"筌笙" 注塑机

TSUENSAINT SERIES INJECTION MOLDING MACHINE



"筌笙" 高精冲床

TSUENSAINT SERIES HIGH PRECISION PRESS MACHINE



NINGBO TSUENSAINT TECHNOLOGY DEVELOPMENT CO.,LTD. 宁波荃笙科技发展有限公司

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TSUENSAINT

die-casting machine

筌笙|精密压铸机床



宁波荃笙科技发展有限公司 NINGBO TSUENSAINT TECHNOLOGY DEVELOPMENT CO.,LTD.



TSUENSAINT

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宁波荃笙科技发展有限公司位于宁波市北仑区,长期以来从事压铸机的研发 &制造。厂区外设有机械加工分厂和总部精加工车间、总装车间。建立有企业工程 技术中心、压铸机事业部研发实验室、实行PDM程序化设计、ERP管理系统、零 件加工CAM制造加工等信息化工程,公司通过ISO质量管理体系认证和产品欧盟 CE认证。"筌笙"压铸机凭借国外先进专业技术及具备高端检测器具及理化测验等 手段、实现品质保证。

"筌笙"多款系列精密压铸机,以精为誉、以诚为本、铭求品质、竭诚服务,与客户共创卓越。

海的百川旭回东升

Company Profile

NINGBO TSUENSAINT TECHNOLOGY DEVELOPMENT CO.,LTD. located in Beilun Ningbo, deals with the research and manufacture of high-end die casting machine for many years. We have established the machining factory, headquarter finishing workshop as well as assembly workshop. Besides, we have also built enterprise engineering technology center, die casting machine division R&D laboratory. We have carried out the PDM program design, ERP administration system and information engineering such as CAM manufacturing of parts processing etc. Our company is qualified with ISO quality management system certification as well as European CE certification. We have combined with foreign advanced professional technology, high end testing equipment as well as physical and chemical testing method so to ensure good quality of "TSUENSAINT" die casting machine.

TSUENSAINT series high precision die casting machine always adheres to the principle of precisionoriented, honesty-oriented, quality-oriented as well as dedicated&sincere service and pursue excellence and create a brilliant future with our customers.

