

追求極致 塑造優勢
Pursuing ultimate. Molding advantage



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義展 V系列射出成型機



V30.V60.V90.V120.V150
V220.V300.V400.V520

YEAR-CHANCE V-SERIES
INJECTION MOLDING MACHINE

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V 系列 series

1. 精密的料管螺桿公差，配合精準的機構接合設計，螺桿轉動時維持最精確的直線性及真圓度。
Screw and barrel with close tolerance are accurately assembled to maintain precise linearity and roundness during screw rotation.
2. 調模定位裝置，關模緊度永不位移。
Mold height adjustment with locating device ensures no displacement.
3. 模板及主結構均採用球墨鑄型鐵材質（FCD50）變形率小、耐壓性高。
Platens and main construction parts are made of ductile iron (FCD50) with less deformation and high impact.
4. 哥林柱採用金十字合金鋼（NH48MV）材質，拉力係數比SCM4材質增加約15%，表面硬度達HRC27.8圓型齒底設計，斷裂強度增加約40%。
Tie bars are made of NH48MV alloy steel with higher tensile strength around 15% more than SCM4, and surface hardness up to HRC27.8 degree. The breaking strength will be increased around 40% by radius corner design at tooth bottom.
5. 模板機套採用粉末冶金合金鋼材質，耐磨耗、耐高壓。
Platen bush is made of powder metallurgy brass alloy with wear-resisting and high impact characteristics.
6. 採用日本NOK高壓高速油封、背托環及耐磨環，最耐久。
Japan made NOK oil seal, back-up ring, and wear ring are used for durability.
7. 強固的機構設計，可以承受最快開關模及射出速度衝擊。
Rigid mechanism construction design can bear all impacts of rapid mold open and close, and high-speed injection.
8. 採用高速切換的邏輯迴路，動作切換快速安靜。
Rapid switch-over logic hydraulic circuit enables quick and quiet shift in movement.
9. 高效率的能源比例設計，可以達到最快的運動速度。
High efficiency energy distribution design achieves the fastest moving speed.
10. 各滑動圓柱、平面均採動態設計稼動性最佳。
All the sliding column and plane are designed by dynamic development to get the best utilization.
11. 關模低壓採用油壓及油壓抗衡原理，最能有效保護模具安全。
Low pressure mold close is adopted by hydraulic mutual-conditioned theorem to highly effect the mold protection.
12. 關模安全設計採電氣、油壓雙重連鎖方式。
Clamping safety devices are actuated by a chain reaction of electric and hydraulic system.
13. 清晰的中、英文及圖形警告標誌。
Clear Chinese/English graphic warning symbol.
14. 板金採圓弧設計，防止碰傷。
Curve guarding design avoids of any crash injury.
15. 活動模板採用二硫化鉬(MoS2)潤滑，潔淨無汙染。
Movable platen is lubricated by molybdenum disulfide (MoS2) without any pollution.
16. 採用耐久的零組件，符合環保訴求。
Durable parts meet the requirement of environmental protection.
17. 足以快速生產的機構設計，可降低單位生產成本。
Fast cycle mechanism design saves the unit production cost.
18. 靛藍及象牙白兩種配色供選擇，均以平和、寧靜為設計要求。
Indigo and ivory are available for machine color based on demand of gentle and peaceful image.



◆ 成型中最重要射嘴部有二段溫控，可非常精準地控制，易解決射嘴部拉成絲狀、射嘴溢料、冷卻遲緩，對降低成形不良品很有效果。

◆ 2 zones' temperature control at nozzle portion are precisely handled to easily manage the problems of filiform result, resin spill, and slow cooling, then the defect product will be decreased.

◆ 溫度控制部分

料管溫度控制採用PID+FUZZY控制模式，並採用SSR無接點繼電器，另可選配SCR恆溫型繼電器做電熱控制，能使料管溫度精確控制在1°C之內。

◆ Temperature control

Barrel temperature is controlled by PID+FUZZY mode with non-contact SSR relay. In addition, SCR constant temperature relay is optional for heating control to have temperature tolerance within 1°C.

