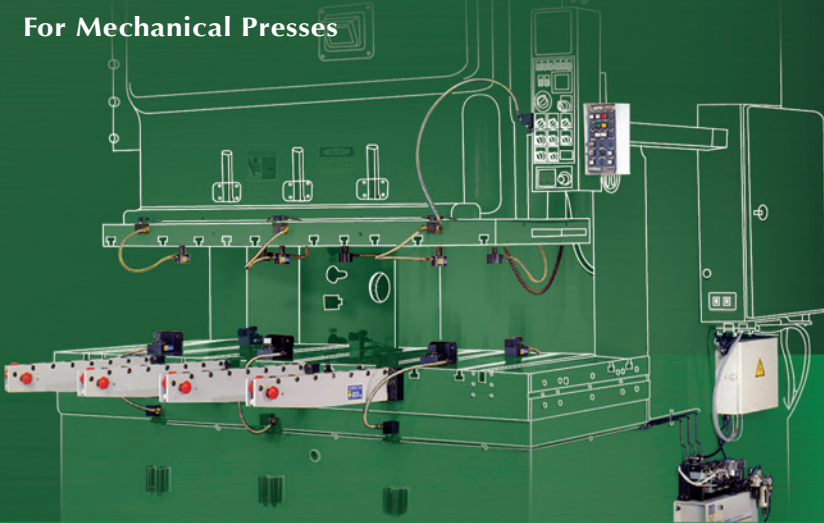


QUICK DIE CHANGE SYSTEM

沖·床·專·用·快·速·換·模·系·統
For Mechanical Presses



FORWELL™

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富偉公司 影片簡介：
請輸入網址 view.forwell.com 即可線上瀏覽動態影片。

Check out our video!
Go to view.forwell.com to watch our company video!

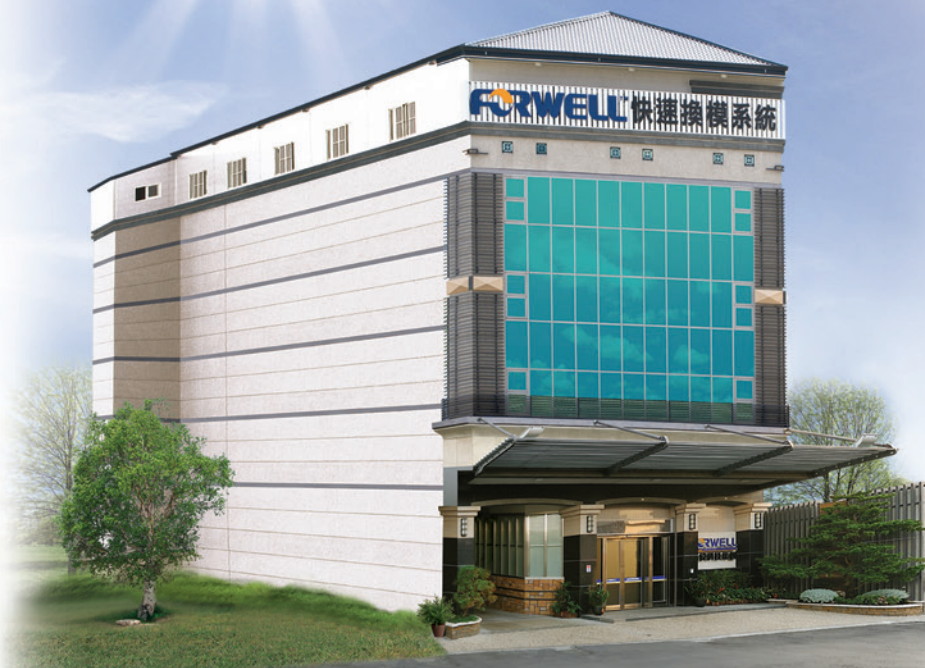
► 公司簡介 Introduction

富偉公司成立於1987年，主要生產自動化、省力化之各式快速換模系統。如沖床快速換模系統、射出機及壓鑄機快速換模系統、印刷電路板沖孔油壓脫料系統，以及各種自動化夾具快速換模系統。在產品品質及功能方面已深獲使用客戶認同，在穩定成長的同時，富偉仍不斷秉持著「品質榮譽、服務回饋、創新發展」的經營理念，研究開發符合客戶需求的產品，以期能為客戶提供更加完整的產品。

FORWELL PRECISION MACHINERY CO., LTD.

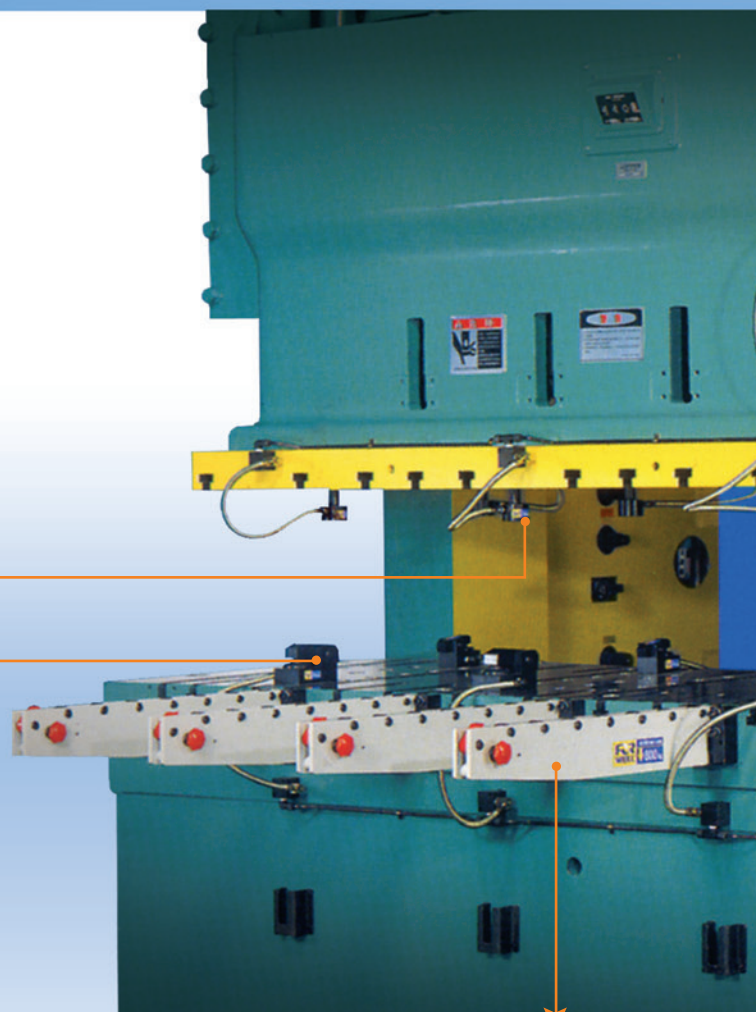
FORWELL was established in 1987. We specialize in the manufacture of labor saving press automation equipment for mechanical presses. Our Quick Die Change Systems work in conjunction with various mold clamping systems for automatic punching presses, injection molding machines, die cast machines, PCB fine piercing, and die clamping systems. Quality and functionality are the hallmarks of our products, earning our press machine accessories wide acclaim throughout the industry. Forwell is a leader in the development of new press automation equipment as we offer new products on a consistent basis; and we are proud of our 20 year history of meeting and exceeding customer requirements. We offer our press automation equipment to any test!

FORWELL - Quality, Service and Innovation



▶ 快速換模系統元件組成

QDCS Unit Introduction



夾模器 / Die Clamp Series



可分TX, TY兩型詳述於第14, 15頁。
TX型夾模器(直拉式)
TY型夾模器(壓板式)

For details, refer to pages 14 and 15.
TX Die Clamp
TY Die Clamp

移模臂 / Die Arm Series

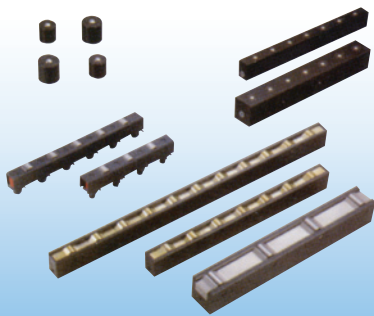


共有RC, RD, RE, RF四種型式，詳述於第23~27頁。
RC型移模臂
RD型移模臂
RE/RF型移模臂

For details, refer to pages 23~27.
RC/RD/RE/RF Bolster Extension Series



舉模器 / Die Lifter Series



計有DL,DU,DR,DB四種，詳見第16~22頁。
DL型舉模器(油壓式)
DB型舉模器(滾珠式)
DR/DU型舉模器(彈簧式)

For details, refer to pages 16~22.
DL Die Lifter
DB Die Lifter
DR, DU Die Lifter

氣動泵組合 / Power Unit



以氣動方式作動，出力為油壓，詳見8~13頁。
氣動泵組合(1迴路 / 2迴路 / 3迴路 / 4迴路)

For details, refer to pages 8~13.
Power Unit Selection of System Components
(1 Circuit / 2 Circuits / 3 Circuits / 4 Circuits)

操作箱 / Control Panel



▶ 富偉QDCS的商業效益

Benefits of FORWELL QDCS

富偉QDCS提供給各式沖床模具多樣性的快速換模專用元件，此系統的使用，不僅降低了沖床的閒置時間，並且大大的促進了產能的提昇，使得生產管理更為合理化。

The FORWELL QDCS not only reduces press downtime due to die changes, but also greatly improves productivity and streamlines production management.



▶ 組件選用基準

Selection of System Components

富偉QDCS提供了最大適用性與多樣性產品，以獨特的系列化設計理念，求取與沖床模具的最佳搭配，您所需求的最佳系統元件組合，可參照下列說明：

The FORWELL QDCS provides maximum flexibility to accommodate diversification in presses and dies with its unique serialized design concept of components and equipment. For the system configuration best suited to your needs refer to the following chart:

1 標準油壓迴路規劃 Standard Hydraulic Circuits (性能規格詳載於第8~13頁) (For details, refer to pages 8~13)

迴路數 No. of Circuits	迴路型式 Circuit Code	迴路分配使用情形	System Configuration
1	C	迴路使用於夾持上模	One circuit for clamping the upper die
		迴路使用於夾持下模	One circuit for clamping the lower die
		迴路使用於同時夾持上下模	One circuit for simultaneously clamping the upper and lower dies
	D	迴路使用於舉模器	One circuit for the lifter
2	2C	一個迴路使用於夾持上模，且另一個迴路使用於下模	One circuit for upper die One circuit for lower die
	CD	一個迴路使用於同時夾持上下模，且另一個迴路使用於舉模器	One circuit for simultaneously clamping the upper and lower dies One circuit for the lifter
3	2CD	一個迴路使用於夾持上模，另一個迴路使用於下模，且第三個迴路使用於舉模器	Two circuits for clamping the upper and lower dies One circuit for the lifter
4	3CD	二個迴路使用於夾持上模交叉方式，另一個迴路使用於夾持下模，且第四個迴路使用於舉模器	Two circuits for clamping the upper die One circuit for clamping the lower die One circuit for the lifter

★以上表根據迴路數與迴路的閥型，規劃迴路的分配使用情形，其中迴路型式C為常開閥，D為常閉閥。

The above list is planned according to the number of circuit and value plan to the necessity of the usage. In between the circuit type "C" means ON at all time and "D" means OFF at all time.

2 選擇夾模器 Selection of Clamps (性能規格詳載於第14~15頁) (For details, refer to pages 14~15)

■ 基本型式之選定

Basic Clamp Selection

模具邊沿有"U"溝設計，採用TX型

模具邊沿無"U"溝設計，採用TY型

Select TX Clamp when die U-slots provided.

Select TY Clamp when die U-slots not provided.

■ 夾模器數量

Determine the Number of Clamps Required

根據模具的大小與沖床出力的噸數來決定

Determine the number of clamps according to the dimensions and configuration of the dies and the T-slot arrangement on the press.

■ 夾模器夾持力的計算

Determine the Clamping Force (Model)

(夾模器總夾持力) = (沖床沖壓能力20%)

(Clamping Force) = (20% Press Tonnage)

■ 上下模所需夾持力的分配

Distribution of Upper and Lower Clamping Force

(上模夾持力) : (下模夾持力) = 3 : 2

(Clamping the Upper Die) : (Clamping the Lower Die) = 3 : 2

(單一夾模器夾持力) = (上模或下模夾持力) ÷ 夾模器數量

(Single Die Clamping Force) = (Upper or Lower Die Clamping Force) ÷ Clamps Number

若依所使用螺栓之規格推算夾持力，如下表：

If determine and calculate the clamping force by using the size of cap screw, pls use the list below.

螺栓規格 Screw Bolt	M16	M18	M20	M24	M30	M38
夾持力(tf) Clamping Force	3	4	6	10	15	20

★上列夾模器夾持力與其數量應依實際作業需要修正，並且供夾模之模具邊沿厚度需標準化，以利配合夾模器之使用。

The above list for the clamping force and quantities of the die clasper should be used according to the actual operation. The thickness of the mould base (bottom plate for die clasper to clamp) should be standardized.

