CNC HYBRID TUBE BENDING MACHINE

YLM
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Your Smart Tube Bender

ISO-9001 CE

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YING HAN Technology Co., Ltd.

CNC HYBRID TUBE BENDING MACHINE

ACW 2020.12.CE

Stock Code:4562

YLM 國際領導品牌
AN INTERNATIONAL BRAND NAME

全球最大彎管機製造廠
冷彎技術深耕四十多年

穎漢科技股份有限公司設計與製造CNC、NC及傳統型彎管機,已有四十多年的經驗累積。並且為客戶提供端末成型機、切管機、自動餵料機等週邊設備。穎漢彎管機以YLM品牌行銷全球五大洲,銷售國家高達30多國,其秉持優異的機械性能配合人性化的操控軟體,穎漢彎管機已成功的塑造彎管機的領導品牌。歷經四十多年的辛勤耕耘與成長拙壯,穎漢將持續精進,以確保競爭優勢。

自主開發　智慧型控制軟體

穎漢科技擁有卓越的軟體程式開發能力,早在1995年,穎漢程式開發人員就已領先同業,成功研發出亞洲第一套PC-BASE控制的全自動彎管機。穎漢可依客戶特殊製程需求而研發客製化程式系統,並配合YLM機電整合能力,進而滿足客戶的生產需求。當工業4.0的時代來臨,穎漢科技也同時致力於智慧型工作站之規劃、設計、製造,以幫助客戶降低生產成本,節省人力,提升產品品質與生產效率,達成更高的競爭力。

The World's Largest Tube Bender Manufacturing Dedicated to Tube Cold Bending for Over 40 Years

Ying Han Technology has more than 40 years of accumulated experience in design and manufacture of CNC, NC and conventional tube and pipe bending machines. Moreover, Ying Han also offers a wide range of peripheral equipment, such as cutting machine, end forming machine and auto loader, etc. Ying Han tube benders are marketed on five continents under the "YLM" brand, with over 30 countries. Thanks to outstanding machine performance in combination with humanized control software, Ying Han tube bender has successfully established a leading brand in this sector. With over 40 years of hard cultivation and the company's growth, Ying Han will keep striving hard to ensure its competitive edge.

In-House Developed Intelligent Control Software

At Ying Han, we have outstanding software program development capabilities. In 1995, Ying Han program development personnel successfully developed the first Asian, pc-based controller for use on a fully automatic tube bender. Upon customer request, Ying Han can develop a customized program system according to customer's specific process requirements. This combined with YLM's outstanding mechanical and electrical integration capabilities, which in turn will better meet customer's production needs. As of today we are in the era of industry 4.0, Ying Han is also dedicated to the planning, design and manufacturing of smart automation work cell. This will help our customers to lower production costs and save labor, thereby upgrading product quality and production efficiency and leading to a higher competitive edge.

主要產品　Main Products

1 　CNC全電型彎管機
CNC electric tube bending machines

2 　CNC全電型左右旋彎管機
CNC electric R&L tube bending machines

3 　CNC/NC/CR油電型彎管機
CNC/NC/CR hybrid tube bending machines

4 　週邊設備
(端末成型機/切管機/餵料機)
Auxiliary equipment
(End forming / Cutting / Feeding machine)

5 　機器人
Robot

6 　彎線機
Wire bender

7 　整廠設備-智能化工作站
Whole plant equipment –
Smart automation work cells

8 　雷射切割機
Laser tube cutting machine

9 　加工中心機
Machining centers

OUTSTANDING DESIGN OPTIMAL OPERATION PERFORMANCE

精湛設計 最佳操控性

CNC油電彎管機

加工力道強勁、應用廣泛

穎漢的全自動CNC油電彎管機，採用伺服馬達驅動及完善的油路系統規劃，確保彎管品質優異。高度彈性化的機台設計，可依據客戶之特殊工件，開發客製化模具。此系統CNC油電機型，配備有簡單易學的控制器。生產性能優異，可徹底滿足各種產業的應用需求，例如:汽機車排氣管零件、運動器材、鍋爐、造船、大型運輸車輛、化工、電廠、柴油引擎、建築、航空、家具、空調管路、剎車油管、衛浴設備等等。

油電彎管機特性

1. 此系列機種均採用油壓閥積體迴路，動作個別控制，可延長油壓零件使用壽命。
2. 大型機種裝有手動可調式數位流量調節閥，可控制進彎之速度。
3. 伺服進彎定位精準，使彎管品質良好。

輔推功能

為了避免小曲半徑加工時之拉斷或破裂問題，穎漢彎管機採用正向輔助推送管件，搭配側向輔推機構(導模輔推)，可將管件拉斷或破裂降到最低程度。輔助推力可配合彎曲速度，材料特性、彎曲角度作調整。以達到最佳生產效率及彎管品質。

CNC HYBRID TUBE BENDING MACHINE

Extra Powerful Machining Capacity. Widespread Applications.

The Fully Automatic CNC Hybrid Tube Bending Machine from Ying Han is driven by servo motor in combination with well planned hydraulic circuit, ensuring outstanding tube bending quality. With the highly flexible design capability, customized dies are being developed to suit customers' special workpieces. The series of CNC hybrid tube bender is equipped with a user-friendly controller. The superb production performance allows the machine to thoroughly satisfy application requirements for a wide range of industries, such as sports equipment, boiler, large transport vehicles, chemical engineering, power plant, diesel engine, exhaust pipe for automotive and motorcycle, architecture, aircraft, furniture, air conditioner piping, brake piping and bathroom equipment, etc.

Features of Hybrid Tube Bender

1. The series of machine employs hydraulic valves and integrated circuits to control bending motion individually, which will extend the service life of the hydraulic parts.
2. Large bending machine is equipped with a manually adjusted digital flow regulation valve to control the speed of bending motion.
3. Servo drive provides high accuracy in bending positioning, that ensures high quality bending.

