

SONLY
首力

一机多能，综合使用，引领高端细分市场
One machine with multi function, comprehensive usage

SONLY 首力

浙江首力智能装备有限公司
ZHEJIANG SONLY INTELLIGENT EQUIPMENT CO.,LTD

地址：宁波市慈溪滨海经济开发区灵绪路 288 号
邮编：315311
电话：0574-83876031 0574-63990188
传真：0574-63780949

ADD: No.288, LingXu Road, Cidong Binhai Industrial Zone, Ningbo
P.C.:315311
TEL.:0574-83876031 0574-63990188
FAX:0574-63780949



公众号二维码

网站二维码



F9- 超音速系列注塑机 F9-SUPERSONIC SERIES
INJECTION MOLDING MACHINE

注塑工程解决商
Injection molding project solution supplier

E-mail: sales@ouyilai.com
www.gosonly.com
www.ouyilai.com

2022.10



浙江首力智能装备有限公司
ZHEJIANG SONLY INTELLIGENT EQUIPMENT CO.,LTD



首力是专业提供塑料成型整体解决方案的高新技术企业，公司创建于 1998 年，位于“中国注塑机之都”宁波，集研发、制造、加工、检测、应用于一体，年生产能力达到 5000 台。

首力拥有 6 万平米现代化生产基地，各类大型先进精密加工和检测设备 300 余台套，拥有一批高素质、高学历的技术研发和管理团队、与知名高校联合建立研究生培养基地。

首力是工信部机械品牌示范企业，通过 CE、ISO9001 质量体系认证，已累计授权专利 27 项，拥有品类齐全的首力 U-TS 系列高档精密注塑机、伺服注塑机、PET 瓶胚、PP-R 管件专用、水果筐、双色、二板大型、全电动注塑机等多系列规格，涵盖了锁模力 98 吨 -3400 吨的全系列产品，在国内建立 40 多家销售网点，产品远销中东、南美、东南亚、独联体等国家和地区。

SONLY is a high technical company which established in 1998, professional at offering turnkey plastic injection project solution. SONLY factory located in Ningbo, "the city of injection molding machine". It has a whole production line including research & study, manufacturing, processing, inspection and application, with production capacity of 5000 sets each year.

SONLY has a modern production workshop of 60000 square meters, more than 300 sets different kinds of big advanced precision equipment and a group of highly educated research team and management team.

SONLY injection molding machine has CE, ISO 9001 certificates and 27 patents. It produces injection machine from 98 to 3400 tons, includes SONLY U-TS series high precision injection molding machine, servo motor injection molding machine, PET preform machine, PPR special series machine, fruit box special series machine, double color machine, two plate machine, full electric injection machine etc., which has been sold to Europe, Middle East, South America and Africa.

理念与价值观

IDEAS AND VALUES

首力秉承“高效节能、精密稳定”的产品理念，为全球市场提供设计先进、功能完善、品质卓越的设备 and 更智慧的注塑解决方案。

Sonly adheres to the product concept of "high efficiency energy saving, precision with stability", providing advanced design, perfect function, excellent quality equipment and more highlight injection moulding solutions in the global market.

“创新、绿色、智能、开放、节能”是首力的品牌理念。我们践行“诚信、责任、务实、创新、利他”的价值观，服务万千用户，创造更优价值。

"Innovation, green, intelligence, openness and energy saving", this is the brand concept of Sonly. We practice the values of "integrity, responsibility, pragmatism, innovation and altruism" to serve thousands of customers and create better value.

强大制造实力

STRONG MANUFACTURING CAPABILITY



6S 管理
6S management



精益生产
precise production



持续改善
continuous improvement

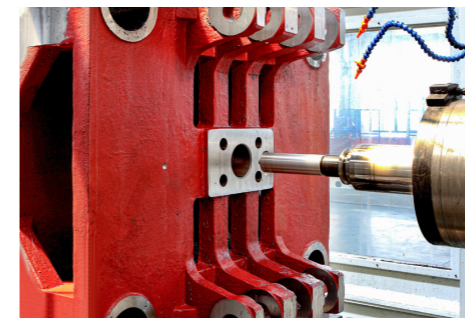


完美交付
perfect delivery



车间一角

WORKSHOP CORNER



车间设备
WORKSHOP EQUIPMENTS



缘起篇

ORIGIN STORY

◆ F9——一机多能，综合使用

F9---One machine with multi function, comprehensive usage

首力团队通过深入的市场调研，发现当今塑料制品材料种类繁多，制品工艺要求也越来越高，而普通常规注塑机的各项性能指标不能很好满足市场的个性化定制需求。客户为了提高生产效率和市场竞争力，纷纷购买水果筐、瓶盖、眼镜架、快速机等各类专用注塑机。短期看，专用注塑机确实能较好满足小众制品的高效生产需求，但长期看，却有巨大隐患。当客户购入专用注塑机后，若该制品改料或遇市场更新换代，此专用塑机便面临很高的改造成本或被淘汰的风险。

Through in-depth market research, Sonly team found that today's plastic products are made of a wide variety of materials, and the product process requirements are getting more and more higher, while the performance of conventional injection moulding machines cannot well suited to the individual needs of the market. In order to improve production efficiency and market competitiveness, customers have to chose special injection molding machines such as fruit baskets, bottle caps, eyeglass frames and fast speed machines. In the short term, these special injection molding machines are indeed better at meeting the need for efficient production of the special products, but in the long term, there are huge pitfalls. When the customer purchased a special injection molding machine, if the product material is changed or the market is updated, the special machine might be obsolete or takes high cost to change.

