ISO Certificate No. 9AV1151

Global 70 Sales Service Offices

目錄編號：PET/CAP-2023 Cat. 202303

KEENPRO®
PET BOTTLE SOLUTION

PET SERIES

整廠設備

ONE-STOP TURNKEY SOLUTION

KEENPRO®

www.keen-pro.com

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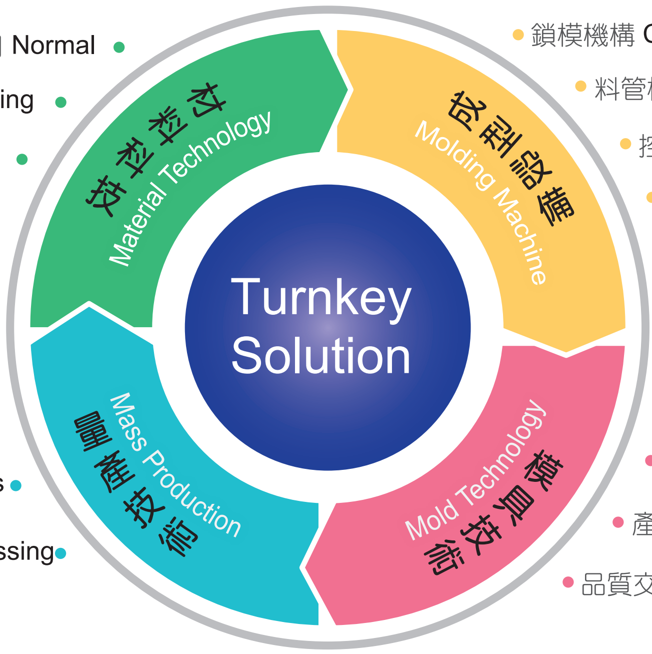
PET Series

整廠規劃服務 Turnkey Solution Service

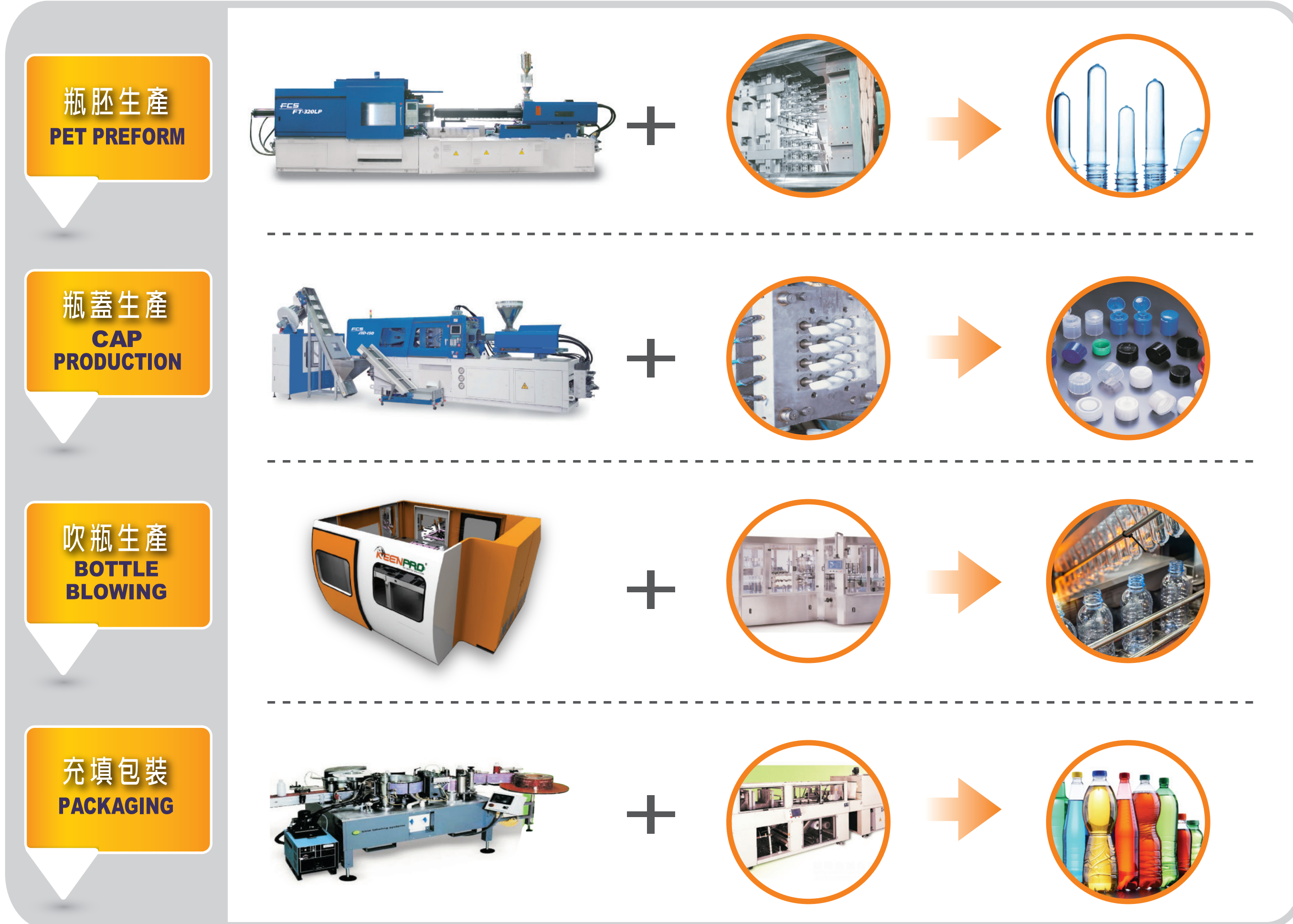
我們專注本業，深耕市場，設備品質已達國際水準並獲得客戶良好的口碑與品牌認同度。近年更致力於發展整廠生產設備規劃輸出項目，依據顧客的生產需求，忠實展開工程規劃並有效垂直整合上下游產業，從設備、模具、自動化週邊、量產技術至廠房配置，提供客戶水、飲料、洗劑、油瓶的整廠服務，進行嚴謹的開發整合與輸出移轉程序，可滿足顧客一站購足的需求並有效縮短交期、實現及時量產的目標。

We have been in the industry of machines for many decades. Our machines had met international standard and earned good reputations from our customers. In recent years, we devoted in developing turnkey project, that suitable for water, beverage, detergent, edible oil production line, in order to satisfy customers' demands of one stop shopping, short lead time, and achievement of time to volume. Our Whole Plant Export Department is able to implement engineering plans with integration abilities for factory layout planning, equipment, molds, automation peripherals, and mass production technique.



- 泛用 Normal
- 工程 Engineering
- 特殊 Particular
- 鎖模機構 Clamping mechanism
- 料管模組 Screw barrel module
- 控制單元 Control unit
- 節能環保 Energy saving & environmental protection
- 遠端監控 Remote monitoring
- Know-How
- 輔助週邊 Peripherals
- 二次製程 2nd Processing
- 核心技術 Core technology
- 產業趨勢 Industry trends
- 品質交期 Quality & delivery

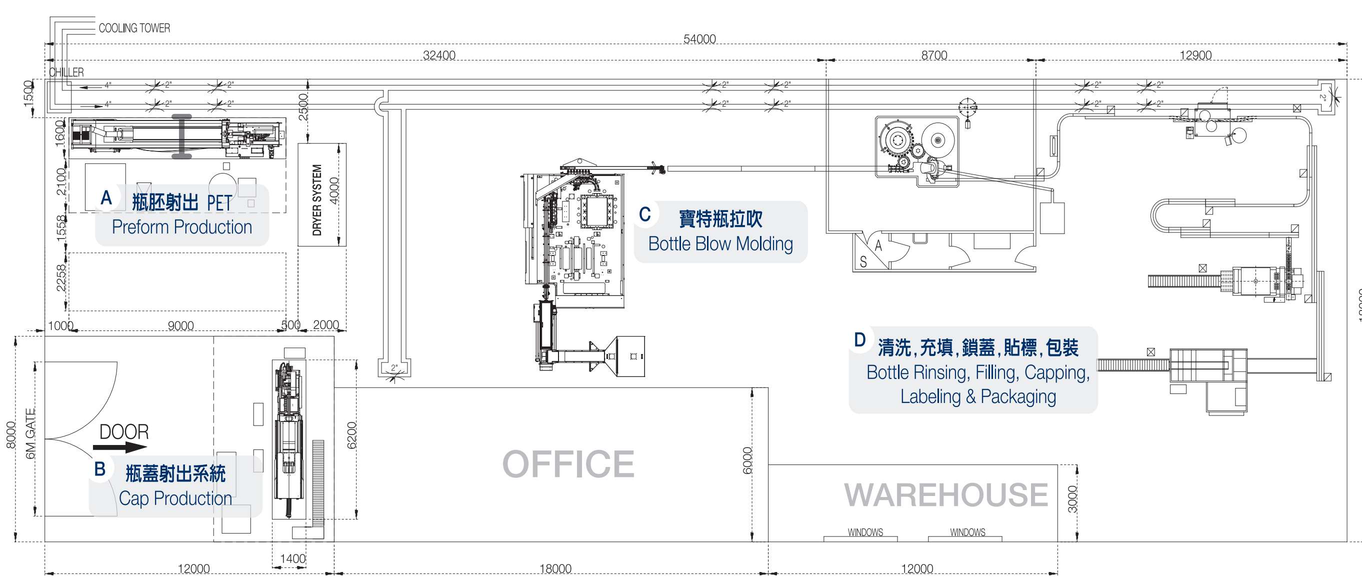
PET瓶裝飲料生產線 Beverage Production Line of PET Bottles



