

MK6.6/C *Competence*

88 - 488 Ton



CHEN HSONG

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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 65 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.

65 Years of Excellence
Since 1958

300+
Patented technologies

20+
Software IP

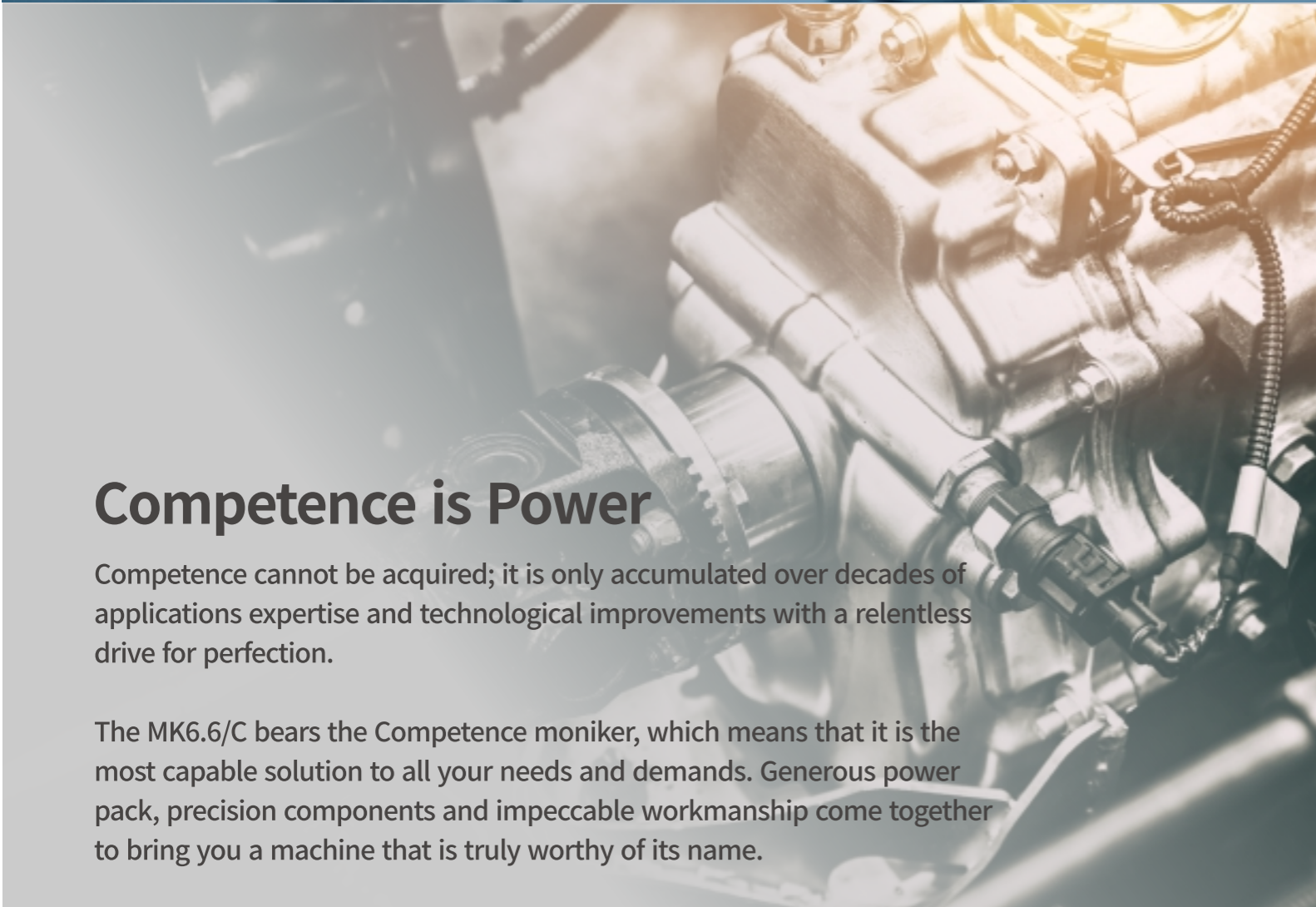
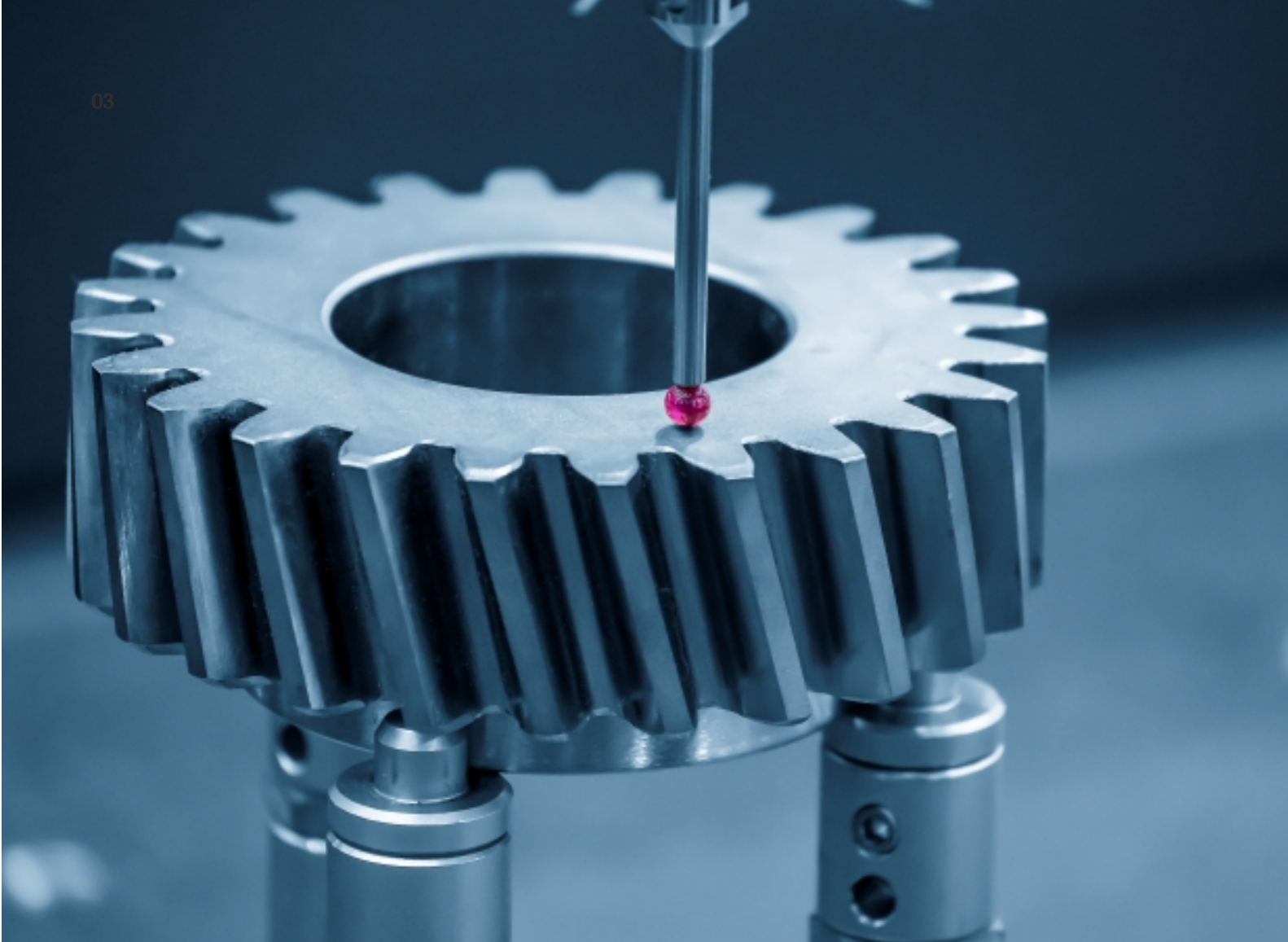
20,000 Sets / year
One of the largest producers of injection moulding machines in the world

Operates **800,000m²**
Production facilities with global presence

Global Reach



The above rankings are in no particular order





















Competence is Power

Competence cannot be acquired; it is only accumulated over decades of applications expertise and technological improvements with a relentless drive for perfection.