▶ 組件選用基準

Selection of System Components

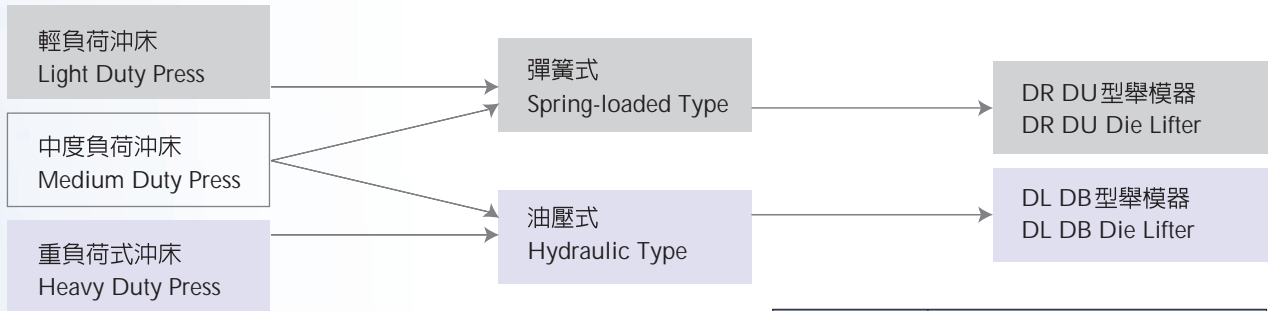
3 選擇舉模器 Selection of Die Lifters (性能規格詳載於第16-22頁) (For details, refer to pages 16-22)

彈簧式或油壓式之選定

依據沖床噸位選擇DL型(油壓式)或DR型(彈簧式)此外並需將
模具重量與所需舉模器之長度一併考量

Select Spring-loaded or Hydraulic Die Lifter

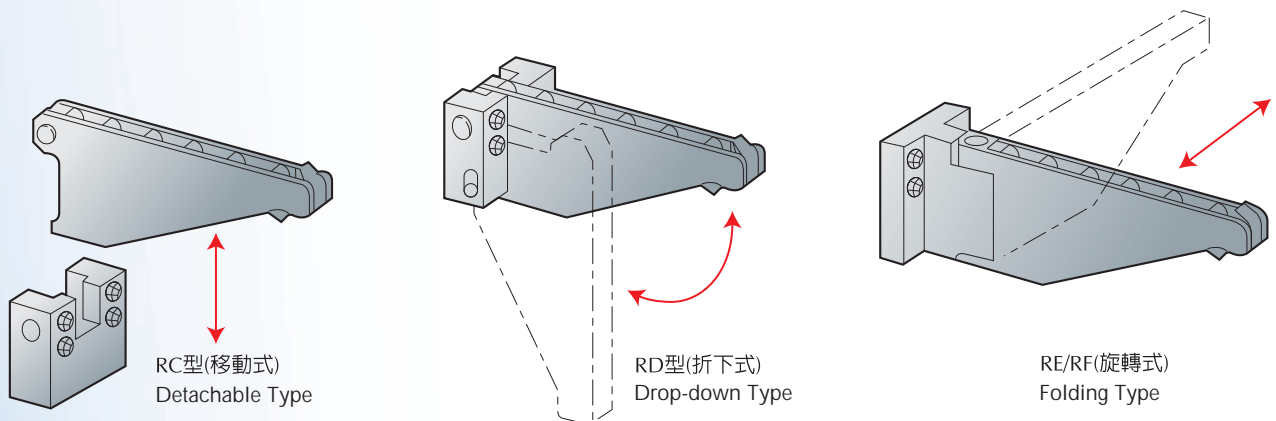
Select spring-loaded (DR DU) or hydraulic (DL) according to the press tonnage, die weight, and the die positioning accuracy required.



選用參考基準	Selection Criteria
舉模器長度	Die Lifter
舉模能力	Lift Capacity
最大承載重量	Maximum Die Lifter Load Weight
U槽尺寸	U-slot Size
配管配件	Accessories

4 選擇移模臂 Selection of Bolster Extensions (性能規格詳載於第23-27頁) (For details, refer to pages 23-27)

基本型式之選定 Basic Selections



選用基準	Selection Criteria
模具尺寸	Die Dimensions
移模臂最大承載重量	Maximum Bolster Extension Load Weight
型式	Type

▶ 氣動泵組合選用

Power Unit - Selection of System Components

形式表示法 / Explanation of Model Numbers

FP 6308U - 1 - C

FP 63 08U

增壓桿面積

Surface area of pressure increased rod

活塞面積

Surface area of piston

Ø 63

Ø 100

(請參考第12~13頁。)

(For details, refer to pages 12-13.)

C: 夾模器 / Die Clamp

D: 舉模器 / Die Lifter

迴路數 No. of Circuits	迴路型式 Circuit Code	迴路分配使用情形	System Configuration
1	C	迴路使用於夾持上模	One circuit for clamping the upper die
	D	迴路使用於夾持下模	One circuit for clamping the lower die
2	2C	迴路使用於同時夾持上下模	One circuit for simultaneously clamping the upper and lower dies
	CD	迴路使用於舉模器	One circuit for the lifter
3	2C	一個迴路使用於夾持上模，且另一個迴路使用於下模	One circuit for upper die One circuit for lower die
	CD	一個迴路使用於同時夾持上下模，且另一個迴路使用於舉模器	One circuit for simultaneously clamping the upper and lower dies One circuit for the lifter
3	2CD	一個迴路使用於夾持上模，另一個迴路使用於下模，且第三個迴路使用於舉模器	Two circuits for clamping the upper and lower dies One circuit for the lifter
4	3CD	二個迴路使用於夾持上模交叉方式，另一個迴路使用於夾持下模，且第四個迴路使用於舉模器	Two circuits for clamping the upper die One circuit for clamping the lower die One circuit for the lifter

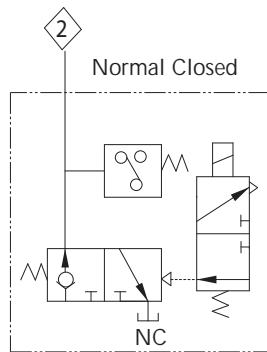
電壓 Voltage: DC 24V, 110V, 220V

▶ 氣動泵組合選用

Power Unit - Selection of System Components

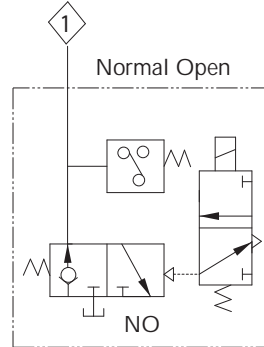
油壓系統迴路圖 / Hydraulic Schematics (Typical)

NC迴路 NC Circuit
(舉模器 Die Lifter)



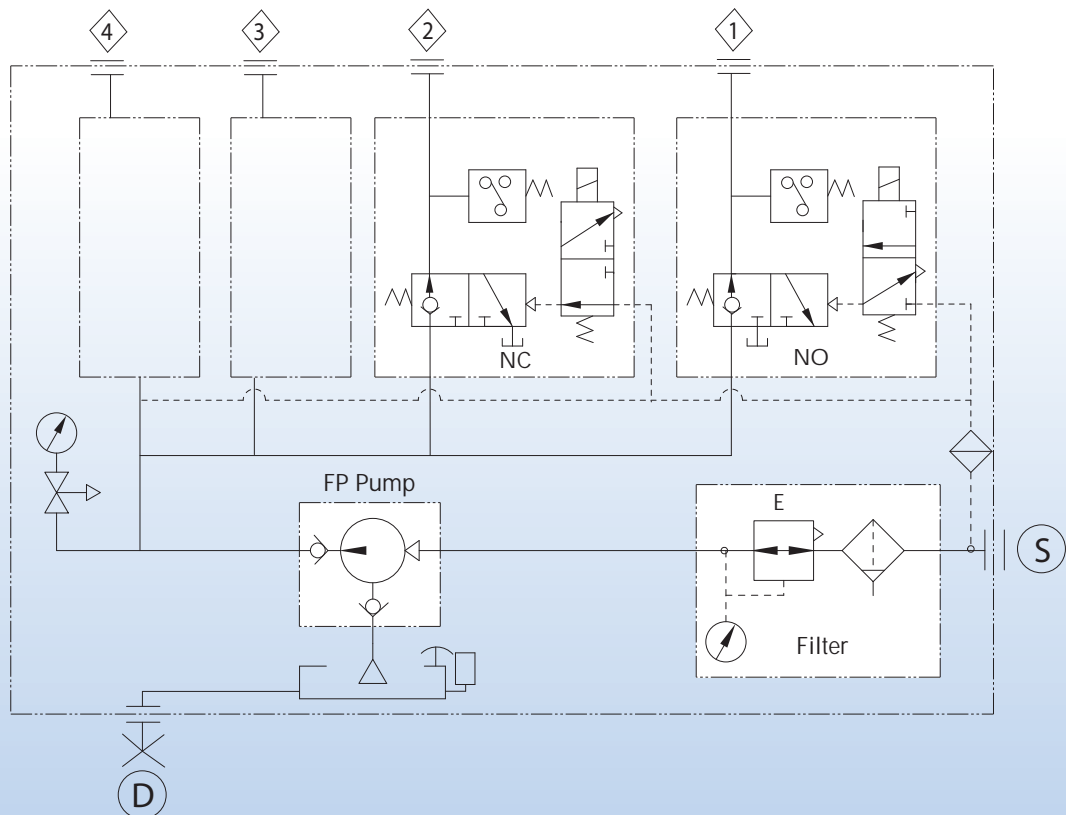
SOL → ON 壓力上昇 Pressure Rise

NO迴路 NO Circuit
(夾模器 Clamps)



SOL → OFF 壓力上昇 Pressure Rise

迴路圖例 (Combined Circuit Example)



- 註：訂貨時請指定電磁閥 (SOL) 使用電壓 (DC 24V, AC110V, AC220V)
When ordering, please confirm the usage voltage of the magnetical valve.

▶ 氣動泵組合選用

Power Unit - Selection of System Components



FP 6308U-1-C



FP 6308U-2-2C



FP 6308U-3-2CD

大陸專利號：ZL 01 2 66203.8
China Patent No: ZL 01 2 66203.8



FP 6308U-4-3CD

FP63	空氣壓力5kg/cm ² 時出力 At 5kg/cm ² Air Pressure	增壓比 Pressure Ratio
06	420 (kg/cm ²)	1 : 84
07	300 (kg/cm ²)	1 : 60
08	250 (kg/cm ²)	1 : 50
09	200 (kg/cm ²)	1 : 40
10	150 (kg/cm ²)	1 : 30
12	100 (kg/cm ²)	1 : 20
14	80 (kg/cm ²)	1 : 16
16	50 (kg/cm ²)	1 : 10
20	40 (kg/cm ²)	1 : 8
24	26 (kg/cm ²)	1 : 5

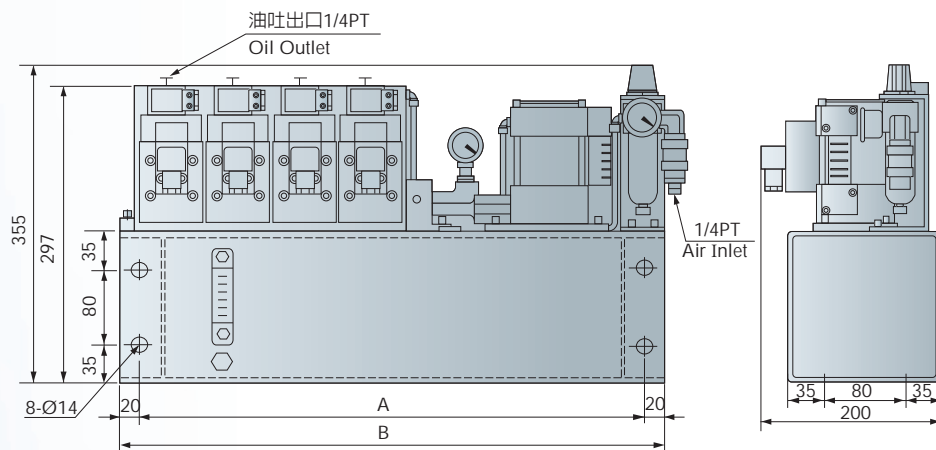


FP 1014U-4-3CD

▶ 氣動泵組合 外型尺寸

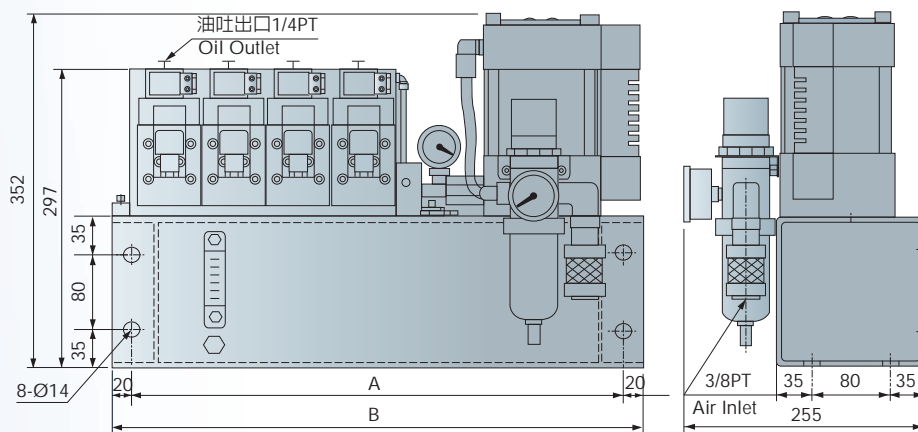
Hydraulic Power Units - Specifications

型號 / Model : FP63 Pump



型號 Model	迴路數 Total Circuits	A	B	油箱全容量 (ℓ) Reservoir Capacity	可用容量 (ℓ) Available Lubricant	重量 Weight (kg)	使用油 Lubricant
FP63□□U	1	353	393	6	4.7	23	一般液壓作動油 ISO VG32- VG68 Standard hydraulic oil
FP63□□U	2	353	393	6	4.7	27	
FP63□□U	3	423	463	7.5	5.9	35	
FP63□□U	4	493	533	9	7.1	43	

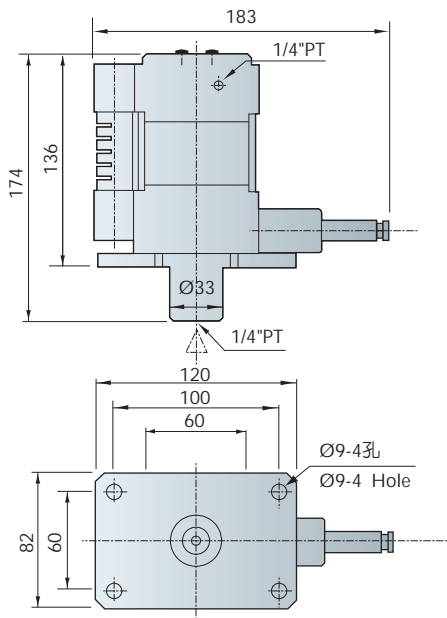
型號 / Model : FP100 Pump



型號 Model	迴路數 Total Circuits	A	B	油箱全容量 (ℓ) Reservoir Capacity	可用容量 (ℓ) Available Lubricant	重量 Weight (kg)	使用油 Lubricant
FP10□□U	1	353	393	6	3.8	30	一般液壓作動油 ISO VG32- VG68 Standard hydraulic oil
FP10□□U	2	353	393	6	3.8	34	
FP10□□U	3	423	463	7.5	4.8	42	
FP10□□U	4	493	533	9	5.8	50	

► 氣動泵組合選用

Power Unit - Selection of System Components



FP63規格特性 Specifications

驅動流體 Drive Fluid	空氣 Air
空氣使用壓力範圍 Air Pressure	2~6 kg / cm ² (2~6 bar)
使用溫度範圍 Operating Temperature	-5° ~60° C
使用油 Lubricant	一般液壓作動油 (ISO VG32-VG68) Standard hydraulic oil
單一重量 Weight	4 kg

● 本表為壓力：流量特性表提供參考

Pressure : Flow characteristics tables provided below for your reference.