整廠規劃流程圖 Flow Chart of Turnkey Solution

專案規劃 Project Proposal	工程檢討 Engineering Review	整合測試 Integrated Testing	售後服務 After Sales Service
• 掌握客戶需求 Understand Customer Needs • 報價 Quotation	• 成品設計 Product Design • 模具 & 設備開發 Mold & Equipment Manufacture	• 裝機 Installation • 教育訓練 Training	• 線上諮詢 Online Customer Service • 零件供應與維修 Parts Supply & Repair

生產流程動線設計 Production Flow Design



瓶胚專用生產系統 PET Preform Production System

本機特性與用途 PET Preform Injection Molding Machine

適用於礦泉水、碳酸飲料、果汁、食用油、藥罐及洗劑、化妝品包裝容器等產品瓶胚之成型加工機械。

- 機種範圍廣泛，可用於生產各式PET瓶胚，如:水瓶、熱充填瓶、油瓶、廣口瓶及5加侖大型瓶胚等。
- 產品配套完整，可提供除濕、乾燥、抽料、冷凍、模具、熱澆道等自動化週邊設備之整廠規劃。
- 特殊射出結構設計，適於PET原料之塑化成型。
- 採用PID溫度控制，具螺桿冷間起動限制、斷線偵測、保溫等功能，能控制溫度誤差±1°C內，有利成型穩定性。

PET preform injection molding machine can be applied to manufacture bottles for mineral water, carbonated drink, juice, cooking oil, medicine, and cosmetics.

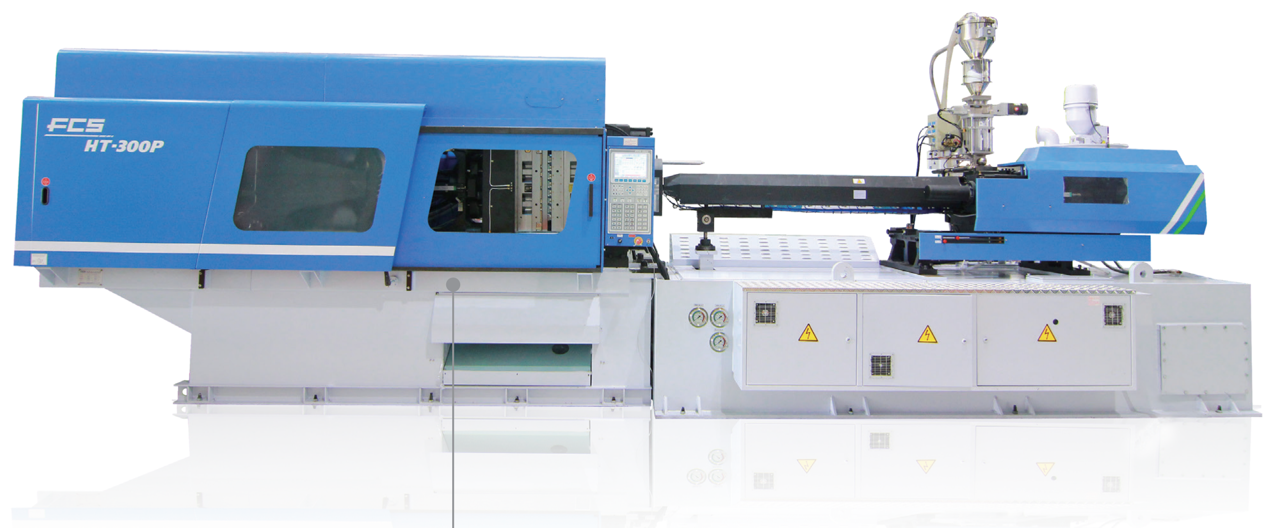
- This series is great for producing various PET preforms, such as water bottle, hot filling bottle, cooking oil bottle, wide mouth bottle, and 5-gallon large perform, etc.
- Our turnkey solution can supply a complete set of peripherals, for example, dehumidifier, dryer, loader, chiller, mold, hot runner system, and etc.
- Special injection unit design, benefit for PET plasticizing.
- Temperature tolerance is kept within ±1°C by using PID temperature control, which has limitations for screw cold starts, broken wire detector, and temperature preservation.

除露機 Dehumidifier

- 提供模具必要的除露控制，維持乾燥環境使成品達到最佳成型品質。
- 富強鑫可為不同規格的生產條件選配適合的除露設備。
- Control in-mold moisture for optimal processing quality.
- FCS can provide a suitable dehumidifier based on production requirements.

冰水機 Chiller

- 提供瓶胚快速生產的必要冷卻條件，模溫設定介於 8~12° C。
- 富強鑫可為不同規格的生產條件選配適合的冰水機。
- Provide fast cooling for the mold with temperature between 8~12° C.
- FCS can provide a suitable chiller based on production requirements.



瓶胚模具(詳見P5-P7)
PET Preform Mold (P5-P7)

◆ 週邊設備視客戶生產需求規劃，產線亦可搭配中央供料系統。
◆ Peripherals will be selected according to customer's production demand, central resin conveying systems can also be applied.

Preform Injection Molding Machine Spec. 瓶胚專用射出機規格表

ITEM		UNIT	HT-200P	HT-250P	HT-300P	HT-350P	HT-400P	HT-600P	HT-750P
射出單元 Injection unit	螺桿直徑 Screw diameter	mm	55	70	90	90	100	115	130
	射出行程 Screw stroke	mm	200	240	306	306	340	420	430
	理論射出容積 Theoretical shot volume	cm^3	475	923	1946	1946	2669	4360	5705
	理論射出量 Shot weight of injection (PET)	gram	432	1015	2140	2140	2936	4796	6275
	射出壓力 Injection pressure	kgf/cm^2	1166	1276	1133	1133	1128	1049	1045
	射出速度 Injection speed	mm/sec	127	124	119	119	119	118	121
	射出率 Injection rate	cm^3/sec	302	478	759	759	933	1228	1607
夾模單元 Mold clamping unit	夾模行程 Mold clamping stroke	mm	510	550	600	645	660	900	1000
	模厚 Mold thickness	mm	200~610	200~650	200~650	200~675	250~700	300~1100	350~1100
	大柱內距 Tie bar spacing (HxV)	mm	505x505	555x555	605x605	680x680	730x730	900x900	980x980
	模盤尺寸 Mold platen (HxV)	mm	745x745	820x820	894x894	969x969	1080x1080	1310x1310	1440x1440
	托模行程 Ejector stroke	mm	130	150	185	200	200	220	240
	托模力 Ejector force	tonf	4.0	7.9	11.0	15.8	21.5	33.7	44.0
電氣單元 Electrical equipment	最大油泵動力 Max. pump driving motor	kW	59	77	100	110	155	189	230
	電熱容量 Heater capacity	kW	18	27.6	48	48	84	100	120
其他 Others	適用模具 Suitable mold	cavity	8	16	24~32	32~48	48	72	96
	機械尺寸 Machine dimensions (LxWxH)	mm	6250x1480x1830	7200x1550x1930	9000x2100x2300	9300x2100x2500	9500x2200x2950	11000x2300x3200	11550x2400x3400

1. 本型錄之射出量按PET比重1.3計算。
2. 模具穴數，以牙口30mm以下為基準。
3. 因產品不斷研究改良，設計變更時恕不另作通知。

1. The shot weight is based on PET at specific gravity of 1.3.
2. The number of cavity is based on the size of the neck under 30mm.
3. Due to continuous improvements, we reserve the right to amend any of the above specifications without prior notice.

瓶胚模外冷卻設備 PET Preform External Cooling System

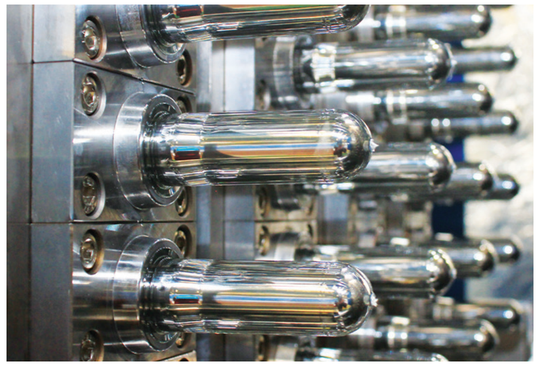
- 多工位設計,快速取出成品並進行模外冷卻。
- 有效提升10~20 % 之生產效率。
- Multi-stage design, easier for taking out preforms and cooling externally.
- Effectively increase 10~20 % productivity.

