

GRAY WOLF



二板式多組分注塑機

Two-Platen Multi-Component Injection Molding Machine

GW SERIES

GW Series

“

射出單元 - 配備 20 餘款多組分射出單元，支持按需選型適配
夾模單元 - 搭載二板式夾模結構，有效節省 30% 以上廠房空間

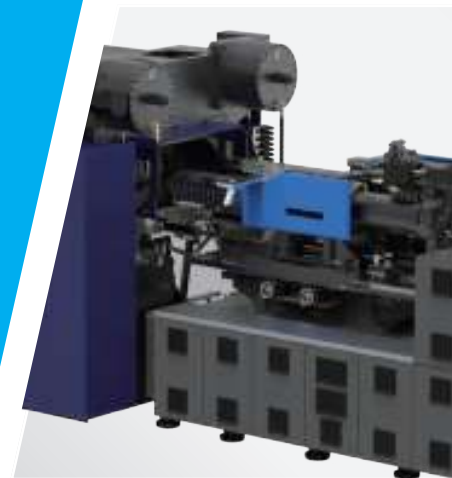
Injection Unit - Over 20 multi-component models available for on-demand selection.

Clamping Unit - Two-platen structure, saves >30% floor space

”

FCS為業界最早研發並量產多組分注塑機型的廠商，深耕多組分技術四十餘年，積澱了深厚的技術底蘊與豐富的行業應用經驗，既打造出品類完備的多組分產品矩陣、鑄就了持續穩定的可靠品質，亦可針對各行業不同的產品特性，提供差異化的技術整合方案與配套服務。**GW系列**是 FCS 全新推出的二板式多組分注塑機，在大幅拓寬多組分機型規格覆蓋的同時，深度融合二板式注塑機的結構優勢，擁有更大的開模行程與容模量，且占地更為集約；整機採用全新美學外觀設計，搭載高端電控系統，可全面適配FCS工業4.0解決方案，是集高性能、高效能、智能化於一體的新一代大型多組分注塑機，可廣泛應用於日用品、汽車等行業，最大鎖模力可達4200噸。

As one of the earliest manufacturers in the industry to develop and mass-produce multi-component injection molding machines, FCS boasts over 40 years of in-depth expertise and extensive application experience in multi-component technology. We have built a comprehensive multi-component product portfolio with stable and reliable quality, and deliver differentiated technical integration solutions and supporting services tailored to the unique product characteristics of various industries. The **GW Series** is FCS's all-new two-platen multi-component injection molding machine. While significantly expanding the specification range of our multi-component lineup, it fully leverages the structural advantages of two-platen technology, featuring a larger mold opening stroke and higher mold capacity, all while occupying a more compact footprint. It features a brand-new aesthetic design and a high-end electric control system, and is fully compatible with FCS Industry 4.0 solutions. As a new-generation large-scale multi-component injection molding machine integrating high performance, high efficiency and intelligence, it is widely applicable to industries such as daily necessities and the automotive parts, with a maximum clamping force of up to 4,200 tons.

