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Published in July 2018.

Please contact us if any misquoting found in this brochure.

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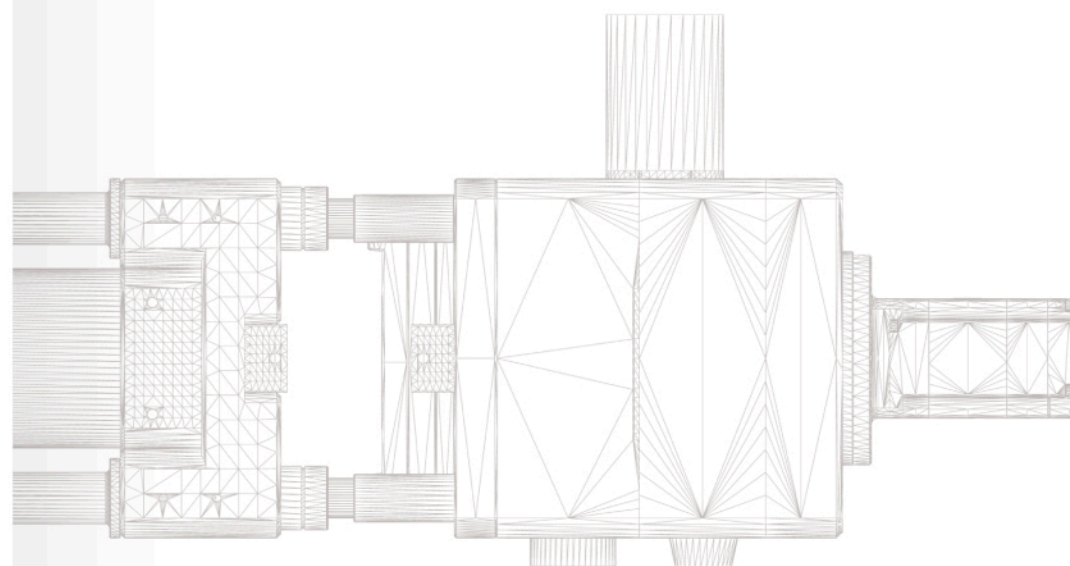
# SMART & SMALL

Powerful | Innovative | Flexible

扁平螺杆式

微精密注塑成型装备

Micro Injection Molding  
Machine





尺寸精度  
Dimension Accuracy  
**0.01mm**



克重精度  
Weight Accuracy  
**0.001g**

## 颠覆固有注塑成型思维 与您高效创造小而美的世界

A creative technology makes  
micro injection more handy & efficient.

**高精度 | 可扩展 | 经济性**  
Precise, Extensible & Cost effective

设备自主知识产权  
Intellectual Property

**4**  
发明专利  
Patent for Invention

**7**  
实用新型专利  
Utility Model Patents

**9**  
外观专利  
Design Patents

微注塑成型技术, 专注生产 5g 以下微精密产品。  
Specialized in micro injection molding, which the products' weight are less than 5g.

减速机与伺服电机完美配合, 精准控制材料用量。  
The consumption of injection material is precisely controlled by the joint effort of worm gear reducer & servo motor.

精确的温控技术, 确保塑化能力的同时保证品质。  
Accurate temperature control to enable plasticizing capacity & its high quality.

扁平螺杆小型化设备尺寸, 占地面积 <0.4 m<sup>2</sup>。  
The innovative design of flat screw makes the equipment more compact, less than 0.4m<sup>2</sup> is the total space needed for each machine.

模块化的塑化单元可搭载水平和垂直架模系统, 也可灵活搭载客户平台。

The modularity design of molding unit can be connected with either horizontal or vertical mold frame system, also can be connected with the customer's operating platforms.

设备与热流道一体技术, 节约模具成本, 零废料。  
Tooling cost reduction & zero waste of material consumption by having the integrated hot runner in place.

灵活搭载各类供料系统, 如 LSR 供料系统, 实现微量硅胶注塑成型。

Flexible with different material feeding system, like LSR feeding system, enable the molding for micro products.

