



海外客户在2005年首次购买6台海强注塑机，凭借可靠的质量和优质的售后，海强获得了客户的信任并在2015年一次性采购了包括1300T和880T等共18台机器。

After the first sale in 2005 of 6 machine, our foreign customer returned to us and purchased another 18 machine in 2015, including 1300 T and 880 T. Customers choice is the testimony of our reliable product quality and perfect service.

**宁波海强电器机械制造有限公司**  
NINGBO HAIQIANG PLASTIC MACHINERY CO., LTD.  
**宁波海长机械设备制造有限公司**

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# HAIQIANG PLASTIC MACHINERY

海强塑机 — 好用又节能

宁波华通电器集团股份有限公司  
NINGBO HUATONG ELECTRICAL EQUIPMENT GROUP CO., LTD.  
宁波海强电器机械制造有限公司  
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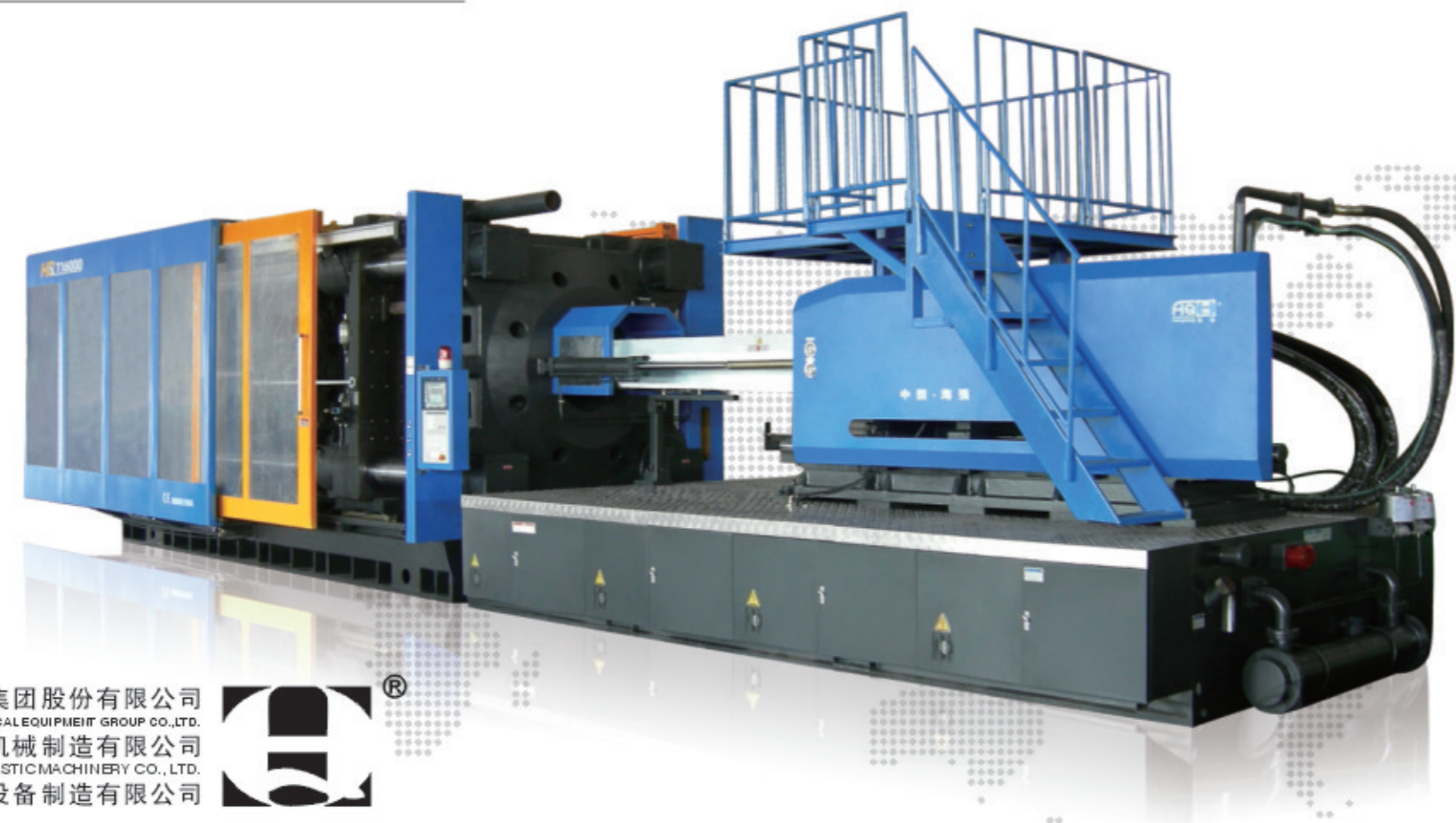
# HAIQIANG PLASTIC MACHINERY