CREATE EXCELLENCE JOINTLY

制造集錦 MANUFACTURING HIGHLIGHTS

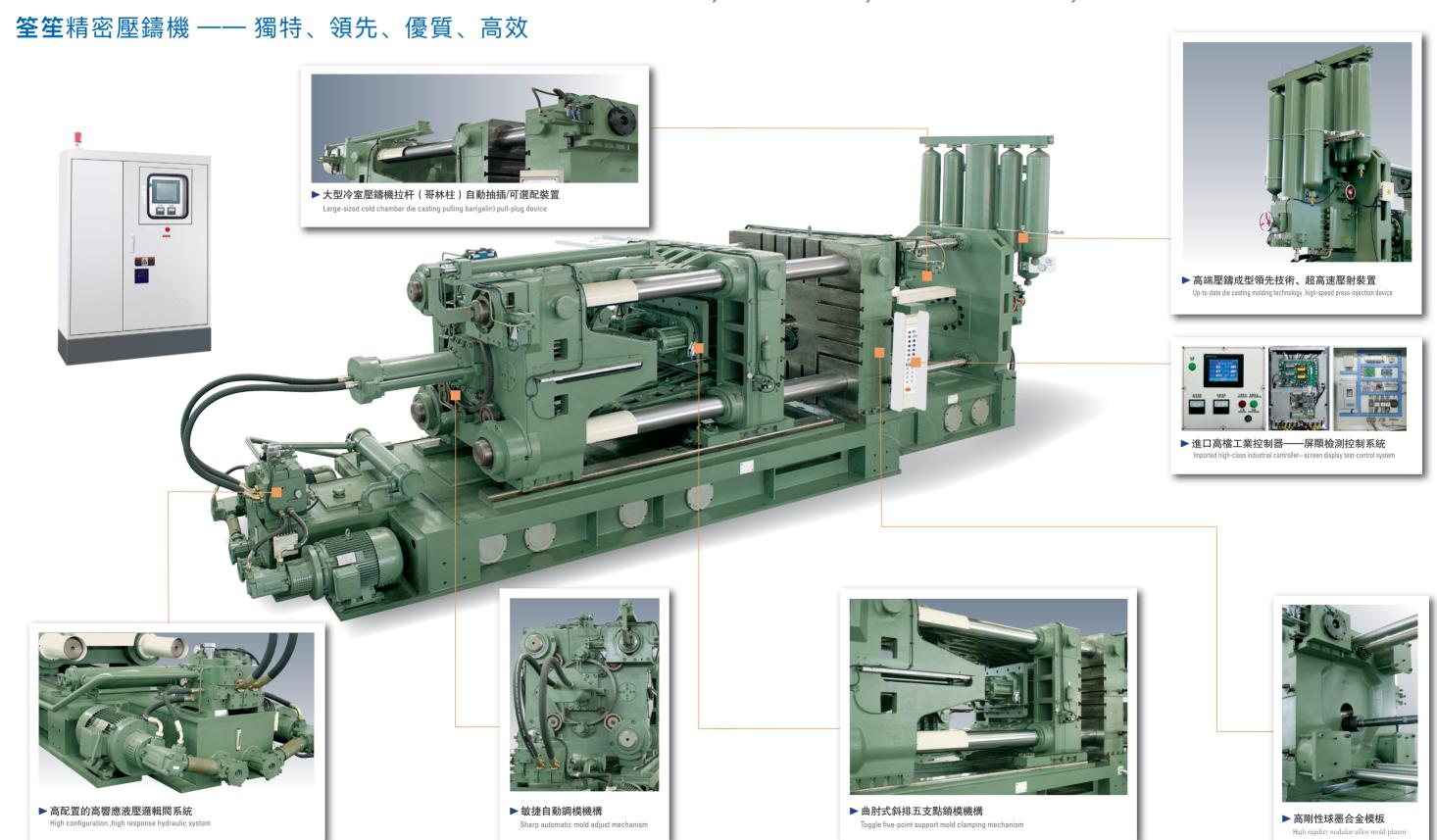


1-2 总装二车间一角 A corner of assembly workshop No.2 3 — 10 CAM制造加工 CAM manufacture process

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TSUENSAINT PRECISION DIE CASTING MACHINE

— DISTINGUISHED, LEADING, TOP QUALITY, HIGH EFFICIENCY



SELF INNOVATION & ENERGY - SAVING DEVICE

自主創新 • 節能設備

筌笙倡導壓鑄機——變頻&伺服驅動節能系統技術

TSUENSAINT special recommendation die casting machine-frequency-conversion & servo drive energy-saving system technology

珍惜能源倡導節能已是當今全球化共同的追尋, 筌笙根據壓鑄機生產工藝特性而研制推出高效/强力 節能系統的機型。并將高節能技術&機器性能科學地融合——讓客户實現無與倫比的使用價值。

Cherish energy resource and advocate energy-saving is the common seeking target of globalization today. TSUENSAINT company have developed the die casting machine with high efficiency/powerful energy-saving system based on its characteristic of manufacturing technique. With scientific fusion of high energy-saving technology and machine features, so to achieve incomparable use value of our machine.

CA&MA系列冷室壓鑄機——變頻驅動高效節能型特性:

CA&MA series cold chamber die casting machine-frequency conversion drive high efficiency energy-saving characteristic

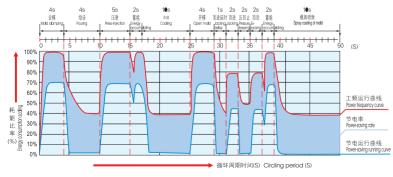


- ▶自主專用模塊技術的驅動器+控制器專用程序+專用電機+高性能油 泵優化合成的電液控制系統。
- ▶系統壓力/流量控制技術——能根據機器動作負載感應比例補償的自動匹配,且無高壓溢流的能量損失,并能有效抑制油温上升,有效確保壓鑄成型的品質穩定并增加機器使用壽命。
- ▶系統具有根據成型工藝需求設定無級轉速或選擇馬達自行運轉狀態 至自行軟啓動循環功能,且不影響制品的生産的周期。CA・MA系 列高效節能型的壓鑄成型耗雷要比常規機器通常節能>35%。

