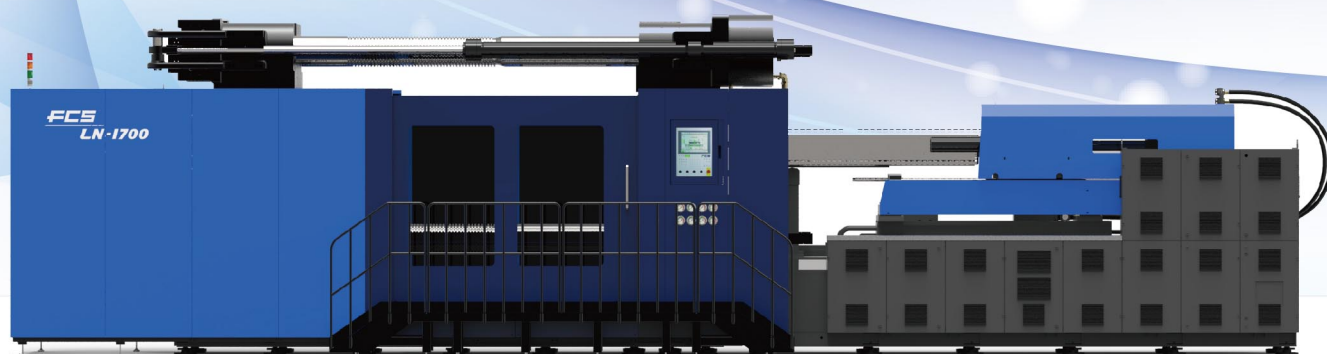




LN **SERIES**

二板式精密注塑機

Two-Platen Injection Molding Machine



小材大用 Your mini Giant

如何利用有限的資源做更有效率的生產，已成為新時代致勝的關鍵，富強鑫二板式射出成型機協助您使用**更小的空間、更少的能源**，達成您更大的目標。

To produce plastics products more efficiently has already become the key factor for winning the competition in the market, FCS two-platen injection molding machine is the best answer for you, to help you use **less space, decrease energy cost**, and to reach your goal.



成型實例

Product Applications

二板式與三板式注塑機之比較 Comparison of 2-platen and 3-platen type injection machine.

項目 Item		型式 Type	二板式 2-Platen	三板式 3-Platen	
				直壓式 Directly clamping	曲肘式 Toggle
佔用空間	Footprint		最小 Smallest	中等 Common	最大 Largest
容模空間	Daylight		最大 Largest	中等 Common	最小 Smallest
調模時間	Time to adjust die thickness		最短 Shortest	短 Short	長 Long
技術前瞻	Technique		最高 Highest	高 High	低 Common
潔淨度	Cleanness		最高 Cleanest	中 Cleaner	低 Normal