Boosting Function

In order to prevent tube from snapping or cracking in small radius bending operations, Ying Han tube bender employs a rear booster to push tube. This combined with side boosting (pressure die boosting) to minimize the problem of tube snapping or cracking. Boosting force can be adjusted in accordance with bending speed, material properties and bending angle. This will lead to optimal production efficiency and bending quality.

THE FULL SERIES OF MACHINES FROM YING HAN

全系列機種 盡在穎漢

齊全的機種與廣泛的應用行業
The Most Comprehensive Range of
Machines and Applicable Industries

CNC-08	CNC-16	CNC-16	CNC-25	CNC-25
家用冷氣管 Household air conditioner tube	家用冷氣管 Household air conditioner tube	煞車油管 Brake fuel pipe	辦公椅體 Office chair frame	安全氣囊的防爆管 Explosion-proof tube of air bag

CNC-30	CNC-38	CNC-38	CNC-38	CNC-38
汽車天線收線架 Car antenna	油管 Fuel	傢俱 - 宴客椅 Banquet chair	賽車椅背 Seat back-racing car	油管 Fuel

CNC-38	CNC-38	CNC-38	CNC-38	CNC-50
吉普車後方的輪胎架 Tire rack of jeeps	嬰兒車把手 Handle bar of baby stroller	導熱管 Heat exchange	嬰兒車把手 Handle bar of baby stroller	機車排氣管 Bike exhaust

CNC-50	CNC-50	CNC-50	CNC-65	CNC-65
衛浴設備 Sanitary ware	渦輪增壓管 Boiler	鍋爐管 Boiler	椅子 Chair frame	消音筒 Noise diminisher

CNC-65	CNC-65	CNC-70	CNC-70	CNC-80
大型燈具 Big size lamp	平衡桿 Stabilizer	平衡桿 Stabilizer	捷運上的椅體 Chair frame	傳動桿 Transmission bar

CNC-90	CNC-90	CNC-90	CNC-90	CNC-90
改裝車尾管 Tail-light of modified car	排氣管 Exhaust pipe	皮卡汽車圍欄 Fence of pickup	捷運上的椅體 Chair frame	汽車排氣管 Exhaust pipe for automotive

CNC-90	CNC-90	CNC-101	CNC-101	CNC-101
歧管 Muffler pipe	排氣管歧管 Exhaust manifold	鍋爐管 Boiler	運動器材 Exercise	保險桿 Bumper

CNC-101	CNC-130	CNC-130	CNC-130	CNC-160
巴士車框 Bus frame	大貨車進氣管 Exhaust of truck	化工的輸送管 Chemical piping	傳動桿 Transmission shaft	大貨車排氣管接頭 Joint of exhaust

# UNLIMITED TUBE APPLICATIONS

管件應用 無遠弗屆

適用產業 Suitable Industries

型　號	MODEL	CNC-08	CNC-16	CNC-20	CNC-25	CNC-30	CNC-38	CNC-50	CNC-65	CNC-70	CNC-80	CNC-90	CNC-101	CNC-130	CNC-160
汽車剎車	Automotive brake	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-
供油管路	Fuel piping	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-
空調管路	Air conditioner piping	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-
電熱管	Heater tube	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-
車架	Car frame	-	-	-	✓	✓	✓	✓	✓	✓	-	-	-	-	-
車把	Handle bar	-	-	-	✓	✓	✓	✓	✓	✓	-	-	-	-	-
座椅	Car seat	-	-	-	✓	✓	✓	✓	✓	✓	-	-	-	-	-
傢俱	Furniture	-	-	-	✓	✓	✓	✓	✓	✓	-	-	-	-	-
運動器材	Exercise equipment	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
航空	Aircraft	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	-	-	-
衛浴設備	Bathroom accessories	-	-	-	-	✓	✓	✓	-	-	-	-	-	-	-
建築	Architecture	-	-	-	-	-	✓	✓	✓	✓	✓	✓	-	-	-
保險桿	Bumper	-	-	-	-	-	-	✓	-	-	-	-	-	-	-
汽機車排氣管零件	Exhaust pipe for automotive and motorcycle	-	-	-	-	-	-	✓	✓	✓	✓	✓	-	-	-
鍋爐	Boiler	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓
造船	Shipbuilding	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓
大型運輸車輛	Heavy transportation vehicle	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓
電廠	Power plant	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓
化工	Chemical engineering	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓
柴油引擎	Diesel engine	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓
		(P10)	(P11)	(P12)	(P13)	(P14)	(P15)	(P17)	(P19)	(P21)	(P23)	(P25)	(P27)	(P29)	(P31)

PC-Base 控制器

人性化操控　易學、易懂、易操作

穎漢科技自行開發之彎管操控軟體，並搭配Windows作業系統。依據客戶要求的客製化機械功能，電腦軟體也可隨之量身訂作。穎漢秉持優異的機電整合能力，可提供更符合您生產需求的設備，達成生產效率最佳化的目標。