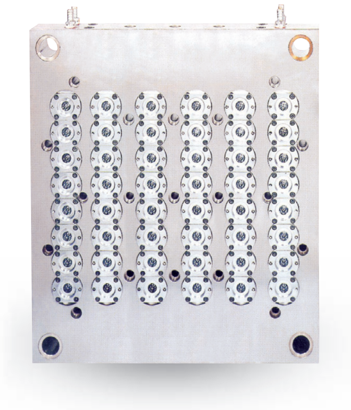
真空供料系統 Vacuum Feeder

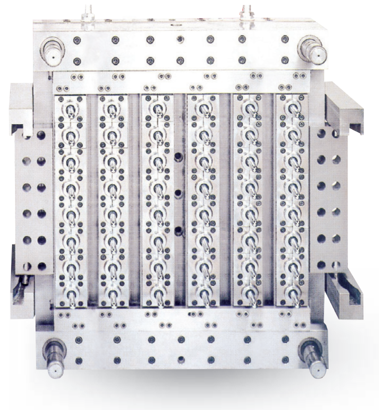
- 以真空供料方式，可提高射出成品的表面效果，特別適合透明件。
- 大幅縮短與降低塑料預熱乾燥的時間與溫度，達到節能的效果。
- The excellent product surface by means of vacuum feeding,suitable for transparent product.
- Energy saving by decreasing the time and temperature needed for drying the plastic material.

PET Series

瓶胚專用生產系統 PET Preform Production System







瓶胚規格 Preform Specifications

- 容量從200毫升到5加侖
- 穴數最多可達96穴
- 以48穴16克瓶胚為例，每小時產量可大於12,000個

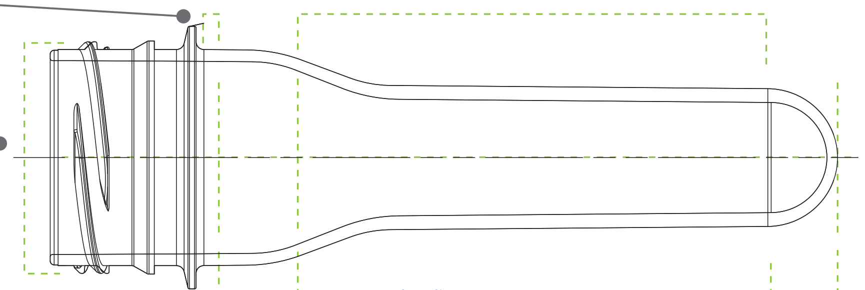
- For PET bottles range from 200 ml to 5 gallon.
- Maximum number of cavities : 96.
- Take a 48-cavity 16g preform mold as the example, hourly production can reach at least 12,000 pieces.

瓶胚設計 Preform Design

- 良好的瓶胚延伸比設計，厚度更薄、瓶身吹塑自由度更高。
- Great stretch ratio design for preforms which has high degree of freedom for bottle blow molding.

支撐環下方 Part below support ring
直徑及厚度根據瓶口定義
Diameter and wall thickness are defined by neck finish.

瓶 身 Body
直徑、長度及厚度根據瓶身外型、尺寸、應用及重量定義
Diameter, length and wall thickness are defined by bottle shape, dimensions, application, and weight.



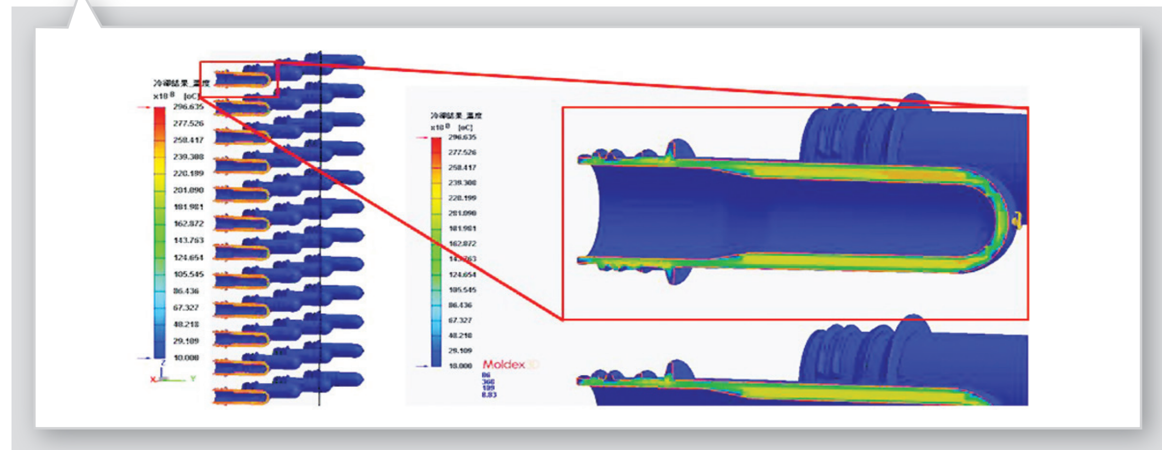
瓶口螺紋 Neck
根據瓶子定義
Defined by bottle.

錐 體 Tapper
長度根據瓶身頸部長度定義
Length is defined by the length of bottle shoulder.

半球區 Base
直徑及厚度根據胚身及應用定義
Diameter and wall thickness are defined by preform body and application.

瓶胚模具-冷卻效率分析 Preform Mold - Cooling Analysis

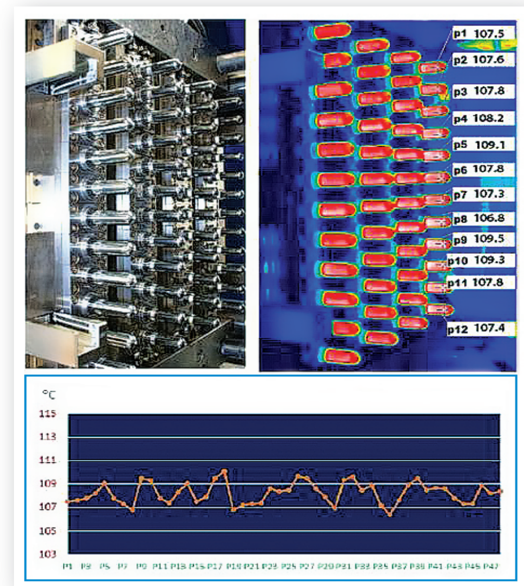
- 導入Moldex3D模流分析，冷卻效率優化設計
- Moldex3D CAE analysis is utilized to optimize the cooling efficiency of mold.



瓶胚模具-優良的水路設計 Preform Mold - Excellent Water Channel Design

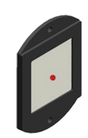
全面積式自動偵測熱顯像儀
Thermal imaging instrument

- 模具冷卻能力與均齊性，是瓶胚系統長時間快速/穩定生產的關鍵指標。
- Cooling ability and preform consistency are the key indicators of a fast / stable preform production system.



- 48穴溫差±1.5°C. / 48 cav. Temp. variation ±1.5°C.

瓶胚模具-頂出機構/雷射偵測（選配） Preform Mold - Eject Mechanism/ Laser Detector(Optional)

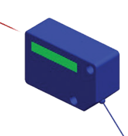


反射器:R6、R7
Reflector : R6、R7

最大檢測距離:8m
Max. detection dist. : 8m

光點直徑:約1.5mm
Light spot diameter : 1.5mm

檢測距離在1m處
Detection dist. at 1m

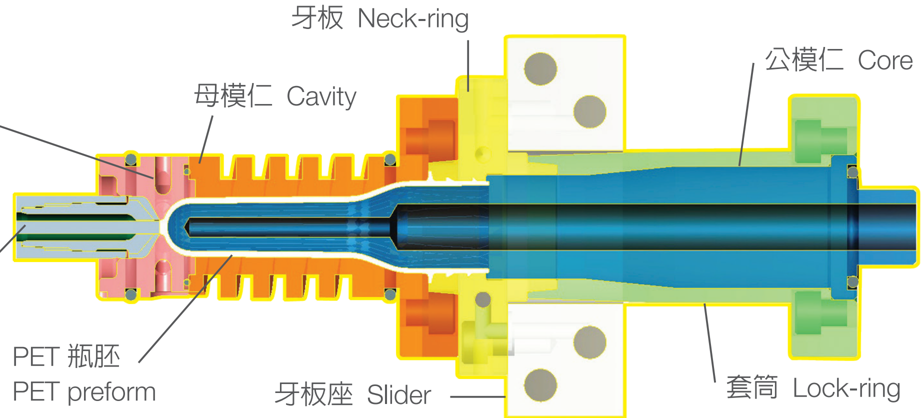


- 頂出裝置採用滑軌型或AY型頂出，並加裝紅外線偵測感應器，確保成品完全掉落。
- To ensure the products can be ejected fully, slide or AY type ejector device is applied. Infrared detector is also installed.

