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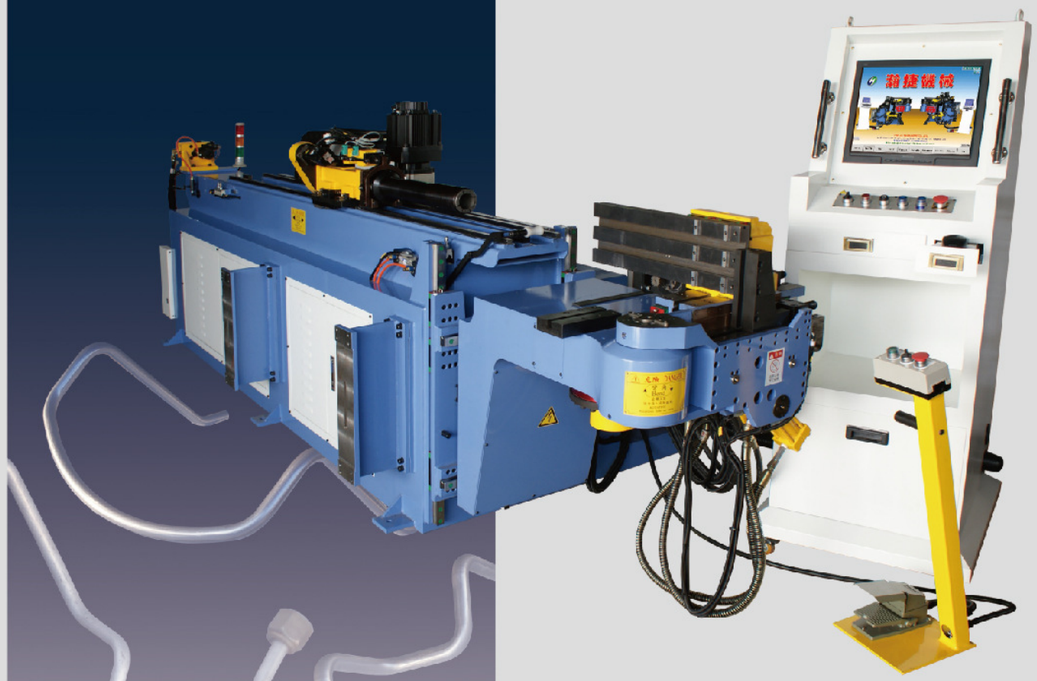
CNC
Rotary Draw Tube Bender
CNC全自動彎管機



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HAN JIE MACHINERY CO., LTD.

瀚捷機械
HAN JIE MACHINERY

公司簡介：

為您提供全方位的彎管需求！

致力於彎管機設計製造的瀚捷機械股份有限公司，十多年來始終秉持不斷創新研發的信念，截至目前為止已成功開發出各種系列之管件成型機械。瀚捷廣泛的系列產品包括：CNC彎管機，NC彎管機,管端成型機，滾圓機與管類專用機等。

在公司理念「品質、服務、創新」的引導下，瀚捷公司的研發人員始終不斷追求技術的新境界。為客戶提供更高性能的機械。堅持為客戶提供最佳品質的機械，是瀚捷公司對客戶的承諾。也因此多年來瀚捷機械已深獲許多國家客戶的肯定。

Company Profile

Provide the Most Flexible Choice in Tube Bending!

Han Jie Machinery Co., Ltd. specializes in design and manufacturing of tube bender. For over 10 years, we have been dedicated to constantly technological innovation and research and development. Till now, Han Jie has successfully developed various series of tube forming machinery, including CNC tube benders, NC tube benders, tube and forming machines, rolling benders and special-purpose tube processing machines etc.

Under the company's policy of "Quality; Service; Innovation", Han Jie's R&D staffs always strive hard for pursuing a new level of technology, that enables us to offer higher performance machines to our customers. Insisting on offering the best possiblt machines to customers is Han Jie's commitment. This is one of the reasons why Han Jie machines have been fulty recognized by customers in many countries.

