



## High-speed Air Compression Hot Forming Automation Equipment

### 高速空压热成型自动化设备



高速热成型  
High-speed hot forming



中心冲穿孔  
Center punch forming



完整冲模  
Complete mold



自动计数、分拣  
Automatic counting and sorting



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本公司专业生产高速空气压缩成型设备具有精度高，操作简便，应用广泛等特点。它主要用于PET、PP、PS、PE、PLA等片材快速成型食品、轻工、电子、玩具等塑料制品。

The company specializes in the production of high-speed air compression thermforming automation equipment, which is characterized by good performance, simple operation and wide application. It is mainly used for PET, PP, PS, PE, PLA and other sheet rapid molding food, light industries, electronics, toys and other plastic packaging products.

# HP1110

高速空气压缩成型自动化设备  
High-speed Air Compression Hot Forming Automation Equipment



# Hot forming positive and negative pressure HP1110 molding machine equipment



## MACHINE FEATURES

### 机器特点

- ◆ 机床整体架构，经整体精密加工，刚性好，精度高，稳定性强，且各机械部位精准之特点。
- ◆ 模具最大成型面积1000mm，长1100mm，边料量少，成型面积大，产量高。
- ◆ 本机控制采用三菱PLC、触摸屏、伺服控制，位置精度： $\pm 0.02\text{mm}$ ，配方数据存储300套，电机采用德国发格特，可分二至三段加热，采用人机触控分区控温，控温精度： $\pm 1^{\circ}\text{C}$ 。
- ◆ The frame is an integral structure, which is characterized by good rigidity, high precision, strong stability and accurate positioning of each mechanism after overall precision processing.
- ◆ The maximum molding area of the mold is 1000mm wide and 1100mm long, with small amount of leftovers, large molding area and high output.
- ◆ Mitsubishi PLC touch screen and servo control are adopted for the control of this machine. The position accuracy is a 0.02mm. The formula data is stored in 300 sets. The electric furnace is made of German heating bricks, which can be heated in two to three stages. The temperature is controlled by japan-machine numerical control zones. The temperature control accuracy is  $1^{\circ}\text{C}$ .

## PARAMETERS

### 技术参数

型号 Model	HP1110
主机尺寸 Host size (L*W*H)	7000*3000*3025mm
成型最大面积 Maximum forming area (W*U)	1000*1100mm
成型最小面积 Minimum forming area (W*U)	610*600 mm
最宽片材 Widest sheet	1050mm
最窄片材 Narrowest sheet	640mm
拉伸尺寸 Stretch size	0-60mm
合模力 Clamping force	450KN
系统气压 System air pressure	6bar
成型气压 Forming air pressure	2-4bar
最快成型时间 fastest forming time	3s

## Hot forming positive and negative pressure HP1110 molding machine equipment

### 控制系统 Control system



控制系统为人工智能，操作控制采用专业制作铝合金机箱式，控制室中采用三菱可编程控制器，研华15寸彩色工控机，由SSCNET III/PLC光纤通讯控制三菱伺服，定位快速精准，专业的操作界面与远程压机，解决了远程维护与程序升级问题，并具有强大的内存空间，设置包含：手动操作、自动操作、成型模式、运动参数、温度设定、报警记录、维护指引、配方数据存储和U盘备份，整套系统安全稳定，易操作。

The control system is artificial intelligence. The operation control box is made of aluminum alloy hanging box. The control system uses Mitsubishi programmable controller, Advantech 15-inch color industrial computer, and Mitsubishi servo is controlled by SSCNET III/PLC optical fiber communication. The positioning is fast and accurate. The professional operation screen and remote correction solve the problem of remote maintenance and program upgrade, and have powerful memory space. The settings include: manual operation, automatic operation, molding mode, motion parameters, temperature setting, alarm record, maintenance guidance, formula data storage and USB flash disk backup. The whole system is safe, stable and easy to operate.

### 超大成型幅面 Oversized format



最大成型面积：宽1000mm，长1100mm，减少边料量，面积大，模具可以根据产品的造型做的更大，产品数量做的更多，产量做的更高。

The maximum molding area is 1000mm wide and 1100mm long, reducing the amount of leftover materials, and the layout is large. The mold can be made more according to the product selection, the product quantity is more, and the output is higher.

### 上下模台调节 Upper/lower mold table adjustment



上下高度皆可调节0-150mm，兼顾了多种规格模具高度，且精准到位。

The upper/lower height can be adjusted by 0-150mm respectively, taking into account the height of various specifications of mold, and is accurate.

