

A white diagonal line graphic, starting from the top left and extending towards the center of the green background.

SHOW GUIDE

TAIPEI PLAS 2018

AUG 15-19, 2018

Booth **J0518**

# 索引 Index

Shape a better world

|                                               |    |
|-----------------------------------------------|----|
| <b>iMF4.0</b> .....                           | 1  |
| 智慧製造工廠<br>Intelligent ManuFactory             |    |
| <b>CT-300</b> .....                           | 3  |
| + 模內貼標生產系統<br>In Mold Labeling Molding System |    |
| <b>FA-160</b> .....                           | 5  |
| + 新世代智慧成型系統<br>New Generation Molding System  |    |
| <b>FA-300</b> .....                           | 7  |
| + 微發泡成型系統<br>MuCell® Molding System           |    |
| 展位平面圖 .....                                   | 11 |
| Booth Layout                                  |    |

# iMF4.0

## 智慧製造工廠

# Intelligent ManuFactory

### 系統說明

**生產穩定** - 射出機可自動調整，適應成型條件的輕微變異。

**生產優化** - 運用製程感知技術，提升良率與品質，降低浪費。

**智慧製造** - 射出機與周邊互聯信息，自主調適及控制質量參數。

**智慧服務** - 使用智慧監控&遠程維護，預先報警、事前養護，減少意外停機。

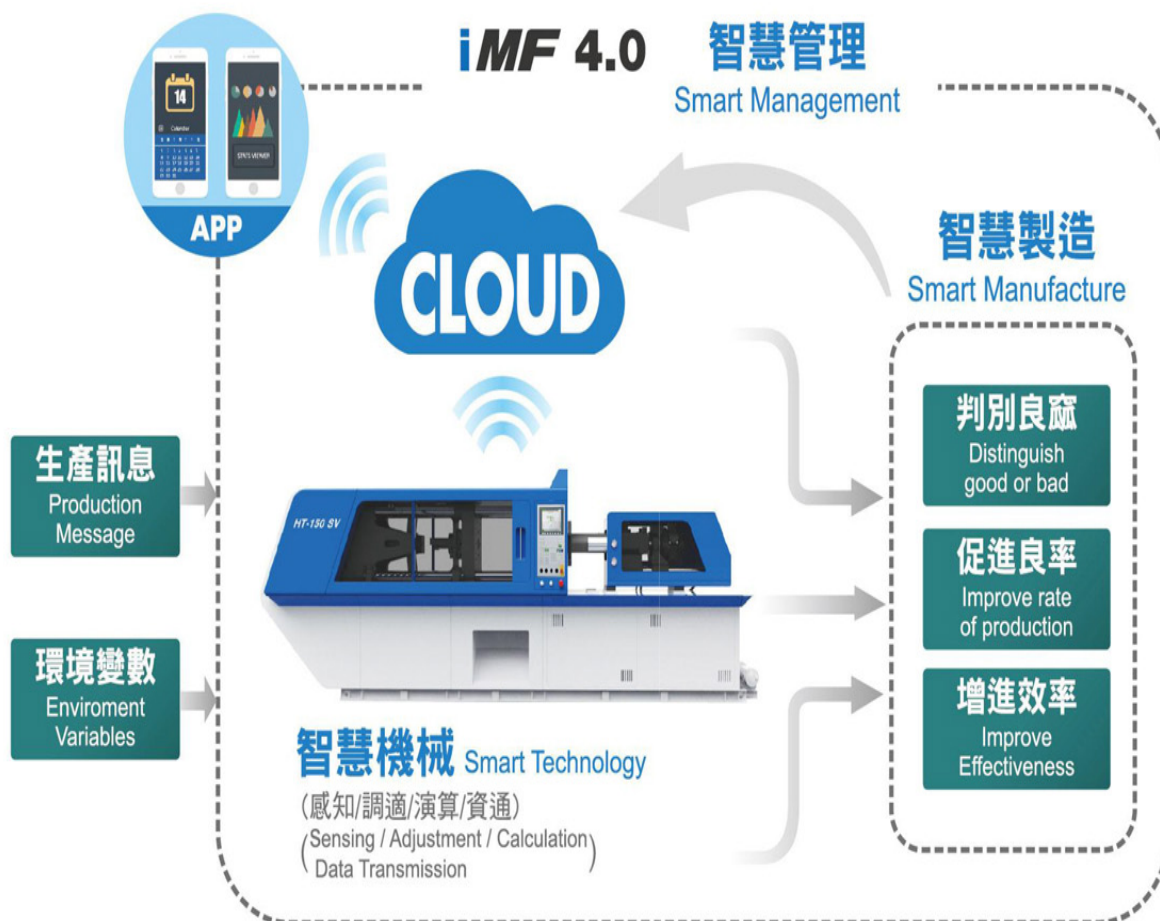
### System Introduction

**Stabilization** - The IMM has adaptive control to meet the slight fluctuations of molding condition.

**Optimization** - Applying process quality sensor monitoring to improve the yield and reduce waste.

**Automation** - The IMM and peripherals communicate with each other to autonomously control the process quality.

**Intellectualization** - Using smart and remote monitoring to plan maintenance in advance, and reduce unexpected downtime.





# CT-300

## 全電式射出成型機 All-Electric IMM

### 機台規格 Specification

|      |                 |               |
|------|-----------------|---------------|
| 機器型號 | Machine Model   | CT-300        |
| 鎖模力  | Clamping Force  | 300 tonf      |
| 螺桿直徑 | Screw Diameter  | 55 mm         |
| 射出量  | Shot Weight     | 416 gram (PP) |
| 射出速度 | Injection Speed | 250 mm/sec    |
| 大柱內距 | Tie Bar Spacing | 720 x 720 mm  |

### 機器特點 Feature

- 具備良好環保性能之低噪音、低振動、潔淨與節能等特點。
- 搭載智慧化流動平衡模組監控系統，熔體流動波前差異自動補償，提高各穴產品品質一致性。
- 控制器具擴充性及EtherCAT與Modbus通訊介面，快速整合相同介面輔機，達到統一集中管理並提升生產效能。
- With advantages of low noise, low vibration, low pollution, and low energy cost.
- Adopting intelligent flow balancing control system, the melt differences in cavities would be compensated automatically, which increases the consistency.
