

# MK6.6/B *Brilliance*

88 - 658 ton

202212



**CHEN HSONG**

📍 13-15 Dai Wang Street, Tai Po Industrial Estate, N.T., Hong Kong

✉ marketing@chenhsong.com

☎ +852 2665 3222

**chenhsong.com**

## About Chen Hsong

Chen Hsong, established in 1958, is one of the largest manufacturers of injection moulding machines in the world, with annual sales exceeding 20,000 sets.

For over 60 years, Chen Hsong sold to more than 85 countries across the globe, supplying injection moulding machines with clamping force from 20 tons to 6,500 tons. In 1991, Chen Hsong became listed on the Hong Kong Stock Exchange (stock code: 00057). Headquartered in Hong Kong, Chen Hsong operates numerous manufacturing and research facilities in China, including Shenzhen, Shunde, Ningbo and Taiwan, as well as in Japan.

Since 2011 when Chen Hsong and Mitsubishi Plastics Technology of Japan entered into a worldwide strategic partnership, Chen Hsong has been progressively upgrading its internal management, production and quality systems with industry best practices, including TPS (lean manufacturing), M-System (Mitsubishi quality system) and a Japanese “perfect quality” focus towards all R&D, procurement and production activities. For over a decade since then, and leveraging its superior supply chain and production capabilities, Chen Hsong also supplied Mitsubishi, as OEM, with world-renowned “MMX” large-tonnage two-platen injection moulding machines (up to 3,500 tons).

To provide customers with even better peace-of-mind, Chen Hsong insists on being the only fully vertically-integrated maker of injection moulding machines globally, starting from basic ductile iron casting to high-end fabrication and machining, and all major production steps until the completed assembly of each machine. Only through absolute control of each fine step of the manufacturing process would customers be best served with professionalism, quality and perfection.

**60+** Years of Excellence  
Since 1958

**200+** Patented technologies











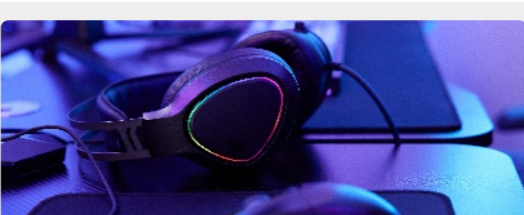
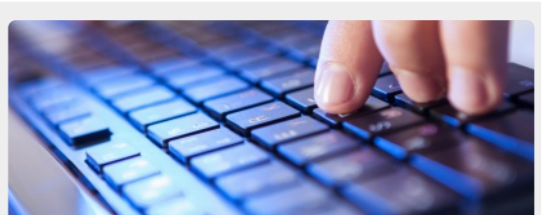




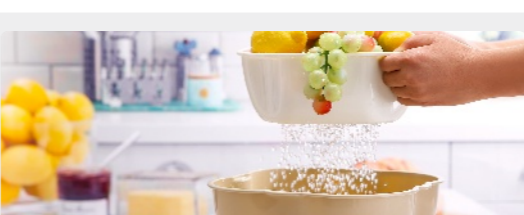
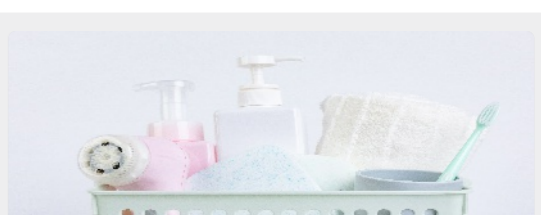
**20+** Software IP

**20,000** Sets / year  
One of the largest producers of injection moulding machines in the world

Operates **800,000m<sup>2</sup>**  
Production facilities with global presence

## Wide Adaptability – A Machine for All Seasons

Perfect for all applications in diverse industries, meets all needs

 Automotive		
 Electronics		
 Medical Consumables		
 Optics		
 Toys		
 Home Appliances		

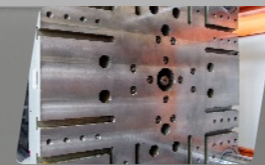
# MK6.6/B *Brilliance*



**Brain of the machine – superiority guaranteed**  
New CPC6.6 professional controller – power and ergonomics perfected



**Advanced toggle design from decades of experience**  
Optimised motion control profile guarantees high speed with high stability



**High-strength platens ensure high-quality precision parts**

Patented high-strength platens have low deformation



**Perfect parts from high-precision injection unit**

Linear guide rails for injection - highly stable, high precision, high repeatability



