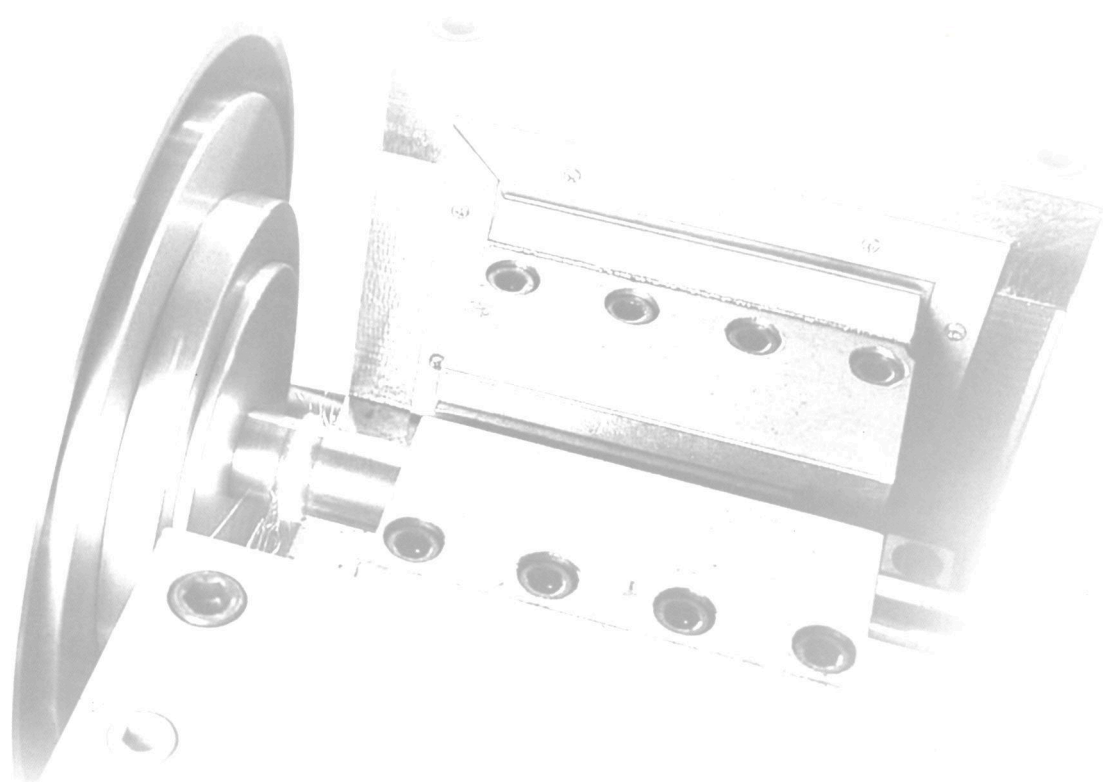
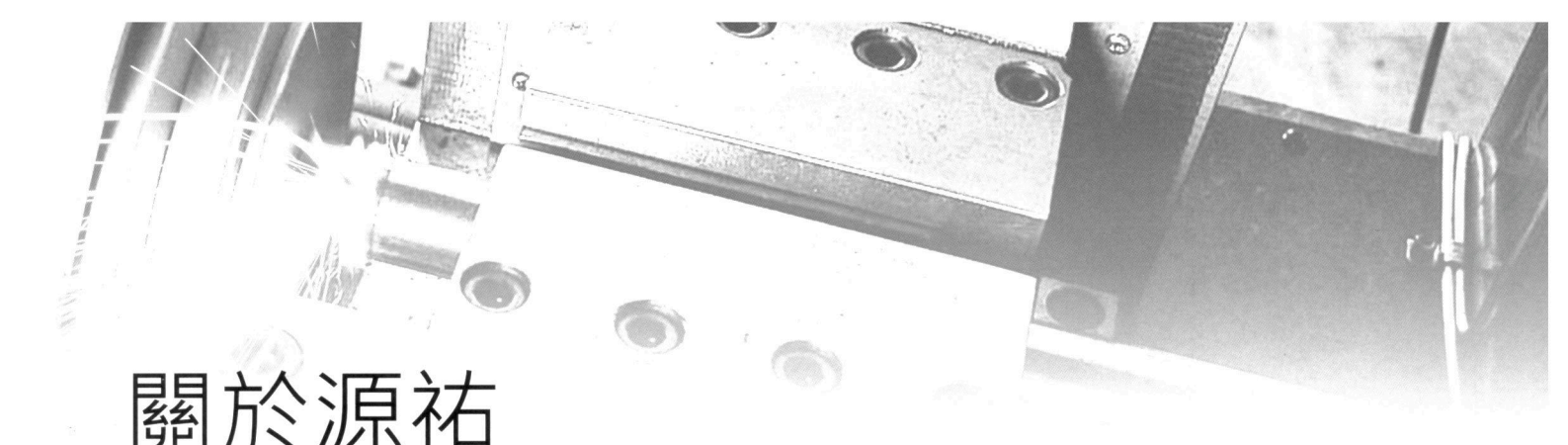


F R I C T I O N W E L D I N G

YUAN YU
FRICTION WELDING



技術 · TECHNOLOGY 品質 · QUALITY 服務 · SERVICE



關於源祐

About YUAN YU

本公司從事各式油壓機械如摩擦熔接機，彎管機，縮管機，絞孔機等已將近30年，近20年專攻於摩擦熔接機，相繼研發閥門專用摩擦熔接機、雙頭摩擦熔接機、角度定位摩擦熔接機、相關電腦監控系統(壓力、轉速、位移等)、以及更人性化的操作系統等等。

產品銷售遍及台灣、日本、美國、德國、中國、澳洲、印度、土耳其、紐西蘭、波蘭、巴西、伊朗、馬來西亞、越南、泰國...等國家。

以客戶的需求為主，用專業的技術不斷的創新與研發，秉持著優良的品質，熱忱的服務，來滿足每位客戶。

Yuan Yu Industrial Co., Ltd., we have been specializing in all kinds of hydraulic machine such as Rotary Friction Welding Machines, Bending Machines, Shrinking Machines, and Special Purpose Machines etc. for almost 30 years.

In the recent twenty years, we concentrate on friction welding machine and develop new machines like two stations auto-loading friction welding machine for engine valves, dual spindle friction welding machine for truck rear axles, angle orientation friction welding machine, monitoring system, and better control system.

