

先進鈹金加工設備 最齊全的機種選擇

Advanced Sheet Metal Processing Equipment
The Most Comprehensive Range

ES23/ES23X

Tailift

Tailift CNC Machine

全電伺服轉塔式沖床 ELECTRO SERVO TURRET PUNCH PRESS

Tailift



環保！ 節能！
沖頭高精度定位，低噪音
(軟衝擊模式)
頭部結構簡單，故障率低、易保養
ECO Friendly! Energy saving!
High Positioning Accuracy, Low Noise
(soft punching)
Simple Ram Structure, Low Maintenance
Cost

台勵福 Tailift

ES23/ES23X

- ◆ ES23/ES23X是台勵福新推出的全電伺服轉塔式沖床，採用全電系列AC伺服數控系統，具有高速、節能、高精度與低噪音的特色，加上過負載自動保護設計，是沖壓高精密薄鈹件的利器。它的集成式組裝方式，有效減少地面安裝空間。因具有沖孔、成型、滾切與攻牙等多工性能，可減少無效率工時的等待，大大提升加工效率。另外節能方面，平均耗電顯著降低，無液壓油的消耗，是環境保護需求的綠色產品，這也是台勵福在研發上全方位思考的重要里程碑。

Tailift's latest innovation, ES23/ES23X, AC Servo drive and numerical control technology. Featured with high speed, high precision, energy saving, and low noise. Equipped with over-load protection, ES23 is an effective implement for thinner sheet metal. ES23/ES23X combined with processing abilities of, punching, forming, roller cutting and tapping, an all-in-one machine. The integration assembly reduces floor space requirements effectively. Low electricity consumption, energy-saving, eliminating the hydraulic. This ECO friendly product is the major milestone form Tailift's R&D.

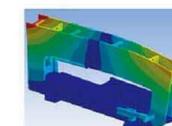


◆ 機身 Frame

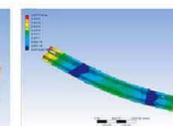
機身基座採O型龍門式架構設計，經世界級頂尖實驗室使用結構有限元素分析後，完成機身機座各部結構之靜性結構分析、剛性結構分析、暫態分析等應力結構性資料。

在構造機身基座之材料上，選用高強度鋼材焊接，引進尖端熱處理技術，消除焊接產生的熱內應力，使機身金屬結構完成統一機身機座，在精加工前更再經過高張力測試、正常化處理與震動應力消除等三道防線嚴格把關，使機身組裝精度維持一致性。

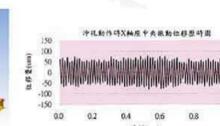
The heart of the Tailift turret punch press is its solid and closed "O" frame structure design. The whole frame is fabricated from premium steel, then through applying ANSYS and other advanced techniques to analyze the internal stress, to minimize such internal and vibration stress from heart treatment. Consequently, distortions resulting from the punching process are greatly reduced, ensuring a consistent die clearance and long tool life.



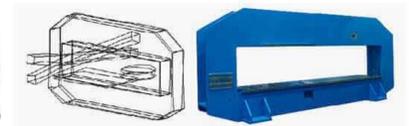
Transient State Analysis



Static Analysis



Model Analysis

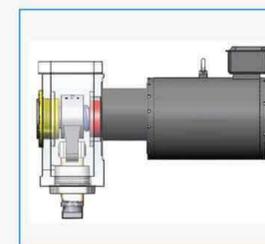


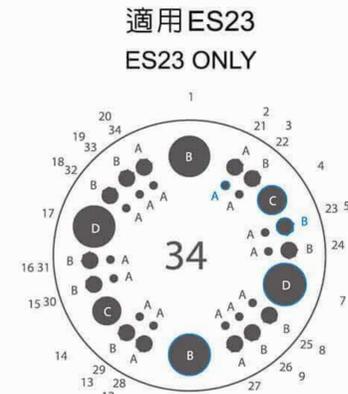
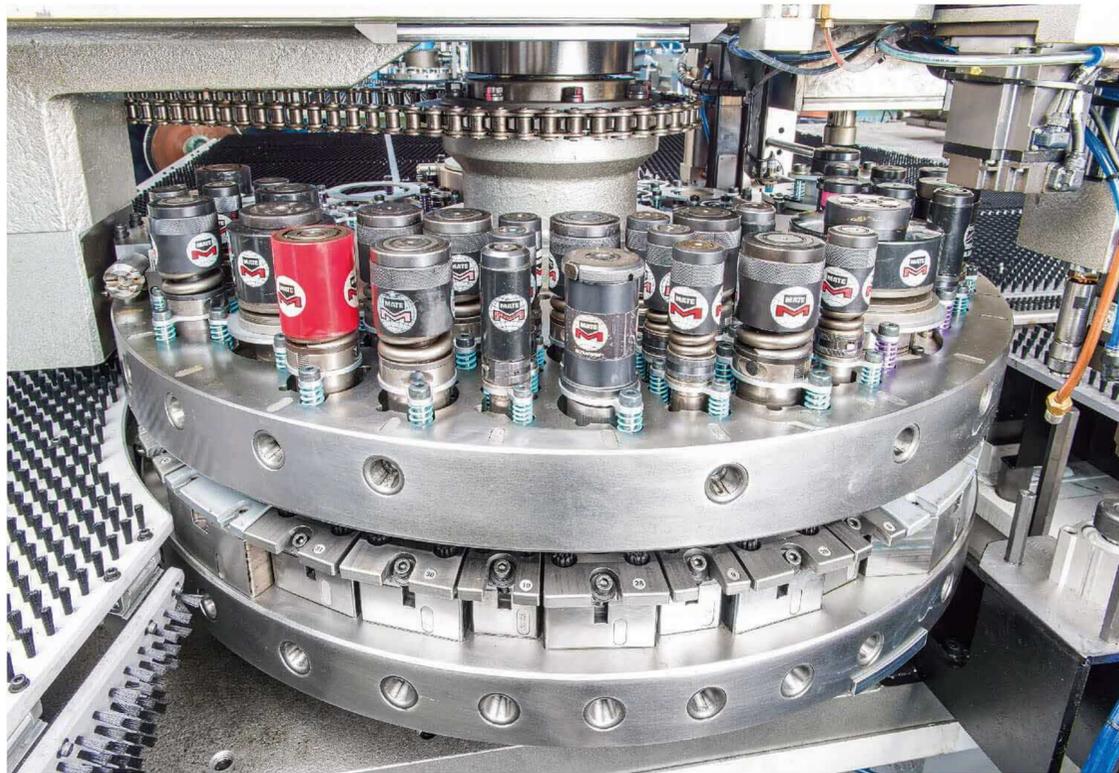
Transient State Analysis

◆ AC伺服數控系統 AC servo electric system

ES23/ES23X採用的是高階AC伺服馬達，單伺服加曲柄連桿組件，無飛輪蓄能，具有較高的精準度、低噪音環境影響。在沖壓過程中的平均總耗電量是一般油壓機型的一半及無液壓油耗和環保問題。行程及速度可依程式設定達到最佳加工模式，這每年可以節省使用者的消耗成本。

ES23/ES23X employs high level AC servo motor in combination with the use of crank type connecting rod without flywheel, leading to higher accuracy and a low noise working environment. In punching operation, its average power consumption is only one-half of comparable hydraulic models and without need of hydraulic fluid as well as no environmental pollution problem. Travel and speed can be set according to programs so as to achieve the optimal machining conditions.

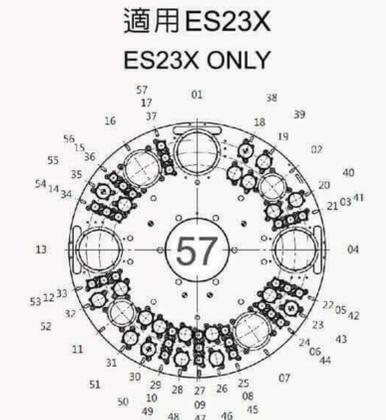




34 刀站 stations			
形式 Type	規格 Specification	數量 Qty	
A	1/2"	18	
B	1-1/4"	10	
C	2"	2	
D	3-1/2"	2	
自動轉刀 Auto Index			
B	1-1/4"	2	



48 刀站 stations			
形式 Type	規格 Specification	數量 Qty	
A	1/2"	24	
B	1-1/4"	16	
C	2"	2	
D	3-1/2"	2	
自動轉刀 Auto Index			
B	1-1/4"	2	
C	2"	2	



57 刀站 stations			
形式 Type	規格 Specification	數量 Qty	
A	1/2"	30	
B	1-1/4"	20	
C	2"	2	
D	3-1/2"	2	
自動轉刀 Auto Index			
B	1-1/4"	2	
C	2"	1	