### 锁模 Mode-locking



上下锁定位后，快速气吹吹紧，再用螺丝效果固定，具有双重安全保障，模具更换和调试更加方便快捷。

After the upper/lower mold is positioned, it can be quickly pneumatically locked, and then locked and fixed with screws, which has double safety guarantee, and the mold replacement and disassembly are more convenient and quick.

## 热成型正负压HP1110成型机设备

Hot forming positive and negative pressure HP1110 molding machine equipment

### 上料机

Charging machine



上料机物料容量可达800公斤，采用空心棒一推靠一收靠原理，简单容易安装厚片圆结构。

设有片材缓存区，减轻切片负载，并避免废料无规律和片材刮花现象，配备涂油装置，有利于产品脱模，轻松解决产品变形问题。

The weight of the coil carrier of the feeding machine can reach 800 kg. It adopts a hollow rod with a super sleeve and a locking ring. It is a simple and lightweight structure for feeding and threading sheet rings.

It is equipped with a sheet buffer area to reduce the pulling load and avoid irregular feeding and sheet scratching. It is equipped with an oiling device to facilitate product demoulding. Early solve the problem of difficult demoulding of products.

### 弹簧夹式链条

Spring clip chain



不伤片材，防止生产过程中产生塑料粉尘，适用于高品质制品，达到无尘车间生产标准。链节可扩张0-60mm，选用片材强度高兼容性强，平行拉伸，使片材均质伸展，边料少，约15mm左右，节省材料。

It does not damage the sheet and prevents plastic dust from being produced during production. It is suitable for high-quality products and meets the production standard of dust-free workshop. The chain rail can be expanded by 0-60mm, and the selected sheet has strong compatibility in wide direction. Parallel stretching can make the sheet stretch evenly, with less scrap, about 15mm, saving material.

### 链轨传动

Chain track drive



链轨主体设计为铝合金整体拉伸成型，永不生锈，盖板由304不锈钢经激光精密加工而成。中板由进口优质S45H钢精密加工并镀硬铬，加工对接强度高，摩擦系数低，使用寿命长。拉片采用夹片式链条，链夹片采用硅钢片制作，特别设计气缸索链卷紧机构，拉片驱动采用三菱7.5kw伺服电机，防止链条松弛，拉片快速而准确。

The main body of the chain rail is designed to be integrally stretched and formed of aluminum alloy. The cover plate is made of 304 stainless steel by laser precision processing. The medium plate is precisely processed by domestic high-quality S45H steel and plated with hard chrome. High machining accuracy, low friction coefficient and long service life. The pull piece adopts clip type chain, and the chain clip is made of silicon steel sheet, and the cylinder tensioning chain mechanism is specially designed. Mitsubishi 7.5kw servo motor is used for pulling the tab to prevent the chain from loosening, and the pulling tab is fast and accurate.