機型辨識：
Model Identification

HC - XXXRX - XSM

(a) XSM：電氣伺服數量
XSM : Quantity of Electric - Servo

1	Feeding 送料
2	Rotation 轉角
3	Bending 進彎
4	Bend-head H-shift 車頭左右
5	Bend-head V-shift 車頭上下
6	Pressure Die Sliding 導模輔推

(b) HT2SM：油壓進彎+電氣伺服
HT2SM : Hydraulic Bending+Electric-Servo

1.	Hydraulic-bending : Electronics Proportional Valve 電子比例閥控制之油壓進彎
2.	Electric-Servo control : Feeding & Rotation 電氣伺服搭配：送料、轉角

Stack of tooling set :
模具層數

R1	1 Stack （單層）
R2	2 Stacks （雙層）
R3	3 Stacks （三層）

Tube Outside diameter :
最大管外徑

From 16mm to 127mm

1.	160:16mm	2.	250:25.4mm	3.	380:38.1mm
4.	500:50.8mm	5.	650:63.5mm	6.	800:76.2mm
7.	1000:101.6mm	8.	1300:127mm		

Han Jie CNC Tube Bender Series
瀚捷CNC彎管機系列

HC-160 Series / 系列

Max. Tube O.D.: ø16 (O.D) x 1.5 (W.T.)mm
Max. Bending Radius: 90mm
(Please refer to model idenfication for stack / servo-motor choices

最大適用管徑：ø16 (外徑) x 1.5 (壁厚)mm
最大彎曲半徑：90mm
(層數 / 電氣伺服搭配，請參考機型辨識)

HC-250 Series / 系列

Max. Tube O.D.: ø25.4 (O.D) x 2.0 (W.T.)mm
Max. Bending Radius: 120mm
(Please refer to model idenfication for stack / servo-motor choices

最大適用管徑：ø25.4 (外徑) x 2.0 (壁厚)mm
最大彎曲半徑：120mm
(層數 / 電氣伺服搭配，請參考機型辨識)

HC-380 Series / 系列

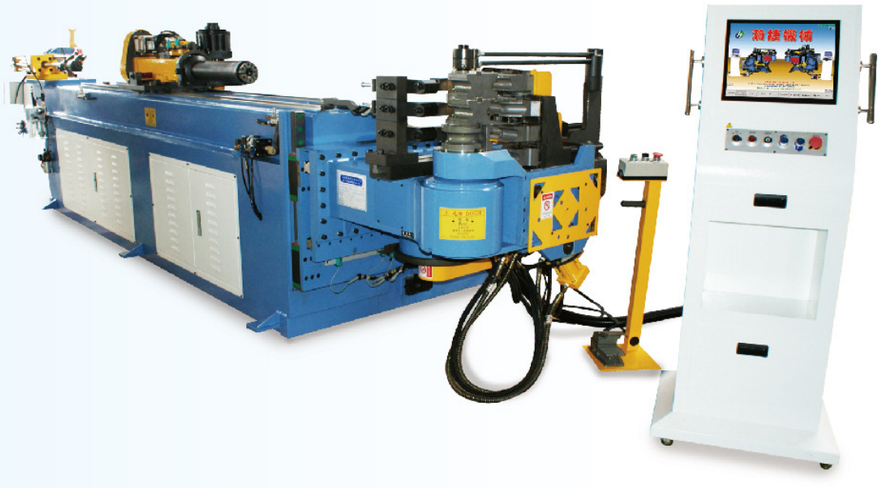
Max. Tube O.D.: ø38.1 (O.D) x 2.0 (W.T.)mm
Max. Bending Radius: 150mm
(Please refer to model idenfication for stack / servo-motor choices

最大適用管徑：ø38.1 (外徑) x 2.0 (壁厚)mm
最大彎曲半徑：150mm
(層數 / 電氣伺服搭配，
請參考機型辨識)