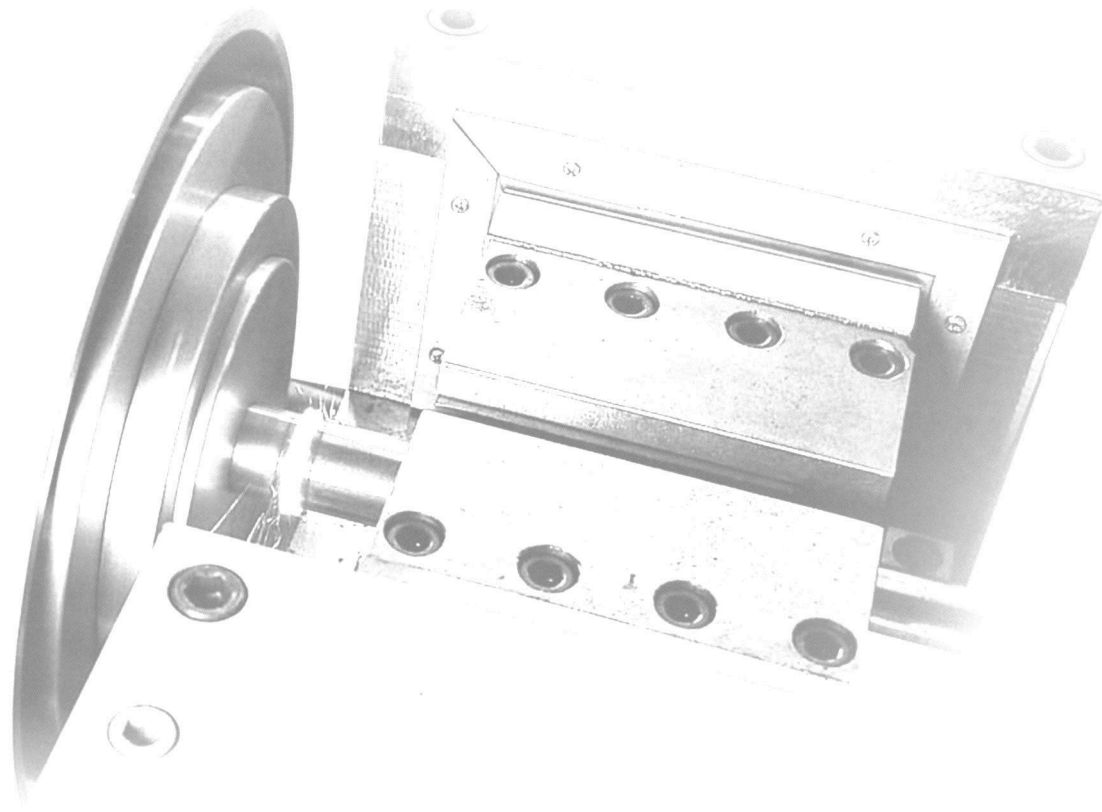
Our product market crosses many countries including Taiwan, Japan, America, Germany, China, Turkey, Australia, New Zealand, Poland, Brazil, Iran, Malaysia, Vietnam, Thailand, India, etc.

According to the demands of customers, we innovate new products constantly with professional skills, insist on making machines with excellent quality, and have cordial service for all customers.

YUAN YU Industrial Co., Ltd.



☒ 熔接可，強度良好 Good Welding Result
☐ 熔接可，強度不足 Brittle
☐ 不可熔接，或者未試驗 Welding Not Possible / Not TESTED YET



摩擦熔接原理

摩擦熔接是一種固態熔接方式，通過機械摩擦運動及軸向壓力使摩擦表面產生熱量，把工件表面旋轉加熱到塑性熔化狀態，再施以壓力頂鍛將同種或異種金屬牢固熔接起來。

PRINCIPLE OF ROTO-FRICTION WELDING

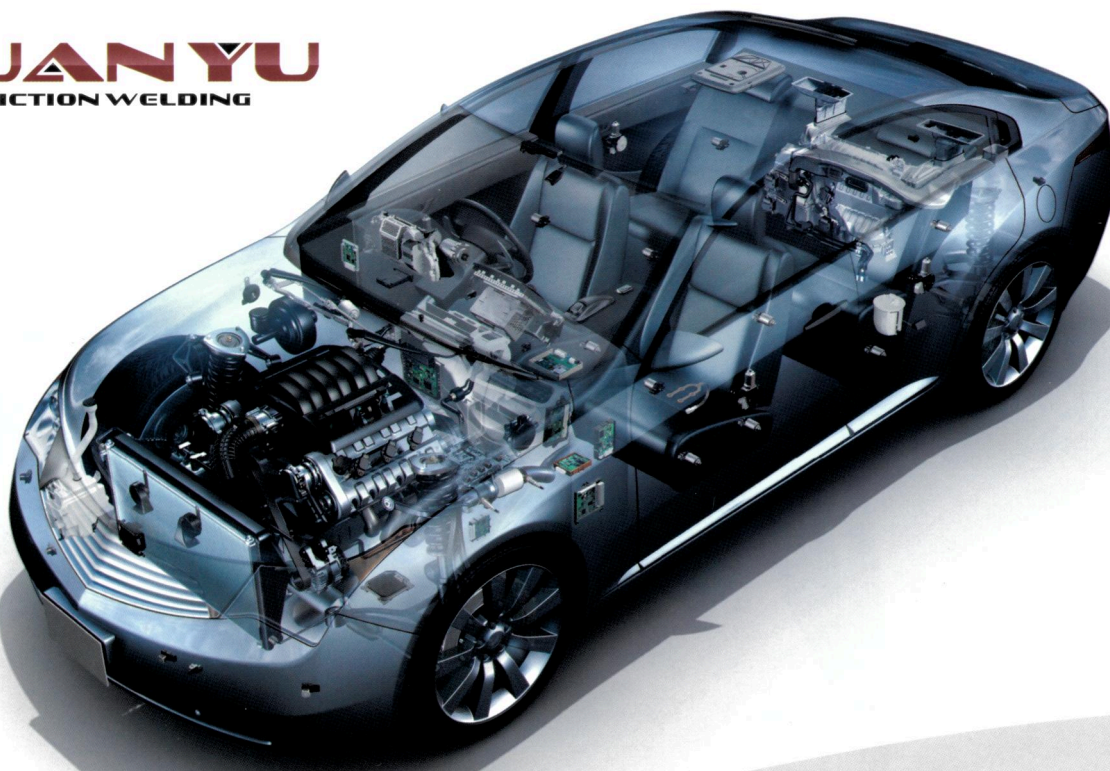
Roto-friction welding is by means of solid welding, utilizing the motion of mechanical friction and axis pressure to generate heat on the friction surface to plastic condition, and forge the same or different material together.

特點

- 接合面百分百接合
- 同材金屬熔接，節省加工時間及節省材料
- 工件分別加工後再進行熔接，節省加工時間
- 可進行異材金屬熔接，降低貴重金屬材料成本
- 不需填充金屬、溶劑、氣體等消耗性材料

Features

- Surface area is 100% welded.
- Same material welding, saving processing time and reducing the refuse.
- Workpieces can be processed separately before welding, which can save a lot of time.
- Different materials can be welded, reducing the cost of the expensive metal.
- No need to fill metals, solvents, catalysts.



AUTOMOBILE INDUSTRY 汽車工業



後輪傳動軸。
Rear wheel
transmission shaft.



鍛件可熔接到棒料、管子、
板料和其它形狀的坯件上，
如圖示傳動軸。
The forgings can be
welded with the bars,
tubes, sheet metal parts,
and other blank shapes.
Fig: transmission shaft.



前輪傳動軸。
Transmission shaft.



前輪傳動軸。
Transmission shaft.



渦輪增壓器。
Turbocharger.



法蘭軸。
Flange shaft.



TRUCK INDUSTRY 卡車工業



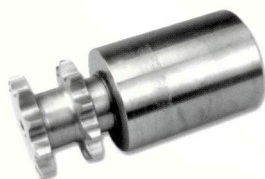
柴油機活塞。
Piston of diesel engine.



履帶軸襯套。
Bushing.



