

◇ 射出成形金型用ノズル部品加工

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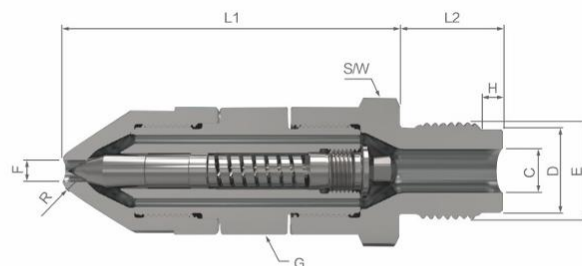
SPRING NOZZLE

弹簧射嘴

产品说明 / Product description

内弹簧射嘴主要用于高流动性塑料低频注塑密封胶合，如PA, PP, PS, PE，能显著提升生产效率节约生产成本。

Internal spring nozzles are mainly used in low-frequency injection molding sealing applications for highly fluid plastics, such as PA, PP, PS, and PE, significantly improving production efficiency and reducing production costs.



参数 Parameters			RS - I	RS - II	RS - III
注塑重量(参考)	Injection weight (reference)	gram	200	200	3000
螺杆直径(参考)	Screw diameter (reference)	mm	40	40	100
主体长度(L1)	Main body length (L1)	mm	91	91	125
六角位(S/W)	Hexagon position (S/W)	mm	46	46	56
加热圈(G)	Heating ring (G)	mm	φ45*50L	φ45*50L	φ47*60L
打开压力(参考)	Opening pressure (reference)	Bar	280		
关闭压力(参考)	Closing pressure (reference)	Bar	100		
最大注射压力(参考)	Maximum injection pressure (reference)	Bar	2500		
最高温度	Maximum temperature	℃	380		

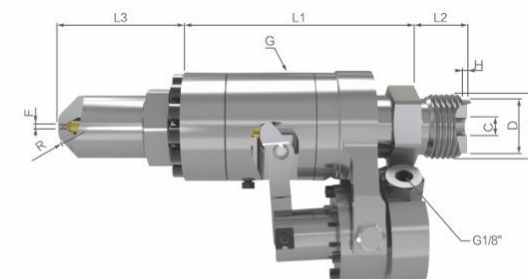
NEEDLE NOZZLE

针式射嘴

产品说明 / Product description

针式射嘴主要用于解决低密度高流动性塑胶注塑过程中的流延问题，同时可用于注塑机同步溶胶，缩短成型周期，可有效防止拉丝等问题。

Needle nozzles are mainly used to solve the flow problems in the injection molding process of low-density, high-fluidity plastics. They can also be used for synchronous gelation in injection molding machines to shorten the molding cycle and effectively prevent problems such as stringing.



参数 Parameters			RN - I	RN - II	RN - III
最大注射重量(参考)	Maximum injection weight (reference)	gram	700	4000	14000
最大螺杆直径(参考)	Maximum screw diameter (reference)	mm	60	100	160
最大机器尺寸(参考)	Maximum machine size (reference)	tonnage	300	800	2200
主体长度(L1)	Main body length (L1)	mm	140	178	220
加热圈尺寸(G)	Heating ring size (G)	mm	φ60*80L	φ80*100L	φ115*150L
建议气压(参考)	Recommended air pressure (reference)	Bar	6	8	10
最大注射压力(参考)	Maximum injection pressure (reference)	Bar	3000		
最高温度	Maximum temperature	℃	400		



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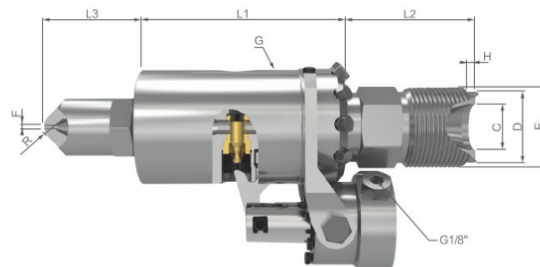
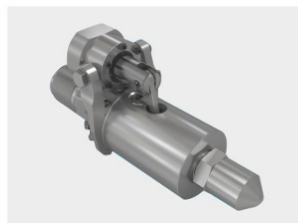
PLUNGER NOZZLE

柱塞射嘴

产品说明 / Product description

柱塞式密封胶射嘴广泛用于注塑机设备同步溶胶，可在螺杆储料时开模，缩短成型周期，提高生产效率，同时亦可防止塑料流涎，节省成本，独有的单一通道设计有效防止了压力损失。

Plunger-type sealing nozzles are widely used in injection molding machines for synchronous melting of plastic. They allow the mold to be opened while the screw is storing material, thereby shortening the molding cycle and improving production efficiency. At the same time, they prevent plastic flow and save costs. The unique single-channel design effectively prevents pressure loss.