1. 多國語系介面 (中、英、日…等)。
2. 3D模擬系統 (有手動模擬及干涉判斷)。
3. 可搭配3D掃描儀 (有ROMER、FARO、AICON)。
4. XYZ轉YBC的功能。
5. 管件反彈系數的計算。
6. PC-BASE 控制系統，圖形化人機介面，畫面切換快速，操作簡易。
7. 全新3D管件預覽功能，即時顯示3D管件模型，方便立即修正。
8. 工件參數與Y, B, C資料輸入時，具自動修正與防錯判斷。
9. 管件工作計數與倒數計數功能。
10. 不同彎曲半徑多次彎管、精度高、速度快、省人工。
11. 具有自動檢測錯誤及故障功能。當異常動作或危險情況存在時，機器立即停機，並發出異警。
12. 異常訊息顯示，方便故障排除。
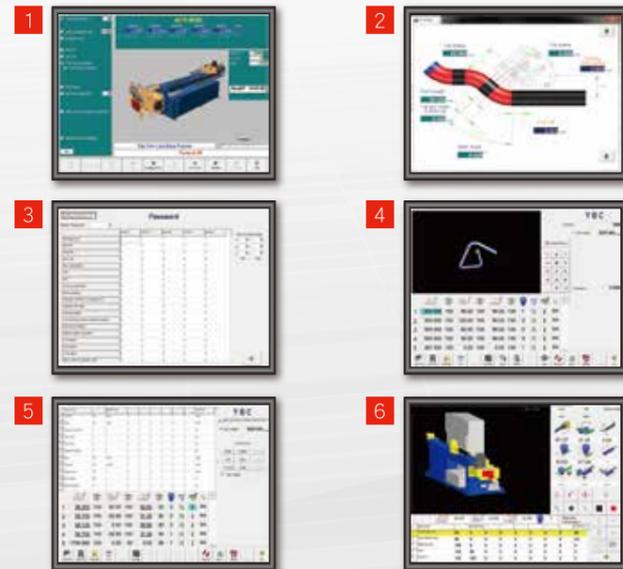
1. 自動功能設定
2. 切斷功能設定 (選配)
3. 操作權限設定
4. 管件預覽功能
5. 管件XYZ座標轉YBC彎管流程
6. 3D模擬干涉判斷功能

PC-Based Controller

Humanized Operation
Easy to Learn, Understand and operate

The tube bending control software is self-developed by Ying Han Technology in combination with windows operation system. The computer software can also be tailor designed according to customers' requirements for customized machine functions. Based on Ying Han's outstanding capability in mechanical and electrical integration, we are able to offer more appropriate equipment to meet your production needs.

1. Multi-language display (Chinese, English and Japanese, etc.)
2. 3D simulation system (With manual simulation and interference judgment)
3. Available to use together with a 3D scanner (such as ROMER, FARO, AICON)
4. Function of converting XYZ to YBC.
5. Calculation of tube springback coefficient.
6. The PC-based controller features graphic human-machine interface, quick change display and easy operation.
7. All new 3D tube preview function provides instant display of 3D tube model, allowing for immediate modification.
8. When entering workpiece parameters and Y, B, C data, the controller provides automatic modification and error-prevention judgement.
9. Tube production count and countdown functions.
10. Multiple bending for various bending radii features high accuracy, fast operation and labor saving.
11. With automatic detection function for error and trouble. In case a malfunction or danger exists, the machine stops immediately and alarm occurs.
12. Error message display makes it convenient for trouble shooting.

1. Auto mode function setting
2. Cut-off function setting (optional)
3. Operation rights setting
4. 3D simulation function
5. Converting X,Y,Z coordinates of tube to Y,B,C bending process
6. 3D simulation and interference judgment function

CNC-08

適用產業	特 性	Suitable Industries	Features
● 汽車剎車 ● 供油管路 ● 空調管路 ● 電熱管	● 無油壓 ● 拉彎 ● 3軸伺服控制 ● 3D模擬 ● 適合使用冷氣工業	● Automotive brake piping ● Fuel piping ● Air conditioner piping ● Heater	● Zero hydraulic ● Draw-bending ● 3 axes servo motor controlled ● 3D simulation ● The best machine for air conditioner industry

主規格	Main Specifications	
管材 - 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø8 mm
最大管壁厚度	Max. tube wall thickness	1 mm
最大彎曲半徑	Max. bending CLR	40 mm

下料機構 (選配)
Unloading mechanism (opt.)

上料機構 (選配) / 三爪機構
Loading mechanism (opt.) /
Three-jaw collet mechanism

CNC-16A

適用產業	特 性
● 汽車剎車	● 混合動力
● 供油管路	● 推/拉彎功能
● 空調管路	● 3~5軸伺服控制
● 電熱器	● 3D模擬

Suitable Industries	Features
● Automotive brake piping	● Hybrid model
● Fuel piping	● Push / draw bending
● Air conditioner piping	● 3~5 axes servo motor controlled
● Heater	● 3D simulation

定位精度高，操作性優異，維修方便。

High positioning accuracy, outstanding operability and convenient maintenance.

主規格	Main Specifications	
管材 - 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø16 mm
最大管壁厚度	Max. tube wall thickness	1.2 mm
最大彎曲半徑	Max. bending CLR	60 mm

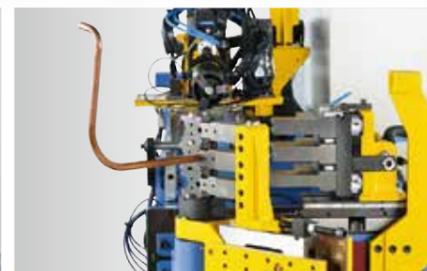送料機構　Feeding mechanism　　車頭設計　Bending head

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CNC-20F

適用產業	特 性
● 汽車剎車	● 混合動力
● 供油管路	● 推/拉彎功能
● 空調管路	● 3~5軸伺服控制
● 電熱器	● 3D模擬

Suitable Industries	Features
● Automotive brake	● Hybrid model
● Fuel piping	● Push / draw bending
● Air conditioner piping	● 3~5 axes servo motor controlled
● Heater tube	● 3D simulation

主規格	Main Specifications	
管材 - 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø20 mm
最大管壁厚度	Max. tube wall thickness	1.5 mm
最大彎曲半徑	Max. bending CLR	70 mm

三爪機構　Three-jaw collet mechanism　多層模設計　Multi-stack die

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CNC-25

適用產業		特 性	
● 汽車剎車		● 混合動力	
● 供油管路		● 推/拉彎功能	
● 空調管路		● 4/5軸伺服控制	
● 電熱管		● 3D模擬	
● 車架			
● 車把			
● 座椅			
● 傢俱			

Suitable Industries	Features
● Automotive brake piping	● Hybrid model
● Fuel piping	● Push / draw bending
● Air conditioner piping	● 4 or more axes servo motor controlled
● Heater	● 3D simulation
● Car frame	
● Handle bar	
● Car seat	
● Furniture	

定位精度高，操作性優異，維修方便。

High positioning accuracy, outstanding operability and convenient maintenance.

