



福隆硬鉻工業股份有限公司  
FU-LONG METAL INDUSTRIAL CO., LTD.

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FU-LONG METAL INDUSTRIAL CO., LTD.

液氣壓用活塞桿&機柱、哥林柱及導桿製作  
World-Class Hard Chrome Plated Steel Bar Manufacturer

Made in Taiwan





# 公司簡介

Company Profile



### 技術領先，業界第一

福隆公司創立於西元1979年，生產總部位於台灣桃園，是台灣第一間專業生產鍍硬鉻鋼棒的製造廠。四十多年來，福隆不斷致力於液、氣壓缸活塞桿的專業生產和各種機械零組件之創新與開發，並不斷研究金屬表面處理及耐磨 / 耐腐蝕性的提升，目前已將產品成功銷售至世界上數十個國家。

### 企業發展，永續經營

- 1979年，創立於新北市新莊區，起初著重於電鍍發展。
- 1996年，成立台中營業所擴大服務及營運範圍。
- 1998年，因應顧客對專業加工製造之一貫化需求，斥資新台幣兩億元於桃園市幼獅工業區設立一座2,400坪的專業製造廠。
- 2011年，福隆公司鑒於國際市場的擴大銷售，另斥資新台幣五億元於幼獅工業區再購置4,000坪的土地，建設出另一座多元化的高產能專業自動化製造總廠。
- 2015年，通過ISO14001環境管理系統與OHSAS18001(現更名為ISO45001)職業安全衛生管理系統雙認證。
- 2017年，榮獲2017年「鄧白氏中小企業菁英獎」TOP1000。
- 2018年，斥資新台幣八億元開始打造全新辦公大樓、廠房增建工程與自動化設備添購，建立獨家一站式自動化生產系統，以達到降低生產成本與不良率，並提升產品品質與加速交期。
- 2020年，二度榮獲2020年「鄧白氏中小企業菁英獎」TOP1000。
- 2021年，全新廠房已於2021年初落成。
- 2022年，第一期產能擴建計畫於2022年第一季完成，大約提高30%產能。  
第二期產能擴建計畫於2022年第四季完成，提高另外60%產能。

### 優勢設備，專業團隊

目前福隆已擁有之專業生產基地共近10,000坪；各項車、銑、磨、搪、熱處理、拋光及電鍍之自動化加工設備機具數百台；精密的檢驗設備儀器及各項專業加工技師近250員；可依顧客之加工圖及要求全程一貫化製造處理，以滿足顧客各項加工需求。福隆不僅在設備硬體方面投資，更積極地鼓勵同仁不斷學習進修，優秀的團隊合作讓每一位人員在該領域擁有最佳的表現。

### ISO認證，優質產能

1998年福隆率先通過ISO 9001 國際品質保證認證，成為台灣同業中第一間通過ISO9001的專業製造商，並於2015年取得ISO 14001 環境管理系統認證以及OHSAS 18001 (現更名為 ISO 45001)職業安全衛生管理系統。在品質控管及生產流程均有標準作業程序來製造高品質的產品。除用心提升品質外，更關注環保議題與勞工安全。

### Industry-leading Technology earns Reputation

Established in A.D.1979, Fu-Long Metal Industrial Co., Ltd. locates its headquarter in Taoyuan City, Taiwan, and becomes the first manufacturer who focuses on the production of hard chrome plated steel bar in Taiwan. Over last four decades, Fu-Long devotes to the production of piston rod for hydraulic/pneumatic cylinder, the innovation and development of machinery accessories, the researching for improvement of metal surface treatment and ability of friction and corrosion resistance, and now has successfully sold products in over dozens of countries worldwide.

