

FCS TODAY

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First Made in India 2K IMM Launched in PVI

Reported by MPO

Plastivision (PVI) holding every 3 years, is one of the popular international plastic exhibitions in India, and was held from January 16th to 21st in 2020. It attracted more than 200,000 visitors, and 1,500 exhibitors from 25 countries worldwide. The total area of China Pavilion took over 5,000 m², which showed that Chinese exhibitors highly intent to invest in Indian market.

India's population about 1.4 billion and a great potential of consumer market. In this PVI, nearly 60% of injection molding machines (IMM) were Indian brands or made in India, and most of them were molding food packaging and houseware products. India seems to be expected to become the next fastest-growing market following China. Considering India's market demand, FCS introduced its All-Electric IMM, and the first Indian-made Multi-Component (2K) IMM, aiming to tap into the market with its leading technology and advanced applications. FCS was the only

exhibitor presenting the multi-component injection molding machine with constant and reliable production during the whole exhibition, which have attracted many visitors and inquiries.

Power-Saving 2K Molding System: FB-280R

FCS has been developed Multi-Component Molding technology for over 35 years, from dual-color, tri-color to four-color. The Power-saving 2K injection molding system features the injection unit with up to 19 permutations, adopted closed-loop servo valves, and the patented rotary positioning clamber, to achieve a stable operation and precise positioning. In PVI, FB-280R IMM automatically molding Collapsible Strainers using PP and TPE, demonstrating FCS's professional multi-component molding technology.



Precision Medical Molding System: CT-120e

FCS All-Electric IMM adopts European high-level control system, which reflects a performance level comparable to the Japanese machine's motion control. It is highly efficient, reliable, energy-saving, and intelligent. Its optimized pressure closed-loop algorithm control allows faster mold adjustments with high precision. The newly launched

CT-120e at PVI produced 32-cavity Pipette Tips, which is the top choice for precise and stable molding of medical devices.

In this PVI, FCS has received a high number of inquiries, over 170 valid business cards, and more than USD1.74 million of potential orders. FCS has been endeavoring to expand its presence in India for two decades and currently, there are over 600 sets of FCS IMM's well running in its Indian clients' factories. With the know-how and differentiation strategies accumulated over the past 45 years from the Group, FCS is highly confident to become the leader of injection molding technology in India.

FCS Announced India Plant

Reported by MPO

FCS held the launch in Mumbai on Jan 17th to announce set up a 5th FCS production plant in Ahmedabad, and will establish a marketing service company to provide expert planning and service for total solutions to customers. The presented VIP included the media of TAITRA, CPMIA, and the important customers who owns hundreds of FCS machines in India.

Mr. Ken Cheng, the Managing Director of FCS India, said that FCS has been in India market for 20 years and have over 600 machines working in customers plants. In order to give better service, FCS pilot plant at Ahmedabad was established in August, 2019, which currently holds the capacity of producing over 300 units of machines per year. Moreover, the 40,000 m² new plant is undergoing planning and is expected to be completed in 2023, with which the annual production capacity could reach up to 1,000 units. Mr. Alan Wang, the CEO of FCS group, emphasized



while providing solutions for plastic manufacturing, we are dedicated to helping our customers operate with the least amount of plastics and energy, along with minimizing resource wastage. Therefore, we have developed technologies such as: all-electric machines, PC Glazing, MuCell Micro Foaming, and Long Carbon Fiber (Strengthening) integrated with iMF 4.0 Systems.

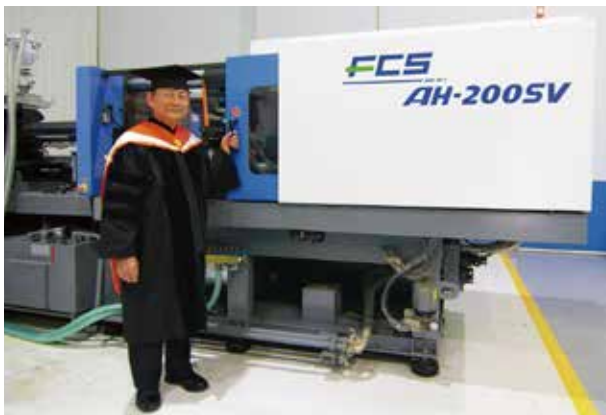
These applications are able to increase yield and product efficiency, lessen energy usage and plastic wastage, and ultimately reaching the purpose of environmental protection, to "Shape a better world".



