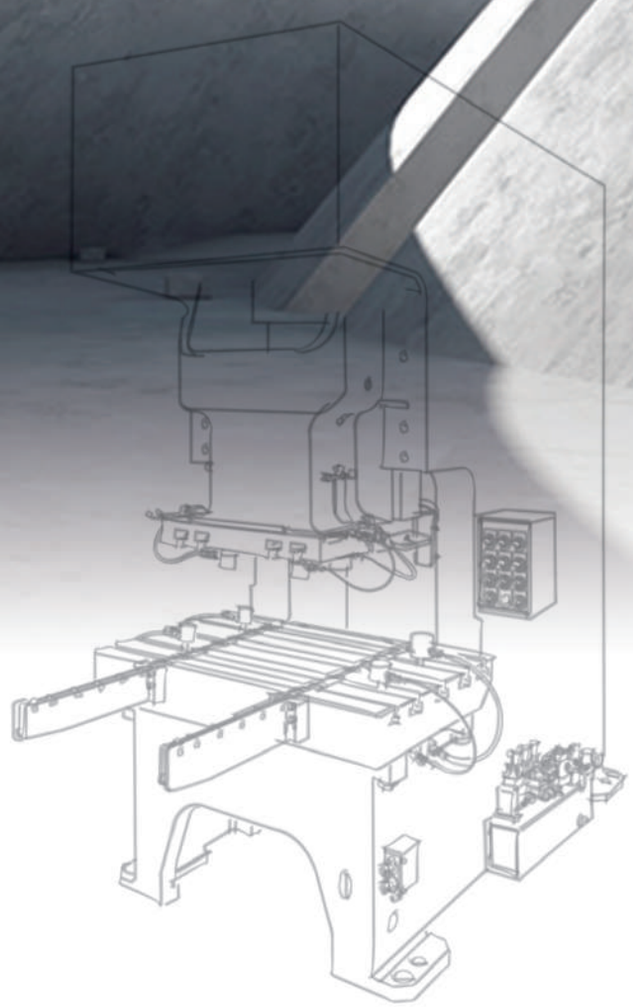
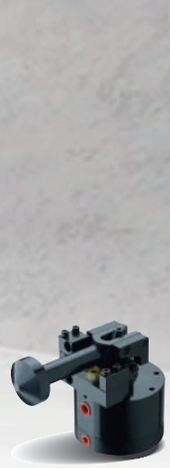
SANDSUN
山田順精機

# QUICK DIE CHANGE SYSTEM

## 快速換模系統

沖床 PRESS | 油壓機 HYDRAULIC PRESS















# QUICK DIE CHANGE SYSTEM 快速換模系統

It's an era for making high frequence of die changing with multiple patterns and small quantity. In order to save die changing time and ensure operational safety, it is just in time to apply Quick Die Change System.

迎接少量多樣高頻率換模生產形態的時代，爭取換模時效、確保操作安全─正是導入快速換模系統的最佳時機。



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## APPLICATION
適用於

- PRESS & HYDRAULIC PRESS
  沖床、油壓機
- DIFFERENT AUTOMATIC MACHINE CLAMP SYSTEM
  各種自動化機台夾持系統

## DIE LIFTER 舉模滑軌

**Model : DL, DB**

- Hydraulic type
- Install in the T-slot or U-slot

**DL、DB 型**

- 油壓式
- 裝置於台盤 T 型槽或 U 槽

**Model : DS**

- Spring type
- Spread equally and install in the plate.

**DS 型**

- 彈簧式
- 平均分散於台盤上

**Model : DLS**

- Spring type
- Install in the T-slot or U-slot

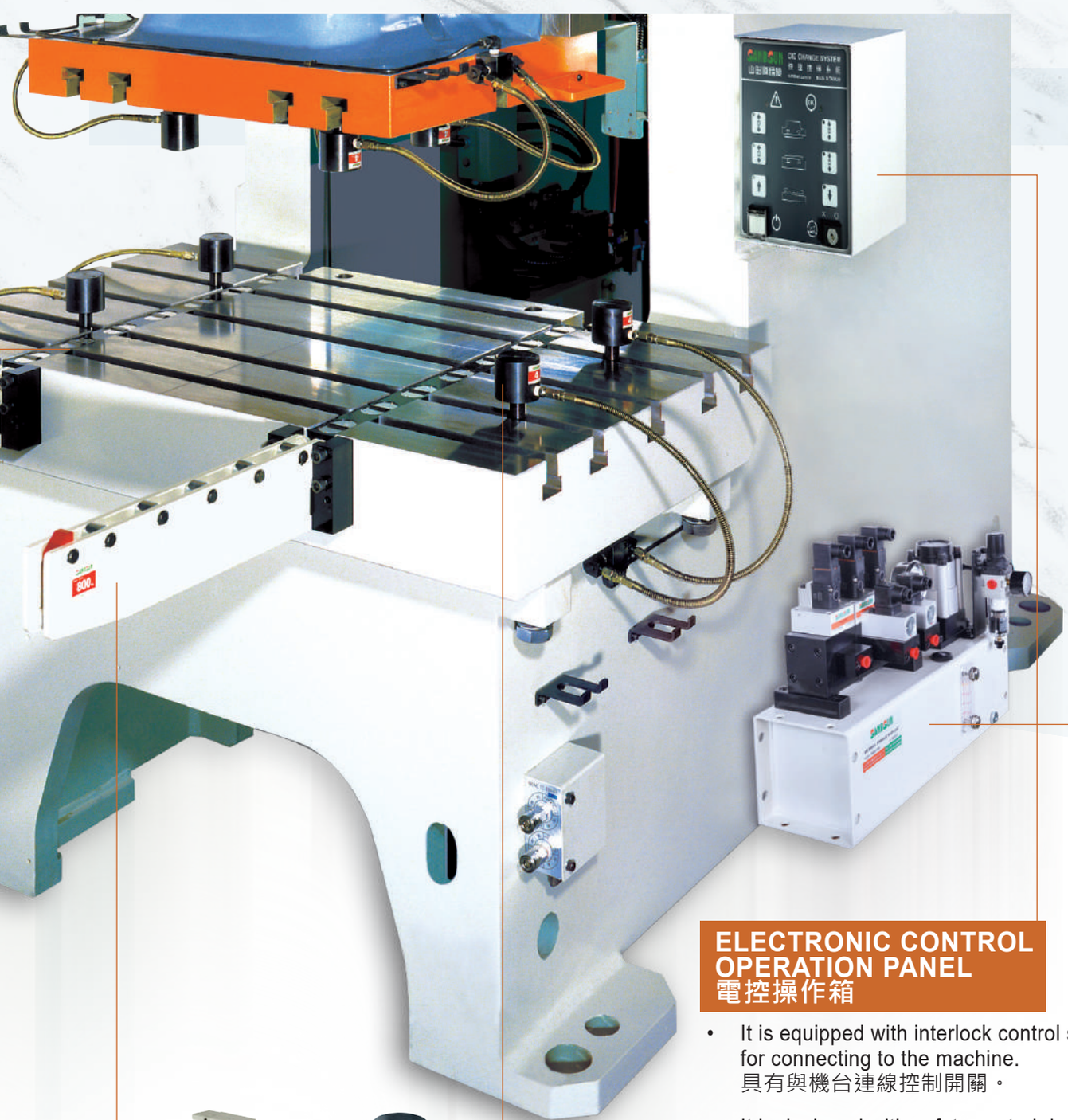
**DLS 型**

- 彈簧式
- 裝置於台盤 T 型槽或 U 槽



## DIE ARM 移模支臂

- Can pull out and push in the die from the plate easily.
  可使模具輕易從台盤拉出或推入。
- There are 4 easy operative ways for the storage when it is not used.
  不用時配合操作方便有四種存放方式供選擇。



## ELECTRONIC CONTROL OPERATION PANEL
## 電控操作箱

- It is equipped with interlock control switch for connecting to the machine.
  具有與機台連線控制開關。
- It is designed with safety control device which prevents any operation error.
  具有防止錯誤操作之安全控制。




## AIR DRIVEN HYDRAULIC PUMP UNIT
## 氣動油壓泵浦單元

- Capable of pressure inspection and interlocking with machines.
  具檢知功能可與機台連線。
- The movements between each devices will be pined down mutually in order to ensure operational safety.
  各配備之間的動作亦可互相牽制，以確保最佳操作安全。

## DIE CLAMP 夾具

- Replacing the traditional method which uses screws to fix dies.
  取代傳統用螺絲鎖模方式。
- Using T-slots to lock or fix directly on the plate.
  利用台盤 T 型槽鎖固或直接固定於台盤。

# 03 SELECTION OF SYSTEM COMPONENTS 選用規範

## THE CHOICE OF AIR DRIVEN HYDRAULIC PUMP UNIT 氣動油壓泵浦單元之選定

| NUMBER OF CIRCUIT 迴路數 | CHOICE STANDARD 選用依據 | | CONTROL MODEL 控制型式 |
|---|---|---|---|
| 1 | Single. For the operation of the die clamp on the upper or lower die. | 單一供上模或下模夾具 | NO |
| 1 | The operations of the upper and lower die clamps use the same circuit. | 上下模夾具使用同一迴路 | NO |
| 1 | Single. For the operation of the die lifter. | 單一供舉模滑軌 | NC |
| 2 | Separated circuit operation for upper and lower die clamps. | 上下模夾具各自迴路分開 | NO |
| 2 | The same circuit operation for upper and lower die clamps.<br>One circuit is for the operation of the die lifter. | 上下模夾具使用同一迴路<br>一迴路供舉模滑軌 | NO<br>NC |
| 3 | Separated circuit operation for upper and lower die clamps.<br>One circuit is for the operation of the die lifter. | 上下模夾具各自迴路分開<br>一迴路供舉模滑軌 | NO<br>NC |

Please refer to Page 4 for the details.
詳述請參閱 P4

## THE CHOICE OF DIE CLAMP 夾具之選用

**MODEL 選用型式**

CA:
The template with the U slot
模板有 U 型溝

CB:
The template without the U slot
模板無 U 型溝

Please refer to Page 5~9 for the details.
詳述請參閱 P5 ~ P9

**CHOICE STANDARD 選用依據**

- Total clamping force which the machine needs (∑F) = machine capacity (tons) x15~20%
- The ratio of total clamping force is as follows:
  Upper clamp (∑ F1)= ∑ Fx60%
  Lower clamp (∑ F2)= ∑ Fx40%
- Each die clamping force (F) :
  according to the die clamp quantity (n) for each upper and lower die.
  Upper clamp F=∑ F1/n (tons)
  Lower clamp F=∑ F2/n (tons)

- 機台所需總夾力 (∑ F) = 機台能力 ( 噸數 )x15~20%
- 總夾力 (∑ F) 分配比率 :
  上模夾力 (∑ F1)=∑ Fx60%
  下模夾力 (∑ F2)=∑ Fx40%
- 每只夾具力 (F): 依上下模各使用夾具數 (n) 求得
  上模夾具 F=∑ F1/n ( 噸 )
  下模夾具 F=∑ F2/n ( 噸 )

| Bolt Size | M16 | M18 | M20 | M24 | M30 | M38 |
|---|---|---|---|---|---|---|
| Clamping force(ton) | 1-3 | 2-4 | 4-6 | 6-10 | 8-15 | 15-20 |

## THE CHOICE OF DIE LIFTER 舉模滑軌之選用

**MODEL 選用型式**

DL / DB/ DS / DLS

**CHOICE STANDARD 選用依據**

- The weight of dies and the operational request → Model of die lifter.
- The size of the plate → the length of the die lifter.
- The size of the T or U slot for installing the die lifter.