很多用户已不满足这种“适用面窄、缺乏灵活性”的专用塑机。人们期待一款能广谱适用多种个性化定制场景，大幅提高生产效率，灵活应对市场挑战的通用性更强的新型机器。客户不仅要求设备精密稳定，更希望能“一机多能、综合使用”。

Many customers are no longer satisfied with these "narrow usage and inflexible" special injection molding machines. They are looking forward to a new machine with strong universality that could be adapted to a wide range of individual situations, significantly increase productivity and respond flexibly to market challenges. They not only require precise and stable equipment, but also want "One machine with multi function, comprehensive usage"

首力顺应市场发展趋势，洞悉客户差异化需求，运用新研发平台，倾力打造了这款 F9- 超音速系列注塑机。

Sonly complies to the market development trend and understands the differentiated needs of customers, so we use new R&D platform to create this F9-Supersonic series injection molding machine.

F9 系列注塑机秉承极简设计理念，以“一机多能、综合使用”为核心目的，外观新颖、结构紧凑、性能卓越。

The F9 series of injection molding machine is designed from extremely austere concept, with the main purpose of "One machine with multi function, comprehensive usage", it has a novel appearance, compact structure and excellent performance.

探索无止境，创新不止步！

Endless exploration, endless innovation!

十大核心优势成就 F9“一机多能、综合使用”

Ten core advantages of F9 "One machine with multi function, comprehensive usage"



01 自主加工，创新更自由 INDEPENDENT PROCESSING, FREE INNOVATION

拥有先进的加工检测设备，自主加工，不仅保证零件精度高，交货周期短，还能满足一机多用的高标准定制需求。

With advanced processing and testing equipment to process independently, SONLY not only ensures high precision for machine detail parts with short delivery time, but also meets the high standard customized requirements with multi-purpose.

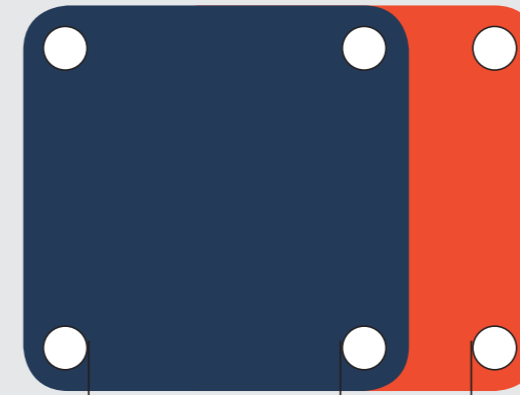
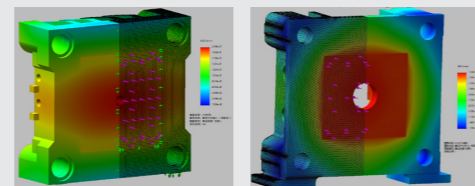
02 超高刚性模板结构，更小模具磨损 SUPER RIGID TEMPLATE STRUCTURE, LESS MOLD ABRASION

销轴内置设计，缩短锁模部件长度，提升模板刚性和模具支撑重量。基于高刚性锁模单元设计，全面优化参数与受力分布，确保整机稳定、可靠、耐用。

借助集成的液压控制装置，可移动模板获得良好支撑并在导向机架上进行导向运动，即使在沉重模具运行时也能提高导向精度，实现模具磨损更小化以及完美的模具保护。所以，维护成本始终可控，效益更好。

Inside design of pin shaft shortens the length of mold clamping part, improves template rigidity and reinforces mould weight support. High rigid mold clamping unit design, comprehensively optimized parameters and force distribution ensure the stability, reliability and durability of the whole machine.

With the help of integrated hydraulic control device, the movable template is well supported and guided on the guide rack. It improves movement accuracy when the mold is very heavy, which achieve less mould abrasion and perfect mould protection. Therefore, the maintenance cost is always controllable and the benefit is better.