- ► Special drive of autonomous module technology+specific program on controller+special computer+high performance oil pump optimized electric hydraulic control system
- ➤ System pressure / flow control technology, which can do automatic matching based on machine action load sensing proportional compensation, and no energy loss of high pressure overflow, which can effectively suppress oil temperature rise, ensure the stable quality of die-casting process as well as increase machine lifetime accordingly:
- ▶ The system has the function that can set stepless speed according to the molding process demand or select the motor self-running state to the self soft restart, and it does not affect the production cycle time of the final product. CA · MA series high efficiency energy-saving type die casting machine can reduce the power consumption more than 35% compared to the standard machine.

CA&MA系列冷室壓鑄機節能效果曲綫圖 / 系統元件

The curve analysis chart of power saving result of CA • MA Series cold chamber die casting machine /elements and parts of system









CJ&MJ系列壓鑄機伺服驅動超强節能型特性:

CJ&MJ series die casting machine servo drive super energy-saving characteristic

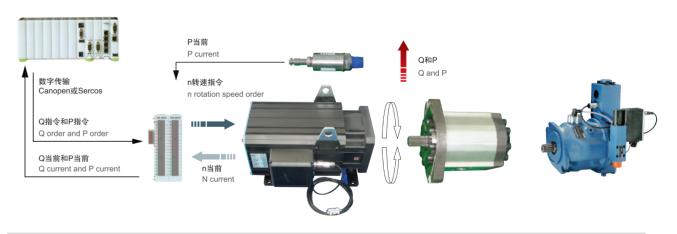


- ▶由本公司中外合資專業技術人員創新研發的專用高端模塊技術 伺服驅動器+伺服馬達+控制器專用程序軟件+特種高性能泵浦 優化組成的高響應電液伺服實現控制系統。
- ▶系統實現壓力/流量閉環控制技術,實現動作的重復定位高精度,伺服驅動輸出匹配功率可按控制器設定的工藝參數指令而高速響應,并能有效抑制油温,更能確保壓鑄成型的品質和增加機器使用壽命。
- ▶系統能自然地根據成型工藝要求設定階段性超低速且保持壓力的 優點,且不影響制品生產周期的產能。CJ·MJ系列超强節能 型壓鑄機電耗要比常規機器通常節能>60%。

- ► Co-operatively developed by the experts, the driver of the up-todate mold board technology+servo motor+special program software for controller use+ servo control system of high response electrohydraulic comprised of specially made high performance oil pump.
- ▶ The system carries out pressure-flow closed-loop control technology, guarantee the high accuracy for repeating positioning of the motions, the servo driver outout matching power will be responsed quickly according to the technical parameter order set by controller. And can control oil temperature effectively, keep top quality of castings and increase machine using period.
- ▶ The system can set the staged ultra-low speed and maintain the pressure according to the molding process requirements, and it does not effect the cycle time of the product as well as production capacity. CJ · MJ series powerful energy-saving die casting machine can reduce power consumption more than 60% compared to the standard machine.

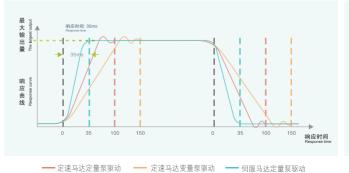
如:伺服马达驱动双容积变量泵——是最具性价比的机能系统

For example: servo motor driven biproduct variable displacement pump—the most cost-effective function system