### Enterprise Development and Sustainable Development

- A.D. 1979, Established in Xinzhuang, New Taipei City, and focused on electroplating at the beginning.
- A.D. 1996, Fu-Long set up Taichung branch office to spread the access of our service and business scope.
- A.D. 1998, Fu-Long invested 7 million US dollars to build a factory with a space of 8,000 square meters in Taoyuan Youth Industrial Park in order to respond customers' demand of consistent manufacturing process.
- A.D. 2011, Fu-Long invested 17 million US dollars to build another multi-automatic factory with a space of 13,200 square meters in the same industrial park in order to fulfill the expanding scale of international business.
- A.D. 2015, Achieved ISO 14001 and OHSAS 18001 Certificate. ( ISO 45001)
- A.D. 2017, Awarded 2017 D&B TOP 1000 Elite SME Award
- A.D. 2018, Fu-Long invested 25 million US dollars to build new office building, expand factory and purchase automatic equipment. In order to lower the cost and defect rates, improve quality and delivery time, Fu-Long created an ultimate one-stop integrated automatic processing system.
- A.D. 2020, Awarded 2020 D&B TOP 1000 Elite SME Award
- A.D. 2021, The new factory was completed at the beginning of 2021.
- A.D. 2022, The first phase of the capacity expansion plan was completed in 2022 Q1 and increased capacity by around 30%.  
The second phase of the capacity expansion plan was completed in 2022 Q4 and increased capacity by another 60%.

### Competitive Equipment combines Professional Team

Fu-Long now owns nearly 33,000 square meters of manufacturing base. It sets up with hundreds of automatic equipments for lathing, milling, grinding, boring, heat treatment, polishing and electroplating; precision instruments for inspection, and approximately 250 professional technicians, so that we can make the products precisely by customers' drawings and requirements. Fu-Long can not only invest equipments, but also encourage employees to study further continuously. Because we believe that professional team work results in excellent performance.

### ISO Authentication guarantees Full-Power Performance

In A.D. 1998, Fu-Long was the first professional manufacturer who obtained ISO9001 certification in the industry, and has continuously passed the 2000 and 2008 version. Other than that, we have also achieved ISO14001 and OHSAS 18001 (ISO 45001) certificate in A.D. 2015. All the processed of quality control and production have standard procedures in order to make qualified products. Not only the product quality we pay attention to, but also the environmental issues and labor safety.





# 產品介紹

PRODUCT INTRODUCTION

## 鍍硬鉻鋼棒

Hard Chrome Plated Steel Bar

棒材冷抽、削皮後經精密研磨、拋光及鍍硬鉻處理，增加表面硬度具耐磨擦及抗腐蝕特性，且材質易加工車削，精確度符合國際標準。

It goes through the machining process of cold drawn, peeling, centerless grinding, polishing, and hard chrome plating, in order to enhance the surface hardness for friction and corrosion resistance; the material will also be easier for further machining, and its precision can achieve international standard.

材 質 Material: JIS S45C, SAE1045, DIN CK45, EN8, 20MnV6, 38MnVS6

用 途 Application : 適用於液、氣壓缸、工程用機械，液、氣壓自動化機械，塑膠射出成型機，機械固定柱軸心類。

Piston rods for Hydraulic/ Pneumatic Cylinder  
Engineering Machine / Hydraulic/ Pneumatic Auto Machine / Plastic Injection Molding Machine / Pillar and Tie Bar

鍍硬鉻層厚度 Thickness of Chrome Layer :  $\phi < 20$  15 $\mu$ m min.  
 $\geq \phi 20$  20 $\mu$ m min.

鍍硬鉻層硬度 Hardness of Chrome Layer: HV850 min.(0.1)

表面粗度 Surface Roughness : Ra 0.2  $\mu$ m max.

外徑公差 External Diameter Accuracy : ISO h7, f7, h8, f8

真 直 度 Straightness : 0.3mm/M

真 圓 度 Roundness : 1/2公差 1/2 Tolerance

量產軸心尺寸 Available Stock Sizes :

外 徑 O.D(mm)	長 度 Length (mm)
$\phi 6 \sim \phi 25.4$	3000
$\phi 28 \sim \phi 200$	6000

特殊材質、長度、尺寸、精度及製程可接受訂製。

Special material, length, size, accuracy and manufacturing process can be made to order.