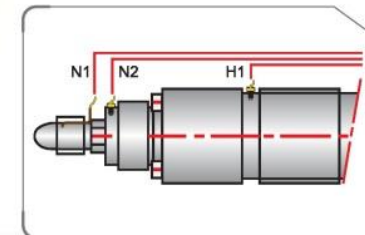
◆ 同步加溫功能

傳統射出機在料管的加熱過程中，射嘴由於質量較小溫度很快就到達設定值，而其它段溫度由於料管的質量較大，因此溫度到達的時間可能會多出射嘴時間2-3倍，尤其料管最後段因為冷卻水循環的因素更加慢，因為射嘴的狀態長時間處於高溫狀，極容易發生過火、銀線、甚至也會發生碳化物的狀況。同步加溫功能可防止射嘴內樹脂的碳化和劣化。

◆ Synchronized heating function

For traditional barrel design, it is easily heating up to the setting data at nozzle portion as its smaller quantity. But, 2~3 times longer at other zones as bigger quantity, even worse at the ending zone due to cooling circuit surrounded. So, pyrolysis and silver mark are easily occurred as high temperature at nozzle portion for long time, even carbonized as well.

Synchronized heating function could prevent resin inside nozzle from carbonization and badness.



Elite perspective

Innovative deduction

◆ 射出壓縮

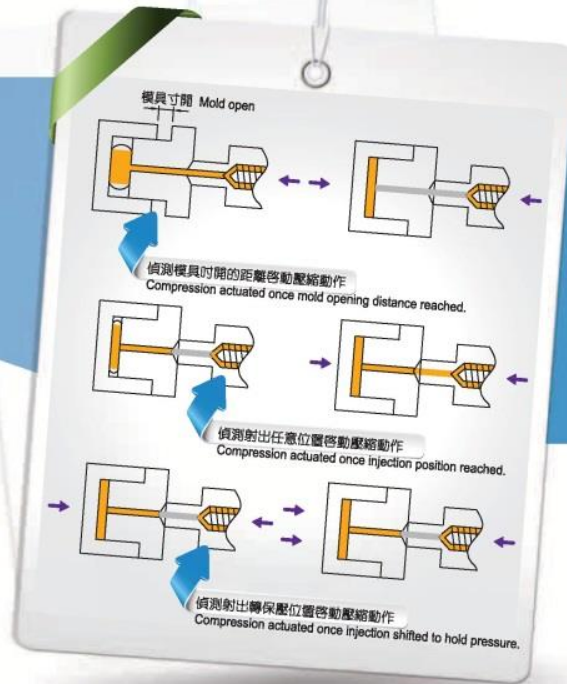
射出壓縮成型的先決條件是模具配置模型設計，溶膠被低壓注入模穴，模具會被溶膠撐開2~3mm也就是所謂的壓縮行程，模具的直升面溶膠不能從模板間隙流出。在射出填充過程中啟動鎖模的動作，因此保壓不是射出單元提供，而是由鎖模單元提供，這個壓力被平靜的完全散發，使得產品密度均勻化、無應力化。

◆ Injection compression

Mold with a wedge design is necessary for injection compression molding, and forced open around 2~3 mm, called compression stroke, while low pressure injection without any resin effusion between mold parting area. Mold clamping is actuated during injection, so hold pressure is provided by clamping unit instead of injection unit. The stress will be smoothly released accordingly, and the molded product will have a uniform density and remain stressless.

◆ 射出壓縮成型的效果 Injection compression

- 減少成型變形
minimize deformation of molded product
- 改善托模特性
improve the ejection character
- 改善貼層特性
improve labeling character
- 縮短成型週期
shorten cycle time
- 降低鎖模壓力
reduce clamping force
- 提高排氣效果
promote air venting

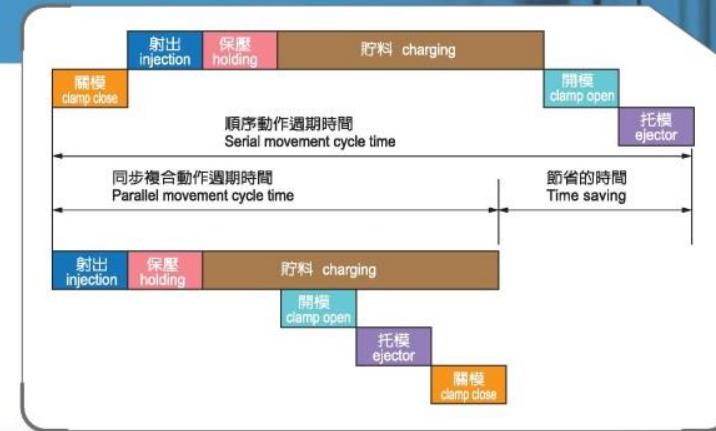


◆ 開中貯料同步複合動作

製作產品需要較長的貯料時間，而且模具的冷卻效率要好，不需很長的冷卻時間的情況下，利用同步複合動作，在做貯料動作的同時，進行開模、托模及關模的動作，可有效節省成型週期時間，降低生產成本。

◆ Parallel movements (simultaneous actions)

The charging time is always much longer for heavier product. If mold cooling time is less, then simultaneous actions will effectively save molding cycle time and reduce the production cost as mold open, ejection and mold close can be actuated during charging.