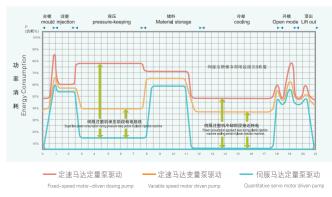
系统高速响应比照

The comparision of systemic high speed response



系统功率消耗比照

The comparision of systemic power consumption



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THE TECHNICAL STUDY OF DIE CASTING FORMING

壓鑄成型工藝探索

- ▶一般來說,鋁合金充型時間0.03~0.15秒爲宜。充型時間受澆口面積、 排氣槽大小、合金種類以及澆注温度、衝頭速度、鑄造壓强的影響, 需對這些谁行控制。
- ▶儲能器内的壓力對于壓射壓力有重大的影響,所以,當氣體量一减少, 充型的最後壓力也會大大降低,影響鑄件質量。如果壓射衝頭壓射一 次儲能器內部壓强降低10%以上,則需要補充氣體。
- ■當壓射完成在型內冷凝的時間過長,由于凝固收縮力而形成的抱型力就會加大,鑄件難以頂出。生產薄壁件時,很容易頂壞產品。時間太短,又容易凝固不好,造成鑄件變形。因此,壓射後要盡快達到取件温度,就需要很好地冷却壓型,爲此還希望澆注量和澆注温度的衡定。
- ▶應根據不同的産品,控制澆注温度并實現標準化,壓型設計時,爲使它温度分布均匀,設有冷却水路和集渣槽,但總會有些温度差。壓型温度的管理,通常是控制壓型表面的幾個點,其温度不是整個壓型的温度,統一用合型之前的温度來控制也行,AI合金時,是150~300℃,Zn合金時,爲150~220℃.另外,動型與定型的温度差要盡量小。
- ▶離型劑要根據鑄件要求進行選擇,要噴塗適當濃度。使用時要噴施最少的量而且要噴塗均匀。重點噴塗冷却進料口周圍及產品壁厚區域。 活動芯子、頂杆、回程銷等的滑動部分和壓射室、衝頭上潤滑劑須塗 摸適量。太多的話,會混入金屬液,進入型腔,導致鑄造缺陷。

CK&MK系列冷室壓鑄機

Cold chamber die casting machine



HK系列熱室壓鑄機

Hot chamber die casting machine



Note: ① the picture is for reference only,may be different from the actual

2) plesae contact us when you want to buy the machine with European CE standard

②當您欲購具備歐盟CE標準的機器、請與我們闡明

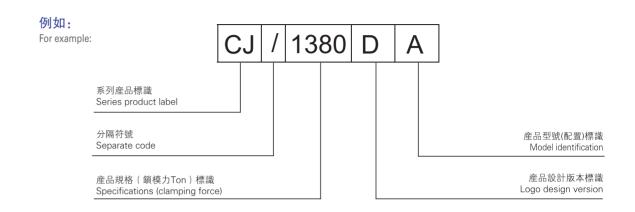
提示: ①資料中產品圖僅供參考,可能與實際出售物偶有不同

- ▶ In general for aluminum alloy, the reasonable mold filling time are 0.03----0.15 second. The mold filling time are affected by the area of pouring head, gas exhausting slot, kind of alloy, speed of punch head, pressure intensity of casting, it need to control these elements.
- ▶ The internal pressure of accumulator has the big effectiveness to press-injection pressure, therefore the lasting pressure will be reduce in large scale after mold filling which affect the casting quality. It need to recharge gas if the internal pressure intensity has reduced more than 10% after the punch press-injection once time.
- ▶ If the condensation in mold with too long time after press-injection, due to the condensation the sharp adhering force will be increased so it is difficulty for casting lift out. It is easy to turn out defective products during lift out when it produce thin-wall product. So to the target of as quickly as possible to arrive to the casting taking-out temperature, must do well for cooling profiling, and also must keep the stable pouring quantity and pouring temperature.
- ▶ It must carry out standardization on pouring temperature control according various products, for the purpose of temperature even distributing when design the profiling, though have cooling water route and residue slot, but still have some different temperature. For the profiling temperature management, in general it controls some points on surface, which temperature is not the whole profiling temperature, it is available use the temperature before mold clamping, for AL alloy is 150-300 ℃, for Zn alloy is 150-220℃, in addition, the temperature difference between moving profiling and dead profiling must be as small as possible.
- ▶ The mold release selection must be according to the requirement of castings, must spray with reasonable concentration . the spraying key points cooling filling inlet and thick-wall area of products. It must spray evenly with minimum quantity.