◆ 刀盤 Turret

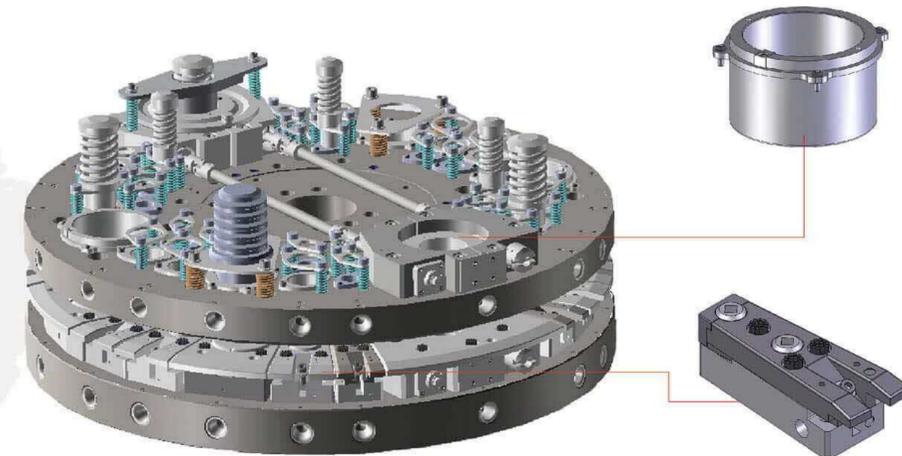
採用蝸桿蝸輪設計。雙軸同步連桿傳動，定位安全可靠。刀盤擁有34/48/57刀站之轉刀盤，可配置1/2"~3 1/4"尺寸的刀具，依據客戶加工需要，自行變換刀具。採用通用規格設計，刀盤上各刀站可搭配各廠牌刀具，如Mate, Wilson。另外，刀盤採同心多環式刀盤設計，各刀站均使用高強度耐磨之可替換襯套，維修更方便。

Large turret design with two/three concentric circle tracks available with 34/48/57 stations with 2B/2B-2C/2B-1C type Auto Index.
All stations are compatible with Mate, Wilson or Amada thick turret tools.
Quick and Easy to exchange the tools.

◆ 可換式刀站襯套 Replaceable Station Bushing

各刀站均裝配高強度耐磨之可換式襯套，長期使用後無須拆卸整組刀盤，即可輕易維修，縮短保養工時及維修費。

Hardened steel bushings for all tool stations for high precision and durability. Easily replaceable when tool station is damaged.



◆ 移動式沖頭 Movable RAM



移動式沖頭，配備超載保護裝置，搭配同心多環式刀盤，讓加工更具彈性。

The movable RAM collocated with overloading protector and three concentric circle tool stations. Make performance more flexible.

◆ 換爪壓缸 Reposition Cylinder



換爪壓缸由CNC全程式控制，換爪動作快速精準，確保加工精度。

CNC controlled reposition cylinder, to hold the metal sheet in place during the clamp reposition process. Fast clamp reposition and ensures position accuracy.

◆ 鈹件變形偵測裝置 Sheet Distortion Sensor



鈹件彎曲自動偵測器，在發生鈹材變形時的自動停止裝置，可避免因鈹件變形連帶造成機器與刀具的損壞。

To detect the sheet deformation, pause the machine to protect the turret and tools from the damage caused by deformed sheet.

◆ 重載型夾爪(附脫料偵測) Heavy-Duty Clamp

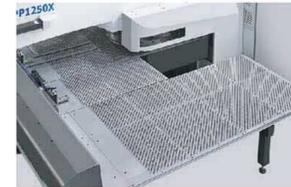


專利線軌式夾爪，利用線性滑軌做傳動，鋼性佳、作動順暢，提升抗扭矩能力，附脫料偵測(選配)，以提高自動化操作的安全性。

Patented design clamp is transmitted by linear guide. High rigidity, smooth movement and enhanced anti-torque ability. With sheet escape detector (option).

◆ 鈹件防刮裝置 Sheet Scratch Preventer

大刷毛台面 Large Brush Table



- 降低加工所造成的噪音並減少鈹件刮傷。
- Reducing the noise and prevent the sheet from scratching during operation.

換爪壓缸檔塊下沉裝置(選配) Lower Block (Option)



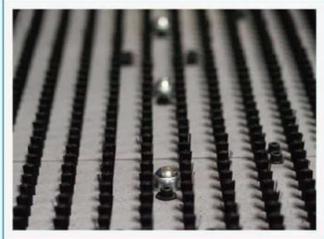
- 檔塊只在換爪時上升，平時低於刷毛表面，避免因與鈹件接觸而發生刮傷。
- This block raises while reposition. Protecting the sheet from scratching during operation.

下模座防刮刷毛 Die Holder Brush



- 下模座搭配可替換式刷毛，以減少鈹件刮傷之可能。
- Die holder collocated with brush, to protect the sheet from scratch.





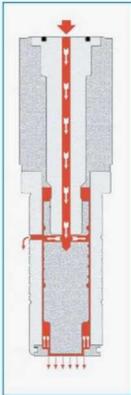
◆ 台珠上升機構 Supporting Ball Set

- 使上料與下料的工作更為輕鬆迅速。
- Support the sheet for smooth loading and unloading.



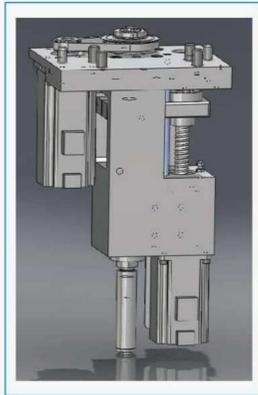
◆ 避震腳墊 Anti-Vibration Foot Mounts

- 與地面層的軟性介面設計，可有效緩衝因X、Y軸頻繁的加減速而產生對滾珠螺桿的衝擊，附有水平調整功能。
- Rubber base interface with floor smoothly and prevent machine from external shock. Equipped with Horizontal machine adjustment.



◆ 刀具自動潤滑系統 Auto Tool Lubrication System

- 可程式控制的油霧系統，提供刀具清潔、冷卻與潤滑，有效提高加工品質並延長刀具壽命。
- Programmable air-blow system for tools, cooling and lubrication, to increase tool performance and extend service-life.



◆ 攻牙系統(選配) Tapping System (Option)

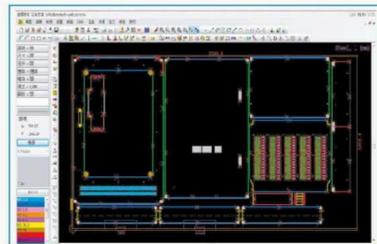
- 高速雙伺服機剛性攻牙系統，單孔1~2秒內完成攻牙，M6以下公、英制牙規任選。附攻牙刀快拆模組，快速更換牙刀。自動潤滑系統，延長牙刀使用壽命。
- High-speed dual servo tapping system.

Single-hole tapping within 1~2 seconds. Available for M3 to M6 Metric/Imperial system. With quick-release tool unit and auto lubrication.



◆ 日本FANUC 控制器 Japanese FANUC Controller

- 新一代FANUC 0i-PF沖床專用高速高精度控制器，搭配全新操作面板設計，服務網遍佈全球，可提供完善快速售後服務。
- New version 0i-PF sophisticated CNC controller with brand-new operator panel. Fanuc worldwide branches can provide fast and complete after-sale services support.



◆ CAD/CAM 軟件 CAD/CAM Software

- Windows版操作畫面，可輕易上手，簡化CNC加工程式設計使用。
- Supporting the entire design to production cycle. Advanced technology combines design, processing, graphic simulation and communication in one single module. Create efficient CNC programs with precision and ease.