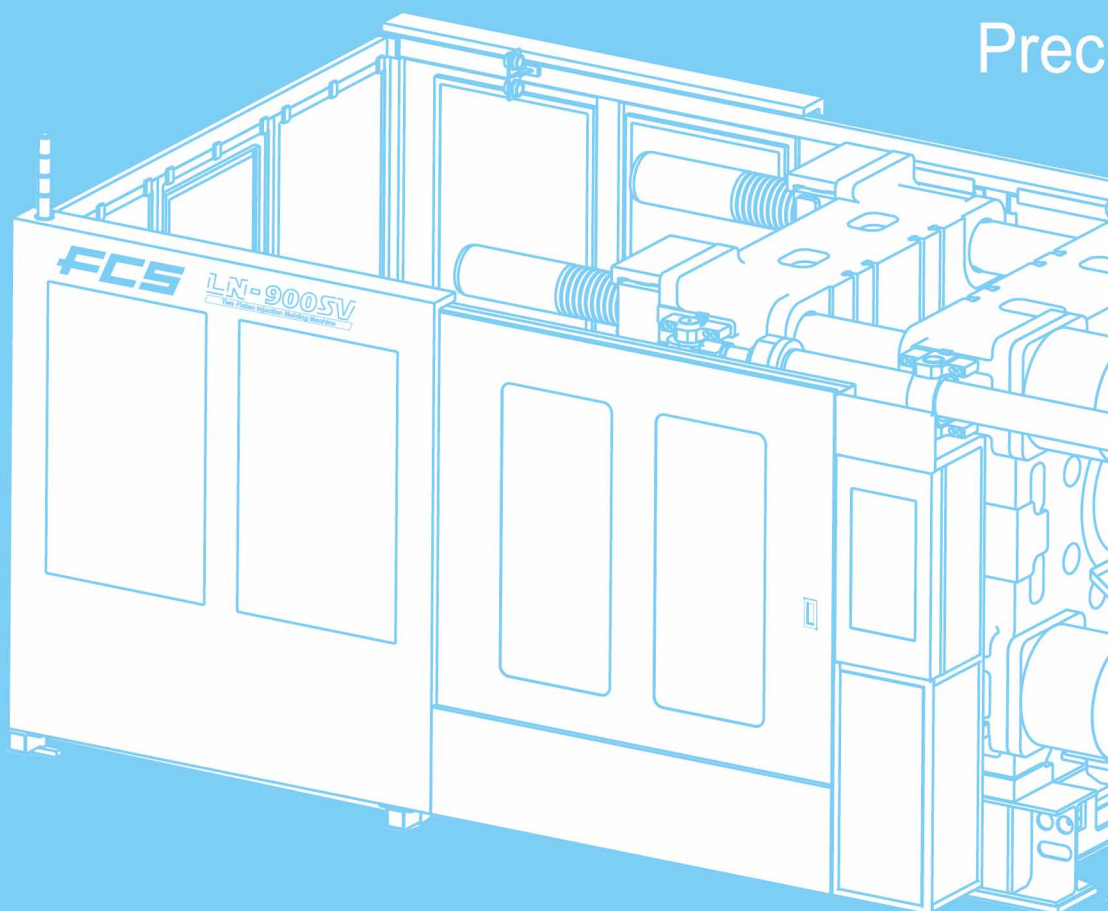
機台長度比較 Comparison of machine length

FCS二板式 FCS 2-Platen	機台長度 Machine Length	FCS三板式 FCS 3-Platen	機台長度 Machine Length
LN-1700	14m	FT-1680	17.0 m
LN-1900	14.5m	FT-2000	19.0 m
LN-2400	15m	FT-2400	19.0 m
LN-2800	16.5m	FT-2700	20.0 m
LN-3300	16.5m	FT-3000	20.0 m
LN-4000	18m	FT-3500	21.5 m