PET Series

瓶胚專用生產系統 PET Preform Production System

瓶胚模具–標準堆疊設計 Preform Mold - Standard Stacking Design



高品質瓶胚模具 High Quality Preform Mold

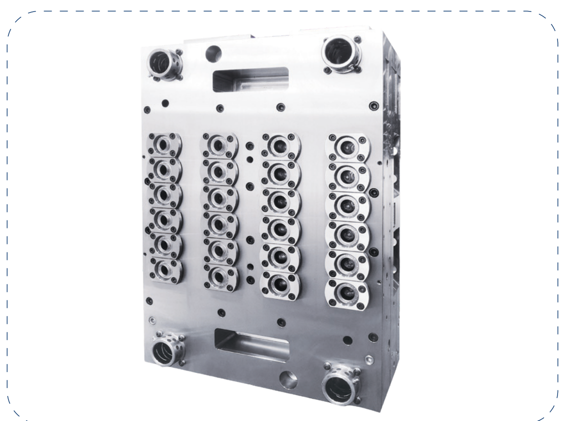
- 不鏽鋼材質
- 低AA(乙醛)值
- 尺寸穩定、同心度高、成品重量一致
- 更短的成型週期、可靠的性能和更高的良率
- 無結晶化、無刮痕、無分模線毛邊、表面品質高

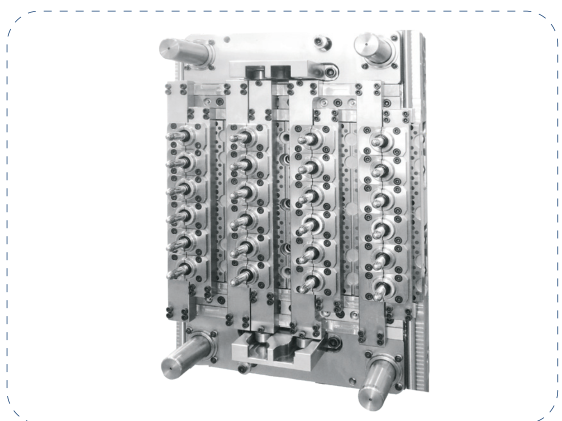
- Material is stainless steel.
- The preform comes out with low AA (acetaldehyde) value.
- Stable dimensions, high concentricity, and consistent preform weight .
- Shorter cycle time, reliable performance with high yield.
- No crystallization, no scratch, no flash, and high surface quality.

熱澆道&熱半模特點 Features of Hot Runner & Manifold

- 平衡熱流道設計、充填時間更快、週期時間較短
- 低能源消耗、降低保壓時間及壓力、降低保養維護成本
- PID溫度控制、閥澆口&熱流板獨立溫控，降低熱降解產生之AA值
- 熱澆道、熱半模零組件與國外知名品牌一致、定位精度高，拆裝快速

- Balanced manifold design, faster filling and shorter cycle time.
- Low energy consumption, decrease packing time and pressure, low maintenance costs.
- PID temperature control, independent tip & manifold control, benefit for lowing AA values.
- Hot runner & manifold are comparable with industrial well-known brands, high precision and easy disassembly.

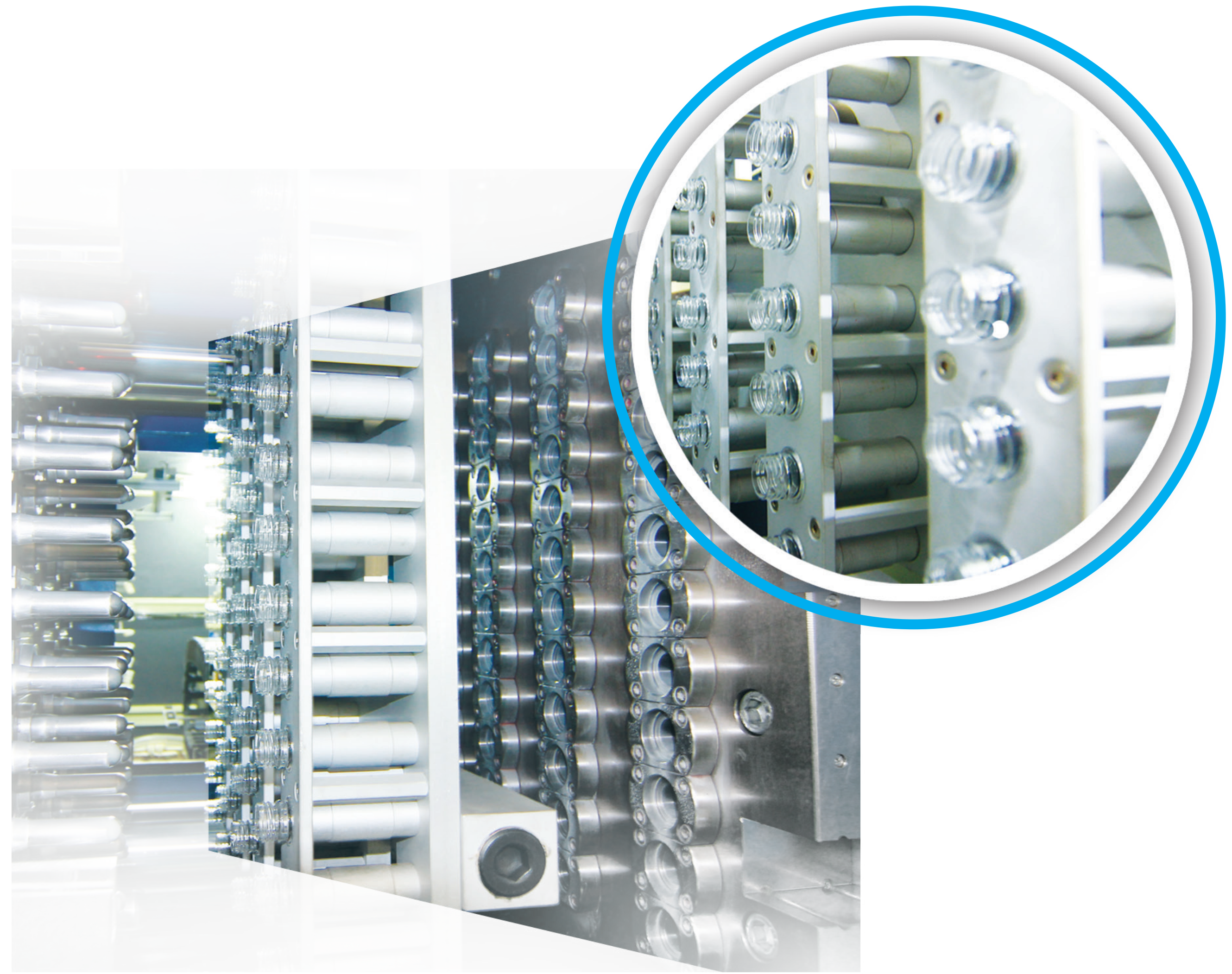




瓶胚模外冷卻設備 Preform External Cooling System

- 觸控式螢幕介面
- 預留週邊配合輸出、輸入功能
- 多段式速度控制，最佳取出效果
- 自我偵測系統，顯示內外部狀況
- 配合分離式除露機，確保冷凍效果
- 校位方便、速度快、定位準、可靠度高
- 多工位模外冷卻有效提高生產效率30%～50%
- 成品於模外冷卻，減少模內冷卻時間及成型週期
- 機械手確保成品完全取出，防止成品刮傷碰撞及模具損傷

- Adopt touch panel interface.
- Reserved peripheral output and input functions.
- Multiple speed control for optimal effect.
- Self-detected system for internal and external conditions.
- Match with a dehumidifier to ensure cooling effect.
- Easy adjustment, fast speed, accurate positioning, highly reliable.
- Multi-stage cooling design, effectively boots productivity by 30%~50%.
- External cooling mechanism, which can reduce in-mold cooling period and cycle time.
- Products are taken out by robot, preform scratches and mold damages can be prevented.



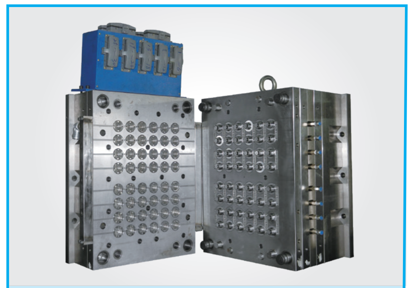
CAP Series

超快速瓶蓋生產系統 CAP Production System

富強鑫公司成功開發「CAP系列」超高速瓶蓋生產系統，目前推出的「28mm/30mm-48cav瓶蓋」生產系統，每小時產能可達26,000個以上，生產效率大幅提升。

FCS successfully developed the "Ultra-high production rate CAP series". A 28mm/30mm 48-cavity mold can produce at least 26,000 caps per hour.