## Break-Away Performance Speaks for Itself

### Application Cases

#### Part Specifications

##### LED lighting part

Shot Weight : 121g  
Cavities : 8  
Resin : PC  
Cycle Time : 32.4s

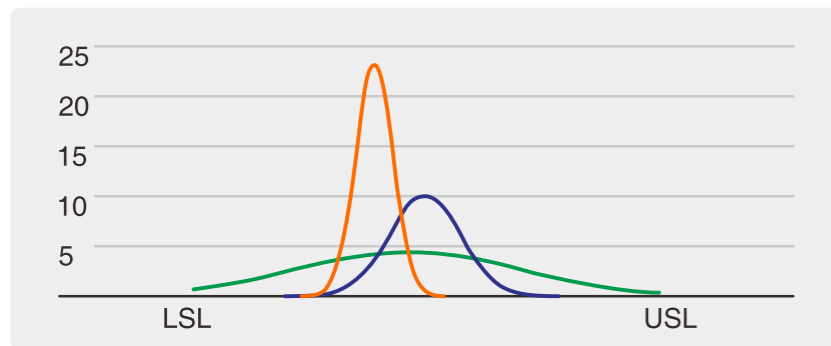
##### Mould

Weight : 350kg  
Dimensions : 400mmx400mmx300mm

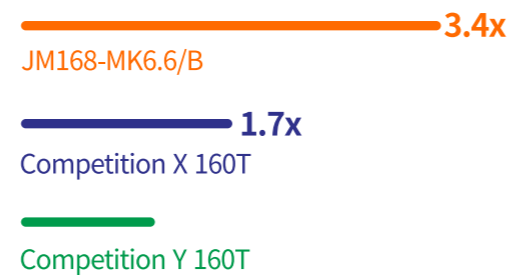


## Production data for LED lighting part

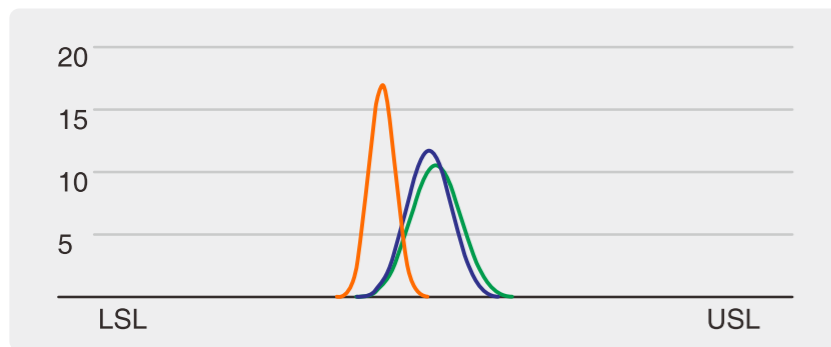
### Part Weight Distribution



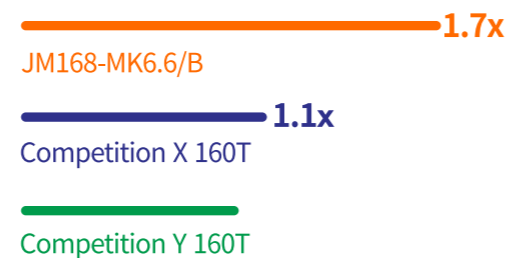
#### Part Weight CPK Comparison



### Wall Thickness Distribution



#### Wall Thickness CPK Comparison

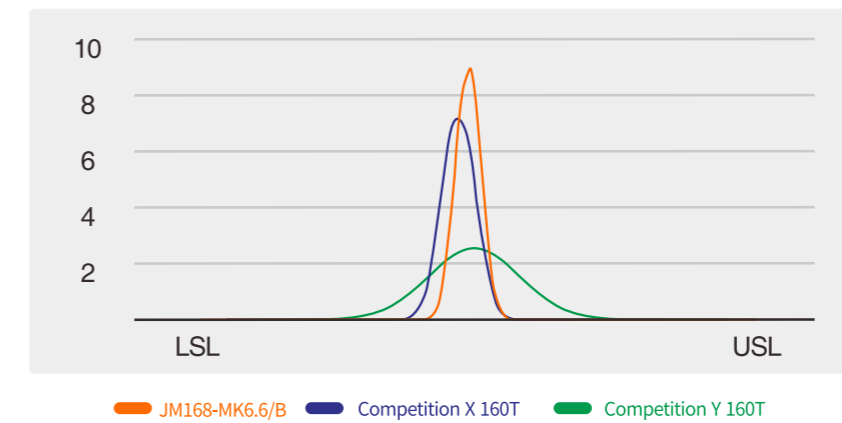


JM168-MK6.6/B Competition X 160T Competition Y 160T

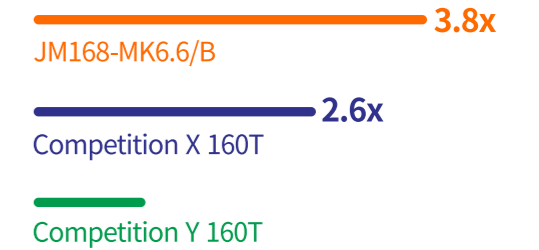
CPK (Process Capability Index) – higher is better, indicating higher stability and quality.