LN SERIES 精密、快速、耐用、

Prec

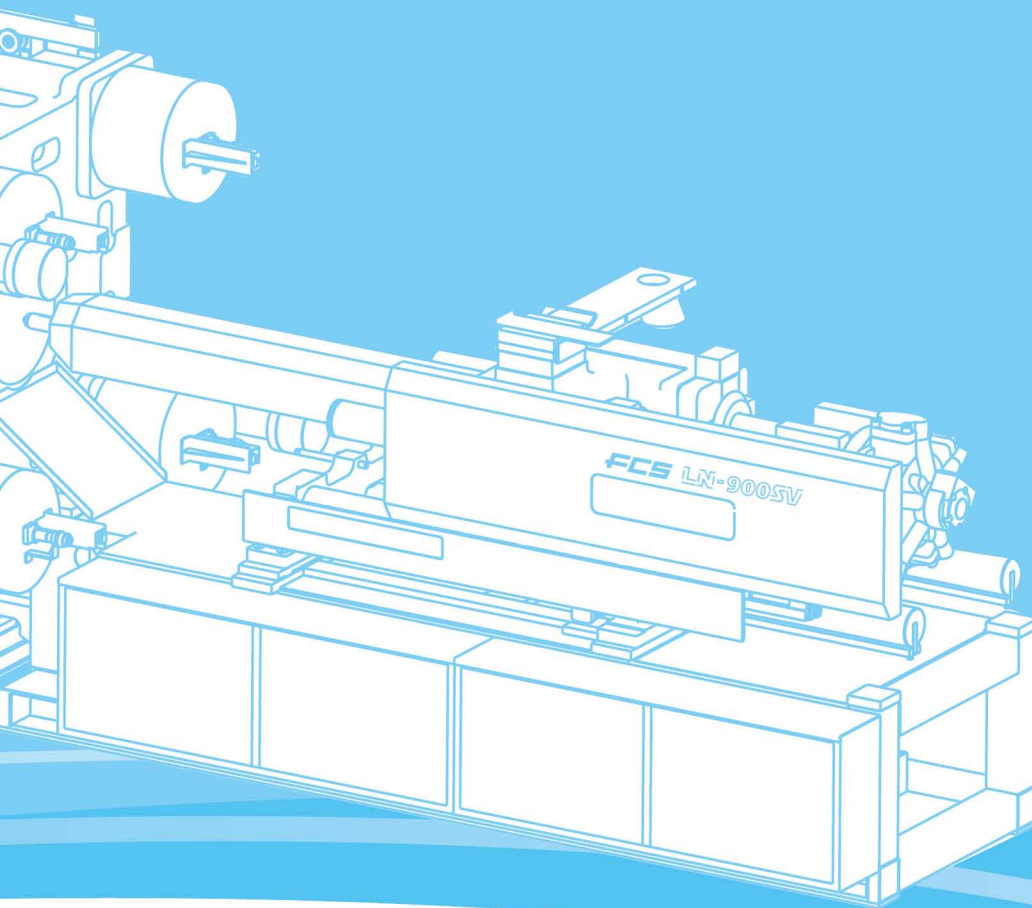


主要特點

- 1 新設計之射出機構，射出精準穩定。
- 2 射出時，加壓缸提供補壓，可持續提供準確穩定之閉模力。
- 3 新式自動調模裝置設計，可迅速換模。
- 4 開模採高壓迴路設計，可加大開模力，確保開模動作順暢。
- 5 高壓鎖模係與歐洲大廠技術合作，閉模力設定簡單且精準，可有效提升機器壽命。
- 6 模具低壓保護，確保模具壽命。
- 7 開關模速度快，縮短成型時間。
- 8 開關模行程及容模量大，適用的產品更為廣泛，特別是深桶型產品。
- 9 機器對廠房空間的需求較少，可提升廠房利用率。
- 10 新式電控設計，整合PDP和遠端監控系統，提升機台的生產與管理效率。
註：PDP (Process Data Protocol)
- 11 採用FCS比例多泵變量節能省電系統，平均節省30~70%能源。

穩定、省空間

ise • Speedy • Durable • Stable • Footprint Reduced



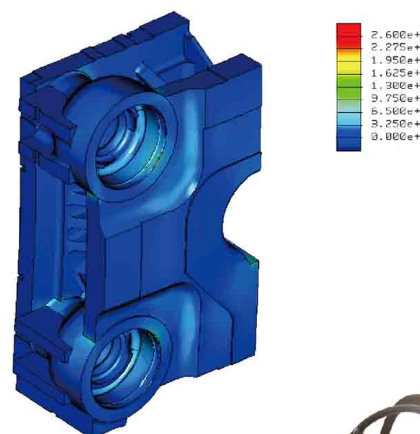
Main Features

- 1 A newly designed injection unit for precise and stable injection.
- 2 Provides stable clamping force while injection, yielding a high mold rate.
- 3 Newly designed automatic mold adjustment system enables faster mold changes.
- 4 Mold clamping system with high-pressure design can increase the clamping force and ensures the operation stably.
- 5 The high-pressure clamping control adopts European technology for easy set up and higher precision .
- 6 Low-pressure protection to enhance the mold life.
- 7 Fast mold opening speed which reduces the molding cycle time.
- 8 A larger mold clamping stroke and capacity than traditional machines well suited for products with greater depth.
- 9 A smaller two-platen design for space efficiently.
- 10 A new microcomputer integrated with PDP* for centralized factory management and manufacture quality monitoring.
*PDP (Process Data Protocol)
- 11 FCS power-saving system to achieve an average power saving of 30%~70%.