(一) 空氣消耗量為MAX=0.35Nm³ / min.

Air consumption MAX=0.35Nm³ / min.

(二) 須大流量請指示說明。

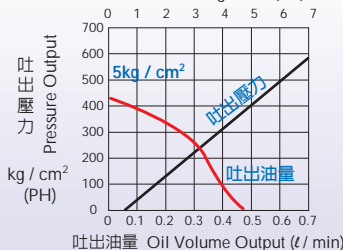
Please refer to instructions for large flow.

(三) 為品質不斷改良，使用前煩請電話查詢確認。

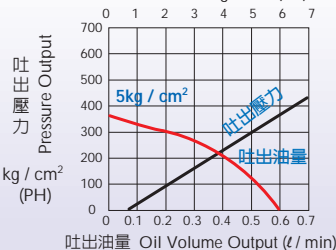
Specifications are subject to change, please phone to confirm values.

*ℓ = 公升

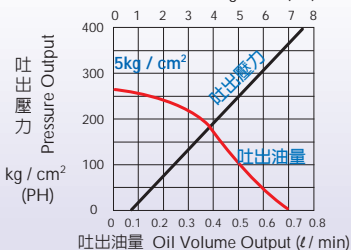
FP-6306型 0.45 ℓ/min, 增壓比 Pressure Ratio 1:84
壓力 Pressure kg / cm² (PA)



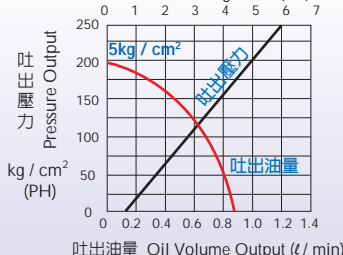
FP-6307型 0.6 ℓ/min, 增壓比 Pressure Ratio 1:60
壓力 Pressure kg / cm² (PA)



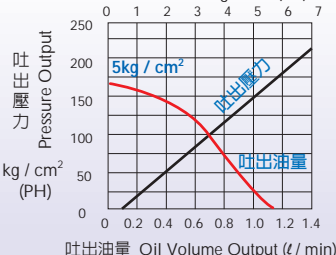
FP-6308型 0.7 ℓ/min, 增壓比 Pressure Ratio 1:50
壓力 Pressure kg / cm² (PA)



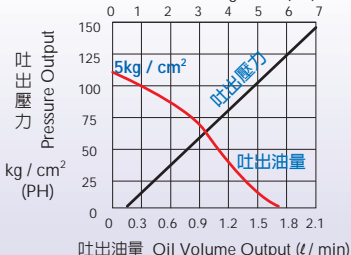
FP-6309型 0.9 ℓ/min, 增壓比 Pressure Ratio 1:40
壓力 Pressure kg / cm² (PA)



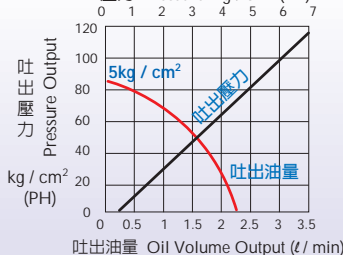
FP-6310型 1.1 ℓ/min, 增壓比 Pressure Ratio 1:30
壓力 Pressure kg / cm² (PA)



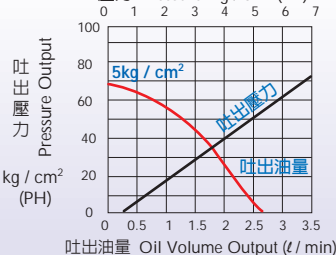
FP-6312型 1.7 ℓ/min, 增壓比 Pressure Ratio 1:20
壓力 Pressure kg / cm² (PA)



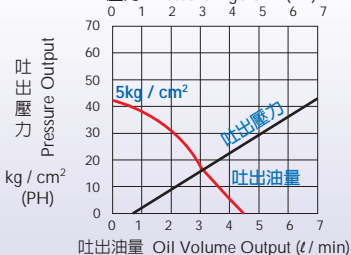
FP-6314型 2.2 ℓ/min, 增壓比 Pressure Ratio 1:16
壓力 Pressure kg / cm² (PA)



FP-6316型 2.7 ℓ/min, 增壓比 Pressure Ratio 1:10
壓力 Pressure kg / cm² (PA)

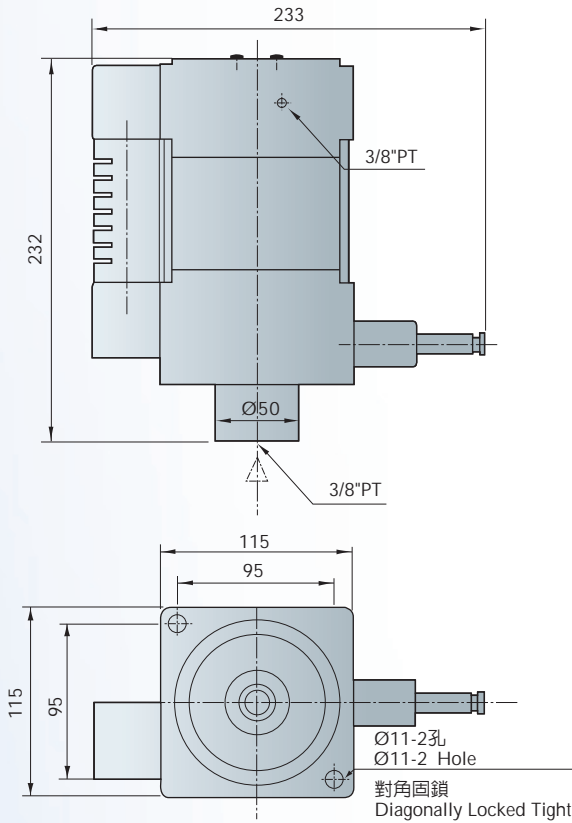


FP-6320型 4.5 ℓ/min, 增壓比 Pressure Ratio 1:8
壓力 Pressure kg / cm² (PA)



▶ 氣動泵組合選用

Power Unit - Selection of System Components



FP100規格特性 Specifications

驅動流體 Drive Fluid	空氣 Air
空氣使用壓力範圍 Air Pressure	2~6 kg / cm ² (2~6 bar)
使用溫度範圍 Operating Temperature	-5° ~60° C
使用油 Lubricant	一般液壓作動油 (ISO VG32-VG68) Standard hydraulic oil
單一重量 Weight	11 kg

● 本表為壓力：流量特性表提供參考
Pressure : Flow characteristics tables provided below for your reference.

(一) 空氣消耗量為MAX=0.8Nm³ / min.

Air consumption MAX=0.8Nm³ / min.

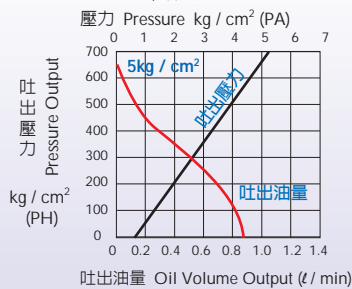
(二) 須大流量請指示說明。

Please refer to instructions for large flow.

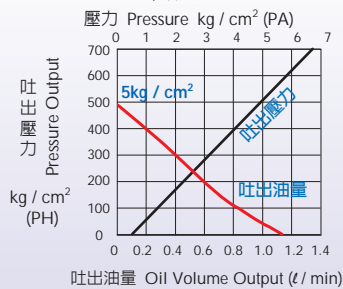
(三) 為品質不斷改良，使用前煩請電話查詢確認。

Specifications are subject to change, please phone to confirm values.

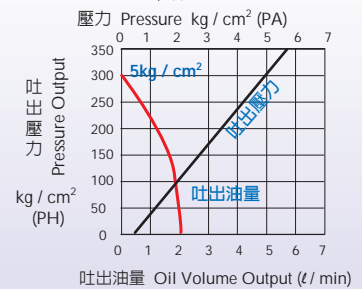
FP1008型 0.9 l/min, 增壓比 Pressure Ratio 1:130



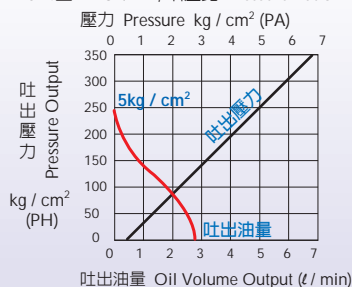
FP1009型 1.15 l/min, 增壓比 Pressure Ratio 1:100



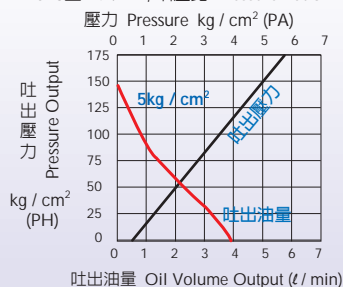
FP1012型 2.04 l/min, 增壓比 Pressure Ratio 1:60



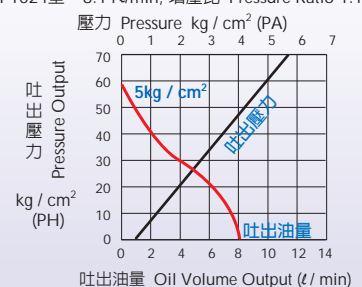
FP1014型 2.8 l/min, 增壓比 Pressure Ratio 1:50



FP1018型 4 l/min, 增壓比 Pressure Ratio 1:25



FP1024型 8.14 l/min, 增壓比 Pressure Ratio 1:12



▶ 快速換模系統—TX型夾模器

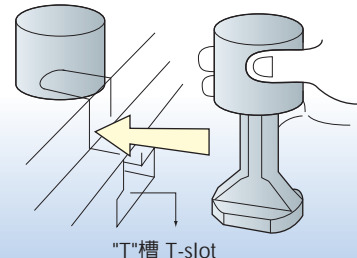
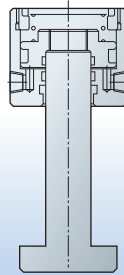
Forwell QDCS - TX Die Clamp

此型夾模器有節省空間的好處，但模沿須有"U"型溝供其夾持，其底部被製成適合在台盤"U"型槽滑動。

This compact, space saving, piston type clamp requires U-slots on the die shoe. The clamp leg is machined to fit the T-slot on the bolster. The automatic slide model makes remote control possible.



結構剖面
Construction



"T"槽 T-slot

模沿"U"型溝 U-slot

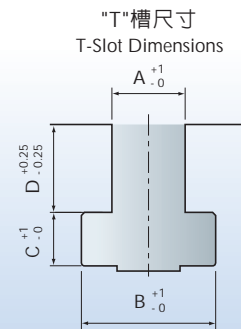
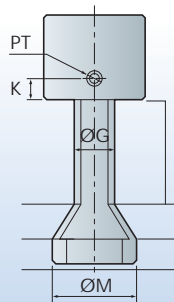
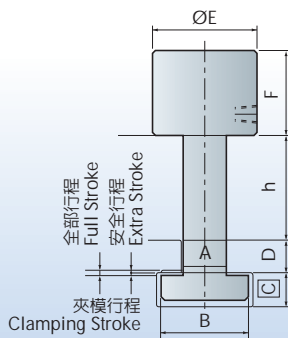
特性規格 Specifications

型號 Model	Unit	TX-1	TX-2	TX-4	TX-6	TX-10	TX-16	TX-25
夾持力(於油壓250kg/cm ²) Clamping Force (at 250kgf/cm ²)	tons	1	2	4	6.3	10	16	25
全部行程(X) Full Stroke	mm	5	8	8	8	8	8	8
夾模行程(Y) Clamping Stroke	mm	3	4	3	3	3	3	3
安全行程(Z) Extra Stroke	mm	2	4	5	5	5	5	5
夾模器缸體容量(全行程) Cylinder Capacity at Full Stroke	cc.	2.7	6.5	13	21	32	54	84

大陸專利號：ZL 01 2 64423.4
China Patent No: ZL 01 2 64423.4

- 註：安全行程為全部行程與夾模行程之差值，為特別的安全預留量。
Extra stroke is the difference between full stroke and clamping stroke with extra space allowed for safe operation.

外型尺寸 Dimensions



型號 Model	E	F	G	M	K	MIN. C	PT	A	B	C	D	選用泵浦 Power Unit Models
TX-1	38	37.5	14	35	11	8	1/8	22	37	16	24	FP6308U-□-□
TX-2	53	52.5	18	38	12	8	1/8	22	37	16	24	
TX-4	68	61.5	25	59	15	10	1/4	22	37	16	24	
TX-6	78	68	30	59	16	14	1/4	28	48	20	28	
TX-10	98	71	40	79	16	17	1/4	28	48	20	28	FP1014U-□-□
TX-16	127	78.5	50	88	16	20	1/4	28	48	23	28	
TX-25	148	100	60	98	15	23	1/4	36	56	25	28	

- 模厚建議：25、30、35、40、45、50、55、60mm

- 註：模沿厚度(h)及T槽 (A.B.C.D.) 尺寸如為既有(特殊)尺寸，請於訂購時確認之。

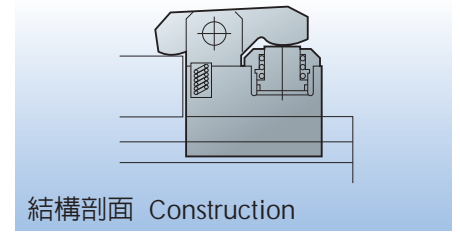
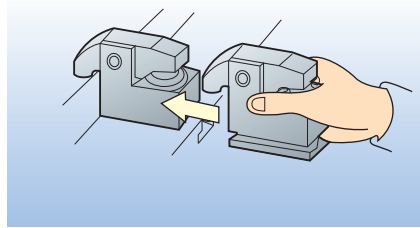
Before purchase, please verify mold edge thickness (h) and T-slot (A.B.C.D.) has standard or special dimensions.