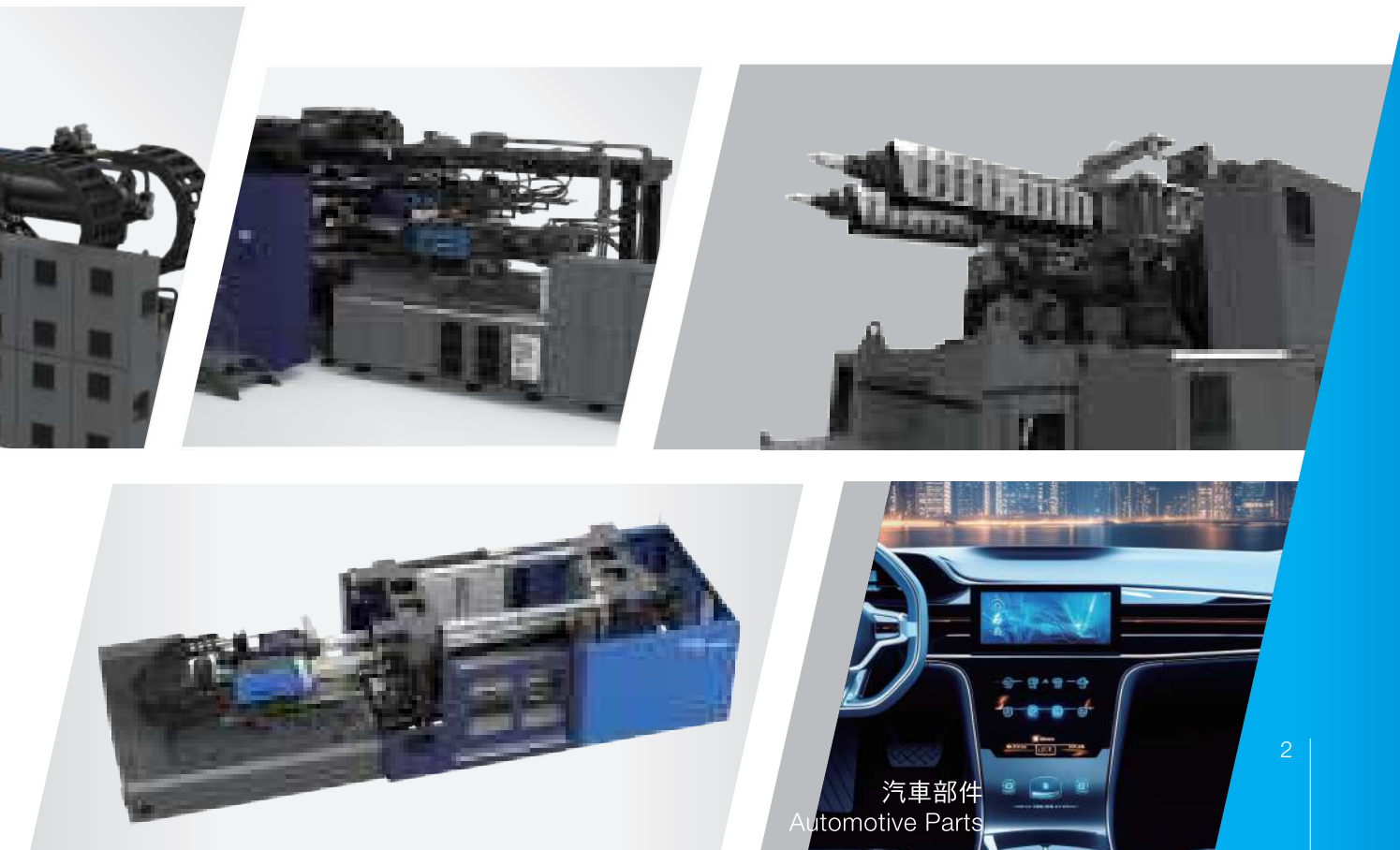


FCS多組分注塑機射出形式

FCS Multi-Component IMM Injection Unit Combination

- 組合式結構的射出單元，與單射機體積相同，節省佔地空間，且可滿足更小中心距的需求。
- 配置開關模定位裝置，頂出採用比例控制(精度達0.1mm)，可滿足機械手生產的精度要求。
- 此類型雙色機產品也可採用特殊方式移位，不需轉盤，因此本機也可以當成標準單色機使用。
- 模組化射出單元設計，生產、備料更精簡，可按客製化要求生產。
- 高精度、低壓、低流量域的重複再現性為 $\pm 0.5\%$ 。成型產品重量誤差控制在0.4%-0.7%，接近半閉迴路控制的水平。
- Barrel sets are special arranged, it takes the same space as single-component machine in horizontal direction. This structure can save space and can suit the mold on which the two gates are extremely close.
- Machine adopts mold open-close positioning device, and equip proportion control on ejector (accurate to 0.1mm), which can totally meet the demand of robot.
- This type of two-component machine can use special way to achieve overmolding, without rotary table. It could also be used as single-component machine.
- Modularized injection unit is easy for production and material preparation, which can be easily customized accordingly.
- Precise control of low pressure & low flow, repeating precision is less than 0.5%. Weight error of the products is 0.4%-0.7%, with semi-close loop system nearly.

Clever Synergy and Dual Perfection



FCS多組分注塑機射出形式

FCS Multi-Component IMM Injection Unit Combination

類型 Item		射出型式 Describe	代號 Type	圖示 Drawing
雙射出 (2K)	1 平行雙射 Parallel	平行雙射出 Parallel double inj.	P型	
	2 直角雙射 Right angle- Horizontal	單射出 + 水平直角射出 Side inj. + Back inj.	L型	
	3 天側雙射 Right angle- Vertical	單射出 + 垂直直角射出 Side inj. + Top inj.	V型	
	4 背式雙射 Piggyback	斜背式雙射出 Side inj. + Oblique inj.	W型	
	5 對向雙射 Opposite	對向雙射出 Opposite double inj.	H型	
三射出 (3K)	6 平行三射 Parallel	平行三射出 Parallel triple inj.	P型	
	7 直角三射 Right angle- Horizontal	平行雙射出 + 水平直角射出 Parallel double inj. + Back inj.	L型	

備註1：2K在此指雙色或雙料(源德文2 komponente)之簡稱，依此類推。
Note1：2K here means 2 component (from German"2 komponente").

類型 Item	射出型式 Describe	代號 Type	圖示 Drawing	
三射出 (3K)	8 天側三射 Right angle- Vertical	平行雙射出 + 垂直直角射出 Parallel double inj. + Top inj.	V型	
	9 背式三射 Piggyback- Parallel	斜背式雙射出+平行射出 Piggyback inj. + Parallel inj.	PW型	
	10 背式三射 Piggyback- Horizontal	斜背式雙射出 + 水平直角射出 Piggyback inj. + Back inj.	LW型	
	11 背式三射 Piggyback- Vertical	斜背式雙射出 + 垂直直角射出 Piggyback inj. + Top inj.	VW型	
	12 獨立三射 Isolated Triple	單射出 + 水平直角射出 + 垂直直角射出 Side inj.+ Back inj.+ Top inj.	LV型	
	13 對射直角三射 Opposite & Horizontal	對向雙射出 + 水平直角射出 Opposite double inj. + Back inj.	HL型	
	14 對射天側三射 Opposite & Vertical	對向雙射出 + 垂直直角射出 Opposite double inj. + Top inj.	HV型	

備註2：對射機型請參閱HB-R目錄

Note2 : Opposite Molding Machine Specifications, please refer to HB-R

FCS多組分注塑機射出形式

FCS Multi-Component IMM Injection Unit Combination

類型 Item	射出型式 Describe	代號 Type	圖示 Drawing
三射出 (3K)	15 對射背式三射 Opposite & Piggyback 對向雙射出 + 斜背式射出 Opposite double inj. + Oblique inj.	HW型	
	16 對射平行三射 Opposite & Parallel 對向雙射出 + 平行射出 Opposite double inj. + Parallel inj.	HP型	
四射出 (4K)	17 直角四射 Right angel-Horizontal 平行三射出 + 水平直角射出 Parallel triple inj. + Back inj.	L型	
	18 天側四射 Right angel-Vertical 平行三射出 + 垂直直角射出 Parallel triple inj. + Top inj.	V型	
	19 直角天側四射 Parallel & Right Angel 平行雙射出 + 水平直角射出 + 垂直直角射出 Parallel double inj. + Back inj. + Top inj.	LV型	
	20 背式四射 Piggyback & Right Angle 斜背式雙射出 + 水平直角射出 + 垂直直角射出 Piggyback inj. + Back inj. + Top inj.	LVW型	
	21 四角四射 Square 平行四射出呈四角形排列 Parallel quartet inj.	X型	
	22 背式四射 Parallel & Piggyback 平行雙射出 + 斜背式雙射出 Parallel double inj. + Piggyback inj.	W型	

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Note1：2K here means 2 component (from German"2 komponente").