- 模具重量及使用需要→滑軌型式
- 台盤尺寸→滑軌長度
- 裝設滑軌之 T、U 形槽尺寸

Please refer to Page 10~12 for the details.
詳述請參閱 P10 ~ P12

## THE CHOICE OF DIE ARM 移模支臂之選定

**MODEL 選用型式**

RC / RD / RE / RF / RS

**CHOICE STANDARD 選用依據**

- The size of the die → the length of the arm
- The weight of the die → the maximum capacity of the arm
- The method of storage → the model of the arm

- 模具尺寸→支臂長度
- 模具重量→支臂最大荷重
- 收存方式→支臂型式

Please refer to Page 13~16 for the details.
詳述請參閱 P13 ~ P16

## MODEL PB•PC



PB-1P1V

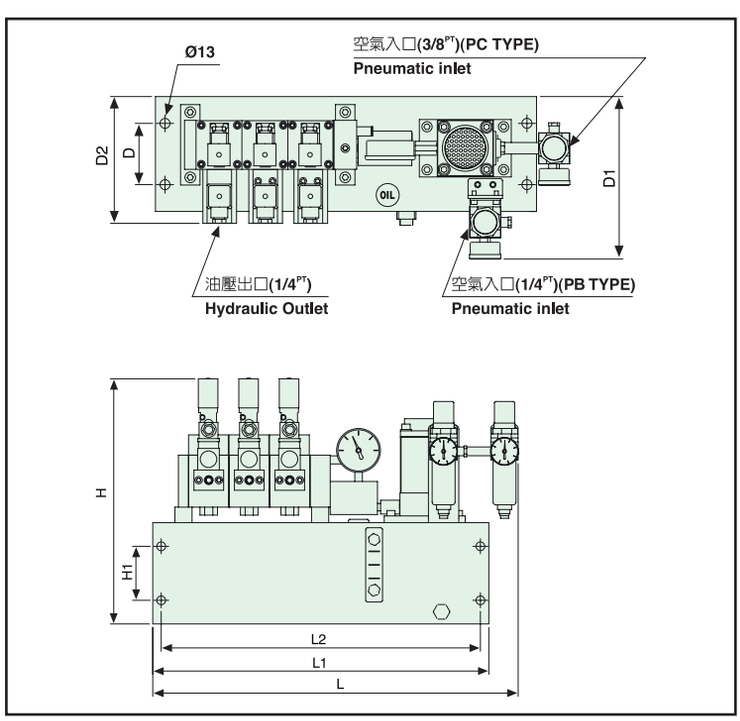


PB-1P3V

- The hydraulic pump is driven by air. Once the hydraulic pressure reaches the pressure setting, it stops pumping which is energy saving. Meanwhile, if the working pressure reduces, the pump would supply pressure automatically to keep working pressure continuously.
- The circuit control system is designed with the function of checking and avoiding oil leakage. If pneumatic pressure out, the hydraulic pressure still maintains.
- It is capable of pressure inspection and connecting to machines.
- It is suggested to adopt pump model PC12 when used with clamp model CA&CB-16 or 25.
- 利用空氣壓力驅動泵浦，出口油壓達設定壓力即停止作動不需繼續消耗能源，出口壓力下降則自動補壓，具持續保持該壓力功能。
- 迴路控制系統具逆止功能，空氣壓力消失時油壓壓力可保持。
- 具壓力檢知功能，可與機台連線。
- 使用 CA 及 CB-16 或 25 型夾具建議使用 PC12 型泵浦。

## MODEL SELECTION 型式選定

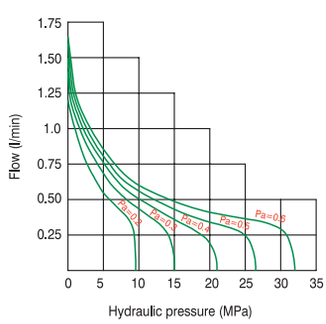
| ① | – | 1 | P | ② | V |
|---|---|---|---|---|---|
| **Pump Model 泵浦型式** | | Pump/ 泵浦 :1(pcs) | | No. of control circuit / 迴路數 :1, 2, 3, 4 | **V**: Non-leak valve control 氣控閥控制 |
| PB08 | | | | | |
| PC12 | | | | | |



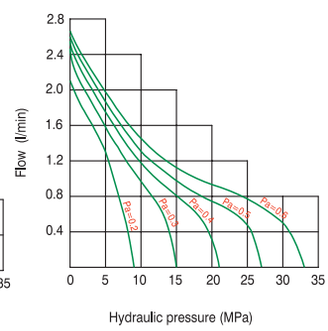

| Model 型式 | L | L1 | L2 | H | H1 | D | D1 | D2 | Volume |
|---|---|---|---|---|---|---|---|---|---|
| PB08-1P1V | - | 378 | 353 | 367 | 80 | 80 | 235 | - | 6L |
| PB08-1P2V | - | 438 | 413 | 367 | 80 | 80 | 235 | - | 7L |
| PB08-1P3V | - | 498 | 473 | 367 | 80 | 80 | 235 | - | 8L |
| PB08-1P4V | - | 588 | 563 | 367 | 80 | 80 | 235 | - | 10L |
| PC12-1P3V | 560 | - | 473 | 367 | 80 | 80 | - | 166 | 8L |

The air combination unit of Model PBO8 in the front, and Model PC12 on the right side.
註：PB08 型二點組合裝於前方，PC12 型裝於右側。

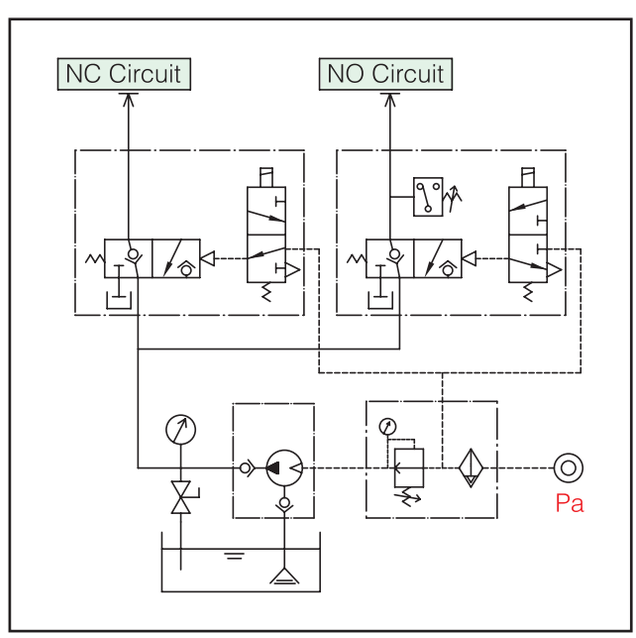
### PB08




### PC12




Pa : Pneumatic pressure 氣壓壓力 (MPa)



## MODEL CA


CA


CA-B

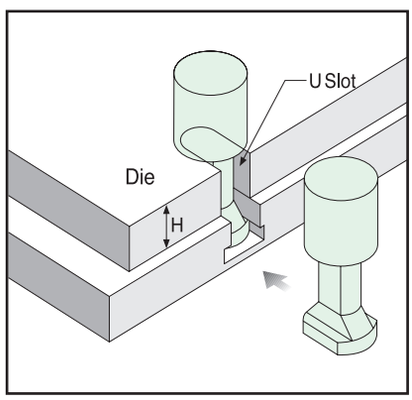

CA-C

## MODEL SELECTION 型式選定

CA – ① ②

Capacity of clamp /
夾力 : 1 ~ 25 (tons)

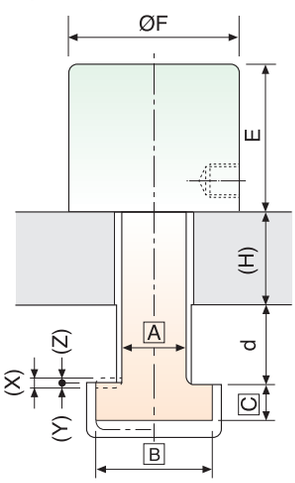
- **EMPTY** : Standard type
  無標示 : 標準式
- **C** : Pneumatic cylinder movable type
  氣缸移動式
- **B** : Fixed type
  固定式
- **V** : Temperature -resisting type
  耐高溫式

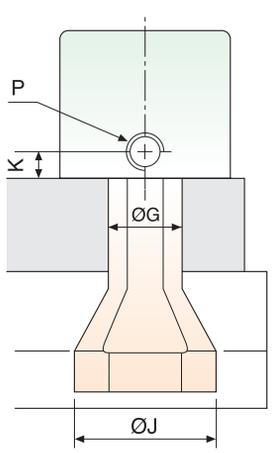


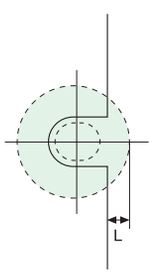

Unit:mm

| Model 型式 | CA-1 | CA-2 | CA-4 | CA-6 | CA-10 | CA-16 | CA-25 |
|---|---|---|---|---|---|---|---|
| Capacity of clamp 夾力 *tons | 1 | 2 | 4 | 6 | 10 | 16 | 25 |
| Total stroke (X) 總行程 (X) mm | 6 | 8 | 8 | 8 | 8 | 8 | 8 |
| Stroke of clamp (Y) 夾具行程 (Y) mm | 3 | 4 | 4 | 4 | 4 | 4 | 4 |
| Preserved stroke (Z) 預留行程 (Z) mm | 3 | 4 | 4 | 4 | 4 | 4 | 4 |
| Total volumn of cylinder 油缸總容量 cc | 3 | 7 | 13 | 21 | 32 | 54 | 76 |
| The tolerance of the template thickness (H) 模板厚度允許公差：H mm | ±1.5 | ±2 | ±2 | ±2 | ±2 | ±2 | ±2 |

* Hydraulic pressure 使用油壓壓力：24.5MPa (250kg/cm$^2$)(3550psi)



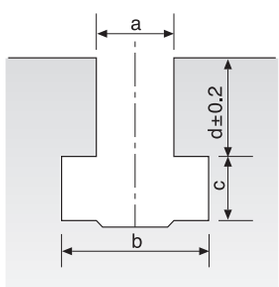




L : Template's length for clamp
夾具容許超出模板量

Unit:mm

| Model 型式 | ∅ F | E | ∅ G | ∅ J | max. H+d | max, L | min. a | K | P |
|---|---|---|---|---|---|---|---|---|---|
| CA-1 | 44 | 48 | 12 | 34 | 60 | 12 | 8 | 13.5 | 1/8PT |
| CA-2 | 53 | 52 | 16 | 48 | 80 | 17 | 12 | 12 | |
| CA-4 | 65 | 58 | 23 | 58 | 90 | 20 | 16 | 15 | 1/4PT |
| CA-6 | 82 | 65 | 30 | 64 | 100 | 25 | 18 | 15 | |
| CA-10 | 99 | 71 | 38 | 78 | 110 | 30 | 22 | 15 | |
| CA-16 | 128 | 82 | 45 | 88 | 120 | 38 | 28 | 17 | |
| CA-25 | 150 | 100 | 55 | 98 | 140 | 45 | 36 | 23 | |

- Please indicate the size of T slot **(a,b,c,d)** and the thickness (H) of the template for the die when purchasing.
  訂購時請指明 T 槽尺寸 **(a,b,c,d)** 及夾模處模板厚度 (H)
- T slot




- The sizes of clamps A, B and C are made based on the size of T slot.
  夾具 A B C 尺寸係配合 T 槽尺寸製作
- If the thickness of clamp(H+d) is more than the max. value listed on the left, it will be regarded as special pattern.
  夾緊處厚度 (H+d) 處出左述最大值，屬特殊式樣。

## MODEL CB


CB


CB-B

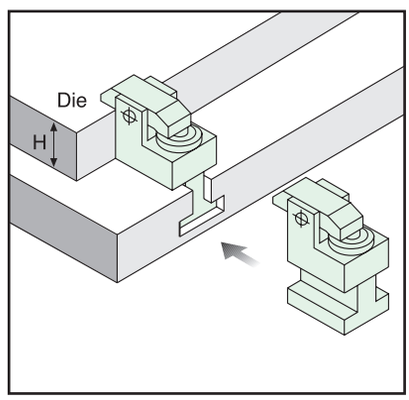

CB-C

## MODEL SELECTION 型式選定

CB – ① ②

Capacity of clamp /
夾力 : 1 ~ 25 (tons)

- **EMPTY** : Standard type
  無標示 : 標準式
- **C** : Pneumatic cylinder movable type
  氣缸移動式
- **B** : Fixed type
  固定式
- **V** : Temperature -resisting type
  耐高溫式