HC-500 Series / 系列

Max. Tube O.D.: ø50.8 (O.D) x 2.5 (W.T.)mm
Max. Bending Radius: 200mm
(Please refer to model idenfication for stack / servo-motor choices

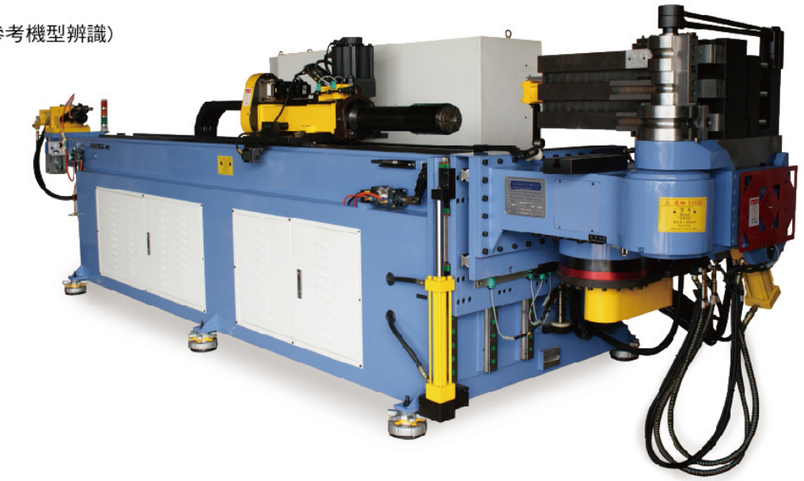
最大適用管徑：ø50.8 (外徑) x 2.5 (壁厚)mm
最大彎曲半徑：200mm
(層數 / 電氣伺服搭配，
請參考機型辨識)



HC-650 Series / 系列

Max. Tube O.D.: ø63.5 (O.D) x 3.0 (W.T.)mm
Max. Bending Radius: 250mm
(Please refer to model idenfication for stack / servo-motor choices

最大適用管徑：ø63.5 (外徑) x 3.0 (壁厚)mm
最大彎曲半徑：250mm
(層數 / 電氣伺服搭配，請參考機型辨識)



HC-800 Series / 系列

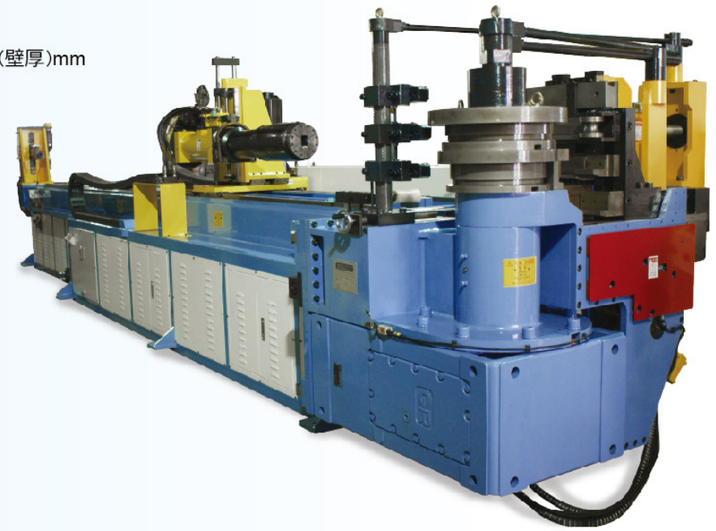
Max. Tube O.D.: ø76.2 (O.D) x 3.0 (W.T.)mm
Max. Bending Radius: 350mm
(Please refer to model idenfication for stack / servo-motor choices

最大適用管徑：ø76.2 (外徑) x 3.0 (壁厚)mm
最大彎曲半徑：350mm
(層數 / 電氣伺服搭配，
請參考機型辨識)

HC-1000 Series / 系列

Max. Tube O.D.: ø101.6(O.D) x 3.5 (W.T.)mm
Max. Bending Radius: 400mm
(Please refer to model idenfication for stack / servo-motor choices