類型 Item		射出型式 Describe	代號 Type	圖示 Drawing
四射出 (4K)	23 雙背式四射 Double Piggyback	兩組斜背式雙射出呈直角排列 Piggyback inj.+ Piggyback inj.	VW型	
	24 對射天側四射 Opposite : Vertical	對向三射出 + 垂直直角射出 Opposite triple inj.+ Top inj.	HPV型	
	25 對射背式四射 Opposite: Piggyback-Vertical	對向雙射出 + 垂直直角射出 + 斜背式射出 Opposite double inj. + Top inj. + Oblique inj.	HVW型	
五射出 (5K)	26 直角天側五射 Parallel & Right Angle	平行三射出 + 水平直角射出 + 垂直直角射出 Parallel triple inj. + Back inj. + Top inj.	LV型	
	27 背式五射 Parallel & Piggyback	平行三射出 + 斜背式雙射出 Parallel triple inj. + Piggyback inj.	W型	
六射出 (6K)	28 直角天側六射 Parallel & Right Angle	平行三射出 + 水平直角雙射出 + 垂直直角射出 Parallel triple inj. + Parallel Back inj. + Top inj.	LV型	
	29 背式六射 Parallel & Piggyback & Vertical	平行三射出 + 斜背式雙射出 + 垂直直角射出 Parallel triple inj. + Piggyback inj. + Top inj.	VW型	

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產品特点 Product Features

● 大柱夾持

智能精確大柱夾持結構，與大柱在正確位置抱合，確保足夠鎖模力。

Tie Bar Locking Mechanism

A tie bar locking system with split nut mechanism for accurate clamping force and position.

● 鎖模單元

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。

Clamping Unit

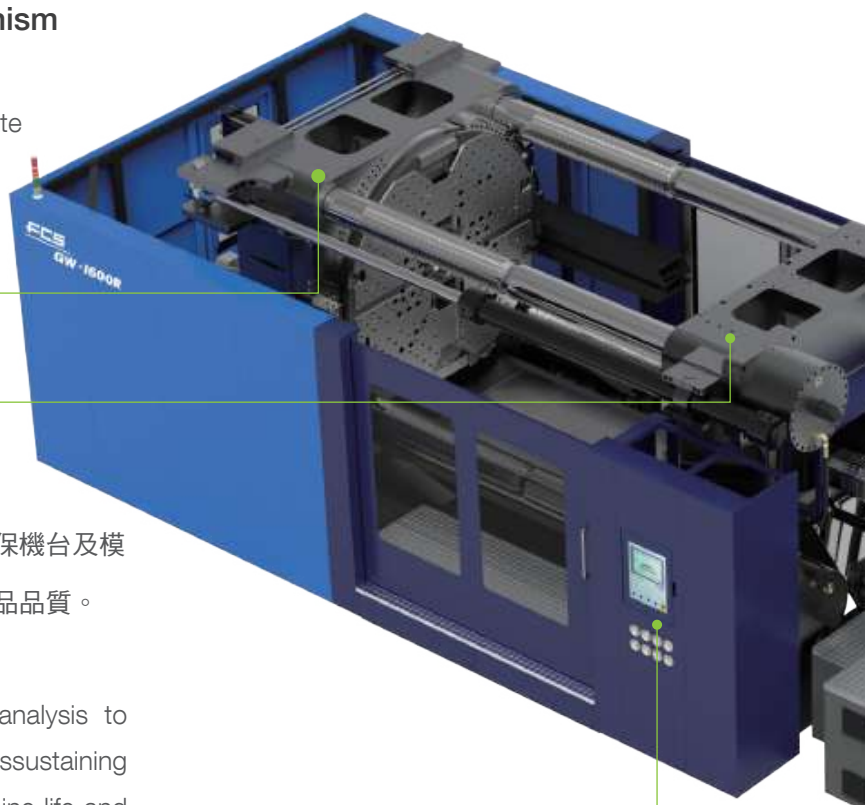
The platen is designed with FEM analysis to ensure the machine and the mold sustaining force balance. It will extend the machine life and also increase the product quality.

● 電控升級

新式電控設計，整合SPC和遠端監控系統，提升機台的生產與管理效率。模具低壓保護，確保模具壽命。

Upgraded Controller

Equipped with a newly designed control panel with integrated SPC and Remote Monitoring System to increase productivity and management efficiency. Equipped with a low pressure protection system to increase a mold's lifespan.



● 緊湊高效的注射單元

射出部分有兩組獨立料管組，同步做射出動作，大幅縮短成型週期。螺桿及料管採用國外特殊合金鋼材，經離子氮化處理，耐腐蝕、耐磨性和耐高溫。採用PID溫度控制，具螺桿冷間啟動限制，斷線偵測功能，並控制溫度在 $\pm 1^{\circ}\text{C}$ 。

Compact and High Efficiency Injection Unit

Two isolated barrel sets can inject at the same time to reduce the cycle time to get more profit. With finest steel and most innovative ino-nitriding process, the hardness of screw and barrel reaches above HV950, to ensure high wear-resistance. Using PID temperature control, with a cold start between the screw limite, breakage detection, and control the temperature at $\pm 1^{\circ}\text{C}$.