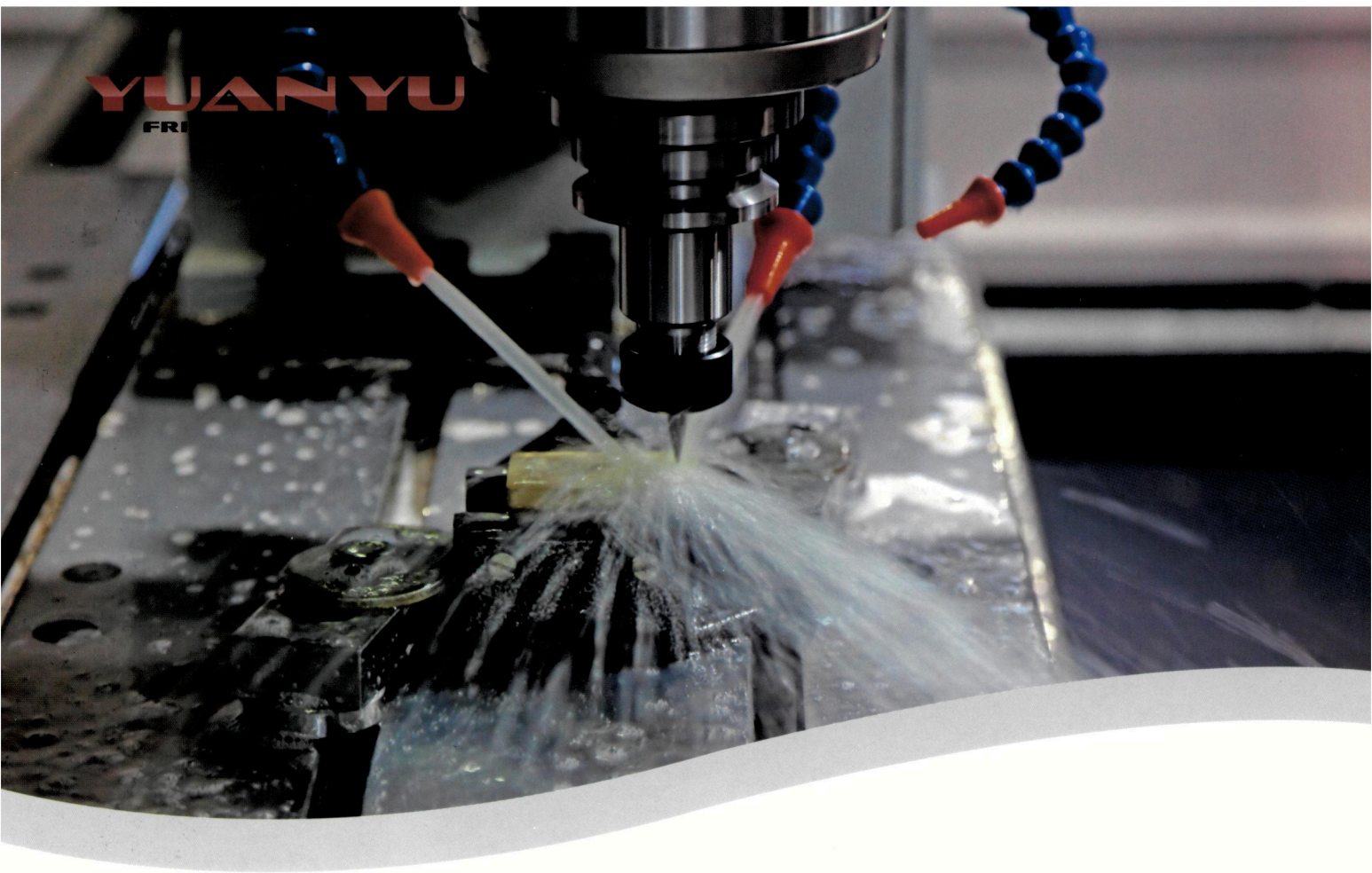
重機具油壓缸。
Cylinder for excavator.



鏈條傳動鏈輪。
Chain wheel.



萬向接頭。
Universal Joint.



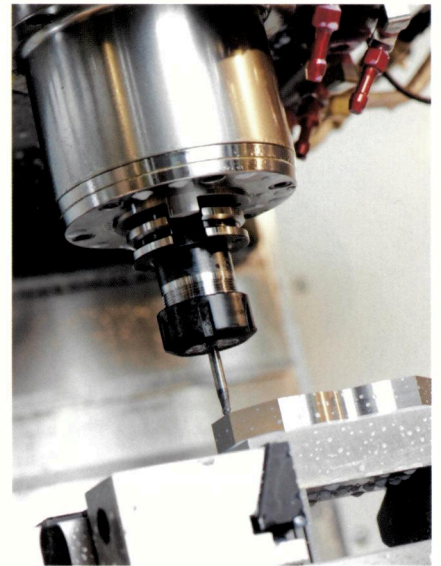
BT/NT HOLDER 刀桿



摩擦熔接後刀桿。
Holders after friction welding.



加工後刀桿。
Processed holder.



加工後刀桿。
Processed holder.



油井鑽桿。
Oil well drilling pipes.



鑽井車。Drilling rigs.

OTHER

其 他



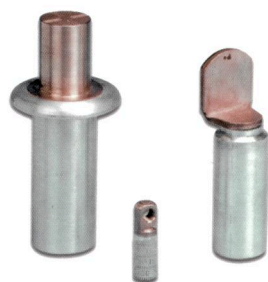
摩擦熔接後的水泵。
Water pump shaft
after friction welding.



加工後的水泵。
Processed water pump
shaft.



抽水馬達不鏽鋼傳動軸。
Transmission shaft of pump motor.
Stainless/Carbon steel.



銅接鋁電線端子。
Cable terminals
Copper/Aluminum



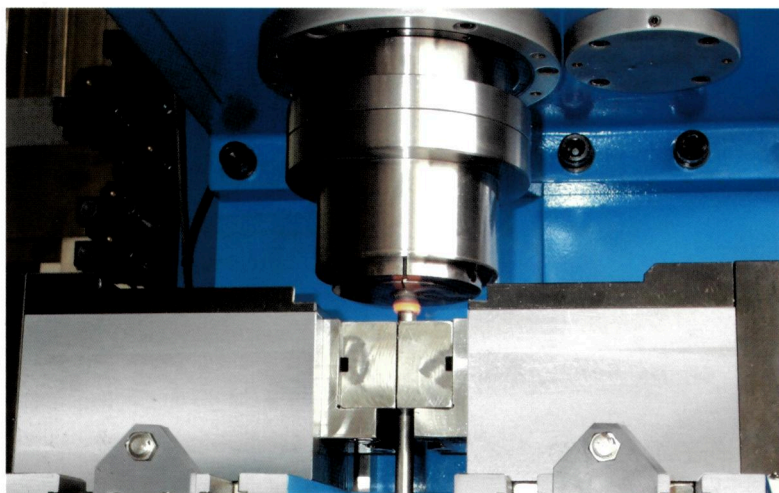
鐵管/不鏽鋼複印輥桿。
Iron pipe/stainless steel
Roller of photocopiers.



手動工具手柄連桿。
Hand tools, shaft linking rod.

YH系列-立式摩擦熔接機

YH SERIES- VERTICAL TYPE FRICTION WELDING MACHINE



※ 熔接過程 During friction welding.



※ 增加安全護罩 with safety cover.

項目Item		型式Model	YH-15	YH-30	YH-45	YH-60	YH-80	YH-100
最大推力(TON) Max thrust			3.9	12.5	23.5	44	63	90
最高壓力(kg/cm ²) Max pressure			80	90	150	180	180	180
摩擦直徑能力(mm) Welding capacity(diameter)			Ø7-Ø15	Ø9-Ø30	Ø15-Ø45	Ø20-Ø60	Ø25-Ø80	Ø30-Ø100
主軸旋轉速(RPM) Spindle r.p.m.			3000	2400	1800	1500	1000	900
最大材料 取出(mm) Max.material size	主軸旋轉夾具側(mm) Spindle rotation jig side		Ø20 x 250L	Ø35 x 300L	Ø45 x 300L	Ø65 x 300L	Ø85 x 300L	Ø100 x 300L
	滑座夾具側(mm) Slide jig side		Ø15 x 600L	Ø30 x 700L	Ø45 x 700L	Ø65 x 700L	Ø85 x 700L	Ø100 x 700L
主軸旋轉用馬力(HP) Spindle motor(HP)			15HP-4P	25HP-4P	40HP-4P	40HP-6P	50HP-6P	75HP-6P
主泵浦動作用(HP) Hydraulic pump(HP)			7.5HP-4P	10HP-4P	10HP-6P	15HP-6P	20HP-6P	30HP-6P
水冷卻機(HP) Air chiller(HP)			3HP	3HP	3HP	5HP	5HP	7.5HP

• 註: 摩擦能力以中碳鋼為參考值

The welding capacity is a reference for carbon steel.