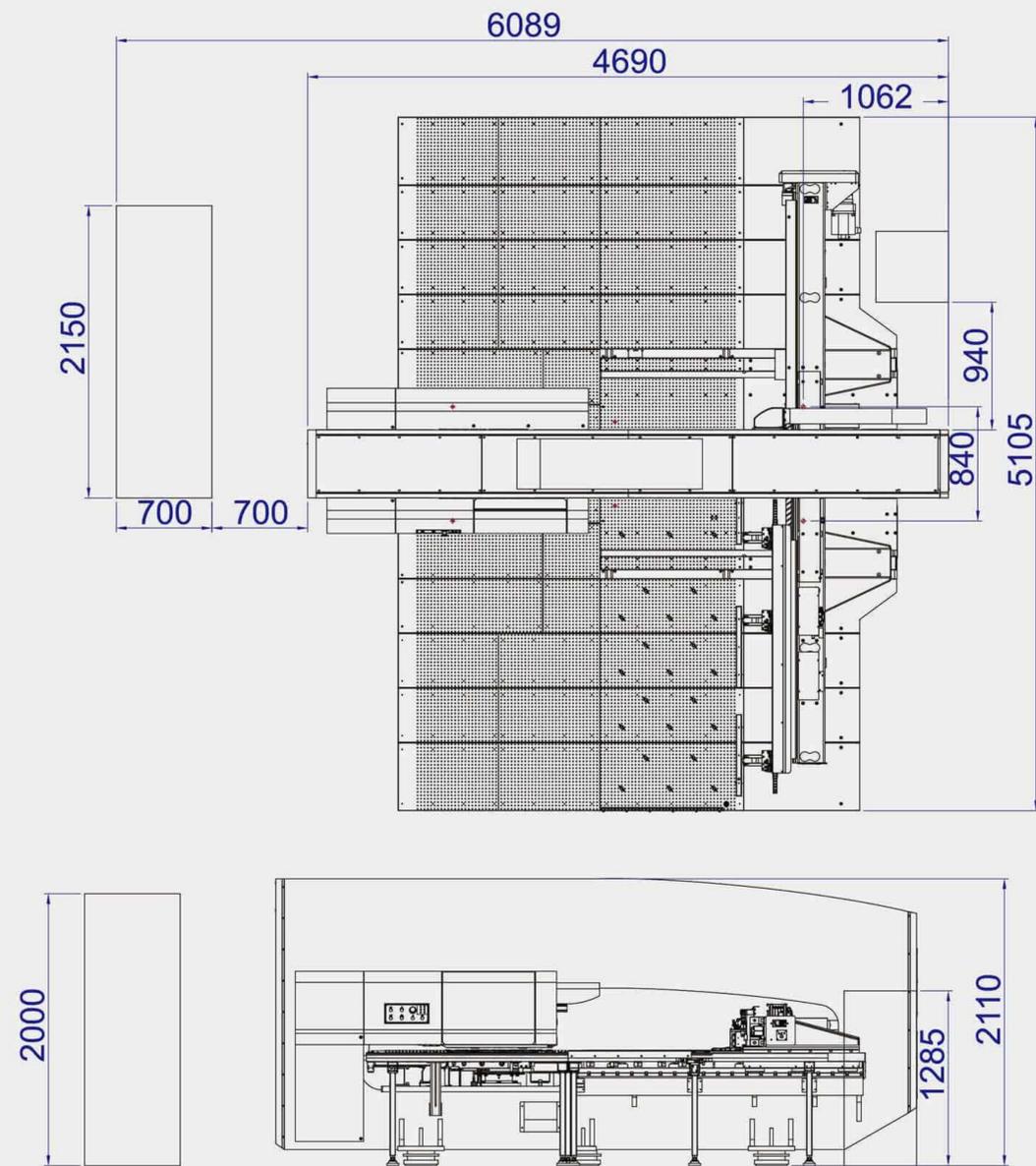
規格表 Specifications

項目 Item	單位 Unit	ES23	ES23X
沖壓噸數 Punching Capacity	公噸 Ton	30	30
X 軸行程 X Traverse Length	公厘 mm	2490±10	2490±10
Y 軸行程 Y Traverse Length	公厘 mm	1250±10	1250±10
最大加工板件尺寸 Max Sheet Size	公厘 mm	1250x4980	1250x4980
最大加工板件厚度 Max Sheet Thickness	公厘 mm	4.5t(SS400) : 3t(SUS)	4.5t(SS400) : 3t(SUS)
工件最大質量 Max Mass of Material	公斤 kg	70	70
X 軸最大移動速度 X Axis Traverse Speed	米/分鐘 M/min.	80	80
Y 軸最大移動速度 Y Axis Traverse Speed	米/分鐘 M/min.	70	70
最大移動速度 Max Traverse Speed	米/分鐘 M/min.	105	105
S=4mm孔距25mm	下/分鐘 hits/min.	370	370
蠶食速度 Nibbling Speed	下/分鐘 hits/min.	600	600
刀具型式 Tool Type		長刀 Thick turret	長型 Thick turret
沖孔最大孔徑 Max Punching Diameter	公厘 mm	88.9	88.9
刀站總數 Number of Tool Stations		34	48
自動轉刀刀站數 Number of Auto Index Stations	支(型式) pcs(type)	2B	4(2B2C)
刀盤轉數 Turret Rotating Speed	轉/分鐘 rpm	30	33
自動轉刀轉數 Auto Index Rotating Speed	轉/分鐘 rpm	100	100
沖錘行程 Ram Stroke Distance	公厘 mm	0~31	0~31
工作台型式 Working Table		滾珠+刷毛 Ball+Brush	滾珠+刷毛 Ball+Brush
夾爪數 Number of Sheet Clamps	支 pcs	3	3
電力供應 Power Supply	KVA	40	40
電壓 Voltage	V	220/380/410/440	220/380/410/440
氣壓供應 Air Supply	NL/min	250	250
氣壓壓力 Air Press	bar	5	5
機器(長度x寬度x高度) Machine Dimensions (LxWxH)	mm	5105x4690x2110	5105x4740x2110
機器概重 Machine Net Weight (Approx)	kg	14000	16000
分離式電控箱尺寸 Size of Control Cabinet	公厘 mm	2150x700x2000	2150x700x2000
CNC控制器 CNC Controller		FANUC 0i-PF	FANUC 0i-PF
可控制軸數 Number of Controllable Axis	軸 Axis	4+1	5+1
RAM記憶容量 RAM Memory	KB	512	512
傳輸界面 Serial Interface		RS232/RJ45/PCMCIA/USB	RS232/RJ45/PCMCIA/USB
定位精度 Punching Precision	公厘 mm	±0.1	±0.1
重複定位精度 Reposition Accuracy	公厘 mm	0.05	0.05

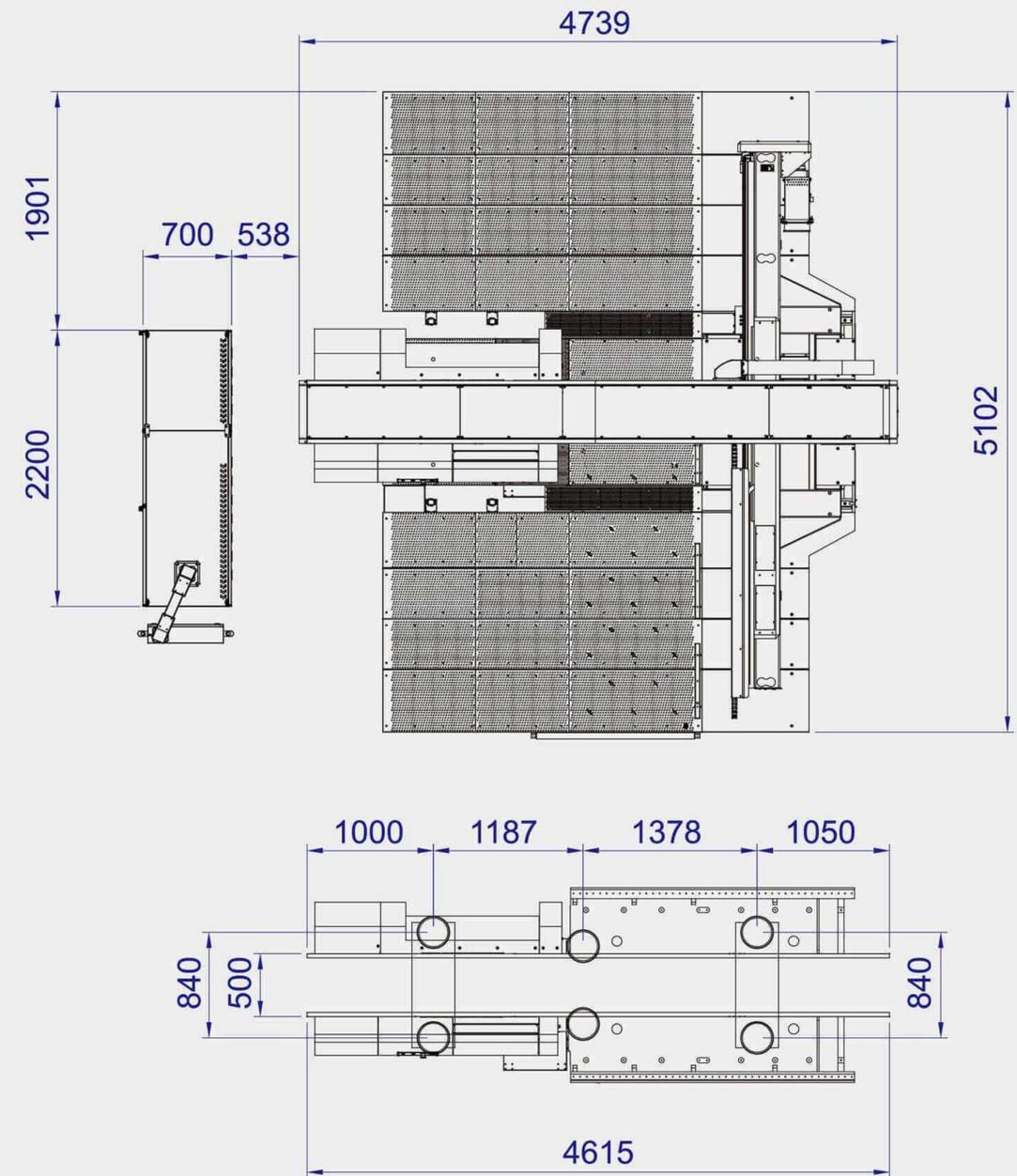
- 產品規格若有變動，恕不另行通知。 Specifications are subjects to change without prior notice.
- X / Y 軸的加減速度依工件的重量而定。 Acceleration / deceleration rate of X / Y-axis are dependent on weight of materials.
- 沖孔速度依不同的加工條件、沖錘行程、加速度及軸的速度而定。 Punch speed depends on processing conditions, stroke length, acceleration / deceleration rate of axes speeds.