- Controller via EtherCAT and Modbus communication interface would increase the integration and production efficiency.

### 系統搭載 System Equipped (optional)

#### iMF4.0 智慧製造工廠 Intelligent ManuFactory

大柱鎖模力監視系統 Tie bar clamping force monitor system  
智慧化流動平衡系統 Intelligent flow balance system

## 模內貼標生產系統 In Mold Labeling Molding System



### 產品 Product

|      |            |              |               |
|------|------------|--------------|---------------|
| 名稱   | Part       | 冰淇淋杯(100ml)  | Ice Cream Cup |
| 肉厚   | Thickness  | 0.45 mm      |               |
| 重量   | Weight     | 6g / pc      |               |
| 模穴數  | Cavities   | 4+4          |               |
| 原料   | Material   | PP (RJ766MO) |               |
| 成型時間 | Cycle Time | 5 sec        |               |

### 模內貼標系統規格 IML Specification

|      |                   |                    |
|------|-------------------|--------------------|
| 供紙能力 | Capability        | 5,760 pcs/hr       |
| 供紙張數 | Label Q'ty Supply | 4+4 pcs/time       |
| 卡匣容量 | Total Label Q'ty  | 1,000 pcs/cassette |
| 標籤厚度 | Label Thickness   | 60 μ (0.06mm)      |

### 合作夥伴 Project Partners

|      |                  |            |                            |
|------|------------------|------------|----------------------------|
| 堆疊模  | Stack Mold       | 德靈         | CMN                        |
| 熱澆道  | Hot Runner       | 長新         | ARICO                      |
| 機械手  | Robot System     | 威得客        | VETEC                      |
| 原料   | Material         | 博祿         | Borouge                    |
| 送料系統 | Material Feeding | 信易         | SHINI                      |
| 冷凍機  | Chiller          | 玉鼎         | YUTING                     |
| 標籤   | Label            | 中域         | YZY                        |
|      |                  | Verstraete | Verstraete in mould labels |
| 感測器  | Sensor           | 雙葉         | Futaba                     |
|      |                  | 科材         | SENSORMATE                 |



## FA-160

### 曲肘油壓射出成型機

### Advanced Toggle Hydraulic IMM

#### 機台規格 Specification

|      |                 |               |
|------|-----------------|---------------|
| 機器型號 | Machine Model   | FA-160        |
| 鎖模力  | Clamping Force  | 160 tonf      |
| 螺桿直徑 | Screw Diameter  | 45 mm         |
| 射出量  | Shot Weight     | 232 gram (PP) |
| 射出速度 | Injection Speed | 120 mm/sec    |
| 大柱內距 | Tie Bar Spacing | 470 x 470 mm  |