控制单元采用日本运动控制系统, 便捷可靠。  
The Japanese motion control system is applied to the machine control unit in which makes the operation convenient and reliable.

全电动控制, 节能环保, 适合洁净室生产。  
An Environmental & energy consumption friendly machine system, suit for clean room production.

适合高精度产品, 多品种及小批量试样, 新材料开发与测试。

The system is designed for injection molding for high-precision products, multi varieties but small batch production and R&D uses.



**KONIG**  
康尼格

## 创新的扁平螺杆 The Innovative Flat Screw

康尼格创新的扁平螺杆代替传统注塑螺杆, 无限小型化螺杆尺寸。

Innovative flat screw instead of traditional injection screw, miniaturized the screw dimension.

表面光滑的螺旋盘和曲线盘将材料旋转/摩擦/移动, 从外部运送至内部。  
The spiral plate and curved plate rotate / rub / move the material from the outside to the inside.

曲线槽深度由外至内逐渐变浅, 对材料进行压缩、塑化同时除去气体  
The depth of curved slots gradually decreased from outside to inside, in which conducting the process of compressing, plasticizing & venting while removing the gas.

塑化后的材料以非牛顿液体特性, 利用韦森堡效应向螺杆中心爬升, 通过热嘴输送至模具

The melted molding material is transported to the tooling through the nozzle uniformly.

不同曲率的扁平螺杆配合不同材料, 高效塑化, 无损材料性能。<sup>注释1</sup>

Different curvature flat screws applied to different molding materials, enable high plasticizing capacity with no weakening of material performance.

扁平螺杆可拆卸清洗, 无材料残留, 方便更换新材料。

Easy to clean for the dismountable flat screws with no residual of material, and easy to change the molding material.

**无限小型化设备尺寸**  
更适合微精密产品生产  
More compact equipment specialized in molding micro products.



F-Screw | A



F-Screw | B



注释 1 KONIG 推荐 F-Screw (A) 用于工程塑料; F-Screw (B) 用于 PA 热熔胶、陶瓷颗粒以及 LSR 等材料。  
Konig recommends to apply F-Screw (A) to engineering plastics, F-Screw (B) to PA, ceramic particles, LSR, and so on.

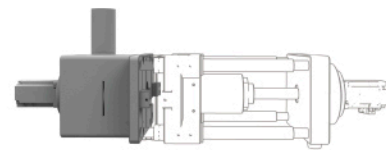




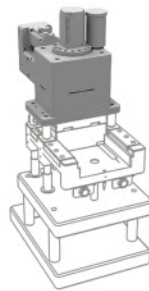
## 模块化的塑化单元

### Modularized Plasticizing Unit

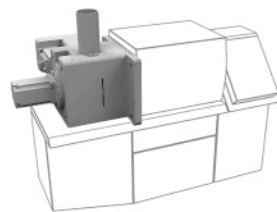
灵活适配不同平台  
Flexible with various platforms



微注塑成型装备水平平台  
Horizontal platform for micro injection molding equipment



低压注塑封装设备垂直平台  
Vertical platform for low pressure injection molding equipment



客户现有生产平台  
Existing production platform of customers

塑化单元核心部件  
The core components of plasticizing unit

扁平螺杆 Flat Screw    热嘴/冷嘴 Hot Runner/Cold Runner    伺服电机 Servo Motor  
减速机 Reducing Gear    透明料斗 Transparent Hopper

便捷的清理维护  
Convenient cleaning and maintenance

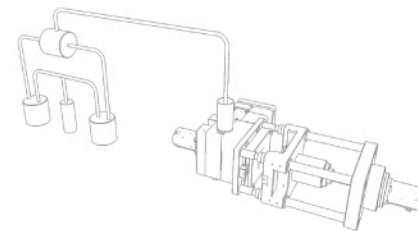
堆积的余料极少，减少材料用量，节约成本  
Cost reduction by having less residuals.