佔地面積圖 Floor Space

ES23



ES23X



Tailift

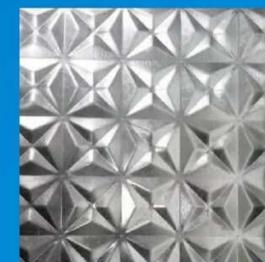
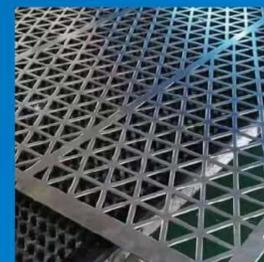
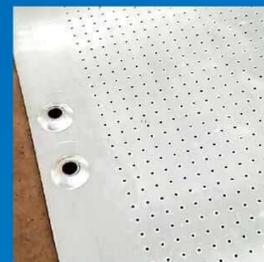
HPS series

HPS1250 / HPS1250X / HPS1500 / HPS2500

Reliable Fanuc Control & drives
Quality & value from
Tailift, the industry's most
competitively priced turret builder
a winning combination



Sample



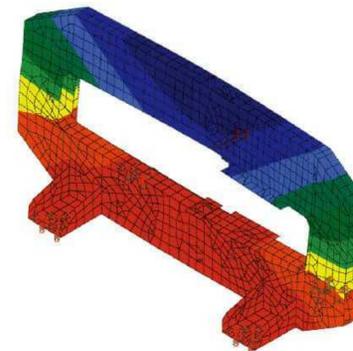
MACHINE FRAME / BALL SCREW SET

FRAME

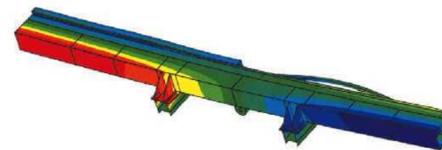
OPTIMUM DYNAMIC CHARACTERISTICS

The heart of the Tailift turret Punch Press is its solid and closed “O” frame structure design. The whole frame is fabricated from premium steel, then through applying ANSYS and other advanced techniques to analyze the internal stress, to minimize such internal and vibration stress from heat treatment.

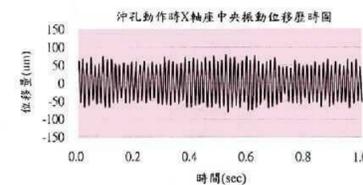
Consequently, distortions resulting from the punching process are greatly reduced, ensuring a consistent die clearance and long tool life.



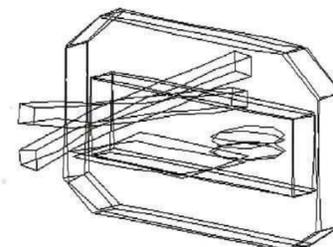
Transient state analysis



static analysis



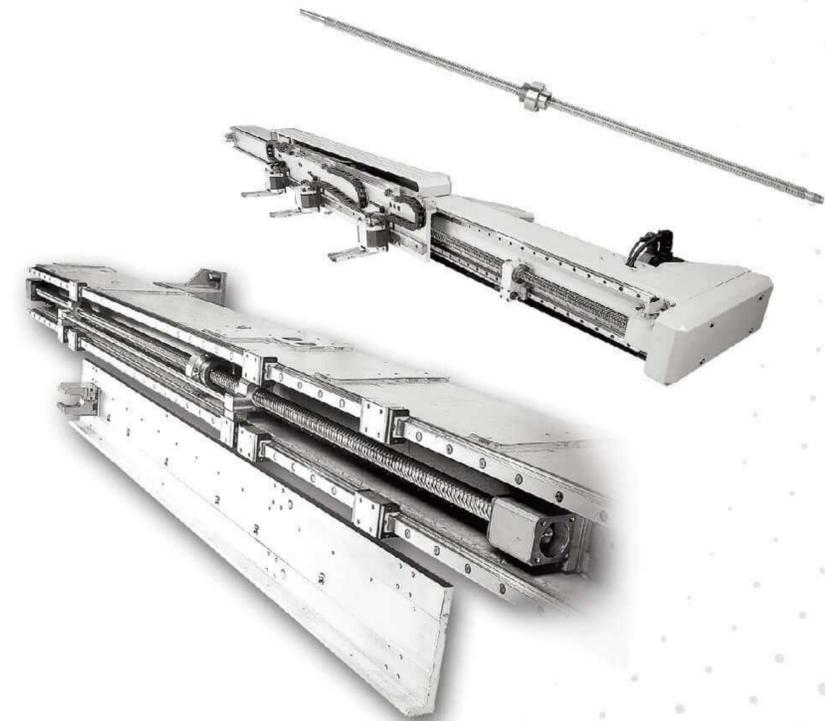
Model analysis



Vibansient state analysis

BALL SCREW SET

German made Star ball screw with double L.M. guides to ensure fast, precise, smooth and stable movements of the X and Y axes with high durability.



HPS1250/1250X

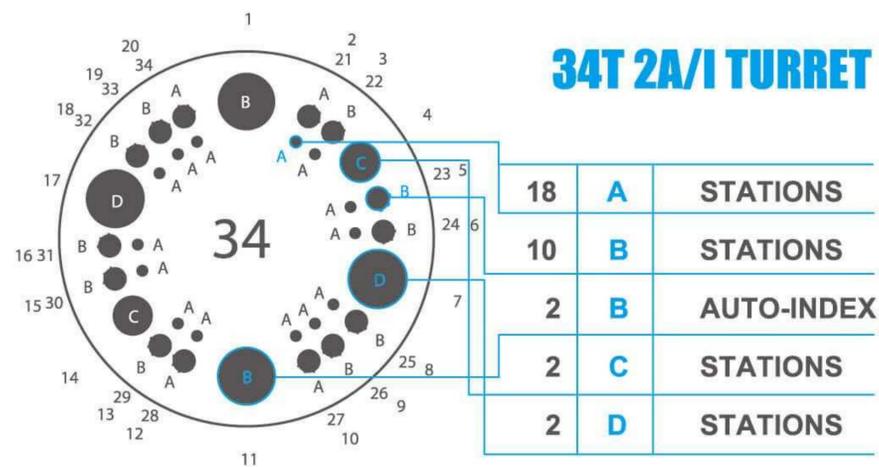
- * PRECISION AND SPEED EFFICIENCY
- * PROGRAMMABLE PUNCH/ RAM STROKE DISTANCE

Advanced German made Schneider Hydraulic Servo system with pressure valve to precisely control the speed, volume and pressure of oil flow.

To control RAM stroke distance on both ends, hence the height and depth of each punch becomes programmable with +/- 0.1mm accuracy.

Faster punching speed.

HPS1250X is with 2490 ± 10mm X-Axis.



HPS1500/2500

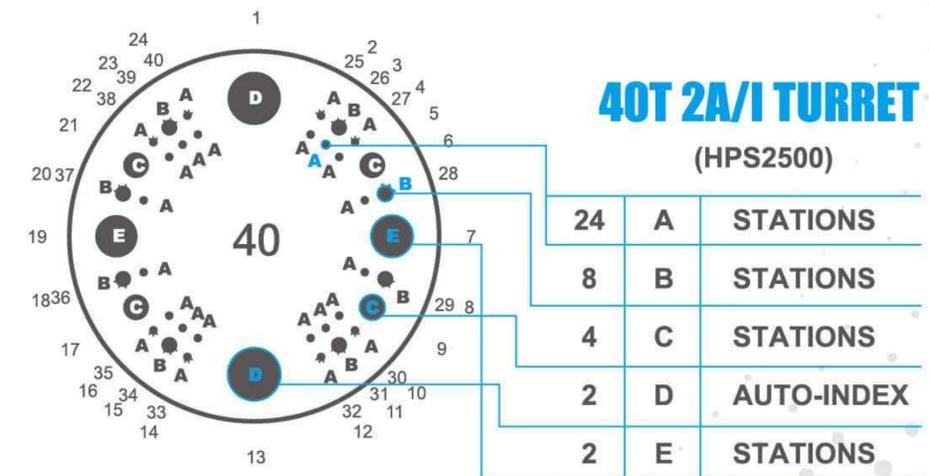
- * PRECISION AND SPEED EFFICIENCY
- * PROGRAMMABLE PUNCH/ RAM STROKE DISTANCE

Advanced German made Schneider Hydraulic Servo system with pressure valve to precisely control the speed, volume and pressure of oil flow.

To control RAM stroke distance on both ends, hence the height and depth of each punch becomes programmable with +/- 0.1mm accuracy.

Faster punching speed.

HPS1250X is with 2490 ± 10mm X-Axis.

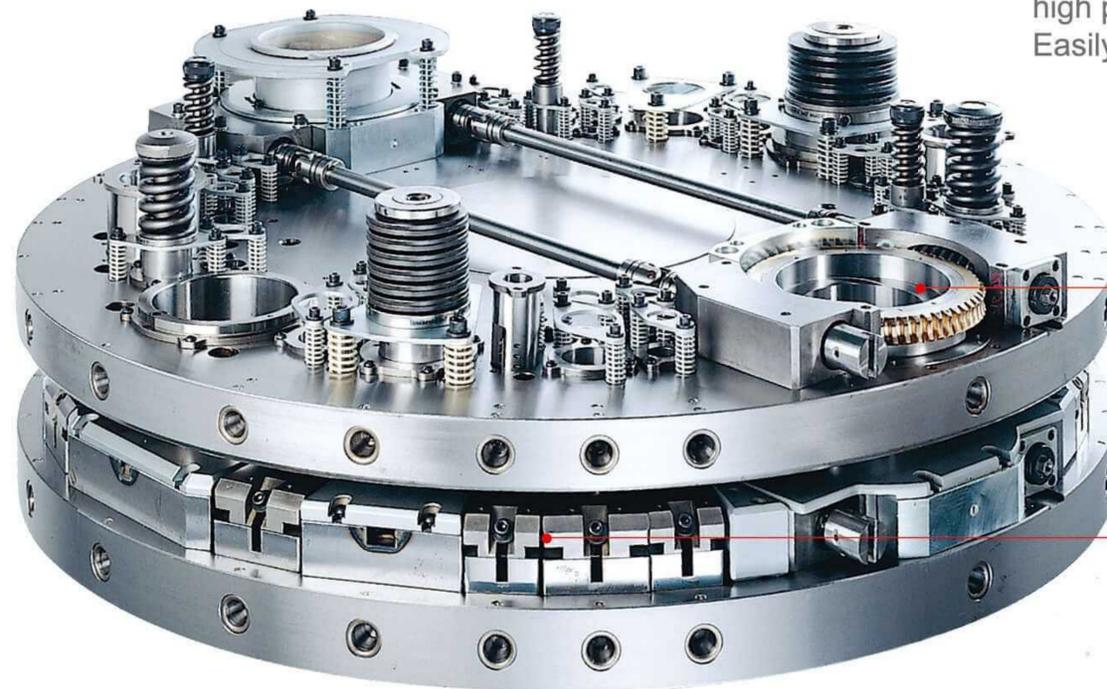


TURRET / AUTO-INDEX DRIVE SHAFT

TURRET

Large turret design, with two concentric circle tool stations, available with 36 stations with 2 B Auto-Index or 40 stations with 2 D Auto-Index. All the standard thick turret tools from Mate, Wilson, or any Amada compatible are applicable. Quick and easy tool exchange.