### 电炉部分

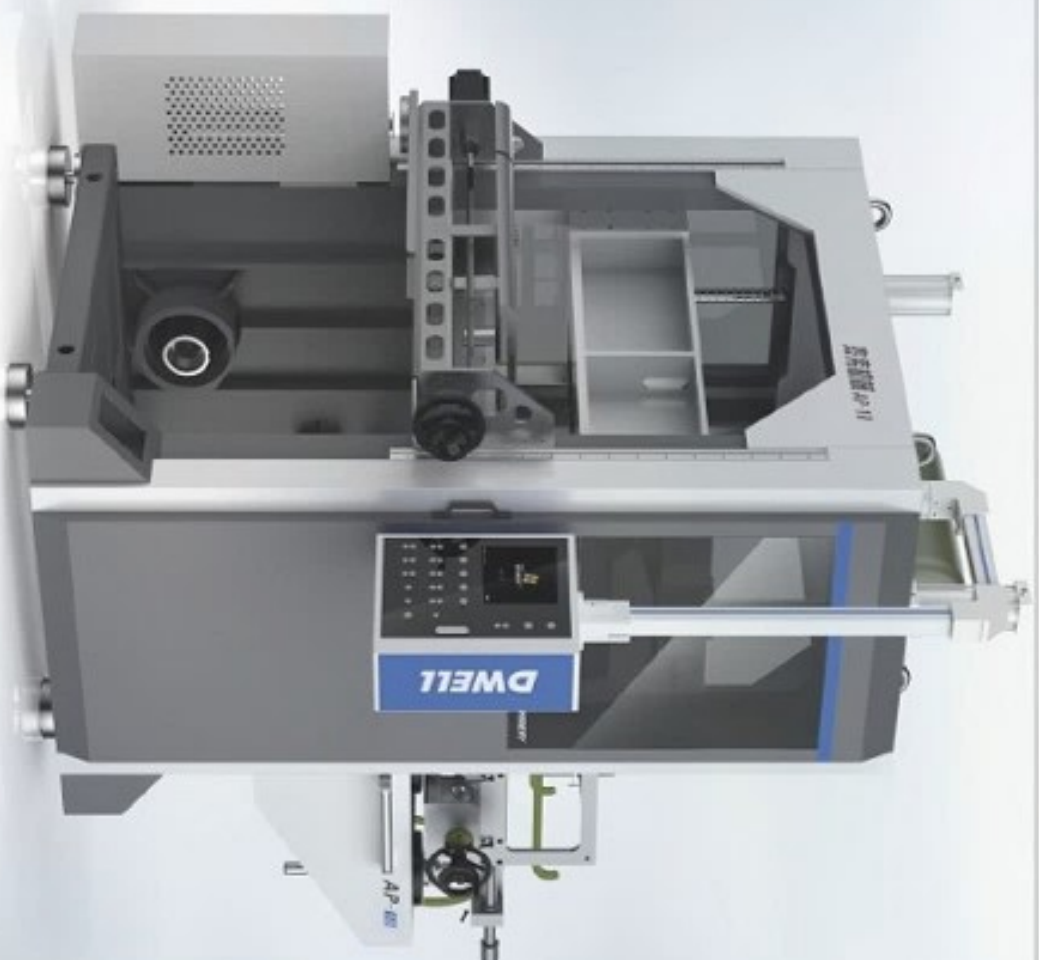
Electric furnace



电炉配备德国高效节能陶瓷发热瓦，高级瓷探头，上下炉两段加热，采用日本山武温控人机数分区控温（控制精度： $\pm 1^{\circ}\text{C}$ ）。电炉结构紧凑，由气缸驱动呈八字形张开，减小空间占用面积，均采用国际品牌机构，加热区片材长度范围可根据生产需求进行调整。

The electric furnace is equipped with German high-efficiency energy-saving ceramic heating, the High-frequency ceramic joint, upper and lower furnace two-stage heating, and adopts Japanese Yamazaki temperature control human-computer numerical control zone temperature control (temperature control accuracy:  $\pm 1^{\circ}\text{C}$ ). The electric furnace has a compact structure and is driven by a cylinder to open in a gully shape to reduce the space occupation area. The furnace area has an insulating bath mechanism, and the length range of the heating zone sheet can be adjusted according to the production requirements.

# Hot forming high-speed AP10 punch



## MACHINE FEATURES

### 机器特点

- ◆ 高速连续配合成型送料并在线自动裁切，裁床与成型机配合使用，用压胶机送料料，以钢丝作传动工作体，使整机的动作自动化、精确化、高效化。
- ◆ 且具备材料自停功能，最快可达100-1200次/分钟，具有产量大、冲切精度非常高的优势，配备新材料，自动调整冲裁所需碎片，大功率电机驱动减速机偏心轮传动，被动力量大，匹配物料精密配合，强度高，裁切刃磨度高，快速换模设计，加快了换模时间，垂直裁切刃磨设计，五金裁切模具，完善冲裁，配备自动升降接料产品，快速垂直推出产品至收料线，由收料线输送至包装机。
- ◆ PLC电脑集成控制系统，100组数据记忆功能，实现自动化程度更高。
- ◆ The high-speed punch is used in conjunction with the external line of the forming machine for automatic cutting, and the frequency is used in conjunction with the forming machine. The pressure wheel mechanism is used to feed the material, and the ball screw drive is used as the main body to make the whole machine move automatically, accurately and efficiently.
- ◆ It also has the function of nesting for material to stop automatically, which can reach 100-120 pieces/minute at the fastest. It has the advantages of large output and very high punching accuracy. It is equipped with a blanking hopper, which automatically collects the blanking falling debris. The high-power motor is connected with the eccentric wheel drive of the reducer. It has a large cutting force. The four side rails are precisely matched, with high strength, high cutting position accuracy, rapid die change design, accelerated die change time, vertical cutting mechanism design, hardware cutting mode, complete punching. Equipped with automatic lifting and stacking products, the product can be quickly and vertically pushed to the assembly line, and then transported to the packaging position by the assembly line.
- ◆ PLC computer integrated control system, 100 sets of data memory functions, achieving a higher degree of automation.