#### 機器特點 Feature

- 射速提升20%以上，並採射出線軌與座進前拉設計，射出同步且穩定。
- 車壁結構強度提升30%，開關模運動平滑控制優化，成型穩定並延長設備壽命。
- 高效能伺服節能油泵達GB一級節能驗證，系統壓力提升至160bar。
- The injection speed is increased by more than 20%; the linear guide and forward pull design are adopted for injection carriage to improve the synchronism and stability.
- Strength of the platen design reinforced by 30%, and the mold closing-opening smoothness control optimized makes molding stable and machine lifetime extended.
- The high-performance servo energy-saving oil pump achieves GB first-class verification, and the system pressure is enhanced to 160 bar.

#### 系統搭載 System Equipped (optional)

#### IMF4.0 智慧製造工廠 Intelligent ManuFactory

大柱鎖模力監視系統 Tie bar clamping force monitor system

熔體變異適應控制 Adaptive control technology for viscosity variation inhibition of melt

模具冷卻流量與溫度監視系統 Mold cooling flow and temperature monitoring system

## 新世代智慧成型系統 New Generation Molding System

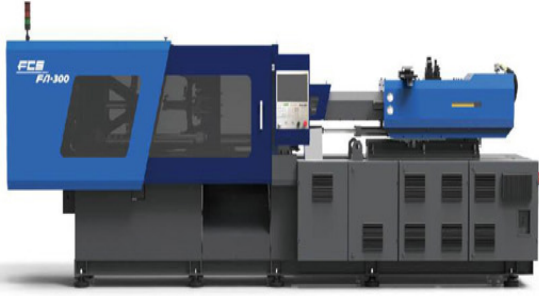


#### 產品 Product

|      |            |                  |              |
|------|------------|------------------|--------------|
| 名稱   | Part       | 多功能收納盒           | Stacking Bin |
| 尺寸   | Size       | 145 x 95 x 63 mm |              |
| 肉厚   | Thickness  | 1.5 mm           |              |
| 重量   | Weight     | 45g / pc         |              |
| 模穴數  | Cavities   | 2                |              |
| 原料   | Material   | PP (BH975MO)     |              |
| 成型時間 | Cycle Time | 15 sec           |              |

#### 合作夥伴 Project Partners

|      |                  |     |  |            |
|------|------------------|-----|--|------------|
| 模具   | Mold Supplier    | 金億唐 |  | CYT        |
| 熱澆道  | Hot Runner       | 契益  |  | MoldPower  |
| 機械手  | Robot System     | 金爪  |  | TENSO      |
| 原料   | Material         | 博祿  |  | Borouge    |
| 色母   | Master Batch     | 原紳  |  | YUANG SHEN |
| 輸送帶  | Conveyer Belt    | 麗鯨  |  | LI JUNG    |
| 供料系統 | Material Feeding | 信易  |  | SHINI      |
| 冷凍機  | Chiller          | 玉鼎  |  | YUTING     |
| 感測器  | Sensor           | 雙葉  |  | Futaba     |
|      |                  | 科材  |  | SENSORMATE |
|      |                  | 勝維  |  | SHENG WAI  |



# FA-300

## 曲肘油壓射出成型機 Advanced Toggle Hydraulic IMM

### 機台規格 Specification

|      |                 |               |
|------|-----------------|---------------|
| 機器型號 | Machine Model   | FA-300        |
| 鎖模力  | Clamping Force  | 300 tonf      |
| 螺桿直徑 | Screw Diameter  | 60 mm         |
| 射出量  | Shot Weight     | 669 gram (PS) |
| 射出速度 | Injection Speed | 110 mm/sec    |
| 大柱內距 | Tie Bar Spacing | 660 x 630 mm  |

FA機台特點請參閱第5頁。Please refer to page 5 for FA feature.

### 微發泡成型特點 MuCell® Feature

- 提高塑料流動性，進而減少射出壓力與降低鎖模力。
- 產品透過發泡結構達到減重效果。
- 射出壓力與鎖模力降低，可減少驅動單元負荷；塑料用量降低亦可節省儲料與加熱消耗功率。
- 免去保壓時間；且塑料量減少，加工熱量降低從而縮短冷卻時間與成型週期。
- The injection pressure and clamping force reduced because the plastic melt flowing is improved.
- The product weight reduced by molding mixed with fizzy particles.
- Lower injecting pressure and clamping force decreases the load of driver units; lower plastic material usage required less drying and heating.
- The holding process is not necessary, and the heating energy, cooling time and amount of the material used are also decreased.