• 表格為標準品 · 如需特殊規格請洽詢

The specifications on the table are standards, for more information, please contact us.



[特點]

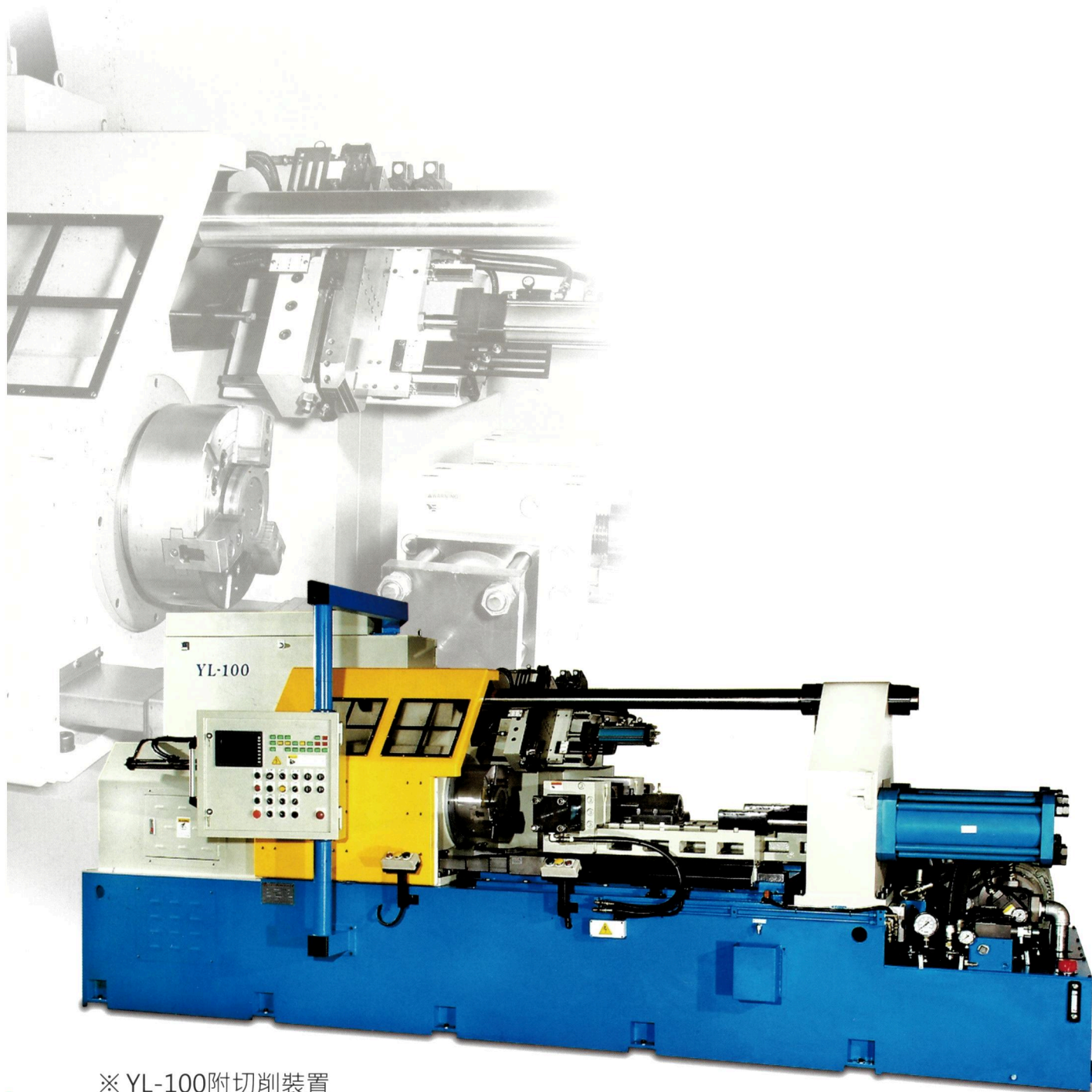
- 占地空間小
- 操作簡易
- 適用較短工件
- 使用法國知名油壓濕式多板煞車、日本知名電磁濕式多板離合器

[Features]

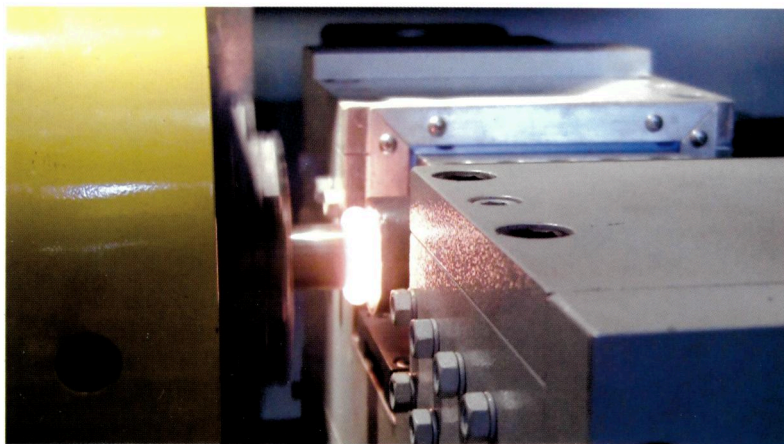
- Space saving
- Easy to operate
- Suitable for short workpieces
- Hydraulic wet type multi-plate brake(made in France)
- Electromagnetic wet type multi-plate clutch(made in Japan)

YL系列-床台移動式摩擦熔接機

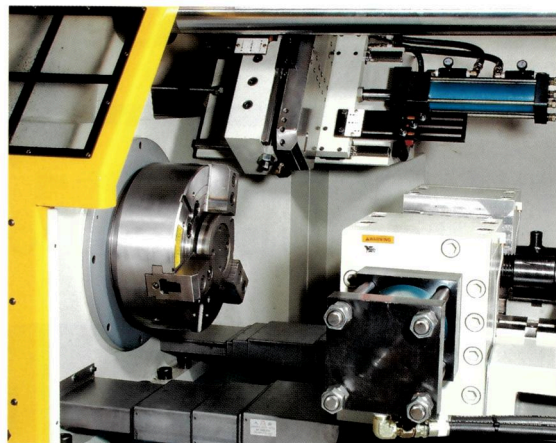
YL SERIES- BED SLIDE MOVING TYPE FRICTION WELDING MACHINE



※ YL-100附切削裝置
YL-100 with cutting device.



※ 熔接過程 During friction welding.



※ 附切削 Equipped with cutting device.