可直接拆卸清理，彻底清理残料，保证产品质量  
The machine can be dismantled, easily for cleaning.

方便材料的更换，适用于昂贵材料的注塑成型  
Easy for changing materials, perfect fit with expensive materials.

灵活搭载各类供料系统  
Flexibly carrying all kinds of feeding systems

如LSR供料系统，实现微量液态硅胶注塑成型  
Carrying LSR feeding system to produce LSR micro injection molding.



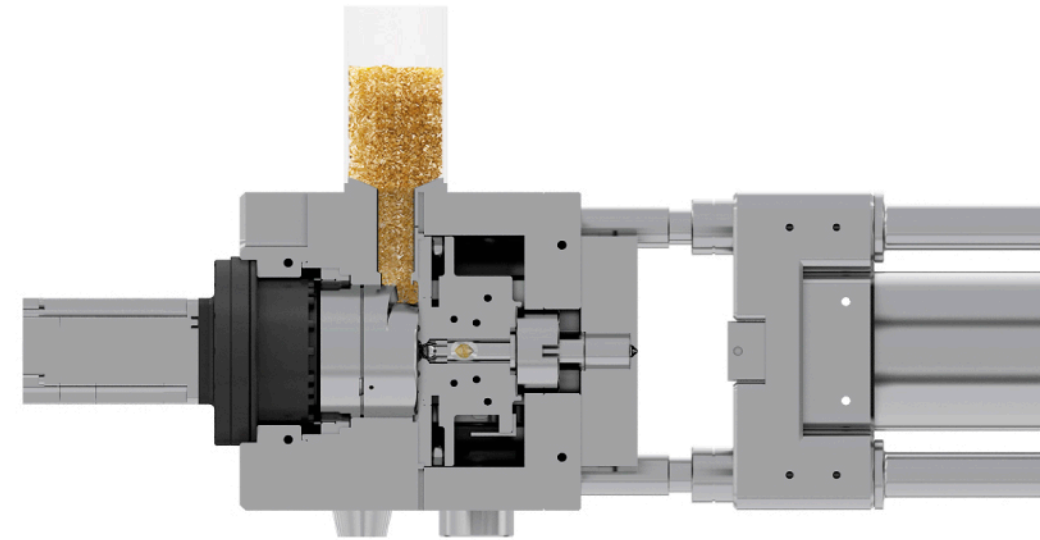
伺服控制  
精准控制产品精度  
Servo Control  
Precision control of product accuracy



尺寸精度  
Dimension Accuracy  
**0.01mm**



克重精度  
Weight Accuracy  
**0.001g**



高精度的标准模具  
High Precision Unit Mold

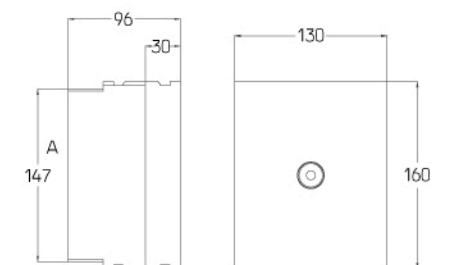
模块化标准模具，节约成本  
Modularization unit mold for cost savings.

模具使用精定位结构，快速装拆模具  
Adopt with 3D printing mold technology, the lead time for tooling can be shortened within 24 hours.

最快一周完成快速小批量试产，大大节约客户产品开发验证时间

The whole process of trial run can be done within one week in which will significantly improve the R&D productivity.

可配合3D打印模具，24小时快速模具制造  
The small batch production can be completed within one week, it greatly saves the time of product development and verification.