海派塑机的先驱 优质服务的典范

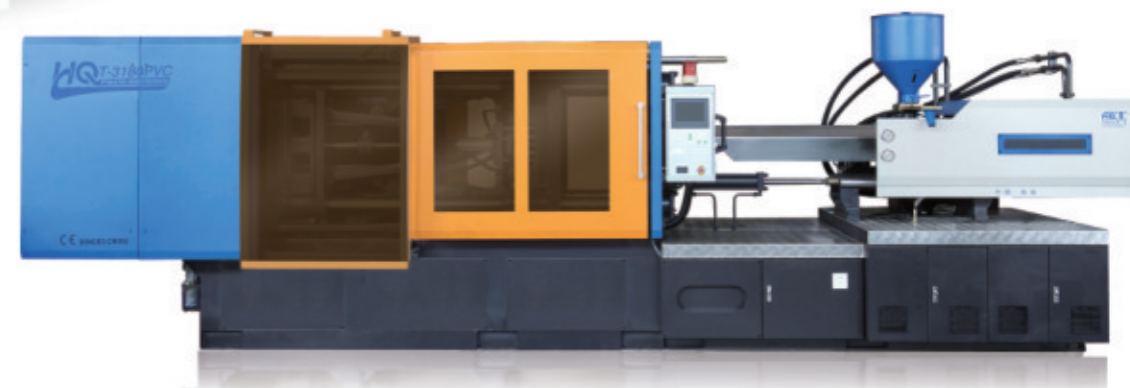
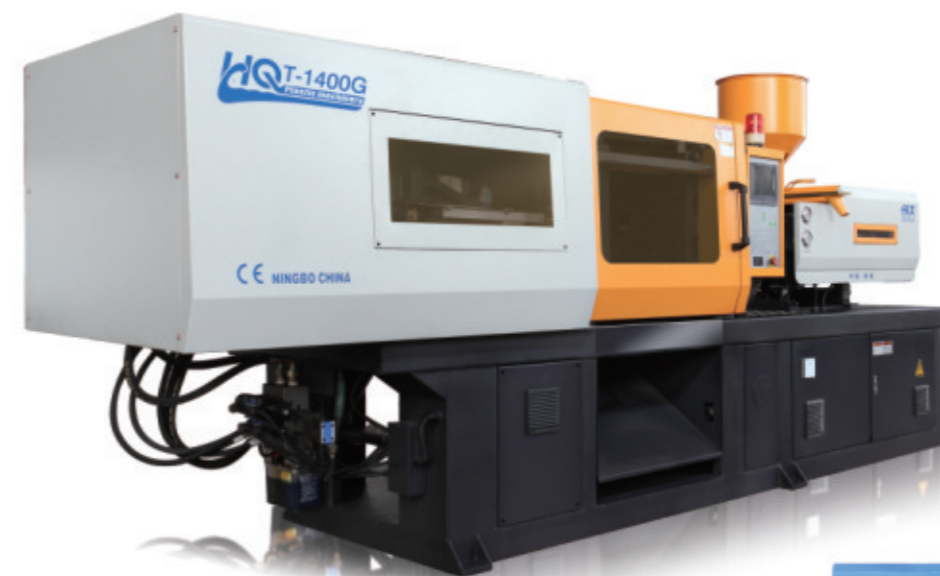
Pioneer in china injection machine industry, model of good quality

海强，不只是制造，更善于创造

Haiqiang, not only an IMM manufacturer, we are innovator and specialist



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## Huatong Group

集团照片



## Company profile

公司简介

宁波华通电器集团股份有限公司始建于1982年，占地面积40万平方米，共计员工2100多人，其中高级工程技术人员有220余人。集团下属包括华通电器成套厂、华通房地产开发有限公司、华通电力设备有限公司等十家企业。

宁波海强（海长）电器机械制造有限公司是宁波华通电器集团股份有限公司下属专业制造HQT/HQS系列自动塑料注射成型机的重要生产基地，位于镇海区庄市工业区，占地面积5.3万平方米。

海强公司自1994年成立以来坚持全面实施品牌战略，建立了一个强大竞争力的设计、制造、营销与服务网络，立足技术开发，不断加强质量管理，优化售后服务。公司拥有50-1600吨（45-12000克）系列产品的完全独立生产能力，被海内外用户所广泛应用，是宁波塑机行业的中坚力量。

海强（海长）的企业宗旨：做“好”塑机，为用户创造最高价值！

Founded in 1982, Ningbo Huatong Electrical Equipment Group Co., Ltd., covers an area of 400,000 square meters, with over 1500 employees, and more than 220 senior engineering technicians. The Group includes 10 subsidiaries Huatong Electrical Wholeset Company, Huatong Real Estate Developing Co. Ltd. Huatong Power Equipment Co. Ltd. ect.

Ningbo Haiqiang (Haichang) Plastic Machinery subordinated to Ning bo Huatong Group, is one of the major manufacturers of plastic injection moulding machine in Ningbo, with 53,000 square meters plant, located in Zhuangshi Industry Zone, Zhenhai District of Ningbo, China.

Through strict quality control, constant efforts in R&D, strong commitment to the customers, our brand HQT/HQS serie injection moulding machine has been earning the trust of customers both in China and overseas since established in 1994. The company has experienced engineer team, timely sales & service network, and completely independent production capacity of machine from 50 to 2000 ton (45-12000g) clamping forces.

The commitment of Ning bo Haiqiang (Haichang): Produce the best machine, create maximum value for the users!

## Certificates

荣誉证书



## R&D team

研发团队





## 三十年的行业经验 二十年的卓越技术 为您专业制造

标准机 / 双色机 / 精密机 / PET瓶胚机 / 高速机 / PVC管件机  
 Standard Machine / Multi-component Machine / High Precision Machine / PET Preform Machine / High Speed Thin Wall Machine / PVC Fitting Machine

二十多年的专业制造，广大用户的广泛使用  
 With 20 years professional experience, and worldwide customer group

我们，知道产品的发展方向和改升内容  
 Haiqiang knows what's the trend of industry and direction to make improvement

从不间断地产品调研和用户建议的收集  
 We keep on do in survey and listening to users' feedback

我们，知道在改升基础上还要做那些创新  
 As the result, we know how to make innovation based on our product

海强，紧密围绕产品设计、加工精度、材料应用  
 Haiqiang, focused on independent product design, processing precision & material application