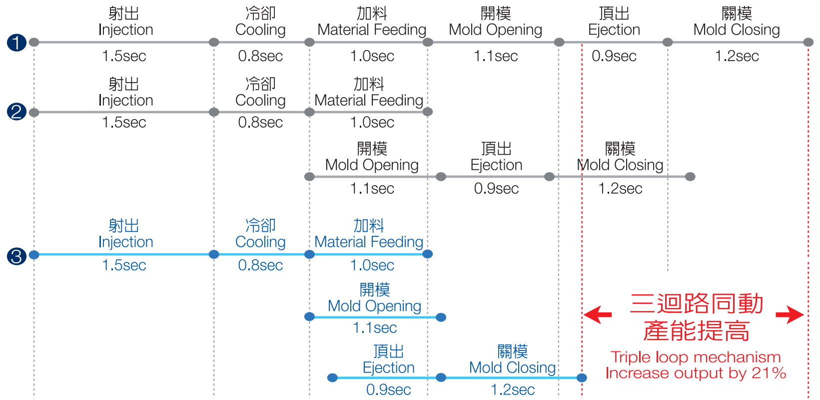
超快速瓶蓋生產系統 Ultra-High Production Rate for CAP System



熱澆道瓶蓋快速模
Hot Runner Cap Mold

可生產一模48穴
礦泉水瓶蓋
48-cavity cap mold for bottled water

【迴路設計示意圖】Diagram of Loop Design



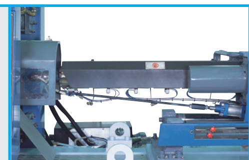
- AD系列三迴路快速射出機比一般單迴路機種成型週期縮短20%以上
- Cycle time of AD Series-Triple Loop High Speed Injection Molding Machine is 20% shorter than regular single loop injection molding machine's.

一體式除露機
Dehumidifier

直接整合於射出機
Directly placed on the IMM

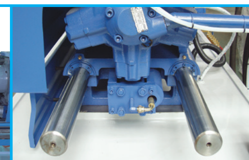
FCS-3000 網路型控制器
FCS-3000 Controller

系統反應速率1.25ms
System reaction time is 1.25ms



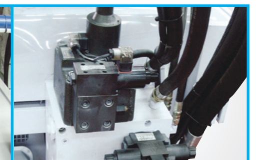
高性能止逆射嘴
Shut-Off Nozzle

止逆射嘴設計、100%防漏料
100% leakage prevention



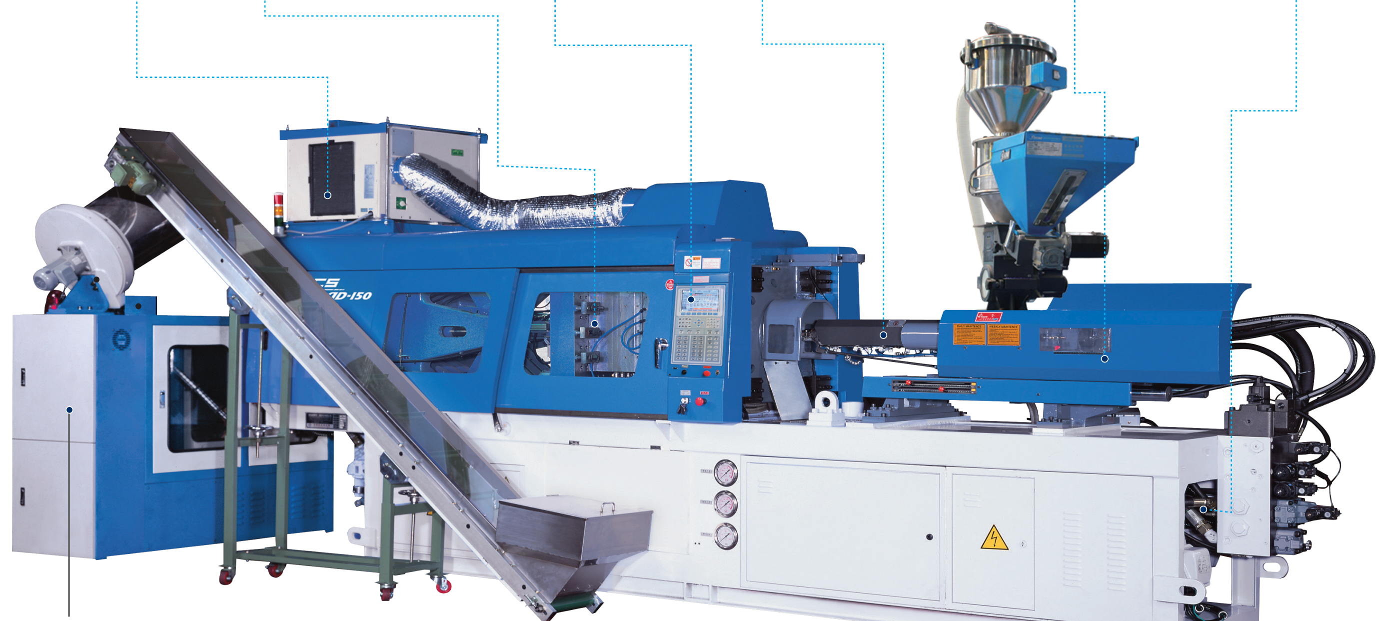
新式專利射移結構
New Injection Carriage

避免料管前傾及射嘴上翹
Prevent barrel tilting and nozzle raising



高效能三迴路設計
Triple Loop Hydraulic System

同時進料、開模與托模，大幅縮短成型週期
Reduce cycle time



切蓋機組
Cap Cutting Machine

AD 系列三迴路快速射出機
AD Series-Triple Loop High Speed Injection Molding Machine

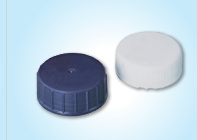
CAP Series

CAP Injection Molding Machine Spec. 瓶蓋專用射出機規格表

ITEM		UNIT	AD-150	AD-250	AD-350
射出單元 Injection unit	螺桿直徑 Screw diameter	mm	50	62	75
	射出行程 Screw stroke	mm	200	240	306
	理論射出容積 Theoretical shot volume	cm^3	393	724	1351
	理論射出量 Shot weight of injection(PS)	gram	357	659	1230
	射出壓力 Injection pressure	kgf/cm^2	1411	1626	1631
	射出速度 Injection speed	mm/sec	121	122	121
	射出率 Injection rate	cm^3/sec	238	367	535
夾模單元 Mold clamping unit	閉模力 Mold clamping force	tonf	150	250	350
	夾模行程 Mold clamping stroke	mm	460	550	645
	模厚 Mold thickness	mm	130~550	200~670	200~790
	建議最小模具尺寸 Suggested min. Mold dim. (HxV)	mm	299x299	364x364	429x429
	大柱內距 Tie bar spacing (HxV)	mm	460x460	555x555	680x680
	模盤尺寸 Mold Platen (HxV)	mm	670x670	820x820	969x969
	托模行程 Ejector stroke	mm	110	150	200
	托模力 Ejector force	tonf	4.0	5.4	10.9
電氣單元 Electrical equipment	伺服加料馬達 Servo motor	kW	33.3	50.0	60.0
	電機馬達 Pump driving motor	HP(kW)	30(22.4)	60(44.8)	80(59.7)
	電熱容量 Heater capacity	kW	11.1	16.0	23.0
其他 Others	適用模具 Suitable mold	cavity	16~32	24~48	32~64
	機械尺寸 Machine dimensions (LxWxH)	mm	5655x1380x2024	6110x1600x2100	7600x1730x2070

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 reference only. Due to continuous improvements, we reserve the right to amend any of the above specification without prior notice.