Power high efficient



◆ DAIKIN IPMP 馬達泵

義展射出機與DAIKIN共同開發，提高SUT伺服馬達系統壓力、流量反應速度，市售的SUT伺服馬達系統壓力的反應時間約150msec，經導入特殊的油路設計及程式的動作、壓力、流量的反應時間縮短到80msec，對一些微射出精細的產品能夠提高製成率。

◆ The IPMP motor pump

Joint collaboration with DAIKIN to upgrade the reflection time of system pressure and flowrate for SUT servo motor. It becomes 80msec with particular hydraulic circuit and programmable movement, and much better than 150msec of market selling one. The finished percentage could be higher for fine product via micro injection.

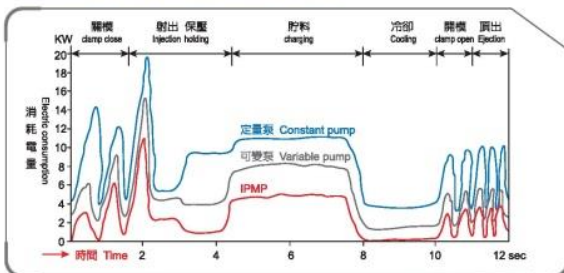
◆ 省能源 / 生產時消耗成本降低

採用大金(DAIKIN)IPMP馬達泵系統，比一般可變泵+定速馬達節省40%以上電量，比一般定量泵+定速馬達節省70%以上電量。

◆ Energy saving / less power consumption for production

To use DAIKIN IPMP pump and motor system can save the electric consumption more than 40% in comparison with system of variable pump plus constant motor, and even 70% above in comparison with system of constant pump plus constant motor.

消耗電量比較曲線
Electric consumption curve



在實際測試生產同一物件之每小時消耗電量子力學(不含電熱)定量泵系統約10.44KW，可變泵系統約5.83KW，而IPMP系統只要2.91KW。

The hourly electric consumption (heating excluded) is about 10.44KW for constant pump system and about 5.83KW for variable pump system, but 2.91KW only for IPMP system.

標準配備 Standard equipment

射出方面

1. 射出電子計位尺
2. 射出保壓有時間位置壓力等三種偵測方式
3. 黑十字鋼氮化螺桿
4. 大小料頭各自獨立的溫控段
5. 射料三段比例背壓控制
6. 射出壓力傳感器
7. 軌道式料斗座
8. 定時乾燥機
9. 備用料頭
10. 料管保護蓋
11. 射料轉速檢測顯示功能

關模方面

1. 集中打油器及管路
2. 油壓、電氣、機械三道關模安全裝置
3. 超低壓力關模保護模具系統
4. 自動調模及定位防鬆裝置
5. 水路分佈器
6. 開關模及托模電子計位尺
7. 多段速度、壓力的托模動作
8. 托模有單次、托停、多次、震托多種選擇
9. 中子、絞牙用油路、電氣裝置一組
10. 間歇矽膠型劑控制
11. 風托裝置

動力及其他

1. 葉片式高效率泵浦
2. MEV壓力流量比例閥
3. 機械避震腳
4. 總壓力及射出背壓油壓錶
5. 模具吊桿組(含V150以下)
6. 夾模鐵及螺絲組
7. 簡易工具及工具箱
8. 單相電插座

組件及系統

1. 伺服節能馬達11KW、15KW、22KW
2. 可變容量柱塞式省電泵浦
3. 射出閉回路伺服系統
4. 高速射出蓄壓器(ACC)及閉回路伺服系統
5. 特殊塑料、材質的射出配套方案
6. 射出壓縮動作系統
7. 射座電子計位尺
8. 膠料落下計量控制裝置
9. 料管內真空裝置
10. 高壓氣體填充產品中空射出設計
11. 大理石紋彩色射出料管及動作配套
12. 雙合金耐腐蝕料管
13. 高混煉及特殊材料用螺桿設計
14. 油電複合動作回路設計
15. 油壓封閉式料管頭組
16. 特殊型乾燥機
17. 吸料機
18. 乾燥機集塵器
19. 乾燥機磁鐵機
20. 電木、尿素射出裝置
21. 雙中子油路、電路
22. 絞牙油壓馬達組
23. 石英隔熱模板
24. 電腦模組記憶卡
25. 電腦連線系統
26. 量身訂做專案
27. 其他解決方案