坚持自主改升创新，坚持在做好优质售后工作之前，为客户提供最有保障的优质机器  
 Is always committed to provide best machine and service for customer

## Application Field

### 产品应用

注塑机具有能一次成型外形复杂、尺寸精确或带有金属嵌件的、质地紧密的塑料制品的能力，被广泛应用于国防、机电、汽车、交通运输、建材、包装、农业、文教卫生及人们日常生活各个领域。在塑料工业迅速发展的今天，注塑机不论在数量上或品种上都占有重要地位。

Injection moulding is the most commonly used manufacturing process for the fabrication of plastic parts. A wide variety of products are manufactured using injection machine, which vary greatly in their size, material, complexity, precision, and even with metal insert, applied to areas such as automobile, packaging, construction material, electronic & electric appliances, houseware tools etc. Injection moulding machine has important place in plastic industry.





## Technology and Innovation

科技创新 引领行业的发展

以领先科技打造卓越精品，华通·海强先后与日本东芝公司、北京化工大学等知名企业、学校、科研机构建立了精密合作关系，并建立了省级工程（技术）中心，凭借着强大的研发实力、高新技术的持续应用和长期坚持执行ISO9001国际质量管理体系及现场“6S”管理模式，使海强的产品性能始终处于同类产品的前列。

To manufacture the best quality products by the leading tech. Huatong · Haiqiang established close cooperation with famous enterprises, faculties, scientific research institutes such as Japan Toshiba Company, Beijing Chemicals University etc. and founded an Provincial Level Engineering (Technology) Center. ISO9001 International Quality Management System is carried out in every stage of production. Supported by strong R&D force, advanced technology, and efficient management, the quality of our machines leads the way in the industry.

## Staff and Equipment

精工细作 优质性能的保证

按照国际领先的硬件标准要求，海强陆续引进欧美、日韩、台湾等国家和地区先进的生产设备和制造技术，装备了进口磨床、镗床、龙门加工中心等高等级的生产制造设备，采用行业顶尖的生产工艺，实现科学化、系统化、自动化的生产流程和精益求精的生产管理。

Haiqiang brings in the advanced production line and technology from Europe, America, Japan, Korea, Taiwan, such as imported grinder, boring mill, gantry machining center etc. High precision processing devices are applied to ensure the accuracy of machine components. Our staff has rich experience and high responsibility, we keep improving our product quality and trying to be perfect.



## Exceed your expectation, Meet every demand

超越价值 满足全方位需求

作为中国塑料机械行业高性能产品及应用解决方案的提供者，海强积极顺应先进科技带来产业变革，充分吸收与转化产业技术的发展成就，持续创新，为满足用户的独特需求而推出了多系统的技术解决方案与服务。

对于海强来说，我们的目标就是创造能解决问题的工具使客户能更大程度的盈利。

品质来自严谨的科学方法、广泛的研究、高品质管理及专业化的生产，海强一直坚持上述观念并以此作为企业理念的首要部分。努力将质量管理意识落实到产品加工的每一个环节，从而持续提升产品品质。

As top plastic machine provider in China, Haiqiang actively faces to challenge of fast technology development, adapt itself to the rapid changing plastic industry, absorb the fruits of innovation and makes reforms to supply best solution and satisfy every unique needs of our customers.

As our mission: make the best machine to generate profit, lay the foundation of customer's success.

High quality comes from rigorous and scientific control, constant research, scientific management and professional working team. Haiqiang always sticks to the rules above and regards it as fundamental base of the company. Moreover, We realize this idea in manufacturing process and persistently enhance our product quality.

## Our Service

全程服务 帮助客户成功

### 系统的服务体系

海强面向客户推出系统的售前工艺分析、技术咨询、售中安装指导、操作培训，售后设备维修、服务回访等内容。

### 多元化的服务方式

海强向客户提供包括热线、网络、现场及远程等在内的全方位、多元化服务，让每一个客户都能得到最佳的、真正的个性化服务。

### 便利的服务网络

海强以总公司服务中心为主导，以各分公司为窗口，实现了从售前、售中再到售后的快速服务。承诺“省内24小时，省外48小时”的快速响应。

### 定期回访

海强对每一个客户、每一台出厂的产品都建立基础档案，定期或不定期由海强技术部、销售部、服务部对客户进行回访服务，解决产品使用中产生的问题。

### Complete Service System

Haiqiang has complete service system including pre-sale technical support to help choose correct machine, installation, operation instruction & training, after-sales maintenance & repair, customer feedback ect. Our team will attend you with their rich knowledge and sincere attitude.

### Easy Access

We seek easier and more friendly way to keep in touch with our customer and hear their need. With the help of social network, you can find us on Facebook, Whatsapp, Youtube ect, and get personal service easily.

### Timely Response

Haiqiang has established sales & service network both in China and worldwide. Our oversea office will attend you with local service. In the meanwhile, our sales team in China is also available and promise to response in 24 hours after receiving request.

### Visit and Feedback

Every machine sold has its ID number and file saved in our documents, so as to guarantee customer get their problem solved timely. Besides, for oversea customer and partner of trust, our company sends technician and give special care.