The movable core, ejector, stroke pin etc. moving parts and pressinjection chamber, punch head, for lubrication quantity should be suitable. If too much, they will be mixed into metal liquid, and into the cavity to cause defective casting.

PRODUCT SPEC / TYPE IDENTIFIER

筌笙精**密壓鑄機床系列產品規格/型號——標識認知**



系列産品標識=機款標識+機能標識的組成

Product series label =style label +model label

- 機款標識 Machine Model Mark
- ▶機種款式標識C爲:冷室壓鑄機床
- ▶機種款式標識M爲:冷室鎂合金壓鑄機床
- ▶機種款式標識H爲: 熱室壓鑄機床
- Mark C: Cold chamber die casting machine
- ► Mark M: Cold chamber die casting machine for magnesium alloy
- ► Mark H: Hot chamber die casting machine

■ 機能標識 Machine Function Mark

- ▶機能型式標識K爲: 常規標準型系統
- ▶機能型式標識A爲: 高效節能型系統
- ▶機能型式標識J爲: 强力節能型系統
- ► Mark K: Standard system
- ▶ Mark A: High efficiency energy-saving system
- ► Mark J: Powerful energy-saving system

■ 産品型號標準配置資料垂詢

Please feel free to contact us if you would like to learn details about our machine configurations for each model / type

"筌笙"精密壓鑄機床廣泛應用于: 航天航空、船泊汽車、電器電子、儀器儀表、醫療器械、五金用品等行業的鉛、鋅、銅、鋁、鎂等有色金屬産品壓鑄。

TSUENSAINT precision die casting machine are widely used for lead, zinc, copper, aluminum, magnesium etc non-ferrous die casting in the industries of aviation & aerospace, ship & vehicles, electric and electronic appliances, instruments and meters, medical facilities, hardware's etc.



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HOT CHAMBER SERIES DIE CASTING MACHINE PARAMETERS

H款(熱室)精密壓鑄機/規格參數

	Specification	Tons	H/30D	H/50D	H/90D	H/130D	H/160D	H/200D
鎖模力	Clamping Force	kN	300	500	900	1300	1600	2000
鎖模行程	Open stroke	mm	200	230	280	350	350	400
頂出力	Ejector Force	kN	35	50	60	88	108	108
頂出行程	Ejector stroke	mm	50	60	60	85	85	100
模具厚度(最小-最大)	Die-Thickness(Min-Max)	mm	120-320	120-340	120-360	170-450	205-505	250-550
拉杆内間距	Space Between Tie-Bars	mm	241x241	310x310	360x360	409x409	459x459	510x510
拉杆直徑	Diameter of Bars Φ	mm	45	56	65	75	80	90
壓射位置	Injection Position	mm	0	0	0	0	0	0
壓射力	Injection Force	kN	35	65	88	108	108	130
壓射行程	Injection Stroke	mm	110	130	150	150	150	175
離嘴行程	Disengage Stroke	mm	200	192	200	200	200	200
最大澆注量(鋅)	Injection Weight (Zn)	kg	0.6?(Zn)	1.1?(Zn)	1.5?(Zn)	2.1?(Zn)	2.5(Zn)	3.3?(Zn)
壓射衝頭直徑	Injection Plunger Diameter φ	mm	45	50	60	65	70	75
系統工作壓力	System Working Pressure	Мра	16	16	16	16	16	16
空循環周期	Dry CycleTime	S	€4	≤5	≤5.5	≤7	€7	≤7
電機功率	Motor Power	kW	7.5	11	11	15	15	15
坩堝有效容量	Pot Capacity	kg	160	250	380	360	360	720
燃油炉	Fuel Oil Consume	kg/h	3.6	4.8	4.8	4.8	4.8	6.3
电炉	Electric Furnace Power	kW	20	24	24	30	30	42
油箱容量	Tank Capacity	L	250	300	400	400	400	400
機器重量	Machine Weight	kg	3000	3500	4600	5800	6150	7900
機器外形尺寸(長x寬x高)	Overall Dimensions of Machine	mm	3400x1640x2100	3400x1450x1880	4220x1700x2020	5200x1630x2350	5600x1630x2580	5950x1750x2600

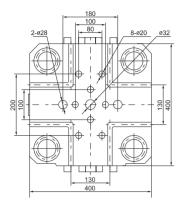
説明:資料中規格參數如有變更,恕不另行通知。 / All Above Technical Parameters Are Subject To Change Wifhout Prior Notice.