## Breaks No Sweat – Sustainable Productivity

### Clamp Open Position Distribution



#### Clamp Open Position CMK Comparison

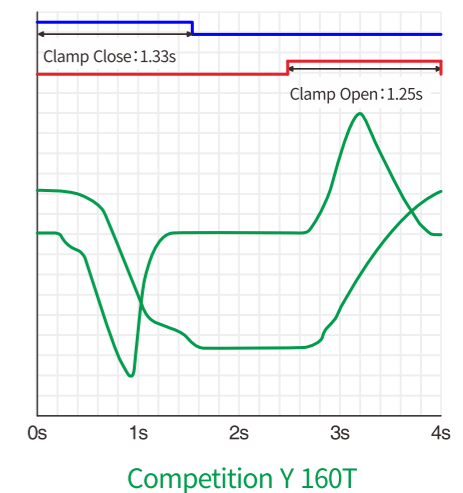
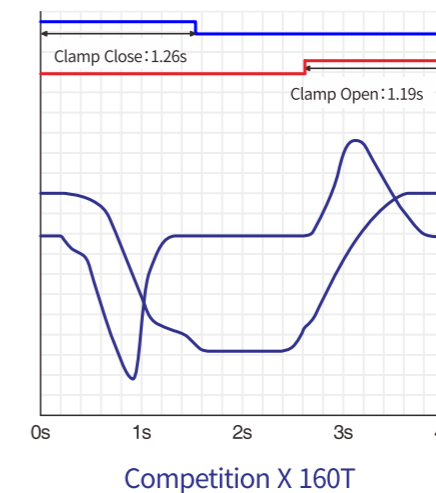
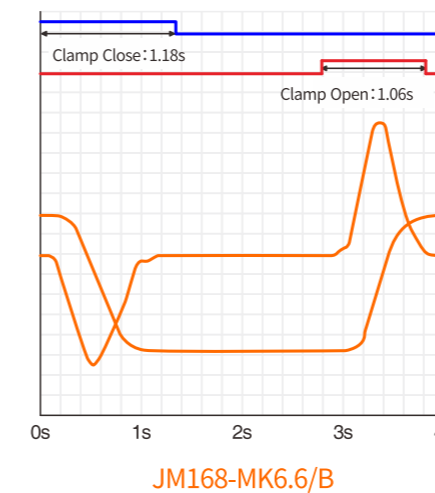


CMK (Machine Capability Index) – higher is better, indicating higher repeatability and better control

## How Fast Is Fast Enough

### Dry Cycle Comparison

Average (s)	Clamp Close (s)	Clamp Open (s)	Total Cycle (s)	Stroke (mm)
JM168-MK6.6/B	1.18	1.06	2.24	300
Competition X 160T	1.26	1.19	2.45	300
Competition Y 160T	1.33	1.25	2.58	300



**13% Faster Dry Cycle** **15% More Speed**

## The Economics of Production

How productivity and energy saving translate into real profits

### Power consumption comparison (against industry average for 160T)

Application Case Example : LED lighting part

Model	Cycle Time (s)	Production Time (h)	Power Consumption (kW · h)	Total Number of Cycles	Total Product Weight (g)	Average Power Consumption per Kg (kW · h/kg)	Average Power Consumption per Cycle (kW · h/Cycle)
JM168-MK6.6/B	32.4	8	50.4	889	107556	0.469	0.0567
Industry average for 160T	35.7	8	57.6	807	98420	0.585	0.0714

## Show Me The Numbers

Production Simulation

11M

11 months of production per year

21H

21 hours of production per day

\$ 0.10

\$ 0.1047/kW · h

10Y

10 years of primary usage

Faster is always better

**JM168-MK6.6/B produces more shots in 10 years**

$(889-807) \times 3 \times 21 / 24 \times 30 \times 11 \times 10 =$

**710,325 more shots**

Efficiency is the name of the game

**JM168-MK6.6/B produces 8 million shots in 10 years, saving about \$12,500 in energy costs**

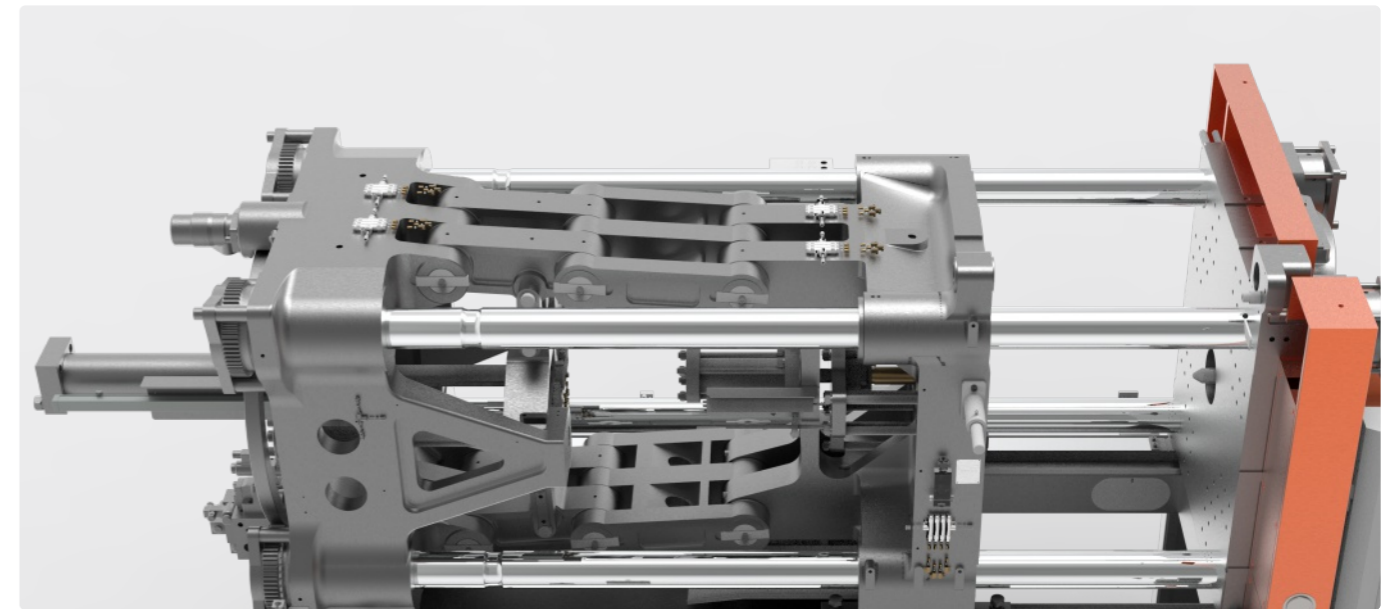
$(0.0714-0.0567) \times 8,000,000 \times 0.1047 =$

