



ECO 系列 高效瓶坯注塑系统

ECO HIGH EFFICIENT PREFORM INJECTION SYSTEM



DEMARK

升级传统瓶坯生产方式

UPGRADING THE TRADITIONAL METHOD OF PREFORM PRODUCTION

德玛克创新为您，带来高达96腔的高速瓶坯注塑系统，一台的效率是普通瓶坯注塑机的两倍多。领先于业内其他同行的保压阀设计，有效缩短了周期时间。同时搭配德玛克高品质瓶坯注塑模具，模后冷却机械手，基于德国倍福集中控制系统和高效原料干燥系统，使得您在有限的投资内收获更多的回报。

Demark brings you the ECO series high efficient preform injection system with many years'innovation. The system is up to 96 cavities and double production capacity with normal injection machine. With the advanced pressure hold technology, the system makes the plasticization and pressure hold at the same time therefore has a better cycle time for production. With Demark precision preform injection molds, post cooling take out robot, centralized control system and high efficient material drying system, the ECO series brings you more returns with limited investment.



DEMARK

▲ 专为PET生产而设计的加大型螺杆和快速开合模设计，该系统广泛用于水和饮料瓶坯的生产，同时也特别适合大克重瓶坯的生产，如油坯以及5L水坯。不仅如此，德玛克还秉承包括瓶坯设计和整厂规划等交钥匙服务理念为您从多个维度提供更多的建议和帮助。

▲ The ECO series is specialized for preform production with enlarge screw and fast clamping design. The system is widely used for water and beverage preform production as well as big gram preform such as oil and 5L water preform. Demark also insist on the "turnkey" solution concept by offering preform design and whole plant planning to our customers with more suggestion on various aspects.



ECO HIGH EFFICIENT PREFORM INJECTION SYSTEM
ECO 系列高效瓶坯注塑系统

机型特点

MACHINE SPECIFICATION

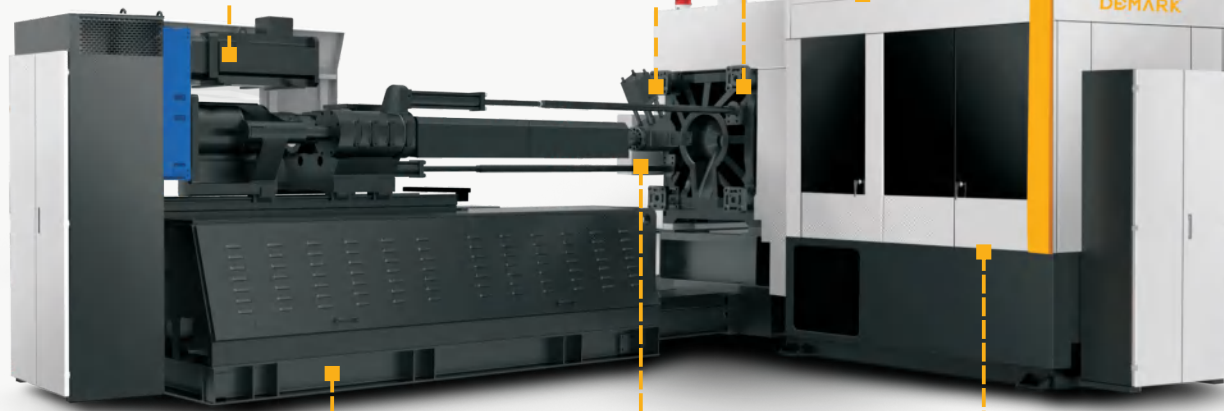


独立伺服电机溶胶
ELECTRIC SCREW DRIVE

保压阀技术
PRESSURE HOLD VALVE

可靠的锁模
RELIABLE CLAMPING

伺服比例阀控制
SERVO PROPORTIONAL VALVE CONTROL



倍福控制系统
GERMANY BECKHOFF CONTROL SYSTEM

伺服液压系统
SERVO MOTOR DRIVE HYDRAULIC SYSTEM

后冷却机械手
POST COOLING TAKE OUTROBOT



独立伺服电机溶胶 ELECTRIC SCREW DRIVE

进口伺服电机溶胶，带来了节能和效率的双重提升。

Independent electric screw drive brings you both plasticization and energy efficiency.



倍福控制系统 BECKHOFF CONTROL SYSTEM

专门为PET生产全新设计的基于德国倍福的集中操作系统。

Brand new BECKHOFF centralized control system special designed for PET production.