● 簡約優化的管路設計

主油路管直線佈置，油路壓力損失小，更為合理美觀，安裝維護更為方便。

Piping Design Improvement

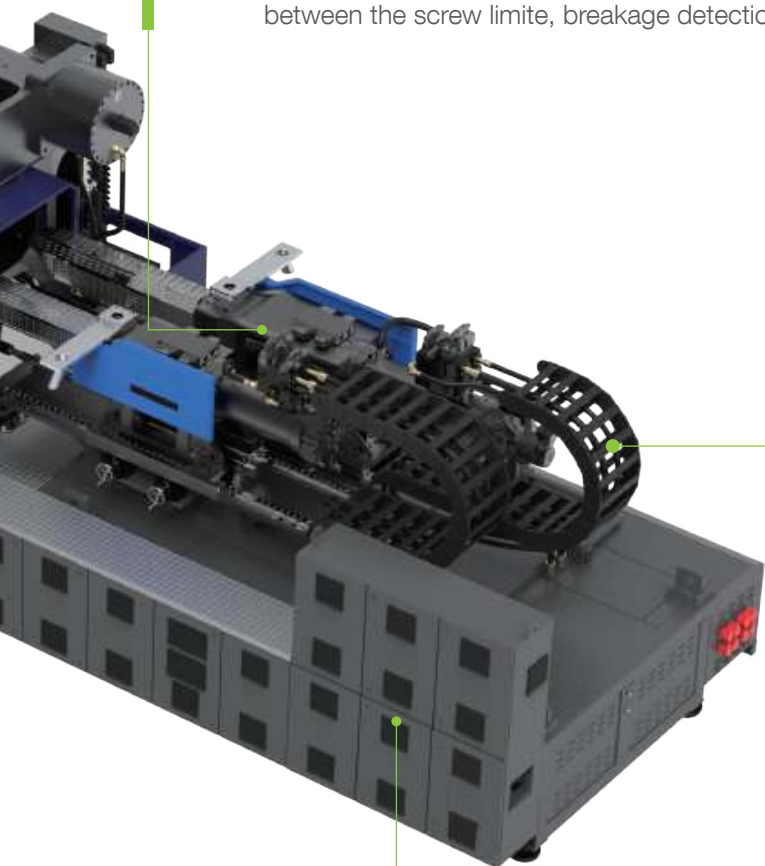
The straight main piping declines the oil pressure and makes installation and maintenance more effective.

● 高效節能伺服動力系統

配置高性能伺服電機可節能約30%-70%。

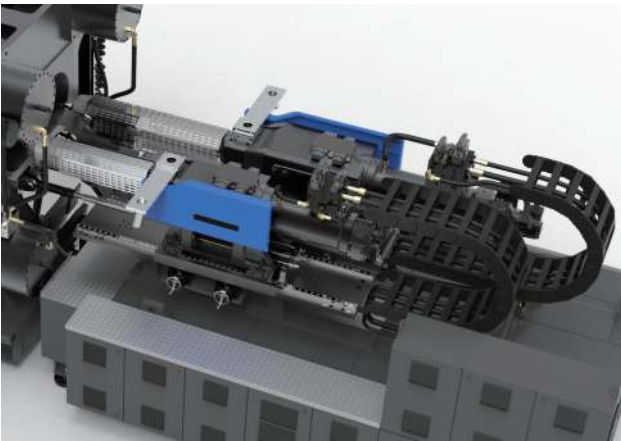
High Efficiency Servo Power System

Adopting AC/PM synchronous servo motor.
Energy-saving can reach up to 30%-70%.

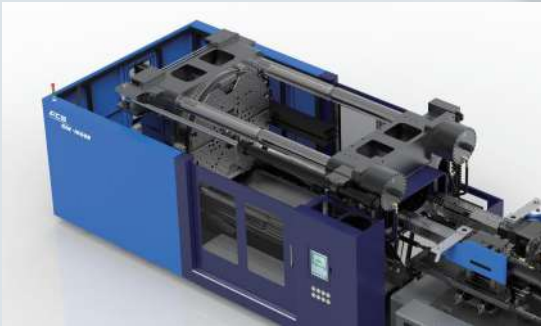
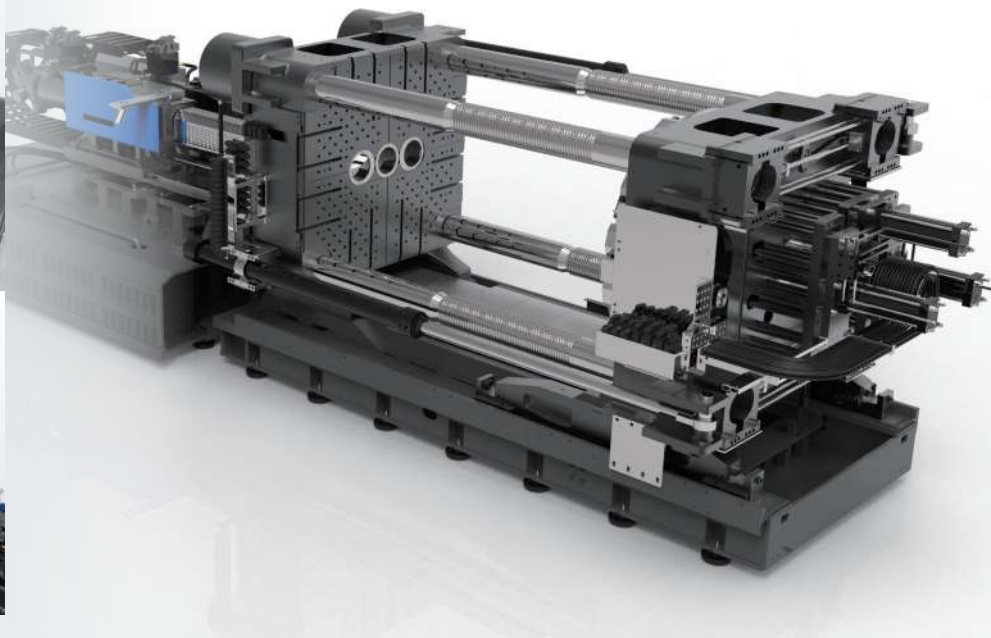