**\$12,321.58**

**9% higher productivity**

## Toggle Design from Decades of Experience

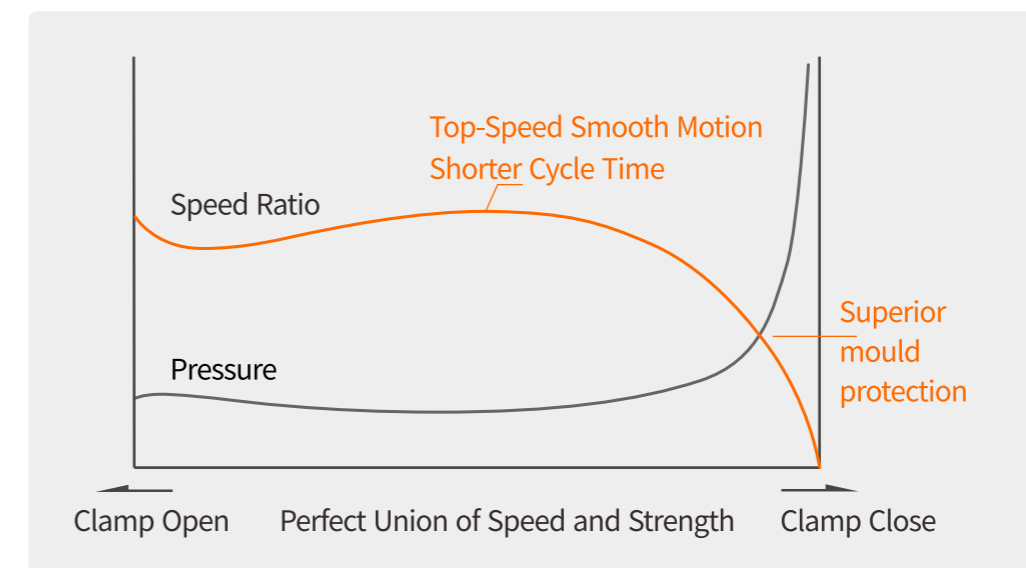
Optimised motion control profile guarantees high speed with high stability



Professional Japanese mechanical experts took the latest and newest in toggle design and hand-fitted a motion-control profile based on large amounts of software simulation and real-life verification. This combination largely avoids unnecessary friction and shocks among mechanical components, distributes tension uniformly to all tie-bars, and ensures high degree of parallelism, in order to prevent flashes on parts and reduce toggle wear. The result is a toggle system that moves snappily, silky-smooth and with no vibrations, improving power efficiency and usage life while protecting against mould damages and unscheduled downtime.

