

RAYSHAPE

All Servo Motor Multi-Stations Thermoforming Machine With Double Moving System

全伺服电机多工位热成型机
采用双动系统



INTRODUCTION

设备简介

Our positive and negative pressure multi-station plastic thermoforming machine, uses internationally advanced plastic sheet forming technology. It is a plastic sheet forming equipment with mechanical, pneumatic and electrical integrated design. It can automatically complete all actions such as loading, feeding, heating, forming, punching, cutting, stacking, finished product transportation, and edge material winding.

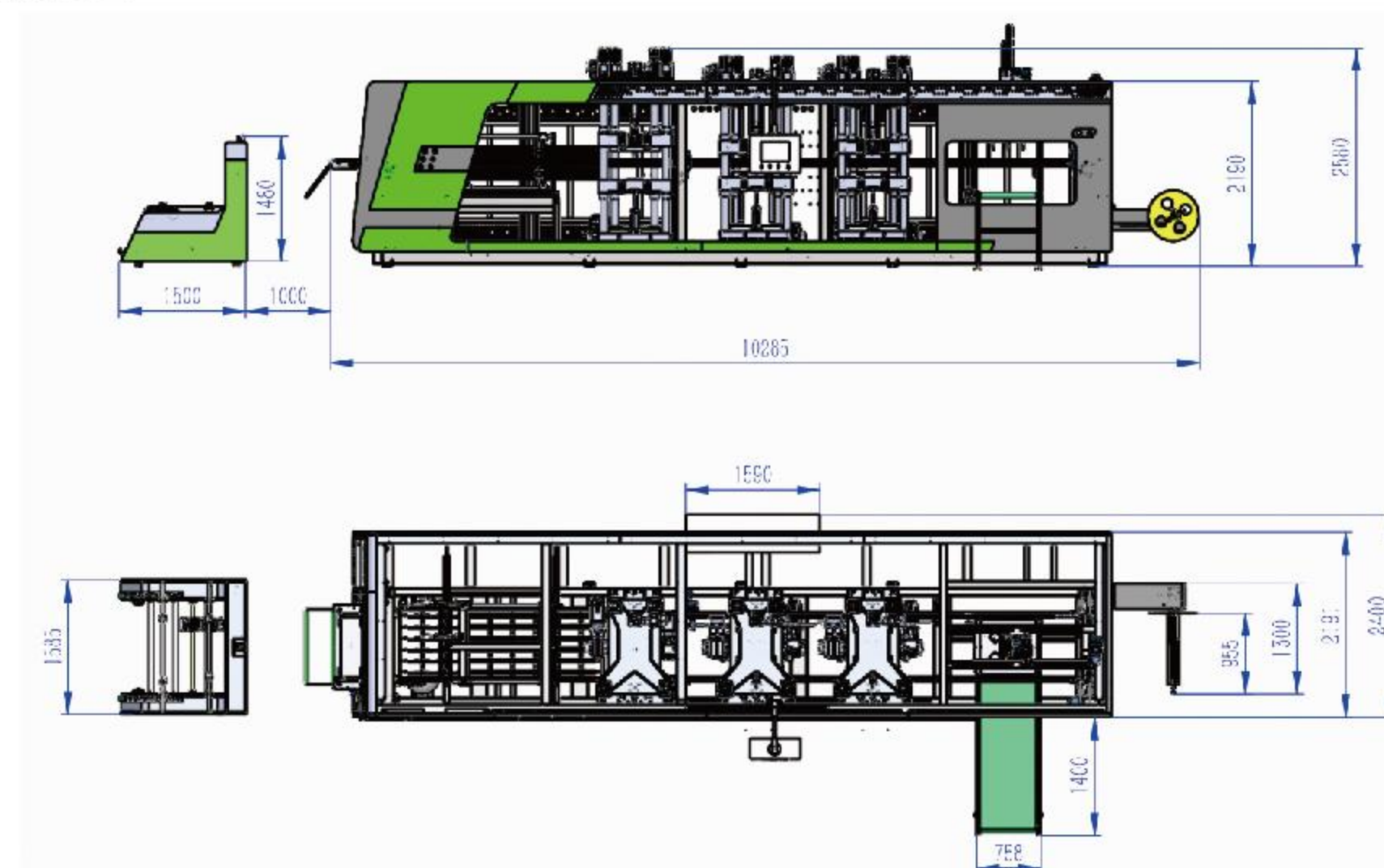
It is suitable for processing different materials, such as A-PET, R-PET, BOPS, HIPS, PP, PLA, PVC and barrier materials, processing high transparency, high stretch, shallow stretch, round, square, upper and lower two-way stretch, flanged and other products, including trays, lids, fruit and vegetable boxes, flower pots, shells, seedling trays and plates, etc.