The MK6.6/C bears the Competence moniker, which means that it is the most capable solution to all your needs and demands. Generous power pack, precision components and impeccable workmanship come together to bring you a machine that is truly worthy of its name.

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/C *Competence*

Competence is Power

Patented high-strength platens have low deformation

New CPC6.6 professional controller – power and ergonomics perfected

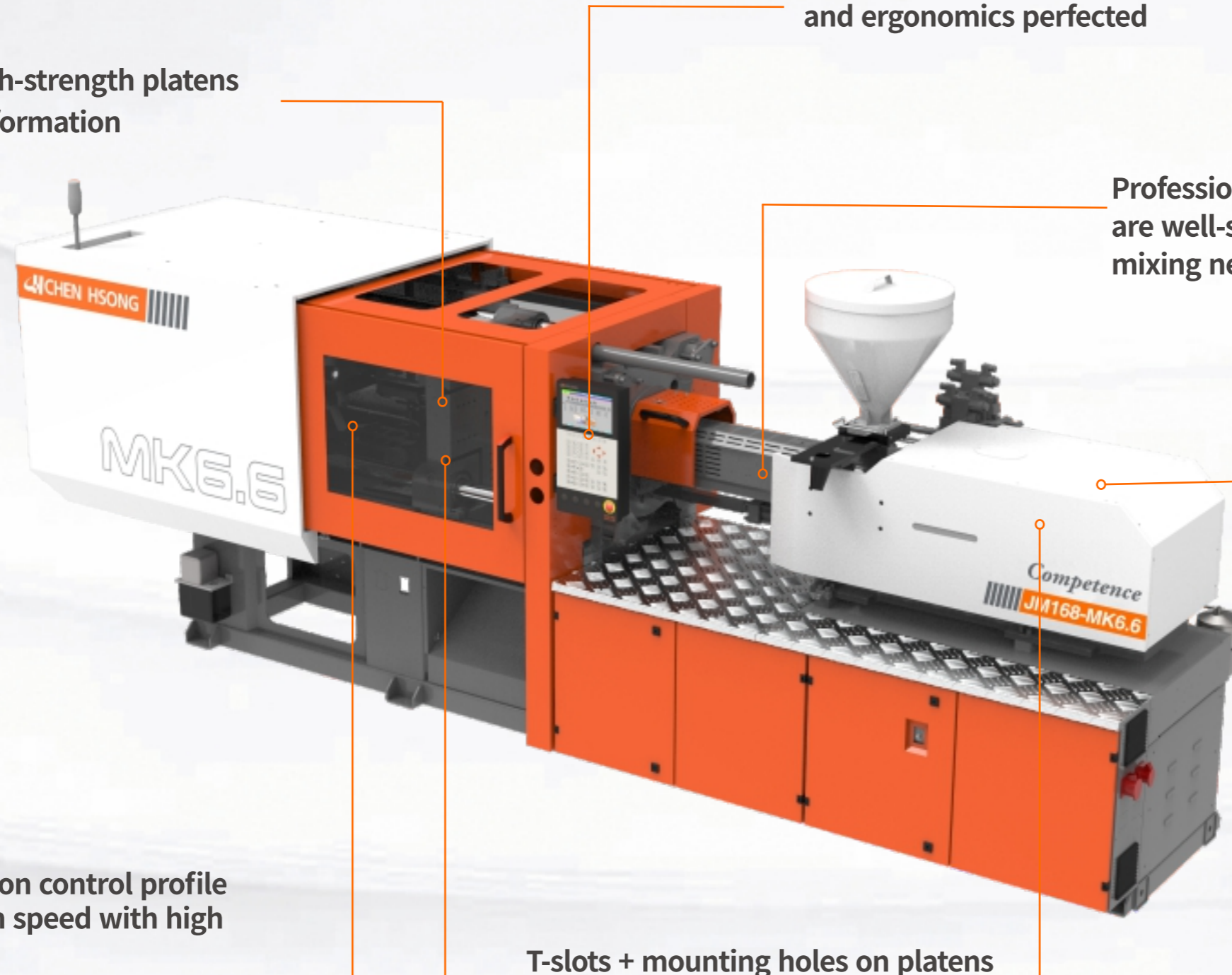
Professional Japanese screw designs are well-suited for most resins and mixing needs

Enhanced reliability and repeatability you can count on

Optimised motion control profile guarantees high speed with high stability

T-slots + mounting holes on platens for ultimate convenience

Enlarged power pack for extra speed applicability and productivity



Photos are for reference only

Power for Speed

Enlarged power pack drives higher injection speed, faster motions, shorter cycle time, wider applicability and higher productivity.