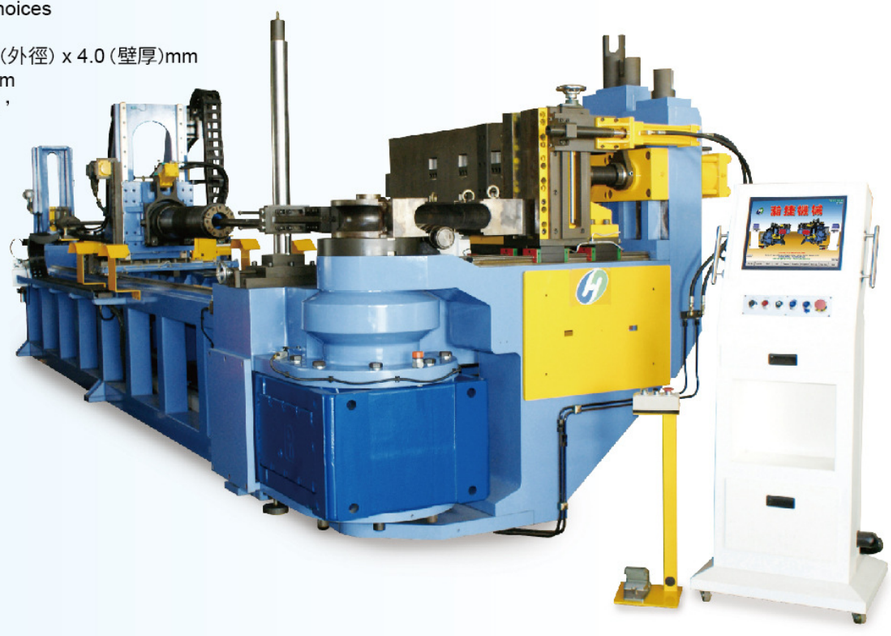
最大適用管徑：ø101.6 (外徑) x 3.5 (壁厚)mm
最大彎曲半徑：400mm
(層數 / 電氣伺服搭配，請參考機型辨識)



HC-1300 Series / 系列

Max. Tube O.D.: ø127 (O.D) x 4.0 (W.T.)mm
Max. Bending Radius: 450mm
(Please refer to model idenfication for stack / servo-motor choices

最大適用管徑：ø127 (外徑) x 4.0 (壁厚)mm
最大彎曲半徑：450mm
(層數 / 電氣伺服搭配，請參考機型辨識)



機構設計 Mechanical Design

- 符合動態力學之高剛性機械結構設計，堅固、耐用。
- 簡潔的彎曲臂與機頭設計，提供最大彎管空間、降低干涉範圍。
- 爬升式夾模設計，可避免干涉提供最大彎管空間。
- 快速換模設計提供更彈性化之生產需求，降低換模調適時間及難度。
- 採用高精度線性滑軌於滑動機構部位，高效能、高精準度、壽命長。
- 電氣箱與機身分離獨立，避免機台作動震動影響。

- Machines'design are based on dynamic mechanical analysis to offer reliable performance.
- Compact bend head & arm minimize the possible interferences.
- Climbing clamp design enables sufficient space to execute bending efficiently.
- Quick tooling changeover shortens set up time and comforts users.
- High quality linear guide ways mounted on sliding mechanism ensure precise and accurate motions.
- Individual electrical cabinet is mounted separately from the machine to prevent the affection of vibration.

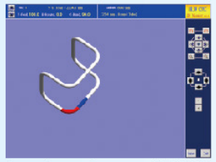
3D 模擬 3D Simulation

- 編輯彎管程式時，3D管件模擬可立即顯示於旁，編寫更簡便。
- 於自動模式生產時，3D管件模擬即時顯示於螢幕上，並以色塊顯示目前進行之部位
- 開啟檔案時，可預覽3D管件與模具資料，方便尋找。
- 3D彎管模擬(選配)，可預先呈現彎管流程，方便使用者調整。

- 3D tube profile can be shown immediately when editing YBC program to help users.
- Under Auto mode, 3D tube graphic indicates current bending section by different color block.
- 3D tube preview with tooling data is shown during opening a file.
- 3D Bending Process Simulation(Optional) directs bending process in advance to avoid unnecessary waste.

