

RHCM-系列注塑机 规格参数表 / Specifications

项目	Item	Unit	600T	750T	1000T	1200T	1500T	1800T	2200T	2800T
螺杆直径	Screw diameter	mm	70	80	90	100	110	125	135	140
理论射胶容积	Theoretical shot volume	cm ³	1416	2071	2863	3848	5293	7363	9232	10391
射胶量 (PS)	Shot weight (PS)	g	1275	1864	2577	3464	4764	6627	8309	9352
射胶量 (PS)	Shot weight (PS)	oz	45	65.8	90.9	122.2	168.1	233.8	293.1	329.3
螺杆长径比	Length/Diameter ratio	L/D	24	23	23	23.2	23.7	23	21.5	25
射胶压力 (高压低速)	Injection pressure (high pressure and low speed)	Mpa	208	214	199	197	219	205	176	208
射胶压力 (低压高速)	Injection pressure (low pressure and high speed)	Mpa	208	214	151	143	167	159	136	155
射胶速率 (高压低速)	Injection rate (high pressure and low speed)	cm ³ /sec	339	371	590	656	724	774	1103	1141
射胶速率 (低压高速)	Injection rate (low pressure and high speed)	cm ³ /sec	339	371	777	905	949	999	1424	1530
熔胶率 (PS)	Plasticizing capacity (PS)	kg/hr	195	229	286	340	390	549	764	430
射胶行程	Injection stroke	mm	368	412	450	490	557	600	645	675
螺杆转速	Max. screw speed	rpm	165	130	125	110	110	85	100	57
射台拉力	Injection unit force	Ton	11	18.3	18.3	18.3	18.3	27	27	29
射台行程	Carriage stroke	mm	480	600	600	700	800	800	850	910
锁模力	Clamping force	Ton	600	750	1000	1200	1500	1800	2200	2800
模板最大间距	Max. daylight	mm	1820	2050	2300	2560	2760	3160	3560	3960
锁模行程	Clamping stroke	mm	910	1025	1150	1380	1480	1680	1880	2080
四柱间距	Distance btwn. tie bars	mm	900X900	1000X1000	1100X1100	1280X1280	1480X1480	1680X1680	1880X1680	2080X1880
最小模具尺寸	Min mould dimension	mm	630X630	700X700	780X780	890X890	1030X1030	1170X1170	1320X1180	1460X1320
容模量	Mould thickness range	mm	350~910	350~1025	450~1150	550~1180	600~1280	700~1480	800~1680	900~1880
顶针力	Ejector force	Ton	12.5	25	25	25	25	33	33	50
顶针行程	Ejector stroke	mm	300	350	350	350	350	400	400	450
顶针数	No. of ejector pins	unit	17	17	17	29	29	33	21	21
主马达功率	Major motor	kW	55	74	90	110+11	110+11	135+11	165	165+15
系统压力	System pressure	Mpa	16	16	16	16,20	16,20.5	16,19	16,15.5	16,19.6
油泵排量	Hydraulic pump capacity	L/min	297	441	484	595	595	726	892	892
加热区	No. of heater zones	unit	5+1	5+1	5+1	5+1	5+1	5+1	5+1	5+1
电热功率	Heater power rate	kW	30.59	34.04	37.24	42.04	47.09	47.09	67.54	82.69
净重	Net weight	Ton	26	45	56	68	70	90	140	205
油箱容积	Tank capacity	L	1200	1450	1450	1757	2088	2254	2453	4566

■ 本公司保留修改技术参数的权力, 恕不另行通知
We are always working on improvement and reserve the right to change design and specifications without notice.

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RHCM 蒸汽无痕高光注塑技术
RHCM Hi-gloss Injection Moulding Technology

CML 大同机械
COSMOS MACHINERY

“RHCM 蒸汽无痕高光注塑技术”介绍

“蒸汽无痕高光注塑”又被称为RHCM成型技术的一种，技术是透过运用蒸汽将模具表面快速升温，令成型模腔表面温度高于树脂塑料的玻璃转移温度 (Tg)，然后开始进行射出成型。当完成模腔填充过程后，立即利用水(经处理)作为冷却媒体使模具表面温度急速下降，从而改变塑料产品表面特性。

Introduction to RHCM Hi-gloss Injection Moulding Technology

'RHCM' is the abbreviation for (Rapid Heat Cycle Moulding). This technology utilizes the steam to raise the mould temperature quickly, hence increase the cavity surface temperature above the plastics Glass Transition Temperature (Tg), then starts to injection process. While completed the cavity filling process, the treated water cools the mould surface immediately. As a result, the appearance quality of the moulded parts can be improved.