優異特點 Specific Features

鎖模單元 Clamping Unit

- 車壁採用有限元素分析協助設計，確保機台及模具受力均勻，延長使用壽命並提升產品品質。
- 大面積高壓油缸設計，採用知名品牌油壓閥，控制精準，確保大柱受力均勻，並可在射出過程中提供充足的鎖模力。
- Platens are designed with FEM analysis to ensure the machine and the mold sustaining force balance which extends the machine life and also increase product quality.
- Equipped with a famous brand valve to control the high pressure cylinder, and ensures the tie bar would sustain a balance force. In addition, it can provide enough clamping force during injection.



大柱夾持 Tie Bar Locking Mechanism

- 精確大柱夾持結構，與大柱在正確位置抱合，確保足夠鎖模力。
- A tie bar locking system with split nut mechanism for accurate clamping force and position.



活動壁滑腳 Moving Platen Guide

- 二板機專用活動壁支撐結構，可確保車壁動作平行度及準確度。
- Moving platen support with exact guiding design to ensure precise movements even when heavy molds are mounted.



油壓迴路 Hydraulic Loop



採用節能油壓迴路設計，具有：

- 模具真空解除高壓開模迴路。
- FCS比例多泵節能省電系統，可節省30%~70%能源。
- 射出增速再生省能源設計，可節省能源並提升射出速度。
- 整機油壓管路不焊接，避免漏油。

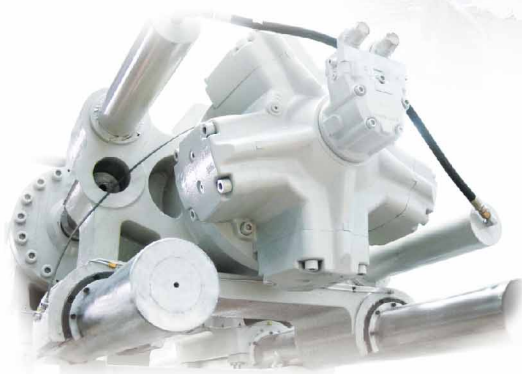


Power saving hydraulic loop design provides features including:

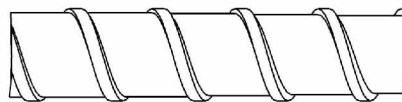
- High pressure to break mold vacuum.
- FCS power-saving system for lessening energy consumption by up to 30%~70%.
- Patented regeneration loop for saving energy and increasing injection speed.
- Weldless flanges were used to reduce oil leak issue.

射出單元 Injection Unit

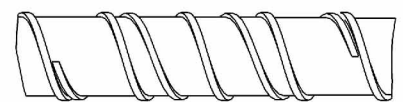
- 大型二板式注塑機專用高混煉螺桿設計，配合高吐出量需求，塑料混煉更均勻。
- 多軸式射出驅動機構，更精密，更穩固。
- A specially-designed screw for better mixing.
- An injection unit featured with a multi-axled driven mechanism for precision and stability.