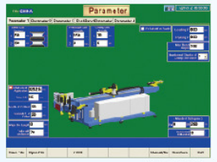
3D 彎管模擬軟體(選購) 3D Bending Process Simulation (Optional)

3D Bending Process Simulation (Optional)
3D 彎管模擬軟體(選購)

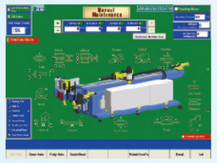


3D Tube Simulation 3D管件模擬

Y.B.C-axis Page Y.B.C軸三軸同動



Parameter Setting Page參數設定頁



Manual Mode 手動模式

Fully Auto. Mode 全自動模式

Open File Page 開啟舊檔預覽

最佳化的操控設定

- 具手動、半自動、全自動、單彎模式之多種操作模式。
- 於手動模式下，各軸可選擇”絕對值”” 相對值”移動，精準、方便、快速。
- 17”觸碰式大螢幕，圖示化、直覺式操作，畫面清晰、流暢。
- 各動作軸位置與彎曲角度，同步且即時顯示於螢幕上，提供良好之狀況掌握。
- 各軸速度獨立調整功能，9段主速+10段微調，共90段速，以針對不同工作物靈活運用。
- 夾、導模預先作動功能，可各筆獨立設定提前或延遲之作動時間差，大幅節省加工時間。
- YBC三軸同動功能，另有多種同動流程，可供選擇，提昇工作效率，大幅增加產能。
- 工件預選排序執行功能，最多可四組工件依順序及數量排列生產，便利生產安排。
- 指定動作流程功能，依需求指定動作，可 指定位移出、入或換層，進行送料、退彎、轉角，有效避開干涉點。
- 依工件性質需求，多種細項動作軸可獨立設定，如穿芯開關、二次退芯、輔推設定、單動、慢退夾、..等，滿足多樣化之彎管需求。
- 動作排程記憶功能，依使用者需求，於進彎到退彎間，記憶任意規劃之各軸作動以利脫模。
- 指定置管方式功能，可依需求指定位移入、出，進行置管。
- 送料方式具往復送料功能、再夾管功能，依客戶需求使用。
- 導模往復作動功能，可依需求設定執行，輕鬆克服大角度彎管。
- 工件總長自動計算，完成YBC彎管加工值後，立即提供者用料長度預估。
- 加工工件量計數功能，具總數、現量、倒數功能。
- 自動顯示單件完成時間，有效掌握生產效率。
- X.Y.Z軸座標轉Y.B.C軸功能。
- 具程式鏡射功能，可立即得此工件之對稱形狀
- 具程式反向功能，可立即反置此工件，變換加工順序。