## Presses main components Control System

### 塑机主要部件 — 控制部分



伊士通电脑 Esto

弘讯 Techmation  
(选配Optional)

- 新一代高精度、高稳定性及智能化中央控制器；
- 故障自动诊断报警系统；
- 实时温度显示功能，料筒温度采用PID控制方式；
- 多种方式抽芯和顶针功能；
- 生产数据存储及打印输出功能；
- 注射速度/压力图标显示功能；
- 自动开关机或开关温度设定；
- 机械手接口回路；
- 网格化监视及控制功能；
- 采用大屏幕LCD显示屏，支持多国语言系统；
- 采用高速、高精度德国NOVO位置传感器，确保位置控制精度。

- New generation of CPU, with high precision, stability and intelligence;
- Automatic fault diagnosis and alarm system;
- PID control and display of barrel temperature;
- Multi-stage control of ejection and core pulling;
- Production data storage and printing outlet function;
- Injection speed and pressure display;
- High oil temperature protection and automatic power break off;
- EUROMAP robot interface;
- Remote control and network monitor function Big LCD color screen, Program multi-language support High-speed, precise electronic sensor NOVO imported from Germany, makes the position control accurate.

## Presses main components Hydraulic System

### 塑机主要部件 — 液压部分



北部精机 Northman

威格士 Vickers  
(选配Optional)赫莱特密封件  
Hallite Sealing Partsurate

铜套 Copper Bushes

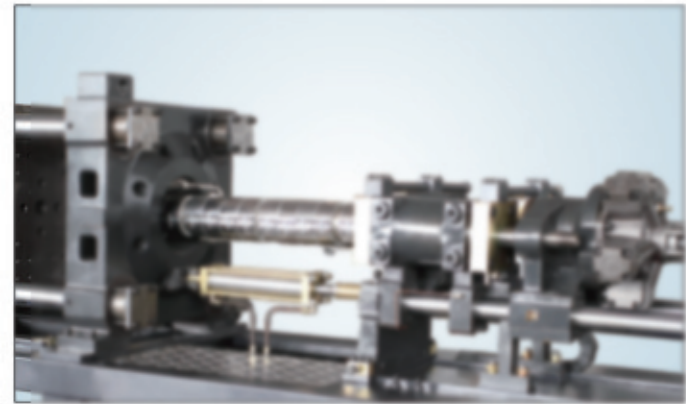
- 采用世界著名品牌的泵和控制阀，既节能又精确控制液压机构的力与速度，保证了整个机器的准确性，可靠性；
- 采用进口密封件，经久耐用；
- 简洁明了的油管排布，减少了油路引起的能量损失，方便保养维修；
- 独特的油路设计，既降低了噪音又最大限度的增加了散热面，降低了油温，减少了冷却水的使用量，增加了油路液压密封件等的使用寿命。

- World famous brands of hydraulic pump and valve, make movement of machine accurate, reliable and saving energy;
- Imported sealing parts is more durable, and of better elasticity;
- Simple and clear oil pipe allocation, reduces energy lost and easy for maintenance;
- Unique hydraulic circuit design with larger heat dissipation surface and low noise, reduces cooling water consumption and prolongs service life of sealing elements. Unique hydraulic circuit design with larger heat dissipation surface and low noise, reduces cooling water consumption and prolongs service life of sealing elements.



## Presses main components injection System

塑机主要部件 — 注射部分

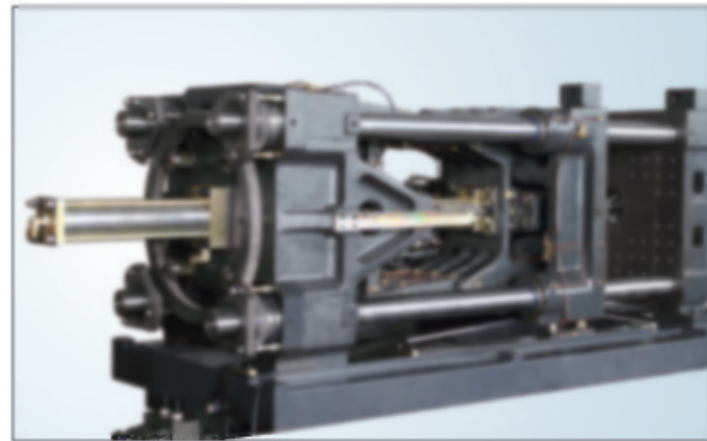


- 平行双注射缸布置，使螺杆在注射过程中受力平衡均匀，注射压力更大；
- 对称双缸射移，避免了由于单缸受力不均引起的料筒变形、漏胶，受力更合理；紧密多级射速、多级压力控制，适合多种复杂塑料制品成型工艺；
- 每种机型设置三种或四种不同直径的并经氧化处理的优质合金料筒螺杆，同时正对不同特性的工程塑料配备专用螺杆，确保品质；
- 整体式设台座，结构紧凑、重量轻、刚性强、可靠性高；
- 差动式射胶，设有增速杆，减小了由于射胶过程大量回油及预塑过程大量吸油而产生的阻力损失，从而增大了射胶速度（部分速度）。

- Parallel Double-cylinder injection system ensures steady injection motion, avoids barrel distortion and leakage from unbalanced force; Thus, it extends life of screw and barrel, improves plasticizing effect;
- Multi-stage injection speed and pressure control are suitable for different complexed thermoplastic molding process;
- For every machine model, 3 or 4 nitrided bimetal screw & barrel of various diameters and special design are provided, to satisfy requirement of different material and product;
- Integral design of injection unit has advantages of compact structure, light weight, good rigidity and reliability;
- Differential injection process with accelerating rod, reduces resistance force and makes injection smooth and fast.