▶ 快速換模系統—TY型夾模器

FORWELL QDCS - TY Die Clamp

此型夾模器以槓桿原理作用，夾持模沿，並不需"U"型溝，因此有更寬廣的適用範圍。

Because this lever-type clamp does not require a U-slot on the die shoe it may be used in a wide range of applications. The base of the clamp is machined to fit the T-slot on the bolster. The flange-mount model clamp may be bolted onto the bolster. The automatic slide model makes remote control possible.



結構剖面 Construction

特性規格 Specifications

型號 Model	Unit	TY-1	TY-2	TY-4	TY-6	TY-10	TY-16	TY-25
夾持力(於油壓250kg/cm ²) Clamping Force (at 250kgf/cm ²)	tons	1	2	4	6.3	10	16	25
全部行程(X) Full Stroke	mm	6	7	7	8	8	8	8
夾模行程(Y) Clamping Stroke	mm	3	2	3	3	3	3	3
安全行程(Z) Extra Stroke	mm	3	5	4	5	5	5	5
夾模器缸體容量(全行程) Cylinder Capacity at Full Stroke	cc.	2	6.5	13.2	22.3	37	61	93

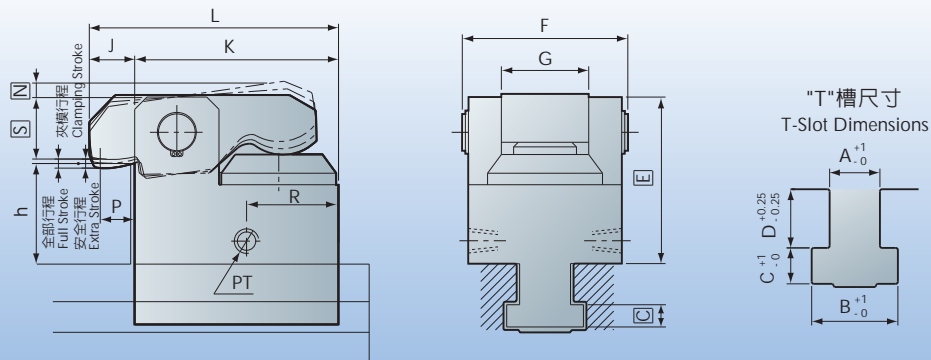
TY型夾模器

大陸專利號：ZL 01 2 67208.4

China Patent No: ZL 01 2 67208.4

- 註：安全行程為全部行程與夾模行程之差值，為特別的安全預留量。
Extra stroke is the difference between full stroke and clamping stroke with extra space allowed for safe operation.

外型尺寸 Dimensions



型號 Model	MIN.[E]	F	G	J	K	L	MAX.[N]	P	R	MIN.[S]	PT	MIN.[C]	A	B	C	D	選用泵浦 Power Unit
TY-1	49.5	46	20	15	58	73	10	10	19	16.5	1/8	7	22	37	16	24	FP6308U-□-□
TY-2	59	65	28	22	85	107	10	12.5	48	27	1/8	9.5	22	37	16	24	
TY-4	85	87	40	30	120	150	10	16	58	33	1/4	12	22	37	16	24	
TY-6	94	97	44	34.5	133	167.5	11	20	68	40	1/4	14	28	48	20	28	
TY-10	105	110	50	30	165	195	11	20	82	53	1/4	16.5	28	48	20	28	FP1014U-□-□
TY-16	120	130	60	35	200	235	12	20	96	67	1/4	19	28	48	23	28	
TY-25	133	152	73	35	240	275	13	20	110	81	1/4	22	36	56	25	28	

- 模厚建議: 25、30、35、40、45、50、55、60mm

- 註：模沿厚度(h)及T槽 (A.B.C.D.) 尺寸如為既有(特殊)尺寸，請於訂購時確認之。

Before purchase, please verify mold edge thickness (h) and T-Slot (A.B.C.D.) has standard or special dimensions.

快速換模系統—DR型彈簧式舉模器

FORWELL QDCS - DR Die Lifter

DR型舉模器可藉由填隙片的增減，很容易的適用不同尺寸的"T"型槽或"U"型槽。其基本長度有200mm與300mm兩種尺寸，經過搭配使用，可產生每100mm的總度變化。

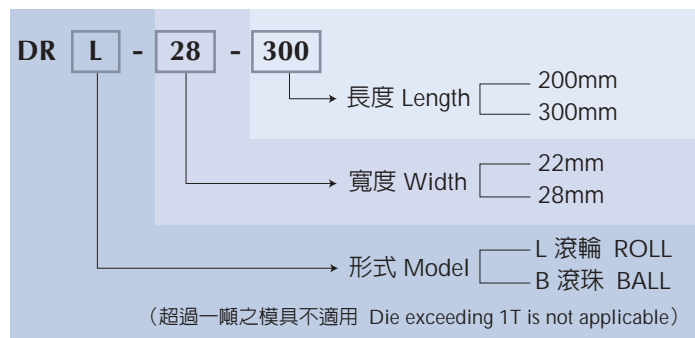
These spring-loaded die lifters easily fit to different sized T or U-slots on the bolster by adding spacers to the side walls of the die lifters.

Die lifters are available in standard lengths of 200mm and 300mm, any die lifters length can be constructed by combining these standard lengths in increments of 100mm.

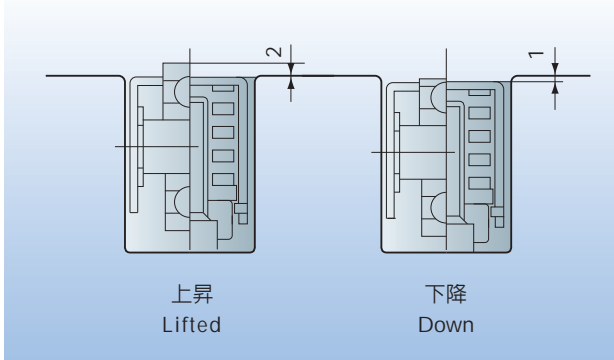


DR型彈簧式舉模器

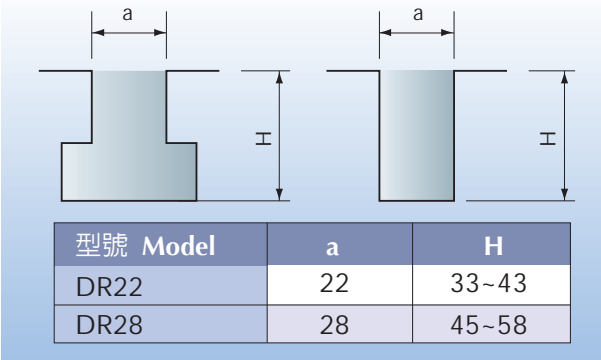
大陸專利號：ZL 01 2 64424.2
China Patent No: ZL 01 2 64424.2



DR型結構與動作 Construction and Action



T/U槽尺寸 T-slot / U-slot Dimensions

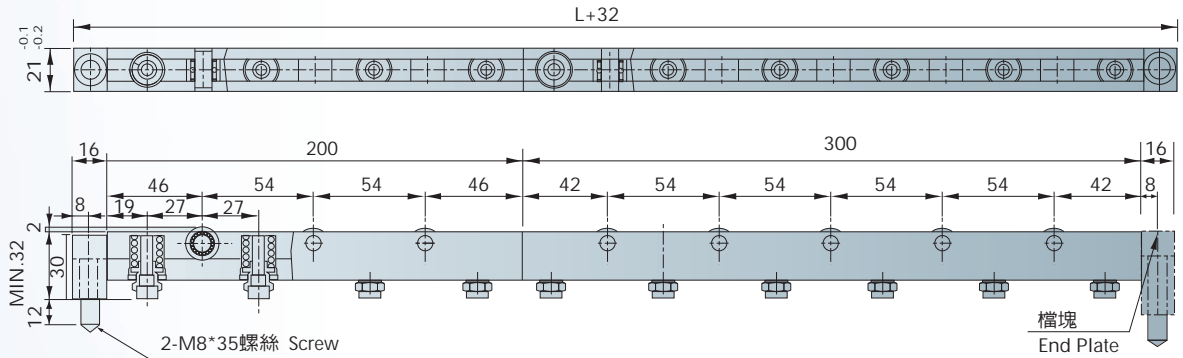


DR型基本尺寸特性 Specifications

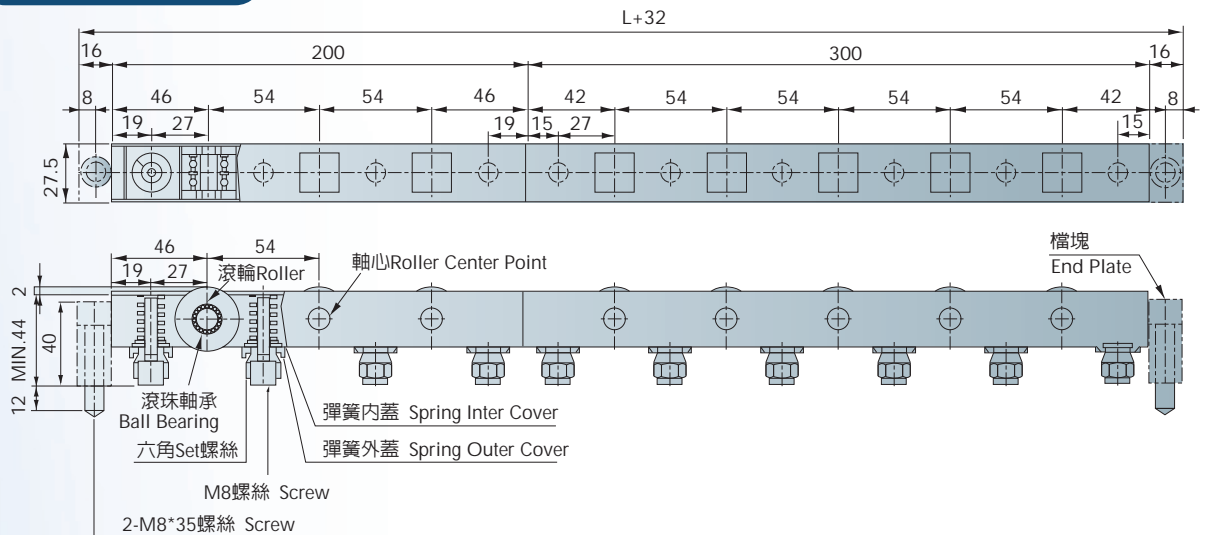
基本型式 Specifications	寬度 Width (mm)	長度 Length (mm)	彈簧數量 Springs (pcs)	單一彈簧舉模力 Lift Force (kgf)
DRL-22-200/ DRB-22-200	22	200	4	37.5
DRL-22-300/ DRB-22-300	22	300	6	37.5
DRL-28-200/ DRB-28-200	28	200	4	75
DRL-28-300/ DRB-28-300	28	300	6	75

▶ 快速換模系統—DR型/DU型彈簧式舉模器 FORWELL QDCS - DR/DU Die Lifter

DR-22 Dimensions



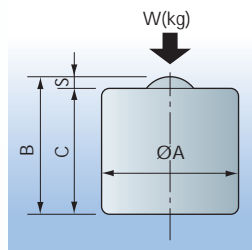
DR-28 Dimensions



單一舉模器最大舉模力(kgf) Maximum Lift Force per Line (kgf)

規格 (Model)	最大舉模力 (kgf)	長度(mm)																	
		200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900
DR22	150	225	300	375	450	525	600	675	750	825	900	975	1050	1125	1200	1275	1350	1425	1500
DR28	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000

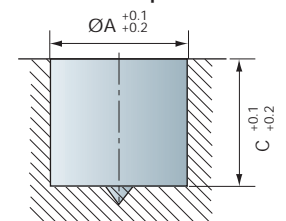
DU滾珠彈簧式舉模器



特性規格 Specifications

	DU100	DU200
A	38 ⁺⁰ / _{-0.05}	45 ⁺⁰ / _{-0.05}
B	38	45
C	35 ⁺⁰ / _{-0.05}	42 ⁺⁰ / _{-0.05}
S	3	3
W	100Kgf	200Kgf

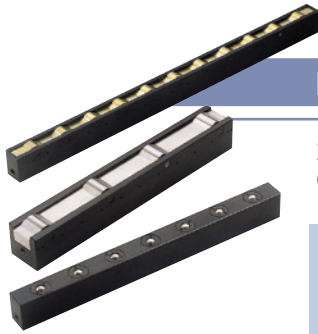
台盤加工尺寸 Dimension for modify the bolster plate



▶ 快速換模系統—DL型油壓式舉模器（滾輪型） FORWELL QDCS - DL Die Lifter (Roller Type)

DL型油壓式舉模器，以油壓方式舉模，有強力舉模能力，適合模具重量變化差異大時使用。

The hydraulic DL DIE LIFTER withstands heavy loads and abuse. The scrap guard / scrapers keep the roller surfaces free from scrap. The rollers are arrayed in closer pitches to prevent damage to the bottom of heavy dies. The height of the roller can be adjusted by removing some of the built-in shims of different thicknesses.