Optimized & Flexible Bending Setting

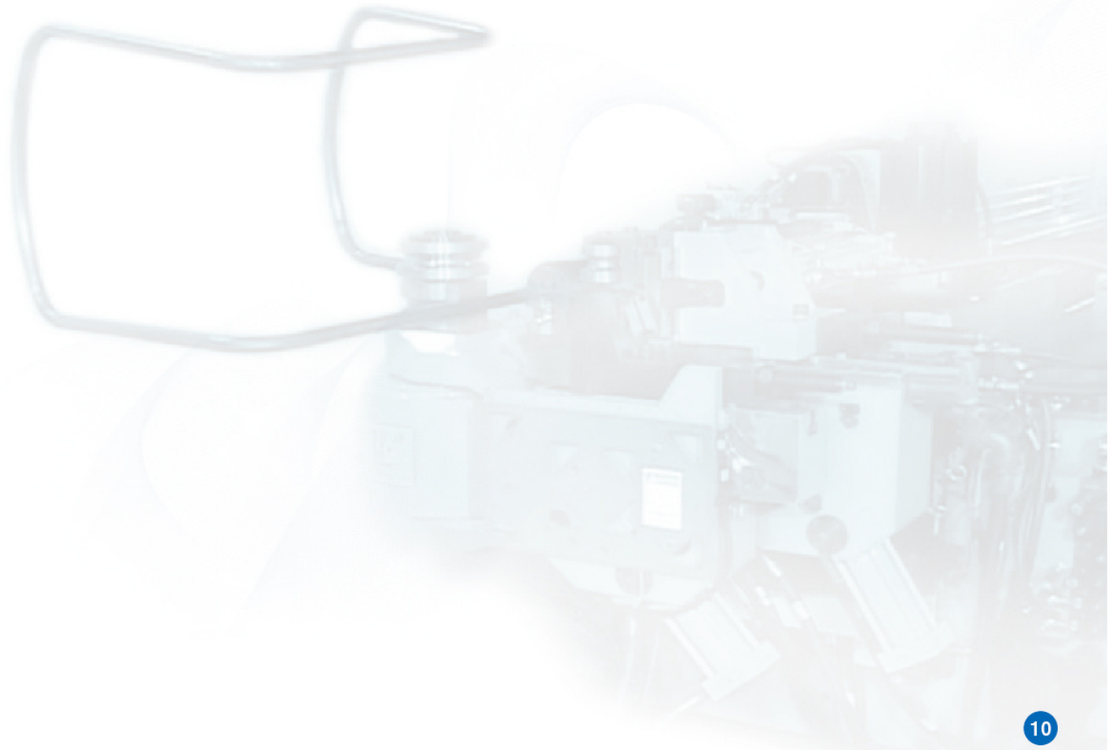
- Operation mode : Manual, Semi-Auto, Fully-Auto, Single-Bend.
- The precise movement of each axis can be executed by setting absolute/relative value.
- User friendly interface with 17”touch screen / Icon display.
- Positions of each axis and bending angle are numerically shown in the screen.
- Each axis has 9 main speed with 10 fine-tune speed to satisfy various applications.
- Anticipated clamping motion for clamp/pressure die could be set individually to save cycle times.
- Simultaneous axis movement on Y.B.C significantly upgrades productivity.
- Batch working function, 4 files can be scheduled to produce sequentially.
- Re-organize motion procedure to avoid touch-points effectively, under move-in/out/stack-change status to execute feeding, un-bending, rotating.
- The individual motion can be set as requests during the bend cycle, such like Mandrel(On/Off), 2-steps MDR retraction, boost function.
- Teach / Process function, any motions can be customized to successfully return the bend-arm to initial position.
- As the request, loading a tube under move-in/out status can be specified.
- Repeatable feeding / Re-capture functions are available for feeding.
- Repeatable Pressure die sliding function can be customized to execute to overcome large angle bending.
- Overall length recommendation, the system calculates the necessary length automatically when Y.B.C data has been set.
- Total, present, count-down functions are available in the workload counter.
- Automatic display of cycle time of X.Y.Z-coordinate can be converted to Y.B.C axis.
- Mirror function enables users to get the symmetrical shape immediately.
- Reverse function enables users to get the reverse shape immediately.

完善的安全防護

- 機台故障或不合邏輯操作之訊息提示功能，有效避免不當操作。
- 具有多道機械式極限保護裝置與軟體控管，防止人為錯誤撞壞機器。
- 前、後送料極限，送料座擺動防護感測，進夾完全偵測。
- 移動式腳踏開關及控制臺上均設計有緊急停止鈕，供隨時因應緊急狀況。
- 活動曲手內側具有安全護板，防止人身夾傷。
- 具有異常警報聲響，可設定聲響或不聲響。
- 具主馬達超載保護功能， 防止不當設定損壞主動力馬達。
- 密碼保護功能，防止外人私自更動造成異常。

Comprehensive Safety Protection

- Error watch dog function on program editing & abnormal operation to effectively help users to avoid artificial mistakes.
- The machine is protected by multi-mechanisms and program means.
- Front and Rear limit switches, Carriage vibration proximity switches, Fully clamping indicators.
- E.M.S buttons are equipped on the foot switch and control console to handle emergent situations.
- The safety plate equipped on the bending arm can stop the operation immediately when triggered.
- The buzzer could be set alarm / non-alarm modes for abnormal situations.
- Overload protection prevents the damage of motors from artificial operation.
- Password protection prevents malfunctions due to unauthorized users modification of files.