Two transmission shafts increases machine durability.

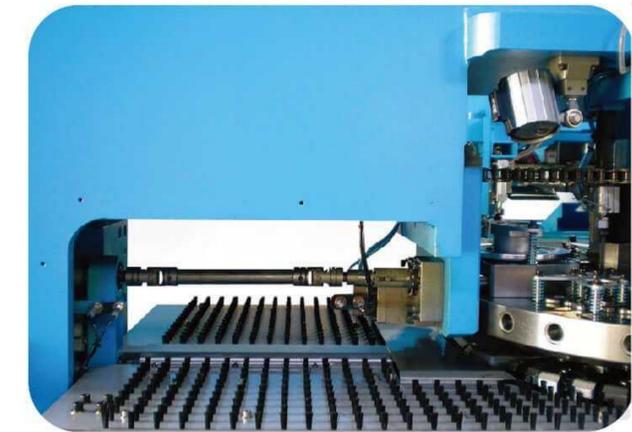


Station Bushing

Hardened steel bushings for all tool stations for high precision and durability. Easily replaceable when tool station is damaged.



High Precision Die Holder



Auto-Index Drive Shaft



Transmission Gear for Auto-Index

PARTS INTRODUCTION



Hydraulic System

Advanced German made H+L Hydraulic System provides fast punching and high durability.
For HP series



Hydraulic Servo System

Advanced German made Schneider Hydraulic Servo System with pressure valve to precisely control the speed, volume and pressure of oil flow.
For HPS, MAX series



Clutch/ Brake Set

Main source of power for the punching process, use German made hydraulic clutch and lining disc to ensure sufficient punching force and long durability.



Anti-vibration Foot Mounts

To reduce vibration and noise, simplify installation.



Tandem Type Pneumatic Clamp

Double Tandem Type Pneumatic clamp. Maximum clipping force of each clamp can reach 230 kg.



Reposition Cylinder

To hold the metal sheet in place during the reposition process.



Movable RAM

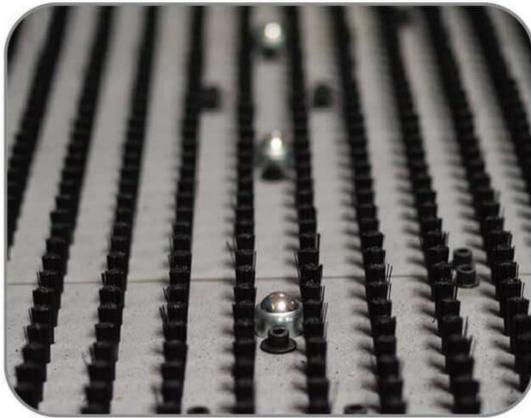
For Inner Track and Outer Track of the Turret Punching.



High Efficiency Cooling System

Powerful cooling system for all kind of tough working environment.

PARTS INTRODUCTION



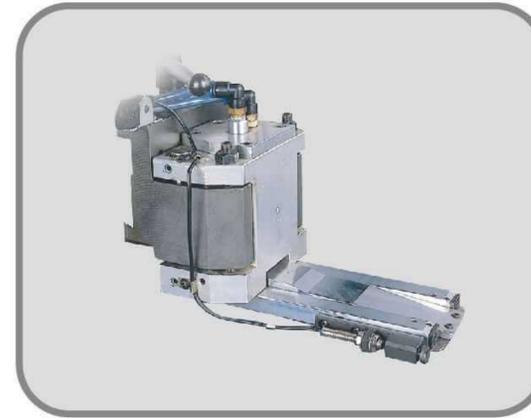
Supporting Ball Set

Arising balls to support sheet loading.



Distortion Sensor

To detect the sheet distortion, shut down the machine to protect the turret and tools from the damage caused by distorted sheet.



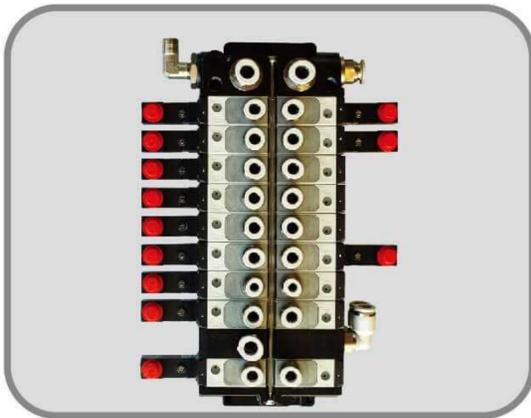
Clamp Sensor

To detect fall off metal sheet, only available for big machines.



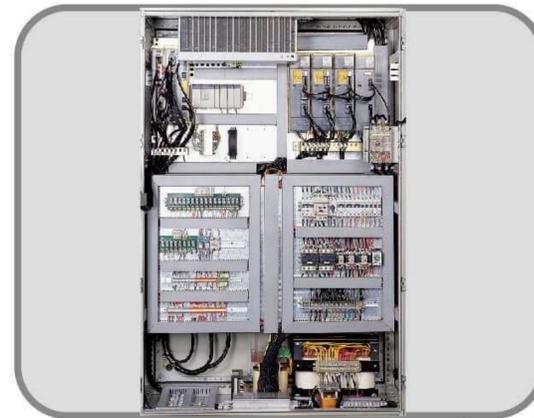
Air Blow System

Provide lubrication for tools to extend tool life.



Solenoid Valve

German made "Bosch" pneumatic solenoid valve to ensure the precise execution of all commands.



Control Cabinet

Module assembly. Fully automated equipments inspection. Not easily broken. Highly durable.