后冷却机械手 POST COOLING TAKE OUT ROBOT

三工位模后冷却机械手使瓶坯充分冷却的同时，更缩短了产品生产周期。

Three station post cooling robot makes the preform perfectly cooled with better cycle time.

机型特点

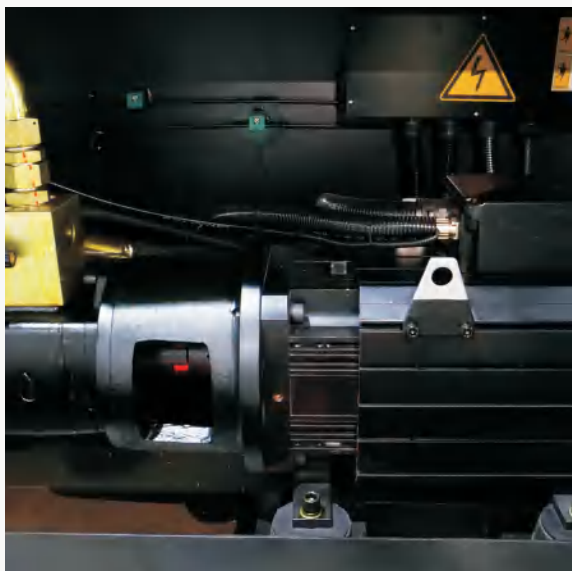
MACHINE SPECIFICATION



伺服比例阀控制

SERVO PROPORTIONAL VALVE CONTROL

- 先进的比例阀控制,使得开合模更加快速精准;
- Advanced proportional valve control technology makes the fast and precise clamping possible;



伺服液压系统

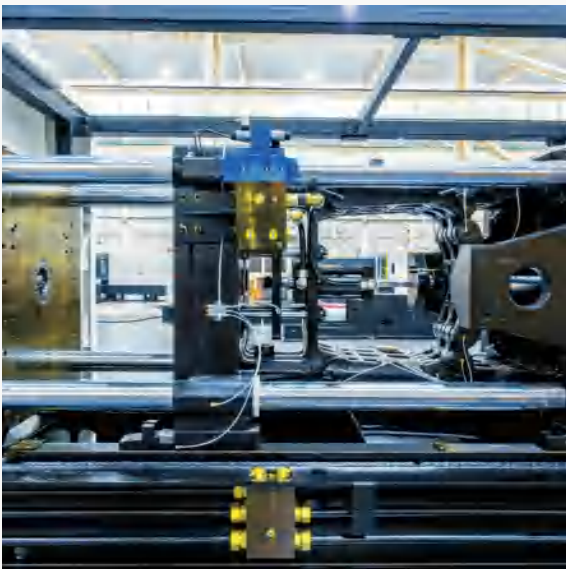
SERVO MOTOR DRIVE HYDRAULIC SYSTEM

- 液压系统全由伺服电机提供动力,大幅度节省能耗的同时保证了充足的动力;
- The hydraulic system was driven by servo motor which ensure the lower energy consumption and sufficient hydraulic power supply;



保压阀技术 PRESSURE HOLDING VALVE

- ▲ 领先于业内其他同行的保压阀设计，使得溶胶和保压可以同时进行，有效缩短了周期时间；
- ▲ With the advanced pressure hold technology, the system makes the plastisization and pressure hold at the same time therefore has a better cycle time for production;

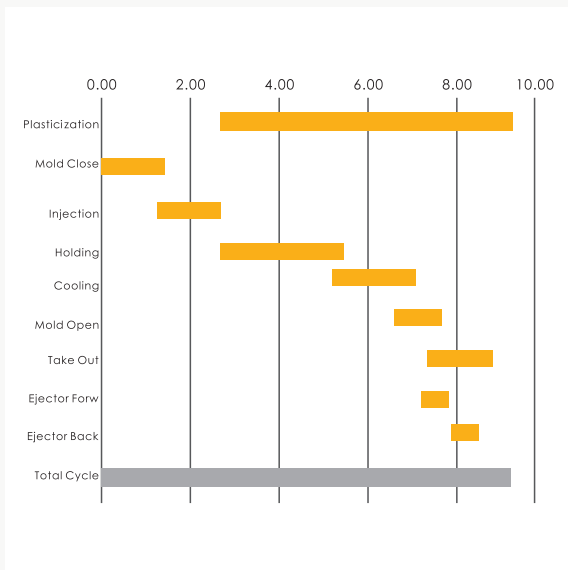


可靠的锁模 RELIABLE CLAMPING

- ▲ 专为PET瓶坯模具设计的模板结构，使得模具各部分都受力均匀，同时保证了高速开合模的要求。
- ▲ Special design for PET preform mold, which ensure the fast clamping movement and uniformly forced of the mold.