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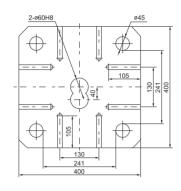
H (HOT CHAMBER SERIES) DIE CASTING MACHINE – PLATEN DRAWING

H款(熱室)精密壓鑄機——模板示意圖

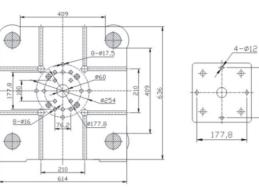
H30

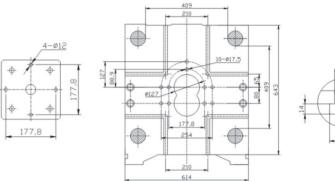




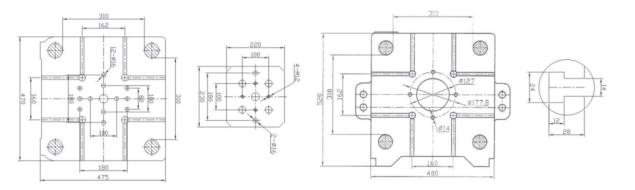


H130

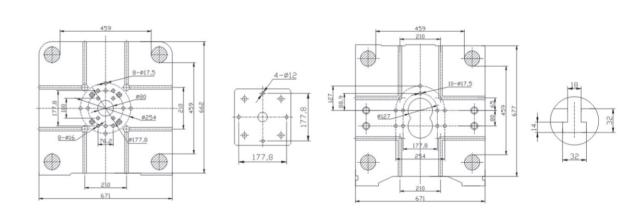




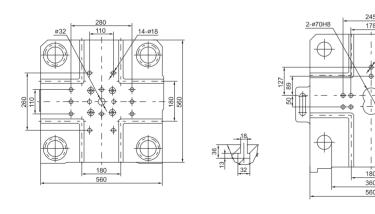
H50



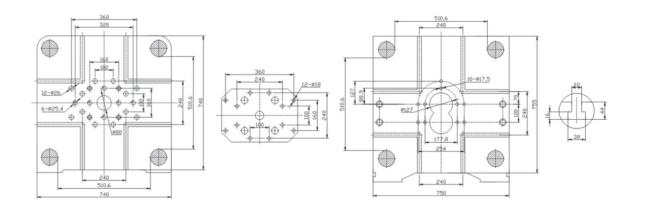
H160



H90



H200



C/M SERIES STANDARD UNIT C/M系列标准装置

<u> </u>	MOLD CLOSING SYSTEM
弱刚性耐磨性球墨合金模板	High rigidity and wear resistance nodular alloy mold platen
例性曲肘式斜排五支点锁模机构	High rigidity five-point support toggle
高拉力合金钢导柱外层镀铬	High tensile alloy steel hard chorm platend tie bar Euro design multi-point oil-bearing graphite bush
	High wear resistant aluminum alloy platen support slider with dust clean de
次规多点石墨含油衬套	High rigidity and wear resistant monolithic guide plate
局耐磨铝合金滑脚带灰尘清扫装置	Euro design eject platen and T slots device
哪性耐磨性整体式导轨	Germany import material support mold adjustment platen to prevent adjustmen
x规设计顶出模板机构与T型装置	Big space between tie bars and big size mold platen
国进口材料支撑调模板,调模防绞死装置	Mechanical tie bar extraction by manual (1pc)
	Die close and die open with lineal transducer control Die close with low pressure protection function
、空间拉杆间距与模板尺寸 	Die height adjustment with hydraulic motor
- 动机械式抽拉杆装置	Mold adjustment by manual with low speed and high speed
F合模行程电子尺控制	Multi-step eject setting function
· 模低压模板功能	Eject stroke control by proximity switch
	Eject in and out with time holding and delay setting function
表压马达驱动调模装置 	Core in and out function select before die close or after die close
三动调模慢速与快速控制	Multi-group hydraulic cores(up 200t) Central auto grease lubrication with pressure alarm sensor
友压顶出多次设定功能	
	INJECTION SYSTEM
级压射控制功能。设定功能	Four-stages injection control function
图学场注塞货件结构层新家员	Injection system adopts no floating piston design
3模前時分類度后中で多端面類逐功能<= 15ms	Max dry injection speed >= 8m/s, Pressure building time <= 15ms
動描写主題之方式,压力触发与位置触发射系统采用欧式拉杆结构,中心及偏心多位置压射选择	There are two intensification activation ways-pressure and position Injection system adopted Euro standard design with multi injection position select
思身自璿連與鴻畫鑫籍裔快速瑪艷传感器	Large flow logic fast speed function of injection and intens
1械式精密手轮调节控制	Mechanical hand wheel control