我们的正负压多工位塑料热成型机，运用国际先进塑料片材成型工艺技术，是集机械、气动、电气一体化设计的塑料片材成型设备，全自动完成上料、送料、加热、成型、打孔、裁切、堆叠、成品输送、边料收卷等所有动作。

适用于处理不同的材料，如 A-PET、R-PET、C-PET、BOPS、HIPS、PP、PLA、PVC 和阻隔材料，加工高透明、高拉伸、浅拉伸、圆型、方型、上下双向拉伸、翻边等制品，包括托盘、盖子、水果和蔬菜盒、花盆、贝壳、育苗托盘和盘子等。

MACHINE STRUCTURE

机械构造



FEATURES AND ADVANTAGES

特征与优势

- High degree of standardization, complete functions, safe, efficient, energy-saving and hygienic.
- It integrates mechanical, pneumatic and electrical integration, and is controlled by microcomputer and programmable controller (PLC).
- Easy-to-operate human-machine interface, and has the function of remote connection.
- Electric lifting, double-station large-diameter unwinding, allowing a single person to load coils weighing up to 600KG.
- Servo feeding, stepless adjustment of sheet length, high speed, accuracy and stability.
- The upper and lower electric heating furnaces are used for four-stage heating and protection to reduce the impact of air convection on temperature, so that the product molding is stable, from 0-400 degrees in just 3 minutes, improving production efficiency. The electric heating furnace can automatically remove the device.
- A new real-time distributed digital dynamic hot forming temperature control system is used to control the temperature of the tile at a single point, and it has automatic compensation control, with an accuracy of $\pm 1^{\circ}\text{C}$. Energy saving of about 15% and extended furnace plate service life.
- The quick mold change system can conveniently, quickly, accurately and safely change molds, reduce machine downtime, reduce labor waste, and improve production efficiency.
- The mold opening and closing of the forming, cutting station are controlled by servo motor, with high precision, low wear, fast speed and low noise. Each station is supported by four columns, combined with a five-point structural connecting rod, which has good stability.
- The unique vertical stacking concept ensures continuous stacking of products.
- Automatic counting of finished product output, with production data memory function, can store 90 sets of operating data.
- Combined with the edge material winding device, the entire production process is clean, without burrs and waste.
- The design of the electrical cabinet is simple and refreshing, simplifying the machine assembly and wiring installation process.

- 标准化程度高，功能齐全，安全、高效、节能、卫生。
- 集机械、气动、电气一体化，采用微电脑与可编程控制器（PLC）控制。
- 易于操作的人机界面，并具备远程连接的功能。
- 电动启料，双工位大直径放卷，允许单人上料重达600KG的卷材。
- 采用伺服送料，片材长度无级调整，高速准确稳定。
- 采用上、下电热炉四段加热并做防护，减少空气对流对温度的影响，使得产品成型稳定，从0-400度只需3分钟，提高生产效率。电热炉可自动移出装置。
- 采用一种全新的实时分布式数字动态热成型温控系统，对瓦片单点控温，并具有自动补偿控制，精度可达 $\pm 1^{\circ}\text{C}$ 。节能15%左右，延长炉板使用寿命。
- 快速换模系统，可方便快速精准安全换模，减少机器停机时间，减少人工浪费，提高生产效益。
- 成型、打孔、裁切工位部分开模、合模由伺服电机控制，精度高、磨损低、速度快、低噪音。每个工位有四根立柱支撑，结合五支点结构连杆，稳定性好。
- 独特的垂直堆叠理念，确保产品连续堆叠。
- 自动计数成品输出，具有生产数据记忆功能，能存储90组运行数据。
- 结合边料收卷装置，整个生产过程洁净，无毛刺、无废料。
- 电箱设计简洁清爽，简化机器组装以及接线安装流程。