適用本生產系統的瓶蓋規格 Cap Specifications

規格 Specifications	28mm, 30mm	38mm	48mm	60mm	特殊瓶蓋 Special Caps	內墊滴塑瓶蓋 Inner pad spot-forming of cap
成品圖 Samples						
適用範圍	350cc, 600cc 1250cc,1500cc, 2000cc 礦泉水、果汁、碳酸飲料 市場瓶蓋需求主流	350cc, 600cc 1250cc,1500cc, 2000cc 礦泉水、果汁、調味醬汁、調味料	1250cc, 1500cc 2000cc, 5000cc 礦泉水、調味料、糖果罐	2000cc,5000cc 礦泉水、調味料、糖果罐、餅乾罐	一般皆有設計專利權，依客戶需求而變異。	350cc,600cc,1250cc 1500cc,2000cc 碳酸飲料
Application	Mineral water, Fruit juice, Carbonated drinks The most popular cap design on the market	Mineral water, Fruit juice, Sauces	Mineral water, Sauces, Candy can	Mineral water, Sauces, Candy can, Cookie pot	Cap design will be based on customer request	Carbonated drinks

全自動PET吹瓶機 PET Stretch Blow Molding Machine

金展公司在研發、產製、品質、銷售、受訓、售服都可以提供全方位即時性服務並推展出全球最節能的PET全自動吹瓶機、牙口結晶設備、整廠設備規劃。金展公司團隊生產、組裝、檢驗依據ISO9001:2008品質管理系統和CE安全規範，以確保產品品質量穩定性及安全性。金展公司以環保、節能、高速、輕量化、佔地面積等PET產業發展趨勢，推展EM、LM、CR系列，規格齊全符合客戶多樣化的需要，飲料廠及水廠，可以將吹瓶機穩定的直接連線灌裝機，發揮最大投資效益。

KEENPRO team with R&D, manufacture, quality, marketing, training, and quick services to develop the world most energy saving Full Automatic PET Blow Molding Machine, Preform Neck Crystallized Machine, and Turnkey Project. KEENPRO manufacture, assembly, inspection based on ISO9001:2008 quality management system and CE regulation rule. KEENPRO through environmental protection, energy saving, high speed, light weight, compact space development trend, present EM, LM, CR series full specification of blowing machine, suitable for customer diversity requirement, can directly connect to filling machine, to maximize investment revenue.

吹瓶機類型 Blow Molding Machine Type

LM 客製型 (Customized)

- 適用於少量多樣化吹瓶行業
- 適用於厚、長、重的瓶胚
- 採用星輪式入胚
- 採用懸吊連續式集中加熱
- 採用伺服氣壓作動

- Suitable for small capacity of diversity production blowing industry.
- Suitable for thick, long and heavy perform.
- Adopt star-wheel preform infeed.
- Adopt preform hanging heating system.
- Adopt servo-pneumatic movement.

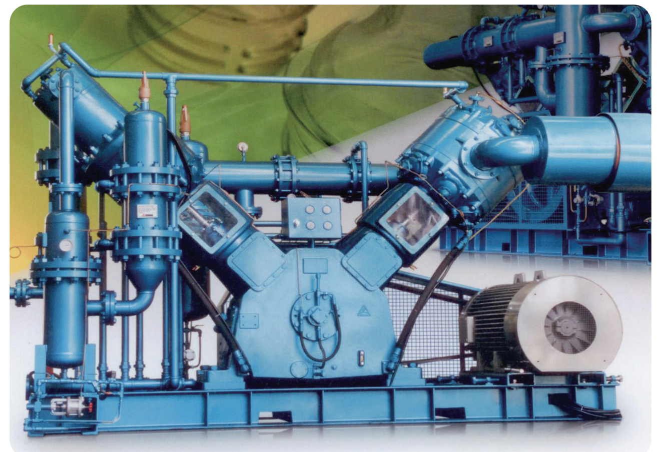
EX 經濟型 (Economic)

EM-SD 標準型 (Standard)

PET Series

Auxiliary Equipment for PET Bottle Bolowing Machine PET吹瓶機專用週邊設備

空壓機 Air Compressor



- 提供吹瓶成型的空壓源
- 依照不同規格的生產條件，選配適合的高壓型(35bar)空壓機
- 省電及低耗氣量的無油式高壓空機，可運作超過10,000hrs，再實施保養即可

- Provide blow molding of air pressure source.
- According to different specifications of the production conditions, matching suitable High pressure type (35bar) air compressor.
- The oil-free air compressor which is energy-saving & low air consumption can operate over 10,000hrs without maintenance.

冰水機 Chiller

- 提供吹瓶模具快速生產的必要冷卻條件
- 依照不同規格的生產條件，選配適合的高壓型(4bar)冰水機

- Provides the necessary cooling conditions for rapid production of blow molds.
- According to different specifications of the production conditions, to adopt the appropriate high-pressure (4bar) chiller .

冷卻水塔 Cooling Tower

- 提供冰水機及空壓機冷卻用

- Provide chiller and air compressor cooling.

EM-HS 高速型 (High-Speed)

公轉系統優勢 Transfer System

- 採用「螺桿驅動」，實現快速連續運動及無級調速。
- 穩定公轉系統採U字型軌道，滑塊只需要1/3的推動力，阻力較小。
- 玻璃纖維尼龍複材射出滑塊，受力可達945kgf。

- Using "screw drive" for fast continuous movement and variable speed.
- Stable transfer system with U-shaped track and 1/3 sling driving force, less resistance.
- Composite of glass fiber and Nylon carrier block with loading force up to 945 kgf.

PET Series

全自動PET吹瓶機 PET Stretch Blow Molding Machine

LM SERIES

型 號 Model	穴 數 Cavity NO.	理論產量 Theoretical Output	胚頭數 Preform Holder	加熱間距 Heating Pitch	瓶子間距 Cavity Pitch	瓶子容量 Bottle Volume	牙口尺寸 Preform Neck	瓶胚高度 Preform Height	瓶身直徑 Bottle Diameter	瓶身高度 Bottle Height	加熱箱數 Oven NO.	加熱功率 Heating Power	配置功率 Installed Power	機台尺寸 Machine Size	機台重量 Machine WT.
	Cavity	BPH	PCS	mm	mm	MAX.	MAX. (mm)	MAX. (mm)	MAX. (mm)	MAX. (mm)	Box*channel	kW	kW	cm	kg
02MC	2	2000	90	38.1	114.3	2Ltr.	30	150	105	320	2*1	30	34	420x290x320	3000
02L	2	1500	64	76.2	240	12Ltr.	55	190	210	450	6*1	125	140	600x420x320	7000
024G	2	1050	80	76.2	270	15Ltr.	55	250	230	500	4*1	150	165	630x420x320	8000

EX SERIES

型 號 Model	穴 數 Cavity NO.	理論產量 Theoretical Output	胚頭數 Preform Holder	加熱間距 Heating Pitch	瓶子間距 Cavity Pitch	瓶子容量 Bottle Volume	牙口尺寸 Preform Neck	瓶胚高度 Preform Height	瓶身直徑 Bottle Diameter	瓶身高度 Bottle Height	加熱箱數 Oven NO.	加熱功率 Heating Power	配置功率 Installed Power	機台尺寸 Machine Size	機台重量 Machine WT.
	Cavity	BPH	PCS	mm	mm	MAX.	MAX. (mm)	MAX. (mm)	MAX. (mm)	MAX. (mm)	Box*channel	kW	kW	cm	kg
02MC	2	2000	62	62	114.3	1.5Ltr.	38	150	105	320	1*2	19	24	230x220x350	2500
02MC-SH	2	2000	62	62	114.3	1.5Ltr.	38	150	105	320	1*2	38	48	230x220x350	2500

EM-SD SERIES

型 號 Model	穴 數 Cavity NO.	理論產量 Theoretical Output	胚頭數 Preform Holder	加熱間距 Heating Pitch	瓶子間距 Cavity Pitch	瓶子容量 Bottle Volume	牙口尺寸 Preform Neck	瓶胚高度 Preform Height	瓶身直徑 Bottle Diameter	瓶身高度 Bottle Height	加熱箱數 Oven NO.	加熱功率 Heating Power	配置功率 Installed Power	機台尺寸 Machine Size	機台重量 Machine WT.
	Cavity	BPH	PCS	mm	mm	MAX.	MAX. (mm)	MAX. (mm)	MAX. (mm)	MAX. (mm)	Box*channel	kW	kW	cm	kg
04S2-88	4	6000	128	54	88	1Ltr.	38	100	80	262	1*2	38	51	430x410x350	5500
04M1	4	5300	144	54	128	2Ltr.	38	160	115	320	1*2	44	56	520x440x330	7000
06S2	6	9000	168	54	80	0.75Ltr.	38	100	70	240	1*3	47	59	540x320x350	6000
06M1	6	7800	168	54	128	2Ltr.	38	160	115	320	1*3	66	78	620x530x350	9000
06M3	6	7800	168	54	116	1.5Ltr.	38	120	105	310	1*3	66	78	620x530x350	9000
08S2	8	12000	224	54	80	0.75Ltr.	38	100	70	240	1*4	64	74	620x530x350	7500
08S2-88	8	12000	224	54	88	1Ltr.	38	100	80	262	1*4	62	74	540x510x350	7500
08M3	8	9600	224	54	116	1.5Ltr.	38	120	105	310	1*4	78	90	520x280x260	10500