参数 Parameters		RN - I	RN - II	RN - III
最大注射重量 (参考) Maximum injection weight (reference)	gram	700	4000	15000
最大螺杆直径 (参考) Maximum screw diameter (reference)	mm	60	100	180
最大机器尺寸 (参考) Maximum machine size (reference)	tonnage	300	800	2500
主体长度 (L1) Main body length (L1)	mm	140	178	310
加热圈尺寸 (G) Heating ring size (G)	mm	Φ60*80L	Φ80*100L	Φ110*180L
建议气压 (参考) Recommended air pressure (reference)	Bar	6	8	10
最大注射压力 (参考) Maximum injection pressure (reference)	Bar		3000	
最高温度 Maximum temperature	℃		400	

SPECIAL NOZZLE FOR LIQUID SILICONE RUBBER

液态硅胶专用射嘴

产品说明 / Product description

LSR液态硅胶专用射嘴是特殊设计专门用于解决硅胶高流动性流涎问题，射嘴内置气动驱动装置和水循环可用于密封胶和冷却，有效防止硅胶料漏胶及硫化。

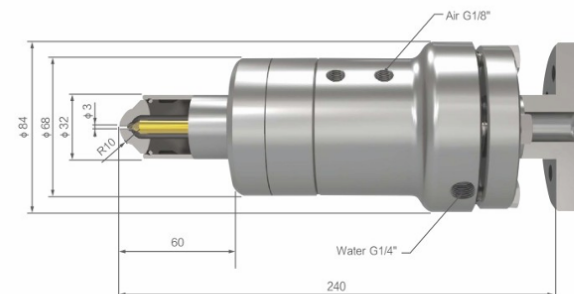
The LSR liquid silicone rubber nozzle is specially designed to solve the problem of high fluidity in silicone casting. The nozzle has a built-in pneumatic drive device and water circulation system for sealing and cooling, effectively preventing silicone leakage and vulcanization.



主要应用领域 / Main applications

婴幼儿用品，医疗器械，电子产品，可穿戴设备等。

Infant and toddler products, medical devices, electronic products, wearable devices, etc.



参数 Parameters		
最大螺杆直径 (参考) Maximum screw diameter (reference)		60mm
气管连接 Air pipe connection		G1/8
驱动压力 Drive pressure		<6Bar
水路连接 Water pipe connection		G1/4
最高温度 Maximum temperature		120° C



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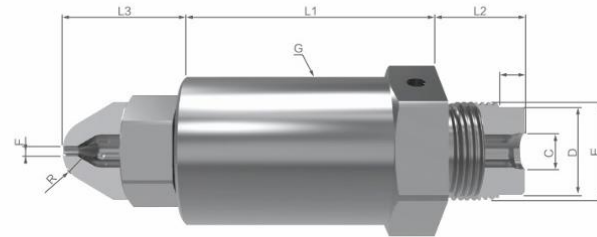
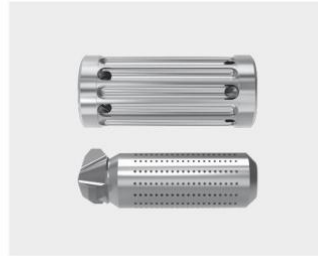
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FILTERING MIXED COLOR NOZZLE 过滤混色射嘴

产品说明 / Product description

注塑机过滤射嘴主要用于净化熔融塑料，防止异物进入模具，提升产品质量和外观，通过内置屏障式或网式滤芯，可有效阻隔异物的通过性，不损伤模具，并且易于清洁。

Injection molding machine filter nozzles are mainly used to purify molten plastic, prevent foreign matter from entering the mold, improve product quality and appearance. Through built-in barrier or mesh filter elements, they can effectively block the passage of foreign matter without damaging the mold and are easy to clean.



静态混合器功能 / Static mixer function

- 均化熔融树脂，防止色素沉淀，改善产品外观。
- 均匀分散着色剂，改善混色效果，减少色素使用量及成本。
- 提升温度均匀性，防止产品变形。
- Homogenize molten resin, prevent pigment precipitation, and improve product appearance.
- Evenly disperse colorants, improve color mixing effects, and reduce pigment usage and costs.
- Improve temperature uniformity and prevent product deformation.