## Presses main components clamping System

塑机主要部件 — 锁模部分



(选配Optional)

经优化级设计的内翻式、双曲肘三连杆五铰锁模结构，具有运动平稳，移模行程大，刚性好。四级锁模压力，速度及差动快速锁模装置，具有多种方式顶出功能。

- Five point double toggle clamping unit, linkage structure of connecting rod guarantee high rigidity and accuracy of mechanic system;
- Reinforced platens with T slot, larger open stroke and mold space, make mould installation easier;
- Multi-stage clamping pressure & speed control, and Fast mold closing devices;
- Multi-stage and function ejection control and air blast fittings.



# HQT-S series servo energy saving plastic injection machine

节能之王者 HQT-S 系列伺服节能注塑机



## 伺服专用电机泵

- 低油温:** 电机只在需要做功时启动, 不会产生多余热能, 有效避免油温上升, 实现大幅节水的效益。
- 高节能:** 在理想状态下, 比定量泵系统最高节能可达到80%, 大幅度降低生产成本。
- 高应答:** 性能稳定的伺服电机, 配备了高精度、高灵敏的压力回馈装置, 形成闭环精准控制, 有效缩短周期, 提高生产效率。
- 低噪音:** 有别于传统定量泵长期运转的噪音, 伺服节能型机只在需要做功的时候运转, 运行噪音低, 使您的工作区间更宁静。

## Servo motor pump

- Low Oil Temperature: Servo motor only works when necessary, decreases system oil temperature and saves cooling water consumption effectively.
- High Energy efficiency: In condition of ideal working state, power consumption is 20%-80% less than that of traditional fixed pump, saving the energy effectively.
- Fast Response: With stable performance, servo motor control system is equipped with precise pressure feedback device, improving motion response and production efficiency.
- Low Noise: Different from traditional fixed pump system, servo machine is only works when necessary, offering you a quieter working place with less noise.



伺服电机 Servomotor



驱动 Drive



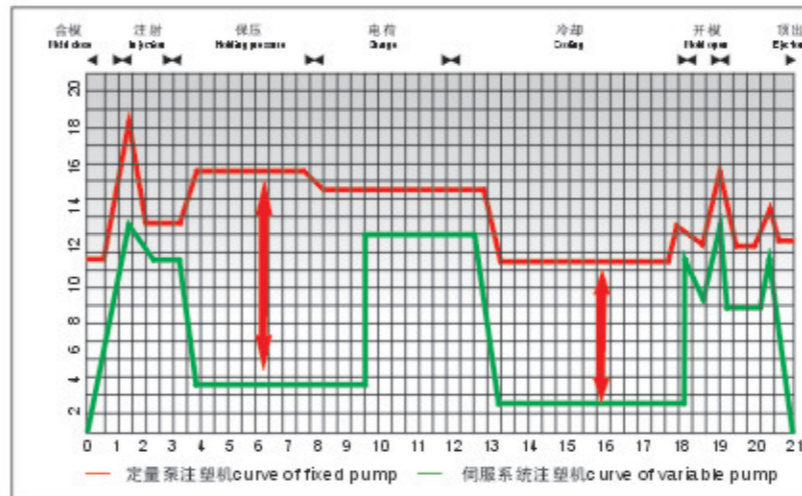
螺杆泵 Screw Pump



齿轮泵 Gear pump



控制器 Controller



## 伺服节能效益参考表

Servo energy-saving efficiency reference list

一年节省时间 (Time savings per year): **16 days**  
 一年节省电费 (Cost savings per year): **56,457**

	HQT-4500		HQT-E4500		HQT-S4500	
	定量泵 Fixed pump KWH	RMB	变量泵 Variable pump KWH	RMB	伺服系统 Servo system KWH	RMB
生产时间 (日) production time(days)	393	-	393	-	377	-
产品 (每件) product(per piece)	0.28	0.20	0.18	0.13	0.11	0.09
50万件总计 5000,000 piece total	127,717	102,173	78,678	62,942	57,146	45,717

以电费 RMB 0.8/KWH 计算  
 Based on RMB 0.8/KWH

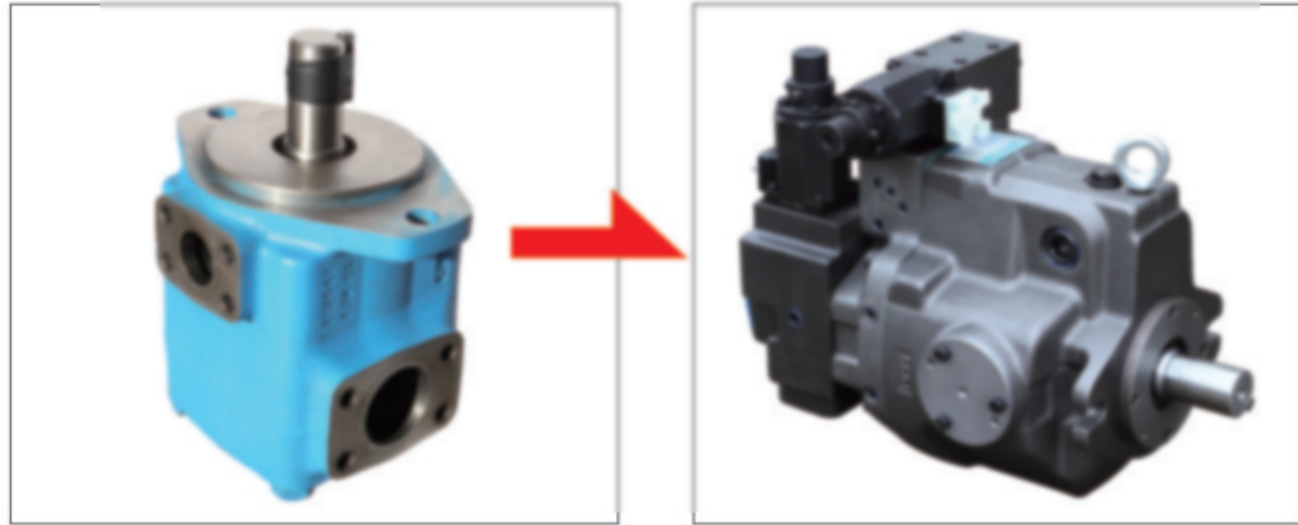
整机省电及生产效率比较 Energy Saving & Efficiency Comparison  
 50万件产品, 以一年生产时间计算 (每天20小时, 1星期6天, 52个星期)  
 ( For 5000,000 pieces of product, roughly one year at 20 hours/day, 6 days/week, 52 week )