其他机型

F9- 超音速系列

03 宽板设计更高效，更省购机成本 MORE EFFICIENT WIDE TEMPLATE DESIGN, SAVE COST FOR BIG SIZE MOLDS

机器的拉杆间距比普通常规机大一个型号，容模量更大，一个产品普通塑机可能需要用 168 吨机才能生产，而用首力 F9 超音速系列 140 吨这款机就可以了。

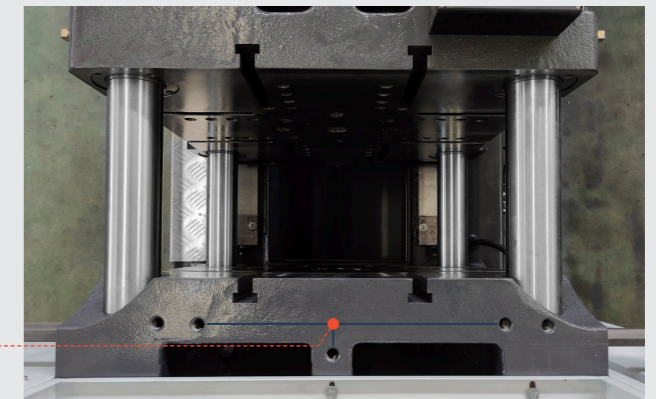
F9 series machine tie bar space of larger compared with ordinary machine in same model, which has bigger space for mould. For example, the same product if by ordinary injection molding machine needs 168 tons, while by SONLY F9 supersonic series only need 140 tons.

04 欧规机械手安装预留，无限可能 EUROPEAN ROBOT INSTALLATION INTERFACE

预留欧规机械手安装孔及信号插头安装孔，实现便捷、高效标准化安装。

European standard robot and signal plug installation interface reserved, which is convenient and efficient.

预留孔位，标准化安装
Reserved holes for standard installation



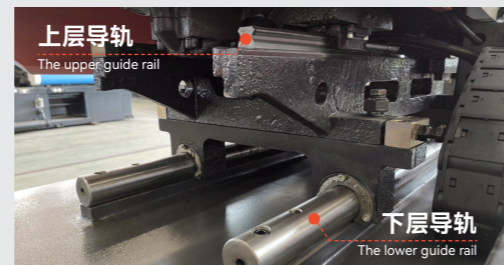
十大核心优势成就 F9“一机多能、综合使用”

Ten core advantages of F9 "One machine with multi function, comprehensive usage"

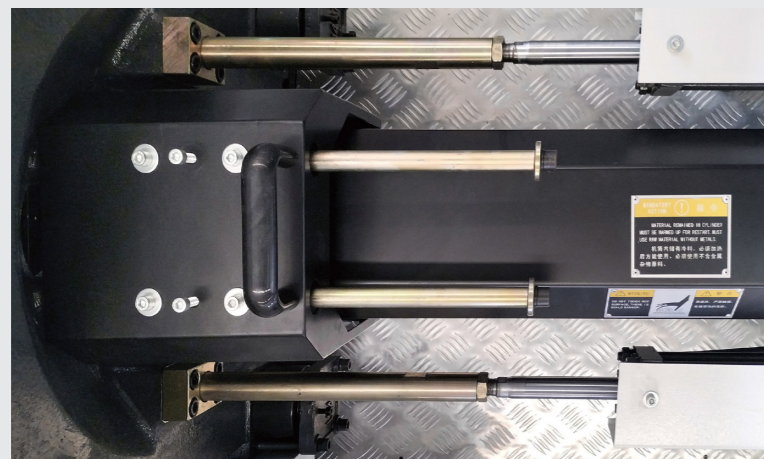
05 注射双层导轨结构，无阻力免拆卸 DOUBLE LAYER INJECTION GUIDE RAIL STRUCTURE, NO RESISTANCE AND NO DISASSEMBLY

采用双层导轨，上层为线性导轨，刚性更好，射胶时无摩擦阻力，平稳而精准，提高制品重复精度，重复精度 0.5% 以内；注射速度提升 10%-40%，且低噪音。下层导轨设计成标配式足够长度，无须拆卸下来更换，前移或后移，方便机筒螺杆改变长短时用户现场直接移动更改。可以适用各种长径比的螺杆，通配性更强（如 PC 料，PET 料等），实现一机多用途，无须改装。

F9 series machine adopted double-layer guide rail, the upper layer is linear guide rail which has better rigidity. The injection movement is smooth and accurate without friction resistance. It also improves the repetition accuracy of products to less than 0.5% and increases injection speed by 10%-40% with low noise. The lower guide rail is in a standard design with enough length, no need to disassemble out the screw for replacement as before, just move it forward or backward, which is convenient for users to change screw & barrel with different diameters. It can be applied to all kinds of screw L/D ratio, the compatibility is stronger (such as PC material, PET material, etc.), to achieve a multi-purpose machine, no need modification.