MATCHING SMALL PIECES 配套小件



内嵌式热流道射嘴 / Built-in hot runner nozzle



射嘴 / Nozzle



射嘴 / Nozzle



混炼型螺杆头 / Mixing screw head



连接部 / Connection part



法兰 / Flange



螺杆头 / Screw head



螺杆头 / Screw head



螺杆头 / Screw head



螺杆头 / Screw head



螺杆头 / Screw head



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DESIGN CLASSIFICATION OF COMMON PLASTIC RAW MATERIALS

常见的塑胶原料的设计分类

通用螺杆 / General gun barrel screw

通用螺杆: 为了避免不同塑料更换螺杆; 压缩段长度介于渐变螺杆、突变螺杆之间(3-4D)。

- 适用于PP、PE、PS、ABS、SPVC等产品;
- 产品质量有较高要求, 对温度和剪切敏感;
- 注塑机标准螺杆, 压缩比2.7-3.3: 1;
- 三段比例为50%: 20%: 30%。

General gun barrel screw, in order to avoid different plastic change of gun barrel screw; is gradually variable pitch screw and suddenly between the variable pitch screw compression length (3-d).

- suitable for PP, PE, PS, ABS, SPVC products such as;
- the quality of the products have higher requirements, is sensitive to temperature and shear.
- standard screw injection molding, compression ratio, 2.7-3.3:1;
- three ratio is 50%:20%:30%.

低剪切螺杆 / Low shear screw

- 适用于PC、PMMA、TPU等(粘度较高, 熔融塑化较难的材料)产品;
- 产品质量有较高要求, 对温度和剪切敏感;
- 压缩比2: 1-2.5: 1;
- 三段比例45%: 30%: 25%;
- 螺槽深度较浅、加料段相对PA专用螺杆较短。

- Suitable for PC, PMMA, TPU and other products (materials with higher viscosity and difficult to melt and plasticize);
- The product quality has high requirements and is sensitive to temperature and shear;
- Compression ratio 2: 1-2.5:1;
- The proportion of three stages is 45%: 30%: 25%;
- The depth of the screw groove is shallower, and the feeding section is shorter than that of the PA special screw.

Pa专用螺杆 / The PA material of gun barrel screw injection molding machine

- Pa材料低黏结晶性材料, 对产品质量有较高要求;
- 螺杆压缩比2.6: 1(较大), 压缩比一般选取2.5-3.2, 其中防止过热分解H3:0.067-0.089D;
- 螺杆三段比例: 65%: 11%: 24%,
- 粘度低, 故止逆环与机筒间隙就尽量小约0.03-0.05, 螺杆与机筒间隙0.05-0.10。
- 喷嘴采用弹簧自锁式射咀。

- Pa material is a low-viscosity crystalline material, which has higher requirements for product quality;
- The screw compression ratio is 2.6:1 (larger), and the compression ratio is generally 2.5-3.2, among which to prevent overheating decomposition H3: 0.067-0.089D;
- The proportion of the three-stage screw: 65%: 11%: 24%,
- The viscosity is low, so the gap between the check ring and the barrel is as small as possible about 0.03-0.05, and the gap between the screw and the barrel is 0.05-0.10.
- The nozzle adopts a spring self-locking nozzle.

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Integrity Management, Continuous Improvement.

UPVC专用螺杆 / The UPVC material special gun barrel screw

- UPVC材料, 增塑剂含量少, 易降解, 难加工; 腐蚀性较强;
- 要求: a. 不对材料产生高的剪切;
b. 不应有死角存料, 避免降解;
c. 材料缓慢熔融塑化。

不采用止逆环

- 压缩比为1.95: 1;
- 三段比例: 28%: 52%: 20%;
- 螺杆和螺杆末端要电镀或采用双金属材料。

- UPVC material, plasticizer content is less, easy degradation, difficult processing; strong corrosion;
- required: a. materials does not produce high shear;
b. There should be no dead ends to store materials to avoid degradation
c. material plasticizing slowly.
Do not use the check ring
- compression ratio of 1.95:1;
- three parts: 28%: 52%: 20%;
- The screw and screw end should be electroplated or made of bimetallic material.

PET/PBT专用螺杆 / PTE/PBT, Special gun barrel screw

- 适用于PBT、PET等材料制品, 熔融温度较高(270-290℃), 结晶型, 剪切敏感;
- 压缩比2.5-2.7: 1;
- 三段比例: 50%: 25%: 25%。

- products suitable for PBT and PET materials, high melting temperature (270-290℃), crystal type, shear sensitive;
- compression ratio of 2.5-2.7:1;
- three parts: 50%: 25%: 25%.

加纤材料炮筒螺杆 / Gun barrel screw of adding glass fiber materials

- 加纤材料, 磨损严重, 要使用双金属螺杆, 或全硬钢螺杆, 螺杆具有耐磨性和耐腐蚀性, 提高使用寿命;
- 耐磨材料主要成份以碳化钨为主。

- Fiber reinforced materials are severely worn, and bimetal screw or all-hard steel screw must be used. The screw has abrasion resistance and corrosion resistance to increase the service life;
- wear-resisting material ingredient is given priority to with tungsten carbide.