SPECIFICAION

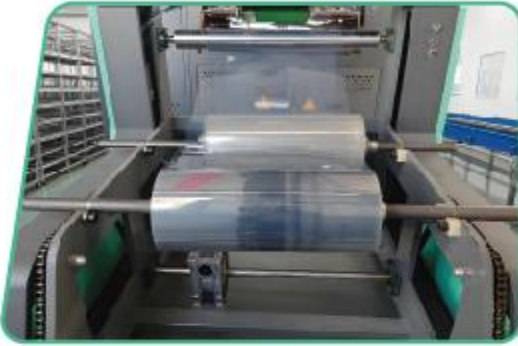
技术参数

Model	型 号	RS-650-450-3	RS-650-450-4	RS-730-610-3	RS-730-610-4	RS-730-800-3	RS-730-800-4
Sheet Materials	片材材质	PP/PS/PET/PLA PE	PP/PS/PET/PLA PE	PP/PS/PET/PLA PE	PP/PS/PET/PLA PE	PP/PS/PET/PLA PE	PP/PS/PET/PLA PE
Sheet Thickness	片材厚度	0.2-1.5mm	0.2-1.5mm	0.2-1.5mm	0.2-1.5mm	0.2-1.5mm	0.2-1.5mm
Forming Area	成型面积	650*450mm	650*450mm	730*610mm	730*610mm	730*800mm	730*800mm
Width Of Sheet	片材宽度	370-700mm	370-700mm	400-800mm	400-800mm	400-800mm	400-800mm
Upper Forming Depth	上模制品成型深度	100mm	100mm	100mm	100mm	100mm	100mm
Bottom Forming Depth	下模制品成型深度	130mm	130mm	130mm	130mm	130mm	120mm
Max Speed	最大速度	60moulds/min	60moulds/min	50moulds/min	50moulds/min	48moulds/min	48moulds/min
The Longest Knife	最长刀线	8m	8m	10m	10m	12m	12m
Dimension	尺寸	10210*2300*2700mm	11230*2300*2700mm	11500*2350*2700mm	12785*2350*2700mm	11500*2350*2700mm	14500*2350*2700mm
Forming clamping force	成型合模力	600kn	600kn	750kn	750kn	750kn	750kn
Punching clamping force	冲切合模力	600kn	600kn	750kn	750kn	900kn	900kn
Air Consumption	耗气量	3m ³ /min 0.5-0.8bar	3m ³ /min 0.5-0.8bar	4m ³ /min 0.5-0.8bar	4m ³ /min 0.5-0.8bar	4m ³ /min 0.5-0.8bar	4m ³ /min 0.5-0.8bar
Weight	重量	8500kg	11000kg	12500kg	15500kg	14500kg	17500kg
Total Installed Power	总装机功率	116Kw	125Kw	174Kw	185kw	185kw	200kw
Heating Power	加热功率	90kw	90kw	140kw	140kw	140kw	140kw
Feeding Motor	送料电机	3kw	3kw	4.4kw	4.4kw	4.4kw	4.4kw
Control Forming Plug Motor Power	拉伸电机功率	3kw	3kw	4.4kw	4.4kw	4.4kw	4.4kw
Stacking Motor	堆叠电机	1.8kw	1.8kw	1.8kw	1.8kw	2.9kw	2.9kw
Winding Waste Of Edge Sheet Motor Power	卷边电机功率	0.4kw	0.4kw	0.4kw	0.4kw	0.4kw	0.4kw
Forming Motor	成型电机	4.4kw*2	4.4kw*2	5.5kw*2	5.5kw*2	7.5kw*2	7.5kw*2
Cutting Motor	裁切电机	4.4kw*2	4.4kw*2	5.5kw*2	5.5kw*2	7.5kw*1, 11kw*1	7.5kw*1, 11kw*1
Punching Motor	冲孔电机		4.4kw*2		5.5kw*2		7.5kw*1, 11kw*1

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Our company reserves the right to change technical characteristics without further notice.

MACHINE STRUCTURE

机械构造



LOADING SHEET PART:

Load automatically, lower human resource cost. Proximity switch clever control, getting the rid of falling down of the sheet by conveying too fast. Double stations, big diameter, reduce the frequency of changing sheet coil, improve the the production efficiency. Max undertake roll of sheet Weight:600kg, Diameter 800mm.