主規格	Main Specifications	
管材 - 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø25 mm
最大管壁厚度	Max. tube wall thickness	1.6 mm
最大彎曲半徑	Max. bending CLR	100 mm

模具設計　Die

子彈通蕊　Bullet mandrel

CNC-30

適用產業		特 性	
● 車架		● 混合動力	
● 車把		● 推/拉彎功能	
● 座椅		● 4/5軸伺服控制	
● 運動器材		● 3D模擬	
● 傢俱			
● 航空			
● 衛浴設備			

Suitable Industries	Features
● Vehicle frame	● Hybrid model
● Handle bar	● Push / draw bending
● Car seat	● 4 or more axes servo motor controlled
● Exercise equipment	● 3D simulation
● Furniture	
● Aircraft	
● Bathroom accessories	

主規格	Main Specifications	
管材 - 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø30 mm
最大管壁厚度	Max. tube wall thickness	2.3 mm
最大彎曲半徑	Max. bending CLR	180 mm

打洞功能　Hole punching function

車頭機構　Bending head mechanism

CNC-38

適用產業	特 性
● 車架	● 混合動力
● 車把	● 推/拉彎功能
● 座椅	● 4~5軸伺服控制
● 運動器材	● 3D模擬
● 傢俱	● 焊道偵測功能 (選配)
● 建築	● 通蕊打油系統
● 航空	
● 衛浴設備	

Suitable Industries	Features
● Vehicle frame	● Hybrid model
● Handle bar	● Push / draw bending
● Car seat	● 4 or more axes servo
● Exercise equipment	motor controlled
● Furniture	● 3D simulation
● Architecture	● Weld seam detection function (opt.)
● Aircraft	● Mandrel lubrication system
● Bathroom accessories	

主規格	Main Specifications	
管材 - 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø38 mm
最大管壁厚度	Max. tube wall thickness	2.3 mm
最大彎曲半徑	Max. bending CLR	180 mm

全自動彎管機可輕易達成多個彎曲半徑及多個彎管一次成型。
大幅低人工成本，並且提升產品精度。

A fully automatic tube bender that permits various bending radii and multiple bending to be accomplished at a time, which dramatically lowers production cost while upgrading product accuracy.

送料機構　Feeding mechanism　　打孔裝置　Hole punching device

CNC-50

適用產業	特 性
● 保險桿	● 混合動力
● 汽機車排氣管零件	● 推/拉彎功能
● 車架	● 4軸以上伺服控制
● 車把	● 3D模擬
● 座椅	● 焊道偵測功能 (選配)
● 運動器材	● 通蕊打油系統
● 傢俱	● 末段輔推功能 (選配)
● 建築	
● 航空	
● 衛浴設備	

Suitable Industries	Features
● Exhaust pipe	● Hybrid model
● Exhaust pipe for automotive and motorcycle	● Push / draw bending
	● 4 or more axes servo motor controlled
● Vehicle frame	● 3D simulation
● Handle bar	● Weld seam detection function (opt.)
● Car seat	● Mandrel lubrication system
● Exercise equipment	● Tube boosting (opt.)
● Furniture	
● Architecture	
● Aircraft	
● Bathroom accessories	

主規格	Main Specifications	
管材 - 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø50 mm
最大管壁厚度	Max. tube wall thickness	3 mm
最大彎曲半徑	Max. bending CLR	240 mm

置管動作可設定位移出或入，以防止刮傷管面。

Tube loading motion allows for setting moving in or out, that avoids scratching on tube surface.

曲手機構　Crank arm mechanism

送料機構　Feeding mechanism

通蕊機構　Mandrel mechanism

CNC-65

適用產業	特 性
● 汽機車排氣管零件	● 混合動力
● 車架	● 推/拉彎功能
● 車把	● 4軸以上伺服控制
● 座椅	● 3D模擬
● 運動器材	● 焊道偵測功能 (選配)
● 傢俱	● 通蕊打油系統
● 建築	● 末段輔推功能 (選配)
● 航空	

Suitable Industries / Features

- Exhaust pipe for automotive and motorcycle
- Vehicle frame
- Handle bar
- Car seat
- Exercise equipment
- Furniture
- Architecture
- Aircraft

- Hybrid model
- Push / draw bending
- 4 or more axes servo motor controlled
- 3D simulation
- Weld seam detection function (opt.)
- Mandrel lubrication system
- Tube boosting (opt.)

主規格	Main Specifications	
管材 - 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø65 mm
最大管壁厚度	Max. tube wall thickness	2.5 mm
最大彎曲半徑	Max. bending CLR	240 mm

可設定進彎後，延遲退夾時間，有助於管件定型，大幅降低管件反彈問題。

Available to set clamping release delay time after bending, that contributes to tube forming, thereby dramatically reducing tube spring-back problem.