特殊配備 Special equipment

Injection system

1. Injection potential meter
2. Injection to hold pressure shifted by 3 methods of time, position, and pressure
3. SACM645 screw with nitrogen treatment
4. Individual temperature control zone for large and small barrel head
5. 3 steps proportional backpressure control
6. Injection pressure sensor
7. Railed hopper bracket
8. Hopper dryer with timer
9. Spare barrel head
10. Barrel protection cover
11. Screw RPM measurement and display

Clamping system

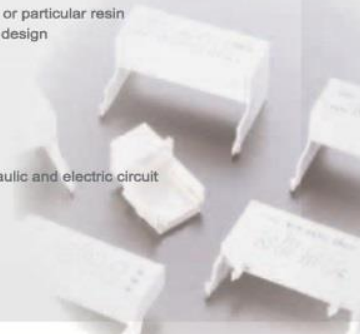
1. Central lubricator and piping
2. 3 safety devices via hydraulic, electric and mechanical
3. Extremely low pressure mold protection system
4. Auto mold height adjustment & positioning anti-looseness device
5. Water distributor
6. Clamping and ejection potential meter
7. Multi steps ejection pressure and speed control
8. Ejection function by single, forward holding, multi-stroke, vibration
9. One set of core pulling/unscrewing with hydraulic and electric device
10. Intermittent silicon spread control
11. Air ejector device

Power system and others

1. Vane type high efficiency pump
2. MEV pressure & flowrate proportional valve
3. Mechanical anti-vibration pad
4. System pressure and injection backpressure gauge
5. Mold loading crutch (V150 Under)
6. Mold clamp and screws set
7. General tool and tool box
8. Single phase power socket

Module and system

1. Energy saving servo motor 11KW、15KW、22KW
2. Plunger type of variable volume pump for power saving
3. Injection close-loop server system
4. High speed injection with accumulator and close-loop server system
5. Injection turnkey for special resin or material
6. Injection compression functioning system
7. Injection unit potential meter
8. Raw material auto-drop counting device
9. Vacuum device inside barrel
10. High pressure air serving for injection blowing article
11. Color mixing barrel and related function arrangement for product with marble lines
12. Bimetal wear-resisting barrel
13. Screw design for high-mixing purpose or particular resin
14. Hydraulic-electric complex movement design
15. Hydraulic shot-off barrel head set
16. Particular hopper dryer
17. Autoloader
18. Hopper dryer dust collector
19. Hopper dryer magnet device
20. Bakelite and carbamide injection unit
21. Double core pulling devices with hydraulic and electric circuit
22. Unscrewing hydraulic motor set
23. Quartz heat insulation plate
24. Memory card for computer data
25. Computer connection system
26. Customization project
27. Other troubleshooting