设于关控制压射行程 设证开关控制压射行程	Injection stroke control by proximity switch
· 友壓系統	HYDRAULIC SYSTEM
メニュストル 国威格士高低压双联泵系统	High and low pressure dual-pump system(Vickers)
<u>丽响应压力/流量比例控制系统</u>]靠耐用的力士东、威格士液压元件,	High response proportional control system of pressure and flow Refiable and durable hydraulic components of famous brand (Rextoth, Vic
5大利马努力高压软管 3级压力、速度控制功能	Italy Manuli high pressure hose
5级压刀、速度控制切能 系统压力、压射压力、蓄能器氮气压力、	Multi-stage pressure and speed control function Pressure indication function of system pressure, injection pressure,
能器工作压力指示功能 抗泵自封式吸油过滤装置	accumulator Nitrogen pressure and accumulator intens pressure Pump self-styled oil-suction filter
自箱液位显示与报警功能 	Oil level display and alarm function
温表显示功能	Oil temperature indicator
	CONTROL SYSTEM
宝问 永初 国西门子PLC与触摸屏控制系统	Siemens PLC(S7–200) and touch screen (7") control system
I靠耐用的国外名牌电器元件	Reliable and durable electric components (Schneider, Omron)
R规CE标准主电源开关与信号连接插头	Euro CE standard main power switch and signal connecting plug
l扇冷却电控箱	Electric cabinet with cooling fans
負人	Mould parameter save and read function
维细的警报记录与警示功能	Detail alarm message record and warning function
「 「 「 「 「 「 「 「 に に に り に り に り に り に り	Cycle time and Production management statistic function
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几器外观	MACHINE APPEARANCE
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C/M SERIES OPTIONS C/M系列选配装置

自动冲头润滑系统(油式、颗粒式)	Auto plunger lubrication (oil type or shot bead type)	
液压保险	Hydraulic safety device	
	Auto electric front side or back side safety door	
电动前、后安全门	Big space safety door or floor-standing safety door(big mould)	
大空间防护门或者落地式防护门	Electric cabinet cooling with air conditioner	
	Mold locking oil pressure display function	
电箱空调冷却	Oil temperature interface and alarm function	
锁模油压显示功能	Accumulator auto discharge pressure function	
油温显示界面与报警功能	Injection storke control by electromagnetic tranducer	
	Mould local pressure intens function	
蓄能器自动泄压功能	Auto die height adjustment (no suggest)	
压射行程电磁尺控制功能	Real time control system with servo valves of inject unit and Siemens S7–30	00 PLC
	Position, Pressure & Speed curve display system with 10" screen	
模具局部增压功能	Siemens 10" touch screen (big machine)	
自动调模系统	Auto tie bar (1pc) extraction device(big machine)	
	Mould support device(big machine)	
	Mould quick change system(big machine)	
高精度PPS曲线系统		