06 平衡式双缸整射移结构，精准稳定防漏胶 BALANCED DOUBLE CYLINDER INTEGRAL INJECTION MOVEMENT STRUCTURE, ACCURATE AND STABLE, AVOID MELTED MATERIAL LEAKAGE



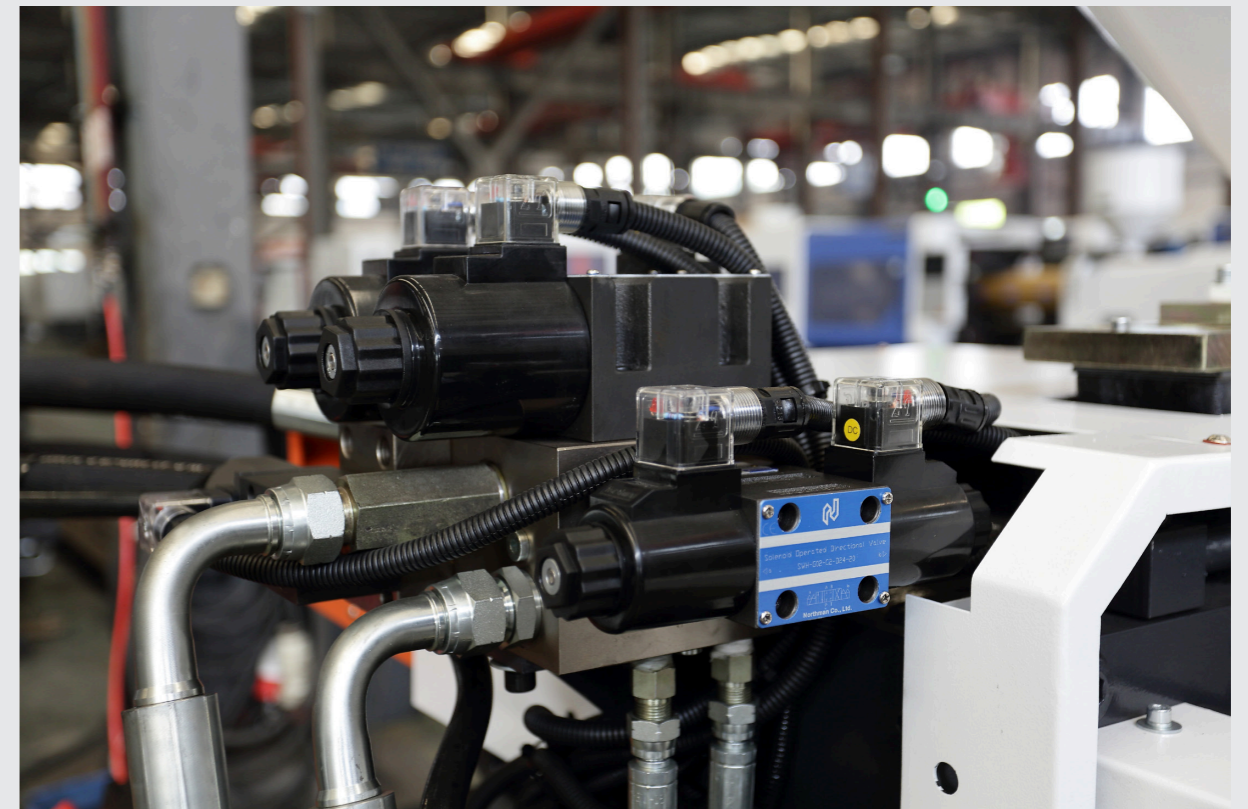
双射油缸平衡布置，确保射嘴对中精准。采用双射移结构，能使座台平稳而均衡有力的顶住模具进胶口，注射稳定，密封性好，有效避免漏胶。

F9 series machine tie bar space of larger compared with ordinary machine in same model, which has bigger space for mould. For example, the same product if by ordinary injection molding machine needs 168 tons, while by SONLY F9 supersonic series only need 140 tons.

07 非焊接式主油管设计，防漏更清洁 NON-WELDED MAIN OIL PIPE DESIGN, LEAK-PROOF AND CLEANER

非焊管路，确保长期使用不会出现焊缝开裂的漏油情况，降低油液污染。可以选配高精旁路过滤装置与自封式吸油过滤器，非焊管路 + 整体式油缸总成，提升油液清洁度。新油路设计，外观亮丽，内在油路快而稳，降本增效。

Non-welded pipe circuit ensures long-term usage without oil leakage by weld crack and reduces oil pollution. High precision bypass filter device, self sealing oil suction filter, non welded pipeline+ integral oil cylinder assembly can be selected to improve the oil cleanliness. New oil circuit design, beautiful appearance, fast and stable internal oil circuit, reducing cost and increasing efficiency.



十大核心优势成就 F9“一机多能、综合使用”

Ten core advantages of F9 "One machine with multi function, comprehensive usage"

08 专用电脑控制器，高效、耐用、延展性强

SPECIAL COMPUTER CONTROLLER, EFFICIENT, DURABLE, STRONG DUCTILITY

配置先进的注塑机专用（弘讯系列）电脑控制器，一键式 12 寸铝铣操作面板，操作屏大、使用直观简便，性能高端耐用、外形美观大气。操作程序二次开发，扫描周期大幅提升，IO 点位预留充足，开放式编程平台，可选配高端多点触控屏。可支持多种数据接口协议。提供云服务，可远程协助和维护（选配）。

It is equipped with advanced special computer controller for injection molding machine (Techmation series), one button 12 inch aluminum milling operation panel, large operation screen, which is intuitive and easy to use and has high-end and durable performance meanwhile with beautiful and atmospheric appearance. The secondary development of the operating program has greatly improved the scanning cycle, reserved enough IO points, open programming platform, high-end multi-point touch screen is optional. It can support multiple data interface protocols and provides cloud services for remote assistance and maintenance (optional).