EM-HS SERIES

型 號 Model	穴 數 Cavity NO.	理論產量 Theoretical Output	胚頭數 Preform Holder	加熱間距 Heating Pitch	瓶子間距 Cavity Pitch	瓶子容量 Bottle Volume	牙口尺寸 Preform Neck	瓶胚高度 Preform Height	瓶身直徑 Bottle Diameter	瓶身高度 Bottle Height	加熱箱數 Oven NO.	加熱功率 Heating Power	配置功率 Installed Power	機台尺寸 Machine Size	機台重量 Machine WT.
	Cavity	BPH	PCS	mm	mm	MAX.	MAX. (mm)	MAX. (mm)	MAX. (mm)	MAX. (mm)	Box*channel	kW	kW	cm	kg
12S2	12	16000	336	54	80	0.75Ltr.	38	100	70	240	2*3	94	118	590x560x350	13000
16S2	16	21000	448	54	80	0.75Ltr.	37	100	70	240	2*4	128	148	680x650x350	15000

選配項目 Optional items

- H (PREFERENTIAL HEATING): 側加熱系統
  SH will not suitable for EM series.
- HPOS (HANDLE POST-INSERT): 把手後植入
  HPOS will not suitable for EM and EX series.
- TPC (TOP CHAIN CONVEYOR): 頂板式輸送機
- SWI (SWING-ARM CONVEYOR): 搖臂式輸送機
  SWI will not suitable for EM-HS series.
- ARS (HP AIR-RECOVERY SYSTEM): 氣體回收系統
- ACS (HP AIR-COOLING SYSTEM): 瓶子吹冷系統
  ACS will be standard device for HOT-FILL bottle and bottle volume higher than 1.5L.

選配項目 Optional items

- RMS (REMOTE MONITORING SYSTEM): 遠端監控系統
- RMM (REMOTE MANAGEMENT SYSTEM): 遠端管理系統
- BRB (BURST BOTTLE REJECTION): 破瓶排瓶裝置
- BRF (FULL BOTTLE REJECTION): 滿瓶排瓶裝置
- BRD (BROKEN BOTTLE DETECTION): 破瓶檢測功能
  BRD will not suitable for EX series.
- ATF (AUTO TEMPERATURE FEEDBACK): 溫度自動迴溯
  ATF will not suitable for EX and LM series.
- SSS (SERVO STRETCHING SYSTEM): 伺服拉伸系統

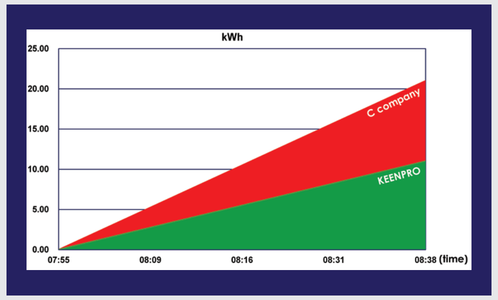
PET Series

吹瓶機核心技術 Core Technology

節能省電
Energy-saving

核心技術
Energy saving
core technology

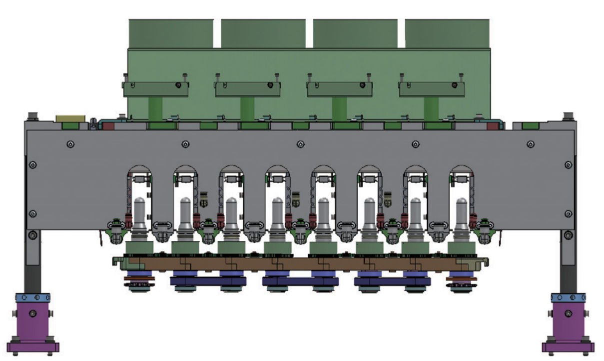
Power Consumpt. Analysis

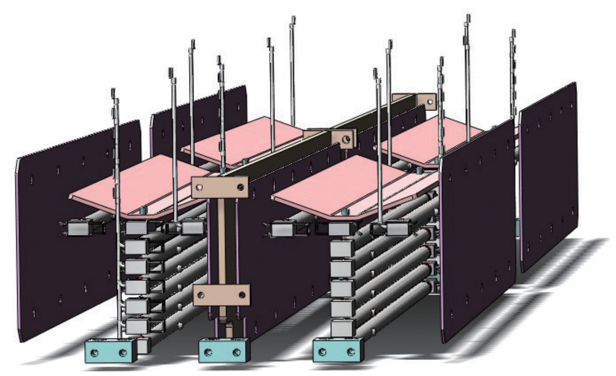


Energy – Saving can reach up to 45%

- 雙邊加熱 Bilateral heating
- 氣體回收 Air circulation
- 公轉系統 Revolution system
- 鎖模機構 Clamping mechanism

加熱耗能低 Less Heating Energy Consumption





雙邊加熱 **Bilateral heating**

- 採用單支燈管雙邊集中方式加熱。
  Double side single accommodation heating zone system.
- 全方位有效利用紅外線燈管加熱。
  Full efficiency use of infrared lamp heating element.
- 反射聚熱理念使瓶胚受熱更均勻。
  Reflect heat concentration concept make preform more evenly heat.
- 各道瓶胚加熱溫度可控制在3°C內。
  Temperature of all channel are controlled within 3°C.

1.突破傳統加熱方式。

2.EM系列加熱能耗約為行業同款機型的50%。

3.採用單燈管雙邊集中加熱和反射聚熱理念，減少一半燈管的浪費使用使瓶胚加熱更均勻。

1.Eliminationg the traditional heating methods.

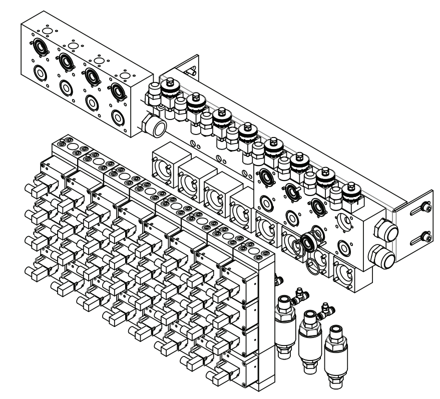
2.The heat consumption required by the EM series is only about 50% compared to competitor methods.

3.The machine employs a single-lamp with a double-sided heating design, combined with reflective heat concentration, which may save up to half of infrared lamp costs. This also achieves more uniform heating on preforms.

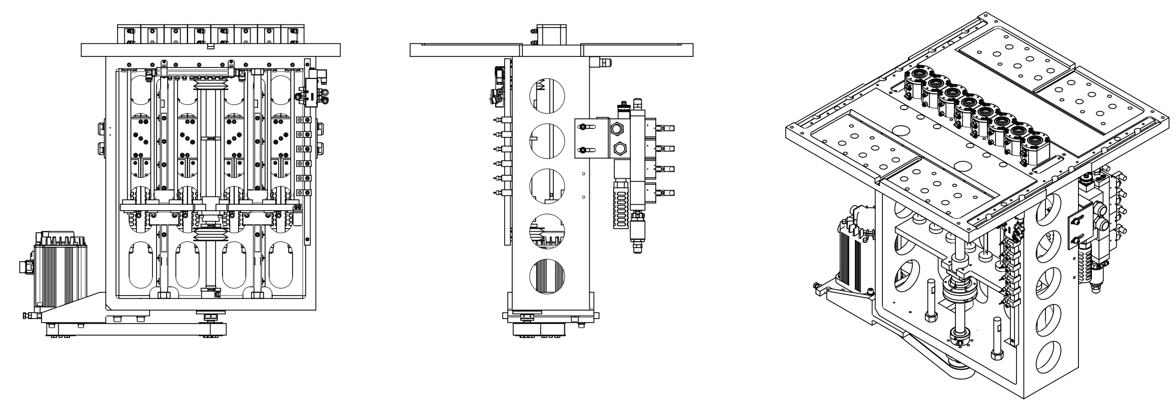
氣體回收系統 Air Circulation System

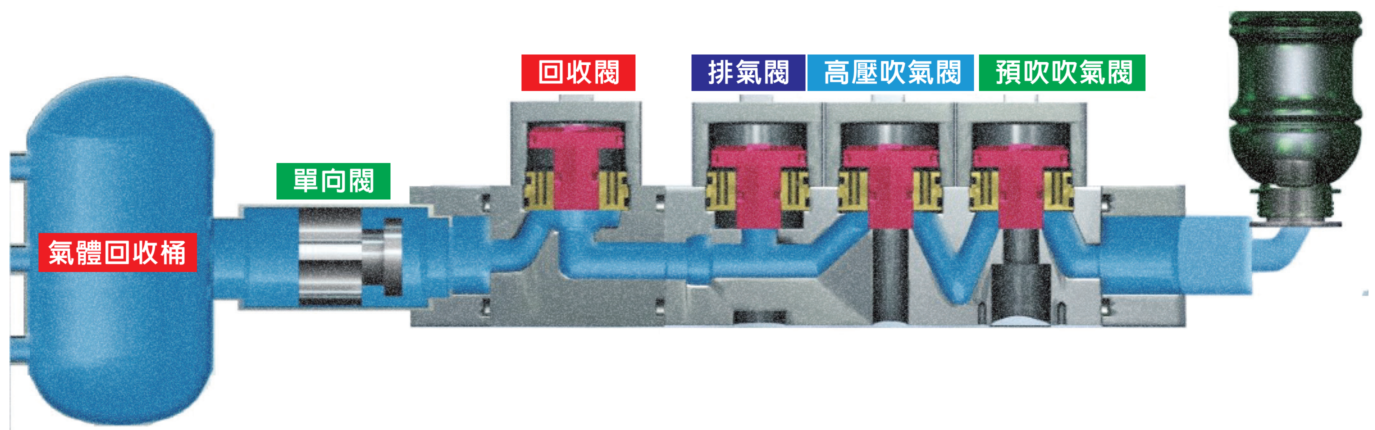
- 封口缸距離短，減少氣體損耗。
- 有效率的設計，減少氣體浪費且增加回收效率。

- Distance between valves module and neck sealing is short.
- Efficient design reduce air wastage and increase air recycle rate.