## Perfect Union of Toggle Design and Hydraulics

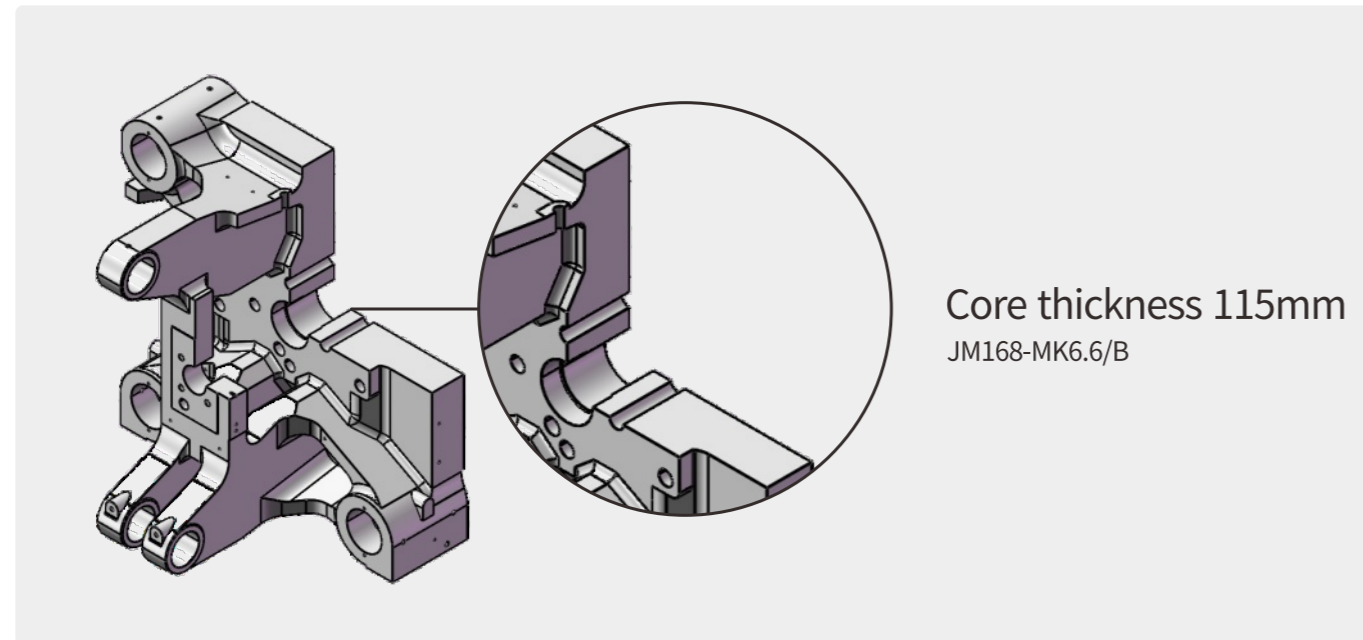
Fast and Precise



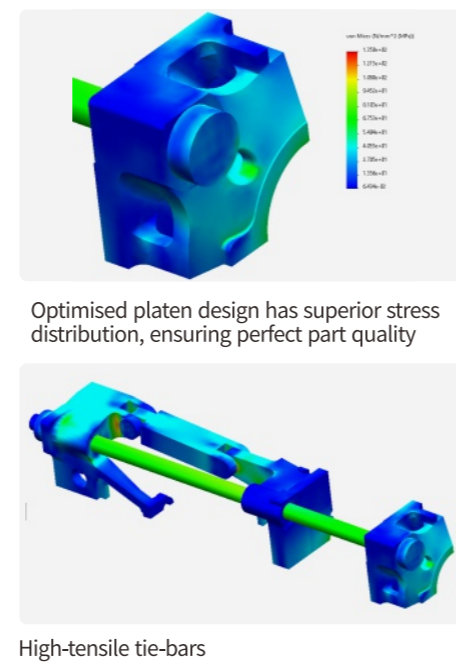
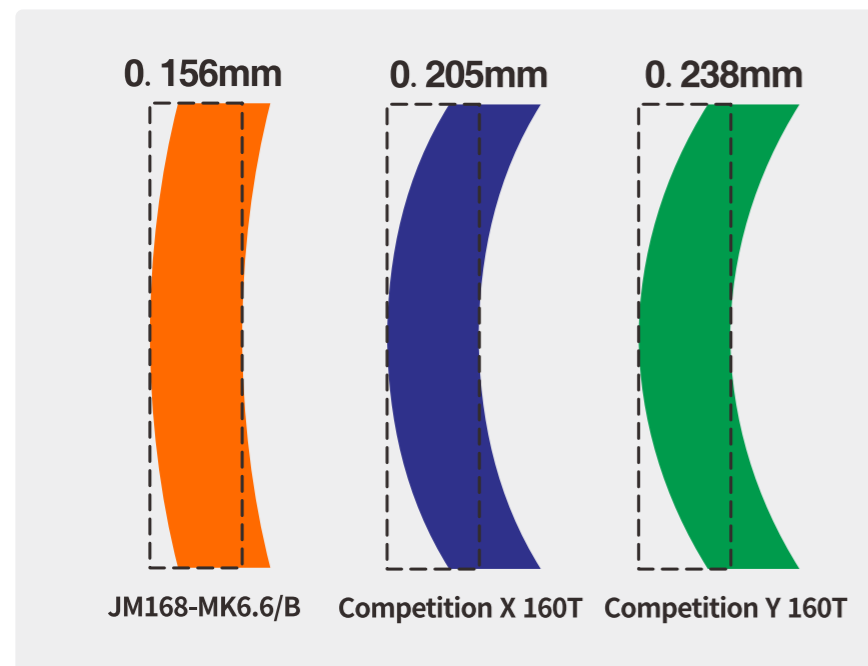
Finely tuned by leading Japanese hydraulic experts, and enhanced via proprietary fluid-dynamics simulation software, the entire hydraulic circuit is optimised to a high degree of perfection.

## Strong Platens for High Quality Parts

Patented high-strength platens with low deformation

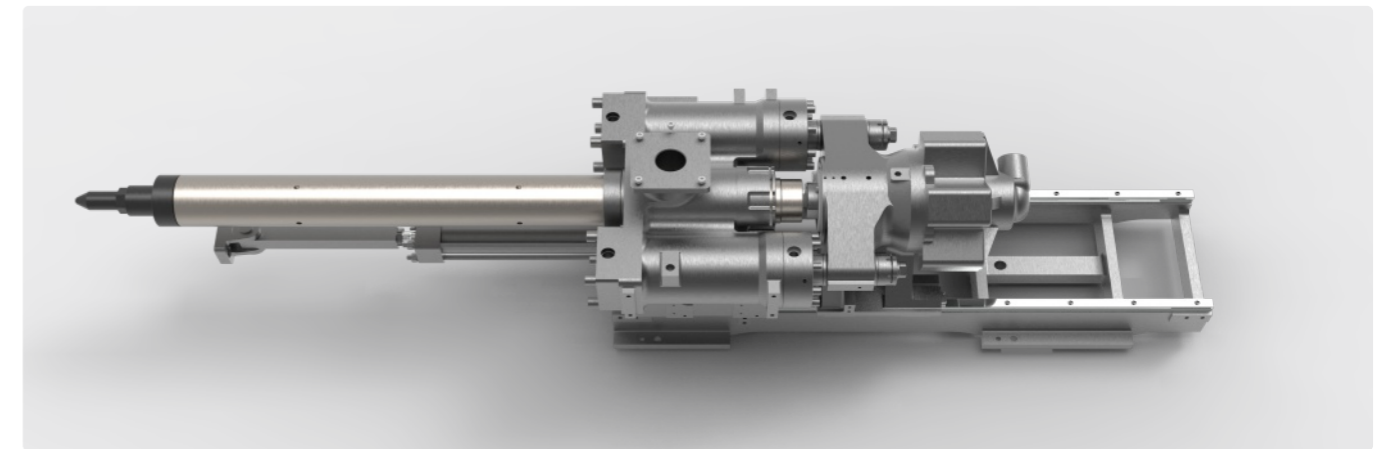


The centre of both platens is thickened to achieve lower deformation, and thus more uniform clamping force on the mould, than most competitive offerings.