一般螺桿
Normal screw



高混煉螺桿
Specially-designed screw



輪圈蓋
Wheel Cap



車門內飾板
Inner Door Trim



葉子板
Fender



儀錶板骨架
Dashboard

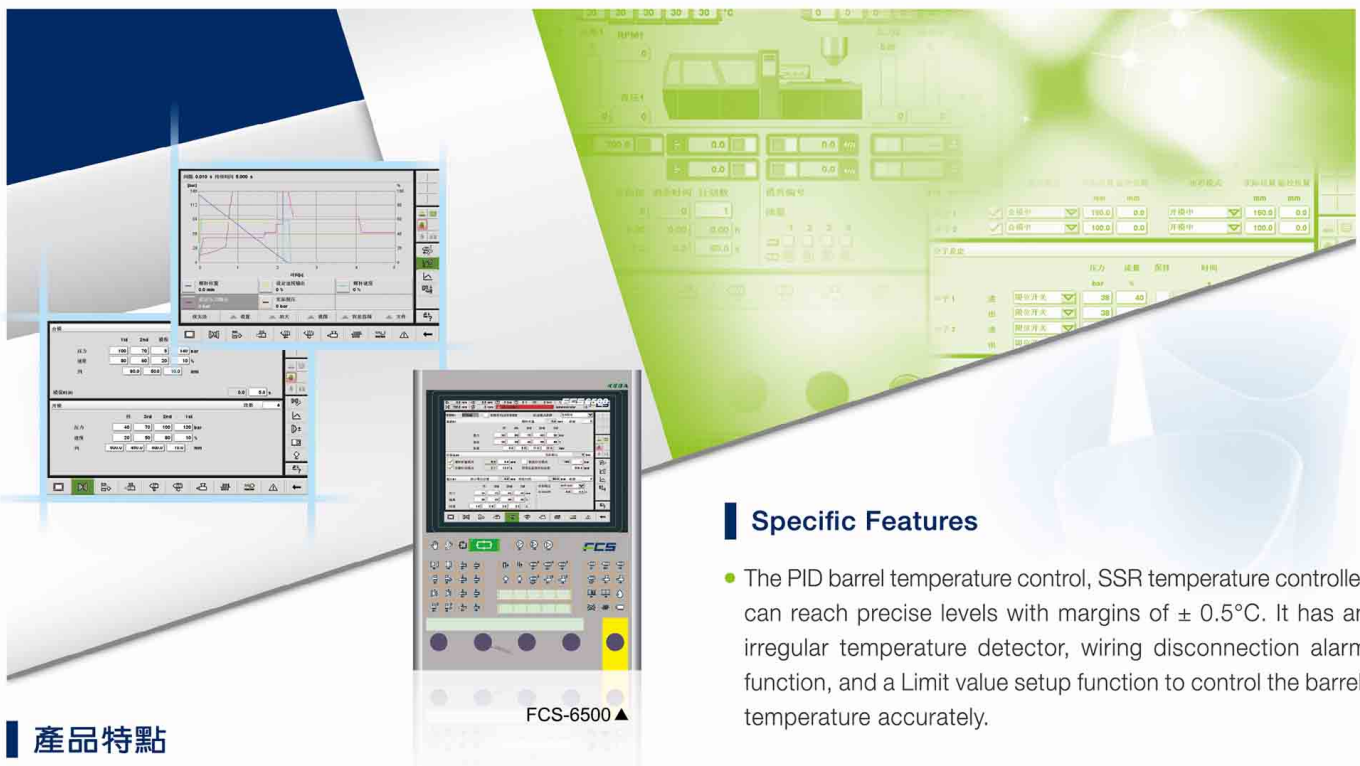


中控台零件
Parts of Center Console



保險桿
Bumper

全新網路型微電腦控制器 All-new Control System



產品特點

- 十二段PID料溫控制，採用SSR無接點溫控，精確度達 $\pm 0.5^{\circ}\text{C}$ ，並具溫度異常斷線警報及上下限設定功能，可精確掌控料溫。
 - 螺桿低溫啟動保護，防止螺桿意外損傷，並具有強制等待功能，確保料管內外無溫差，使螺桿保護更確實。夾模、頂出均採用線性電位計，精密度達0.1mm，可準確控制夾模及頂出行程。
 - 採用32位元高速中央處理器，系統反應速率高達1.0ms，有效提升動作靈敏度及穩定性。
 - 具備停機記憶功能，可隨機存取250組模具資料、500筆警報記錄及100筆修改記錄，並具備檔案管理功能，使資料讀取更快速方便。
 - 具SPC生管統計功能，可以下載模具參數到USB隨身碟，也可以透過RS422介面連結FCS自製的熱澆道系統，搭配生管資訊系統，進行中央整廠管理及品質參數監視，並可透過INTERNET進行遠端生管監控。(選購)
 - 具多階密碼保護功能，可依不同授權等級更改設定，並有資料硬體鎖功能，防止一般操作員任意修改成型參數。
 - 中、英、葡等多國語言可供選擇。
 - 預留機械手標準介面及快速換模系統線路。
 - 模組化控制器，可快速擴充軟、硬體模組以連接更多週邊設備(如：閥澆口、快速換模系統...等)。
- ## Specific Features
- The PID barrel temperature control, SSR temperature controller can reach precise levels with margins of $\pm 0.5^{\circ}\text{C}$. It has an irregular temperature detector, wiring disconnection alarm function, and a Limit value setup function to control the barrel temperature accurately.
 - Both clamping and ejection are equipped with precise linear potentiometers accurately controlling them by up to $\pm 0.1\text{mm}$.
 - A 32-bit high speed central processor operates the system at a reaction speed of 1.0 ms, for an accurate and stable motion.
 - Its non-volatile storage can hold 250 sets of molding data, 500 alarm records, plus 100 modification records and features a file management function for quick and easy access.
 - Its built-in Statistical Process Control (SPC) statistics allows molding data to be saved in a USB flash drive and can be optionally linked to FCS' Hot Runner system under the RS422 interface. Equipped with a production control information system, it serves as a central factory management and quality parameter inspection, and can monitor long distance production via Internet.
 - A multi-level password protection enables parameters setups based on different degrees of authority.