上料部分：自动上料，降低人力资源成本。

接近开关智能控制，有效避免输送速度过快导致板材下落。双工位，大直径，减少更换板材卷料的频率，提高生产效率。最大承接板材卷料重量：600kg，直径：800mm



FEEDING SHEET PART:

Automatic feeding reduces human resource costs. Actively transport the sheet and reduce the load on the conveying servo motor. Cleverly control the proximity switch to prevent the sheet from falling too quickly during transportation.

送料部分：自动送料，降低人力资源成本。

片材积极输送，降低输送伺服电机负荷。接近开关巧妙控制，杜绝片材输送过快下落。



HUMAN-MACHINE INTERFACE:

Controlled by microcomputer and programmable controller (PLC), all action programs can be operated through the human-machine interface, simple and convenient, 15-inch touch screen.

人机界面：

采用微电脑与可编程控制器（PLC）控制，所有动作程序可以通过人机界面操作，简单便捷，15英寸触摸屏。



HEATER:

1. Vacuum insulation cotton is installed in the heater, which has a fast reaction speed, short processing time and energy saving.
2. The furnace body is divided into two layers, the layout of the heating tiles is optimized, so that the plate is heated evenly.

加热器：

加热器内加装真空保温棉，反应速度快，处理时间短，节省能源。炉体分上下两层，优化加热瓦布局，使板材受热充分均匀。



MOLDING STATION:

1. Mold changing auxiliary mechanism, using sliding guide rails and support rods to achieve fast mold change, saving time and effort.
2. Adopting high-power servo motor drive, high precision, high efficiency and low noise.

成型工位：

换模辅助机构，采用滑动导轨和支撑杆，实现快速换模，省时省力。采用大功率伺服电机驱动，精度高，效率高，噪音低。



MOLDING MOLD:

The working principle is a combination of positive and negative pressure, and some nylon plugs are used to assist stretching in the mold to make it have stronger molding ability. There is cooling water in the mold cavity to speed up the cooling speed and make demolding easier.

成型模具：

工作原理是正负压结合，通过一些尼龙塞在模具内辅助拉伸，使其具有更强的成型能力。模腔内有冷却水，加快冷却速度，脱模容易。

MACHINE STRUCTURE

机械构造



GUIDE HEAD STRUCTURE:

The workstation is supported by four columns (45# steel, hard chrome plated). The integrated mold table (QT-600 steel) is made by a high-precision CNC milling machine. Therefore, it is wear-resistant, stable, and accurate, which prolongs the service life of the equipment.

导头结构：

工作站由四根立柱（45#钢，镀硬铬）支撑。一体式模台（QT-600钢）采用高精度数控铣床加工而成，耐磨、稳定、精准，延长设备使用寿命。



A FIVE-POINT-CONNECTING-ROD STRUCTURE:

This structure design provides more stable operation and faster speed.

五支点结构：

此种结构设计，工作更稳定，速度更快。



MOLD CHANGE STRUCTURE:

Greatly reduce mold change time and labor costs, improve production efficiency and safety factor, and provide convenience for your diversified product chain.

换模结构：

打孔工位与裁切工位的换膜结构一样，大大减少换模时间和人工成本，提高生产效率和系数，为您多元化的产品链提供便利。



SERVO MOTOR:

The station mold closing, forming auxiliary stretching, and pull-tab parts are all driven by servo motors, which have fast speed, low noise, high precision, and high efficiency.

伺服电机：

工位合模、成型辅助拉伸、拉片等部件均采用伺服电机驱动，速度快、噪音低、精度高、效率高。



SERVO-CONTROLLED CONVEYOR BELT:

Set conveyor belt parameters directly on the operation screen. Freely adjust and control conveying length and speed.

伺服控制的输送带：

在操作屏直接设置输送带参数，自由调节和控制输送长度和速度。



REWINDING WASTE OF EDGE SHEET:

Our multi-station thermoformers feature a winding unit with torque motor to efficiently collect the offcuts and wind them into a roll with one side retractable, which can be conveniently removed at the end of production. This advanced waste management system improves operating efficiency and cleanliness, making multi-station thermoformers ideal for high-quality and sustainable production.