# HQT-E series variable pump energy saving plastic injection machine

## 节能之先创 HQT-E系列变量泵节能注塑机

### 高品质、高性能的专用比例变量泵系统 专用变量泵



威格士定量泵 Vickers Fixed pump

变量泵 Variable pump

在注塑机工作周期中,每个阶段的动作速度有快有慢,但是传统定量泵型注塑机的油泵吐出量是不能改变的,根据公式:  $P=pxQ$  (P:功率, P: 压力, Q: 流量) 可见,定量泵机型在同一个压力的情况下,无论机器动作的快慢,由于其油泵吐出量不能改变,因此这类机器不能实现节能生产。

而变量泵是可变排量的油泵,其油泵的吐出量可以根据控制器输出进行改变,要求多少排量就给出多少,无溢流能量损失,相比较普通定量泵机型,变量泵注塑机可达到30%~60%的节能效果。(节能视工况不同而定)。

In the operating period of injection molding machine, the speed of motion in each section is different, but the output of pump in traditional fixed pump system machine is fixed, according to the formula:  $P=pxQ$  (P :power;p:pressure, Q:flow) . Regardless of motion speed.The output of pump is fixed under the same pressure ,then superfluous output volume will return to oil tank through relief valve , so plenty of energy is wasted.These kinds of machines can not save energy. The pump of variable displacement pump can vary according to the instructions of controller, so there is no extra energy lost via the relief valve. Compared to the fixed pump system machine ,the variable displacement pump can save energy by 30%-60% ( differs according to working conditions) .

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**节能:** 在理想状态下,比定量泵系统最高节能可达到60%,有效降低生产成本。

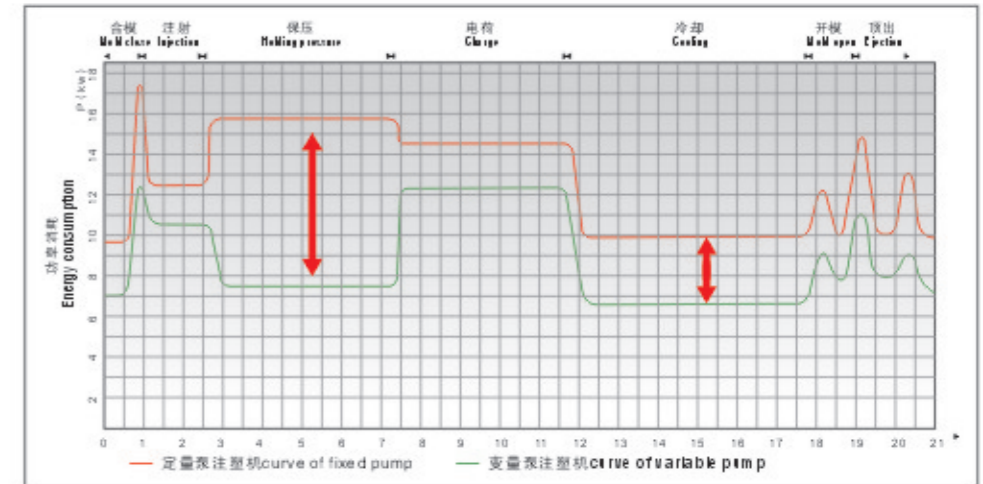
**节油:** 配备高性能精密滤油器装置,确保液压油使用寿命更长。

**节水:** 无溢流发热,低油温,节约冷却水,使密封圈寿命更长。

Energy Saving: In the ideal working state, power consumption is 30%-60% less than that of ordinary fixed pump, saving the energy effectively.

Oil Saving: Provided with imported high quality oil filter, longer life of hydraulic oil.

Water Saving: Without overflow heating, low oil temperature saves cooling water and prolongs the service life of sealing parts.





## HQT-J serie High Precision Injection Machine

专用机系列之 HQT-J 精密注塑机



- 大功率的电机和油泵，确保注射的快速和精度；
- 专项的油路系统升级，保证了机器的响应速度；
- 特殊设计的螺杆，保证了超强的塑化性能和产品的饱满；
- 多项特殊设计的应用，保证了壁薄、成型时间短、精密度高的产品生产需求。

- Adopt motor and pump of large power, increasing injection speed and precision;
- Improved oil circuit, enables quick and accurate response of action;
- Special screw with excellent plasticizing capacity, guarantees the best moulding effect;
- Various unique designs meet perfectly the requirements of fabrication such as high precision, short forming time, thin wall ect.



## HQT-PET serie PET Preform Injection Machine

专用机系列之 HQT-PET瓶胚注塑机



- 采用PET专用的锁模结构、注射系统、长径比螺杆，确保各类PET产品的生产需求。

- Special screw for PET material, with bigger L/D ratio, screw diameter ect, reduces acetaldehyde content to meet food packaging standard, and makes sure preform to be completely transparent and bright.
- Special clamping and inject unit to meet PET products' requirement.