## 可靠的微量控制

### The Reliable Micro Control

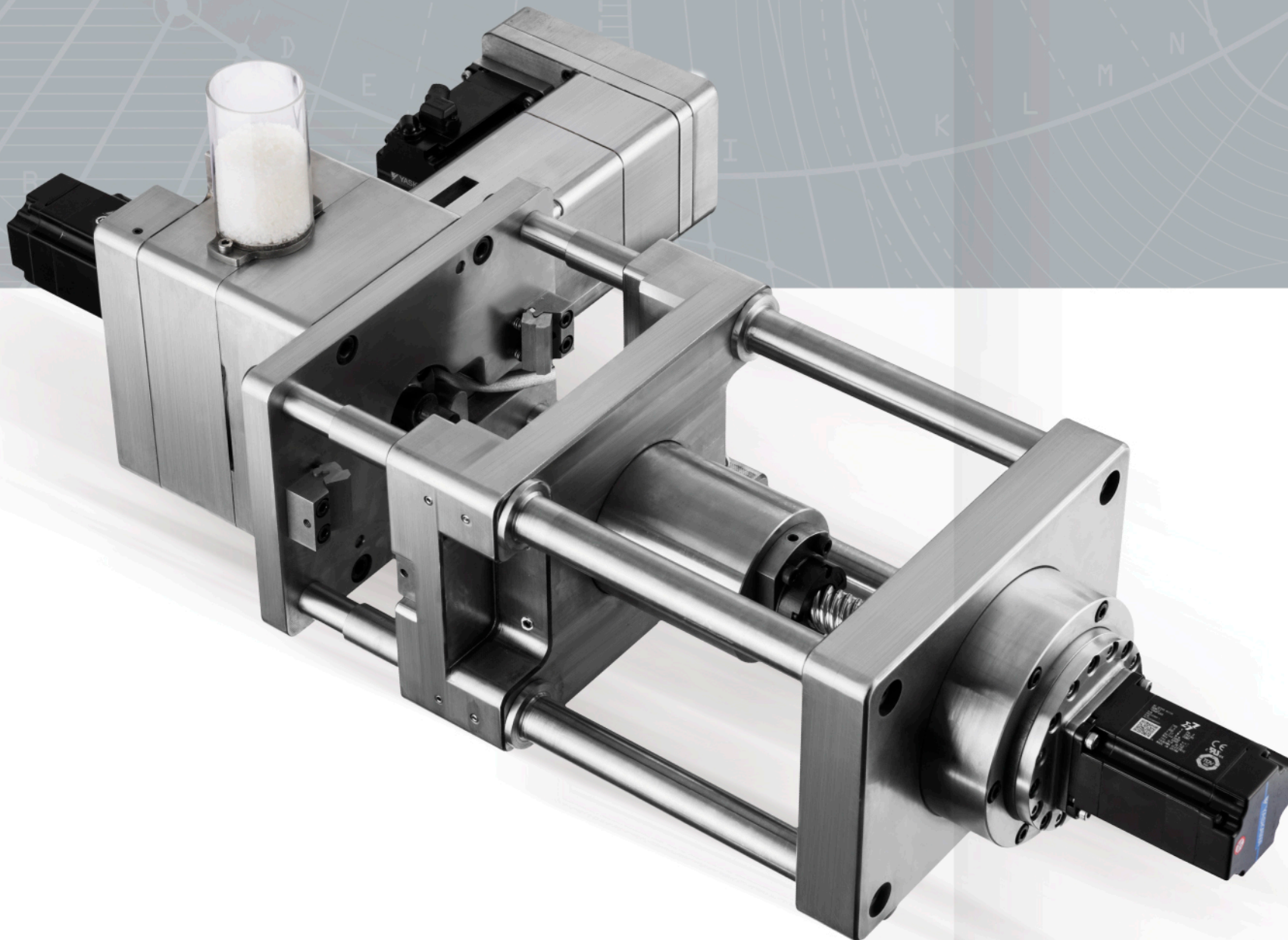
采用日本安川高速CPU，快速响应执行命令；采用MECHATROLINK通讯协定，伺服驱动器实现高精度控制；位置、转矩、速度精确可调，可精准的控制复杂的机械动作。

Using high-speed Yaskawa CPU with MECHATROLINK communication protocol to enable the servo driver to achieve high precision control, and Disc reducer, small in size and high in precision the position, torque, speed accuracy can be adjusted to better perform the control the accuracy of complex mechanical move.