材質 / 化學成分、機械性質

Material Grade / Chemical Composition, Mechanical Property

用途	規格 Spec.		化學成分 % Chemical composition %				
			C	Si	Mn	P	S
曲軸	JIS S45C	DIN CK45	0.42	0.15	0.60	<0.030	<0.035
			0.48	0.35	0.90		
軸類	20MnV6		0.16	0.10	1.30	<0.035	<0.035
			0.22	0.50	1.70		
	38MnVS6		0.34	0.15	1.20	<0.025	0.02
			0.41	0.80	1.60		

規格 Spec.	外徑 Diameter(mm)	機械性質 Mechanical Property				
		抗張強度 (T.S) N/mm <sup>2</sup>	降伏點 (Y.P) N/mm <sup>2</sup>	伸張率 (EL) %	硬度 HB	
JIS S45C	DIN CK45	6 < $\phi$ $\leq$ 16	min.710	min.500	min.5	190
		16 < $\phi$ $\leq$ 40	min.650	min.410	min.7	
		40 < $\phi$ $\leq$ 100	min.580	min.305	min.16	172
		100 < $\phi$ $\leq$ 200	min.560	min.275	min.16	
20MnV6		30 < $\phi$ $\leq$ 80	min.550	min.450	min.10	159
		80 < $\phi$ $\leq$ 100	min.530	min.420	min.18	156
38MnVS6		30 < $\phi$ $\leq$ 100	800-950	min.520**	min.12	240

\*\*另可依客戶需求提供590/690 N/mm<sup>2</sup>

On request we can provide material with min.590 or 690 N/mm<sup>2</sup>

## 新研發

## 高耐腐蝕鍍硬鉻鋼棒

High Corrosion Resistant Hard Chrome Plated Steel Bar

福隆自歐洲購入先進自動化水平電鍍設備，並與德國公司合作使用HEEF KR電鍍液，新研發出高耐腐蝕性鍍硬鉻鋼棒。

- 具有極佳的抗腐蝕、耐酸鹼特性，顯著提高軸心的耐腐蝕性能，延長工件使用壽命。
- 經由SGS認證符合ISO 9227 NSS國際標準可達120小時，等級9以上。
- 另可依客戶需求製作耐腐蝕性達200小時及500小時，等級9以上之產品。

Fu-Long has introduced state-of-the-art horizontal-plating equipment from Europe, cooperated with German company by using its HEEF KR plating solution, and developed the high corrosion resistant hard chrome plated steel bar.

- With Extra corrosion, acid and alkali resistance, it enhances the corrosion resistant ability of the steel bar, and extends its service life.
- Rating 9 (minimum) with 120 hours in ISO9227 NSS according to SGS certification.
- Customization for the product of corrosion resistance in Rating 9 up with 200 and 500 hours.