Apply the Theory to Pursue Continual Optimization

Reported by MPO

The operating conditions of enterprises are constantly changing, which urges managers to keep learning. FCS plays a leading role in the industry of IMM in Taiwan and pursues diversified development. Mr. Po Hsun Wang analyzing the competitions in the global market, he was still confronted with many challenges in terms of operation.



Therefore, he decided to take the PhD program with the hope of finding the solutions, and obtained the degree in January 2020.

To finish the entitled “A Study of the Introduction of Global Supply Chain Management to Transnational Enterprises”, he held interviews with the experts from businesses, governments and universities, drafted a questionnaire about the major rules of the introduction of global supply chain management to transnational enterprises. According to the research results, “supply chain management performance” and “supply chain management dimension” are the most effective in increasing “organizational effectiveness”.

As an enterprise becomes international, supply chain management will undoubtedly become one of the most essential parts in the course of its development. FCS Group is striving to make a global plan to facilitate the combination of the resources of supply chains, and shape a better world with partners.

Team and Differentiation Fuel the FCS's Expansion

Reported by MPO

“Team plays the most important role in the success of an enterprise,” said the vice chairman Jerry Wang. The reason why FCS achieved continuous development that its founder was a technician in developing technologies and had high requirements on product quality. Therefore, FCS quickly took a firm stand in the Taiwanese market, and established Dongguan and Ningbo plants in 1984 and 2001.

Jerry admitted company developed slowly in the early days, until he entered the Ningbo in 2003, promoted the communication between the teams of marketing and technology, products customization, consisted local core team. Besides, all the indexes were quantified for horizontal and vertical comparison among the departments to build a well-structured team. All these measures have made our work more efficient and contributed to the development of FCS in recent years.



The strategy of differentiated products

In the field of injection molding machine (IMM), the thriving enterprises have come up with their distinctive features. FCS has always aimed the “multi-component IMM” that has accumulated rich experience for 35 years, and has made remarkable achievements.

FCS has collected abundant data resources in large 2K IMM, can offer suggestions on mold design and hot runner configuration as well as complete solutions according to consumer demands, provides the clamping from 60 to 4,000 tons. In 2008, the Ningbo plant sold 350 units of 2K machines, taking up 65% sales volume of group.

Nowadays, FCS has become a model enterprise. Apart from balancing the supply chains, and planning to build a new plant in Hangzhou Bay, which is predicted will be running in June 2021, with an investment of RMB 200 million. In the future, the total output will be RMB 1.25 billion in China plant.

FCS High-End IMM in BYD New Plant

The market changes are closely related to user demands. New energy vehicles have been attracting much attention recently and getting government subsidies in China. BYD Group started its business from batteries and entered the automotive industry and launched its own brand in 2003. Now BYD is the largest production base in western China. The Chinese media "Auto Time" showed that totally sold 461,400 cars in 2019, which market share is among

the best in new energy vehicles field.



Photo credit: BYD website



Reported by MPO

FCS provides customized service for automotive industry and has received great feedback especially from lamps manufacturers. Therefore, BYD has been using FCS injection molding machines (IMM) in its Shenzhen and Xi'an plants. This January, FCS successfully delivered 4 large IMM to BYD Hunan plant that were 2 sets of three-color IMM (FB-1600R) and 2 sets of two-platen IMM (LN-1700). Those are high precision and quality (FPY), and even could reduce upto 30% footprint and save over 50% energy consumption.

Overall, FCS has accumulated thousands case in multi-component molding field to help solve various molding bottlenecks and hence become the strongest partner of BYD Group.

KEYWAY Installed Largest Two-Platen IMM

FCS has more than 45 years of R&D achievements in plastic injection molding industry, and has customized injection molding machines (IMM) for more than 10,000 customers. In September 2019, FCS successfully developed for KEYWAY the 1st largest two-platen IMM (LM series) with 4,000 tons of clamping force. KEYWAY is the Taiwan 's most popular brand of houseware products, and has 40 FCS IMM producing 24 hours every day, exporting products to more than 40 countries.