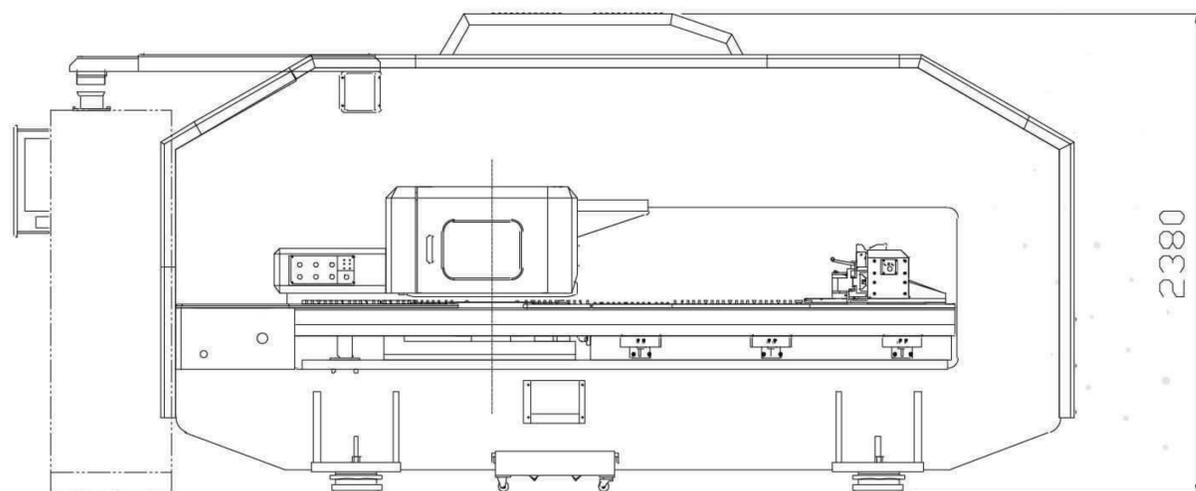
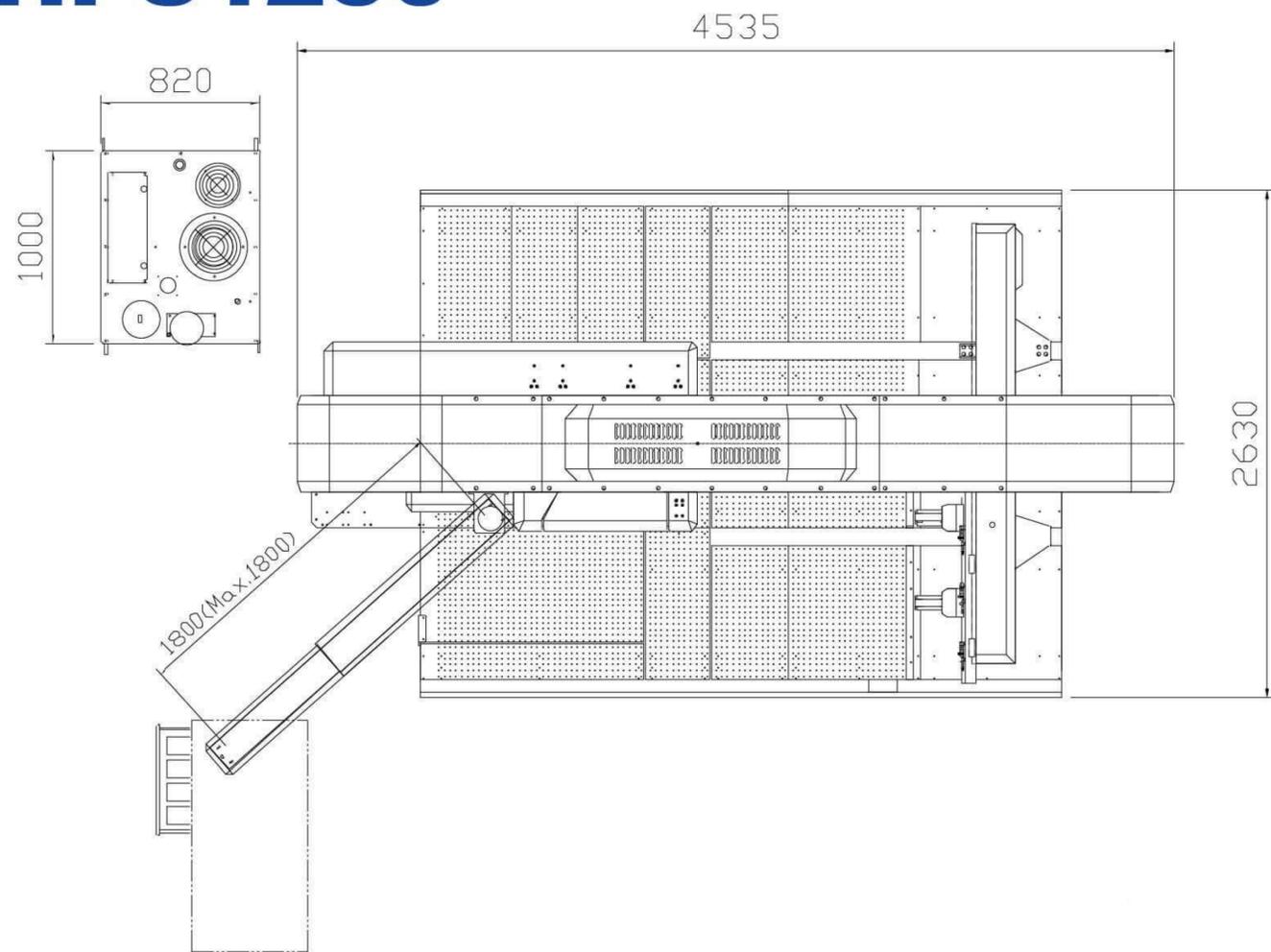
FANUC controller

The most sophisticated and advanced CNC controller in the world. With worldwide branches to provide fast and complete after sales services.

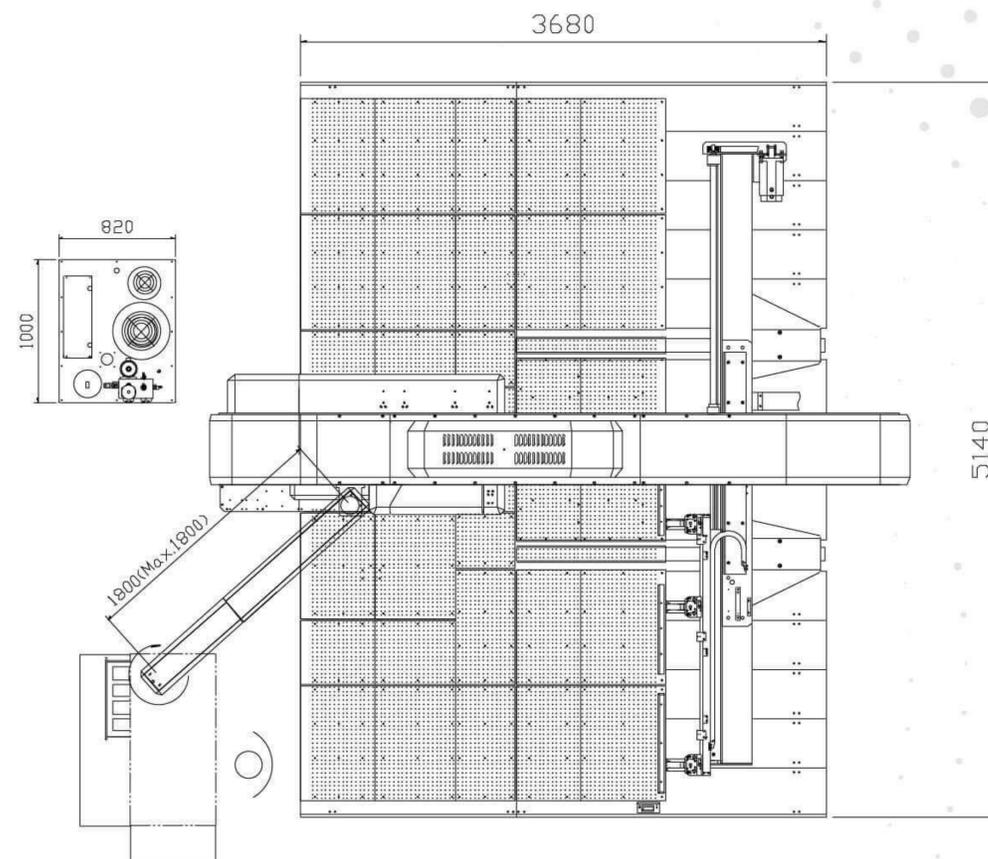
Metalix CAD/ CAM software

Supporting the entire design to production cycle. Advanced technology combines design, processing, graphic simulation and communication in one single module. Create efficient CNC programs with precision and ease.

HPS1250



HPS1250X



Specifications

Item	Unit	HPS1250	HPS1250X	HPS1500	HPS2500
Tonnage	Tons	20	20	30	30
X Traverse Length	mm	1250±10	2490±10	1250±10	2490±10
Y Traverse Length	mm	1250±10	1250±10	1250±10	1525±10
Max Sheet Size	mm	1250x2500	1250x4980	1525x3050	1525x4980
Max Mass Thickness	mm	6.35	6.35	6.35	6.35
Max Mass of Material	Kg	110	110	110	110
X Axis Traverse Speed	m/min	75	80	80	80
Y Axis Traverse Speed	m/min	60	70	70	70
Max Traverse Speed	m/min	96	105	105	105
Punching Speed at 25mm pitch	hits/min	360	360	360	360
Nibbling Speed	hits/min	600	600	600	600
Tool Type		Thick turret	Thick turret	Thick turret	Thick turret
Max Punching Diameter	mm	88.9	88.9	114.3	88.9
Number of Tool Stations		34	34	40	40
Number of Auto Index Stations		2/(B Type)	2/(B Type)	2/(D Type)	2/(D Type)
Turret Rotating Speed	rpm	40	40	40	40
Auto Index Rotating Speed	rpm	50	50	50	50
Ram Stroke Distance	mm	0~31	0~31	0~31	0~31
Working Table		Brush	Brush	Brush	Brush
Arising Ball		Option	Standard	Standard	Standard
Number of Sheet Clamps		2	3	3	3
Power Supply	KVA	25	35	35	35
Air Supply	NL/min	250	250	250	250
Oil Tank Volume	Liter	350	350	350	350
Air Pressure	Bar	5	5	5	5
Machine dimensions	mm	4535x2630x2380	4905x5410x2380	5190x3200x2536	5190x5150x2560
Net Weight(approx.)	Kg	13,500	14,000	14,000	14,500
Size of Control Cabinet	mm	1200x600x1900	1200x600x1900	1200x600x1900	1200x600x1900
Size of Independent Station	mm	400x320x940	400x320x940	400x320x940	400x320x940
CNC Controllable Axles		FANUC 0i-PF	FANUC 0i-PF	FANUC 0i-PF	FANUC 0i-PF
Memory	KB	256	256	256	256
Serial Interface		RS232	RS232	RS232	RS232
Punching Precision	mm	±0.1	±0.1	±0.1	±0.1

■ specifications are subject to change without prior notice.



Founded in 1973 in Taiwan, Tailift Group's turnover is around 3 billion USD and selling machines with own brand "Tailift" worldwide. Product under Tailift brand includes material handling equipment, sheet metal machine, laser cutting and welding machine, machine tools and drilling machines. For almost 50 years' development, Tailift group is toward to a 100 years company.

Tailift group also provides profession OEM service for more than 30 years. Just like Foxconn Technology Group (whose founder is Terry Gou (Gou Tai Ming)), we are expert in OEM business. With flexible resources on production and development from China and Taiwan, Tailift group creates win-win situation with customers.