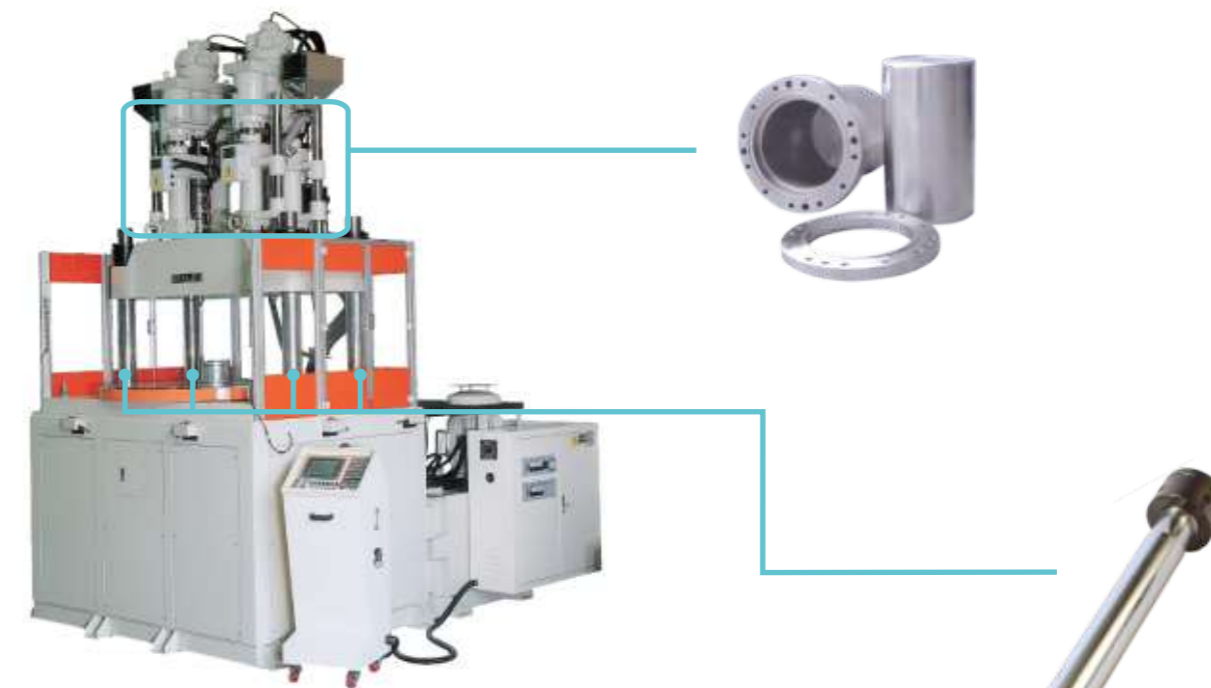


## 機械構造用機柱、導桿

Pillar, Tie Bar, Guide Bar, And Column For Mechanical Structure



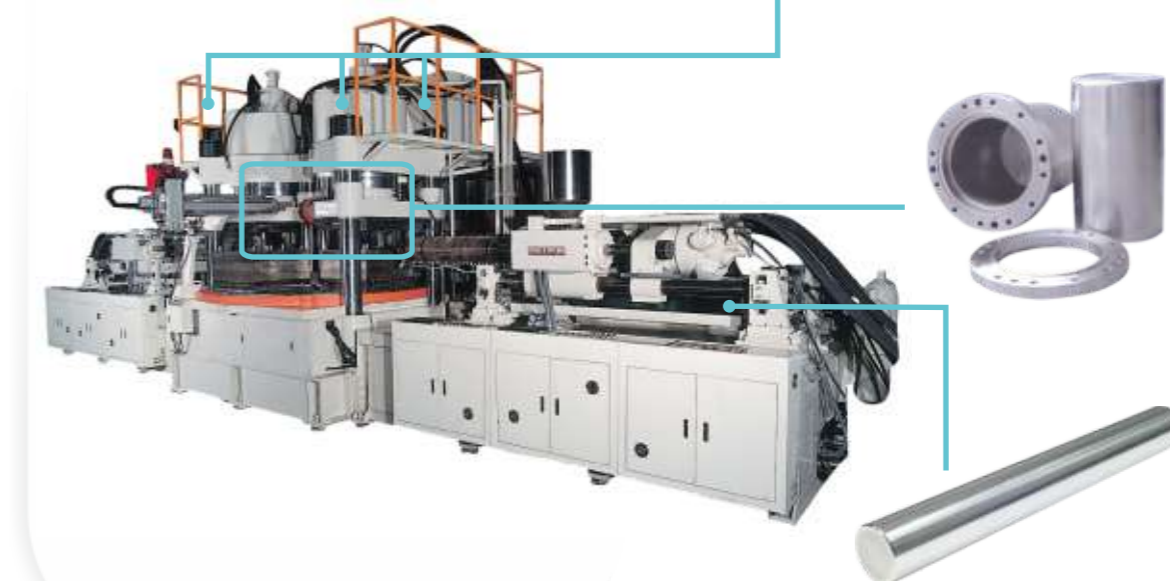
- 可配合客戶設計尺寸，搭配各種材質（如SCM440、SNCM8、S45C...等）依圖面專業製造，機械設備齊全，加工範圍廣泛。
- 一條龍服務（一貫化作業）；從進料到成品皆為廠內製造，降低成本及不良率，交期迅速及完善的售後服務。
- Full machinery equipments enable us to deal with various kinds of machining requirements and produce customized sizes with various material grades (such as SCM440 · SNCM8 · S45C, etc.) According to each customer's design.
- One stop integrated service, We handle everything from raw material purchasing to full production process in order to lower costs, speed up delivery time and provide excellent after-sale service to our customers.