超大型多組分注塑機

Super-Large Multi-Component Injection Molding Machine



二板式 **超大** 容模結構



富強鑫以先進技術且豐富的經驗，成功開發出超大型二板多組分注塑機！鎖模力可達4200噸。轉盤容模直徑可達3300mm，廣為汽車車燈業所採用。

With superior technology and rich experience, FCS successfully developed super-large two-platen multi-component injection molding machine. The mold clamping force is up to 4200 tons and rotation plate diameter reaches 3300 mm.

- 本機所採用的新一代二板式夾模結構，結合箱型活動壁及高剛性固定壁結構，精簡堅固的設計，經有限元素分析變形量及應力分佈，確實達到高強度且耐疲勞之特性，可確保成型品質及大柱壽命。
- 兩組射出單元均採用新式單缸射出結構，射出與加料獨立運作，可進行多項複合射出動作。
- 高應答，性能穩定的伺服電機，配備了高精度，高敏度的壓力回饋裝置，形成閉迴路精準控制，有效縮短週期，提高生產效率。
- Increased durability through the application of new series two platen system upon Finite Element Analysis (FEA), high strength to increase lifespan of tie bars and assure quality of products.
- Both sets of injection units adopt a single hydraulic cylinder structure, the injection and feeding are independent, and multiple composite injection operations can be performed.
- With Steady capability, Servo gearshift dynamical control system has equipped with pressure feedback device with high precision and sensitivity, which forms closed-loop precision control, cycle time effectively shortened and improving production efficiency.

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，富強鑫二板式多組分注塑機協助您使用**更小的空間、更少的能源**，達成您更大的目標。

Producing plastics products more efficiently has already become a key factor for winning the competition in the market, FCS two-platen multi-component injection molding machines are the best option for you, to help you **decrease space usage and save energy** to reach your goals.

- 開關模行程及容模量大，適用的產品更為廣泛。
- 鎖模機構短，可節省30%以上廠房空間。
- 閉模力設定簡單且精簡，可有效提升機器壽命。
- 射出時，加壓缸提供補壓，可持續提供準確穩定之閉模力。
- 伺服節能省電系統，平均節省40~70%能源。
- In comparison with conventional machinery, the LM has a larger mold clamping stroke and capacity.
- Our proven two-platen-design saves up to 30% of your valuable floor space.
- The high-pressure clamping control is easy to set up and has higher precision.
- Accurate and stable mold closing force is achieved by continuously monitoring and controlling the pressure in each tonnage cylinder throughout the injection cycle.
- Servo motor technology allows customers to see an average power saving between 40%-70%.



電控單元 Control Unit



FCS-6500 ▲

產品特點

- 15吋超大TFT顯示螢幕、1600萬色真彩顯示及768x1024像素分辨率，觸控式操作面板，為一操作簡易的控制器。
- 採用功能強大的CPU其時脈為1.75~1.91GHz，系統反應時間至快可達1ms。
- 採多重通訊介面(USB、串行接口、Ethernet Ether CAT)。
- 所有程序都儲存在SD卡，更換控制器及程式均相當便利。
- 該控制器支援OPC協定，且依據IEC-61131設計，其特點為模組化並易於軟硬體維護。
- 共有多種語言可供客戶選擇。
- 十二段PID料溫控制，採用SSR無接點溫控，精確度達 $\pm 0.1^{\circ}\text{C}$ ，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。
- 具多階密碼保護功能、可依不同的授權等級更改設定，及資料硬體鎖功能，可防止成型參數被任意更改。
- 提供統計製程控制及射出波形圖，使成品有高效的品質保證以及提高生產效率。
- 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

- A 15" TFT LCD screen display, with 16 million color palettes, 768x1024 pixel resolution and a touchscreen panel ; User Friendly controller.
- Equipped with a powerful CPU (1.75GHz-1.91GHz). System reaction rate of 1ms promotes sensibility and stability of motion.
- Multiple communication interfaces (e.g. USB, RS232, Ethernet, EtherCAT).
- All software is stored on an exchangeable compact flash driver (SD Card), reducing downtime and providing ease of service.
- This controller also supports the open industry standard OPC. The controller was designed according to IEC-61131, featured together with a module, thus saving maintenance time.
- Multiple optional operation languages available for customers to choose from.
- The PID barrel temperature control, SSR temperature controller can reach precise levels with margins of $\pm 0.1^{\circ}\text{C}$. It has an irregular temperature detector, wiring disconnection alarm function, and a limit value setup function to control the barrel temperature accurately.
- A multi-level authorization with password protection to prevent anyone from randomly changing parameters.
- The operating system contains integrated softwares such as statistic process control (SPC) and injection graphs for efficient quality assurance and increased productivity.
- With modular controllers design, rapid expansion of software and hardware modules to connect more peripherals (valve gate quick mold change system...etc.)



智能製造工廠

- 智能塑機 — 運用外加感測器，掌握因環境、塑料、設備磨耗的微量變異，提升射出機自適應調控能力。
- 智能周邊 — 透過標準通訊協定，達到設備運轉、互聯及調控之目的。
- 智能製造 — 由熔體變異或模穴壓力感測，即時線上監控品質，並搭配機械手臂檢出不良品，有效降低品檢人力。
- 智能管理 — 透過智能管理系統收集關鍵熔體變異數據。

Intelligent ManuFactory

- **Smart Machine -**
Applying additional sensors to monitor and meet the slight fluctuations caused by the environment, material, or machine abrasion, and to improve the adaptive control of injection molding machines.
- **Smart Auxiliary -**
The IMM and auxiliaries could operate, communicate with each other through the standard communication protocol, to be adjusted and controlled.
- **Smart Manufacturing -**
Real-time online quality monitoring through the sensors of viscosity variation of melt, or cavity pressure, and detecting the defectives with automations, to effectively reduce the inspection manpower.
- **Smart Management -**
Using intelligent managing system to collect the key data of viscosity variation of melt.