[特點]

- 可增加切削裝置
- 操作簡易
- 適用中長工件
- 使用法國知名油壓濕式多板煞車、日本知名電磁濕式多板離合器

[Features]

- Available for cutting device
- Easy to operate
- Suitable for short to middle length workpieces
- Hydraulic wet type multi-plate brake(made in France)
- Electromagnetic wet type multi-plate clutch(made in Japan)

項目Item		型式Model	YL-30	YL-45	YL-60	YL-80	YL-100	YL-120	YL-150
最大推力(TON) Max thrust			12.5	23.5	44	63	90	135	250
最高壓力(kg/cm ²) Max pressure			80	150	180	180	180	180	180
摩擦直徑能力(mm) Welding capacity(diameter)			Ø9-Ø30	Ø15-Ø45	Ø20-Ø60	Ø25-Ø80	Ø30-Ø100	Ø40-Ø120	Ø50-Ø150
主軸旋轉速(RPM) Spindle r.p.m.			2400	1800	1500	1000	900	800	650
最大材料 取出(mm) Max.material size	主軸旋轉夾具側(mm) Spindle rotation jig side		Ø35 x 300L	Ø45 x 300L	Ø65 x 300L	Ø85 x 300L	Ø100 x 300L	Ø120 x 350L	Ø150 x 400L
	滑座夾具側(mm) Slide jig side		Ø35 x 700L	Ø45 x 700L	Ø65 x 700L	Ø85 x 700L	Ø100 x 1200L	Ø120 x 1200L	Ø150 x 1200L
主軸旋轉馬力(HP) Spindle motor(HP)			25HP-4P	40HP-4P	40HP-6P	50HP-6P	75HP-6P	100HP-6P	200HP-6P
主泵浦動作用(HP) Hydraulic pump(HP)			10HP-6P	10HP-6P	15HP-6P	20HP-6P	30HP-6P	40HP-6P	100HP-6P
水冷卻機(HP) Air chiller(HP)			3HP	3HP	5HP	5HP	7.5HP	7.5HP	7.5HP

• 註: 摩擦能力以中碳鋼為參考值

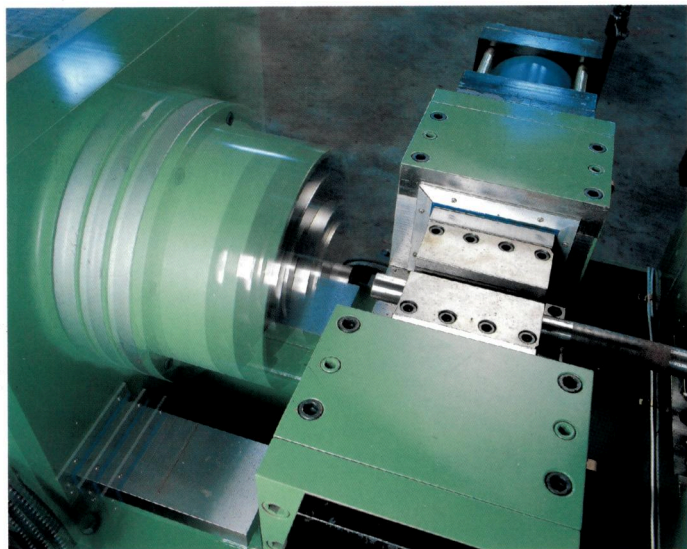
The welding capacity is a reference for carbon steel.

• 表格為標準品，如需特殊規格請洽詢

The specifications on the table are standards, for more information, please contact us.

YU系列-主動移動式摩擦熔接機

YU SERIES- SPINDLE SLIDE MOVING TYPE FRICTION WELDING MACHINE



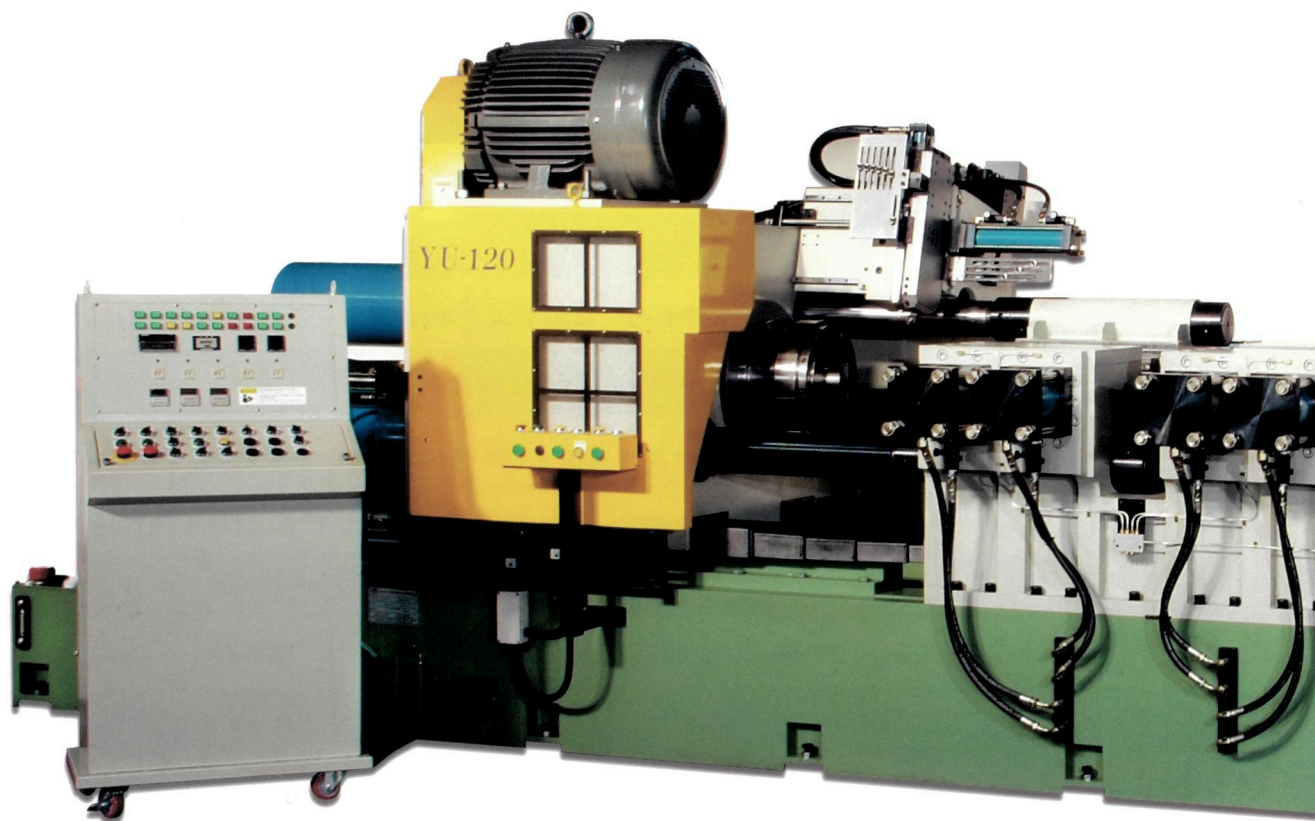
※ YU系列主軸端移動
YU Series spindle slide moving.

[特點]

- 可增加切削裝置
- 操作簡易
- 適用長工件，如鋼筋、油管...等
- 使用法國知名油壓濕式多板煞車、
日本知名電磁濕式多板離合器

[Features]

- Available for cutting device
- Easy to operate
- Suitable for long workpieces like rebar, drill pipes...ect.
- Hydraulic wet type multi-plate brake(made in France)
- Electromagnetic wet type multi-plate clutch(made in Japan)



※ YU-120搭配尾座及切削裝置
YU-120 with cutting device and tail rack.



※ YU-60無尾座及切削裝置
YU-60 without cutting device and tail rack.