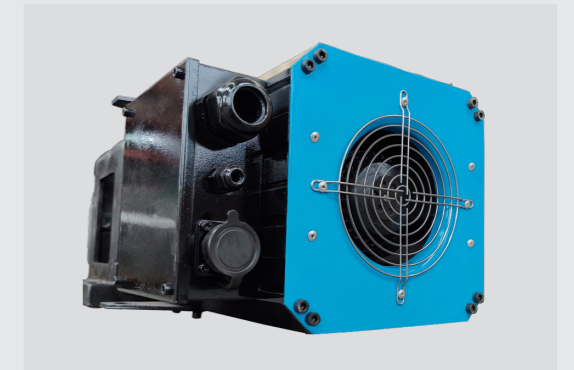


09 新一代伺服系统，更高效

NEW GENERATION SERVO SYSTEM, MORE EFFICIENT

超快响应，27ms 可达最高压力，相比同一款 / 规格的普通机，制品成型周期快 3s 左右，能有效缩短周期、提高生产效率。特别适合透明产品的生产。系统压力高，生产的制品更广泛。

Super fast response can reach the highest pressure in 27ms. Compared with the same model/specification ordinary machine, its production molding time is about 3s faster, which shorts the cycle time effectively and improves production efficiency. It is especially suitable for transparent products. With high system pressure, it can use for a wider range of products.



10 综合服务，一机多用、通用性更强

COMPREHENSIVE SERVICE, ONE MACHINE FOR MULTI-PURPOSE, STRONG UNIVERSALITY



您的设备必须应对塑料加工行业不断变化的挑战。我们有非常专业的综合服务体系，让您随时获得高性能的改良和优化工具，以及全面的专业培训，实现一台机器终身使用。

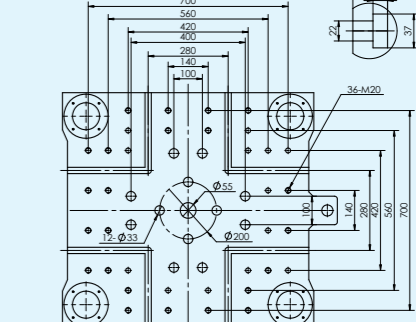
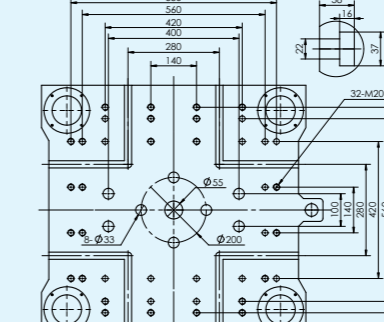
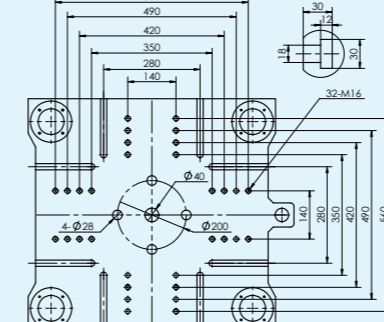
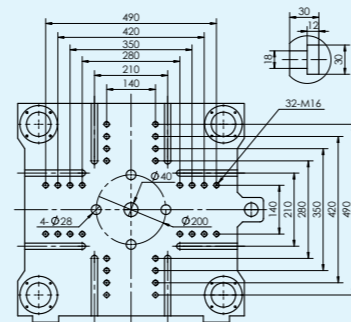
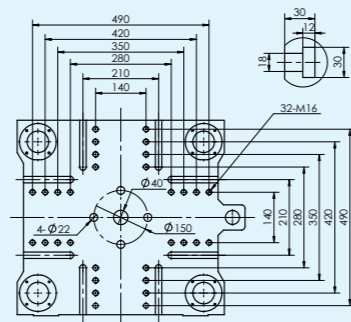
A good machine must be capable to face the challenges of plastic processing industrial market changes. We have a very professional and comprehensive service system, so that you can obtain high-performance improvement and optimization tools at any time, as well as comprehensive professional training, to achieve one machine with the maximum lifetime