GW-R標準與選購配備

GW-R Standard & Optional Accessories

配備項目	ITEM	GW-1000R	GW-1200R
PVC、PC、壓克力、尼龍專用螺桿組	Special Screw for PC/PMMA/PA/PVC...	○	○
雙合金螺桿、料管	Bi-alloy Screw/Barrel	○	○
拖拉式落料裝置	Sliding material feeding device	●	●
多段數位背壓(螢幕設定)	Multi-stage back pressure control(Screen set up)	●	●
多段數位背壓/射出壓力螢幕顯示	Multi-stage back pressure/Injection pressure display on screen	●	●
射出閉回路(伺服閥)	Closed-loop control for injection(servo valve)	○	○
射出比例閥	Proportional valve for injection unit	○	○
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 feeding gate	●	●
射出電阻尺	L/P for injection unit	●	●
開關模比例閥控制	Proportional valve for mould open and close	●	●
電預塑裝置	Electric plastification 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)	●	●
安全踏板	Security Pad	●	●
車壁潤滑：電動注油器	Auto lubrication system(platen)	●	●
四中子（二公二母）	Four core pull device	●	●
轉牙裝置(計時/計次)	Unscrew device by timer or counter	—	—
伺服馬達轉盤驅動裝置	Servo motor drive for rotary table	●	●
夾模電阻尺	L/P for clamping unit	●	●
托模電阻尺	L/P for ejection unit	●	●
兩個風托(兩公)	Air ejector sets	○	○
電動安全門	Automatic safety gate (Electric type)	●	●
水流分佈器10入10出(銅製)	Water manifold - 10 in & 10 out (copper)	●	●
自封式磁性吸油過濾器	With check valve magnetic suction filter	●	●
獨立循環油冷卻過濾系統	Independent cooling & filter system	●	●
雙回路(開模與托模同動)	Double loops system(mould open - ejector start)	—	—
伺服節能系統	Servo power-saving system	●	●
油溫顯示	Oil temperature display for hydraulic system	●	●
油溫省水閥控制	Water valve for hydraulic oil temperature control	○	○
油溫預熱功能	Oil temperature preheating function	○	○
FCS-6500微電腦控制器(彩色觸控：KEBA)	FCS-6500 controller(color & touch screen:KEBA)	●	●
資料保護鎖(硬體鎖)	Data lock function(key)	●	●
機械手電氣接口（歐規12）	Robot electrical interface（EUROMAP 12）	○	○
機械手電氣接口（歐規67）	Robot electrical interface（EUROMAP 67）	○	○
電控穩壓器	Power stabilizer	○	○
三色警示燈	Three colors alarm light	●	●
CE安全插座	Outgoing Socket	●	●
主電源斷路器	Main power breaker	●	●
24H料管自動定時預熱	24 hours Auto-preheat	●	●
油壓、電氣雙重保護裝置	Dual safety device: hydraulic and electrical	●	●
不銹鋼漏斗	Stainless hopper	—	—
乾燥機	Hopper dryer	○	○
抽料機	Auto loader	○	○
落地式送料裝置(乾燥機 / 抽料機 / L型腳架 / 吸料盒)	Loading set (Dryer, Auto Loader, L-Frame, Suction Box)	○	○
模溫機	Mold temperature controller	○	○
乾燥機磁鐵	Magnet for hopper dryer	○	○
吊桿組	Mold lifting hanger set	—	—
避震器	Anti-vibration mounting pad	●	●
地腳螺栓	Foundation bolt	○	○
填料台	Filling material stand	—	—
工具箱組	Tool box set	●	●
電氣及其他附件	Accessory for electrical and others	●	●

本資料僅供參考。因產品不斷研究改良，設計變更時恕不另作通知。

The features are for your reference only. Due to continuous improvements, we reserve the right to amend any of the above specifications without prior notice.

GW-1400R	GW-1600R	GW-1850R	GW-2200R	GW-2400R	GW-3000R	GW-3500R	GW-4200R
○	○	○	○	○	○	○	○
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- 標準配備 Standard ○ 選購配備 Option ▲ 選附配備 Free Option — 無 N/A
- 機台模壁若加裝隔熱墊板，會使模厚及托模行程的規格改變。
- If clamping unit adopting insulator sheets, the "mould thickness" & "ejector stroke" dimensions will be different.