通蕊打油機構　Mandrel lubricator system　通蕊機構　Mandrel mechanism

送料機構　Feeding mechanism　多層模模具　Multi-stack die

CNC-70

適用產業	特 性
● 汽機車排氣管零件	● 混合動力
● 車架	● 推/拉彎功能
● 車把	● 6軸以上伺服控制
● 座椅	● 3D模擬
● 運動器材	● 全機潤滑
● 傢俱	● 焊道偵測功能 (選配)
● 建築	● 通蕊打油系統
● 航空	● 末段輔推功能 (選配)

Suitable Industries	Features
● Exhaust pipe for automotive and motorcycle	● Hybrid model
● Vehicle frame	● Push / draw bending
● Handle bar	● 6 axes servo motor controlled
● Car seat	● 3D simulation
● Exercise equipment	● Machine auto lubrication system
● Furniture	● Weld seam detection function (opt.)
● Architecture	● Mandrel lubrication system
● Aircraft	● Tube boosting (opt.)

主規格	Main Specifications	
管材 - 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø70 mm
最大管壁厚度	Max. tube wall thickness	2.2 mm
最大彎曲半徑	Max. bending CLR	240 mm

不同彎曲半徑可多次彎管，
更凸顯高精度、速度快、省人工特色。

Different bending radius can be achieved through several times of bending, featuring high accuracy, high speed and labor saving.

推彎模　Push bending die

送料機構　Feeding mechanism

通蕊機構　Mandrel mechanism

CNC-80

適用產業	特 性
● 運動器材	● 混合動力
● 鍋爐	● 推/拉彎功能
● 造船	● 4~6軸伺服控制
● 大型運輸車輛	● 切斷機構 (選配)
● 化工	● 3D模擬
● 電廠	● 全機潤滑
● 柴油引擎	● 焊道偵測功能 (選配)
● 汽機車排氣管零件	● 通蕊打油系統
● 建築	● 末段輔推功能 (選配)
● 航空	

Suitable Industries	Features
● Exercise equipment	● Hybrid model
● Boiler	● Push / draw bending
● Shipbuilding	● 4~6 axes servo motor controlled
● Heavy transportation vehicle	● Cutting system (opt.)
● Chemical engineering	● 3D simulation
● Power plant	● Machine auto lubrication system
● Diesel engine	● Weld seam detection function (opt.)
● Exhaust pipe for automotive and motorcycle	● Mandrel lubrication system
● Architecture	● Tube boosting (opt.)
● Aircraft	

主規格	Main Specifications	
管材 – 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø80 mm
最大管壁厚度	Max. tube wall thickness	2.5 mm
最大彎曲半徑	Max. bending CLR	270 mm

全自動彎管機可輕易達成多個彎曲半徑及多個彎管一次成型。
大幅低人工成本，並且提升產品精度。

A fully automatic tube bender that permits various bending radii and multiple bending to be accomplished at a time, which dramatically lowers production cost while upgrading product accuracy.

內爪機構　ID collet mechanism

多層模具設計　Multi-stack die

CNC-90

適用產業 特性

- 運動器材
- 鍋爐
- 造船
- 大型運輸車輛
- 化工
- 電廠
- 柴油引擎
- 汽機車排氣管零件
- 建築
- 航空

- 混合動力
- 推/拉彎功能
- 4軸以上伺服控制
- 切斷機構 (選配)
- 3D模擬
- 快速換模 (選配)
- 全機潤滑
- 焊道偵測功能 (選配)
- 通蕊打油系統
- 通蕊桿斷裂偵測 (選配)
- 通蕊球裂偵測 (選配)
- 末段輔推功能(選配)

Suitable Industries Features

- Exercise equipment
- Boiler
- Shipbuilding
- Heavy transportation vehicle
- Chemical engineering
- Power plant
- Diesel engine
- Exhaust pipe for automotive and motorcycle
- Architecture
- Aircraft

- Hybrid model
- Push / draw bending
- 4 or more axes servo motor controlled
- Cutting system (opt.)
- 3D simulation
- Quick tooling change system (opt.)
- Machine auto lubrication system
- Weld seam detection function (opt.)
- Mandrel lubrication system
- Mandrel rod break detection (opt.)
- Mandrel ball break detection (opt.)
- Tube boosting (opt.)

主規格 / Main Specifications

主規格	Main Specifications	
管材 - 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø90 mm
最大管壁厚度	Max. tube wall thickness	2.6 mm
最大彎曲半徑	Max. bending CLR	230 mm