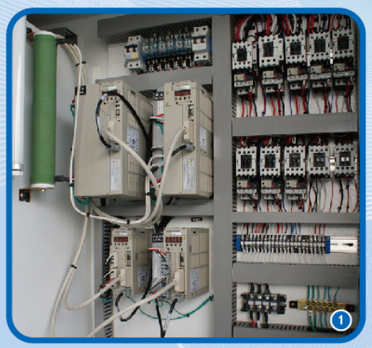


CNC Series

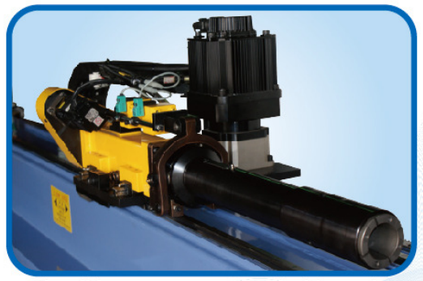
PC Based 控制系統 >
PC Besed Control System

- Windows作業系統為系統介面，搭配靈活之PC Based控制系統，擴充性強，非一般PLC控制系統。
- 採高規格、抗雜訊之工業電腦，搭配美國Intel原廠CPU(中央處理器) 2.6G以上或同級之CPU。
- 高清晰度之17吋觸碰螢幕，畫面清晰流暢，直覺式觸碰操作，方便快速。
- 最新高速記憶體 DDR2 2GB或以上，操作快速、流暢。
- 大硬碟容量(500GB)，可儲存2百萬筆資料以上，無須擔心容量問題。
- 於操控台上即有USB連接埠可使用，方便檔案之存取與備份。
- 使用者檔案自動備份系統，電腦內藏4GB之隨身碟，每次開機自動備份，確保檔案不遺失。
- YBC彎管彎數不受限制，輕鬆克服多彎工件。
- 隨機具Ethernet連接埠，可立即連線客戶端，提供問題諮詢，服務。(客戶端須提供網路連線)

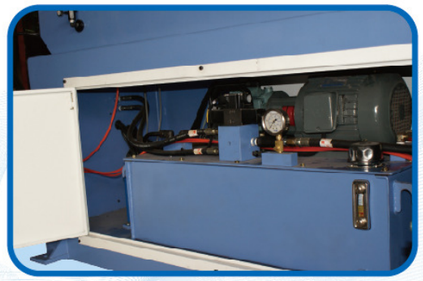
- PC Based control system in Windows operating system features remarkable functions and flexibility instead of conventional PLC control system.
- The high grade industrial computer with Intel CPU 2.6G above or same class CPU ensure the performance and noise free.
- 17" touch-screen features high resolution display and easily enables users touch to go.
- Latest high speed DDR2 memory 2GB or above.
- High capacity of hard disk (500GB) can store 2,000,000 programs, no insufficient capacity is concerned.
- USB ports are available on the movable console, it's convenient for users to access files.
- Built-in 4GB USB automatically backs up users' programs whenever the machine is reboot, that guarantees no loss of users' programs.
- No limit bend numbers in YBC can achieve multi-bends task easily.
- Ethernet port offers immediate connection with the manufacturer for trouble-shooting and service (Users need to offer internet-access).