LM series has great reputation that has been developed since 2005, standing for achieving the most efficient production mode with the smallest footprint and the least energy. This high-end machine for KEYWAY has interlocking design in clamping unit to achieve a better fluent high-pressure clamping. The high-rigidity platen and extended guide design could carry a huger mold, and make fast and precise mold closing performance under the maximum daylight of 4,500 mm.

Reported by MPO

FCS servo system and integrated remote controlling function to enhance the managing efficiency and save energy upto 30~70%. Furthermore, it has 4.0 intelligent system which monitors the rigidity condition of platens in real time, and provides detection, alarm and notification functions.



35 years

富強鑫多組分成型技術35周年
Multi-Component IMM – Since 1984

Development and Application of Multi-Component Injection Molding Technique in China

Special Report on the 35th Anniversary of Multi-Component IMM by FCS (II)

Author: Jerry Wang

“Precision development of two-component injection molding machine”

The hybrid IMM

In 2001, FCS first introduced the high-speed hybrid IMM (AE series), it has electric positioning accuracy and energy-saving features and retains the high thrust characteristics of the oil structure. In other words, with a cost lower than that of electric IMM, the hybrid IMM can effectively improve energy consumption and low accuracy of traditional machine, and greatly reduce the pollution and noise.

To achieve continuous, high-speed and precise injection, the mold clamping unit adopts high-rigidity structure and closed-loop control of German high-response servo valve. The control accuracy of mold clamping force is $\pm 0.5\%$, the injection speed error is $\pm 0.1\%$, the injection positioning accuracy is 0.05mm, the time control accuracy is 0.01s, and the weight error of the finished product is lower than 0.1%. This model is equipped with a multi-segment injection compression and can be compounding action, which greatly shortens the molding cycle.

FCS then applied this technique to the two-component IMM, and launched the high-speed closed-loop hybrid two-component IMM, which drives the screw feed through an electric servo motor and is equipped with accumulator and high-speed injection device to form a hybrid multi-circuit system. Moreover, it is the first domestic two-component IMM based on the hybrid structure.

It is used to produce thin CD cases through 2+2 cavities, combined with manipulator and automatic stacking device, the cycle time only 7s. It not only breaks through the assembly bottleneck on production lines, but improves the product and mold quality to achieve the high efficiency.

This model is the first domestic two-component IMM to adopt closed-loop system with high-speed injection, and has single-color, two-component, homogeneous, heterogeneous and multilayer injection functions, which makes great progresses toward high precision, high quality and multi-function two component molding.

This model was awarded the “Excellence Award” in the “Design & Innovation Plastics & Rubber Machinery” at the Taipeiplas in 2001 and the “Taiwan Excellence Award” in 2002. Therefore, this machine received the CE specification that FCS was reputed as the pioneer of high-end precision molding technique in China, and offering advantages to enter the European market.



HB-250Y, Won the “Excellence Award” at Taipeiplas in 2001

“Professional development of two-component injection molding machine”

Application in office supplies

In 2001, there was already two color IMM for pen-making industry in the China market, but still was many aspects requiring improvement after verification by FCS. Ningbo FCS launched the “Dedicated pen-making two-component IMM” (FB-200R) in 2003, which enjoy wider mold space, faster and precise turntable positioning, movable center distance, shorter molding cycle, and higher product yield. These characteristics make the FB-200R popular after its launch.



FB-200R, First-generation dedicated pen-making two-component IMM in 2003

Application in mobile phone industry

The global mobile phone industry has been booming since 2000, the demand for mobile phones has increased exponentially every year. In the production process of mobile phones such as housings, buttons and connectors that required high-precision machinery to produce it. Given this demand, FCS launched the dedicated button-making 2K IMM for the mobile phone industry in 2004, which received by a large orders of Korean mobile phone manufacturers.