微精密产品优质之选  
Just for Micro Precision Products

KM1600

840×435×300mm (L×W×H)



小型化：结构紧凑，创新的扁平螺杆实现真正小型化

Miniaturization: innovative flat screw for compact structure, to achieve the miniaturization.

灵活性：适用于所有热塑性材料，弹性体（如液态硅胶LSR），陶瓷颗粒等高密度材料

Flexibility: fit for all thermoplastic materials, elastomers(eg. LSR), ceramic particles and other high density materials.

适配性：灵活搭载各类供料系统，如LSR供料系统实现微量硅胶注塑成型。

Suitability: Flexible with different material feeding system, like LSR feeding system, enable the molding for micro products.

亲和性：全电动设计，节能降噪，更具环境亲和力

Affinity: all-electrical control for energy saving and noise reduction, and environment friendly.

适合微精密产品的注塑成型，是您开发新项目及测试新材料的理想之选

Apply to micro-precise injection molding, is ideal to develop new projects or test new materials.



扫码登录康尼格优酷自频道  
观看设备视频  
KÖNIG YouKu Video Channel



## 敏感精密电子元器件 封装保护优质之选

Overmolding for sensitive  
and precision electronic  
components

# KE1600

300×540×735mm (LxWxH)



低压注塑，适用于对温度和压力敏感的元器件封装保护

Low pressure injection overmolding to protect sensitive  
and precision electronic components with low pressure  
and low temperature.

无胶缸无胶管设计，材料即熔即用，从根本上杜绝碳化

No carbonation will happen by eliminating the hose & tank,  
so that the molding material is transported directly from  
melting.

模架可扩展，支持多模具作业，提高生产效率

Extensible mold frame to support multi-mold and improve  
the productivity.

全电动设计，节能环保，更具环境亲和力

All-electrical control for energy saving and noise reduction,  
and environment friendly.

适合敏感精密电子元器件封装保护，是您开发新项目及测试  
新材料的理想之选

Apply to overmolding the sensitive and precision electronic  
components, is ideal to develop new projects and testing  
new materials



扫码登录康尼格优酷自频道  
观看设备视频  
KONIG Youku Video Channel





使用市场上通用的标准颗粒  
Use the common standard particles

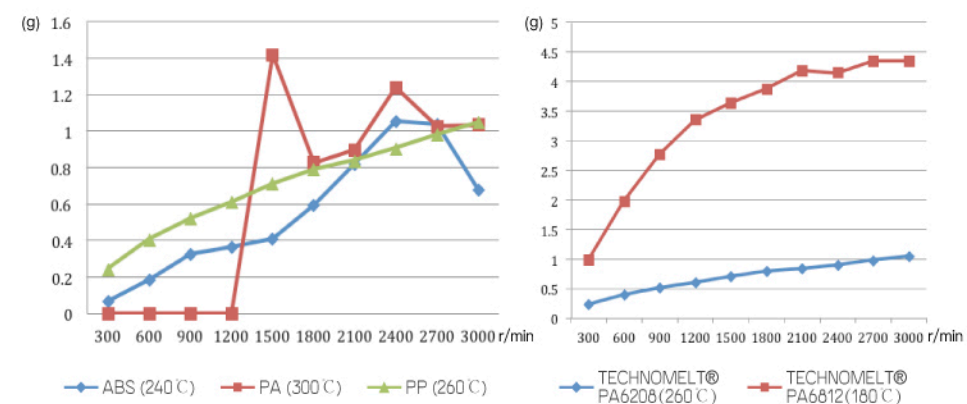
## 自由应用多种材料 Multiple application of molding material

### 适用材料 APPLICABLE MATERIALS

ABS、PA、PP、PEEK、PPS、PEI、PI、PC、POM、PBT、PET、LCP、COP、PMMA、PS、PE、LSR、陶瓷 (ceramics)、其它 (etc)

对材料尽量避免剪切，减少浪费，特别适合昂贵材料的产品生产

To avoid shearing and reduce waste, it is especially suitable for the production of expensive materials.