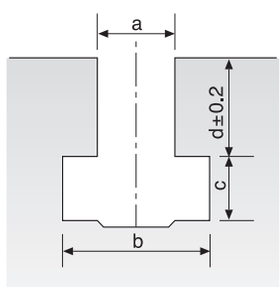


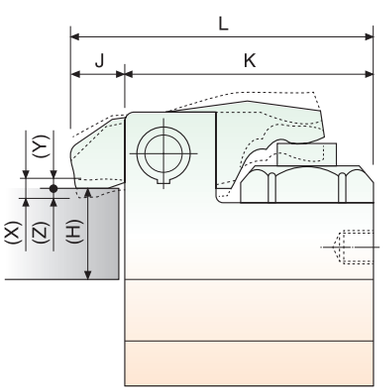

Unit:mm

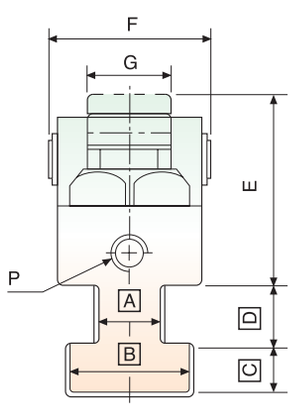
| Model 型式 | CB-1 | CB-2 | CB-4 | CB-6 | CB-10 | CB-16 | CB-25 |
|---|---|---|---|---|---|---|---|
| Capacity of clamp 夾力 *tons | 1 | 2 | 4 | 6 | 10 | 16 | 25 |
| Total stroke (X) 總行程 (X) mm | 6 | 8 | 8 | 8 | 8 | 8 | 8 |
| Stroke of clamp (Y) 夾具行程 (Y) mm | 2.5 | 3 | 3 | 3 | 3 | 3 | 3 |
| Preserved stroke (Z) 預留行程 (Z) mm | 3.5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Total volumn of cylinder 油缸總容量 cc | 3 | 7.5 | 13 | 21 | 38 | 55 | 98 |
| The tolerance of the template thickness (H) 模板厚度允許公差 : H mm | ±1.5 | ±2 | ±2 | ±2 | ±2 | ±2 | ±2 |

* Hydraulic pressure 使用油壓壓力 : 24.5MPa (250kg/cm$^2$)(3550psi)

- Please indicate the size of T slot **(a,b,c,d)** and the thickness(H) of the template for the die when purchasing.
  訂購時請指明 T 槽尺寸 **(a,b,c,d)** 及夾模處模板厚度 (H)
- T slot




Unit:mm

| Model 型式 | L | K | J | min. (H) | min. E | F | G | min. a | min. C | P |
|---|---|---|---|---|---|---|---|---|---|---|
| CB-1 | 74.5 | 60 | 14.5 | 25 | 55 | 44 | 20 | 10 | 6.5 | 1/8PT |
| CB-2 | 110 | 90 | 20 | 25 | 73 | 68 | 32 | 14 | 10 | |
| CB-4 | 134 | 110 | 24 | 25 | 77 | 79 | 40 | 18 | 12 | 1/4PT |
| CB-6 | 159 | 130 | 29 | 30 | 92 | 96 | 46 | 22 | 14 | |
| CB-10 | 189 | 159 | 30 | 40 | 114 | 117 | 54 | 24 | 16 | |
| CB-16 | 230 | 200 | 30 | 40 | 126 | 129 | 58 | 28 | 20 | |
| CB-25 | 265 | 235 | 30 | 45 | 148 | 156 | 70 | 36 | 23 | |

- The sizes of clamps A B C and D are made based on the size of T slot.
  夾具 A B C D 尺寸係配合 T 槽尺製作

## MODEL CD

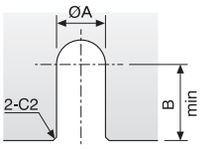
### MODEL SELECTION 型式選定

CD – ① - ② - ③ - ④ - ⑤ - ⑥ - ⑦

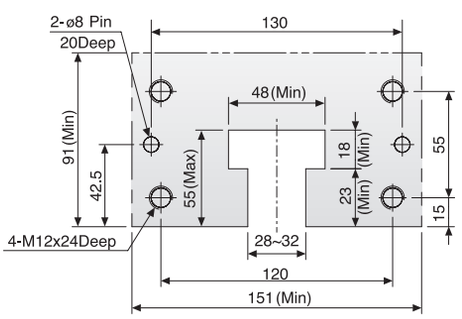
- ⑦ Solenoid valve voltage
  電磁閥使用電壓
  0: 無電磁閥 (No Solenoid)
  1: AC110V
  2: AC220V
  3: DC24V
- ⑥ **V**: Proximity sensor voltage
  近接開關使用電壓
  1: AC90~240V (2-Wire)
  3: DC10~30V (NPN,3-Wire)
  4: DC10~30V (PNP,3-Wire)
- ⑤ **P**: Distance between seat & slide
  上固定座與滑塊距離
- ④ **H**: Die template thickness
  模具模板厚度
- ③ Terminal box
  接線盒
  R: 右側 (Right side)
  L: 左側 (Left side)
- ② **S**: Stroke / 行程：400~1300
- ① Capacity of clamp / 夾力 : 4.6.10 (tons)




- Processing dimensions for the die
  模具加工尺寸

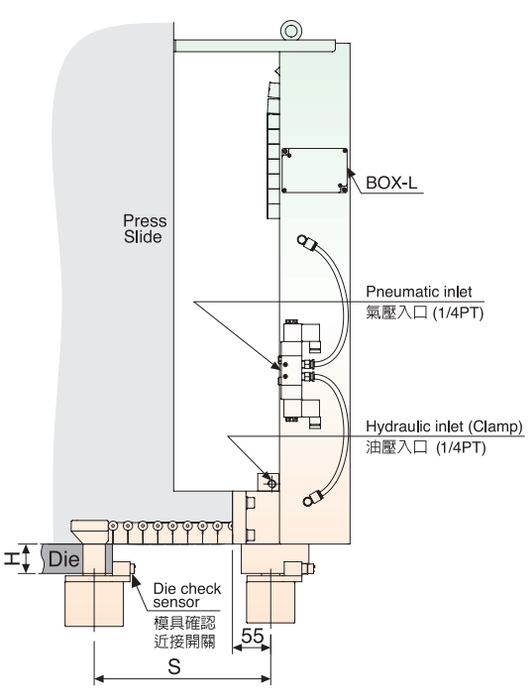


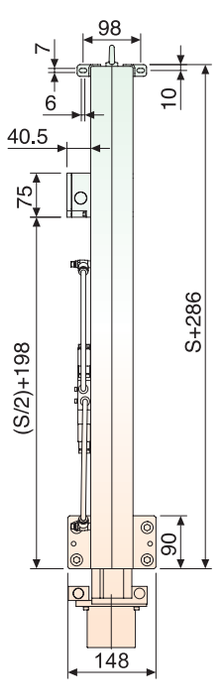

- Processing size for plate (T-slot)
  台盤加工尺寸

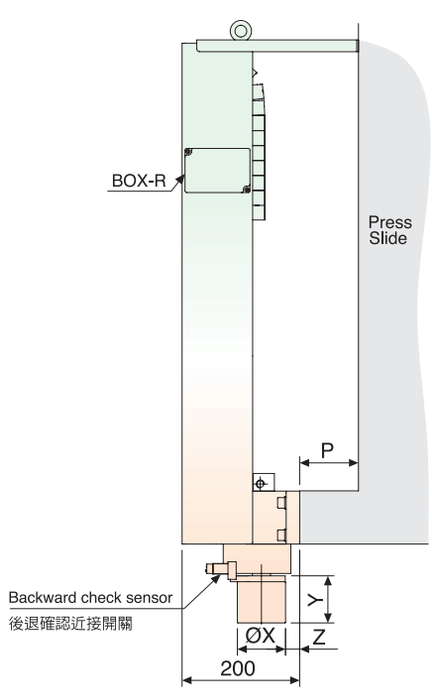



| Model 型式 | | CD-4 | CD-6 | CD-10 |
|---|---|---|---|---|
| Capacity of clamp / 夾力 | tons | 4 | 6 | 10 |
| Hydraulic pressure / 油壓壓力 | MPa (kg/cm²)(psi) | 24.5 | (250) | (3550) |
| Pneumatic pressure / 氣壓壓力 | MPa (kg/cm²)(psi) | 0.34~0.49 | (3.5~5.0) | (50~71) |
| Moving speed / 移動速度 | mm/s | 300 (max) | | |
| Total stroke / 夾具總行程 | mm | 8 | 8 | 8 |
| ∅ X | mm | 65 | 82 | 99 |
| Y | mm | 73 | 80 | 86 |
| Z | mm | 23 | 14.5 | 6 |
| ∅ A | mm | 28~32 | | |
| B min | mm | 32 | 42 | 47 |

### OUTLINE DIMENSIONS 外型尺寸



## MODEL CE•CF

## MODEL SELECTION 型式選定

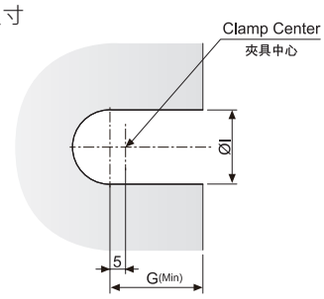
C ① - ② - ③ - ④ - ⑤

- ① **E**: For upper die 上模使用 (45˚)
- ① **F**: For lower die 下模使用 (90˚)
- ② Capacity of clamp / 夾力 : 4.6.10 (tons)
- ③ **H**: Die template thickness (tolerance : H±0.5) 模具模板厚度 ( 允許公差 : H±0.5 )
- ④ **V**: Proximity sensor voltage 近接開關使用電壓
  1: AC90~240V (2-Wire, 2meter)
  3: DC10~30V (NPN,3-Wire, 2meter)
  4: DC10~30V (PNP,3-Wire, 2meter)
- ⑤ **P**: Plate thickness 台盤厚度


CE

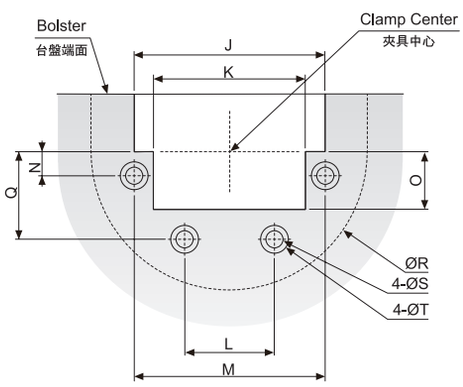

CF

- Processing dimensions for the die 模具加工尺寸




| Model 型式 | C □ -04 | C □ -06 | C □ -10 |
|---|---|---|---|
| Capacity of clamp 夾力 tons | 4 | 6 | 10 |
| Hydraulic pressure 油壓壓力 MPa (kg/cm²)(psi) | 24.5 | (250) | (3550) |
| Pneumatic pressure 氣壓壓力 MPa (kg/cm²)(psi) | 0.34~0.49 | (3.5~5.0) | (50~71) |
| Total stroke of cylinder(X) 油缸總行程 (X) mm | 8 | 10 | 12 |
| Stroke of clamp (Y) 夾具行程 (Y) mm | 5 | 7 | 9 |
| Preserved stroke (Z) 預留行程 (Z) mm | 3 | 3 | 3 |