FCS two-component IMM purchased by electronics customers

Application in cosmetics industry

Among the FCS 2K IMM, FB-260R is the best-selling model which has stable performance, high product yield, high injection speed and excellent surface quality. Besides, it provides low-speed stability for thick and highly transparent products. Due to good reputation, many large cosmetics companies in Taiwan, Japan and France have adopted FCS two-component IMM.

Application in auto parts industry

The application has been extended to auto parts industry after 2006. The FCS models of over 1,000 tons are targeted at the automotive light industry, then are applied for large-size interior and exterior parts. Therefore, FCS launched the IMM of piggyback injection structure in 2009 that suitable for injecting two products with huge weight difference, and automotive parts with seals.



FB-1420R, Dedicated automotive light two-component IMM in 2008

Application in laptop computer industry

China's thin laptops and tablets have gradually emerged since 2012, that must integrate the design of fixtures and seals to reduce the weight and improve the assembly efficiency. FCS launched the high-precision two-component IMM dedicated for thin laptop computers in 2014. This machine has been greatly improved in terms of turntable speed, positioning accuracy, mold-closing accuracy, and injection speed, making them especially suitable for thin, high flow ratio, and sophisticated electronic products.

Application in medical industry

The application must consider clean room space, height, production area cleanliness, heat source emission control, waste rate control and other factors. In order to meet the above special needs, FCS improved this model and launched the two-component IMM dedicated for medical products. The combination of soft and hard rubber is the technical focus that the best reflects this technical difficulty is the production of multi-cavity multi-component toothbrush handles.

The dedicated toothbrush machine was upgraded by FCS in 2016, in which saves half of the space, reduces the manpower that three shifts from 24 persons to 3 persons, the yield from 95% to 99%, and was applied by the medical manufacturers.



To be continued... ▶▶▶

FCS Fights Against COVID-19 with You

Before celebrating the Chinese New Year, COVID-19 outbreak and was declared as an international emergency by WHO. Since the first case appeared in December 2019, more than 80,000 cases have been diagnosed globally within 3 months. The government implemented precautionary to reduce cluster infections for epidemic areas, such as closure of cities and postponed resumption of work after holidays. It has inflicted the business that requires face to face contact, such as service, retail, tourism, and transportation. It's hard to estimate the influence and loss for those postponed or cancelled business activities.



Reported by MPO

The COVID-19 affects the world. FCS immediately took actions including temperature detection for colleagues and visitors, and regularly disinfect public areas. For customers, FCS helped ensure the machine stability to produce medical supplies for epidemic prevention frontline. (Statistics till end of Feb. 2020)

In addition, Ningbo FCS donated RMB 200,000 to the Red Cross Society for "The Affiliated Hospital of Medical School of Ningbo University". FCS strives to provide a safe and secure working environment to protect the health of colleagues, and reminds everyone to follow the correct preventive steps in daily life to protect selves.

COVID-19 Situation reports >>>



China



WHO

Protect yourself >>>



Wear a mask when coughing or sneezing



Frequently wash hands with soap and water.



Avoid close contact or crowded area.



Avoid contact with stray or wild animals.

FCS

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uCloud

Headquarters:
No.269, Baodong Rd., Pitou Vil., Guanmiao Dist., Tainan City 71841, Taiwan
TEL : +886-6-5950688 FAX : +886-6-5951129
E-MAIL : fcsco@fcs.com.tw

FCS Dongguan:
No.18, Jinxia East Rd., Shixia Administration Dist., Dalang Town, Dongguan City, Guangdong Province, China
TEL : +86-769-83313753 FAX : +86-769-83181903
E-MAIL : cdg@fcs.com.tw

FCS Ningbo:
No.115, Haichuan Rd., Jiangbei Dist., Ningbo City, Zhejiang Province, China
TEL : +86-574-56138688 FAX : +86-574-56138600
E-MAIL : cnb@fcs.com.tw

FCS India:
218, Xcelon Industrial Estate, Near Intas Pharmaceutical, Village Chancharvadi Vasna, Sarkhej Bavla Rd., Taluka Sanand, Ahmedabad, Gujarat.
TEL : +91-99-7410-7787
E-MAIL : fcsindia@fcs.com.tw

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