DL型油壓式舉模器

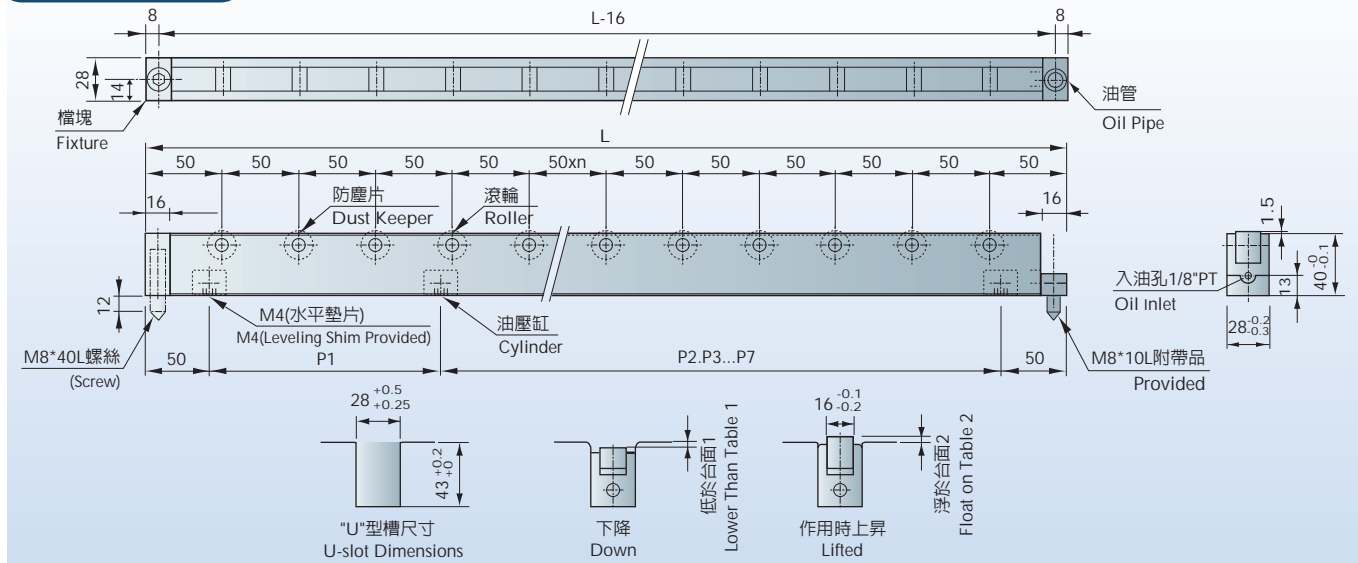
大陸專利號：ZL 01 2 68229.2
China Patent No: ZL 01 2 68229.2

DL - **28** **400**
外觀長度 Overall Length
寬度 Width

規格特性 Specifications

基本形式 Basic Model	Unit	DL28	DL50
單一缸體舉模力 Lifting Force Per cylinder	tons	0.5	1.1
工作油壓 Working Hydraulic Pressure	kgf/cm ²	250	250
總上昇行程 Total Stroke	mm	3	3
單一缸體容油量 One Cylinder Capacity	cc.	0.6	1.4

DL-28 Dimensions



型號 Model	總長度(mm) Overall	滾輪數 Roller Q'ty	載模能力(kgf) Die Load Capacity	油壓缸(kg) Lift Cylinder		油壓缸距離 (mm) Lift Cylinder Pitch							
				丁數 (pcs)	舉模力(kgf) Lift Force	P1	P2	P3	P4	P5	P6	P7	
DL-28-400	400	7	560	2	1000	300							
DL-28-500	500	9	720	3	1500	90	310						
DL-28-600	600	11	880	4	2000	100	340	60					
DL-28-700	700	13	1040	4	2000	150	350	100					
DL-28-800	800	15	1200	5	2500	95	95	390	120				
DL-28-900	900	17	1360	5	2500	110	110	410	170				
DL-28-1000	1000	19	1520	6	3000	130	130	420	110	110			
DL-28-1100	1100	21	1680	6	3000	150	150	460	120	120			
DL-28-1200	1200	23	1840	7	3500	100	150	150	200	200	300		
DL-28-1300	1300	25	2000	7	3500	150	150	300	300	150	150		
DL-28-1400	1400	27	2160	8	4000	100	100	150	150	200	250	350	
DL-28-1500	1500	29	2320	8	4000	100	100	150	150	200	350	350	

● 1000L以上建議使用DL-50

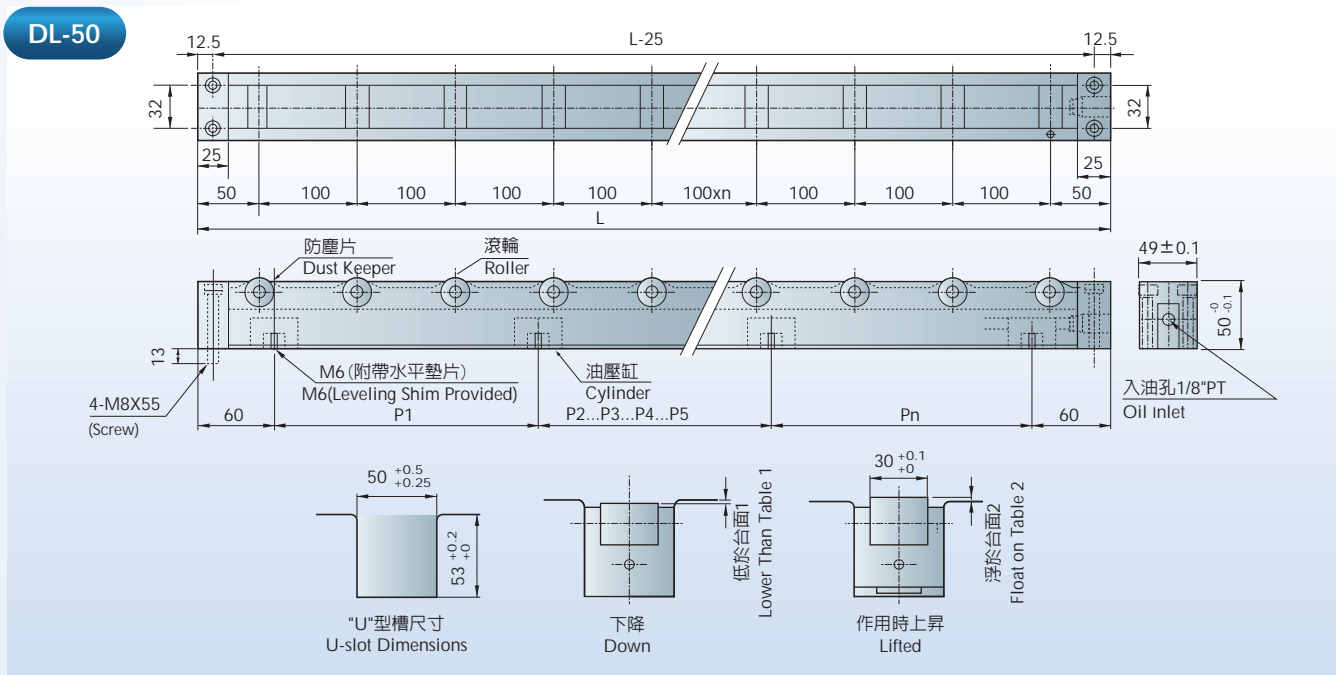
● 品質不斷改良，尺寸變更不另行通知。 Specifications are subject to change without notification.

▶ 快速換模系統—DL型油壓式舉模器（滾輪型）

FORWELL QDCS - DL Die Lifter (Roller Type)

DL型油壓式舉模器，以油壓方式舉模，有強力舉模能力，適合模具重量變化差異大時使用。

The hydraulic DL DIE LIFTER withstands heavy loads and abuse. The scrap guard / scrapers keep the roller surfaces free from scrap. The rollers are arrayed in close pitches to prevent damage to the bottom of heavy dies. The height of the roller can be adjusted by removing some of the built-in shims of different thicknesses.



型號 Model	總長度(mm) Overall	滾輪數 Roller Q'ty	載模能力(kgf) Die Load Capacity	油壓缸(kg) Lift Cylinder		油壓缸距離(mm) Lift Cylinder Pitch							
				丁數 (pcs)	舉模力(kgf) Lift Force	P1	P2	P3	P4	P5	P6	P7	
DL-50-400	400	4	800	2	2200	280							
DL-50-500	500	5	1000	3	3300	90	290						
DL-50-600	600	6	1200	4	4400	90	330	60					
DL-50-700	700	7	1400	4	4400	140	340	100					
DL-50-800	800	8	1600	4	4400	170	390	120					
DL-50-900	900	9	1800	4	4400	210	400	170					
DL-50-1000	1000	10	2000	5	5500	125	125	410	220				
DL-50-1100	1100	11	2200	5	5500	150	150	400	280				
DL-50-1200	1200	12	2400	5	5500	150	150	400	380				
DL-50-1300	1300	13	2600	6	6600	150	150	200	400	280			
DL-50-1400	1400	14	2800	6	6600	150	150	200	400	380			
DL-50-1500	1500	15	3000	7	7700	150	150	200	300	300	280		
DL-50-1600	1600	16	3200	7	7700	100	150	250	400	300	280		
DL-50-1700	1700	17	3400	8	8800	100	100	150	250	300	300	380	
DL-50-1800	1800	18	3600	8	8800	100	100	150	250	300	300	480	

● 註：訂購時，如有下料孔請附台盤圖。

For purchases please attach a bolster plate diagram for correct sizing of the waste material hole at the bottom.

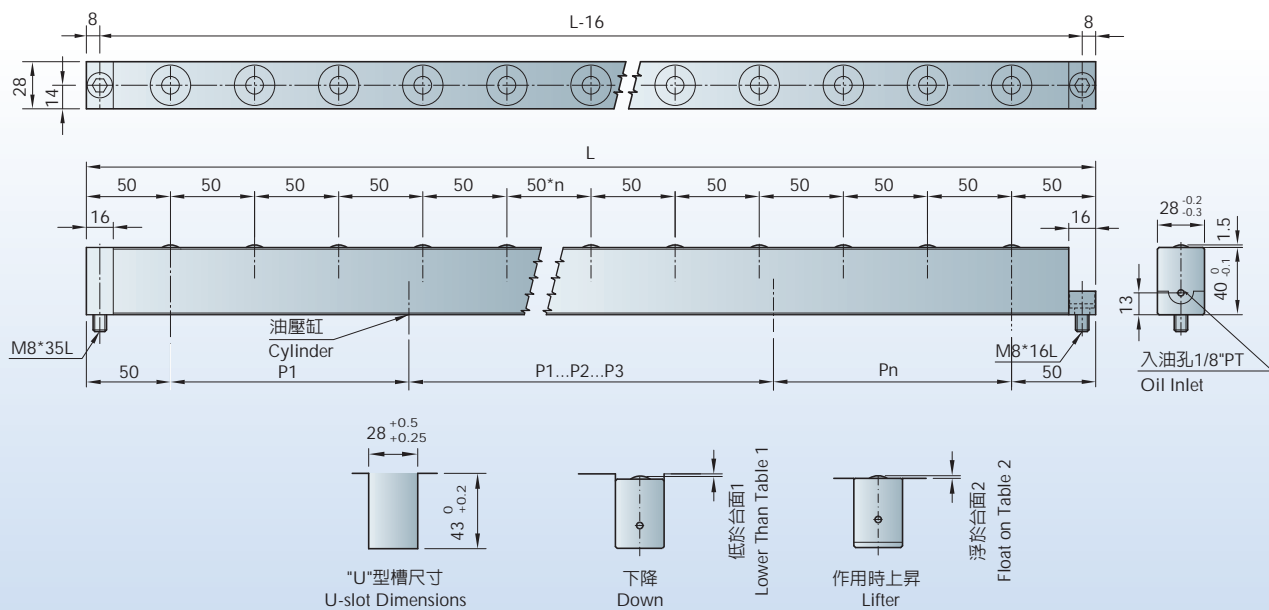
▶ 快速換模系統—DB型油壓式舉模器（滾珠型） FORWELL QDCS - DB Die Lifter (Ball Type)

DB-28適用於模具重量800kg以下 DB-28 for Dies 800kg or Less

DB型油壓式舉模器，利用萬向滾珠的方式，適合前後左右移動模具時使用。

The hydraulic DB Die Lifter employs universal bearings for superior forward and reverse, left and right motion of molds in and out of press machines.

DB-28



型號 Model	總長度(mm) Overall	滾珠數 Ball Q'ty	油壓缸(kg) Lift Cylinder		油壓缸距離 (mm) Lift Cylinder Pitch							
			丁數 (pcs)	舉模力(kgf) Lift Force	P1	P2	P3	P4	P5	P6	P7	
DB-28-400	400	7	2	1000	300							
DB-28-500	500	9	3	1500	90	310						
DB-28-600	600	11	4	2000	100	340	60					
DB-28-700	700	13	4	2000	150	350	100					
DB-28-800	800	15	5	2500	95	95	390	120				
DB-28-900	900	17	5	2500	110	110	410	170				
DB-28-1000	1000	19	6	3000	130	130	420	110	110			
DB-28-1100	1100	21	6	3000	120	120	460	150	150			
DB-28-1200	1200	23	7	3500	300	200	200	150	150	100		
DB-28-1300	1300	25	7	3500	150	150	300	300	150	150		
DB-28-1400	1400	27	8	4000	350	250	200	150	150	100	100	
DB-28-1500	1500	29	8	4000	350	350	200	150	150	100	100	

●註：訂購時，如有下料孔請附台盤圖。

For purchases please attach a bolster plate diagram for correct sizing of the waste material hole at the bottom.