客户价值

CUSTOMER VALUE



彻底改变传统瓶坯生产效率

TOTALLY CHANGE THE WAY OF PET PREFORM PRODUCTION

- 优秀的系统设计，使得各部分在中央控制系统的集中控制下，协同工作，大幅度缩短了产品的成型周期；
15g配套48腔系统最快周期达9s；
100g配套24腔系统最快周期达23s
- Excellent system design, makes all the parts work together under the central control system and greatly reduce the cycle time;
15g preform with 48 cavities system cycle time 9s;
100g preform with 24 cavities system cycle time 23s



有效降低初始投资

REDUCE YOUR INITIAL INVESTMENT

- 无线接近于市面上进口瓶坯注塑系统的生产效率，但是价格却有巨大优势，使得客户能够以有限的投资获得更大的生产能力，以便提前和快速抢占市场。
- With almost the same producing efficiency as the imported preform production system, the investment of ECO become great advantage, the system help the customer gain more production capacity with lower initial investment and grab the market in advance.



整厂交钥匙服务 TURN-KEY SOLUTION

- 并且我们始终秉承“交钥匙”解决方案的理念，为客户从多个维度提供更多的建议和帮助。
帮助客户在竞争激烈的和快速变化的水，饮料、饮料市场始终保持长期的竞争力。
- Demark allways insist on the "turnkey" solution concept by offering preform design and whole planning to our customers.
With more suggestion on various aspects to help our customers keep long term competitive strength in the hyper competitive, changeful consuming market.



同一台机器同时兼容以下不同类型的瓶坯 ONE ECO MACHINE CAN WORK WITH DIFFERENT PREFORM MOLD

- 72腔，15g瓶坯，适用于500ml矿泉水
48腔，34g瓶坯，适用于1.5L矿泉水
24腔，103g瓶坯，适用于5L矿泉水和食用油
- 72 cavities, 15g preform, for 500ml water
48 cavities, 34g preform, for 1.5L water
24 cavities, 103g preform, for 5L water and edible oil

控制系统

CONTROL SYSTEM



BRAND NEW HMI CONTROL SYSTEM 全新的人机交互控制系统

采用由国家千人计划的获得者，原HUSKY Injection Molding Machine Ltd的控制系统开发部首席工程师，加拿大华侨博士主持开发的新一代基于BECKHOFF Pcbased平台的注塑机控制系统。

具有以下优势：

- 稳定快速的生产周期
- 快速的PLC执行周期
- 高性能的PC和快速的I/O
- 各控制部件的快速通讯能力
- 自校正和自适应的控制方法
- 高级的各种速度、压力、温度等的控制算法和节能控制策略
- 友好的用户设计与界面
- 明了精确的报警功能
- 详细的操作事件记录
- 配备寸触摸屏，双核处理器，大内存和硬盘
- 非接触式电子尺，寿命长，EtherCAT通讯数字信号传输，抗干扰强

The project leading by former HUSKY engineer who was in charge of developing injection machine control system. Applied with his new generation PC based BECKHOFF injection system control solution.

Demark machine could has following advantage:

- Stable and fast cycle time.
- Fast PCL execution time.
- High performance PC and fast I/O capability.
- Quick communication thought all control components.
- Self-adjustment and self-adaption.
- High level control algorithm for speed, pressure and temperature. High level control strategy for reducing energy control strategy for reducing energy consumption.
- Friendly user interface design.
- Clear and accuracy alarm function.
- Detailed event log.
- Touch screen, dual core CPU, big memory and hard drive equipped.
- Non-touched electronic ruler with longer life time, and EtherCAT digital single with stronger anti-interference capability.