**Low platen deformation ensures high part quality and superior mould protection**

## Linear Guide Rails for Stable Injection



**High Accuracy** - Low-friction linear guide rails ensure silky-smooth, highly repeatable injection curves.

**High Speed** - Inject at high speeds without sacrificing precision, that's a guarantee.

## Brain of the Machine—Superiority Guaranteed

New CPC6.6 professional controller – power and ergonomics perfected



1. High-clarity 10" LCD panel with wide colour range
2. Precision Hydraulics™ technology enables industrial-grade mould protection – detection of obstacles less than 0.1mm in thickness (or a single sheet of A4 paper)
3. High-accuracy PID barrel temperature control
4. Advanced motion-control algorithms are finely coupled to the hydraulic circuit, ensuring silky-smooth mechanical movements
5. Designed and developed in Japan
6. Complies with JIS and IEC testing standards
7. LED backlight with high brightness and long usage life
8. Advanced SMT technology with highest stability and reliability
9. Full suite of networking/data features for Industrie 4.0

The CPC6.6 runs, at its core, the ITRON industrial-grade hard-real-time operating system, widely used in high-end Japanese machine tools, which provides extremely high repeatability and short reaction times.

## Standard Features

### Electricals

- 1 3-Phase Sockets
- 2 Tri-colour status indicator
- 3 Robot interface

### Clamping unit

- 1 Automatic toggle lubrication
- 2 Adjustment-free mechanical safety lock
- 3 Automatic mould thickness and clamping force adjustment
- 4 High-tensile chrome-plated tie-bars
- 5 Safety door with mechanical and electrical safety interlock protection
- 6 Differential boost for high-speed clamping
- 7 EUROMAP ejector
- 8 Hydraulic core pulls (88-568T: 1 set, 658T: 2 sets)

### INJECTION UNIT

- 1 Nitrided screw and barrel
- 2 Automatic PID temperature control (including nozzle)
- 3 Screw RPM display
- 4 Digital back pressure control
- 5 Nozzle guard
- 6 Cold start prevention
- 7 Broken thermocouple detection alarm
- 8 Blocked nozzle and overflow detection
- 9 Barrel safety cover
- 10 Movable hopper
- 11 Linear guide rails

### Power Pack

- 1 Oil temperature control
- 2 Speed and pressure control via servodrive
- 3 Low-noise internal gear pump
- 4 AC servomotor
- 5 High efficiency oil cooler
- 6 Suction and return line filter

## Optional Features

### Electricals

- 1 Multi-zone hot-runners control

### Clamping unit

- 1 Mixing screw
- 2 EUROMAP 12 or EUROMAP 67 robot interface with connectors
- 3 EUROMAP/SPI holes pattern
- 4 Air blows
- 5 Ejection-on-fly / core-pull-on-fly