1. The electrical cabinet is a modular design and is separately mounted from the machine to prevent being affected by machine vibration.
電氣箱模組化。與機台分離安裝，避免機台震動之影響。
2. The electrical cabinet is equipped with an air conditioner to keep at a constant temperature.
電氣箱附空調冷卻機，以保持恆溫。



■ The slide ways are mounted with precision linear guide ways.
滑道配置精密線性滑軌



■ The high-performance hydraulic system features smooth running and long service life.
高性能油壓系統，運轉順暢，壽命長。

■ Driven by Electric Servo Motor
伺服馬達驅動

■ Automatic lubrication for mandrel.
通心蕊自動潤滑

■ The foot switch increases operational convenience.
腳踏開關提升操作之方便性

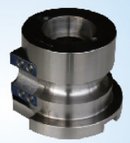
可移動式控制箱
The Movable Console

分 離 式 控 制 箱

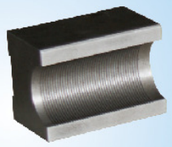
■ 可移動到喜愛位置，提升操作之方便性。
■ The movable console can be the desired position that increases convenience of operation.

CNC 全自動彎管機>
CNC Rotary Draw Tube Bender

Standard Bending Tools 彎管模具


Bending Die直徑模

Pressure Die 導 模


Clamp Die 夾 模

Collet 束 夾

Optional Tools 選購模具

Wiper Die 後導模

Plug Mandrel 子彈通蕊

Ball Mandrel 關節通蕊

Flexible Mandrel 萬向通蕊

SPECIFICATIONS 機器規格

ITEM		MODEL	HC-160 Series/系列	HC-250 Series/系列	HC-380 Series/系列	HC-500 Series/系列	HC-650 Series/系列	HC-800 Series/系列	HC-1000 Series/系列	HC-1300 Series/系列
最大彎曲能力 (管外徑x管碧厚) Max. Tube O.D.&W.T. (O.D.xt)	鐵管	Mild Steel	Ø16x1.5t	Ø25.4x2.0t	Ø38.1x2.0t	Ø50.8x2.5t	Ø63.5x3.0t	Ø76.2x3.0t	Ø101.6x3.5t	Ø127x4.0t
	不銹鋼	Stainless Steel	Ø12x1.5t	Ø22x1.5t	Ø32x1.8t	Ø45x2.0t	Ø50.8x2.0t	Ø65x2.5t	Ø90x2.0t	Ø114x3.0t
	角管	Mild Steel	□12x1.2t	□22x1.2t	□32x1.8t	□45x2t	□50x2.5t	□63x3t	□90x2t	□100x3t
最大拉彎彎曲半徑(最大R)	Max. Draw Bending Radius (mm)		90	120	150	200	250	350	400	450
彎曲角度範圍	Max. Bending Angle		200°	200°	200°	200°	200°	190°	190°	190°
最大有效通芯距離	Max. Effective Mandrel Length (mm)		1000	1500	2000	2500	3000	3500	4000	4500
彎曲 Bending	精度	Accuracy	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05	±0.1	±0.1
	速度	Speed/Sec.	180°	160°	150°	110°	100°	65°	50°	38°
送料 Feeding	精度	Accuracy	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
	速度	Speed/Sec.	1200	1100	1100	1000	1000	750	650	580
轉角 Rotation	精度	Accuracy	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
	速度	Speed/Sec.	300°	260°	240°	200°	200°	180°	120°	100°
兩層R最大差距R1-R2	Max. Bending Radius Difference (R)		30	40	50	60	65	70	75	80
機器外型	Dimension of Machine (LxWxH)cm		270x125x170	350x130x170	420x150x170	510x160x170	600x170x170	630x215x170	750x200x220	1000x220x275
機台重量	Weight of Machine (Kgs)		1200kgs	1400kgs	2200kgs	4500kgs	5000kgs	8000kgs	11000kgs	13000kgs

- 由於持續性的設計精進，改良。上述規格若有些許更動，恕不另行通知。
  Due to the continuous improvement on design, the specifications above are subject to change without notice.
- 請洽業務為您規劃及建議最適合您的機種與詳細的規格尺寸。
  Please contact sales to recommend you the suitable model with the latest specification details.