Trustworthy Tailift Equipment

Tailift[®]
台勵福集團

機種齊全，因應市場需求
We Offer What You Need



高效率 旋臂鑽床
HIGH EFFICIENCY AND PRECISION
RADIAL DRILLS

Tailift

www.tailiftgroup.com

手動夾緊 Manual Clamping

○ TPR-720A ○ TPR-820A ○ TPR-920A ○ TPR-1100

- 主軸正逆轉採用自製機械式切換開關，長期使用不易損壞。
- 旋臂採高級鑄體翻鑄而成，其滑軌更經嚴格熱處理及精密研磨。
- 二馬力標準馬達可提供重切削下多種不同速度的選擇。
- 主軸採用特殊彈簧平衡，此種平衡機構較傳統耐用。
- 內裝多項極限，超負荷保護裝置，可兼顧操作之安全性。
- 特製進刀深度輔助環，可隨時顯示主軸進刀深度達全程210mm。(適用於TPR-720A, TPR-820A, TPR-920A)
- In-built Mechanical switch for Forward/Reverse functions and longer service life with low maintenance.
- Arm Slider made upon high-class cast-iron and processed under severe Heat-Treatment and well Ground.
- 2HP motor can provide various speed selection under heavy-duty cutting.
- The main spindle is balanced by specially designed spring which is more durable than all other traditional balance mechanism.
- The over-load protective devices can secure the operator against injury.
- Extra auxiliary dial for spindle feed depth indication. With this indicator, we can review the momental feed depth of spindle 1 through 210mm at any moment. (for TPR-720A, TPR-820A, TPR-920A)



▲ TPR-720A



▲ TPR-920A



▶ TPR-820A



▶ TPR-1100

電鎖夾緊 Electric Clamping

○ TPR-1230

- 主軸正逆轉採用自製機械式切換開關，長期使用不易損壞。
- 旋臂採高級鑄體翻鑄而成，其滑軌更經嚴格熱處理及精密研磨。
- 三馬力變極馬達可提供重切削下多種不同速度的選擇。
- 內裝多項極限，超負荷保護裝置，可兼顧操作之安全性。
- In-built Mechanical switch for Forward/Reverse functions and longer service life with low maintenance.
- Arm Slider made upon high-class cast-iron and processed under severe Heat-Treatment and well Ground.
- 3HP two speeds motor can provide various speed selection under heavy-duty cutting.
- The over-load protective devices can secure the operator against injury.



◀ TPR-1230



電動夾緊型(TPR-1230)
Electric clamping (TPR-1230)

油壓夾緊 Hydraulic Clamping

○ TPR-1230H ○ TC-1250H ○ TC-1600H ○ TPR-1600H ○ TPR-2000H ○ TPR-C2500

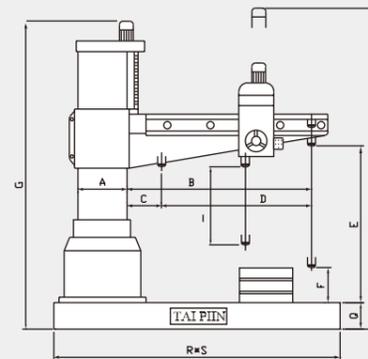
- 旋臂升降係採用電子計時器控制，啟動按鈕即可完成旋臂自動放鬆並垂直升降，或升降停止並自動夾緊作業，易於操作，並在換刀後仍可保持原刀具中心位置。
- 旋臂升降機構附有安全裝置，以防止多年以後，因升降銅螺母過度磨損而旋臂突然掉落。
- 內裝齒輪專用型機油循環泵浦，以冷卻齒輪箱內精密齒輪，可降低齒輪過度磨損。
(適用於 TPR-1600H, TPR-2000H, TPR-C2500)
- 摩擦型離合器可吸收主軸所產生縱向衝擊力，故能有效地保護齒輪箱內所有傳動元件，並具有主軸快速回位功能，可加快攻牙作業速度。
(適用於 TPR-1600H, TPR-2000H, TPR-C2500)
- 機柱、旋臂、齒輪箱可同時夾緊，設有按鈕開關可使用。除 TPR-1600H 及 TPR-2000H 採用十字開關，其餘機種採用按鈕開關控制。
- 備有特殊設計自動退刀裝置，可大大增進退刀效率。
(適用於 TPR-1600H, TPR-2000H)
- 機柱、旋臂、齒輪箱可個別夾緊或同時夾緊，設有選擇開關可使用。
(適用於 TPR-C2500)
- 速度轉換採油壓傳動設計，且裝有速度預先調整裝置，快速且易於操作。
(適用於 TPR-C2500)
- The Radial Drill Arm adopts IC Timer with advantage of one bottom press, it can automatically release up/down movement, stop, and automatically clamping easy to operate. The spindle can still maintain in original set after the tools change.
- Special arm elevating safety device is provided to prevent arm from falling down abruptly after year of usage. It will keep us from injurious dropping whenever the copper nut is excessively worn.
- Exclusively for gears type cycling oil pump is furnished to cool off precise gears inside gear box, and minimize excessive wear on gears to lowest extent. (for TPR-1600H, TPR-2000H, TPR-C2500)
- Friction type disc clutch is adopted to absorb impact force caused by vertical movement of spindle, and effectively protect all transmission unit inside gear box. With the function of quick spindle return, this clutch will also help us to speed up our tapping operation. (for TPR-1600H, TPR-2000H, TPR-C2500)
- Column, Arm, Gear box can clamp at same time by a push button for all model machines except TPR-1600H and TPR-2000H which use cross switch.
- Automatic tool releasing device effectively increases tool changing. (for TPR-1600H, TPR-2000H)
- Equipped with hydraulic clamping system, with proper selection on change switch, column, arm, gear box can be clamped/released independently. (for TPR-C2500)
- Speed Changing function is driven by hydraulic power and equipped with quick preset device for TPR-C2500.

標準附件

- 調節用工具 (含工具箱) ... 1套
- 冷卻裝置 (含泵浦) ... 1套
- 照明裝置 (含日光燈) ... 1套
- 箱型工作檯 ... 1套

Standard Accessory:

- Adjustment tools (box included) 1 set
- Cooling device (pump included) 1 set
- Lighting device (fluorescent lamp included) 1 set
- Box-type work table 1 set



特殊附件

- 可傾斜工作檯 1套
- 單式傾斜工作檯，可傾斜到90度，有刻度指示針可告知傾斜度。
- 可傾斜工作檯亦可用於其他加工工作母機上面。

- 攻牙器-DT33-MT#4..... 1套
- 攻牙器-DT33-MT#5..... 1套
- 萬能夾具-5/8"..... 1套
- 萬能夾具-3/4"..... 1套
- 萬能夾具-18mm..... 1套

Special Optionals/Tilt Tables

Uni-tilt table tilts full 90 degrees. Calibrated indicator shows degree of tilt has accurately planed top.

- DT33-MT#4 Drill Tapping Set 1 set
- DT33-MT#5 Drill Tapping Set 1 set
- 5/8" Clamping Kits 1 set
- 3/4" Clamping Kits 1 set
- M18 Clamping Kits 1 set

尺寸規格 (長×寬×高)

1. 810×710×610m/m (大)
2. 520×510×570m/m (小)

Dimensions (L x W x H)

1. 810x710x610m/m (Large size)
Application: TC-1250H/TC-1600H/TPR-1600H
TPR-2000H/TPR-C2500
2. 520x510x570m/m (Small size)
Application: TPR-720A-1600H



▲ TPR-1230H



▲ TC-1250H



▲ TC-1600H



▲ TPR-1600H



▲ TPR-2000H



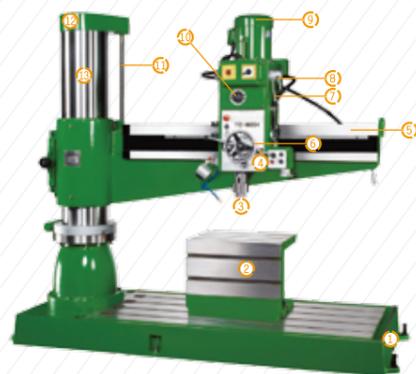
▲ TPR-C2500



油壓夾緊型(TC-1250H, TC-1600H)
Hydraulic clamping (TC-1250H, TC-1600H)



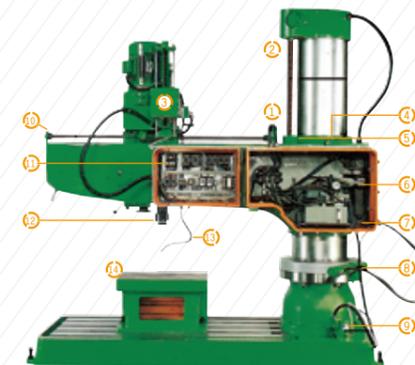
- ① 鎖緊開關
P/B switch for clamping
- ② 主軸正反轉開關
Lever for spindle forward/reverse turn
- ③ 臂手下降開關
P/B switch for arm down
- ④ 臂手上升開關
P/B switch for arm uplift
- ⑤ 放鬆開關
P/B switch for release
- ⑥ 變極開關
Pole change switch
- ⑦ 電流指示燈
Power indicator
- ⑧ 緊急開關
Emergency stop switch
- ⑨ 切削液切換開關
Coolant water switch
- ⑩ 進給電源指示燈
Feed indicator
- ⑪ 切削液調整開關
Coolant water adjust switch