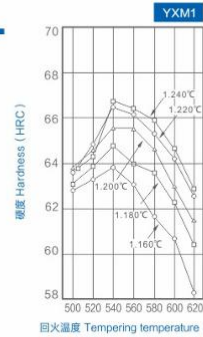
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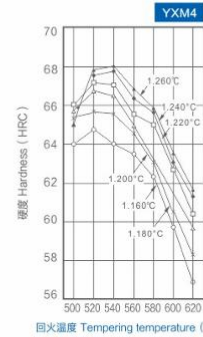
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CONVENTIONAL HIGH SPEED TOOL STEELS

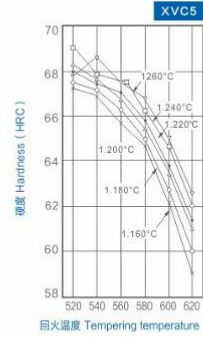
传统高速钢



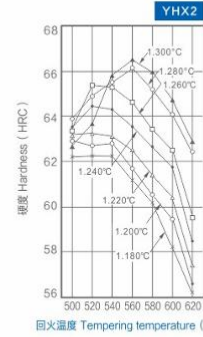
回火温度 Tempering temperature (°C)



回火温度 Tempering temperature (°C)



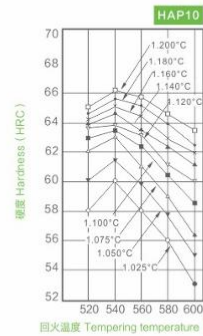
回火温度 Tempering temperature (°C)



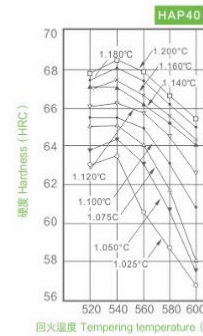
回火温度 Tempering temperature (°C)

P/M HIGH SPEED TOOL STEELS

粉末高速钢



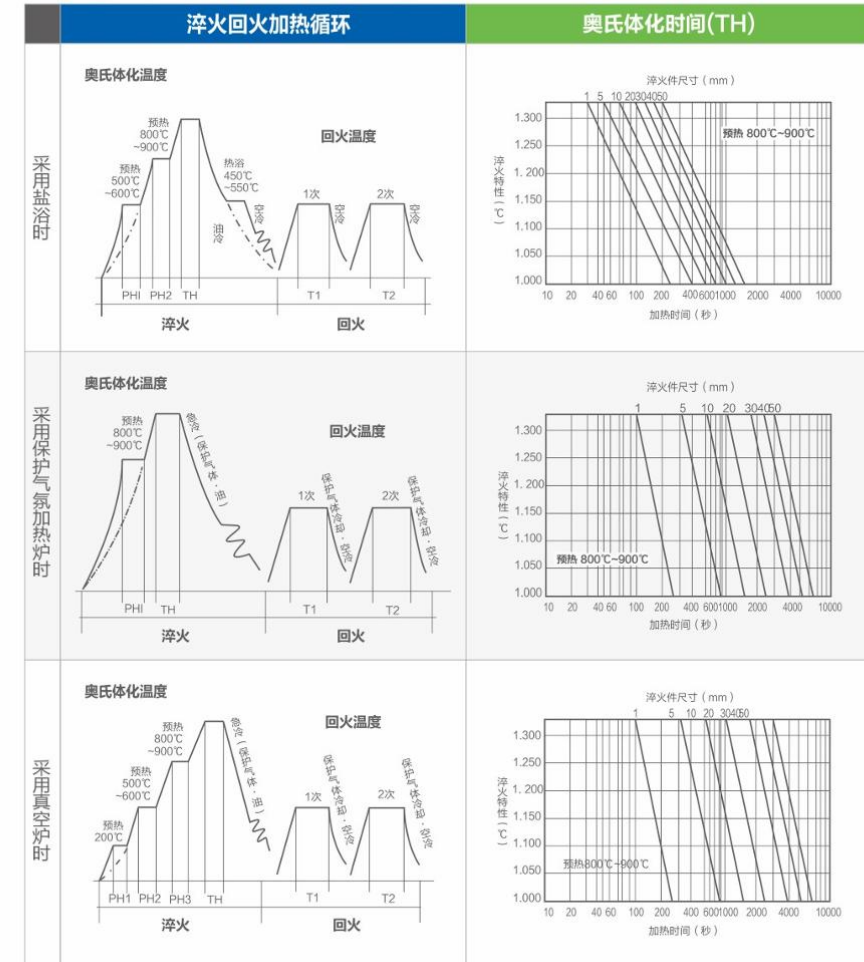
回火温度 Tempering temperature (°C)



回火温度 Tempering temperature (°C)

QUENCHING AND TEMPERING PROCESS

淬火回火工艺



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