1984

FCS第一台雙色機

- ▶ 「KT-300D」

1990

推出「FB系列」

- ▶ 成為現今雙色機的代名詞

1993

- ▶ 推出夾層混色機「FB-C系列」

2001

推出大型雙色機「FB-1000R」

- ▶ 台灣最大型轉盤雙色機

2002 台灣精品獎

推出油電式雙色機「HB-250Y」

- ▶ 全閉迴路系統+高速射出

2001 Taipeiplas「優等獎」

2002 台灣精品獎

2003

- ▶ 推出製筆專用雙色機「FB-200R」

2004

- ▶ 推出手機按鍵專用雙色機「FB-140R」

2005

- ▶ 推出三色機「FB-450M」
- ▶ 雙色機首次銷往歐洲「德國電子業者」

2006

深耕中國汽配行業（車燈及內外飾）

- ▶ 中大型雙色機開始在寧波廠量產

2007

- ▶ 推出「FB三代系列伺服節能雙色機」

2009

- ▶ 推出「FB-350」斜背式無轉盤單雙色兩用機

2009 榮格技術創新獎

2010

- ▶ 推出「FB-1250R」大型四色轉盤射出機

2010 榮格技術創新獎

2012

超大型二板式水平轉盤雙色機

- ▶ 推出「HB-1900R」

2013 榮格技術創新獎

2017 台灣精品獎

- ▶ 推出醫療專用雙色機「FB-260R」

- ▶ 推出牙刷專用三色機「FB-550R」

2014

推出「FB四代系列」

- ▶ 推出大型二板雙色機「LM-3200LB」

- ▶ 薄型筆記型電腦專用雙色機
「FB-700R」、「FB-850R」

2015

- ▶ 推出超大型三工位三色機「FB-1900R」

2017

提出「多組分注塑機射出型式定義」

- ▶ 推出三色混色機「FB-250C」
- ▶ 推出多工位四色機「FB-1600R」

2018

- ▶ 與「國家塑機產品質量監督檢驗中心」共建「多組分注塑機聯合科創技術中心」
- ▶ 「FB-600T」三色機獲選「改革開放40週年—機械工業傑出產品」

2020 榮格技術創新獎

2019

- ▶ 推出大型物流專用超大型二板對射機「HB-2350D」
- ▶ 推出大型二板轉盤雙色機「GW-1600R」
- ▶ 「HB-R 系列」實現在中國本地化量產

2020

- ▶ 由富強鑫擔任第一起草單位的「多組分注塑機」行業團體標準正式公佈實施
- ▶ 「HB-1900R」大型水平轉盤多組分注塑機被認定為浙江省高端裝備重點領域首台套產品
- ▶ 推出「FB-1600Re」、「HB-1900Re」射出全電動及「CT-280R」全電式雙色機
開啟「雙色機電動化」新紀元

2022

- ▶ 推出超大型射出可移動多工位六射機「FB-1600RVW」將富強鑫多組分成型技術推向頂峰
- ▶ 推出超大型二板式多工位四射機「GW-1600Rp / GW-2200R」
新增X型多組分射出形式
- ▶ 「FB-550Re」電動式雙色機獲評為 2022「創新產品獎」

2023

- ▶ 推出「GW-1600Rp」大型二板式X型四射射出機

2023 榮格技術創新獎

- ▶ 推出「HB-3500R」超大型二板式水平對射注塑機（中國最大型）
- ▶ 推出「SA-380h」高速雙色機，結合高速雙色及IML成型技術
- ▶ 推出「FB-1250RW」，為目前最大型斜背式雙色機
- ▶ 「GW-2200R」大型二板式X型四射射出機被認定為浙江省高端裝備重點領域首台套產品

2024 榮格技術創新獎

2024

- ▶ 推出第五代「FB-R」多組分注塑機

2025 榮格技術創新獎

- ▶ 推出「GW-3000R」超大型二板式垂直轉盤雙色機（FCS最大型）
- ▶ 推出「LN-1100T」超大型二板式轉軸雙色機（FCS最大型轉軸機）
- ▶ HB-3500R 列入寧波市「科創甬江2035」重大科研項目
- ▶ 擔任「多組分塑料注射機能耗檢測方法」行業團體標準第一起草單位

2025

雙色機累計銷售「6610 台」金額「RMB 57.2 億元」



1984**The first 2K IMM**

- ▶ “KT-300D”.

1990**Launched of the “FB Series”**

- ▶ Has almost become a synonym of 2K injection molding machine.

1993

- ▶ Launched of the “FB-C Series”.

2001**Launched of the “FB-1000R”**

- ▶ Was the largest 2K machine in Taiwan at that time.

2002 Taiwan Excellence Award

Launched of the “HB-250Y”

- ▶ Full close-loop system and high-speed injection unit.

2001 Taipeiplas Excellence Award

2002 Taiwan Excellence Award

2003

- ▶ Launched the 2K machine for pen industry (FB-200R).

2004

- ▶ Launched the 2K machine for the mobile phone industry (FB-140R).

2005

- ▶ Launched the first 3K machine “FB-450M”.
- ▶ First time FCS 2K machine sold to German electronics.

2006**Deep ploughing in China's auto parts industry**

- ▶ FCS large tonnage 2K IMM was started production in Ningbo factory.

2007

- ▶ Launched the 3rd generation servo drive energy-saving 2K IMM.

2009

- ▶ Launched 2K machine (FB-350) with piggyback (W-type) injection structure.

2009 Ringier Technology Innovation Award

2010

- ▶ Launched FB-1250R large tonnage 4K injection molding machine.

2010 Ringier Technology Innovation Award

2012**Launched large tonnage two-platen horizontal rotary table 2K IMM**

- ▶ Launched the “HB-1900R”.

2013 Ringier Technology Innovation Award

2017 Taiwan Excellence Award

- ▶ Launched the 2K machine FB-260R for medical devices.
- ▶ Launched the 3K machine FB-550R for toothbrush handle.

2014**Launched the 4th generation of 2K IMM**

- ▶ Launched the “LM-3200LB”.
- ▶ Launched high-precision 2K IMM FB-700R and FB-850R for thin type notebook.

2015

- ▶ Launched the large tonnage three-station 3K IMM FB-1900R.

2017

Proposed definition of “Multi-component IMM injection unit combination”

- ▶ Launched FB-250C 3K sandwich IMM.
- ▶ Launched FB-1600R multi-station 4K IMM.

2018

- ▶ FCS established “Technology Center of Multi-component IMM”.
- ▶ FB-600T 3K IMM was awarded the “Outstanding Products of machinery Industry”.