- 6 Longer ejector stroke

- 7 Larger maximum mould thickness

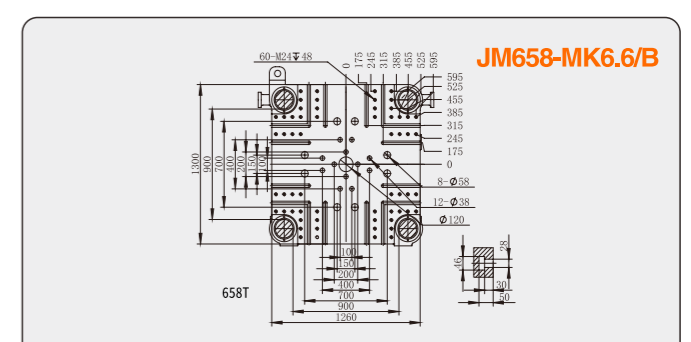
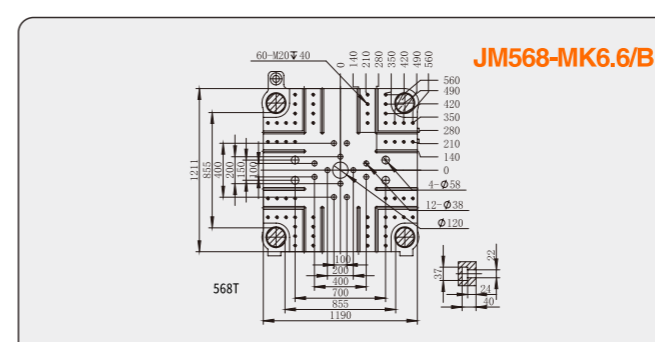
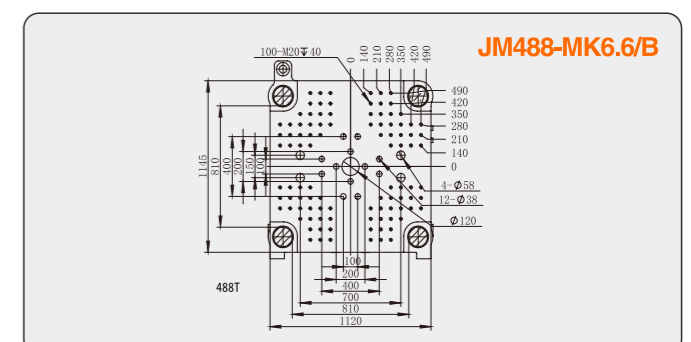
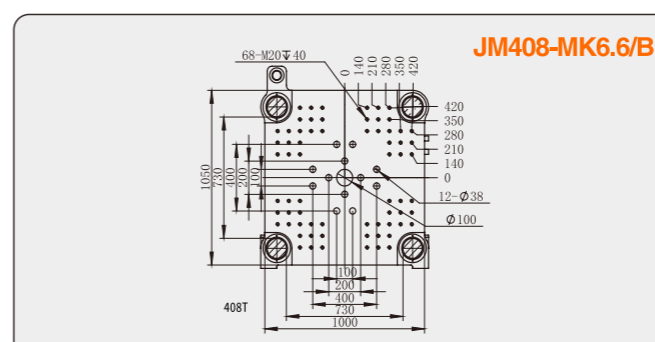
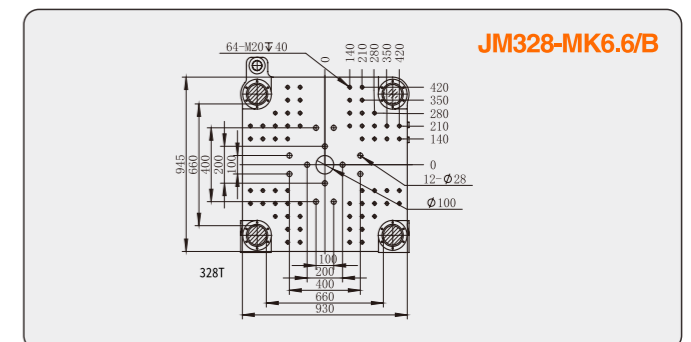
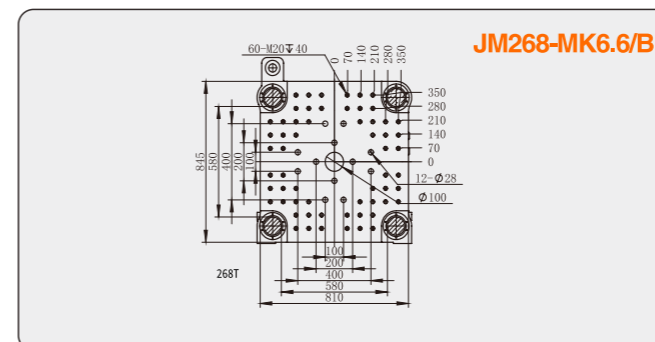
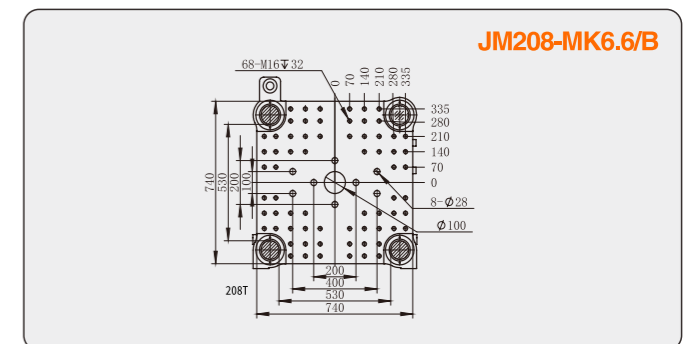
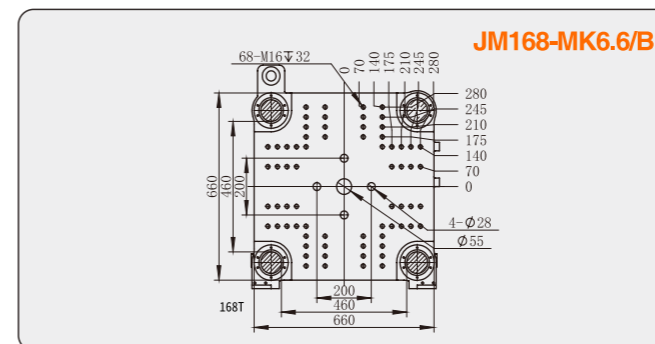
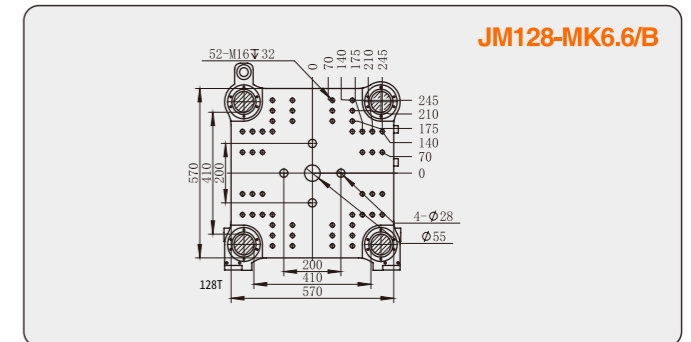
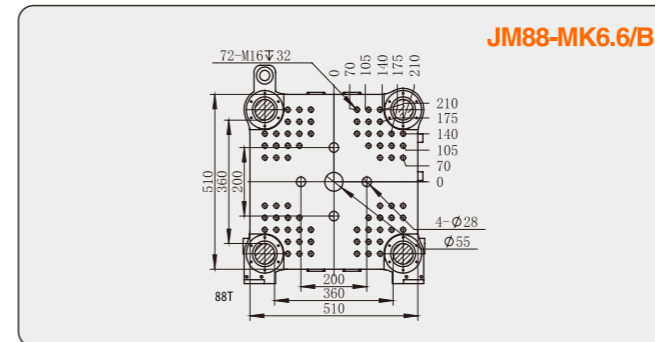
- 8 Barrel inlet zone heat preservation / heating power enlargement