### 產品應用

Application

▲ 塑膠射出成型機  
Plastic Injection Molding Machine





# 產品介紹

PRODUCT INTRODUCTION

特殊長度及用途工件

WORKPIECE WITH EXTRA LENGTH & SPECIAL APPLICATION



福隆公司設備及人員技術之優良製造為業界首選，尤其以較難加工之超長或大型工件之承製，例如車/貨梯用超長液壓活塞桿、吊桿、大型工作母機之中心導桿等，數十年來福隆解決了客戶無數的困難，一貫化製程能力相信必為您最好的選擇。

Fu-Long is customers' best choice according to its industry-leading equipments and technology. We have ability to produce extra-length or large-scale workpieces, such as extra-length piston rod for hydraulic freight elevator, or central guide rod for large-scale machine and so on. Fu-Long has assisted customers to overcome many difficulties through decades. The manufacturing ability of one stop integrated service is your one and only choice.

## 其它加工產品

Other Machining Product



福隆1979年創立至今，除專業生產液氣壓活塞桿外，另發展出全面性的代客加工服務，現今已擁有數十種數百台之加工機具，可針對客戶之需求，依圖製造各式軸管加工製程，如：車、銑、研、電、拋、鑽、搪、裁切、染黑、高週波、調質、氮化等加工過程，所承製範圍廣泛，舉凡各式導桿、哥林柱、活塞、螺母、傳動軸、機械機柱、吊桿等成品，可直接一貫化完成，節省時間、降低成本，免除客戶自行尋找協力廠商之困擾。

Since A.D.1979, Fu-Long can not only produce piston rods for hydraulic/ pneumatic cylinder, but also offer customized processing. We now own nearly 200 sets of multi-processing machines to meet every single customer's needs, such as CNC lathing, CNC milling, grinding, electroplating, polishing, drilling, boring, cutting, surface blackening, induction, quenching and tempering, nitriding and so on.; so that we can take various orders for guide bar, column, piston rod, nut, transmission shaft, pillar, tie bar, suspension rod etc., and all for one stop processing. It will help customers to save time, reduce cost and avoid difficulties on searching suppliers and contractors.

## 生產流程 / 量產品

Manufacturing Process / standard Product



WORKPIECE WITH EXTRA LENGTH & SPECIAL PURPOSES / PRODUCTION FLOW

福隆一貫化流程化製程，從倉庫取料→車、銑、鑽加工製程→研磨車削製程→鍍鉻層鍍膜製程→表面拋光作業→品檢包裝分級流程→出貨完成。進而發展各項代客戶加工業務，至今已建置一套分工明確，層層把關之加工制度，為因應時代變遷及創造更優異之競爭力，目前福隆已擁有數十種加工生產設備，共數百台機械，加工能力直徑可達800mm、長度可達15M，並分設五大加工組別，為客戶提供最優質之加工環境。

Fu-Long owns its one stop manufacturing process, from material gathering → lathing, milling and drilling → grinding and skiving → electroplating → surface polishing → quality control, packing and grading to delivery. We have developed the capability of customizing products; furthermore, we have set up a processing system with distinct labor division and lit-par-lit quality control. To create higher competitiveness, Fu-Long now has dozens of processing equipment items that nearly 200 in number, and separated in 5 processing groups. It enhances the product size to O.D.800mm and Length 15M, and provides the best processing environment to customers.

## 倉庫 Warehouse

為縮短製程時間，福隆備有各種材質及尺寸之光圓棒、黑皮鋼棒，可依客戶需求裁切製作。

Fu-Long has stored cold-drawn steel bars and peeling material with various material grades and dimensions that not only can shorten the processing time but also make-to-order by customers' requirements.

## 車床 Lathing

備有1~8M高速精密車床，1~6M CNC電腦車床，及各種CNC鑽、銑床，可依客戶需求進行大量及精密之工件加工。

Fu-Long has 1~8M high speed lathing machines, 1~6M CNC lathing machines, and various kinds of CNC drilling/ milling machine that can do huge amount of precision piece processing for customers' needs.