技术参数表

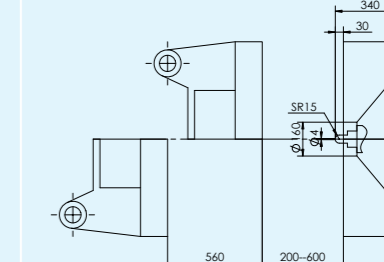
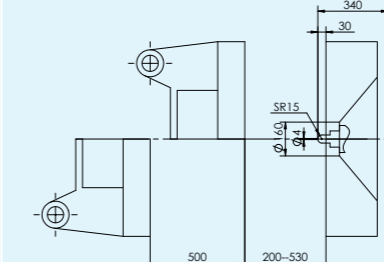
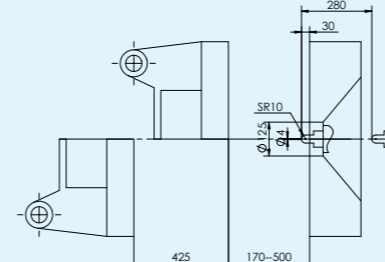
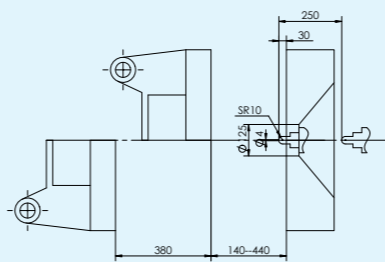
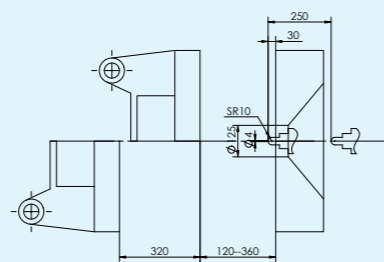
TECHNICAL PARAMETER TABLE

规格	SPECIFICATIONS	U100TSF9			U140TSF9			U170TSF9			U220TSF9			U270TSF9			
国际公认型号 / 公称射胶能力	INTERNATIONALLY RECOGNIZED MODEL	300			420			660			1070			1280			
注射	INJECTION UNIT	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
注射装置 INJECTION																	
螺杆直径	SCREW DIAMETER	mm	32	35	38	38	40	45	40	45	48	45	50	55	55	60	65
螺杆长径比	SCREW RATIO	L/D	24.1	22	20.3	23.2	22	19.6	24.8	22	20.6	24.4	22	20	24	22	20.3
理论注射容量 (PS)	THEORETICAL SHOT VOLUME	cm ³	134.2	160.6	189.0	215.4	238.6	302.0	314.0	397.4	452.2	468.2	578.9	700.5	655.4	780.0	915.4
注射压力	INJECTION PRESSURE	MPa	222.1	185.7	157.5	193.3	174.5	137.8	210.0	165.9	145.8	226.8	183.7	151.8	194.3	163.3	139.2
理论注射重量 (PS)	THEORETICAL SHOT WEIGHT	g	122.2	146.1	172.3	196.0	217.2	274.8	285.7	361.6	411.5	426.7	526.8	637.5	596.4	709.8	833.0
理论注射速度	THEORETICAL INJECTION RATE	mm/s	140.0			180.0			180.0			140.0			140.0		
理论注射重量 (PS)	THEORETICAL SHOT WEIGHT	oz	4.30	5.10	6.00	6.878	7.654	9.665	10.0	12.7	14.4	15.0	18.5	22.4	20.9	24.9	29.2
螺杆转速	SCREW SPEED	rpm	270			250			250			230			250		
锁模装置 CLAMPING DEVICE																	
锁模力	CLAMPING FORCE	KN	1000			1400			1700			2200			2700		
移模行程	TOGGLE STROKE	mm	320			380			425			500			560		
拉杆内间距	SPACE BETWEEN TIE BARS	mm	400X360			460X420			510X467			565X520			620X565		
最大模具厚度	MAX MOULD HEIGHT	mm	360			440			500			530			600		
最小模具厚度	MIN MOULD HEIGHT	mm	120			140			170			200			200		
顶出行程	EJECTOR STROKE	mm	100			115			130			150			150		
顶出力	EJECTOR FORCE	KN	41			41			41			77			77		
顶出杆数	EJECTOR NUMBER		4+1			4+1			4+1			8+1			12+1		
模具孔直径	DIE HOLE DIAMETER	mm	125			125			125			160			160		
其他 OTHER																	
系统压力	SYS TEM PRESSURE	MPa	17.5			17.5			17.5			17.5			17.5		
加热功率	HETER POWER	KW	10			12.7			13.2			16.3			21.5		
油箱容积	TANK VOLUME	L	125			170			210			230			300		
机器重量 (约)	MACHINE WEIGHT (APPROX.)	Ton	3.1			4.2			5.3			7.4			9.4		
外形尺寸 (LxWxH)	OVERALL DIMENSIONS (LXWXH)	m	4.34x1.24x1.85			4.8x1.35x1.85			5.4x1.4x2.03			6.2x1.47x2.2			6.7x1.6x2.4		
伺服驱动器功率	SERVO DRIVE POWER	KW	15			30			37			37			45		

