                           |                         |                  |
| 2B40A                                          |                         |                  |
| 2B5A                                           |                         |                  |
| 2B6A                                           |                         |                  |
| 2B60A                                          |                         |                  |
| 2B7A                                           |                         |                  |
| 2B8A                                           |                         |                  |
| 2B9A                                           |                         |                  |
| 2B10A                                          |                         |                  |
| 2B11A                                          |                         |                  |
| 2B12A                                          |                         |                  |
| 2B25A                                          |                         |                  |
| 2B29A                                          |                         |                  |
| 2B48A                                          |                         |                  |
|                                                |                         |                  |
|                                                |                         |                  |

| 彈簧偏心<br>2位置<br>Spring<br>off set<br>2 Position | 圖形符號<br>Graphic Symbols |                  |
|------------------------------------------------|-------------------------|------------------|
|                                                | 標準組立<br>Standard        | 反向組立<br>Standard |
| 2B2B                                           |                         |                  |
| 2B3B                                           |                         |                  |
| 2B4B                                           |                         |                  |
| 2B40B                                          |                         |                  |
| 2B5B                                           |                         |                  |
| 2B6B                                           |                         |                  |
| 2B60B                                          |                         |                  |
| 2B7B                                           |                         |                  |
| 2B8B                                           |                         |                  |
| 2B9B                                           |                         |                  |
| 2B10B                                          |                         |                  |
| 2B11B                                          |                         |                  |
| 2B12B                                          |                         |                  |
| 2B25B                                          |                         |                  |
| 2B29B                                          |                         |                  |
| 2B48B                                          |                         |                  |
|                                                |                         |                  |
|                                                |                         |                  |



## 無衝擊型電磁方向閥

## 型號說明 Description of Model

HD - 3C2 - G03 - LW - B - RF - A

| HD                                                                                         | - | 3C2                                              | - | G03                     | - | LW                                                   |
|--------------------------------------------------------------------------------------------|---|--------------------------------------------------|---|-------------------------|---|------------------------------------------------------|
| HD                                                                                         |   | ***                                              |   | G03                     |   | LW/DL                                                |
| 方向切換閥<br>Direction conversion valve                                                        |   | 軸心回路種類<br>Spool Type                             |   | 閥體口徑尺寸<br>Valve size    |   | 接現形式代號<br>Wiring Connection type                     |
| 油浸式電磁方向閥<br>Flow oil Dipping Solenoid<br>Directional control valve<br>(plug-in board type) |   | 請參閱軸心表<br>Refer to The<br>List Of Spool Function |   | G03 3/8"<br>(D05)(NG10) |   | LW :<br>接線盒形式<br>Box type<br>DL :<br>插頭式<br>Din type |

| B                                                                                                     | -                                                                    | RF                                               | -                                                   | A                                                                                                               |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| *                                                                                                     |                                                                      | *                                                |                                                     | *                                                                                                               |
| 設計代號<br>Design No.                                                                                    |                                                                      | 切換頻率代號<br>Conversion Frequency                   |                                                     | 手動切換定位調整型<br>Adjustment Type                                                                                    |
| B :<br>高效率低電流<br>電磁方向閥<br>High efficiency<br>and Low current<br>Solenoid Directional<br>control valve | E :<br>大流量<br>電磁方向閥<br>Standard High<br>Flow Wet Pin<br>design valve | RF :<br>交直流轉換型<br>RF :<br>Rectified coil<br>type | A :<br>A邊定位型<br>A :<br>A Port<br>Adjustment<br>type | B :<br>B邊定位型<br>B :<br>B Port<br>Adjustment<br>type<br>AB :<br>AB邊定位型<br>AB :<br>A&B Port<br>Adjustment<br>type |

## 產品特色 Feature

1. 采流量控制及機械式雙阻尼特殊設計。
2. 減少衝擊減少震動，使機器操作時更加平順。
3. 線圈加裝保護電路，提高使用壽命。
4. 線圈及RF指示燈接線盒采分離式設計，可獨立更換。

1. The special design of the dual flow control and mechanical damping.
2. Reducing shock and vibration to mark machine running smoothly.
3. The coil with protection circuit to improve life time.
4. Coil and RF connector with pilot light are separate design, can be replaced individually.