冷却水路与定盘两段温控，配合动盘转速，实现最佳材料塑化能力  
Two-stage temperature control by cooling water and fixed screw, combined with rotating speed, to achieve the best material plasticizing ability



应用领域  
Applications



Automotive  
汽车电子



Medical  
医疗电子



4G/5G Communication  
4G/5G 通讯



Consumer Electronic  
消费类电子



Semiconductors  
半导体

微精密零部件生产  
Production of small precision parts

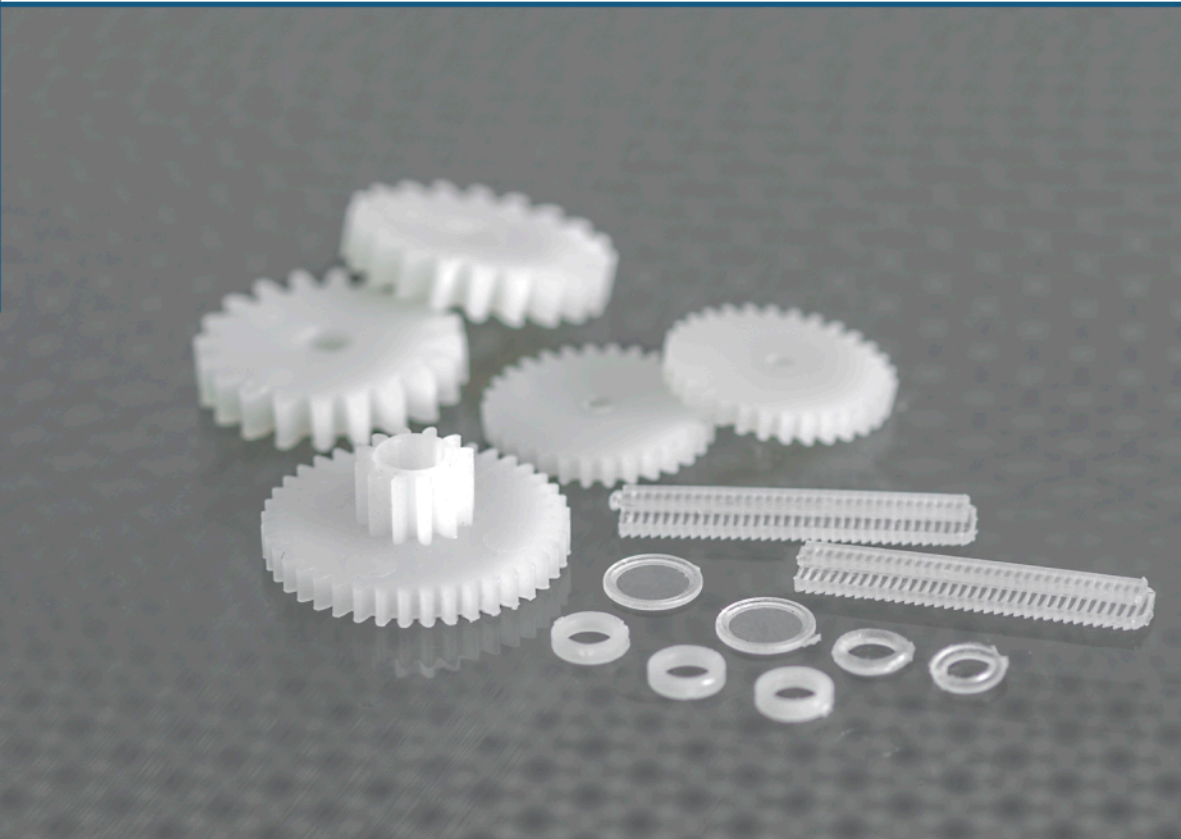
试验模测试和生产  
Prototyping

洁净室生产  
Clean room applications

实验室测试和打样  
Laboratory tests / sample production

多品种和小批量订单  
Multi-variety and short production runs

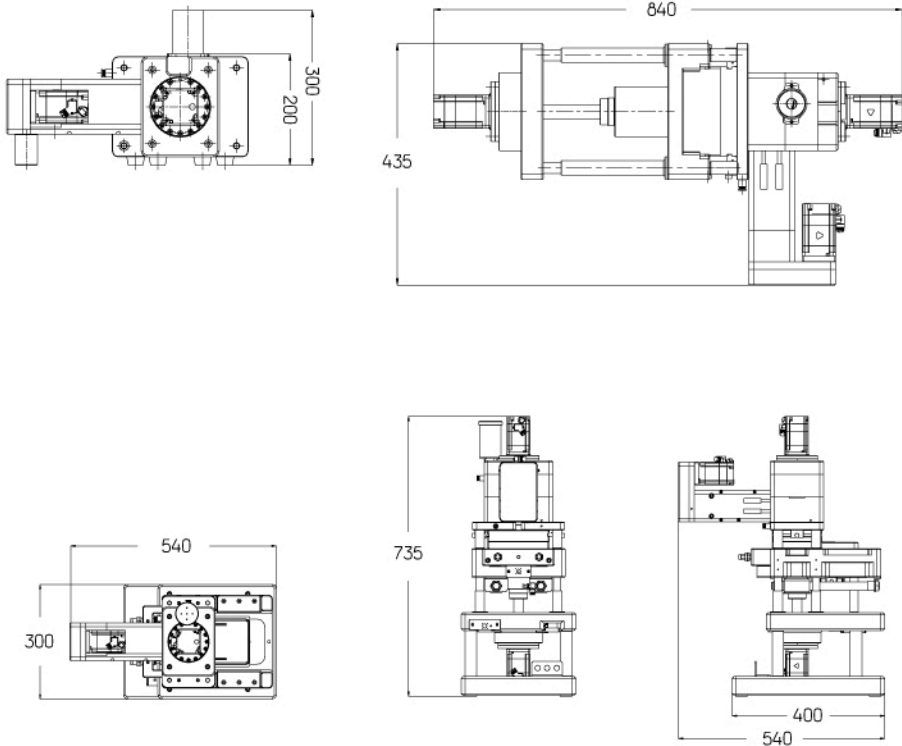
提高微精密元件性能，降低元件成本，配合3D模具缩短产品开发周期。  
Improve micro products performance also cost saving, shorten product development cycle with 3D mold.





注塑样品  
Injection Samples

镜片、接头、齿轮, LSR 密封圈, 半导体封装  