“RHCM 蒸汽无痕高光注塑技术”优点

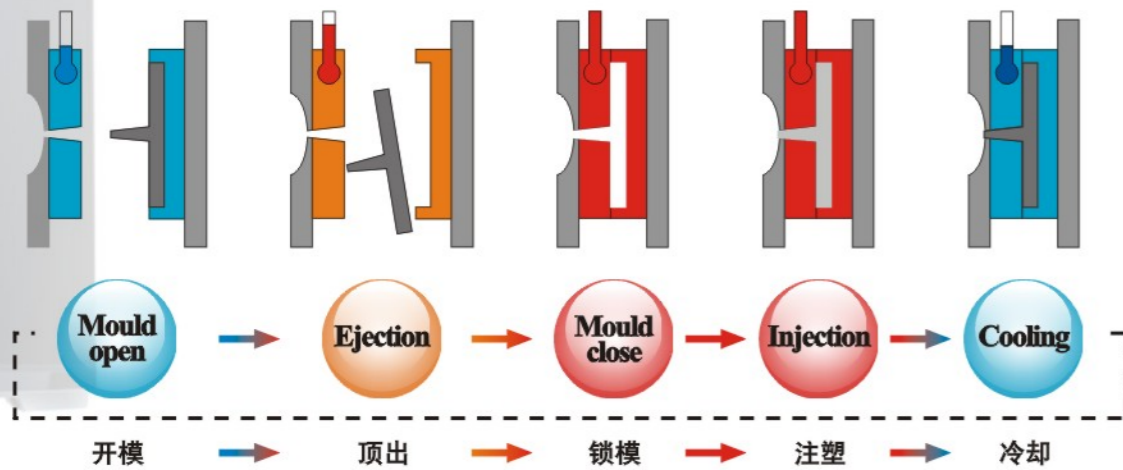
- 消除产品表面夹水痕 / 收缩痕 / 流纹等问题
- 增强产品表面光泽度
- 提高产品表面防刮性能
- 省却产品后加工程序 (如:喷漆)
- 改善纤维产品表面浮纤问题

Benefits of RHCM Technology

- Eliminated the product weld line, sink mark, and flow mark
- Enhanced glossy surface
- Improved scratch resistance of the moulded part
- Minimize Post-moulding process (e.g. Painting)
- Improved fiber-mark defect of the moulded part

工作原理

RHCM Working Principle



“RHCM 蒸汽无痕高光注塑技术”方案

“RHCM” Technology Solution

RHCM 专用注塑机

- 具卓越重复精度
- 针对应用性机械配置
- 高性能控制系统
- ITC系统连接使用介面

RHCM Special Injection Moulding Machine

- Excellent repeatability
- Application oriented machine configurations
- Powerful machine control system
- ITC interlock connection interface

特殊模具钢材

- 硬度要求 37-41 HRC (洛氏硬度)
- 具有良好防锈性能
- 良好防腐性能
- 良好镜面抛光性
- 低热膨胀系数特性

High-grade Mould Steel

- Hardness requirement: 37-41 HRC
- Rust resistant properties
- Corrosion resistant properties
- Good mirror surface polishability
- Low thermal expansion coefficient

模具设计

- 蒸汽流道尺寸及分布设计
- 使用K-type 模温传感器

Mould Design

- Steam-channel dimension and layout design
- K-type thermocouple for the mould temperature sensing

蒸汽锅炉

- 每2台 ITC 控制器需配置蒸发量达 1吨 / 小时之蒸汽锅炉
- 蒸汽压力 9-11 bar
- 进水量 300升 / 小时

Steam Boiler

- Every two ITC controller equipped with 1 ton/hr evaporative capacity steam boiler
- Steam pressure from 9-11 bar
- Water flow rate: 300 L/hr

原料

- 具高光表面特性 (ASTM D523 75° / 95-97%)
- 高表面硬度 (JIS K 5401 / F-4H)

Resin

- With high surface glossy properties (ASTM D523 75° / 95-97%)
- High surface hardness properties (JIS K 5401/F-4H)

产品实例 (1)



图 (1): 产品表面出现浮纤 (笔记本电脑机前壳)
Fig (1): Fiber-mark on the product surface (Front-case of Notebook PC)

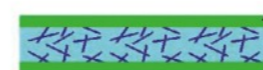


产品纤维分布图(1)
Fiber distribution diagram (1)
传统注塑工艺
(Conventional Moulding)

Case Study (1)



图 (2): 消除产品表面浮纤情况 (笔记本电脑机前壳)
Fig (2): Eliminated fiber-mark on the product surface (Front-case of Notebook PC)



产品纤维分布图(2)
Fiber distribution diagram (2)
RHCM 注塑技术
(RHCM Technology)

高分子聚合物外层
Polymer surface layer

产品实例 (2)

32" 液晶电视前框

Case Study (2)

32" LCD TV frame



模具资料:

- 钢材: 日立CENA-1
- 热流道: HOTSYS (6点)

Mould Specification:

- Mould steel: Hitachi CENA-1
- Hot runner: HOTSYS (6 Drop)

ITC参数设定

- 上限到达温度: 18秒内130℃
- 下限到达温度: 11秒内65℃
- 冷却设定: 11秒
- 加热选择开模信号

ITC Parameters Setting

- Upper limit: 18 sec. raised to 130℃
- Lower limit: 11 sec. cool down to 65℃
- Cooling time: 11 sec
- Heating triggered by mould open process

注塑机

- 机型: 1000T

SAMSUNG 原料

- 干燥温度: 80℃ / 时间3小时
- 料筒温度: 210℃ ~ 235℃

Injection Moulding Machine

- Machine size: 1000T

SAMSUNG Resin

- Drying temperature: 80℃ / Duration: 3 hr
- Barrel temperature: 210℃ ~ 235℃

锅炉

- 蒸气压力: 0.8Mpa
- 蒸气温度: 170℃
- 冷却水压: 0.4Mpa / 温度18℃
- 辅助气压: 0.5Mpa

Steam Boiler

- Steam pressure: 0.8Mpa
- Steam temperature: 170℃
- Cooling water: 0.4Mpa (18℃)
- Auxiliary air pressure: 0.5Mpa

效果

- 消除产品熔接痕
- 减少生产废品率
- 改善产品收缩及变形情况

Result

- Eliminated the product weld line
- Reduced production scrap rate
- Improved shrinkage and deformation of the moulded part