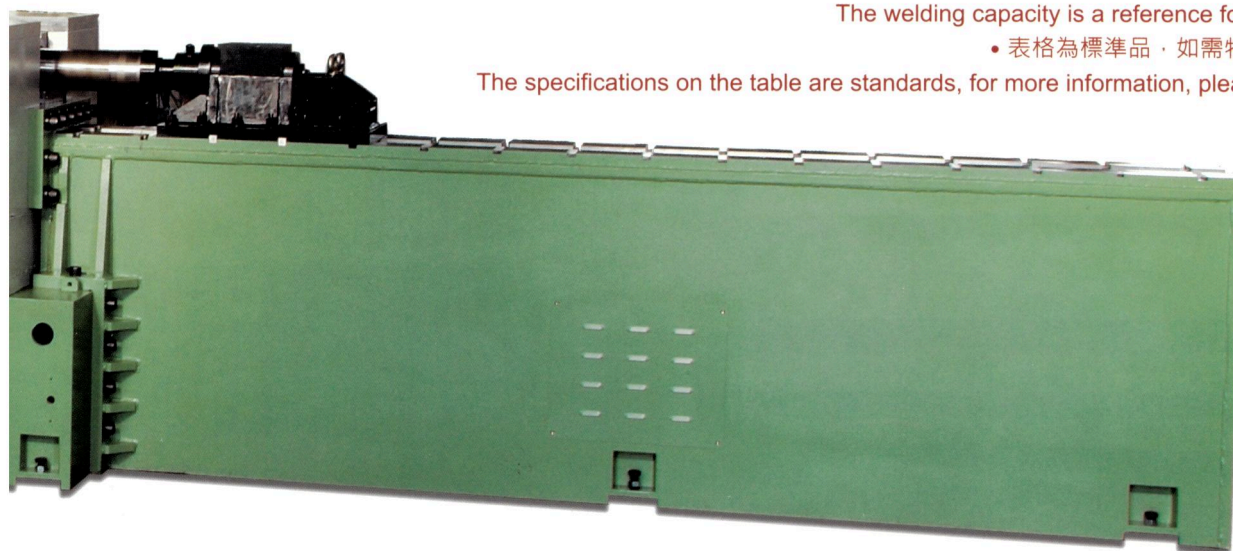
項目Item	型式Model	YU-30	YU-45	YU-60	YU-80	YU-100
最大推力(TON) Max thrust		12.5	23.5	44	63	90
最高壓力(kg/cm ²) Max pressure		80	150	180	180	180
摩擦直徑能力(mm) Welding capacity(diameter)		Ø9-Ø30	Ø15-Ø45	Ø20-Ø60	Ø25-Ø80	Ø30-Ø100
主軸旋轉速(RPM) Spindle r.p.m.		2400	1800	1500	1000	900
最大材料取出主軸旋轉夾具側(mm) Max material size of spindle rotation jig side(mm)		Ø35 x 350L	Ø50 x 400L	Ø65 x 400L	Ø85 x 450L	Ø100 x 250L Ø70 x 450L
主軸旋轉馬力(HP) Spindle motor(HP)		25HP-4P	40HP-4P	40HP-6P	50HP-6P	75HP-6P
主泵浦動作(HP) Hydraulic pump motion(HP)		10HP-6P	10HP-6P	15HP-6P	20HP-6P	30HP-6P
水冷卻機(HP) Air chiller(HP)		3HP	3HP	5HP	5HP	7.5HP

• 註: 摩擦能力以中碳鋼為參考值

The welding capacity is a reference for carbon steel.

• 表格為標準品，如需特殊規格請洽詢

The specifications on the table are standards, for more information, please contact us.



YU系列-主動移動式摩擦熔接機

YU SERIES- SPINDLE SLIDE MOVING TYPE FRICTION WELDING MACHINE

[特點]

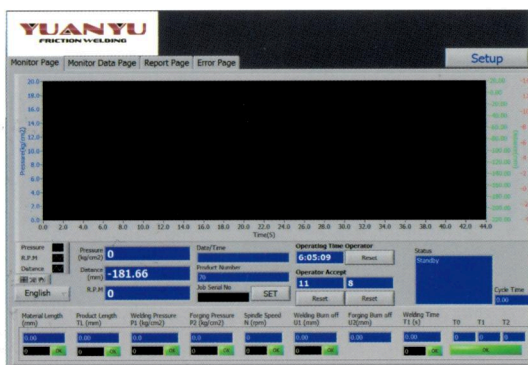
- 一體式機台設計
- 特殊設計長行程夾爪
- 電腦監控整合操作系統
- 適用中長工件
- 雙刀具 伺服切削系統
- 法國知名油壓濕式多板煞車
- 日本知名電磁濕式多板離合器

[Features]

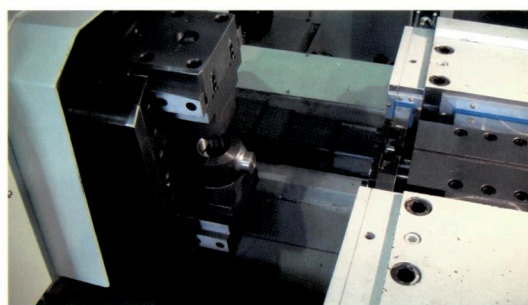
- All in one design
- Special long stroke two jaws chuck
- Computer monitoring and operation system
- Server cutting system with two cutting tools
- Suitable for short to middle length workpieces
- Hydraulic wet type multi-plate brake(made in France)
- Electromagnetic wet type multi-plate clutch(made in Japan)



型式Model	最大推力 Max thrust(TON)	參考 能力範 Welding (solid)
80	63	Ø25



※ 電腦監控系統
Computer monitoring system.



※ 特殊設計長行程兩爪
Special long stroke two jaws chuck.



管直徑 (英寸) Capacity (mm)	參考熔接面積 能力範圍(管狀工件) Welding capacity (pipe mm²)	主軸轉速 Spindle R.P.M.	主軸側最大材料 Spindle side max. material size(mm)	主軸旋轉用馬力 Spindle motor	主油泵浦動馬力 Main hydraulic pump	冷卻機 chiller
80	490-5024	1000	Ø85 x 450L	50HP-6P	20HP-6P	5HP

• 註: 摩擦能力以中碳鋼為參考值

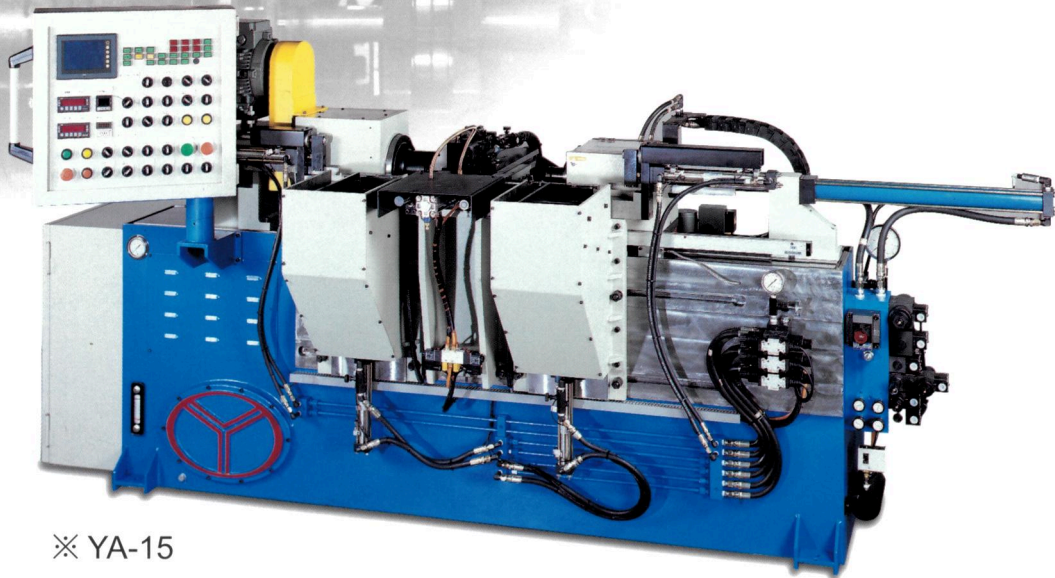
The welding capacity is a reference for carbon steel.

• 表格為標準品，如需特殊規格請洽詢

The specifications on the table are standards, for more information, please contact us.