## PARAMETERS

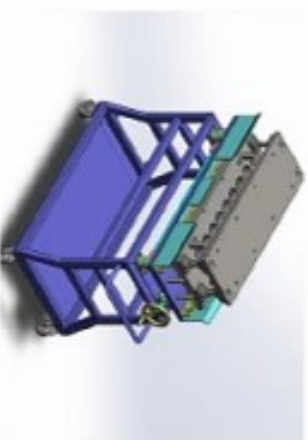
### 技术参数

型号 Model	AP10
机身尺寸 Fuselage size (L*W*H)	2500*2000*2900mm
冲床面积 Punching area (㎡)	1000*330mm
最大材料宽度 Maximum material width (mm)	1100mm
最大成品高度 Maximum finished product height	150mm
冲床行程 Punching and shearing stroke	200mm
空气气压 Air pressure	0.4-0.6Mpa
最大送料速度 Maximum punching and shearing speed	100-1200次/分钟
冲床推力 Punching and shearing thrust	100KN
最大推力 Maximum impact force	15T
额定冲击力 Rated impact force	10T

## Hot forming high-speed AP10 punch

### 装模

#### Mold installation



设计有专用模具车，装模轻松便捷，模具推入定位后，油缸迅速锁紧，减少更换模具的时间，更加安全可靠。

A special mold car is designed, which is easy and convenient to install the mold. After the mold is pushed into position, the oil cylinder locks the mold quickly, reducing the time to replace the mold, and making it more safe and reliable.

### 冲剪部分微调

#### Fine adjustment of punching and shearing part

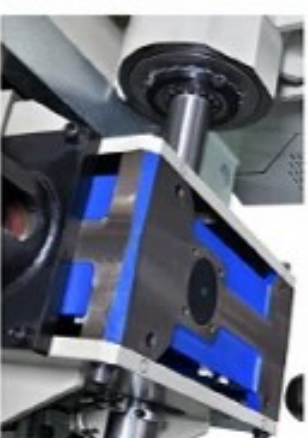


以滚珠丝杠传动为主体，使整机跟剪动作自动化、精确、高效。

With ball screw drive as the main body, the fine adjustment of the whole machine is automatic, accurate and efficient.

### 偏心轮传动

#### Eccentric drive



大功率电机连接减速机偏心轮传动，裁切力量大，四骨轮精密配合，强度高，裁切刃面度高。

The high-power motor is connected with the eccentric wheel drive of the reducer, and the cutting force is large. The four side ribs are precisely matched, with high strength and high cutting position accuracy.

### 开模计数输送机

#### Lifting counting conveyor



产品堆叠高度: 0-350mm,配有自动开模堆叠产品结构检测针，对较小产品的堆叠也无忧，平衡堆叠并计数，快速水平推出产品经流水线，由流水线输送机架送包装线的工位，有利于快速包装。

Stacking height of product: 0-350mm, equipped with the structure design of automatic lifting and stacking products. It also has no worries about the stacking of light and small products. It can stack and count the products smoothly, quickly and horizontally push the products to the assembly line, and send them to the packaging position by the assembly line conveyor rack, which is conducive to rapid packaging.

Hot forming high-speed AP10 punch



高精度大版面冲剪  
High-precision large layout punching and shearing

本机为配成型机体外罩自动裁切，频率与成型机配合使用，具备带料自停功能，具有产量大、冲切精度非常高的优势；水平裁切机构设计，五金裁切模具，完整冲裁，并配有4组压轮送片，再配备超长送料产品与料箱，解决大板面送料产品的难题，产线导杆用线性轴承作支撑，手持操作手柄，使产线作业安全稳定快捷。

This machine is used in conjunction with the external line of the forming machine for automatic cutting. The frequency is used in conjunction with the forming machine, and it has the function of automatic stopping when waiting for material. It has the advantages of large output and very high punching accuracy. Horizontal cutting mechanism design, hardware cutting tool, complete blanking, and equipped with 4 sets of pressure wheel feeding, and then equipped with ultra-long and ultra-thin product guide rod group, to solve the problem of large-panel closed-set products. The product guide rod uses linear bearings as support, and the handle screws as fastening, so that the product support and positioning operation is fast.