 - Various choices of languages- Chinese, English, Portuguese, Vietnamese, Spanish, Turkish.
 - A stand-in interface is prepared for robots and quick mold-change systems.
 - With Modular controllers design, rapid expansion of software and hardware modules to connect more peripherals(Valve Gate、Quick Mold Change System...etc.)

標準及選購配備 Standard & Optional Accessories

配備項目	ITEM
射出安全護罩	Safety cover for injection
雙合金螺桿、料管	Bi-alloy Screw/Barrel
托拉式落料裝置	Sliding material feeding device
模壁T型槽	T-slot platen
隔熱墊板	Insulator sheets
活動式模定位圈	Check ring of mold (Replaceable)
電動安全門	Automatic safety gate (Electric type)
安全踏板	Security Pad
多段數位背壓 (螢幕設定)	Multi-stage back pressure control(Screen set up)
多段數位背壓 (螢幕設定及顯示)	Multi-stage back pressure control(Screen set up and display)
射出閉迴路	Closed-loop control for injection
四中子 (二公二母)	Four core pulling device
轉牙裝置 (計時/計次)	Unscrew device by timer or counter
水流分佈器10入10出 (玻璃)	Water manifold - 10 in & 10 out (glass)
水流分佈器20入20出 (玻璃)	Water manifold - 20 in & 20 out (glass)
如圖所示	Double circuit (open mould and demould simultaneously)
伺服節能系統	Servo power saving system
自封式磁性吸油過濾器	With check valve magnetic suction filter
射嘴獨立溫控	Temperature control of injection nozzle
落料口溫度顯示及控制	Temperature display & control of material feeding section
射出電阻尺	Linear potentiometer for injection
夾模電阻尺	Linear potentiometer for clamping
托模電阻尺	Linear potentiometer for ejection
射座電阻尺	Linear potentiometer for injection carriage
兩個風托 (一公一母)	Air ejector sets
油溫顯示	Oil temperature display for hydraulic system
油溫顯示及控制	Oil temperature display & control
"FCS-6500微電腦控制器 (彩色觸控：KEBA)"	FCS-6500 controller(color & touch screen:KEBA)
電控穩壓器	Power stabilizer for controller
三色警示燈	Three-color alarm lamp
CE安全插座	CE safty socket
電源插座	Power socket (110V/220V)
主電源斷路器	Main power breaker
24H料管自動定時預熱	24 hours auto-preheat for barrel sets
資料保護鎖 (硬體鎖)	Data lock function(key)
機械手電器接口	Robot electrical interface
乾燥機	Hopper dryer
抽料機	Auto loader
乾燥機磁鐵	Magnet of hopper dryer
避震器	Anti-vibration mounting pad
填料台	Filling material stand
工具箱組	Tool box set
標準出車附件	Spare parts
外銷出車附件	Export accessories