10"高分辨率显示屏

自动抽拉杆装置

并**管訊IES STANDARD UNIT** H系列標準裝置

IT OLITILO OTANDAND ONT	11水/11水平农且
鎖模系統	MOLD CLOSING SYSTEM
開合模綫性位移傳感器控制	Linear position moving sensor control for mold open and close
合模低壓模保功能	Low pressure mold protection function for mold clamping
液壓馬達驅動調模裝置	Hydraulic motor drive mold adjusting mechanism
一組中子(抽、插芯)裝置	One group hydraulic core pulling (pull & insert core) device
活動模板導柱含油軸承	Guide post oiliness bearing of moving mold board
液壓多次及多級行程頂出設定功能	Multi-step and multi-time stroke lift out setting function
自動潤滑系統/故率檢測報警功能	Automatic lubrication system/trouble detect alarming function
産品自動檢出系統	Product automatic detection system

液壓系統	HYDRAULIC SYSTEM
獨特創導快速壓射裝置	Distinguished created quick press-injection mechanism
兩級壓射控制功能	Two-step press-injection control function
中子壓力 / 流量單獨設定功能	Independent setting function of neutron pressure /flow
高響應壓力/流量比例控制系統	High response pressure/flow proportional control system
蓄能器氮氣壓力指示功能	Nitrogen pressure indication function of accumulator
蓄能器工作壓力指示功能	Work pressure indication function of accumulator

控制系統	CONTROL SYSTEM
工藝參數輸入/輸出動作屏顯檢索系統	Technical parameter input/ output motion screen display retrieval function
成型周期 / 産品成品統計功能	Forming period/ qualified product statistics function
運行异常 / 狀態警示功能	Abnormal running/condition warning function
機器前、後防護門安全裝置	Safe device of front and rear protection doors of the machine

加熱系統	HEATING FUNCTION
實時壓鑄流道温度控制	The temperature control of live die casting flow way
壓射温度保護功能*	Protection function of press-injection function
節能型熔化爐(可選配燃油、燃氣、電能等加熱裝置)	Energy-saving welter (power, fuel ,gas are available)

H SERIES OPTIONS H系列选配装置

自动模具喷涂系统	Auto sprayer system with four head	
_自动铸件推落系统	Auto castings sweeper down system	
天然气熔化炉	Gas melting furnace	

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AUXILIARY DEVICES 配套辅机



自动喷雾机 Autosprayer



自动取出机 Auto extractor



自动给汤机 Auto ladler



自动传输带 Auto conveyer





打**标机** Marking machine



夹模器 Fast die clamping device



配比机 Mixer



切**边机** Trimming machine



真空机 Vacuum machine



融化炉 Melting furnace



油压切边机 Hydraulic trimming machine



模温机 Mould temperature controller



离型剂混合机 Release agent mixer



冷水机 Cooling chiller



机器人 Robot



取出喷雾一体机(热式) Sprayer extractor combine(Hot chamber)



合模机 Die spotting press

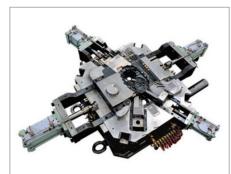
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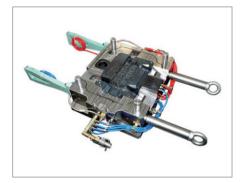
DIE CASTING MOULDS 压铸模具

汽车配件模具 Auto parts mould



















发动机外壳模具 Car starter engine housing mould







DIE CASTING MOULDS 压铸模具

通讯部件模具 Communication components mould







LED路灯压铸模具 LED street light die casting mould



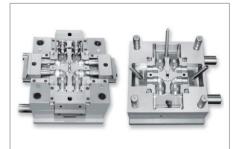




日用品压铸模具 Commodity die casting mould







通机产品模具 General mechanical components mould







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DIE CASTING PRODUCTS 压铸产品

汽配压铸产品 Die casting products of auto parts

























发动机外壳铝压铸件 Aluminum die casting car starter engine housing components

















DIE CASTING PRODUCTS 压铸产品

通讯部件压铸产品 Die casting products of communication components







通机压铸产品 Die casting product of general mechanical components









精密铝材舷外发动机压铸 Precision aluminum material outboard engine die casting









电力附件铝压铸件 Aluminium die casting parts electrical power accessories









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