## 注意事項 Notice

1. 無衝擊型僅提供於DC、RF型線圈。
2. AC電壓無提供此型號。
3. 無衝擊型之電磁管不可與一般型互換。
4. RFN型線圈需搭配RF專用電器接頭，否則無整流效果，且有啟動不良及線圈燒毀之現象。

1. The soft shift only applies to DC, RF type coil.
2. In this type without AC voltage.
3. The soft shift type's coil and tube can't interchange with the general type.
4. RFN coil need RF dedicated connector. Otherwise, would has a poor rectify efficiency, a poor start function and coil burnt.

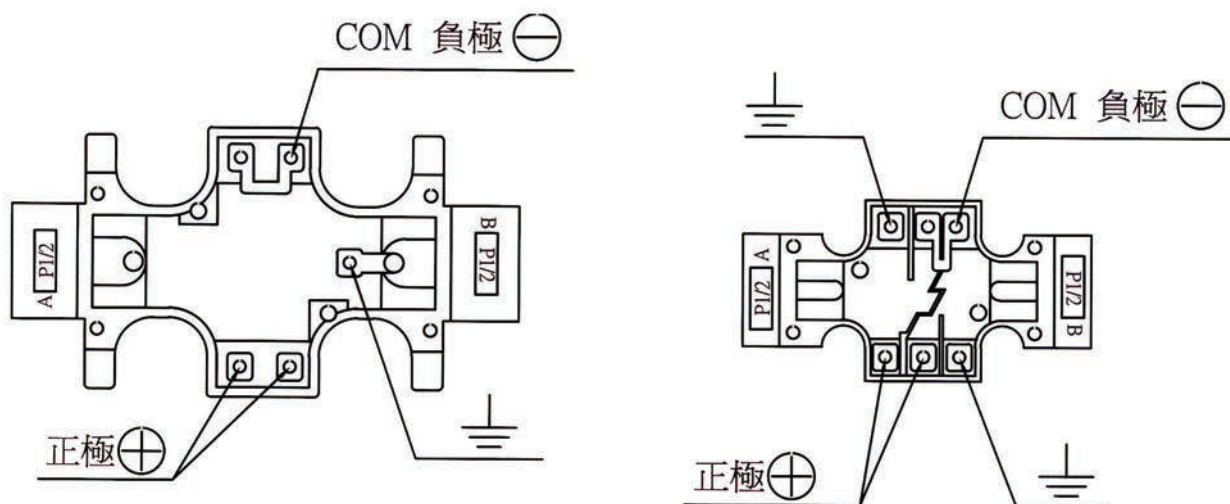
## 接線盒及指示燈使用說明

### 盒式 (BOX) 接線盒 Terminal Box connector

1. 如為雙動閥，本接線盒內之共線COM均以並聯免除再自行共線，簡單容易使用。
2. 接線盒同時具有LED指示燈，且PC板與指示燈均采插入式設計，方便更換。
3. 電壓DC12V-DC100V  
電壓AC24V-AC380V
4. 接線盒備有RF型，電壓RF110V、RF220V。

1. As Dual coil solenoid valve, its contact COM are connected in parallel to avoid additional wiring, it is simple easy to use.
2. Connector with LED pilot lights and the PC board with lights plug-in design. If the lights burned out ,the replacement is easy and simple.
3. Voltage DC12V-DC100V ; AC24V-AC380V
4. The connectors with RF type : Voltage RF 110V , RF220V.