- ① 底座
Base
- ② 箱型工作檯
Box-type work table
- ③ 主軸
Spindle
- ④ 進刀撥桿
Feed lever
- ⑤ 臂手
Arm
- ⑥ 手輪
Handwheel
- ⑦ 三段變速桿
Three step speed change lever
- ⑧ 二段變速桿
Two step speed change lever
- ⑨ 主軸馬達
Main motor
- ⑩ 進給速率切換開關
Feed rate change switch
- ⑪ 傳動導螺桿
Lead screw
- ⑫ 帽蓋
Top cover
- ⑬ 大柱
Column



- ① ② 進刀速率選擇
Structure of feed lever
- ③ 退刀控制桿
Ejecting lever
- ④ 離合器控制桿
Hom
- ⑤ 十字開關
Cross switch
- ⑥ 進刀手動/自動控制桿
Swing lever
- ⑦ 變速桿
Change lever
- ⑧ 高/低速；正/逆轉選擇桿
H.L change lever
- ⑨ 微調進刀手輪
Limit hand wheel
- ⑩ 油鏡
Machine oil indicator
- ⑪ 夾緊鈕
Red, clamp button
- ⑫ 放鬆鈕
Green, release button



- ① 控制齒箱鎖緊放鬆之油
Oil cylinder base for fasten & loosen gear box
- ② 導螺桿
Leading screw
- ③ 主軸重力平衡裝置
Spindling weight counter balance unit
- ④ 上極限開關
Limit switch, upper
- ⑤ 旋臂升/降安全裝置
Special arm raising safety device
- ⑥ 油壓控制鈕
Hydraulic control unit
- ⑦ 下極限開關
Limit switch, lower
- ⑧ 油壓缸
Hydraulic cylinder
- ⑨ 冷卻泵浦
Coolant pump
- ⑩ 齒箱鎖緊放鬆導桿
Leader for fasten & loosen gear box
- ⑪ 電氣控制箱
Electric control unit
- ⑫ 主軸/排齒管組
Spindle and quill
- ⑬ 冷卻噴嘴
Coolant nozzle
- ⑭ 箱型工作檯
Plain box table

Unit/mm

型號 / MODEL		TPR-720A	TPR-820A	TPR-920A	TPR-1100	TPR-1230	
大柱直徑	Dai.of column	210		260	300	A	
主軸中心至機柱表面距離-最大	Distance from column surface to spindle center, Max	750	850	950	1120	1230	D+C
主軸中心至機柱表面距離-最小	Distance from column surface to spindle center, Min	225	230	210	270	330	C
主軸頭部在旋臂上水平移動行程	Travel of spindle head	540	640	755	850	880	D
主軸末端至底座加工距離-最大	Distance from base surface to spindle end, Max	1050	1210	1225	1280	1360	E
主軸末端至底座加工距離-最小	Distance from base surface to spindle end, Min	260	375	385	480	467	F
旋臂在機柱上垂直升降行程	Elevating height of Arm	580	625	625	560	620	E-F-I
箱型工作檯尺寸有效工作範圍	Effective area of box table	600x445x380		635x520x415	635x520x415	LxKxH	
底座尺寸(長x寬x厚)	Dimension of base	1250x640x160	1250x640x160	1260x640x160	1720x715x185	1720x715x185	RxSxQ
主軸孔模式推拔番號	Taper hole spindle	MT#4		MT#4	MT#4		
主軸垂直行程	Stroke of spindle	210		240	270	I	
主軸轉速 (空載轉速/分鐘x段數)	R.P.M of spindle (rpm x steps)	50HZ	73~1247x6		37~1253x12		
		60HZ	88~1500x6		44~1500x12		
主軸進刀速(mm/轉x段數)	Feed of spindle (rev.x steps)	0.05, 0.09, 0.15x3		0.05, 0.09, 0.15x3	0.05, 0.09, 0.15x3		
主軸驅動馬達馬力數	Main motor (HP)	2HP		3(two speed motor)	3(two speed motor)		
旋臂升降馬達馬力數	Elevating motor (HP)	1HP		1HP	1HP		
機柱•旋臂•夾緊裝置馬力數	Clamping motor(HP)			1HP	1HP		
冷卻泵浦馬達馬力數	Coolant equipment (HP)	1/8HP		1/8HP	1/8HP		
齒輪箱頂端至地面距離-最大	Machine height from floor (Max.)	2160	2320	2340	2570	2670	M
機柱帽蓋頂端馬達至地面高度	Base + column height	1820	2010	2020	1990	2070	G
單機淨重(約)	Net weight (approx)kgs	1175	1200	1280	1800	2100	
裝箱後毛重(約)	Shipping weight (approx)kgs	1320	1350	1400	1950	2300	
裝箱尺寸(長x寬x高)	Shipping dimensions (LxWxH)	1630x810x2160	1680x810x2210	1800x810x2210	1880x860x2210	2030x990x2240	
工作 能力 Capacity	鑽孔 Drilling	中碳鋼 Steel	32Φ		42Φ	42Φ	
		鑄鐵 Cast iron	50Φ		55Φ	55Φ	
	攻牙 Tapping	中碳鋼 Steel	25Φ		25Φ	25Φ	
		鑄鐵 Cast iron	32Φ		38Φ	38Φ	

* 上述列示規格公差介於 +/-5mm

* 以上參數僅供參考，如有變更恕不另行通知。

* Above listed specifications are within +/-5mm tolerances.

* Above specifications for reference only, modifications are not subject to notice in advance.

Unit/mm

型號 / MODEL		TPR-1230H	TC-1250H	TC-1600H	TPR-1600H	TPR-2000H	TPR-C2500	
大柱直徑	Dai.of column	300	300	320	432	432	550	A
主軸中心至機柱表面距離-最大	Distance from column surface to spindle center, Max	1230	1275	1650	1550	2060	2500	D+C
主軸中心至機柱表面距離-最小	Distance from column surface to spindle center, Min	330	305	330	440	440	500	C
主軸頭部在旋臂上水平移動行程	Travel of spindle head	880	970	1320	1110	1620	2000	D
主軸末端至底座加工距離-最大	Distance from base surface to spindle end, Max	1360	1330	1405	1640	1950	2000	E
主軸末端至底座加工距離-最小	Distance from base surface to spindle end, Min	467	438	465	380	395	550	F
旋臂在機柱上垂直升降行程	Elevating height of Arm	620	625	670	875	1185	1000	E-F-I
箱型工作檯尺寸有效工作範圍	Effective area of box table	635x520x415	635x520x420	630x500x500	700x500x400	1000x800x500	1000x800x560	LxKxH
底座尺寸(長x寬x厚)	Dimension of base	1720x715x185	1830x785x185	2550x970x200	2470x1030x200	2920x1120x260	3520x1400x320	RxSxQ
主軸孔模式推拔番號	Taper hole spindle	MT#4	MT#5		MT#5		MT#6	
主軸垂直行程	Stroke of spindle	270	270		370		450	I
主軸轉速 (空載轉速/分鐘x段數)	R.P.M of spindle (rpm x steps)	50HZ	37~1253x12	44~1206x12	29~1575x12	16~1250x16		
		60HZ	44~1500x12	56~1450x12	35~1890x12	16~1250x16		
主軸進刀速(mm/轉x段數)	Feed of spindle (rev.x steps)	0.05, 0.09, 0.15x3	0.06, 0.10, 0.20x3	0.07-0.96x6	0.04-3.20x16			
主軸驅動馬達馬力數	Main motor (HP)	3(two speed motor)	5(two speed motor)	7-1/2HP	10HP			
旋臂升降馬達馬力數	Elevating motor (HP)	1HP	1HP	2HP	2HP	3HP	5HP	
油壓泵浦馬達馬力數	Hydraulic clamping motor(HP)	1HP	1HP	1HP	1HP		1HP	
冷卻泵浦馬達馬力數	Coolant equipment (HP)	1/8HP	1/8HP	1/8HP	1/8HP		1/4HP	
齒輪箱頂端至地面距離-最大	Machine height from floor (Max.)	2670	2795	2790	3130	3520	3990	M
機柱帽蓋頂端馬達至地面高度	Base + column height	2070	2070	2190	2660	3050	3850	G
單機淨重(約)	Net weight (approx)kgs	2100	2300	3300	4250	5600	11000	
裝箱後毛重(約)	Shipping weight (approx)kgs	2300	2500	3650	4700	6100	12500	
裝箱尺寸(長x寬x高)	Shipping dimensions (LxWxH)	2030x990x2240	2220x1000x2240	2700x1130x2430	2820x1450x2930	3200x1450x3300	4160x1880x3850	
工作 能力 Capacity	鑽孔 Drilling	中碳鋼 Steel	42Φ	50Φ	65Φ	80Φ		
		鑄鐵 Cast iron	55Φ	60Φ	70Φ	100Φ		
	攻牙 Tapping	中碳鋼 Steel	25Φ	40Φ	50Φ	65Φ		
		鑄鐵 Cast iron	38Φ	50Φ	60Φ	75Φ		

* 上述列示規格公差介於 +/-5mm

* 以上參數僅供參考，如有變更恕不另行通知。

* Above listed specifications are within +/-5mm tolerances.

* Above specifications for reference only, modifications are not subject to notice in advance.