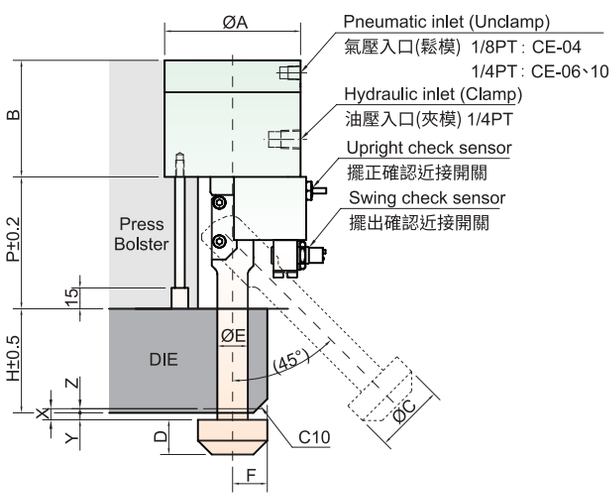
- Processing size for plate 台盤加工尺寸



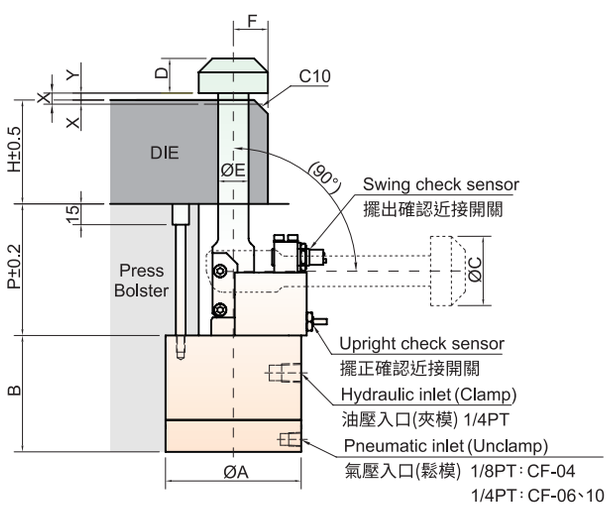

| Model 型式 | ∅ A | B | ∅ C | D | ∅ E | F (max) | G | ∅ I | J | K | L | M | N | O | P (min) | Q | ∅ R | ∅ S | ∅ T |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C □ -04 | 102 | 84 | 50 | 25 | 22 | 25 | 30 | 28 | 83 | 66 | 39 | 83 | 10.5 | 25 | 85 | 38 | 120 | 7 | 12 |
| C □ -06 | 125 | 94 | 60 | 25 | 28 | 30 | 35 | 34 | 93 | 70 | 49 | 93 | 10.5 | 30 | 85 | 43 | 145 | 7 | 12 |
| C □ -10 | 145 | 111 | 75 | 30 | 34 | 37.5 | 43 | 40 | 130 | 80 | 59 | 120 | 10.5 | 35 | 100 | 50 | 165 | 9 | 16 |

## OUTLINE DIMENSIONS 外型尺寸

### • MODEL CE




### • MODEL CF




* Make sure that screws, washers, cutting chips or blank pieces do not enter the clamp. Otherwise, clamp does not operate smoothly and may be damaged.
嚴禁螺絲、華司、鐵屑、廢料等異物侵入夾具的內部。否則夾具將無法順暢動作，甚至會導致夾具的損壞。

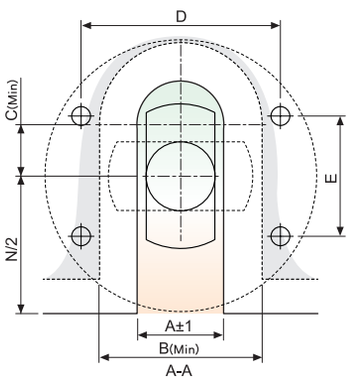
## MODEL CAR

### MODEL SELECTION 型式選定

CAR – ① - ② ③ - ④

- ④ • **Inlet** / 入口方向：L or R
- ③ • **P**: Bolster thickness / 台盤厚度
- ② • **H**: Die template thickness / 模具模板厚度
- ① • Capacity of clamp / 夾力 :4~16 (tons)



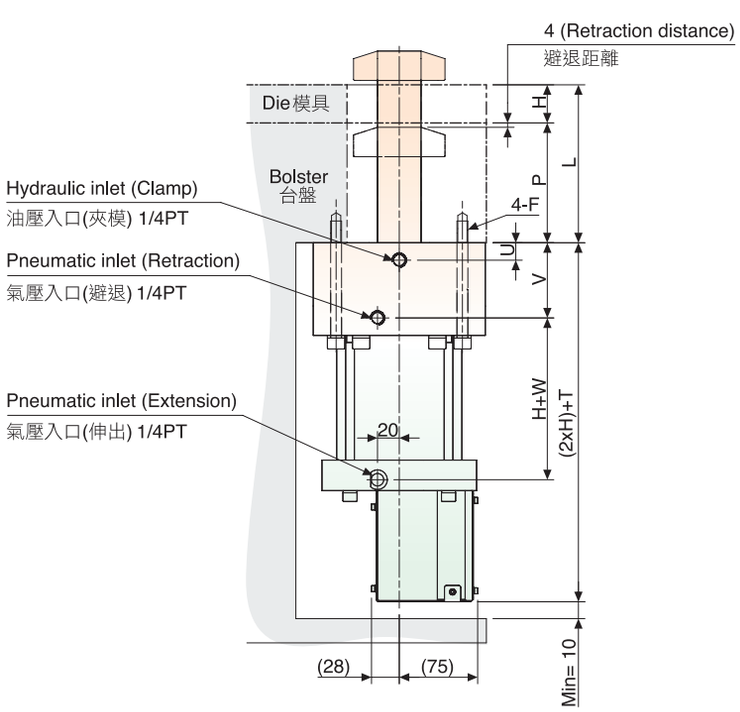


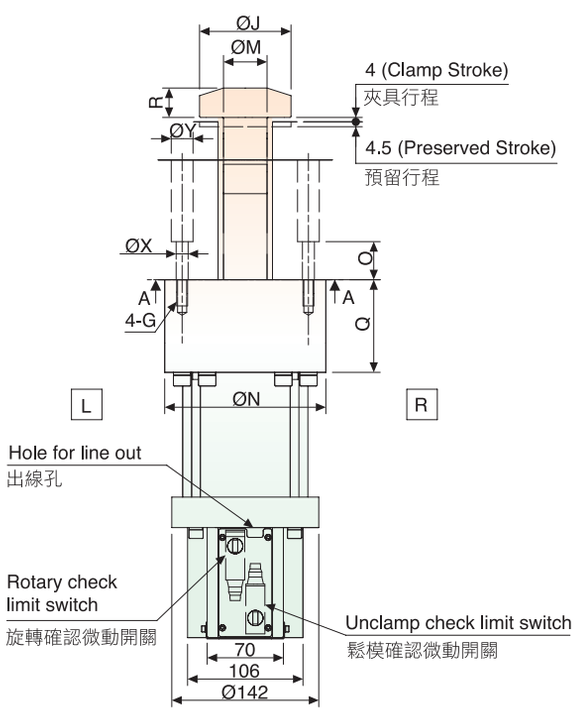

| Model 型式 | A±1 | B (Min) | C (Min) | D | E | F | G | ∅ J | ∅ M | ∅ N | Q | O | R | T | U | V | W | ∅ X | ∅ Y | P (Min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAR-04 | 35 | 70 | 20 | 112 | 70 | M8×16D | M10×20D | 59 | 25 | 148 | 84 | 35 | 17 | 240 | 16 | 68 | 104 | 12 | 20 | 80 |
| CAR-06 | 40 | 75 | 25 | 112 | 70 | M8×16D | M10×20D | 64 | 32 | 148 | 84 | 35 | 22 | 250 | 16 | 68 | 109 | 12 | 20 | 80 |
| CAR-10 | 50 | 95 | 30 | 116 | 70 | M8×16D | M10×20D | 84 | 40 | 158 | 85 | 70 | 27 | 260 | 16 | 69 | 110 | 12 | 20 | 90 |
| CAR-16 | 60 | 110 | 35 | 118 | 72 | M10×20D | M12×24D | 99 | 50 | 168 | 95 | 80 | 32 | 280 | 16 | 79 | 119 | 14 | 23 | 100 |

* Hydraulic pressure 使用油壓壓力：18.2MPa (185kg/cm$^2$ (2625psi)
* Pneumatic pressure 使用氣壓壓力：0.34~0.49MPa (3.5~5.0 kg/cm$^2$) (50~71psi)

* CAR-25 is customized product 為客製化產品

### OUTLINE DIMENSIONS 外型尺寸




- Series product : Hydraulic cylinder device, straight pull clamping device.
  系列產品 : 舉上油缸、直拉夾具、舉上直拉油缸
- Please contact with us once you need details.
  如需要詳細資料，請連絡我們

## MODEL DL•DB

### MODEL SELECTION 型式選定

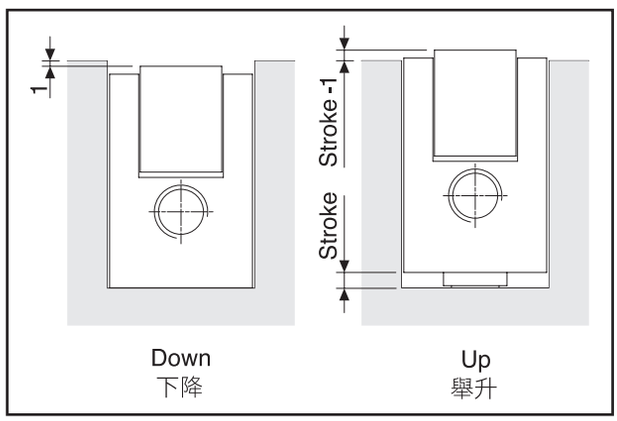
D ① ② – ③

| | Model 型式 |
|---|---|
| L | Roller type 滾輪式 |
| B | Ball type 滾珠式 |

| | Width of Lifter 滑軌寬度 |
|---|---|
| 28 | 28 mm |
| 50 | 50 mm |
| 80 | 80 mm |

| Length of Lifter 滑軌長度 |
|---|
| 200-1900 |
| 200-2500 |
| 500-2500 |

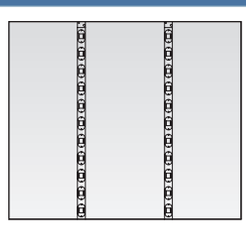
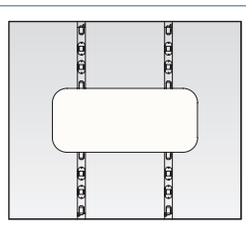
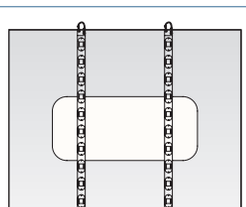



| Model 型式 | Capacity of Each Cylinder 每只油壓缸舉力 | Full Stroke 全行程 | Capacity Per Roller (kgf) 每只滾輪容許荷重 (DL) | Capacity Per Ball (kgf) 每只滾珠容許荷重 (DB) |
|---|---|---|---|---|
| | | | SS41 模具材質 | SS41 模具材質 |
| D □ 28 | 0.63 ton | 3 mm | 80 | 40 |
| D □ 50 | 1.1 ton | 3 mm | 200 | 50 |
| D □ 80 | 2.8 ton | 3 mm | 460 | 200 |

* Hydraulic pressure 使用油壓壓力：24.5MPa (250kg/cm$^2$) (3550psi)

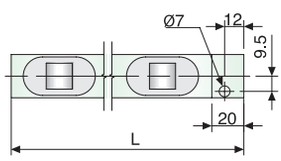
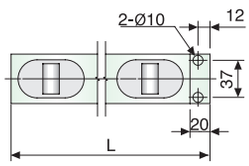
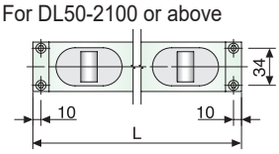
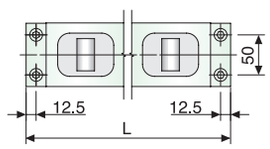
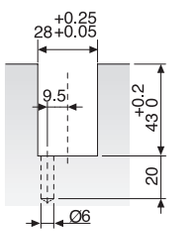
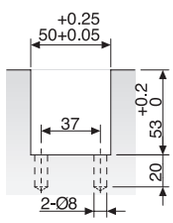
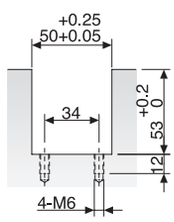
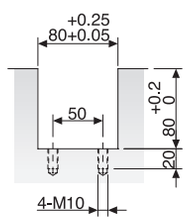
## DIE LIFTER MODEL TYPE 滑軌類型

| Model 型式 | Application 適用 | |
|---|---|---|
| Standard Die Lifter 標準式滑軌 |  | Normal platen and die lifter can be fixed with platen. 一般台盤且滑軌固定於台盤上 |
| Two Stepped Die Lifter 兩段式滑軌 |  | Platen with hole in the middle and die lifter can be fixed on platen. 台盤有下料孔且滑軌固定於台盤上 |
| Removable Die Lifter 抽取式滑軌 |  | Normal platen or platen with hole in the middle and die lifter is removable via quick connector. 一般台盤或是台盤有下料孔，滑軌經由快速接頭可輕易裝卸於台盤上 |