### INJECTION UNIT

- 1 Reduced / enlarged injection unit
- 2 Shut-off nozzle
- 3 Specialised injection units for PVC or UPVC
- 4 Valve gates

### Power Pack

- 1 Oil level alarm
- 2 Hydraulic unscrew
- 3 Enlarged plasticising motor
- 4 Hydraulic oil pre-heat



T-slot with mounting holes (optional), standard for 568T and 658T

JETMASTER MK6.6/B		JM88-MK6.6/B			JM128-MK6.6/B			JM168-MK6.6/B			JM208-MK6.6/B			JM268-MK6.6/B			JM328-MK6.6/B			JM408-MK6.6/B			JM488-MK6.6/B			JM568-MK6.6/B			JM658-MK6.6/B					
Injection unit																																		
Screw Diameter	mm	31	36	41	36	41	46	41	46	52	46	52	60	52	60	67	60	67	75	67	75	83	75	83	90	75	83	90	83	90	98			
Screw L/D Ratio	L/D	24.4	21.0	18.4	23.9	21.0	18.7	23.6	21.0	18.6	23.7	21.0	18.2	24.2	21.0	18.8	23.5	21.0	18.8	23.5	21.0	19.0	23.2	21.0	19.4	23.2	21.0	19.4	23.9	22.0	20.2			
Screw Stroke	mm	180			205			230			260			300			335			375			415			415			450					
Swept Volume	cm <sup>3</sup>	135	183	237	208	270	340	303	382	488	431	551	734	636	847	1057	946	1180	1479	1321	1655	2027	1832	2244	2638	1832	2244	2638	2433	2861	3392			
Shot Weight (PS)	g	123	166	216	189	246	309	276	347	444	393	502	668	579	771	962	861	1074	1346	1202	1506	1845	1667	2042	2401	1667	2042	2401	2214	2603	3087			
	oz	4.4	5.9	7.6	6.7	8.7	10.9	9.7	12.3	15.7	13.9	17.7	23.6	20.4	27.2	33.9	30.4	37.9	47.5	42.4	53.2	65.1	58.8	72	84.7	58.8	72	84.7	78.1	91.8	108.9			
Injection Pressure (Max)	kgf/cm <sup>2</sup>	2367	1755	1353	2302	1775	1410	2233	1774	1388	2295	1796	1349	2365	1777	1425	2263	1815	1448	2230	1780	1453	2165	1768	1504	2165	1768	1504	2114	1798	1516			
Injection Rate	cm <sup>3</sup> /s	76	103	133	98	128	161	127	160	204	155	199	265	192	255	318	251	313	392	318	399	488	419	514	604	419	514	604	483	568	674			
Screw Rotation Speed (Max)	rpm	207			225			220			180			183			190			178			190			190			175					
Screw Nozzle Force (Max)	t	4.5			4.5			4.5			4.5			9.0			9.0			9.0			9.0			9.0			9.0					
Nozzle Stroke	mm	250			250			250			280			330			360			420			420			420			460					
Clamping unit																																		
Clamping Force (Max)	t	88			128			168			208			268			328			408			488			568			658					
Opening Stroke	mm	330			370			420			490			530			600			670			770			835			920					
Space Between Tie Bars (HxV)	mm	360x360			410x410			460x460			530x530			580x580			660x660			730x730			810x810			855x855			900x900					
Max.Mould Thickness	mm	380			450			520			550			610			660			730			810			850			900					
Min. Mould Thickness	mm	130			145			160			180			195			220			250			275			330			350					
Max.Daylight	mm	710			820			940			1040			1140			1260			1400			1580			1685			1820					
Ejector Force	t	2.8			4.2			4.2			6.7			7.7			7.7			11.1			11.1			16.6			18.2					
Ejector Stroke	mm	100			120			140			150			170			170			220			220			250			265					
Mould Register Hole	mm	100			100			125			125			125			125			160			160			160			200					
POWER/HEATING UNIT																																		
System Pressure	Mpa	17.5			17.5			17.5			17.5			17.5			17.5			17.5			17.5			17.5			17.5			17.5		
Motor Pump	KW	11			16			16			24			31			48			60			63			63			80					
Electrical Heating	KW	6.8			10.5			12.9			16.1			19.6			25.6			31.2			37			37			44					
Temperature Control Zones	Zones	3+1			3+1			3+1			3+1			4+1			4+1			5+1			5+1			5+1			6+1					
OTHERS																																		
Machine Dimensions (LxWxH)	m	4.3x1.2x1.9			4.6x1.3x2.0			5.2x1.4x2.0			5.7x1.5x2.1			6.4x1.6x2.3			7.2x1.7x2.4			7.9x1.9x2.3			8.6x1.9x2.3			8.8x2.0x2.3			9.6x2.2x2.5					
Oil Tank Capacity	L	160			190			240			280			400			520			690			730			730			870					

\*The technical parameters above are for reference only and discrepancies may arise in different circumstances. The company keeps upgrading the products and reserves the right to change the product specifications and parameters without prior notice. The final interpretation to the above specifications and parameters belongs to the company.