边料收卷：

我们的多工位热成型机配备伺服电机的收卷装置，可高效收集边料并将其卷成单侧可伸缩的卷筒，方便在生产结束时取下。这种先进的废料管理系统提高了操作效率和清洁度，使多工位热成型机成为高质量、可持续发展的理想选择。



PRODUCTS RANGE

产品范围



Choose RAYSHAPE, Share a Prosperous Future!
选择锐塑，共富前路！

It can make some products which unable to be made in one station thermoforming machine, like for example: PLA products, plastic lids or containers which has holes, the packing containers (fruit box, egg trays) with body and cover connected etc.

它可以制造一些单工位热成型机无法制造的产品：
例如：PLA 产品、有孔的塑料盖或容器、主体和盖子连接的 包装容器（水果盒、鸡蛋托盘）等。

For more information,
please consult the manufacturer.



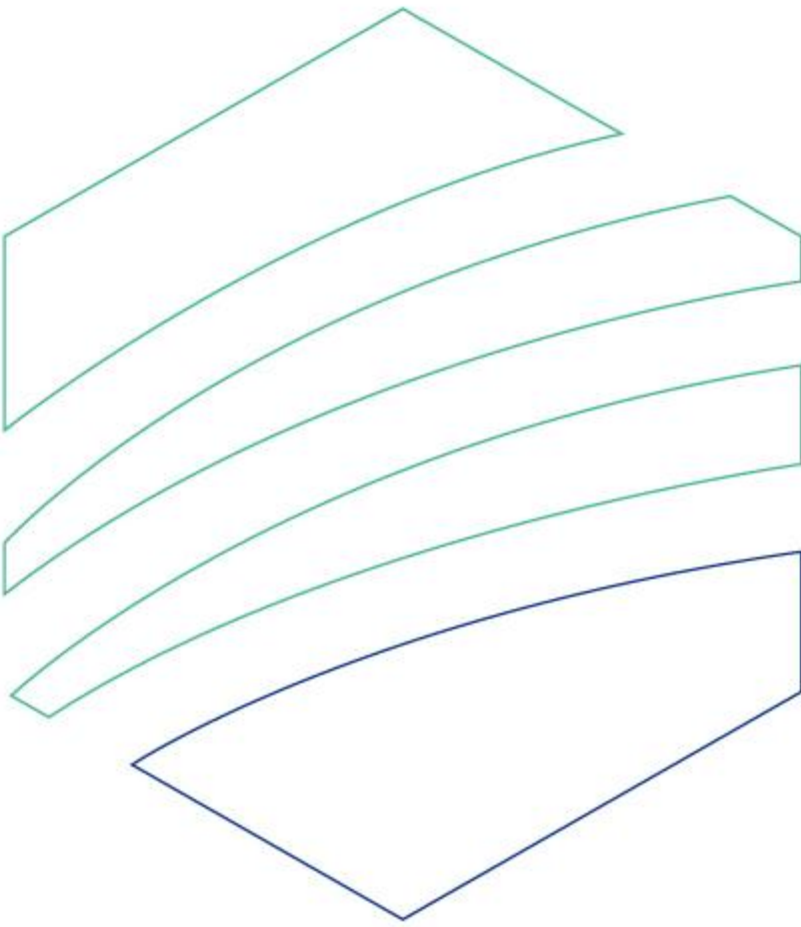
CONFIGURATION LIST

配置清单

Motor Reducer 电机减速机	Guangdong 广东	Temperature Module 温度模块	Taiwan Delta 台湾台达
Molding Solenoid valve 成型电磁阀	Japan SMC 日本SMC	Heating Brick 加热瓦	Jiangsu Tianbao 江苏天宝
Solenoid Valve 电磁阀	Japan SMC 日本SMC	Contactator 接触器	America Eaton 美国伊顿电气
Cylinder 汽缸	Taiwan AirTac 台湾亚德客	Low Voltage Apparatus 低压电器	America Eaton 美国伊顿电气
Servo Motor 伺服电机	China Inovance 中国汇川	Other Electrical Appliances 其他电器	Germany Phoenix 德国菲尼克斯

THE SOLUTION OF
FULLY AUTOMATIC PLASTIC
THERMOFORMING

全自动塑料热成型解决方案



Shaping The Future With Cutting-edge Innovation
以锐意之姿，塑行业未来