模具 & 辅机

MOLD & AUXILIARY

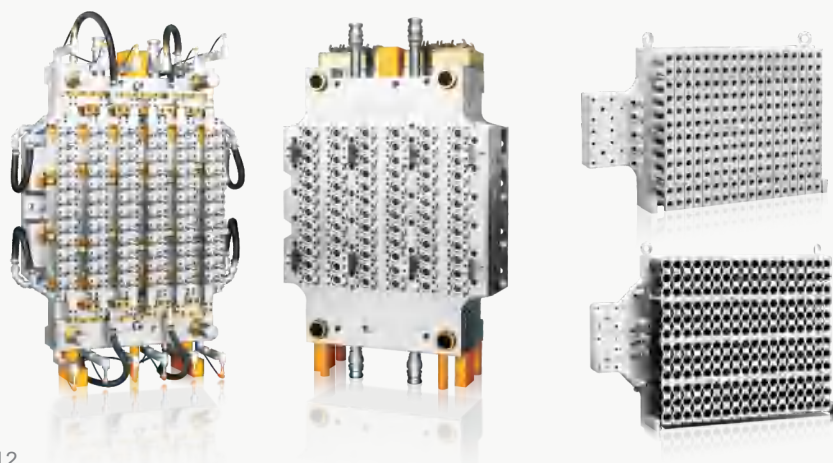
DEMARK HIGH QUALITY PREFORM MOLD

高品质德玛克瓶坯注塑模具



德玛克致力于打造世界级的恒温恒湿模具加工车间，保证材料在稳定的环境下满足严苛的精度标准。

World class stable temperature mold processing workshop. Ensure the strict precision standards in a perfect manufacturing condition.



- 无螺纹不良
Better neck finish
- 更好排气
Better air exhaust
- 减少磨损
Reduce wear
- 尺寸稳定
Dimension stability
- 合模线佳
Better parting line
- 冷却均匀
Cooling uniformity
- 瓶坯尺寸稳定
Stable preform size
- 在顶部密封面无缩痕
No indentation on top sealing surface

AUXILIARY EQUIPMENT INTEGRATION ABILITY

辅机配套能力



德玛克深谙PET系统工艺之道，为了生产出更加优质的瓶坯，根据PET瓶坯注塑生产的特点，专门定制相应的原料除湿干燥系统，模具除露机，冷水机以及供料系统。

Demark has the sound knowledge of PET preform production. In order to produce higher quality preforms, according to the characteristics of PET preform injection, the corresponding raw material dehumidification drying system, chiller and material loader system are specially customized.

并且发挥德玛克优秀的辅机整合能力，与业内诸多厂家保持长期战略合作关系，保证充足的供货能力和更低的采购价格。

In order to show Demark's excellent auxiliary machine integration ability, we maintain long-term strategic cooperation with many manufacturers in the industry to ensure sufficient supply capacity and lower purchase price.

主要技术参数

MAIN TECHNICAL FEATURES

MODEL			UNIT	ECO260/2000	ECO300/2500	ECO300/3500	ECO400/3500
INJECTION UNIT 注射单元	Screw L/D Ratio	螺杆长径比	L/D	25	25	25	25
	Screw Diameter	螺杆直径	mm	80	90	100	100
	Theoretical Shot Volume(max)	理论射胶容积(最大)	cm ³	1708	2162	3691	3691
	Shot Weight(PET)	射出量(PET)	g	2000	2500	4300	4300
	Injection Pressure	射胶压力	kgf/cm ²	1125	1173	1075	1075
	Plasticizing Capacity (PET)	塑化能力	g/s	80	110	150	150
CLAMPING UNIT 合模单元	Clamping Force	锁模力	T	260	300	300	400
	Clamping Stroke	移模行程	mm	540	585	585	670
	Max/Min Thickness of Mould	最小/大模厚	mm	200~580	300~720	300~720	300~820
	Space Between Tie Bars(WxH)	导杆间距(宽x高)	mm	570x570	660x760	660x760	845x845
	Ejector Stroke	顶出行程	mm	150	180	180	180
	Ejector Force	顶出力	T	8	20	20	28
NO. of Ejector Pins	顶出杆根数	pcs	5	9	9	13	
MOULD 模具规格	Cavity(Max)	腔数(Max)	pcs	32	48	48	72
	Neck of Bottle(Max)	最大螺口直径	mm	38	42	42	42
	Length of Preform(Max)	最大管胚长度	mm	160	190	190	220
	Weight of Preform(Suggest)	建议管胚重量	g	30	30	50	50
	Type of Mould	模具形式	气动针阀式热流道模具 Needle Valve Of Non-cutting PET Preform Mold				
POWER UNIT 电气单元	Pump Motor Power	马达功率	KW	39+45	39+55	39+39+82	39+39+82
	Robot Power	机械手功率	KW	12	36	36	43
	Heater Input Capacity	熔胶电热容量	KW	43	51	63	63
	Mould Heater Capacity	模具加热容量	KW	30	55	55	68
ROBOT 取胚冷却机械手	Cooling Tubes	机械手真空吸头	cavity	96	144	144	216
	Cooling Form	瓶胚冷却装置	cavity	32x3	48x3	48x3	72x3
	Size(LxWxH)	外型尺寸(长x宽x高)	cm	257X160X220	280X160X250	280X160X250	310X160X250
OTHER 其他	Power Supply(3-phase AC)	电源(交流三相四线制)	V/HZ	380/50	380/50	380/50	380/50
			KW	169	236	314	334
	Chilling Water	冷冻水要求	°C	5~11	5~12	5~12	5~10
			Mpa	0.8	0.8	0.8	0.8
			L/min	700	900	900	1200
			°C	<25	<25	<25	<25
	Cooling Water	冷却水要求	Mpa	0.3	0.3	0.3	0.3
			L/min	100	120	120	300
			Mpa	0.7~0.9	0.7~0.9	0.7~0.9	0.7~0.9
	Compressed Air	压缩空气要求	L/min	400	800	800	1200
Mpa			0.7~0.9	0.7~0.9	0.7~0.9	0.7~0.9	
Machine Size(LxWxH)	主机外型尺寸(长x宽x高)	cm	840X160X240	880X170X250	980X210X250	1020X210X250	
Machine Weight	整机重量	T	14	18	19	24	