V-Series 射出機性能表 Injection Molding Machine

型式 Model (standard)		V30			V60			V90			V120			V150			V220			V300			V400			V520		
螺桿直徑 Screw diameter	mm	16	19	22	22	25	28	25	28	32	30	33	36	35	38	42	40	45	50	45	52	60	50	58	65	55	65	75
射出容積 Shot volume	cm ³	20	28	38	46	59	74	74	92	121	127	153	183	192	226	277	301	381	471	477	637	848	647	871	1095	855	1194	1590
射出重量(PS) Shot Weight	g	19	26	35	42	55	68	68	85	112	117	142	169	178	210	256	279	353	436	442	590	785	600	778	1014	792	1106	1473
	oz	0.7	0.9	1.2	1.5	1.9	2.4	2.4	3	3.9	4.1	5	6	6.3	7.4	9	9.8	12.5	15.4	15.6	20.8	27.7	21.1	27.3	35.7	27.9	39	52
可塑化能力 Plasticizing Capacity	kg/hr	6	8	11	13	17	21	16	21	26	34	41	49	46	56	68	82	104	128	114	152	204	103	187	236	124	206	318
螺桿轉數 Screw rotation	R.P.M	320			375			267			305			250			300			300			198			187		
射出壓力 Injection pressure	kg/cm ²	3421	2426	1809	2827	2189	1745	2828	2255	1726	2644	2185	1836	2664	2260	1850	2677	2115	1713	2686	2011	1511	2692	2001	1593	2697	1931	1450
射出效率 Injection rate	cm ³ /s	32	46	62	60	78	97	67	83	108	115	139	165	132	155	191	192	243	300	255	340	453	277	373	467	303	424	565
射出速度 Injection speed	mm/s	165			159			136			163			138			153			161			141			128		
型式 Model (High-Speed)		V30H			V60H			V90H			V120H			V150H			V220H			V300H			V400H			V520H		
可塑化能力 Plasticizing Capacity	kg/hr	7.5	10	13	14	18	23	22	28	35	43	52	62	65	78	95	110	139	172	136	182	244	120	219	276	155	256	395
螺桿轉數 Screw rotation	R.P.M	400			400			350			385			352			400			360			232			225		
射出效率 Injection rate	cm ³ /s	50	70	94	87	113	141	106	133	173	144	173	207	187	221	269	257	325	402	305	407	542	323	435	547	377	527	702
射出速度 Injection speed	mm/s	248			231			179			205			195			205			192			165			159		
型式 Model (Energy-saving)		V30S			V60S			V90S			V120S			V150S			V220S			V300S			V400S			V520S		
可塑化能力 Plasticizing Capacity	kg/hr	7	10	13	14	18	22	20	25	32	40	49	58	49	58	71	82	104	129	76	101	136	103	139	176	122	166	256
螺桿轉數 Screw rotation	R.P.M	400			398			314			370			260			300			200			148			146		
射出效率 Injection rate	cm ³ /s	65	92	125	80	103	129	80	100	131	139	168	200	138	162	199	210	266	329	210	281	375	273	368	462	346	484	644
射出速度 Injection speed	mm/s	328			210			163			197			143			168			132			139			145		
鎖模力 Clamping force	Tonf	28			62			93			129			150			222			300			405			518		
開模行程 Opening stroke	mm	200			270			350			400			450			500			600			700			800		
模厚 Mold height	mm	80 ~ 280			100 ~ 320			100 ~ 450			100 ~ 500			100 ~ 550			120 ~ 600			150 ~ 650			200 ~ 800			250 ~ 900		
模板 Platen dimension	mm	405 × 405			460 × 460			540 × 540			615 × 615			685 × 685			775 × 775			910 × 910			1040 × 1040			1190 × 1190		
支柱內距 Distance between tie bar	mm	260 × 260			310 × 310			360 × 360			410 × 410			460 × 460			510 × 510			610 × 610			710 × 710			810 × 810		
托模力 Ejection force	Tonf	2.7			3.3			4			4.8			5.6			6.5			7.5			10.8			13.3		
托模行程 Ejection stroke	mm	60			75			105			120			150			170			200			230			260		
電機馬達 Pump driving motor	HP KW	10 7.5	H15 11.2	S14.7 11	15 11.2	H20 14.9	S14.7 11	15 11.2	H20 14.9	S14.7 11	25 18.6	H30 22.4	S20.1 15	30 22.4	H40 29.8	S20.1 15	40 29.8	H50 37.3	S29.5 22	50 37.3	H60 44.7	S29.5 22	50 37.3	H60 44.7	S40.2 30	60 44.7	H75 55.9	S49.6 37
電熱段數 Heating zone	set	N2+2			N2+2			N2+3			N2+3			N2+3			N2+3			N2+4			N2+4			N2+4		
電熱容量 Heating capacity	KW	2.7			3.5			4.8			5.7			7.7			8			12.4			15.82			18.5		
系統壓力 Max. system pressure	kg/cm ²	170			170			170			170			170			170			170			170			170		
油箱容量 Oil tank capacity	L	101			149			197			240			315			431			581			1082			1264		
機械尺寸 Machine dimension	M(LxWxH)	3.52 × 0.93 × 1.5			3.9 × 1.09 × 1.58			4.44 × 1.17 × 1.65			4.89 × 1.24 × 1.74			5.5 × 1.31 × 1.83			6.09 × 1.41 × 1.92			6.89 × 1.54 × 2.1			8.4 × 2 × 2.2			9.91 × 2 × 2.1		
機械重量 Machine weight	Ton	2.6			2.9			4.1			4.8			6.6			7.8			12.8			17.8			26		

1. 射出重量以射出容積為準，以PS塑料比重1.05，假設效率0.88的乘積。
Shot weight is based on shot volume multiplied by specific gravity 1.05 of PS with 88% efficiency.

2. OZ為重量單位，1OZ等於28.349g。
OZ is weight units, and 1 OZ is equal to 28.349 grams.

3. 機械顏色有象牙白及靛藍兩色可供選擇。
Ivory and indigo are available for machine color.

4. 規格外科管亦可訂做，將跟據需求配合機械性能提出建議。
Special barrel is also available along with a proposal based on request and machine function.

5. 基於研發需求，本公司保有修改上述規格之權利若未減低性能，得不另行通知。
Design and specification are subject to change without prior notice.