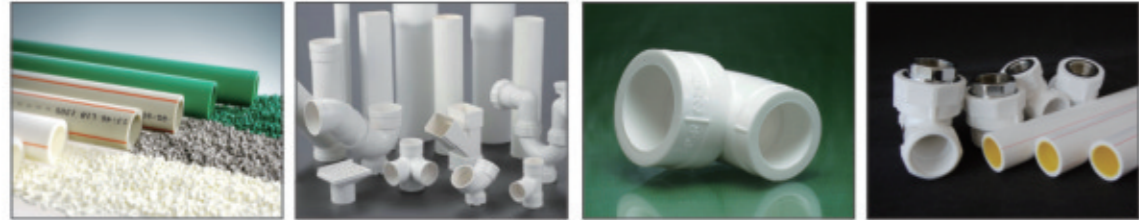
# HQT-PVC Serie PVC Fitting Injection Machine

专用机系列之 HQT-PVC管件专用机



· 采用PVC专用的注射系统、强排式冷却装置、高硬度和防腐蚀的双合金螺杆，符合PVC、UPVC等颗粒、粉料的生产要求，保证了塑化效果和混色效果，同时避免产品过热而变色。

- Air cooling device with quick response and accurate temperature control, avoid Degradation of PVC in barrel;
- Bimetal screw with high corrosion resistance and rigidity, ideal for PVC powder material;
- Extra spacious mould area, suitable for long core pulling and multi-core pulling;
- Enlarged plasticizing motor and special injection system, make sure plasticization is Complete and even.



# HQT-X Serie Plastic Crate Injection Machine

专用机系列之 HQT-X箱框专用机



· 采用特殊设计的注射结构，配以流动性良好并注射速度快的专用螺杆，以达到吃料快并且成型周期短的生产需求。  
· 特殊的油路设计，增加了开模后顶出产品的联动装置，提高生产效率。

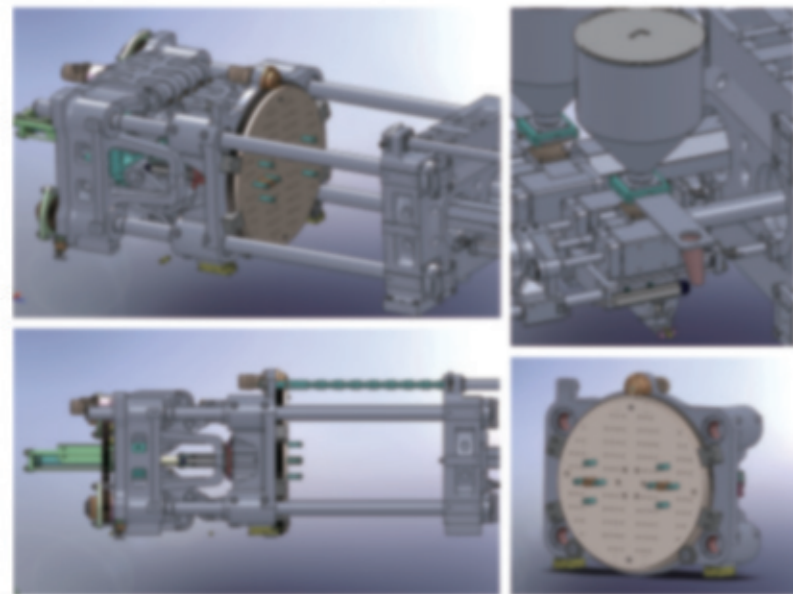
- Special designed injection unit and screw can INcrease plasticizing capacity and reduce forming time.
- Innovation of additional ejection device and optimized hydraulic circuit design improve production efficiency.





## SHT-S series multi-color plastic injection machine

专用机系列之 HQT-S清双色注塑机



- 两套独立的比例压力流量控制系统，分别控制两组射台，提高重复精度，大幅度提升产品质量；
- 双向180°转盘，可放置两副模具，生产双色分明的产品；
- 转盘转动时不与模壁接触，减少因磨损所造成的故障；在锁模前均做精准的转盘定位确认，以保护模具安全；
- 注射部分设有两组独立的料管组，同步做射出动作，双色一次成型，可大幅度缩短成型周期，增加经营利润；
- 转盘由两轴承支撑，辅助承载模具重量，保证转盘转动精度。

- Two sets of independent proportional pressure / flow control system respectively coordinate two sets of injection unit, which enhances repeatability, precision and greatly increases the product quality;
- Bi-directional 180° rotary platen can place two pairs of the molds. It can produce distinctively two-color products;
- In rotation, rotary plate does not touch the mold wall, which reduces the abrasion troubles. It detects accurate position of rotary table before clamping so as to extend mould life;
- Injection unit consists 2 sets of independent material feeding system, which works together to realize multi-injection molding;
- Rotary platen is supported by two bearings which helps to support mold weight And enhance accuracy of rotation.