# DIE LIFTER (HYDRAULIC) 舉模滑軌（油壓式）

## MODEL DL•DB




| | D □ 28 Serial | D □ 50 Serial | D □ 50 Serial<br>用於 DL50-2100 以上的固定方式<br>For DL50-2100 or above | D □ 80 Serial |
|---|---|---|---|---|
| Outline Dimensions 外型尺寸 |  |  |  |  |
| Processing Size For Bolster (U-Slot) 台盤加工尺寸 |  |  |  |  |

| Length of Lifter | D □ 28 | | | | | | D □ 50 | | | | | | D □ 80 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DL28 | | DB28 | | Cylinders 油缸 | | DL50 | | DB50 | | Cylinders 油缸 | | DL80 | | DB80 | | Cylinders 油缸 | |
| 全長 (L) | Roller Qty. 滾輪數 | Capacity 承載能力 (Kg) | Ball Qty. 滾珠數 | Capacity 承載能力 (Kg) | Qty. 油缸數 | Capacity 舉升能力 (Kg) | Roller Qty. 滾輪數 | Capacity 承載能力 (Kg) | Ball Qty. 滾珠數 | Capacity 承載能力 (Kg) | Qty. 油缸數 | Capacity 舉升能力 (Kg) | Roller Qty. 滾輪數 | Capacity 承載能力 (Kg) | Ball Qty. 滾珠數 | Capacity 承載能力 (Kg) | Qty. 數量 | Capacity 舉升能力 (Kg) |
| 200 | 3 | 240 | 5 | 200 | 2 | 1260 | 2 | 400 | 4 | 200 | 2 | 2200 | | | | | | |
| 300 | 5 | 400 | 7 | 280 | | | 3 | 600 | 6 | 300 | | | | | | | | |
| 400 | 6 | 480 | 10 | 400 | | | 4 | 800 | 9 | 450 | | | | | | | | |
| 500 | 8 | 640 | 12 | 480 | 3 | 1890 | 5 | 1000 | 11 | 550 | 3 | 3300 | 5 | 2300 | 6 | 1200 | 2 | 5600 |
| 600 | 9 | 720 | 15 | 600 | | | 6 | 1200 | 13 | 650 | | | 6 | 2760 | 7 | 1400 | | |
| 700 | 11 | 880 | 17 | 680 | | | 7 | 1400 | 16 | 800 | | | 7 | 3220 | 9 | 1800 | 3 | 8400 |
| 800 | 12 | 960 | 20 | 800 | 4 | 2520 | 8 | 1600 | 18 | 900 | | | 8 | 3680 | 10 | 2000 | | |
| 900 | 14 | 1120 | 22 | 880 | | | 9 | 1800 | 20 | 1000 | 4 | 4400 | 9 | 4140 | 11 | 2200 | | |
| 1000 | 15 | 1200 | 25 | 1000 | 5 | 3150 | 10 | 2000 | 23 | 1150 | | | 10 | 4600 | 13 | 2600 | 4 | 11200 |
| 1100 | 16 | 1280 | 27 | 1080 | | | 11 | 2200 | 25 | 1250 | | | 11 | 5060 | 14 | 2800 | | |
| 1200 | 17 | 1360 | 30 | 1200 | | | 12 | 2400 | 27 | 1350 | 5 | 5500 | 12 | 5520 | 15 | 3000 | | |
| 1300 | 18 | 1440 | 32 | 1280 | 6 | 3780 | 13 | 2600 | 29 | 1450 | | | 13 | 5980 | 17 | 3400 | | |
| 1400 | 19 | 1520 | 35 | 1400 | | | 14 | 2800 | 31 | 1550 | | | 14 | 6440 | 18 | 3600 | 5 | 14000 |
| 1500 | 20 | 1600 | 37 | 1480 | | | 15 | 3000 | 33 | 1650 | | | 15 | 6900 | 19 | 3800 | | |
| 1600 | 22 | 1760 | 40 | 1600 | 7 | 4410 | 16 | 3200 | 35 | 1750 | 6 | 6600 | 16 | 7360 | 21 | 4200 | | |
| 1700 | 24 | 1920 | 42 | 1680 | | | 17 | 3400 | 38 | 1900 | | | 17 | 7820 | 22 | 4400 | 6 | 16800 |
| 1800 | 25 | 2000 | 45 | 1800 | | | 18 | 3600 | 40 | 2000 | | | 18 | 8280 | 23 | 4600 | | |
| 1900 | 27 | 2160 | 47 | 1880 | 8 | 5040 | 19 | 3800 | 42 | 2100 | | | 19 | 8740 | 24 | 4800 | | |
| 2000 | | | | | | | 20 | 4000 | 44 | 2200 | 7 | 7700 | 20 | 9200 | 26 | 5200 | | |
| 2100 | | | | | | | 21 | 4200 | 46 | 2300 | | | 21 | 9660 | 27 | 5400 | 7 | 19600 |
| 2200 | | | | | | | 22 | 4400 | 48 | 2400 | | | 22 | 10120 | 28 | 5600 | | |
| 2300 | | | | | | | 23 | 4600 | 50 | 2500 | | | 23 | 10580 | 30 | 6000 | | |
| 2400 | | | | | | | 24 | 4800 | 52 | 2600 | 8 | 8800 | 24 | 11040 | 31 | 6200 | | |
| 2500 | | | | | | | 25 | 5000 | 54 | 2700 | | | 25 | 11500 | 32 | 6400 | 8 | 22400 |

* Any specific size is available based on the needs of the customers.
可依客戶使用需要製作特殊規格

## MODEL DS•DLS

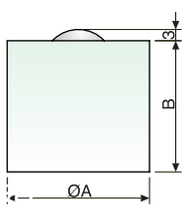
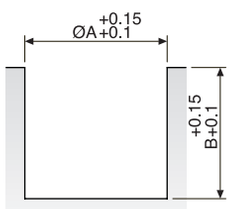
### MODEL SELECTION 型式選定


DS


DLS

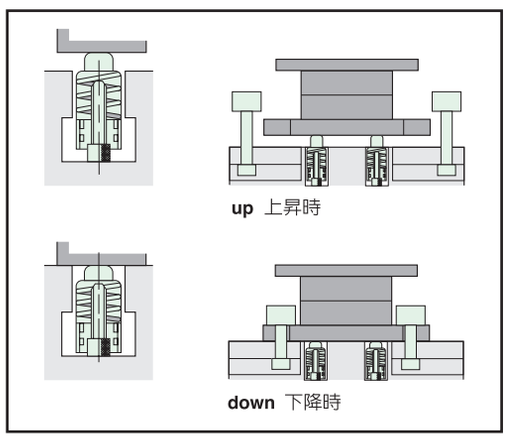
DS – ①

| Capacity (Kg) | ∅ A | B |
|---|---|---|
| 100 | ∅ 38 | 35 |
| 200 | ∅ 45 | 42 |

| Outline Dimensions 外型尺寸 | Processing Size For Bolster (U-Slot) 台盤加工尺寸 |
|---|---|
|  |  |





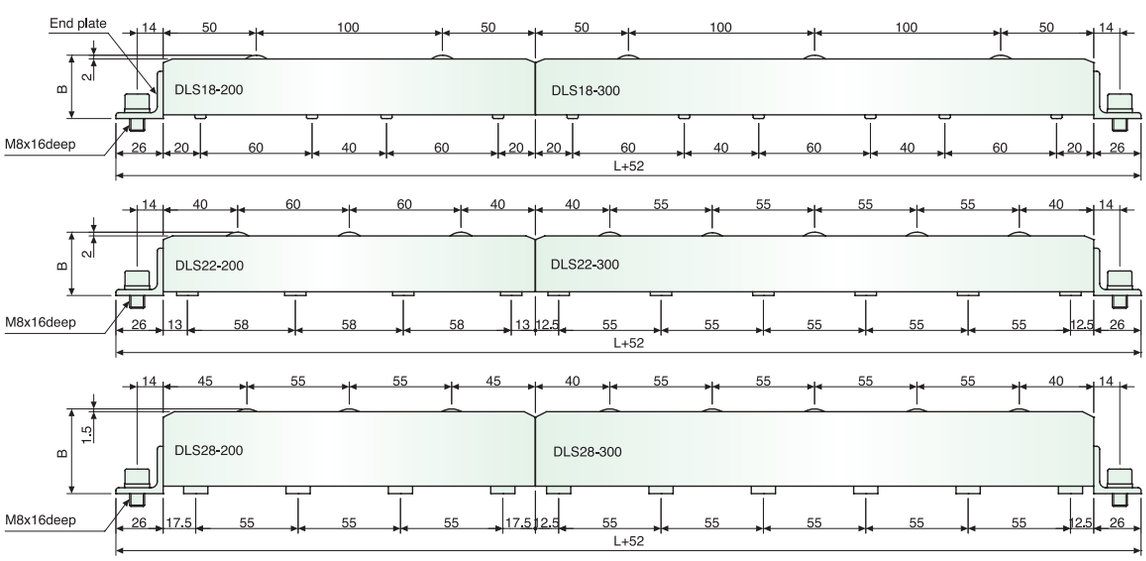



DLS – ① – ②

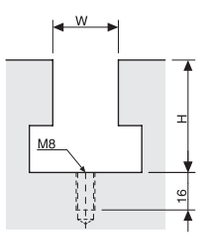
(W) : 18, 22, 28 (mm)

(L) : 200, 300 (mm)

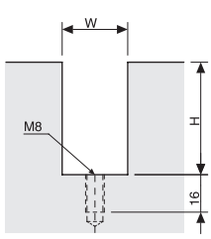
- Please clearly indicate:
  1. the slot height
  2. the equipped length of every slot while ordering.
  3. quantity of end plate
- 訂購時請指明：
  1. 溝槽高度 (H)
  2. 每一溝槽裝配長度
  3. 固定端板數量




- T-Slot




- U-Slot



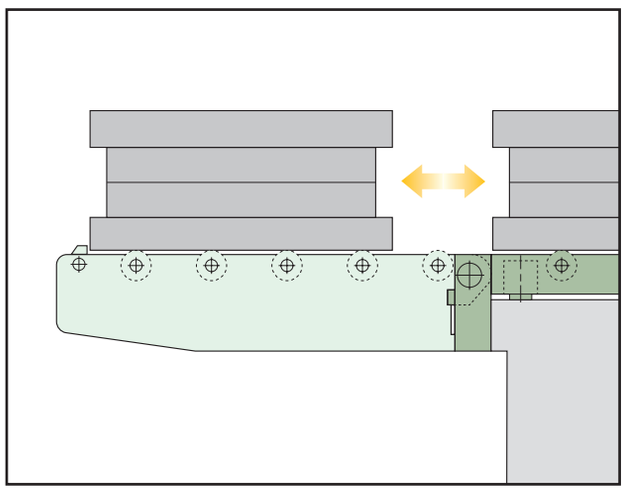

| Model 型式 | | DLS18-200 | DLS18-300 | DLS22-200 | DLS22-300 | DLS28-200 | DLS28-300 |
|---|---|---|---|---|---|---|---|
| Capacity | 每支舉力 (kg) | 150 | 225 | 150 | 225 | 300 | 450 |
| Width of slot | 溝槽寬度 (W) | 18 | | 22 | | 28 | |
| Height of slot | 溝槽高度 (H) | 32~37 | | 33~43 | | 44~58 | |
| Number of roller | 滾輪數 | 2 | 3 | | 5 | 3 | 5 |
| Number of spring | 彈簧數 | 4 | 6 | 4 | 6 | 4 | 6 |
| Width of end plate | 端板寬度 | 17 | | 21 | | | |
| Min. height of lifter | 最小成品高度 (B) | 32 | | 32 | | 43.5 | |