### 系統搭載 System Equipped (optional)

**iMF4.0** 智慧製造工廠 Intelligent ManuFactory

大柱鎖模力監視系統 Tie bar clamping force monitor system

超臨界進氣系統 Supercritical fluid delivery system

## 微發泡成型系統 MuCell® Molding System



### 產品 Product

|      |            |              |                 |
|------|------------|--------------|-----------------|
| 名稱   | Part       | 擴鞋器          | Shoe Stretchers |
| 肉厚   | Thickness  | 3 mm         |                 |
| 重量   | Weight     | 60g / pc     |                 |
| 模穴數  | Cavities   | 1+1+1        |                 |
| 原料   | Material   | ABS (757J01) |                 |
| 成型時間 | Cycle Time | 80 sec       |                 |

### 進氣系統 SCF Delivery System (T-200)

|        |                    |                      |
|--------|--------------------|----------------------|
| 適用螺桿直徑 | Plasticizing Screw | 40 - 70 mm           |
| 射出量    | Shot size          | 120 - 600 gram       |
| 設備尺寸   | Overall Dimension  | 550 x 630 x 1,560 mm |
| 重量     | Weight             | 215 kg               |

### 合作夥伴 Project Partners

|      |                |    |            |
|------|----------------|----|------------|
| 模具   | Mold Supplier  | 卓細 | TREXEL     |
| 機械手  | Robot System   | 金爪 | TENSO      |
| 原料   | Material       | 奇美 | CHIMEI     |
| 輸送帶  | Conveyer Belt  | 麗鯨 | LI JUNG    |
| 乾燥機  | Dryer          | 晏邦 | YANN BANG  |
| 急冷急熱 | Heat & Cool    | 松井 | MATSUI     |
| 冷凍機  | Chiller        | 玉鼎 | YUTING     |
| 感測器  | Sensor         | 科材 | SENSORMATE |
| 空壓機  | Air Compressor | 復盛 | FUSHENG    |

# 微發泡射出成型系統

## MuCell®

# Foaming Injection Molding System

降低成本

Cost Reduction

永續性高  
Sustainability

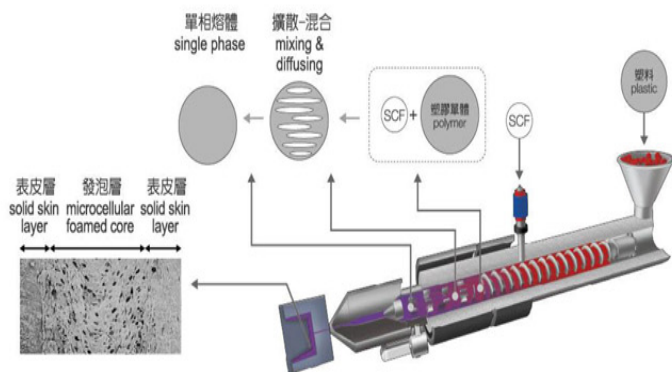
造型自由

Design Freedom

開發期短

Faster to market

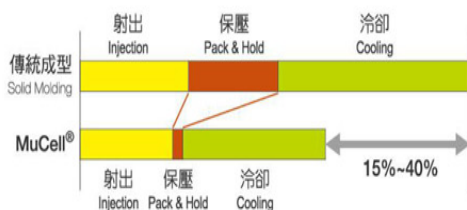
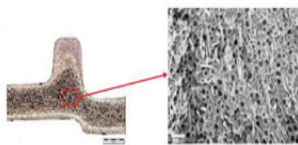
## 微發泡射出原理 Principals



## MuCell® 製程設備 Implementation



## MuCell® 應用優勢 Advantages



- 減重(輕量化)  
Weight reduction
- 降低鎖模力需求  
Machine clamping force reduction
- 縮短成型週期  
Cycle time reduction
- 減少成型不良問題  
Sustaintially reduce warpage & dimensional defect

## 應用實例 Application



筆記頁  
Note



 **TAIPEI PLAS**  
AUG. 15-19  
Booth **J0518**



**FCS**  
www.fcs.com.tw

**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 • E-mail: fcsco@fcs.com.tw

FAX: +886-6-5951129

### **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 • E-mail: cdg@fcs.com.tw

FAX: +86-769-83181903

### **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 • E-mail: cnb@fcs.com.tw

FAX: +86-574-56138600