YA系列-自動送料棒對棒摩擦熔接機

YA SERIES- AUTO FEEDING TYPE FRICTION WELDING MACHINE



※ YA-15

[特點]

- 全自動上下料
- 附切削裝置，自動切除熔接屑
- 具壓力檢測及長度檢測功能，可確保產品品質
- 變頻器控制主軸馬達
- 適用於棒材對棒材熔接或棒材對傘狀工件熔接，如引擎閥門...等
- 兩站式設計，搭配沖屑系統，循環時間大幅縮短(YC-05,約10秒一支)

[Features]

- Auto-feeding and unloading
- With cutting device, remove chips automatically
- Length and pressure monitoring system, assuring the product quality
- Spindle is controlled by frequency inverter
- Applicable to stick to stick workpiece or stick to umbrella-shape workpiece like engine valves
- Two stations design, equipped with punching device, reduce a great of time(YC-05, 10 sec/piece)



摩擦直径能力:

- YC-05: $\varnothing$ 4.5~10mm • YA-15: $\varnothing$ 7~15mm

Roto-friction diameter capacity:

- YC-05: $\varnothing$ 4.5~10mm • YA-15: $\varnothing$ 7~15mm



※ YC-05

YUA-120雙頭摩擦熔接機

DUAL- SPINDLE FRICTION WELDING MACHINE

[特點]

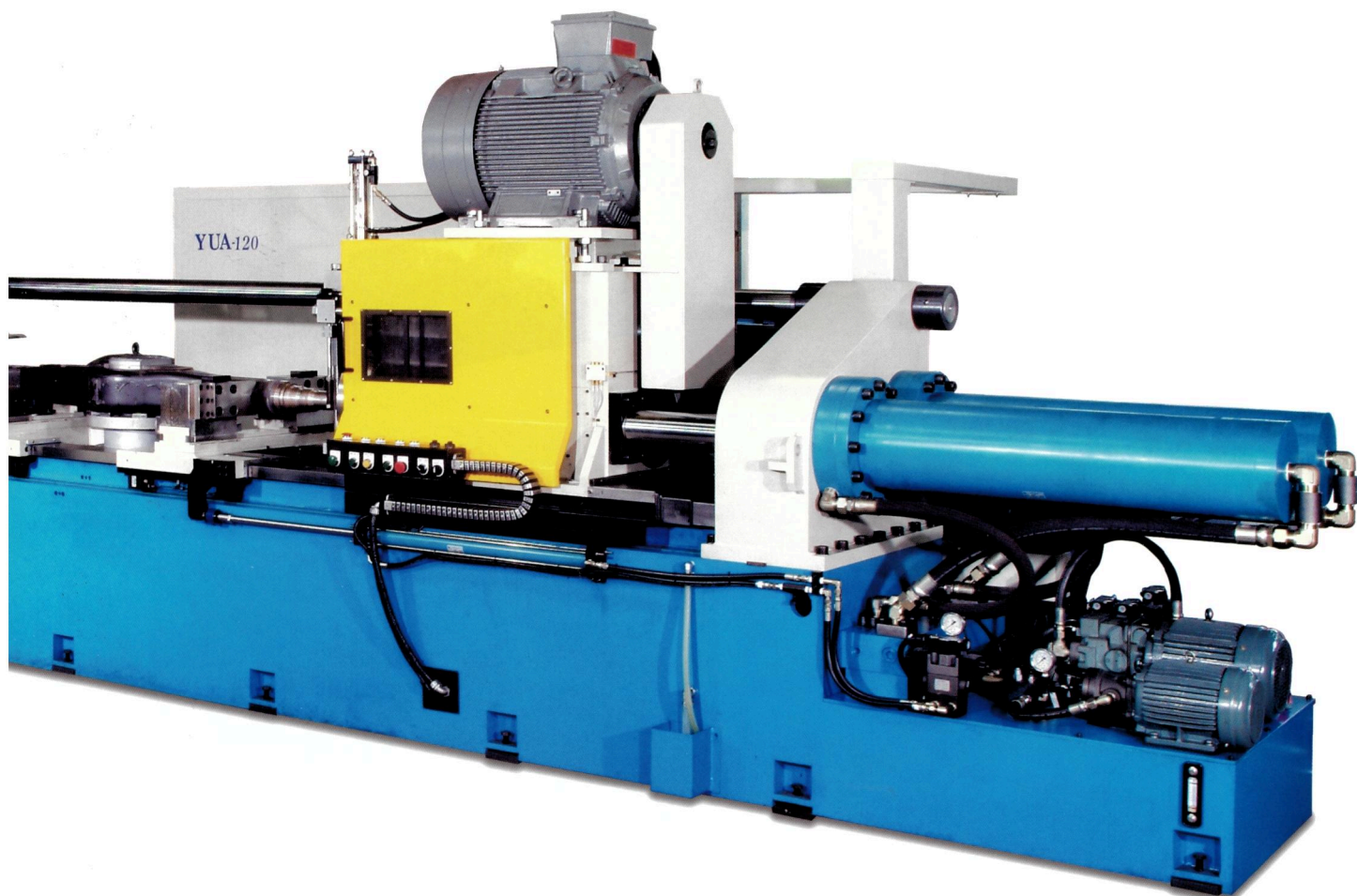
- 雙邊同時摩擦熔接，節省大量時間
- 沖斷式斷屑裝置，比傳統車床式切削更省時
- 電腦監控與操作系統整合
- 變頻器驅動主軸馬達
- 使用法國知名油壓濕式多板煞車、
日本知名電磁濕式多板離合器

[Features]

- Welding both side at the same time, saving lots of time.
- Using punching instead of turning for saving time.
- Integration of monitoring and operating system.
- Spindle motors are driven by frequency inverters.
- Hydraulic wet type multi-plate brake(made in France)
- Electromagnetic wet type multi-plate clutch(made in Japan)



型式Model	最大推力 Max thrust(TON)
120	135



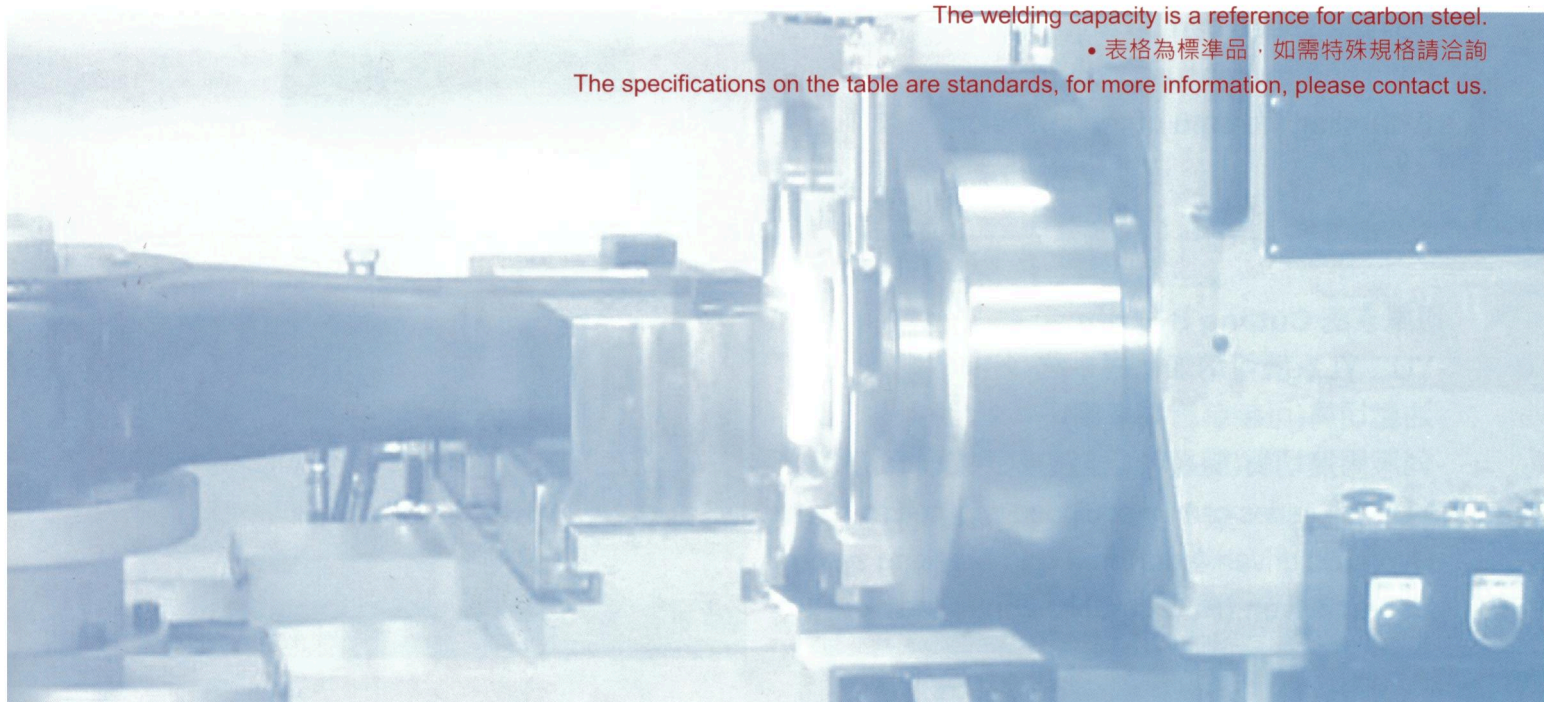
參考熔接直徑 能力範圍(實心圓) Welding capacity (solid bar mm)	參考熔接面積 能力範圍(管狀工件) Welding capacity (pipe mm ²)	主軸轉速 Spindle R.P.M.	主軸側最大材料 Spindle side max. material size(mm)	主軸旋轉用馬力 Spindle motor	主油泵浦動馬力 Main hydraulic pump	冷卻機 chiller
Ø40-Ø120	1256-7853	300	Ø120x 350L	100HP-6P	40HP-6P	7.5HP