# MODEL RC•RD•RE•RF•RS

## MODEL SELECTION 型式選定

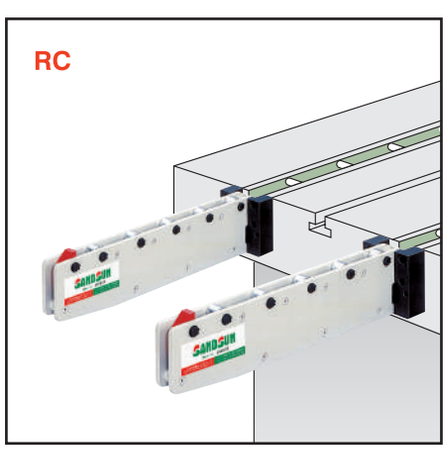
R ① – ②

| Model 型式 | Storage Method 存放方式 | Specification 規格 |
|---|---|---|
| C | Dismantling 拆卸式 | 580 |
| D | Hanging 折下式 | 760 |
| E | Folding (short) 折疊式 ( 短座 ) | 880 |
| F | Folding (long) 折疊式 ( 長座 ) | 990 |

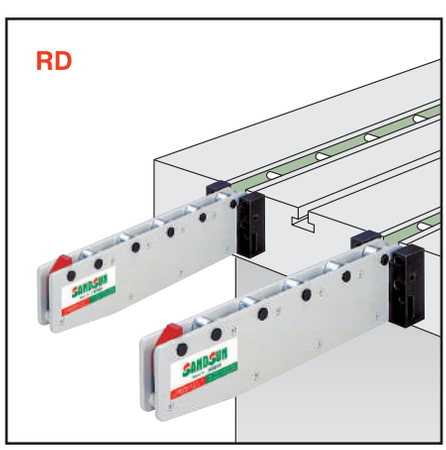


- The support should be changed into lengthening (S) model when using die arm cooperated with two-stepped die lifter. (Ex:RC-16A → RC-16SA · RC-16HA → RC-16HSA)
  移模支臂配合二段式舉模滑軌使用時，固定座需改用加長 (S) 型。 ( 例：RC-16A → RC-16SA · RC-16HA → RC-16HSA )

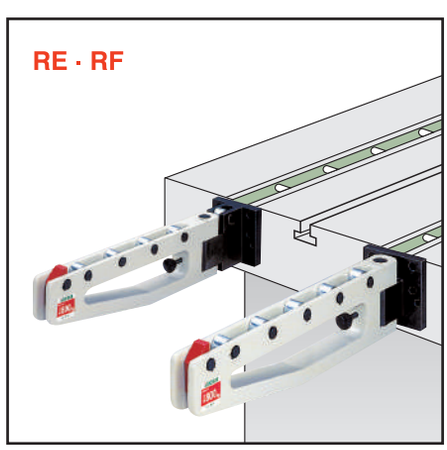
RC

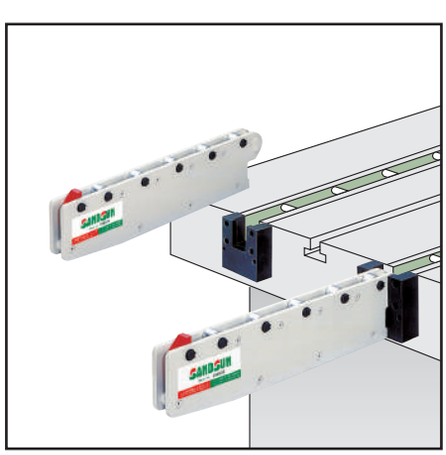


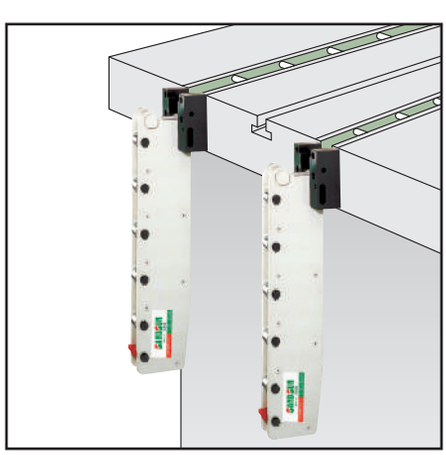
RD

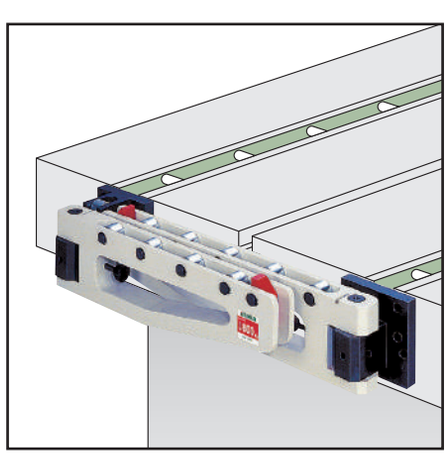


RE · RF



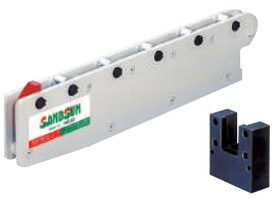


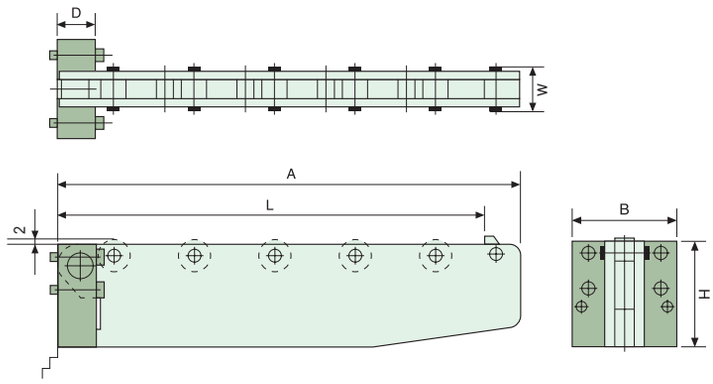




* Any specific model is available based on the needs of the customers.
特殊形式依實際需要另行訂製。

## MODEL RC （DISMANTLING / 拆卸式）





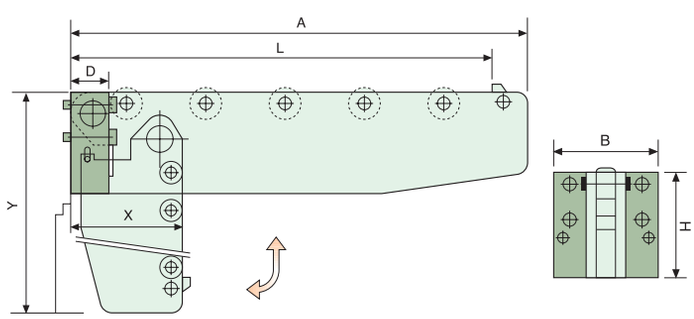

- The arm itself and the support in Model RC can be used separately.
  RC 型支臂本體與固定座可分開個別使用。

| Model 型式 | Model of Support 固定座形式 | Length of The Die 模具使用長 (L) | Capacity(kg) 承載能力 (kg) | Total Length(A) 總長 (A) | Width 寬度 (W) | Dimension Of Support 固定座尺寸 | | | Hole Pattern For Installation 安裝孔位型式 | Roller Q'ty 滾輪數 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | D | B | H | | |
| RC-580A | RC-12A | 500 | 800 | 550 | 46 | 48 | 115 | 118 | A Type | 5 |
| RC-760A | | 700 | 600 | 750 | | | | | | 7 |
| RC-880A | RC-14A | 800 | 800 | 850 | | | | 138 | B Type | 8 |
| RC-990A | RC-16A | 900 | 900 | 950 | | | | 158 | | 9 |
| RC-05125A | RC-14HA | 500 | 1250 | 550 | 50 | 48 | 115 | 138 | B Type | 7 |
| RC-05160A | RC-15HA | | 1600 | | | | | 148 | | |
| RC-05200A | RC-16HA | | 2000 | | | | | 158 | | |
| RC-07125A | RC-14HA | 700 | 1250 | 750 | | | | 138 | | 9 |
| RC-07160A | RC-16HA | | 1600 | | | | | 158 | | |
| RD-07200A | RC-18HA | | 2000 | | | | | 178 | | |
| RC-08125A | RC-16HA | 800 | 1250 | 850 | | | | 158 | | 10 |
| RC-08160A | RC-18HA | | 1600 | | | | | 178 | | |
| RC-08200A | RC-19HA | | 2000 | | | | | 188 | | |
| RC-09160A | RC-18HA | 900 | 1600 | 950 | | | | 178 | | 11 |
| RC-09200A | RC-20HA | | 2000 | | | | | 198 | | |

## MODEL RD （HANGING / 折下式）

- The hanging length(Y) of Model RD should be less than the height between the plate and the ground.
  選用 RD 型其折下之長度 (Y) 需小於台盤面距地面之高度。

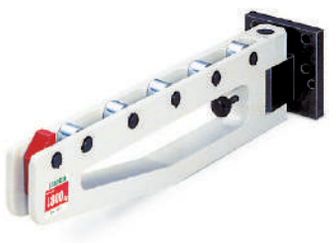


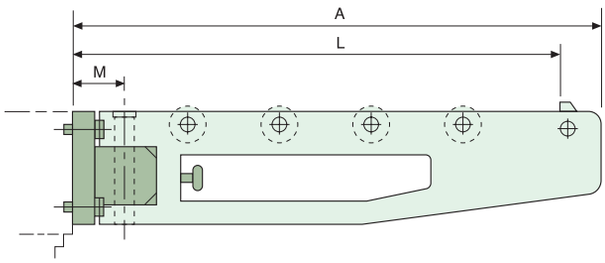


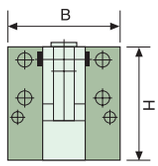

| Model 型式 | Model of Support 固定座形式 | Length of The Die 模具使用長 (L) | Capacity(kg) 承載能力 (kg) | Total Length(A) 總長 (A) | Dimension Of Support 固定座尺寸 | | | Hole Pattern For Installation 安裝孔位型式 | Roller Q'ty 滾輪數 | Dimension After Folding 折下尺寸 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D | B | H | | | X | Y |
| RD-580A | RD-12A | 500 | 800 | 550 | 52 | 115 | 118 | A Type | 5 | 145 | 630 |
| RD-760A | | 700 | 600 | 750 | | | | | 7 | | 830 |
| RD-880A | RD-14A | 800 | 800 | 850 | | | 138 | B Type | 8 | 165 | 950 |
| RD-990A | RD-16A | 900 | 900 | 950 | | | 158 | | 9 | 185 | 1070 |
| RD-05125A | RD-14HA | 500 | 1250 | 550 | 52 | 115 | 138 | B Type | 7 | 165 | 655 |
| RD-05160A | RD-15HA | | 1600 | | | | 148 | | | 175 | 665 |
| RD-05200A | RD-16HA | | 2000 | | | | 158 | | | 165 | 675 |
| RD-07125A | RD-14HA | 700 | 1250 | 750 | | | 138 | | 9 | 165 | 855 |
| RD-07160A | RD-16HA | | 1600 | | | | 158 | | | 185 | 875 |
| RD-07200A | RD-18HA | | 2000 | | | | 178 | | | 205 | 895 |
| RD-08125A | RD-16HA | 800 | 1250 | 850 | | | 158 | | 10 | 185 | 975 |
| RD-08160A | RD-18HA | | 1600 | | | | 178 | | | 205 | 995 |
| RD-08200A | RD-19HA | | 2000 | | | | 188 | | | 215 | 1005 |
| RD-09160A | RD-18HA | 900 | 1600 | 950 | | | 178 | | 11 | 205 | 1095 |
| RD-09200A | RD-20HA | | 2000 | | | | 198 | | | 225 | 1115 |