全自動彎管機可輕易達成多個彎曲半徑及多個彎管一次成型。
大幅低人工成本，並且提升產品精度。

A fully automatic tube bender that permits various bending radii and multiple bending to be accomplished at a time, which dramatically lowers production cost while upgrading product accuracy.
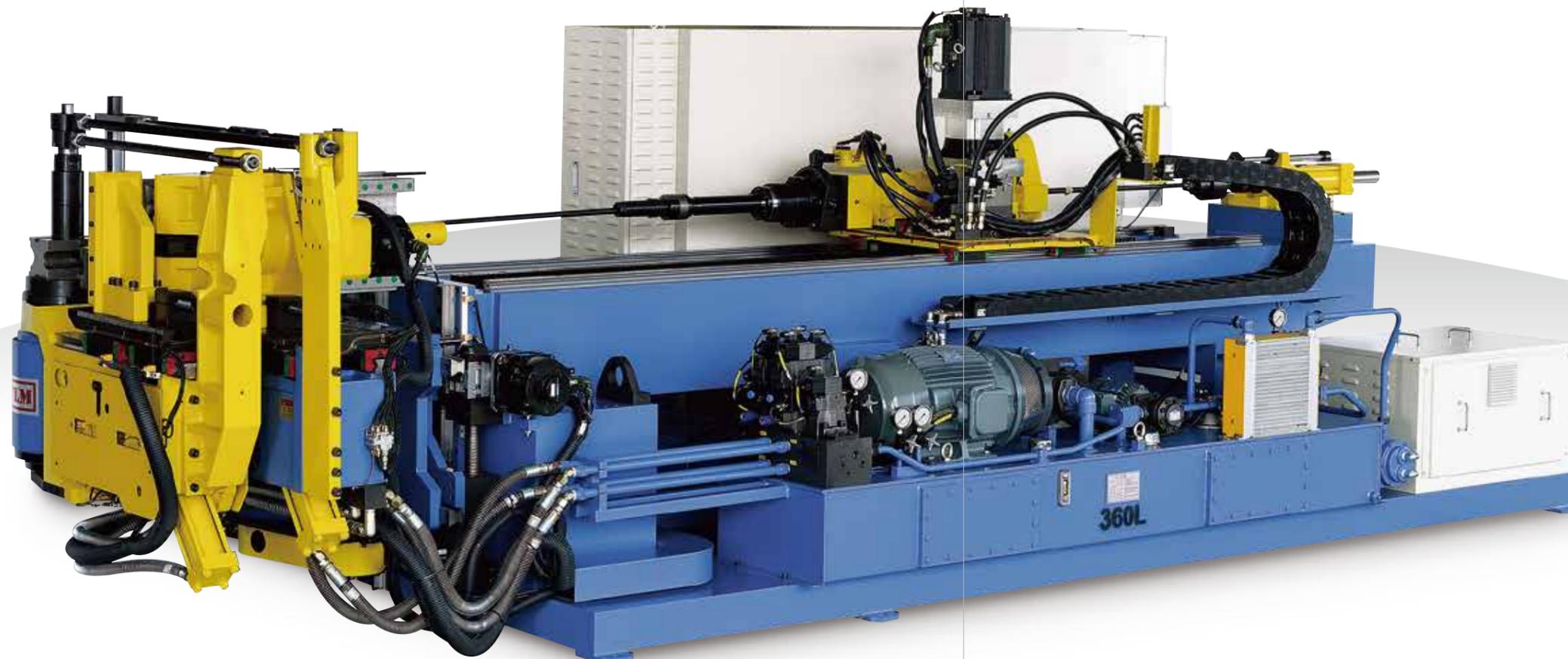
拉桿設計　Tie bar

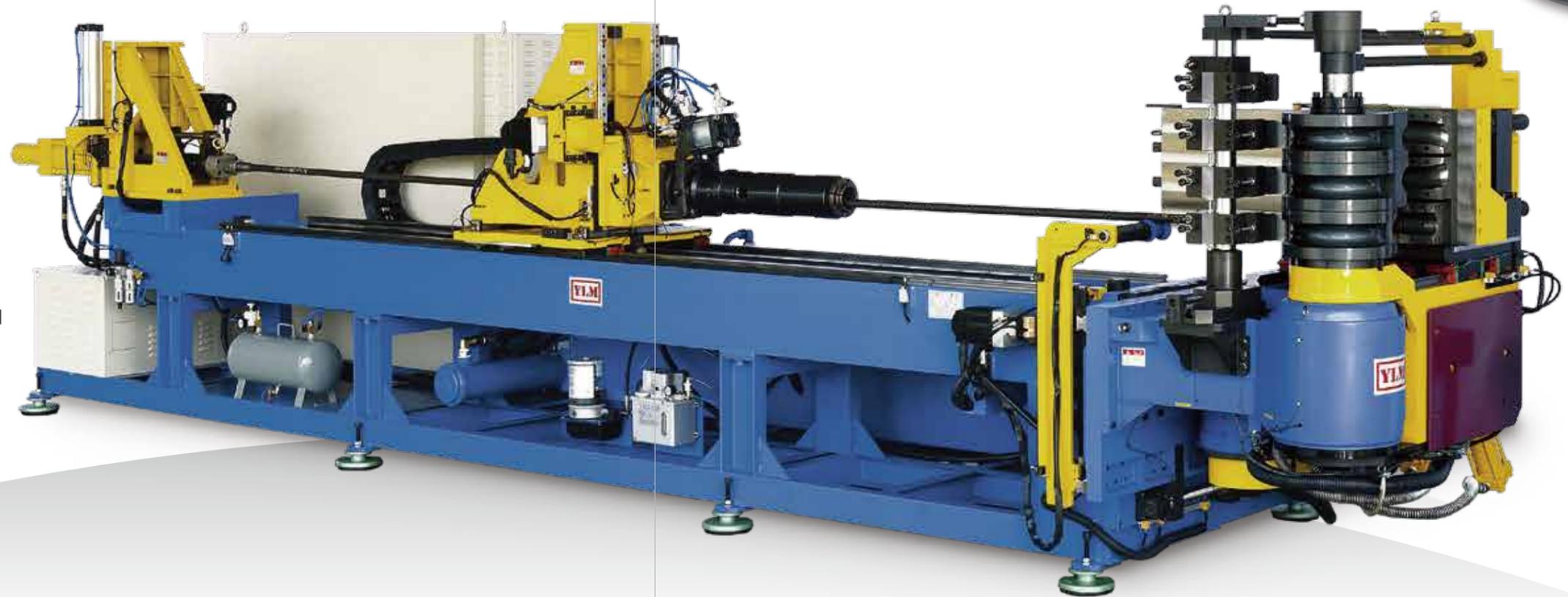通蕊機構　Mandrel mechanism

內爪機構　ID collet mechanism

CNC-101

適用產業	特 性
● 運動器材	● 混合動力
● 鍋爐	● 推/拉彎功能
● 造船	● 切斷機構 (選配)
● 大型運輸車輛	● 3D模擬
● 化工	● 全機潤滑
● 電廠	● 焊道偵測功能 (選配)
● 柴油引擎	● 通蕊打油系統
	● 通蕊桿斷裂偵測 (選配)
	● 通蕊球裂偵測 (選配)
	● 末段輔推功能(選配)

Suitable Industries	Features
● Exercise equipment	● Hybrid model
● Boiler	● Push / draw bending
● Shipbuilding	● Cutting system (opt.)
● Heavy transportation vehicle	● 3D simulation
● Chemical engineering	● Machine auto lubrication system
● Power plant	● Weld seam detection function (opt.)
● Diesel engine	● Mandrel lubrication system
	● Mandrel rod break detection (opt.)
	● Mandrel ball break detection (opt.)
	● Tube boosting (opt.)