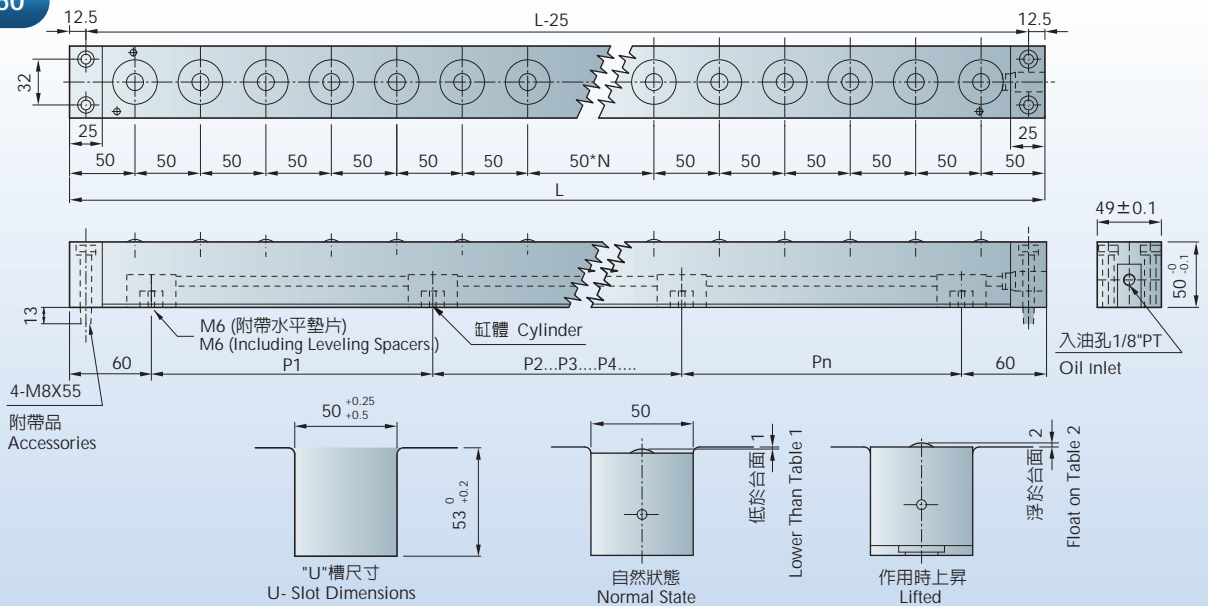
▶ 快速換模系統—DB型油壓式舉模器（滾珠型） FORWELL QDCS - DB Die Lifter (Ball Type)

DB-50適用於模具重量800~1500kg DB-50 for Dies 800~1500kg

DB型油壓式舉模器，利用萬向滾珠的方式，適合前後左右移動模具時使用。

The hydraulic DB Die Lifter employs universal bearings for superior forward and reverse, left and right motion of molds in and out of press machines.

DB-50



型號 Model	總長度(mm) Overall	滾珠數 Ball Q'ty	油壓缸(kg) Lift Cylinder		油壓缸距離(mm) Lift Cylinder Pitch							
			丁數 pcs	舉模力(kgf) Lift Force	P1	P2	P3	P4	P5	P6	P7	
DB-50-400	400	7	2	2200	280							
DB-50-500	500	9	3	3300	90	290						
DB-50-600	600	11	4	4400	90	330	60					
DB-50-700	700	13	4	4400	140	340	100					
DB-50-800	800	15	4	4400	170	390	120					
DB-50-900	900	17	4	4400	210	400	170					
DB-50-1000	1000	19	5	5500	125	125	410	220				
DB-50-1100	1100	21	5	5500	150	150	400	280				
DB-50-1200	1200	23	5	5500	150	150	400	380				
DB-50-1300	1300	25	6	6600	150	150	200	400	280			
DB-50-1400	1400	27	6	6600	150	150	200	400	380			
DB-50-1500	1500	29	7	7700	150	150	200	300	300	280		
DB-50-1600	1600	31	7	7700	100	150	250	400	300	280		
DB-50-1700	1700	33	8	8800	100	100	150	250	300	300	380	
DB-50-1800	1800	35	8	8800	100	100	150	250	300	300	480	

● 註：訂購時，如有下料孔請附台盤圖。

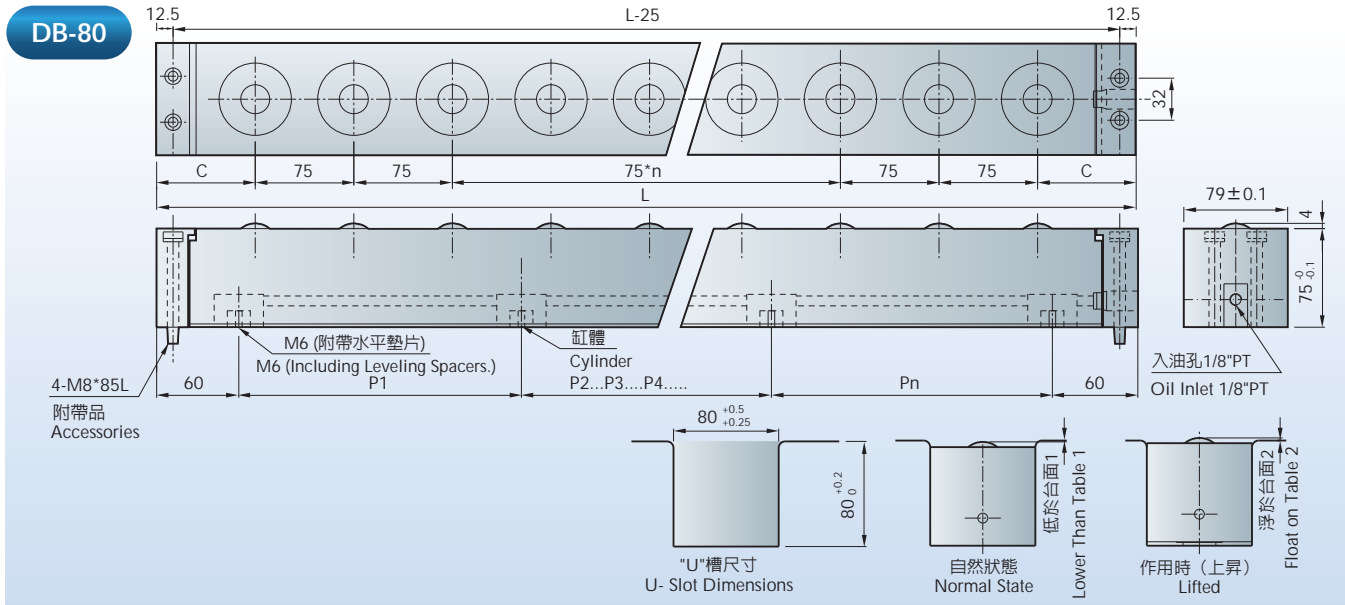
For purchases please attach a bolster plate diagram for correct sizing of the waste material hole at the bottom.

▶ 快速換模系統—DB型油壓式舉模器（滾珠型） FORWELL QDCS - DB Die Lifter (Ball Type)

DB-80適用於模具重量1500kg以上 DB-80 for Dies 1500kg or More

DB型油壓式舉模器，利用萬向滾珠的方式，適合前後左右移動模具時使用。

The hydraulic DB Die Lifter employs universal bearings for superior forward and reverse, left and right motion of molds in and out of press machines.



型號 Model	總長度 (mm) Overall	滾珠數 Ball Q'ty	載模能力 Die Load Capacity	油壓缸(kg) Lift Cylinder		油壓缸距離 (mm) Lift Cylinder Pitch															邊距 Margin
				丁數 pcs	舉模力(kgf) Lift Force	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	
DB-80-400	400	4	800	3	4400	80	120	80													87.5
DB-80-500	500	6	1200	3	4400	90	200	90													62.5
DB-80-600	600	7	1400	4	6600	80	80	160	80	80											75
DB-80-700	700	9	1800	4	6600	90	90	220	90	90											87.5
DB-80-800	800	10	2000	6	8800	80	80	80	200	80	80	80									62.5
DB-80-900	900	11	2200	6	8800	90	90	90	240	90	90	90									75
DB-80-1000	1000	13	2600	6	11000	80	80	80	80	240	80	80	80	80							87.5
DB-80-1100	1100	14	2800	8	11000	90	90	90	90	260	90	90	90	90							62.5
DB-80-1200	1200	15	3000	8	11000	100	100	100	100	280	100	100	100	100							75
DB-80-1300	1300	16	3400	8	13200	90	90	90	90	90	280	90	90	90	90						87.5
DB-80-1400	1400	18	3600	10	13200	100	100	100	100	100	280	100	100	100	100						62.5
DB-80-1500	1500	19	3800	10	15400	90	90	90	90	90	90	300	90	90	90	90	90				75
DB-80-1600	1600	20	4200	10	15400	100	100	100	100	100	280	100	100	100	100	100	100				87.5
DB-80-1700	1700	22	4400	12	17600	90	90	90	90	90	90	90	320	90	90	90	90	90	90	90	62.5

● 註：訂購時，如有下料孔請附台盤圖。

For purchases please attach a bolster plate diagram for correct sizing of the waste material hole at the bottom.

● 品質不斷改良，尺寸變更不另行通知。 Specifications are subject to change without notification.

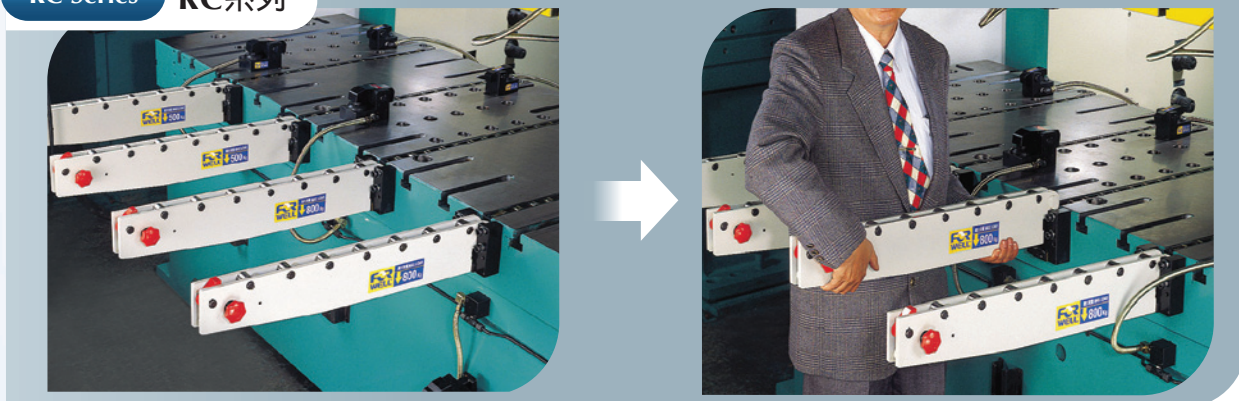
▶ 快速換模系統—RC/RD/RE/RF型移模臂

FORWELL QDCS - RC/RD/RE/RF Bolster Extension Series

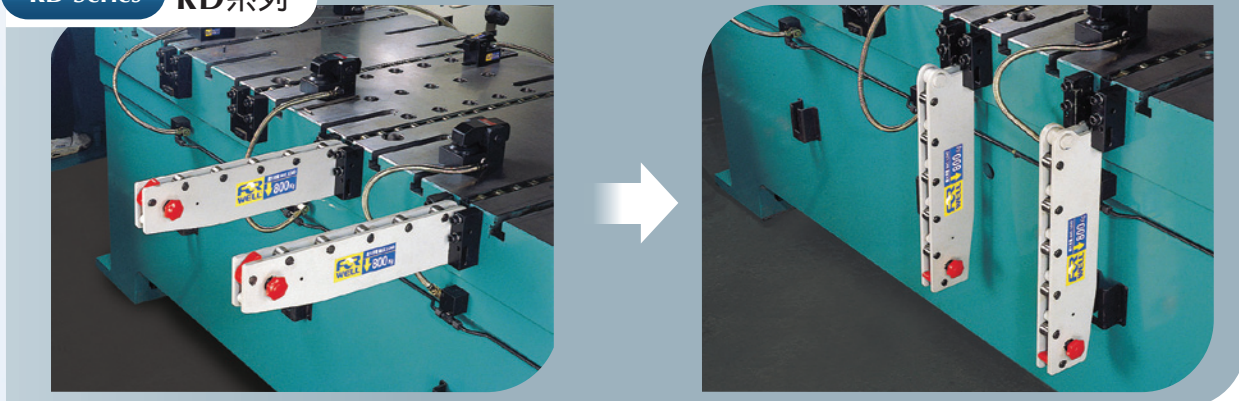
當您使用起重機或叉架昇降機作模具更換時，共有三種不同的型式設計，包括RC(移動式)、RD(折下式)與RE/RF(旋轉式)系列，可供選用移模臂使用，可以使模具更容易的移到沖床台盤確實位置。

Bolster extensions makes it easy to move dies to an accessible area with a crane or forklift truck for convenient die changes. Three different designs are available: Detachable RC series, drop-down RD series (alternate model), and folding RE/RF series.