# DIE ARM 移模支臂

## MODEL RE （FOLDING / 折疊式）

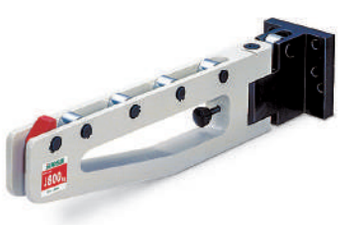


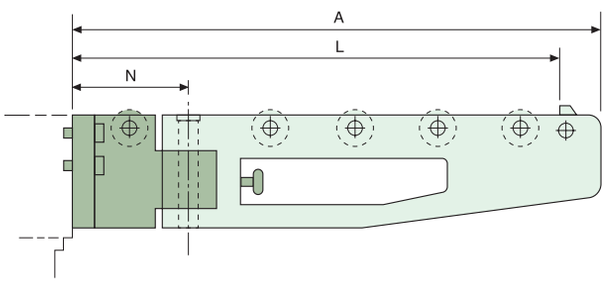


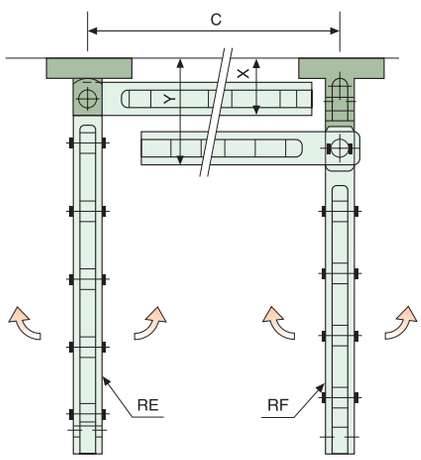




- Model RE itself can be turned left or right for storage.
  RE 型可單獨任意左右旋轉存放使用

## MODEL RF （FOLDING / 折疊式）






- The distance for installing the two arms of Model RE and RF should be more than the distance between the installations(C).
  選用 RE,RF 型兩支臂安裝之距離需大於安裝最小間距 (C)

| Model 型式 | Length Of The Die 模具使用長 (L) | Capacity(kg) 承載能力 (kg) | Total Length(A) 總長 A(mm) | MIN.Distance For Installation 安裝最小間距 C(mm) | Dimension After Folding 折下尺寸 | | Dimension Of Support 固定座尺寸 | | Roller Q'ty 滾輪數 | M | N | Hole Pattern For Installation 安裝孔位型式 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | X | Y | B | H | | | | |
| RE,RF-580A | 500 | 800 | 550 | 525 | 87 | 150 | 115 | 118 | 5 | 57 | 120 | A Type |
| RE,RF-760A | 700 | 600 | 750 | 725 | | | | | 7 | | | |
| RE,RF-880A | 800 | 800 | 850 | 825 | | | | 138 | 8 | | | B Type |
| RE,RF-990A | 900 | 900 | 950 | 925 | | | | 158 | 9 | | | |
| RE,RF-05160A | 500 | 1600 | 550 | 525 | 87 | 150 | 115 | 148 | 7 | 57 | 120 | B Type |
| RE,RF-05200A | | 2000 | | | | | | 158 | | | | |
| RE,RF-07160A | 700 | 1600 | 750 | 725 | | | | | 9 | | | |
| RE,RF-07200A | | 2000 | | | | | | 178 | | | | |
| RE,RF-08160A | 800 | 1600 | 850 | 825 | | | | | 10 | | | |
| RE,RF-08200A | | 2000 | | | | | | 188 | | | | |
| RE,RF-09160A | 900 | 1600 | 950 | 925 | | | | 178 | 11 | | | |
| RE,RF-09200A | | 2000 | | | | | | 198 | | | | |

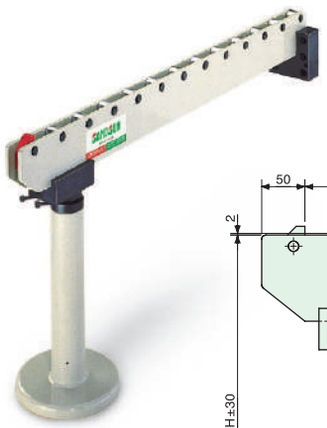
## MODEL RS（SUPPORTER / 支柱式）

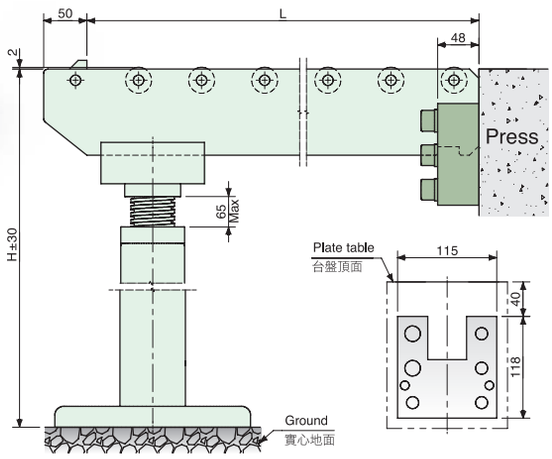
## MODEL SELECTION 型式選定

RS – Ⓛ – Ⓗ – Ⓦ

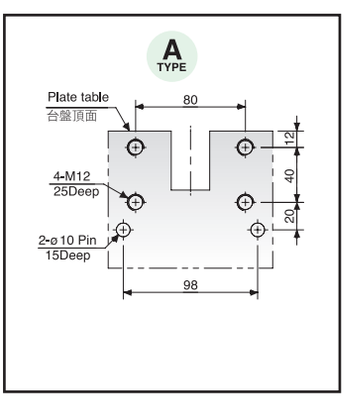
- Use length 使用長度
- The height between the plate and the ground 地面距機台盤面高度
- Die weight 模具重量

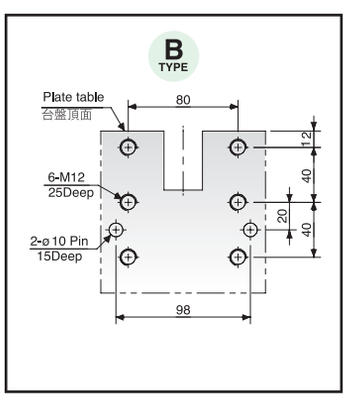
- Please clearly indicate the above information while ordering. 訂購時請指明以上資料
- Adopt D Type to install hole pattern. 安裝孔位型式採用 D TYPE
- Capacity of Model RS is 3000 (KG)/PC 選用 RS 型式，單支承載能力為 3000 (KG)

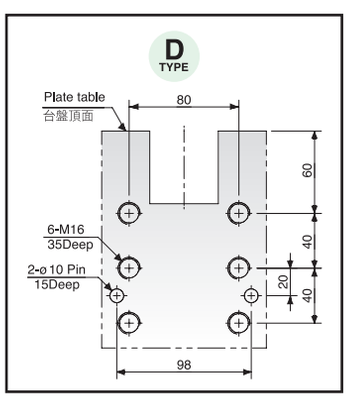


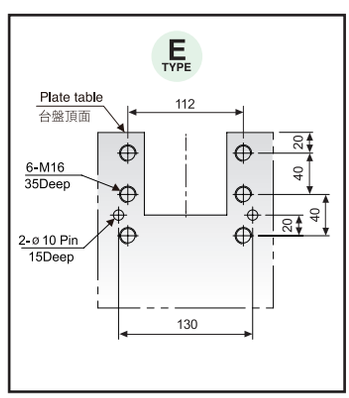



## HOLE PATTERN FOR INSTALLATION 安裝孔位型式




- Apply for DL/DB80 Die Lifter 搭配 DL/DB80 滑軌使用

## ACCESSORIES 相關配件

- NON-LEAK VALVE 氣控閥

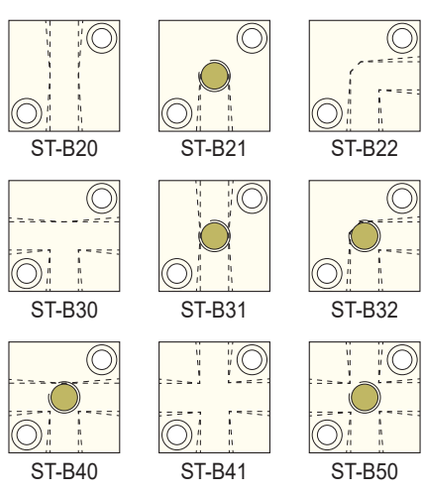



- CLAMP BRACKET 夾具存放架



CA CB

- TUBE CONNECTER MODEL 分油座型式




- ROTARY JOINT 迴轉接頭



- TUBE CONNECTER 分油座



SANDSUN

**Application 適用於**

Press 、 Hydraulic press 、 Forging machine.
沖床、油壓機、鍛造機

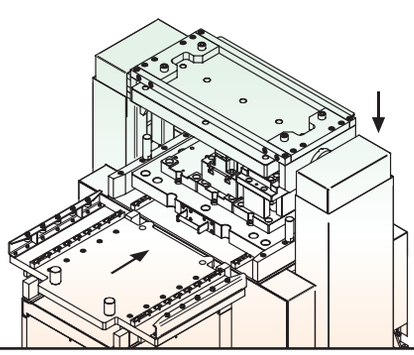
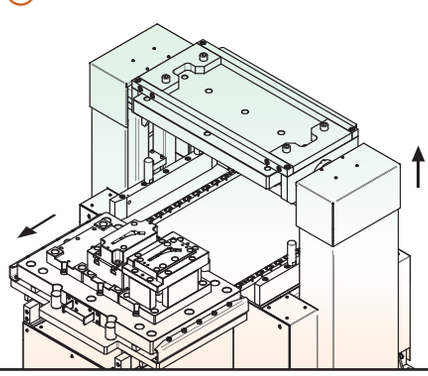
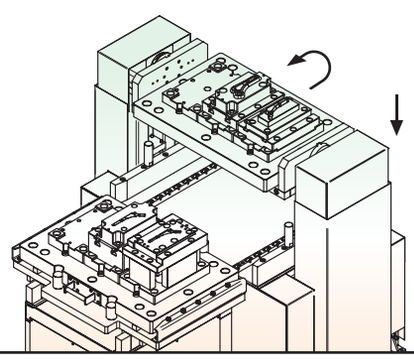
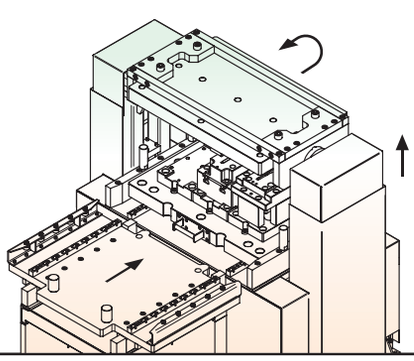
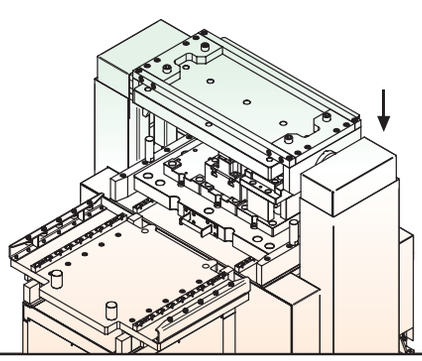
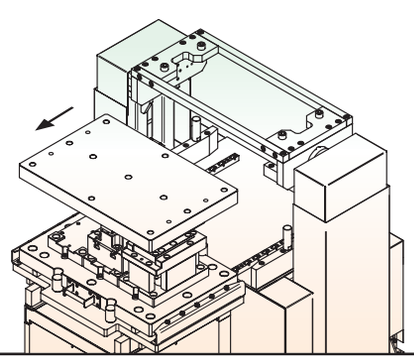



**Feature 特色**

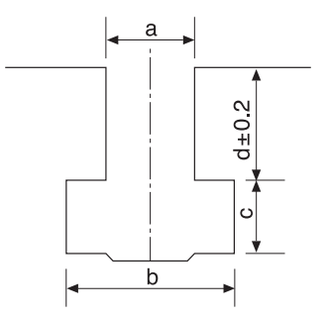
1. Mold Flip device using electric hydraulic motor, move up-down and flip mold through hydraulic power.
2. Using the Mold Flip device can raise work efficiency and also reach zero accident happens.
3. If power shut during mold flip, each hydralic circuit is designed with the function of checking and avoiding oil leakage and the device will stop at the final stage.
4. Shorten the operation time of mold repair.
5. Mold Flip device helps the die to be flip. It has the inspection function of die loading and die move-in position.