2020 Ringier Technology Innovation Award

2019

- ▶ Launched HB-2350D large tonnage two-platen opposite type IMM.
- ▶ Launched large tonnage two-platen turntable 2K IMM: GW-1600R.
- ▶ “HB-R Series” to achieve localized mass production in China.

2020

- ▶ **The Chinese industry standard for multi-component IMM**, with FCS serving as the first drafting committee member has been officially announced.
- ▶ Large tonnage horizontal rotary table multi-component IMM (HB-1900R) awarded the “Zhejiang Province Pioneering Product” of high-end equipment manufacturing industry.
- ▶ Launched FB-1600Re, HB-1900Re electric hybrid type and CT-280R all-electric 2K IMM, **opening a new era of electrification of multi-component IMM.**

2022

- ▶ Launched of large tonnage multi-station 6K IMM (FB-1600 RVW) with movable injection unit, the FCS multi-component molding technology towards to the peak.
- ▶ Launched the large tonnage two-platen multi-station 4K IMM (GW-1600Rp / GW-2200R) with new X-type injection unit.
- ▶ 2K IMM with electric injection unit (FB-550Re) was awarded the **2022 China Injection molding Industry “Innovation Product Award”.**

2023

- ▶ Launched of the “GW-1600Rp”two-platen X-type 4K IMM.

2023 Ringier Technology Innovation Award

- ▶ Launched HB-3500R super large tonnage horizontal rotary table 2K IMM. It is currently the largest.
- ▶ Launched SA-380h high-speed 2K IMM, combined with high-speed 2K injection and IML technology.
- ▶ Launched FB-1250RW, which is the largest piggyback 2K IMM.
- ▶ Large tonnage two-platen 4K IMM with X-type injection unit (GW-2200R) awarded the **“Zhejiang Province Pioneering Product” of high-end equipment manufacturing industry.**

2024 Ringier Technology Innovation Award

2024

- ▶ Launched of the 5th generation 2K IMM.

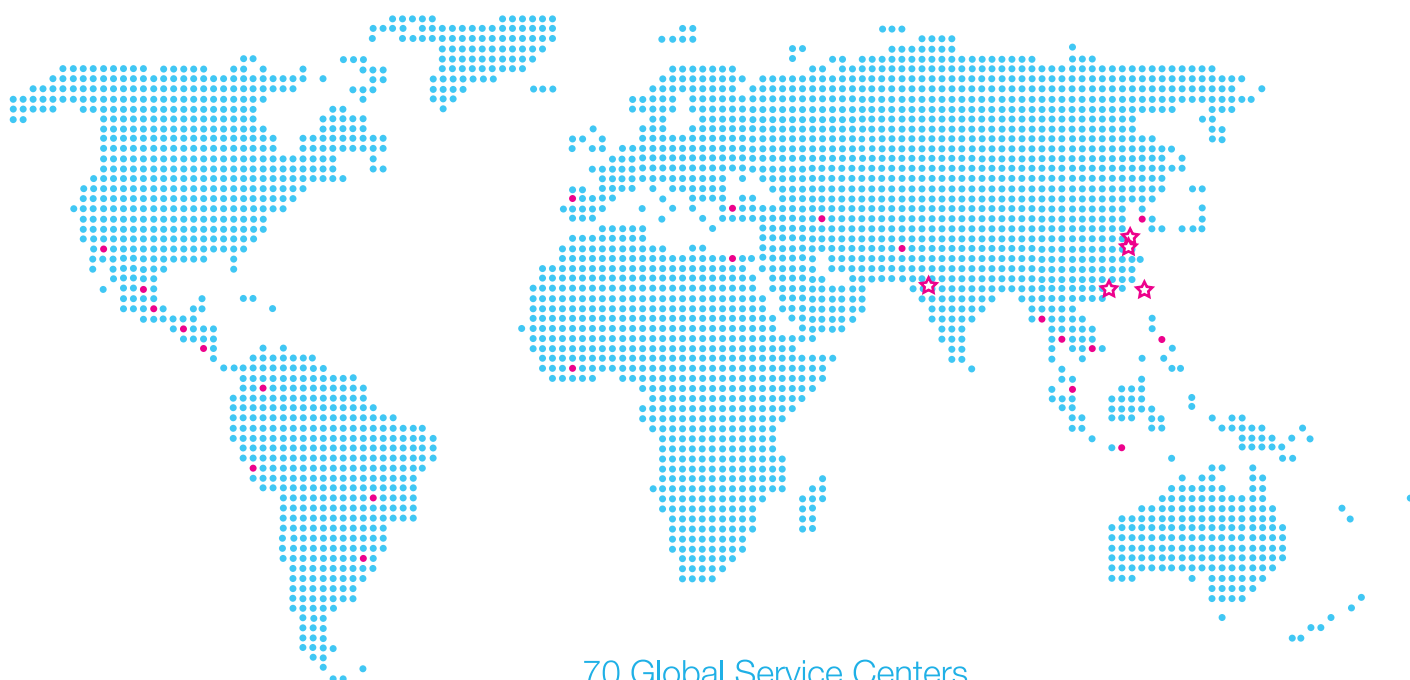
2025 Ringier Technology Innovation Award

- ▶ Launched GW-3000R super large tonnage two-platen vertical turntable 2K IMM (It is currently the largest vertical turntable 2K IMM of FCS).
- ▶ Launched LN-1100T large tonnage two-platen rotating shaft 2K IMM with W-type injection unit (It is currently the largest rotating shaft 2K IMM of FCS).
- ▶ FCS serves as the first drafting committee member for the Chinese industry standard “Testing method of energy consumption for multi-component IMM”.

2025

**2K IMM Sales volume over “6610 sets”
Sales amount over “USD 805M”**





70 Global Service Centers

富強鑫集團 FCS Group

富強鑫精密工業股份有限公司

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