模板正面尺寸 PLATEN DIMENSIONS



模板侧面尺寸 PLATEN DIMENSIONS

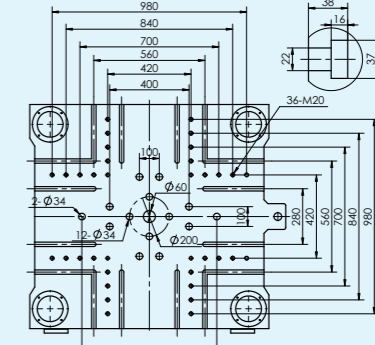
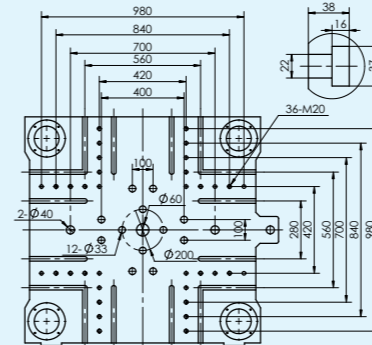
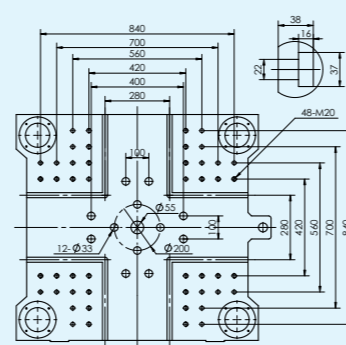
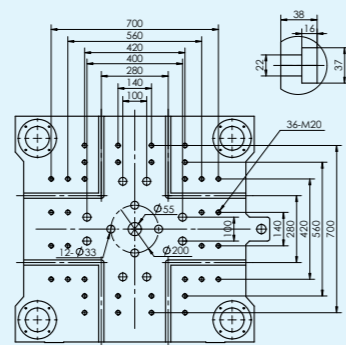


技术参数表

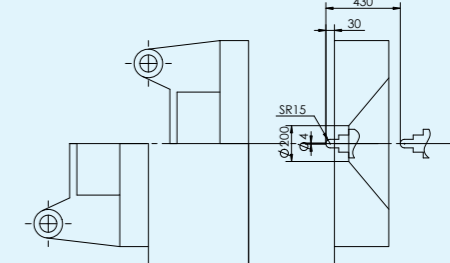
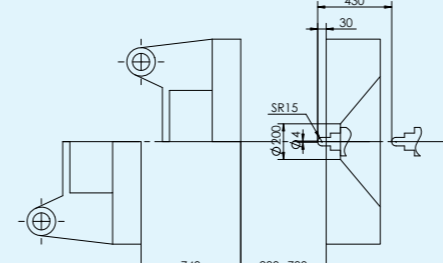
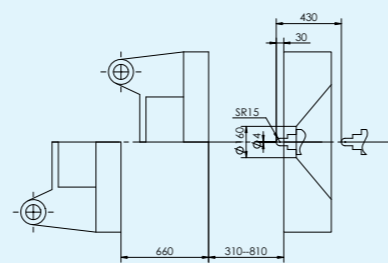
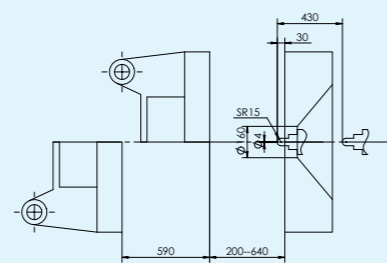
TECHNICAL PARAMETER TABLE

规格	SPECIFICATIONS	U330TSF9				U388TSF9				U450TSF9				U550TSF9				
国际公认型号 / 公称射胶能力	INTERNATIONALLY RECOGNIZED MODEL	2020				2840				3060				3300				
注射	INJECTION UNIT	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	
注射装置 INJECTION																		
螺杆直径	SCREW DIAMETER	mm	60	65	70	75	65	70	75	80	70	75	80	85	75	80	85	90
螺杆长径比	SCREW RATIO	L/D	23.8	22	20.4	19.1	23.7	22	20.5	19.1	23.5	22	20.6	19.4	23.4	22	20.7	19.5
理论注射容量 (PS)	THEORETICAL SHOT VOLUME	cm ³	1003.2	1177.4	1365.5	1567.5	1247.1	1446.3	1660.3	1889	1504.0	1726.5	1964.4	2217.6	1726.5	1964.4	2217.6	2486.2
注射压力	INJECTION PRESSURE	MPa	201.2	171.5	147.9	128.8	198.8	171.4	149.3	131.3	213.4	185.9	163.3	144.6	210.2	184.8	163.6	145.9
理论注射重量 (PS)	THEORETICAL SHOT WEIGHT	g	912.9	1071.4	1242.6	1426.5	1134.8	1316.1	1510.9	1719	1368.6	1571.1	1787.6	2018	1571.1	1787.6	2018.0	2262.4
理论注射速度	THEORETICAL INJECTION RATE	mm/s	140.0				150.0				160.0				145.0			
理论注射重量 (PS)	THEORETICAL SHOT WEIGHT	oz	32.0	37.6	43.6	50.1	39.8	46.2	53.0	60.3	48.0	55.1	62.7	70.8	55.1	62.7	70.8	79.4
螺杆转速	SCREW SPEED	rpm	190				246				250				220			
锁模装置 CLAMPING DEVICE																		
锁模力	CLAMPING FORCE	KN	3300				3880				4500				5500			
移模行程	TOGGLE STROKE	mm	620				660				740				840			
拉杆内间距	SPACE BETWEEN TIE BARS	mm	710X655				760X685				810X765				870X800			
最大模具厚度	MAX MOULD HEIGHT	mm	640				675				780				800			
最小模具厚度	MIN MOULD HEIGHT	mm	200				280				280				290			
顶出行程	EJECTOR STROKE	mm	150				170				170				225			
顶出力	EJECTOR FORCE	KN	77				99				99				167			
顶出杆数	EJECTOR NUMBER		12+1				12+1				12+1				12+1			
模具孔直径	DIE HOLE DIAMETER	mm	160				160				200				200			
其他 OTHER																		
系统压力	SYS TEM PRESSURE	MPa	17.5				17.5				17.5				17.5			
加热功率	HETER POWER	KW	23.5				27				30.5				33			
油箱容积	TANK VOLUME	L	440				700				750				900			
机器重量 (约)	MACHINE WEIGHT (APPROX.)	Ton	11				13.5				18.5				20.5			
外形尺寸 (LxWxH)	OVERALL DIMENSIONS (LXWXH)	m	6.8x1.6x2.42				7.2x2x2.46				8x2.1x2.53				8.6x2.3x3.1			
伺服驱动器功率	SERVO DRIVE POWER	KW	55				65				37+55				45+55			