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Demark Reserve The Rights To Make Any Product Improvement Or Specification Change Without Prior Notice.

MODEL			UNIT	ECO225P/2500	ECO225P/3500	ECO300P/3500	ECO300P/4500	
INJECTION UNIT 注射单元	Screw L/D Ratio	螺杆长径比	L/D	25	25	25	25	
	Screw Diameter	螺杆直径	mm	80	90	100	110	
	Theoretical Shot Volume(max)	理论射胶容积(最大)	cm ³	1724	2456	3589	4481	
	Shot Weight(PET)	射出量(PET)	g	2069	2947	4307	5377	
	Injection Pressure	射胶压力	kgf/cm ²	1138	1210	1117	1111	
	Plasticizing Capacity (PET)	塑化能力	g/s	170	230	230	280	
CLAMPING UNIT 合模单元	Clamping Force	锁模力	T	225	225	300	300	
	Clamping Stroke	移模行程	mm	550	550	600	600	
	Max/Min Thickness of Mould	最小/大模厚	mm	450-720	450-720	500-800	500-800	
	Space Between Tie Bars(WxH)	导杆间距(宽x高)	mm	620x725	620x725	780x780	780x780	
	Ejector Stroke	顶出行程	mm	160	160	200	200	
	Ejector Force	顶出力	T	11.1+21.6	11.1+21.6	11.1+31.4	11.1+31.4	
	NO. of Ejector Pins	顶出杆根数	pcs	17	17	9+4	9+4	
最高系统压力	Max. System Pressure		kgf/cm ²	175	175	175	175	
MOULD 模具规格	Cavity(Max)	腔数(Max)	pcs	48	48	72	96	
	Neck of Bottle(Max)	最大螺口直径	mm	38	38	38	30	
	Length of Preform(Max)	最大管胚长度	mm	200	200	220	220	
	Weight of Preform(Suggest)	建议管胚重量	g	50	50	40	40	
	Type of Mould	模具形式	气动针阀式热流道模具 Needle Valve Of Non-cutting PET Preform Mold					
POWER UNIT 电气单元	Pump Motor Power	马达功率	KW	39+55	39+55	39+39+82	39+39+82	
	Robot Power	机械手功率	KW	36	36	36	43	
	Heater Input Capacity	熔胶电热容量	KW	51	51	63	63	
	Mould Heater Capacity	模具加热容量	KW	55	55	55	68	
ROBOT 取胚冷却机械手	Cooling Tubes	机械手真空吸头	cavity	144	144	216	288	
	Cooling Form	瓶胚冷却装置	cavity	48x3	48x3	72x3	96x3	
	Size(LxWxH)	外型尺寸(长x宽x高)	cm	280x160x250	280x160x250	280x160x250	310x160x250	
OTHER 其他	Power Supply(3-phase AC)	电源(交流三相四线制)	V/Hz	380/50	380/50	380/50	380/50	
			KW	236	236	314	334	
			°C	5-12	5-12	5-12	5-10	
	Chilling Water	冷冻水要求	Mpa	0.8	0.8	0.8	0.8	
			L/min	900	900	900	1200	
			°C	<25	<25	<25	<25	
	Cooling Water	冷却水要求	Mpa	0.3	0.3	0.3	0.3	
			L/min	120	120	120	300	
			Mpa	0.7-0.9	0.7-0.9	0.7-0.9	0.7-0.9	
	Compressed Air	压缩空气要求	L/min	800	800	800	1200	
	Machine Size(LxWxH)	主机外型尺寸(长x宽x高)	cm	880x170x250	880x170x250	980x210x250	1020x210x250	
Machine Weight	整机重量	T	18	18	19	24		



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