### 盒式 (BOX) 接線盒配置圖

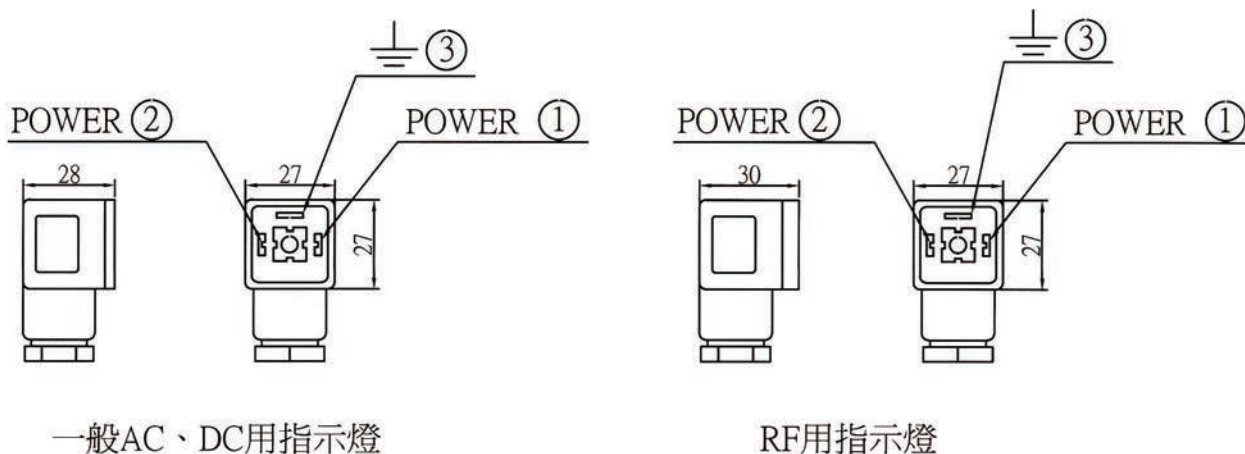


## 接線盒及指示燈使用說明

### 插头式(DIN)接線盒 Plug-in connector

1. 本插頭是根據DIN43650規格，並且達到IP65的保護等級。IP65的意義是完全的保護能力，如灰塵及低壓水柱。雖然線圈各方面均防水但不能直接安裝于水中或保持在水面下，或有爆炸危險、潮濕、腐蝕劑、發黴等工作環境。
  2. 接線盒為透明外殼同時具有LED指示燈。
  3. 電壓DC12V-DC100V  
電壓AC24V-AC380V
1. The connector is base on DIN43650 specifications and achieving IP65 protection IP65 means complete protection, such as dust and lower-pressure water column. Although the coil is waterproof but can not be installed in the water or kept below the water surface,even explosion hazard,wet,corrosive,moldy working environment.
  2. The connector is transparent with LED pilot lights.
  3. Voltage DC12V-DC100V ; AC24V-AC380V

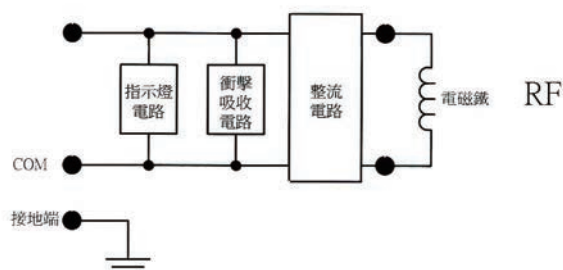
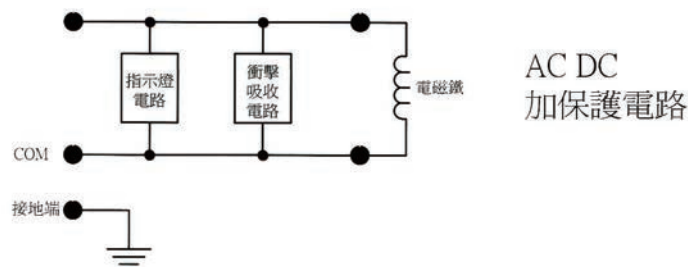
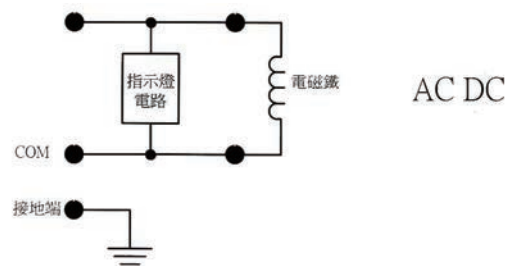
### 頭式(DIN)接線盒指示燈配線圖



## RF型插頭式 (DIN) 接線盒 RF Type Plug-in connector

1. 本插頭是根據DIN43650規格，並且達到IP65的保護等級。IP65的意義是完全的保護能力，如灰塵及低壓水柱。雖然線圈各方面均防水但不能直接安裝于水中或保持在水面下，或有爆炸危險、潮濕、腐蝕劑、發黴等工作環境。
  2. 接線盒為透明外殼同時具有LED指示燈。
  3. 電壓RF110V、RF220V。
  4. 本接線盒內含整流與保護電路。
  5. 本接線盒符合ROHS規範。
1. The connector is base on DIN43650 specifications and achieving IP65 protection IP65 means complete protection, such as dust and lower-pressure water column. Although the coil is waterproof but can not be installed in the water or kept below the water surface,even explosion hazard,wet,corrosive,moldy working environment.
  2. The connector is transparent with LED pilot lights.
  3. Voltage RF110V,RF220V
  4. The connector containing rectifier and protection circuit.
  5. The connectors are conform to standard ROHS.