LN-500	LN-700	LN-900	LN-1100	LN-1300	LN-1500	LN-1700	LN-1900	LN-2100	LN-2400	LN-2800	LN-3300	LN-4000
●	●	●	●	●	●	●	●	●	●	●	●	●
○	○	○	○	○	○	○	○	○	○	○	○	○
●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●
○	○	○	○	○	○	○	○	○	○	○	○	○
●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●
—	—	—	—	—	—	—	—	—	—	—	—	—
●	●	●	●	●	●	●	●	●	●	●	●	●
○	○	○	○	○	○	○	○	○	○	○	○	○
●	●	●	●	●	●	●	●	●	●	●	●	●
○	○	○	○	○	○	○	○	○	○	○	○	○
●	●	●	●	●	●	—	—	—	—	—	—	—
○	○	○	○	○	○	●	●	●	●	●	●	●
/	/	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●
○	○	○	○	○	○	○	○	○	○	○	○	○
●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●
○	○	○	○	○	○	○	○	○	○	○	○	○
●	●	●	●	●	●	●	●	●	●	●	●	●
○	○	○	○	○	○	○	○	○	○	○	○	○
●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●
○	○	○	○	○	○	○	○	○	○	○	○	○
●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●
○	○	○	○	○	○	○	○	○	○	○	○	○
●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●
○	○	○	○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○	○	○	○
●	●	●	●	●	●	●	●	●	●	●	●	●
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●
▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲

● 標準配備 Standard ○ 選購配備 Option ▲ 選附配備 Free Option — 無 N/A

【全球行銷服務網】Global Marketing Network



富強鑫集團 FCS Group



富強鑫精密工業股份有限公司

Fu Chun Shin Machinery Manufacture Co., Ltd.

71841 臺灣台南市關廟區埤頭里保東路269號

No.269, Baodong Road, Pitou Village, Guanmiao District, Tainan City 71841, Taiwan

TEL: +886-6-5950688 • FAX: +886-6-5951129 • E-mail: fcsco@fcs.com.tw

東莞富強鑫塑膠機械製造有限公司

Dongguan Fu Chun Shin Plastic Machinery Manufacture Co., Ltd.

中國廣東省東莞市大朗鎮石廈管理區金廈東路18號 郵編：523792

No.18, Jinsha East Road, Shixia Administration District, Dalang Town,

Dongguan City 523792, Guangdong Province, China

TEL: +86-769-83313753 • FAX: +86-769-83181903 • E-mail: cdg@fcs.com.tw

富強鑫(寧波)機器製造有限公司

Fu Chun Shin (Ningbo) Machinery Manufacture Co., Ltd.

中國浙江省寧波市江北區海川路115號 郵編：315032

No.115, Haichuan Road, Jiangbei District, Ningbo City 315032, Zhejiang Province, China

TEL: +86-574-56138688 • FAX: +86-574-56138600 • E-mail: cnb@fcs.com.tw

印度富強鑫

FCS Manufacturing (India) Private Limited

1005, Synergy, Opp. Commerce House, Near Vodafone, Corporate Road, Prahladnagar,

Ahmedabad, Ahmedabad, Gujarat, India, 380015

TEL: +91-99-98897768 • E-mail: fcsco@fcs.com.tw