主規格	Main Specifications	
管材 – 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø100 mm
最大管壁厚度	Max. tube wall thickness	2.8 mm
最大彎曲半徑	Max. bending CLR	250 mm

手動伺服操控，可設定絕對與相對
位置運動，展現精準快速特色。

**Manual servo control allows for
setting motions with absolute and
relative position, thus exhibiting
high accuracy and high speed.**

支撐機構　Tube support

束頭設計　Tube collet

多層模具設計　Multi-stack die

曲手機構　Crank arm mechanism

外爪機構　OD collet mechanism

通蕊機構　Mandrel mechanism

CNC-130

適用產業	特 性
● 運動器材	● 混合動力
● 鍋爐	● 推/拉彎功能
● 造船	● 3D模擬
● 大型運輸車輛	● 全機潤滑
● 化工	● 通蕊打油系統
● 電廠	● 通蕊桿斷裂偵測 (選配)
● 柴油引擎	● 通蕊球裂偵測 (選配)
	● 伺服進彎/油壓進彎機型
	● 末段輔推功能(選配)

Suitable Industries	Features
● Exercise equipment	● Hybrid model
● Boiler	● Push / draw bending
● Shipbuilding	● 3D simulation
● Heavy transportation vehicle	● Machine auto lubrication system
● Chemical engineering	● Mandrel lubrication system
● Power plant	● Mandrel rod break detection (opt.)
● Diesel engine	● Mandrel ball break detection (opt.)
	● Servo bending / hydraulic bending
	● Tube boosting (opt.)

| 主規格	Main Specifications	
管材 - 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø130 mm
最大管壁厚度	Max. tube wall thickness	3.4 mm
最大彎曲半徑	Max. bending CLR	450 mm

內爪機構 ID collet mechanism

油壓進彎機型
Hyd. bending

大容量冷卻循環系統，使機器運轉更順暢、更穩定。

Big capacity circulated cooling system makes machine running smoother and more stable.

CNC-160

適用產業 | 特性

- 運動器材
- 鍋爐
- 造船
- 大型運輸車輛
- 化工
- 電廠
- 柴油引擎

- 混合動力
- 油壓進彎機型
- 推/拉彎功能
- 3D模擬
- 全機潤滑
- 通蕊打油系統
- 通蕊桿斷裂偵測 (選配)
- 通蕊球裂偵測 (選配)
- 末段輔推功能(選配)
- 中大型管件專用

Suitable Industries | Features

- Exercise equipment
- Boiler
- Shipbuilding
- Heavy transportation vehicle
- Chemical engineering
- Power plant
- Diesel engine

- Hybrid model
- High performance hydraulic bending
- Push / draw bending
- 3D simulation
- Machine auto lubrication system
- Mandrel lubrication system
- Mandrel rod break detection (opt.)
- Mandrel ball break detection (opt.)
- Tube boosting (opt.)
- Applicable for medium and large sized tubes

主規格	Main Specifications	
管材 – 鐵管	Material - Mild steel	CLR 1.5D
最大彎曲管徑	Max. tube O.D.	Ø160 mm
最大管壁厚度	Max. tube wall thickness	3.2 mm
最大彎曲半徑	Max. bending CLR	400 mm
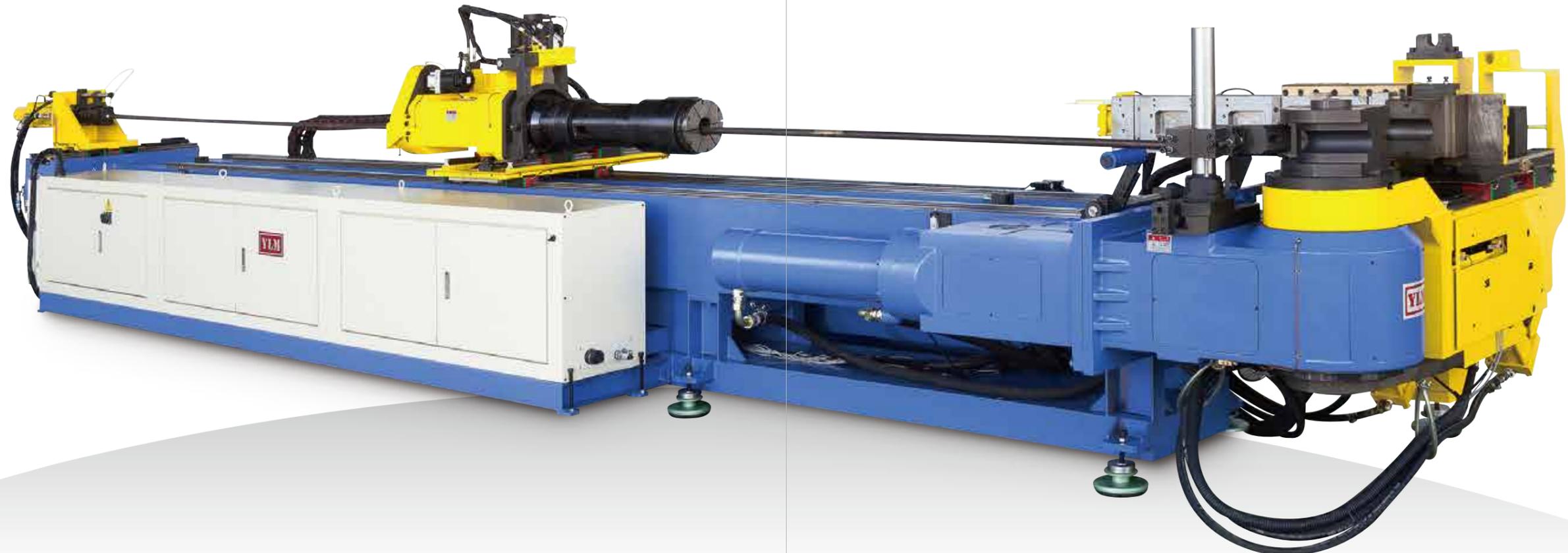
車頭機構　Bending head mechanism　送料機構　Feeding mechanism　通蕊打油機構　Mandrel lubricator system　通蕊機構　Mandrel mechanism