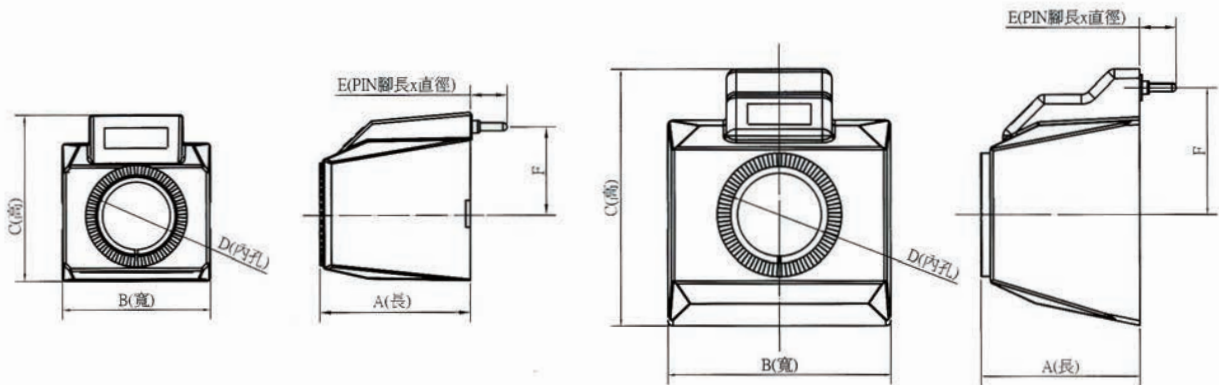
## 配電圖、配線圖 Power Distribution and Wiring Diagram



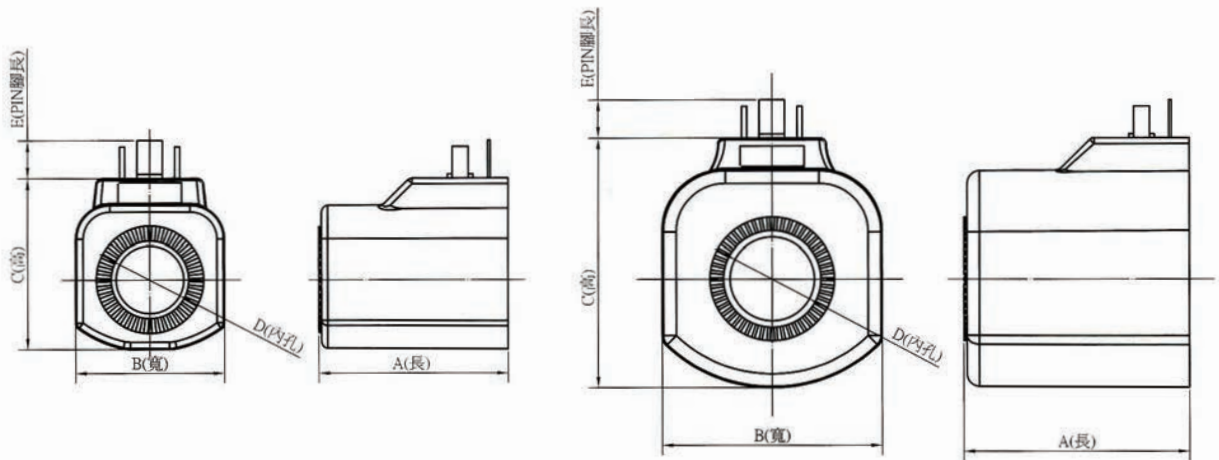
## 接線盒及指示燈使用說明



線圈 外觀尺寸圖 Terminal Box contactor



|           | A(長) | B(寬) | C(高)  | D(內孔) | E(PIN腳長x直徑) | F     |
|-----------|------|------|-------|-------|-------------|-------|
| G02AC- LW | 47.2 | 46.8 | 53.15 | 21.3  | 11.5x2.5    | 28    |
| G02DC- LW | 59.3 | 47   | 54    | 21.3  | 11.5x2.5    | 28    |
| G03AC- LW | 50   | 69.8 | 81    | 26.3  | 11.5x2.5    | 40.15 |
| G03DC- LW | 71   | 69   | 80.52 | 26.3  | 11.5x2.5    | 40.15 |



|           | A(長) | B(寬) | C(高) | D(內孔) | E(PIN腳長) |
|-----------|------|------|------|-------|----------|
| G02AC- DL | 47.5 | 46.8 | 52.5 | 21.3  | 12.5     |
| G02DC- DL | 59.3 | 47   | 54   | 21.3  | 12.5     |
| G03AC- DL | 50   | 69.8 | 73   | 26.3  | 12.5     |
| G03DC- DL | 71   | 69   | 79   | 26.3  | 12.5     |