Lens, connectors, gears, LSR seal ring and semiconductors



设备参数	Product Datasheet	KM1600	KE1600
扁平螺杆直径	Screw Diameter	Ø80 mm	
柱塞直径	Plunger Diameter	Ø14 mm	
螺杆转速	Screw Speed	30 rpm/min	
注射行程	Screw Stroke	Max 35 mm	
注射压力	Injection Pressure	0~2060 bar	
注射速度 / 射出规格	Injection Speed	12.5 mm/sec 注1	
注射体积 / 射出率	Injection Rate	5 cm3/sec	
合模力	Mold Clamping force	3 ton	
合模速度	Mold Clamping Speed	12.6 mm/sec 额定 400w   3000 转	
开闭模行程	Mold Clamping Stroke	100 mm	
架模尺寸	Die Size	160×130×96 mm	
顶出行程	Ejector Stroke	10 mm	
热嘴型号	Hot Runner	No.1658	
料斗容量	Hopper Capacity	0.2 liter	
伺服马达	Servo Motor	400 w×3 pc	
电热功率	Power Conumption(excl.heat)	1300 w	
电源规格	Electrical Source	AC220 V	
机器尺寸	Machine Size (HxDxW)	840×435×300 mm	300×540×735 mm
机器重量	Machine Weight	98 kg	130 kg

注释 1 可选用不同的动力源获得更高的射速。  
Different power sources can be selected for getting higher injection speed.