• 註: 摩擦能力以中碳鋼為參考值

The welding capacity is a reference for carbon steel.

• 表格為標準品，如需特殊規格請洽詢

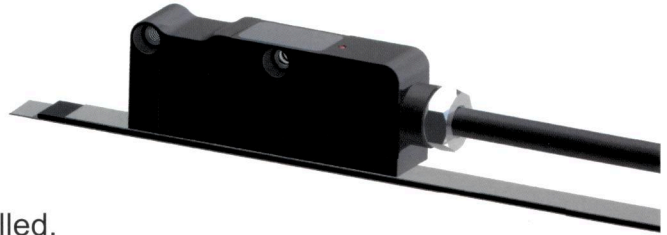
The specifications on the table are standards, for more information, please contact us.



選備件 ACCESSORIES

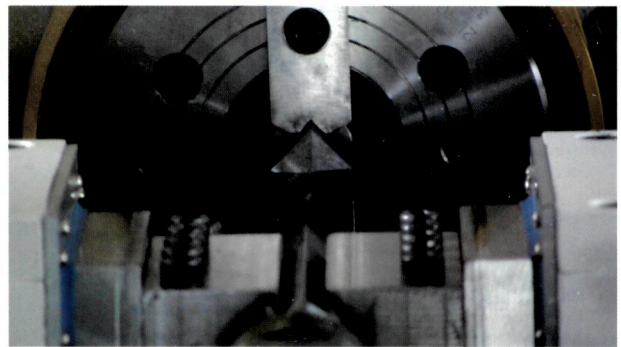
光學尺定位模組 Positioning Scale

- 操作方便、快速，長度調整更為精準
- 可檢測工件長度
- Easier and faster operation.
- More accurate compare to limit switch controlled.



旋轉角度定位 Angle Orientation

- 兩端工件在熔接後可停在特定角度
- Work pieces can be welded with a certain angle.



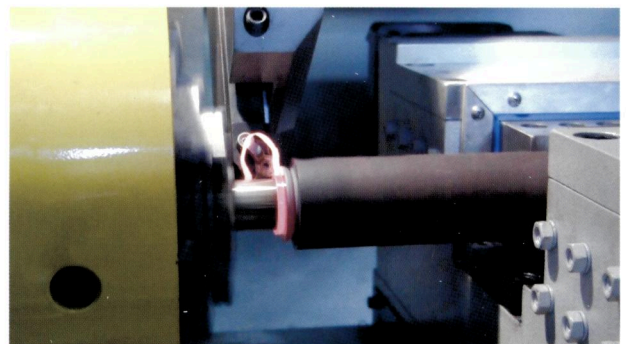
變頻器 Frequency Inverter

- 可調整主軸轉速
- 減省主軸啟動耗能
- 傳動系統壽命延長
- Spindle speed can be adjusted.
- Less energy consumption.
- Extending life time of transmission.



切屑系統 Cutting System

- YU、YL系統可增加切屑系統
- 油壓切屑(可加裝斷屑車削)
- 伺服馬達切屑(簡易PLC控制或CNC程式控制)
- YU、YL series can be equipped with cutting device.
- Hydraulic driven.(additional chip-breaking system)
- Server driven.(PLC or CNC controlled)



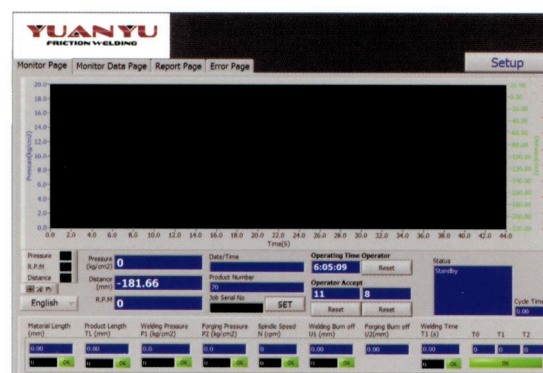
安全光幕 Safety Light Curtains

- 保護操作人員人身安全
- Protecting operators from dangers.



電腦監控記錄系統 Computer Monitoring System

- 監控並記錄每一支工件的熔接參數
在工業電腦內(轉速、壓力、位移、時間)
- 可與工業級觸控電腦做操作整合
- Monitoring and recording every single data
(R.P.M., pressure, distance, time, ect).
- Can be integrated with industrial touch screen computer.



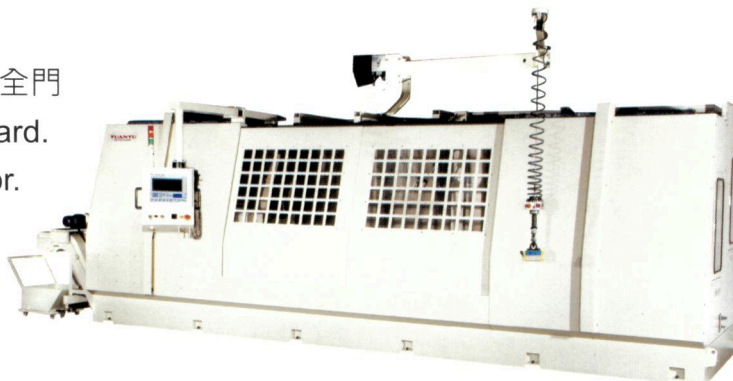
電控箱散熱 Cooling Electric Cabinet

- 標記風扇
- 可升級熱交換器或冷氣
- Heat exchanger or AC are additional.
- Maintaining great performance and extending the lifetime of electrical parts.



機械全蓋式安全護罩 Safety Cover

- 標準為簡易安全門
- YA-15以下機型因機械結構故未配備安全門
- Currently using simple cover as standard.
- Can be upgrade to a fully covered door.





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