規格 Specification

型 號			MODEL			UNIT	08S2	16AS2	20FS2	25MS	30MS	38MS	50MS	65MS	70MS	80MS	90MS	100S2	101MS	130S2	130MS	160S2
最大管徑彎曲能力 (最大管徑 x 厚度)	鐵管 (CLR 1.5D)		Max. Tube O.D. Bending Capacity	Mild steel (CLR 1.5D)		mm	Ø8 x 1.0	Ø16 x 1.2	Ø20 x 1.5	Ø25 x 1.6	Ø30 x 2.3	Ø38 x 2.3	Ø50 x 3.0	Ø65 x 2.5	Ø70 x 2.2	Ø80 x 2.5	Ø90 x 2.6	Ø100 x 2.8	Ø100 x 2.8	Ø130 x 3.4	Ø130 x 3.3	Ø160 x 3.2
CLR中心線半徑範圍 (可加長)			Max. CLR			mm	40	60	70	100	180	180	240	240	240	270	230	430	250	450	450	400
多層模半徑差 S1-S2-S3			Bending Radius Difference S1-S2-S3			mm	25	40	40	40	40	50	80	80	90	90	90	100	100	150	150	150
最大彎曲角度			Max. Bending Angle			°	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190
標準有效穿心距離 (可加長)			Max. Mandrel Working Distance			mm	1000	1500	1400	1800	2000	2000	2500	2500	2500	3000	2500	3600	4000	4500	4500	4500
加工速度	MAX-送料速度	Processing Speed	Max. Tube Feeding Speed		mm/sec.		1466	1466	1795	1458	1458	1319	1319	904	904	753	653	754	653	466	558	700
	轉管速度		Tube Rotation Speed		°/sec.		900	900	900	562	561	360	180	204	437	180	180	180	348	99	80	99
	MAX-彎曲速度		Max. Tube Bending Speed		°/sec.		450	450	360	300	219	198	141	92	92	83	63.49	21.765	47.6	25	34.7	18
重現精度	送料精度	Repeatability	Tube Feeding Precision		mm		±0.1															
	轉管精度		Tube Rotation Precision		°		±0.1															
	彎曲精度		Tube Bending Precision		°		±0.1															
機台重量			Overall Weight			kg	680	935	1750	1800	1980	2695	4000	4200	5170	6560	7900	8710	11020	14300	19800	16000
操作高度			Operation Height			mm	1127	1140.5	1112	1085	1085	1183	1145	1157	1170	1164	1274	1274	1295	1182	1158	1222
機械長度			Machine Length			mm	1823	2500	2903	3510	3746	4660	5090	5068	5646	6440	6062	6212	8225	8977	9559	9067
機械寬度			Machine Width			mm	895	961	1025	1200	1354	1282	1370	1320	1556	2195	2103	2180	2041	2280	3374.5	2426
機械高度			Machine Height			mm	1412	1318	1790	1670	1717	1914	2067	1939	1914	1877	1942	1877	2005	1735	2050	2095

● 本公司機台不斷研發創新，機台如有設計變更恕不另行通知。
The above machine specification is subject to change without previous notice due to the continuous improvement of R&D.

● *: CNC-100S2，CNC-130S2及CNC-160S2為油壓進彎機型
*: CNC-100S2, CNC-130S2 and CNC-160S2 are by bending hydraulic models.

標準配件 | 選購配件

機械標準功能:
- 全機自動潤滑（CNC-65以上）
- 通蕊打油（CNC-38以上）
- 後導模機構（CNC-38以上）
- 3D模擬功能

機械選購功能:
- 推彎功能
- 打孔功能
- 拆合模功能
- 掃描器
- 柵欄

- 配重汽缸（CNC-25以下）
- 安全地毯
- 光柵
- 焊道偵測功能
- 切斷功能

- 通蕊桿斷裂偵測
- 通蕊球斷裂偵測
- 末段輔推功能
- 快速換模
- 冷卻系統（風冷）

Standard Accessories | Optional Accessories

Standard Functions of Machine
- Machine automatic lubrication (models over CNC-65)
- Mandrel lubrication (models over CNC-38)
- Wiper die (mechanism over CNC-38)
- 3D simulation for tube bending

Optional Functions of Machine
- Push bending
- Hole punching function
- Split die system
- Scanner
- Fence
- Counter-balancing air cylinder (models under CNC-25)
- Safety mat

- Light curtain
- Weld seam detection function
- Cut-off function
- Mandrel rod break detection
- Mandrel ball break detection
- Tube boosting
- Quick tooling change
- Cooling system (air cooling)

模具介紹 Mold Description

導模
Pressure die

成型直徑模
Compound bending die

直徑模 (拉彎)
Bending die / Draw bending

導模 (拉彎)
Pressure die / Draw bending

成型夾模
Compound clamp die

夾模 (拉彎)
Clamp die / Draw bending

關節通蕊
Ball mandrel

束頭
Tube collet

子彈通蕊
Bullet mandrel

後導模
Wiper die