- ▶ 傳統車床 Conventional Lathing Machine
- ▶ CNC電腦車床 CNC Lathing and Turning Machine
- ▶ CNC電腦鑽、銑床 CNC Drilling/ Milling Machine



**削皮、矯直設備 Peeling & Straightening Equipment**  
提高原素材表面之平整度及真直度  
Enhance the surface flatness and straightness of raw material.

**研磨加工設備 Grinding Equipment**  
修整公差精度、去除表面砂孔及增加表面平整度  
Adjust the accuracy of tolerance, remove surface pin hole, and enhance surface flatness.

**電鍍 Hard Chrome Plating**  
金屬軸、管表面鍍硬鉻、鍍鉻層可抗腐蝕並增加表面耐磨係數及表面硬度，硬度可達HV850以上。

Steel bar/ tube that plated with chromium layer can be corrosion proof, and enhance abrasion resistance and hardness of the surface, and its hardness can reach HV850 min.

- ▶ 自動化水平式電鍍 Horizontal Automatic Plating  
領先歐洲、業界最新設備，全程採用高科技自動化製程，軸心旋轉電鍍，鍍層膜厚平均，精準度高，搭配使用德國電鍍液，顯著提供軸心耐腐蝕性能，延長使用壽命。

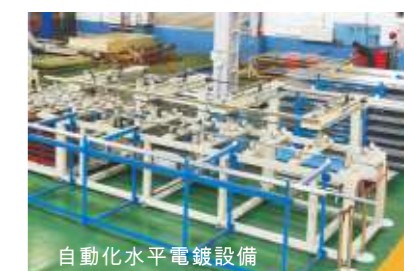
Using state-of-the-art equipment from Europe, its high-technical automatic processing line as rotary plating with German HEEF KR plating solution can make the plating layer even and enhance its accuracy, corrosion proof, and service life.

- ▶ 吊掛式電鍍 Vertical Plating

## 拋光 Polishing

金屬表面拋光處理，可增加工件表面光滑度及表面粗度之控制。

Polishing treatment for metal surface can enhance its smoothness and control the roughness.



- 鹽霧試驗機—耐腐蝕測試。  
Salt Spray Tester - corrosion resistant test.
- 拉力試驗機—測試物件之抗拉強度、伸長率、降伏點等。  
Tensile Strength Tester - tensile strength, elongation, yield point test.
- 三次元測量儀—量測成品平面度、垂直度、同心度等。  
Coordinate Measuring Machine - flatness, verticality, cylindricity test.
- 原子吸收光譜儀—測定試樣中金屬元素的含量。  
Atomic Absorption Spectrometer — metallic content test.
- 金屬表面觀測放大設備  
Metal Surface Observing and multiplying instrument.
- 金屬表面粗度儀  
Surface Roughness Tester.
- 電子式鍍鉻塗層膜厚計  
Electronic Coating Thickness Tester.
- 維小維克氏硬度試驗機  
Micro Vickers Hardness Tester.
- 洛氏 / 蕭氏 / 里氏硬度計  
Rockwell Hardness Tester / Shore Durometer / Leeb Hardness Tester.
- 高度規  
Height Gage
- 兩點式/三點式/螺紋式外徑分厘卡  
Two-point/Three-point/ Screw-Thread outside micrometer
- 深度分厘卡  
Depth Micrometer
- 游標卡尺  
Vernier Caliper
- 電子式游標卡尺  
Electronic Digital Vernier Caliper
- 其他  
Others



## 包裝方式

PACKAGE

Packing

除標準紙管包裝方式外，我們可依國內、外客戶不同的運輸需求，增加防水、防鏽、與防撞包裝處理。

Cardboard tube is our standard package. We also provide waterproofing, rust-proofing, and collision-proofing package to meet domestic / foreign customers' different needs.



■ 紙管包裝  
Cardboard tube



■ 帆布包裝  
Waterproof plastic sheet



■ 木箱包裝  
Wooden case