## HQT-G serie high speed thin wall injection machine

专用机系列之 HQT-G高速薄壁专用机



- 经特殊设计的注射和锁模结构，并应用优质材质，确保连续高速生产所需要的抗击能力；
- 通过辅助系统来实现高速注射，并用联动功能来减少注射成型时间；
- 高精度的控制系统，能精准的控制每一模的位置和质量，降低成型误差，提高精密度；
- 专用油路系统设计，能迅速响应并完成控制系统所指示的工作要求。

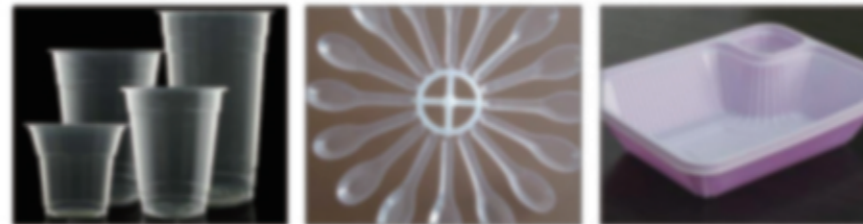
- Clamping unit with improved rigidity meets the requirement of high injection speed and pressure, and extends the service life of mould;
- Hydraulic accumulator allocated with high quality proportional valves accelerates the injection velocity significantly;
- Fast injection rates and response assured by optimized hydraulic system;
- High precision control system can enhance the accuracy of movement, and make machine work reliably.

### 备注：

高速机的配置，完全区别普通机。

### Note:

The configuration of high-speed machine, completely different from standard machine.





## Features of HQT 7 series

### HQT 7系列 特色介绍

**开放式射台:** 可在规定距离内前后移动, 以满足额定范围内不同长度螺杆的安装。

Flexible Injection Unit: It is adjustable to move back and forward, so that you can inject products of different screw length with the same machine, for example mobile phone shell and bottle cap.

**注射双回油:** 注射和预塑独立回油, 预塑时基本实现零阻力, 从而提高生产效率。

Double oil return circuit: independent oil return circuits for injection and plasticizing process, reduce energy loss and make movement smooth and fast.

**前置式被压:** 背压阀安装在电脑箱下方, 方便操作并可以直接看到每次调节的实效。

Front back pressure valve position: The back pressure control valve is installed under the computer, convenient for operation, able to see the screen in adjustment.

**电控式被压:** 电脑控制调节被压, 确保精度 (备注: 因客户使用习惯不同, 此功能为选配)

Digital Backpressure control: Precise backpressure control by computer (Optional)

**嵌入式回油:** 回油管进邮箱中底部, 避免回油冲入邮箱产生大量气泡而导致泵吸空。

Optimized oil return position: oil return pipe is connected to the middle bottom of oil tank, in order to avoid bubbles in oil flow which affect efficiency of pump.

**回油再过滤:** 为避免渣滓进入邮箱, 在主回油端增加过滤装置, 过滤油量达80%

Extra oil filter: To avoid waste into the oil tank, An additional oil filter device is installed on the edge of oil return pipe, with filtration capacity up to 80 %

**调模阀上置:** 调模阀安装在锁模阀板的非最底部, 避免渣滓的沉淀, 降低卡死概率。

Die adjusting valve: to avoid waste deposit and getting stuck, the die adjusting valve is put in middle bottom of clamping valve block.

**前后活动窗:** 正面封板有两个可拆卸式的透明活动窗, 便于实现观察并方便维护。

Moveable windows on the shell. There are two moveable windows in forward shell, easy to observe and repair in case problem occurs.

**高强度高压管:** 按机型和需求应用四层和二层加强型, 保证高压软管的防爆能力。

High quality oil pipe: adopted high pressure pipe of 4 or 2 layers according to customers requirement with good explosion proof.



**润滑油量自动检测和报警系统:** 在无润滑油时, 会即刻报警提醒, 避免磨损而损坏机器。

Automatic lubrication and alarm system: Immediately report when short of lubrication oil, to avoid dry grinding and damage to the machine.

**专业级回油管:** 非PVC水管, 采用抗压强度高、耐磨、不易氧化老化的专用回油管。

Professional oil return pipe: Instead of common PVC pipe, we use professional oil return pipe with high resistance of pressure, abrasion, oxidation and aging.

**硬连接润滑管:** 坚持应用柔软性好、抗压能力强、不易拆卸的铜管, 保证使用寿命。

Copper lubrication pipe: we keep using good quality copper pipe of high flexibility and pressure resistance, to extend the service life.

**螺杆设计应用:** 喷嘴头和前体用38铬钼铝并氮化, 不易变形; 特殊螺棱, 不易打滑。

Screw design: Nozzle and front part are made of nitrided 38CrMoAla of high rigidity; adopted Special anti-slip screw land.

**喇叭式下料口:** 下料头颈采用喇叭式设计, 下料速度快; 前置拖板, 方便清理原料。

Horn-shaped material inlet port: adopted horn-shape design for inlet port, to feed material faster; front carriage easy to clear.

**耐干磨合金套:** 按需求应用吸油式耐干磨的石墨锌基合金套, 减少磨损变形卡死概率。

Hard metal bushes: applied oil-absorb, anti-wearing bronze or graphite zinc alloy bushes, to increase reliability.

**精密型密封件:** 对铸铜件等进行高精密度配合公差计算并加工, 采用原装进口密封件。

Hydraulic sealing parts: imported sealing parts of high precision, compatible with our casting steel components.

**下进式冷却水:** 从底部分两组引入水管, 保证动板头板水管不缠绕且漏水不渗入油箱。

Cooling water circuit design: cooling water pipes are connected in two groups from the bottom of mould clamping area, to avoid twisting and water getting into oil tank.

**透视铝制油箱窗:** 在侧面增设透明可拆卸的油箱窗, 即可实时监测油质又方便清理。

Oil tank opening hole: moveable observation window on oil tank, easy to clear and monitor oil quality.

**系统阀板全封闭:** 系统阀板和冷却器全封闭安装, 避免元器件等被撞坏不影响维护。

Valves block protection: hydraulic valve block and cooling device are protected completely by metal shell to avoid damage, while not influence maintenance.