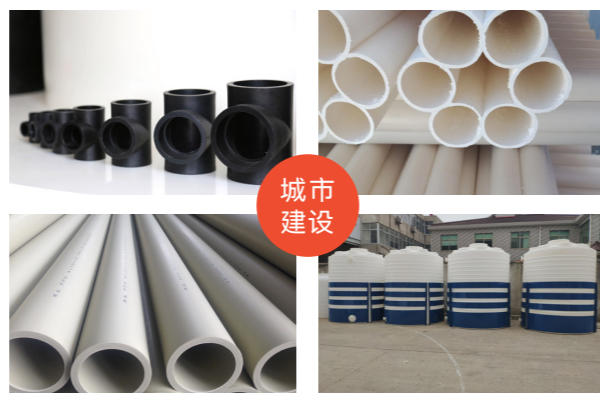
模板正面尺寸
PLATEN DIMENSIONS



模板侧面尺寸
PLATEN DIMENSIONS



参数如有更新, 恕不另行通知。 Dimensions are subject to change without notice



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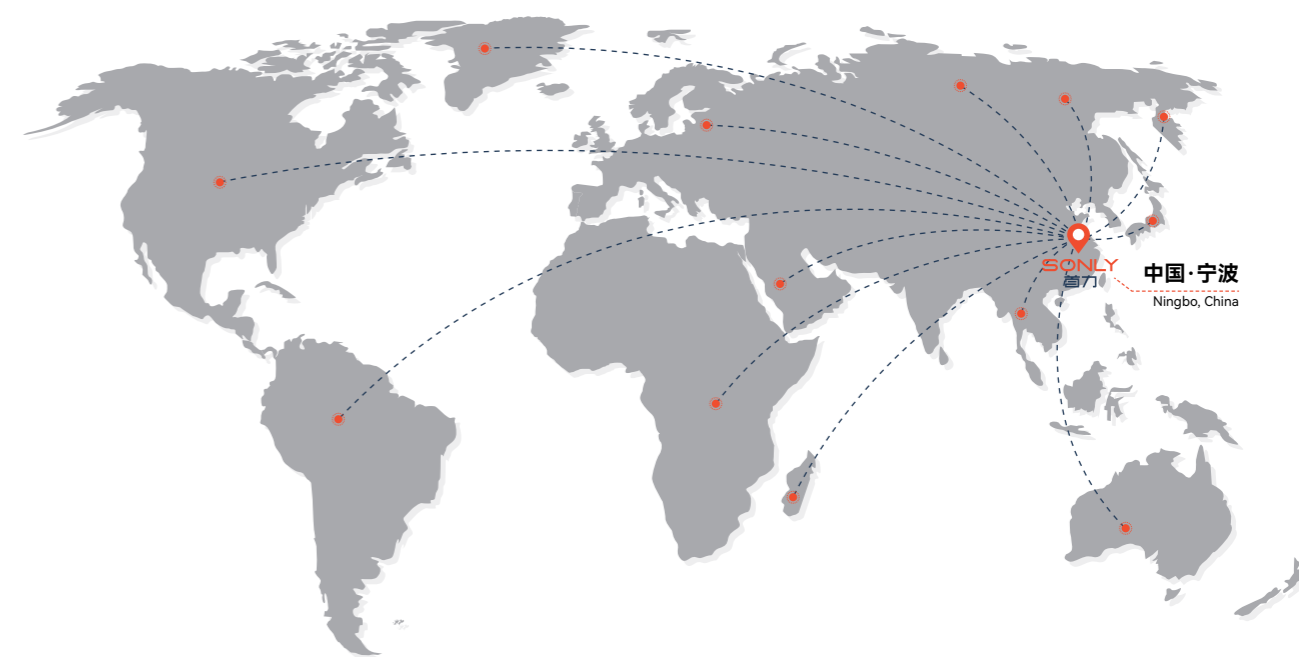



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