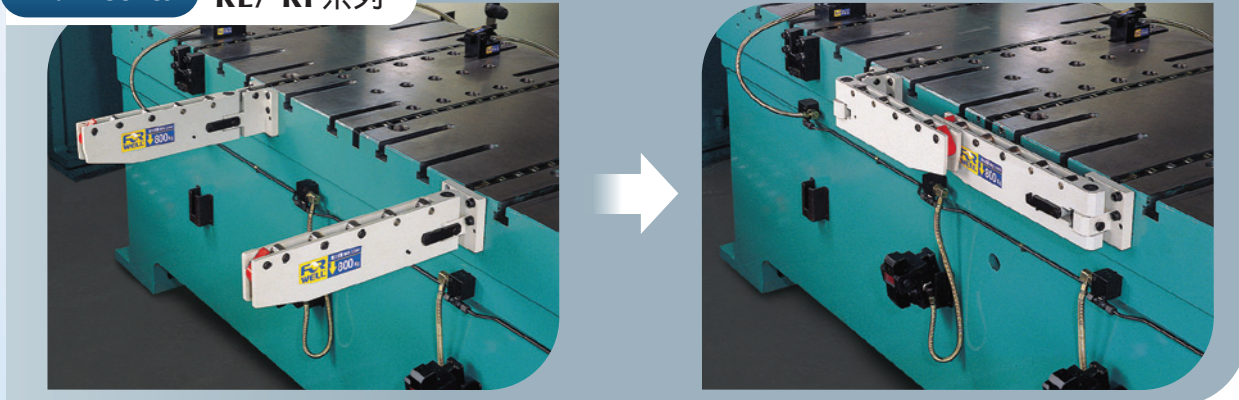
RC Series RC系列



RD Series RD系列



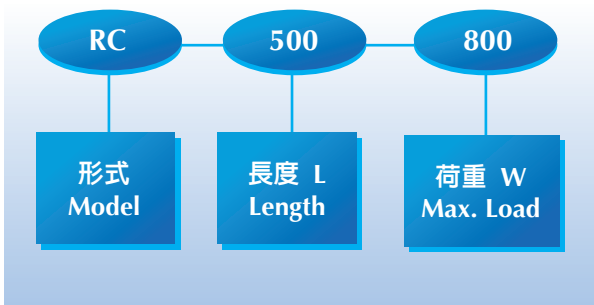
RE/RF Series RE/ RF系列



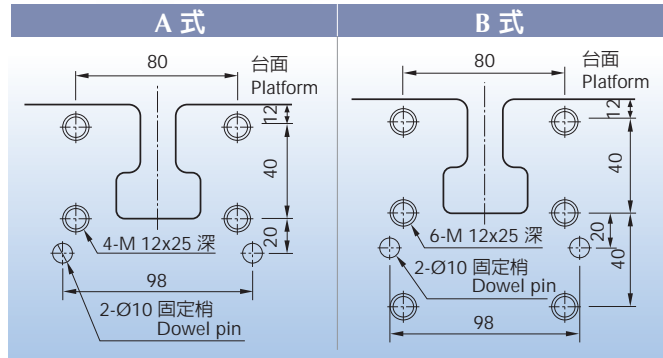
▶ 快速換模系統—RC型移模臂（輕、中負荷）

FORWELL QDCS - RC Bolster Extension Series (Light Duty, Medium Duty)

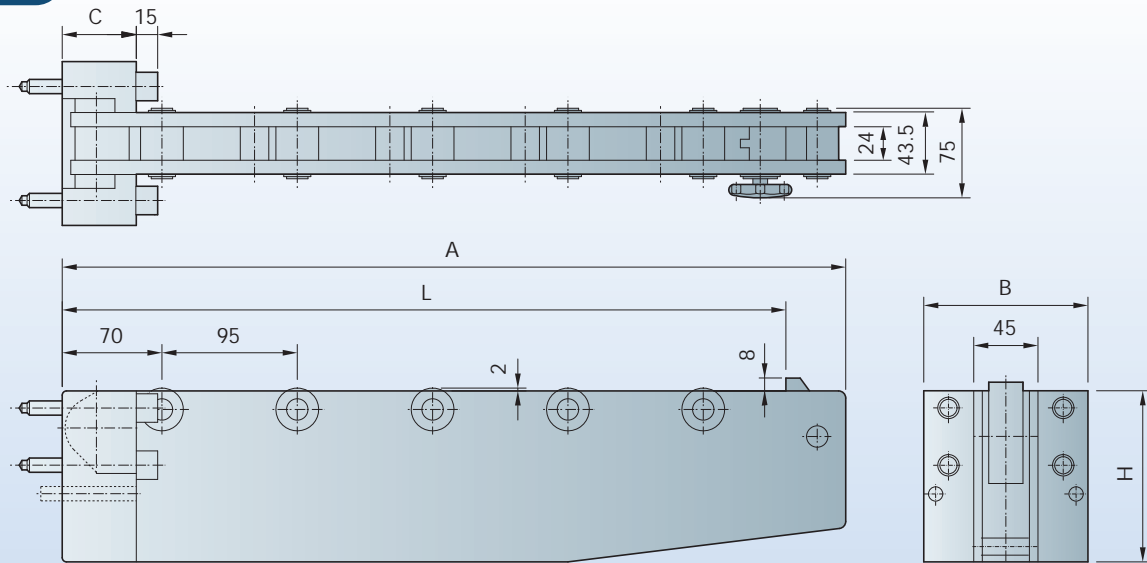
形式表示法 Model/Length/Max. Load



安裝鉗孔尺寸 Mounting Hole Dimensions



RC Series

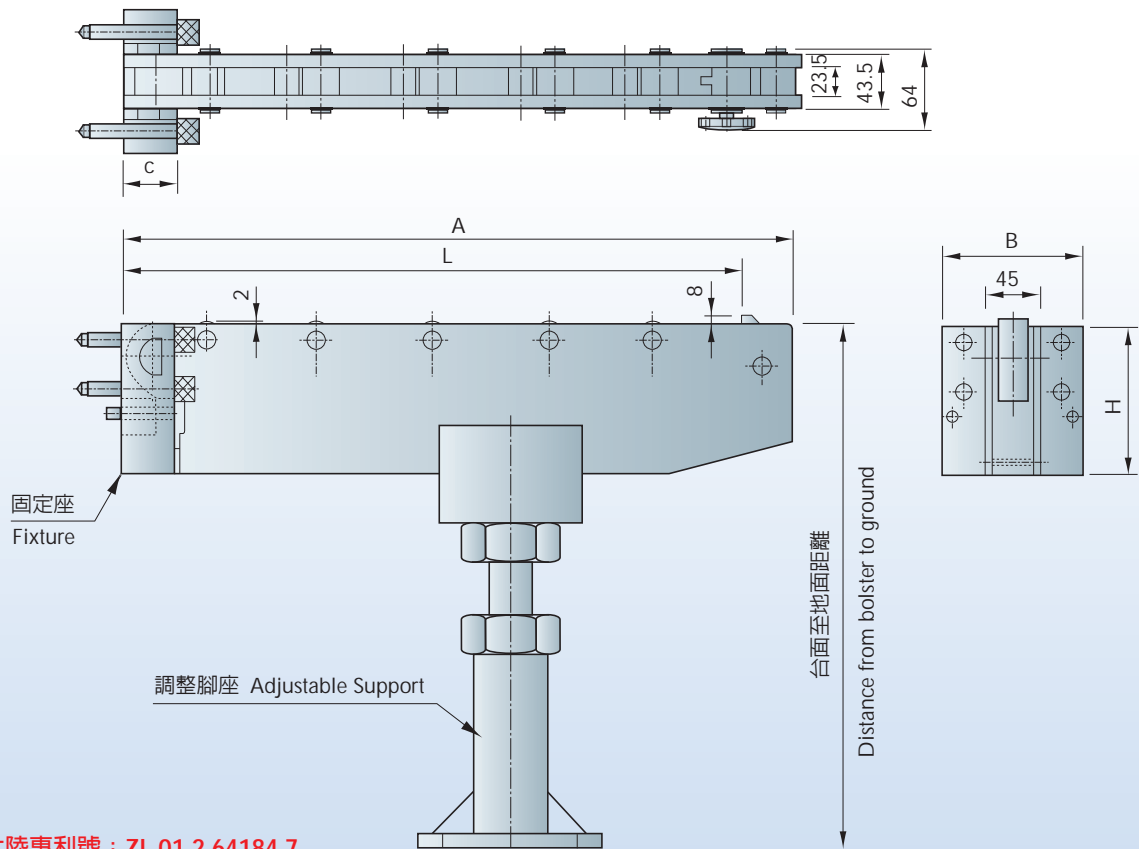


型號 Model	模具引出長 Die Travel (L)	最大荷重 Max. Load (kg)	全長 Overall Length (A)	固定座 Fixture			個/支 Rollers	安裝尺寸 Installed Dimensions	固定座形式 Fixture Model
				B	C	H			
RC-500-800	500	800	550	115	46	120	5	A式	RC-120
RC-500-1250	500	1250	550			160			RC-160
RC-500-1600	500	1600	550			200		RC-200	
RC-700-600	700	600	750		46	120	7	A式	RC-120
RC-700-1000	700	1000	750			160			RC-160
RC-800-800	800	800	850			160		8	B式
RC-800-1600	800	1600	850		200	RC-240			
RC-800-2000	800	2000	850		240	RC-200			
RC-900-900	900	900	950		50	200	10		RC-200
RC-1000-1600	1000	1600	1050						

▶ 快速換模系統—RC型移模臂（重負荷）

FORWELL QDCS - RC Bolster Extension Series (Heavy Duty)

RC型（移動式） Detachable RC Series



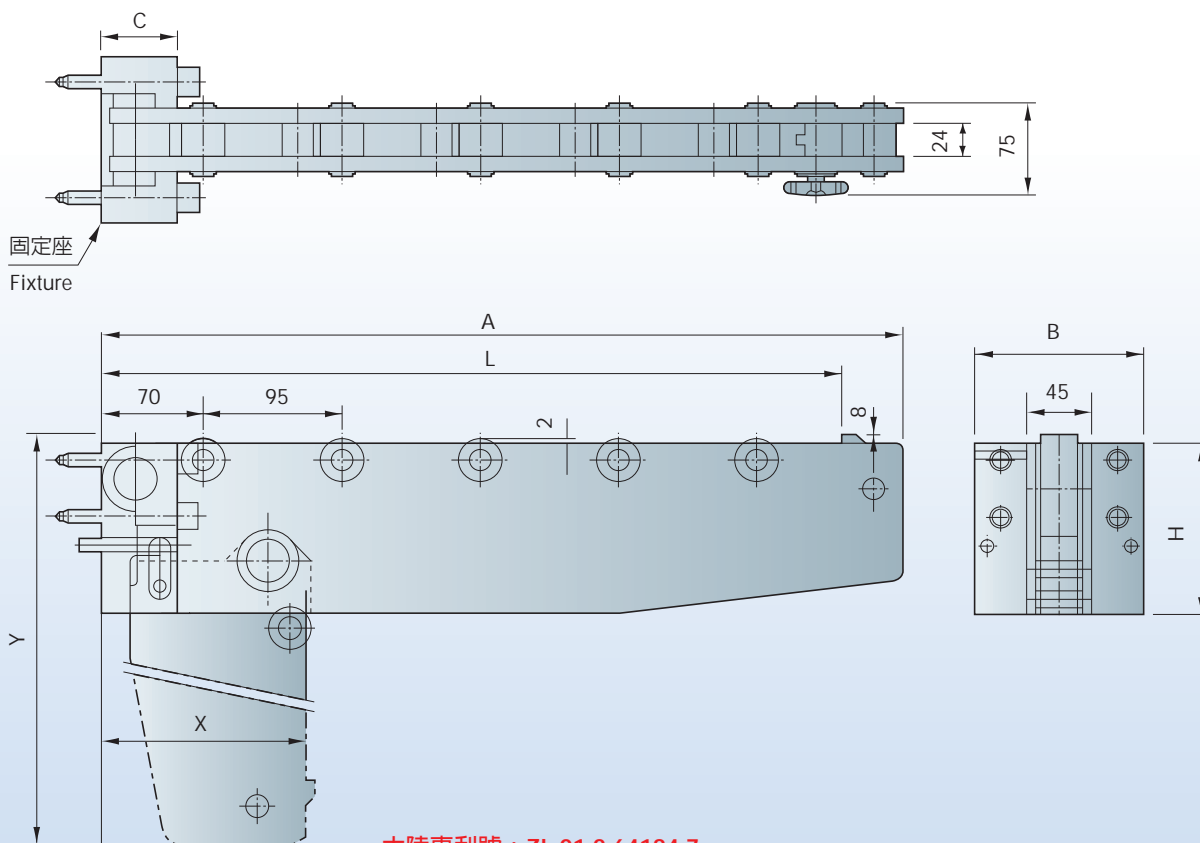
大陸專利號：ZL 01 2 64184.7
China Patent No: ZL 01 2 64184.7

型號 Model	模具引出長 Die Travel (L)	最大荷重(kg) Max. Load	全長 Overall Length (A)	固定座 Fixture			個 / 支 Rollers	安裝尺寸 Installed Dimensions	固定座形式 Fixture Model
				B	C	H			
RC-1200-2500	1200	2500	1250	115	45	120	14	A式	RC-120
RC-1300-2500	1300	2500	1350						
RC-1400-2500	1400	2500	1450						
RC-1500-2500	1500	2500	1550						
RC-1600-2500	1600	2500	1650						
RC-1700-2500	1700	2500	1750						

- (L)尺寸超出 1000mm 須加調整腳座。Requires adjustable support if die travels over 1000mm. 附腳座。These models come standard with adjustable support.
- 規格外請確認。Contact us for other specifications.

▶ 快速換模系統—RD型移模臂 FORWELL QDCS - RD Bolster Extension Series

RD型（折下式） Drop-Down RD Series



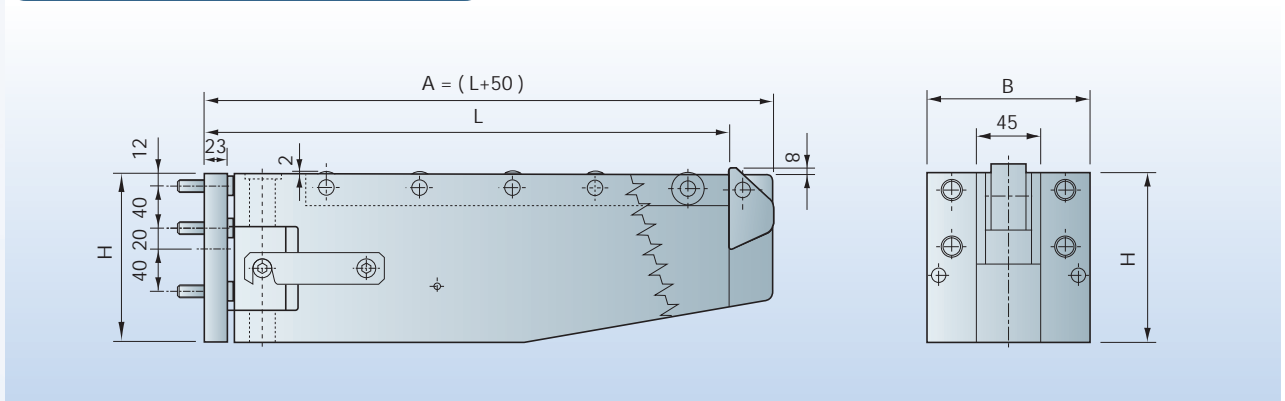
大陸專利號：ZL 01 2 64184.7
China Patent No: ZL 01 2 64184.7