01 Higher Speed

For clamping, injection and plasticising

02 Higher Productivity

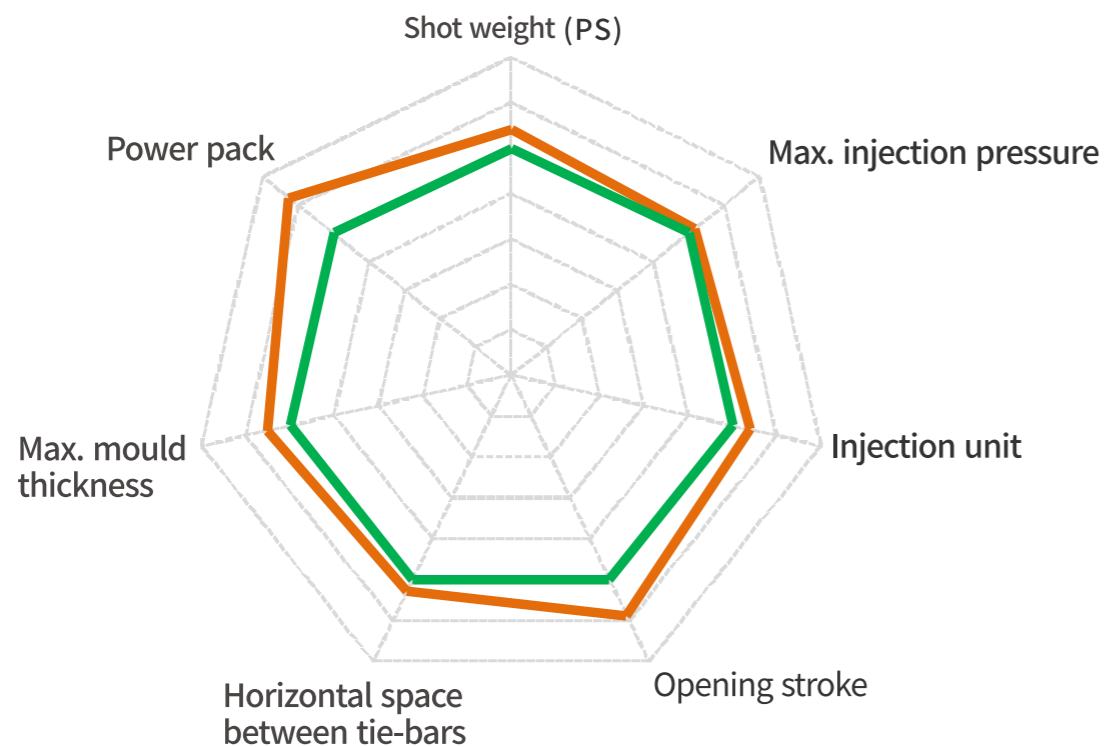
Due to shorter cycle time

03 Higher Applicability

For a wider range of parts (e.g. flat and thin-walled)