1. 模具翻轉機使用電動油壓馬達，以油壓力量升降及翻轉模具。
2. 運用模具翻轉機可提高工作效率又可達到零工安意外。
3. 翻模過程中如發生斷電，各油壓迴路具逆止防漏功能，機台立即停止於最後狀態。
4. 減少模具維修時間。
5. 模具翻轉機用於輔助模具翻轉，並有檢知以及定位裝置。

## WORKING PROCESS & FUNCTION
## 作業流程與機能

<table>
<tr>
<td>①<br></td>
<td>②<br></td>
<td>③<br></td>
</tr>
<tr>
<td>Die in 模具移入</td>
<td>Flip device move up 翻轉裝置上升</td>
<td>Flip upper die by 180 degree 上模翻轉 180 度</td>
</tr>
<tr>
<td>Flip device move down 翻轉裝置下降</td>
<td rowspan="2">Take lower die out 下模移出</td>
<td rowspan="2">Drop the upper die to the height for maintenance or replacement<br>上模下降至維修 / 更換高度</td>
</tr>
<tr>
<td>Lock the upper die with screws 上模鎖螺絲固定</td>
</tr>
<tr>
<td>④<br></td>
<td>⑤<br></td>
<td>⑥<br></td>
</tr>
<tr>
<td>Raise upper die and flip 上模上升翻轉</td>
<td>Flip device move down 翻轉裝置下降</td>
<td>Flip device move up 翻轉裝置上升</td>
</tr>
<tr>
<td>Lower die in 下模移入</td>
<td>Release the screws of the upper die<br>鬆開上模螺絲</td>
<td>Take the die out 模具移出</td>
</tr>
</table>

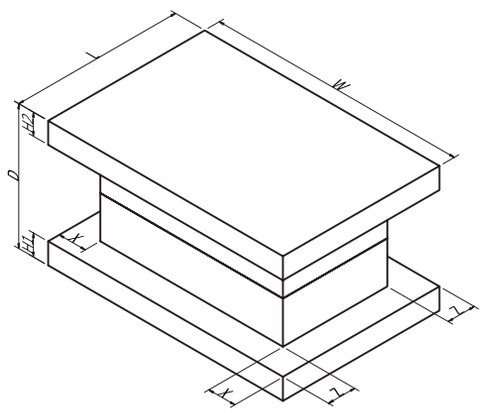
# DATA REQUIRED FOR Q.D.C.S. 快速換模系統訂購明細表

| | | | | |
|---|---|---|---|---|
| Customer<br>客戶名稱 | | | | |
| Machine Brand<br>機台廠牌 | | | Machine Capacity<br>機台噸數 | |
| Drawing for slide and bolster<br>上、下台盤圖面 | ☐ Yes, please offer it. 有，請提供 / ☐ No. 沒有<br>☐ U-slot on the platen 台盤有 U 型槽： ☐ Yes. 有 Heigh 高度：_____mm / ☐ No. 沒有 | | | |
| Die Data<br>模具資料 | 1. U-slot on the platen 模具有 U 型槽 ☐ Yes 有 ☐ No 沒有<br>2. Working temperature 作業溫度 : _____° C | | | |
| Item<br>品名 | | Model<br>規格 | Qty<br>數量 | Description<br>說明 |
| Air Driven Hydraulic Pump Unit<br>氣動油壓泵浦單元 | | | | Control voltage 控制電壓 :<br>☐ AC110V ☐ AC220V ☐ DC24V |
| Die Clamp<br>夾具 | Upper<br>上模 | | | The thickness of the template(H)<br>模具鎖模板厚度 (H): _____mm |
| | Lower<br>下模 | | | The thickness of the template(H)<br>模具鎖模板厚度 (H): _____mm |
| Die Lifter<br>舉模滑軌 | | | | 1. Max. die weight 最大模具重量 : _____kg<br>2. There is hole with bolster 台盤有下料孔<br>☐ YES 是 ☐ Removable Type (With quick connector) 抽取式 ( 含油壓快速接頭 )<br>☐ Two Stepped Type 兩段式<br>☐ NO 否 ☐ Standard Type 標準式<br>3. Die Dimension 模具尺寸 (mm) :<br>Max: _____(L)x_____(W)<br>Min: _____(L)x _____(W)<br>(L: left-right 左 - 右 W: front-back 前 - 後 ) |
| Die Arm<br>移模支臂 | | | | Max. die weight<br>最大模具重量 : _____kg |
| Support of Die Arm<br>移模支臂固定座 | | | | Additional 追加 |
| Others<br>其他 | Install by Sandsun 山田順安裝： ☐ Yes 是 ☐ No 否 | | | |
| | CE certificated required CE 認證： ☐ Yes 是 ☐ No 否 | | | |
| T-slot / T 型槽尺寸 |  | | | Slide 滑塊 : (mm)<br>a : _____<br>b : _____<br>c : _____<br>d : _____ (±0.2)<br><br>Bolster 台盤 : (mm)<br>a : _____<br>b : _____<br>c : _____<br>d : _____ (±0.2) |
| | * The size of "d" should be measured to first digit after decimal point.<br>d 尺寸請實量至小數點第一位或要求加工 ± 0.2mm | | | |
| Remark<br>備註 | | | | |

# DATA SHEET OF MCS FOR PRESS MACHINE 沖床換模台車訂購明細表

| Company 公司 | | Contact 聯絡人 | | Tel 電話 | |
|---|---|---|---|---|---|

Die (Tooling) Demensions / 模具尺寸




| | | |
|---|---|---|
| Die Weight 模具重量 | | Max 最重 : ton |
| D | Min 最小 : mm | Max 最大 : mm |
| L | Min 最小 : mm | Max 最大 : mm |
| W （Should be unified 需統一） | | mm |
| H1 （Should be unified 需統一） | | mm |
| H2 （Should be unified 需統一） | | mm |
| Die Edge Z （Min 最小） | | mm |
| Die Edge X （Min 最小） | | mm |
| Position Device 定位裝置 | | ☐ Yes (Please offer drawing) 是（請提供圖面） ☐ No 沒有 |
| Remark 備註 | | 1. Size (W) and (H) should be unified. 尺寸 (W) 和 (H) 必須統一 2. There must be positioning device on die. 模具必須有定位裝置 |

| | | | |
|---|---|---|---|
| Die Cart Type 台車型式 | ☐ Single Machine and Die 單機單模 ☐ Multi-machines and Twin Dies 多機雙模 ☐ Single Machine and Twin Dies 單機雙模 ☐ Others 其他 | | |
| The Way of Die Movement 模具移動方式 | ☐ Hook push/pull 掛勾推拉 ☐ Hand push 手推 | Die Change Operation 換模操作方式 | ☐ Automatic 全自動控制 ☐ Semi-Automatic 半自動控制 ☐ Manual 手動控制 |
| Main Power Supply 電源供應 | ☐ AC220V ☐ AC380V ☐ AC_____V (3 ∅ 4W) ☐ 60Hz ☐ 50H | | |
| Construction of Rail Track 台車軌道型式 | ☐ Under ground 埋入式 ☐ On the ground 地面上 ☐ On the bench 台架上 | Control Box 電控箱位置 | ☐ On the Cart 台車上 ☐ On the ground 地面上 |
| Length of Rail Track 軌道長度 | ☐ Min. die changing length 最小換模距離 ☐ Custom 自訂_____M | Type of Operation Panel 操作面板型式 | ☐ Button & Switch 按鈕開關 ☐ HMI 人機介面 |
| Required Parts Brand 零件廠牌要求 | ☐ No required 無要求 ☐ Yes ( Please offer detail) 有，請提供資訊 | Required PLC Brand PLC 廠牌要求 | ☐ No required 無要求 ☐ Yes ( Please offer detail) 有，請提供資訊 |
| Drawings Required From Customers 客戶需提供圖面 | 1. Platen drawing (slide and bolster) 沖床台盤圖面（上滑塊及下台盤） 2. Machine outline drawing 機台外型圖 3. Factory layout drawing 工廠佈置圖（機台佈置圖） | | |
| Remark 備註 | | | |

# DIE CART SYSTEM 換模台車系統



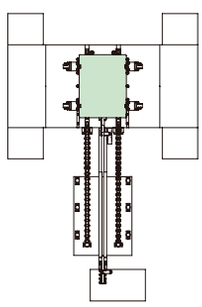

**Feature 特色**

1. Shorten the operation time of die change.
2. Auto position checking of die cart moving.
3. Die moving guide and position detection function.
4. Device for preventing die sliding.

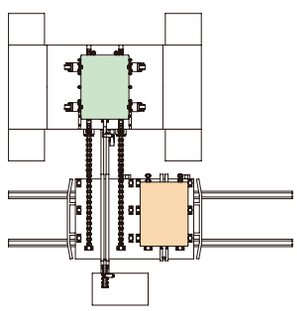
1. 減少換模待機時間。
2. 台車移動自動對機台尋位。
3. 模具移入導正及到位檢知功能。
4. 模具滑落防呆保護裝置。

## DIE CART TYPE
## 台車型式

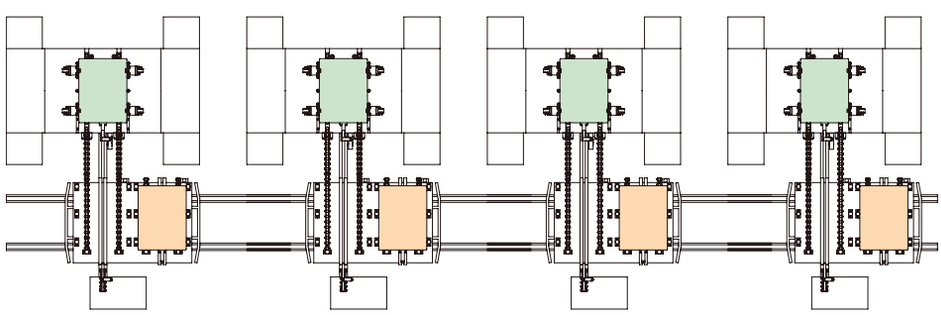
### Single Machine and Die
### 單機單模



### Single Machine and Twin Dies
### 單機雙模

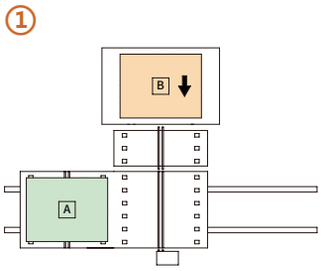


### Multi-machines and Twin Dies
### 多機雙模



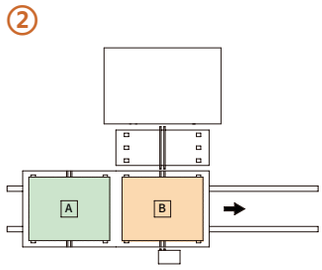
## DIE CART CHANGING PROCEDURES
## 台車換模流程

①



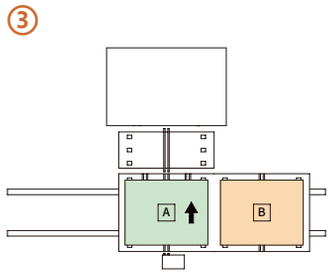

- Die B move out
  B 模具移出

②



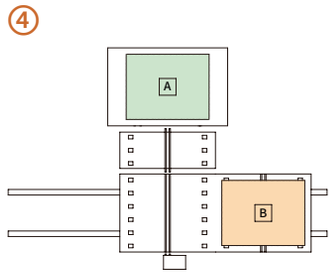

- Die cart changes position
  台車換位

③




- Die A move in
  A 模具移入

④




- Die change finished
  換模完成