型式 Model	模具引出長 Die Travel (L)	最大荷重 Max. Load	全長 Overall Length (A)	固定座 Fixture			個 / 支 Rollers	安裝尺寸 Installed Dimensions	折下時尺寸 Drop-Down	
				B	C	H			X	Y
RD-500-800	500	800	550	115	52	120	A式	140	620	
RD-500-1250	500	1250	550			160		5	180	660
RD-500-1600	500	1600	550			200	7	B式	220	700
RD-700-600	700	600	750			120		140	820	
RD-700-1000	700	1000	750			120	A式	180	860	
RD-800-800	800	800	850			160		180	960	
RD-800-1600	800	1600	850			200	8	B式	220	1000
RD-800-2000	800	2000	850			240			260	1040
RD-900-900	900	900	950			200	9	220	1100	
RD-1000-1600	1000	1600	1050				10		1200	

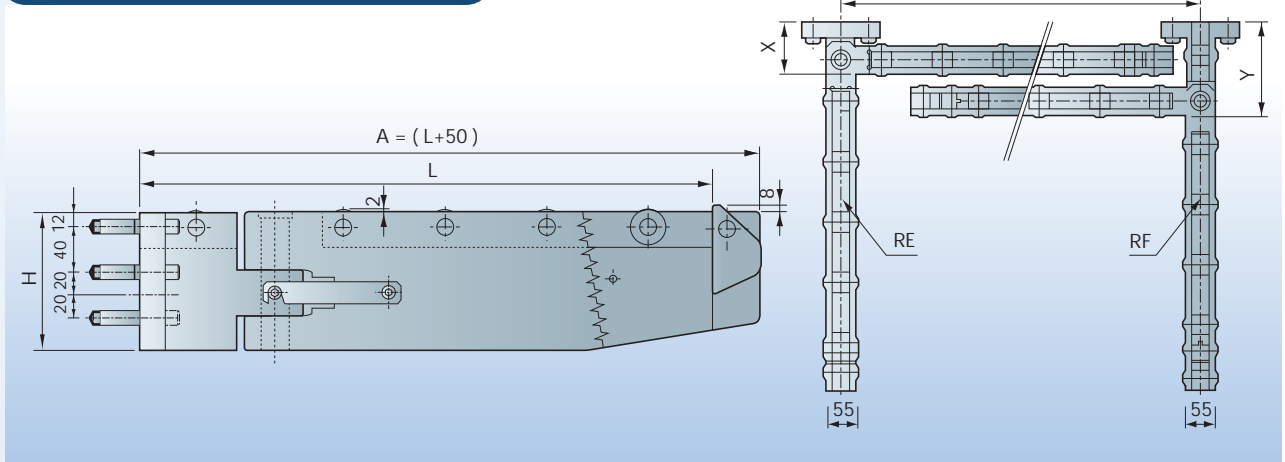
▶ 快速換模系統—RE/RF型移模臂

FORWELL QDCS - RE/RF Bolster Extension Series

RE型（旋轉式）Folding RE/RF Series



RF型（旋轉式）Folding RE/RF Series



大陸專利號：ZL 01 2 64184.7

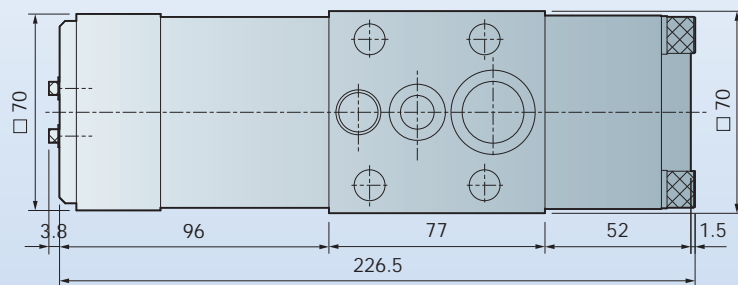
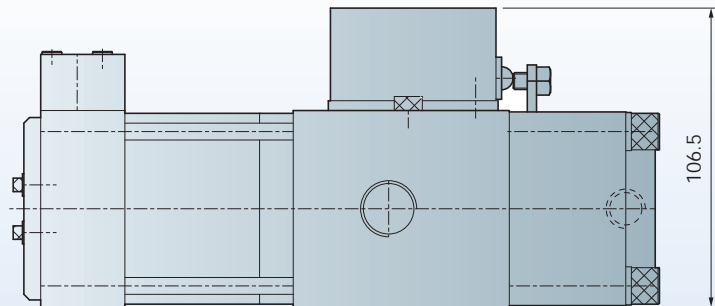
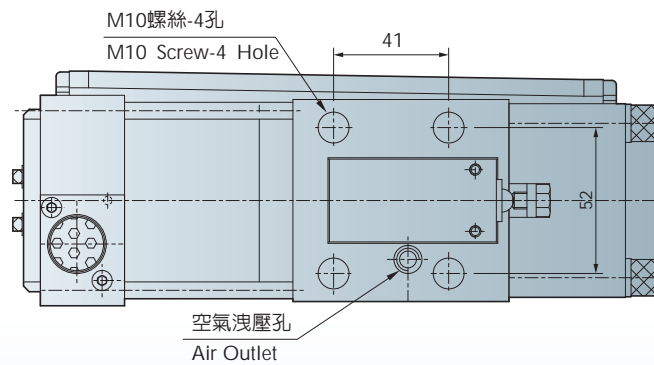
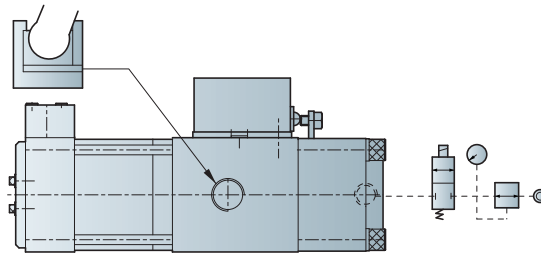
China Patent No: ZL 01 2 64184.7

型式 Model	模具引出長 Die Travel (L)	最大荷重 Max. Load	全長 Overall Length (A)	固定座 Fixture			個 / 支 Rollers	安裝尺寸 Installed Dimensions	折下時尺寸 Drop-Down	
				C	B	H			X	Y
RE.RF-500-800	500	800	550	525	115	120	5	A式	90	150
RE.RF-500-1250	500	1250	550	525		160				
RE.RF-700-600	700	600	750	725		120				
RE.RF-700-1600	700	1600	750	725		200	7	B式		
RE.RF-800-800	800	800	850	825		160	8	A式		
RE.RF-800-1600	800	1600	850	825		200	8	B式		
RE.RF-500-1600	500	1600	550	525		200	5			
RE.RF-900-900	900	900	950	925			9			

▶ 過負荷泵浦 Overload Pump

除了換模系統產品以外，富偉也提供了寬廣適用範圍的空油壓組件與設備，這些包括供塑膠射出模具用，和工件夾具系統使用的套件等等，下面圖示說明的產品，如果對您的生產機具有所效用，請與我們聯絡，做更技術性的了解。

Besides die change systems Forwell offers a wide range of hydraulic and pneumatic controlled components and equipment for plastic injection molds and workpiece clamping systems for machine tools. The components shown below represent just a selection of what we have available. For related brochures and further details, don't hesitate to contact us.



型式 Model	OL107
空氣壓力範圍 Air Supply	2.5~5.5 kg/cm ²
過負荷壓力比 Power Ratio	空氣壓力 x 70倍 Air Pressure x 70
過負荷壓力範圍 Power Pressure	175~385 kgf/cm ²
洩載面積 Area of Air Outlet	0.42 cm ²

▶ 相關零件 Related Products for Press Machines

氣動泵單體 Air Pump



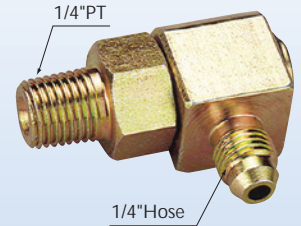
外形圖於P12~P13
Model on P12~P13

	空氣壓力5kg/cm ² 時出力 At Air 5kg/cm ²	增壓比 Pressure Ratio
06	420 (kg/cm ²)	1:84
07	300 (kg/cm ²)	1:60
08	250 (kg/cm ²)	1:50
09	200 (kg/cm ²)	1:40
10	150 (kg/cm ²)	1:30
12	100 (kg/cm ²)	1:20
14	80 (kg/cm ²)	1:16
16	50 (kg/cm ²)	1:10
20	40 (kg/cm ²)	1:8
24	26 (kg/cm ²)	1:5

AV氣控閥 Air Control Valve



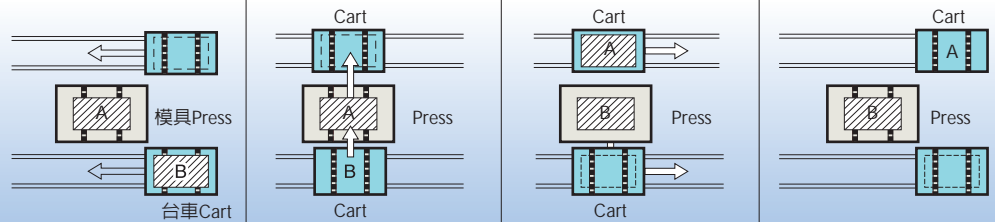
迴轉接頭 Rotary Unit



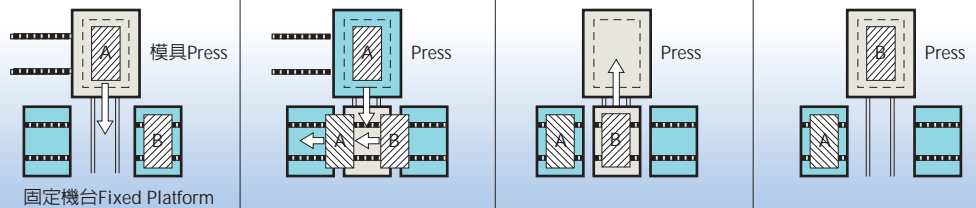
1/4"PT x 1/4"H
耐壓 Pressure Resistance: 700kg/cm²

換模台車系統 Example Die Cart Systems

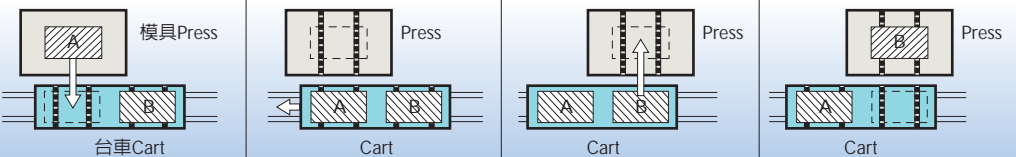
搭配台車，兩副模同時換模，節省換模時間。
Simultaneous 2-die change using two carts. The shortest die change time is achieved.



搭配移模和兩組固定台車進行換模，此為低成本型。
Die change using a moving bolster and two stationary tables. Low cost type.



動力雙模台車換模，適用範圍極廣。
Die change using a powered 2-die cart. Many applications are possible.



▶ 訂購資料表 Quotation Request Form

(如果您訂購二台以上沖床換模系統，請複印此份表格使用，並明列每台沖床資料。)
(If you require quotations for more than one press, please copy this form one for each machine.)

A Press Parts 沖床部份	A1 新購或舊有 New or Existing	<input type="checkbox"/> 新購 New	<input type="checkbox"/> 舊有 Existing
	A2 製造商及型號 Manufacturer and Model	製造商 Manufacturer	型號 Model
	A3 沖床型式 Type of Press	<input type="checkbox"/> C Frame	<input type="checkbox"/> 直柱型 Straight Side
		<input type="checkbox"/> Transfer	<input type="checkbox"/> Other Specify (其它 <input type="text"/>)
	A4 沖壓能力 Tonnage	<input type="checkbox"/> tf	<input type="checkbox"/> 美制 US <input type="checkbox"/> 公制 Metric
	A5 滑塊尺寸 Slide Dimensions	(L-R) <input type="text"/> X (F-B) <input type="text"/> mm (inch)	
	A6 台盤尺寸 Bolster Dimensions	(L-R) <input type="text"/> X (F-B) <input type="text"/> mm (inch)	
A7 T槽 (詳細測量) T-slot	<input type="checkbox"/> 有 Yes <input type="checkbox"/> 沒有 No	尺寸 Dimensions	a: <input type="text"/> c: <input type="text"/> b: <input type="text"/> d: <input type="text"/>

B Die Parts 模具部份	B1 最大重量 Max. Weight	<input type="text"/> kg (1bs)
	B2 最大尺寸 Max. Dimensions	(W) <input type="text"/> x (L) <input type="text"/> x (H) <input type="text"/> mm (inch)
	B3 螺栓用"U"槽 U-slot for Bolting	<input type="checkbox"/> 有 Yes <input type="checkbox"/> 沒有 No
	B4 模具邊緣厚度 Die Shoe Thickness	<input type="text"/> mm (inch)
	B5 模具底部 Bottom	<input type="checkbox"/> 平面 Plain <input type="checkbox"/> 格子狀 Lattice
	B6 特殊需求 Special Requirements	<input type="text"/>

C Die Change System 換模組件部份	C1 所需組件 Required Components	夾模器 Clamp	型式 Model	<input type="text"/> X <input type="text"/>	個 pcs
		舉模器 Die Lifter	型式 Model	<input type="text"/> X <input type="text"/>	個 pcs
		移模臂 Bolster Extension	型式 Model	<input type="text"/> X <input type="text"/>	個 pcs
		氣動泵組合 Power Unit	型式 Model	<input type="text"/> X <input type="text"/>	個 pcs
	C2 閥門操作 Valve Operation	<input type="checkbox"/> 手動式 Manual	<input type="checkbox"/> 電氣操作式 Automatic		
	<input type="checkbox"/> 電力規格 Power Supply	<input type="checkbox"/> AC <input type="checkbox"/> DC	<input type="checkbox"/> Volt <input type="checkbox"/> Hz		

基本資料 Your Information

公司名稱 / COMPANY :	聯絡人 / NAME :
地址 / ADDR :	
電話 / TEL :	傳真 / FAX :



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品質、服務、創新 Quality Service Innovation

富偉精機股份有限公司

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富偉公司 影片簡介:

請輸入網址 view.forwell.com 即可線上瀏覽動態影片。



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富偉科技集團 台灣



富偉科技集團 寧波