Air Wastage Reduction above 15%





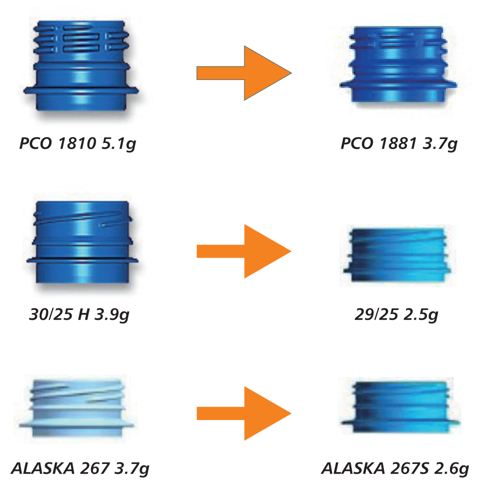
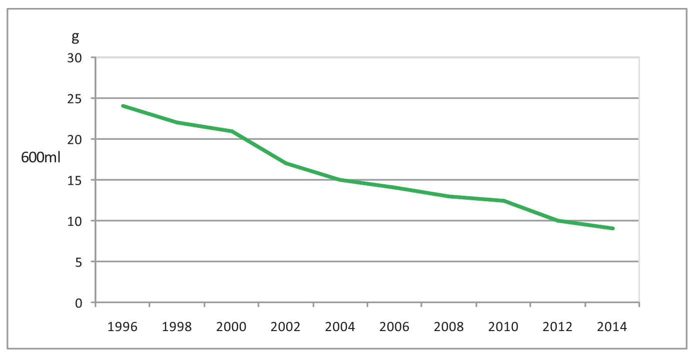
PET瓶胚牙口規範 PET Standard for Preforms

產品特性 Feature

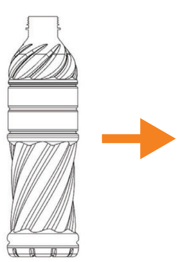
金展公司在開始投入高速雙軸延伸吹瓶機設備之研發製造的工作，面臨產業變化迅速、貿易自由化衝擊(ECFA相關敏感性產業)與節能減碳環保議題之各項挑戰，金展公司遂積極投入各項研發工作。其中，PET熱模罐裝吹瓶模具溫控製程改善之工作，突破以往利用熱煤油加熱方式加熱PET熱模罐裝吹瓶模具，成功改以電熱方式進行加熱控制。

When designing the PET hot-fill bottle mold, the bottle's styles,function, production condition and forming cycle time must be taken into account. Since the shape of bottle is spherical, during the blowing process, the heat conduction between the mold surface and macromolecule material is the key factor of smooth forming. Therefore, even heat distribution is the most important factor for the production processes. Uneven heat distribution results in cracks or over-crystallization phenomenon, and different bottle shapes have different heat distribution strategies. In order to master these variables efficiently, KEENPRO utilizes Finite Element Method to analyze the heating distance, energy, time and efficiency, successfully developing the electrical heating and temperature control technology for stretch-blow molding machines.

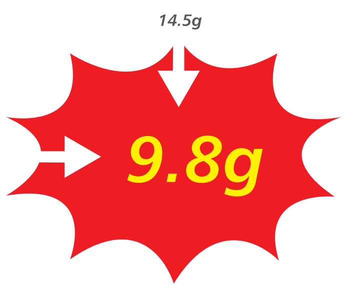
輕量化的趨勢 Lightweight Trend

牙 口 Neck	瓶胚輕量化趨勢圖 Preform Lightweight Illustration
	

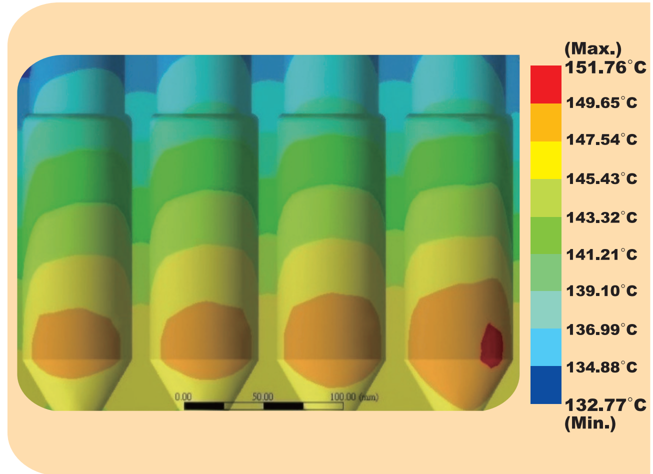
PET瓶輕量化 PET Lightweight



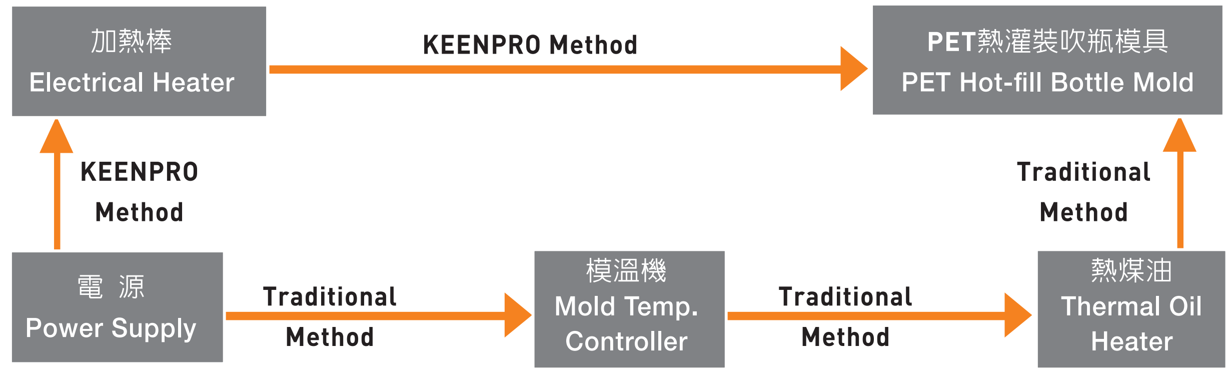
牙口輕量化 *Neck Lightweight*
瓶胚輕量化 *Preform Lightweight*
瓶身結構設計 *Bottle Construction Design*
精密穩定的吹瓶機 *Precision and Stability of Blow Molding Machine*



Heating Analysis for PET Hot-Fill Blow Mold PET熱模罐裝吹瓶模具加熱分析



比較項目 Comparison sheet	傳統油溫加熱 Thermal Oil Heating	電熱加熱 Electrical Heating
設備建置成本 Equipment Cost	較高 High	較低 Low
電力消耗 Power Consumption	較高 High	較低 Low
加熱管路配置 Heating Distribution	較複雜 Complicated	較簡單 Simple
環境 Environment Impact	會產生油霧 Oil Mist	較潔淨 Clean



型號 EM08SH1-6000BPH

瓶型規格 Bottle Specification		
瓶子最大容量 Max. Volume	liter	0.75
最大瓶身直徑 Max. Bottle Diameter	mm	70
最大瓶身高度 Max. Bottle Height	mm	240
最大瓶胚高度 Max. Preform Height	mm	100
瓶胚牙口尺寸 Preform Neck	mm	15-32

機台規格 Machine Specification		
模穴數量 No. of Cavity	cavities	8
胚頭數量 No. of Preform Holder	pcs	196
瓶子間距 Cavity Pitch	mm	80
加熱間距 Heating Pitch	mm	54
加熱最大功率 Max. Heating Power	kw	69
機台安裝功率 Machine Installed Power	kw	96
機台尺寸 Machine Dimension	m2	11.52
機台重量 Machine Weight	kg	7500

※ 實際產能依罐裝溫度及是否與充填生產線連線而定。
Actual production depends on the filling temperature and whether it is filling production line connection.