One of the Largest Power Packs in the Market

— JM-MK6.6/C
— Competition



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

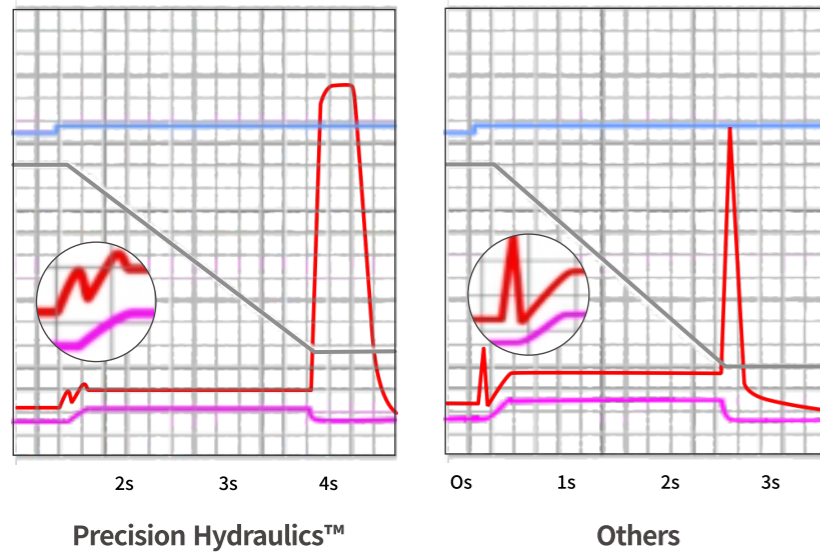
The CPC6.6 runs, at its core, the ITRON industrial-grade hard-real-time operating system, widely used in high-end Japanese machine tools, which provides extremely high repeatability and short reaction times.

Precision Hydraulics™

A team of Japanese and European technical experts took the time-tested hydraulic circuits in our machinery and relentlessly fine-tuned/optimised them to perfection, aided by the latest fluid dynamics simulation software.

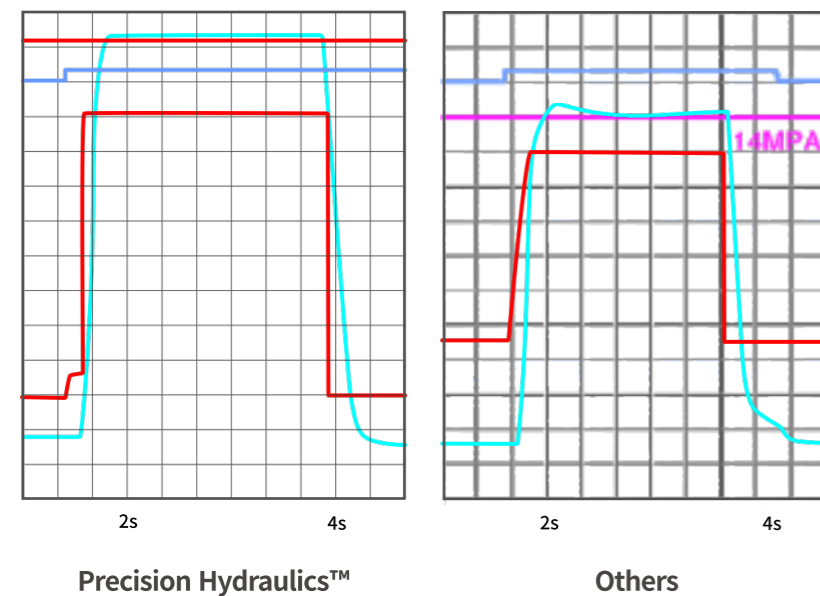
The result? Hydraulics so smooth, reliable and snappy that must be seen to believe.

Smooth as Silk



Tuned and Optimised:
Unnecessary pressure drops are all but eliminated through multiple rounds of optimisations by Japanese experts.

Rock-Solid Stable:
Stable and precise pressure control (especially during holding) is paramount for ensuring high yields in demanding applications



No Overshoots:
Normal hydraulic circuits are subject to overshoots and fluctuations, which get worse with faster response times. Precision Hydraulics™ eliminates these instabilities even at high speeds.

Fast-Response Dynamic Control System

HRD (Highly Responsive Dynamics) is a unique technology seeking to address the numerous instabilities that arises during typical mechanical motion, including (but not limited to) signal line noise, hydraulic shocks, temperature drifts, time-lags, overshoots, harmonics and fluctuations.

A smooth and stable motion profile is critical for preventing undue wear on mechanical parts. Instabilities such as pressure overshoots, hydraulic shocks and harmonic oscillations are dynamically compensated and adjusted for, at runtime in lightning speed, by advanced AI-based learning algorithms.

HRD

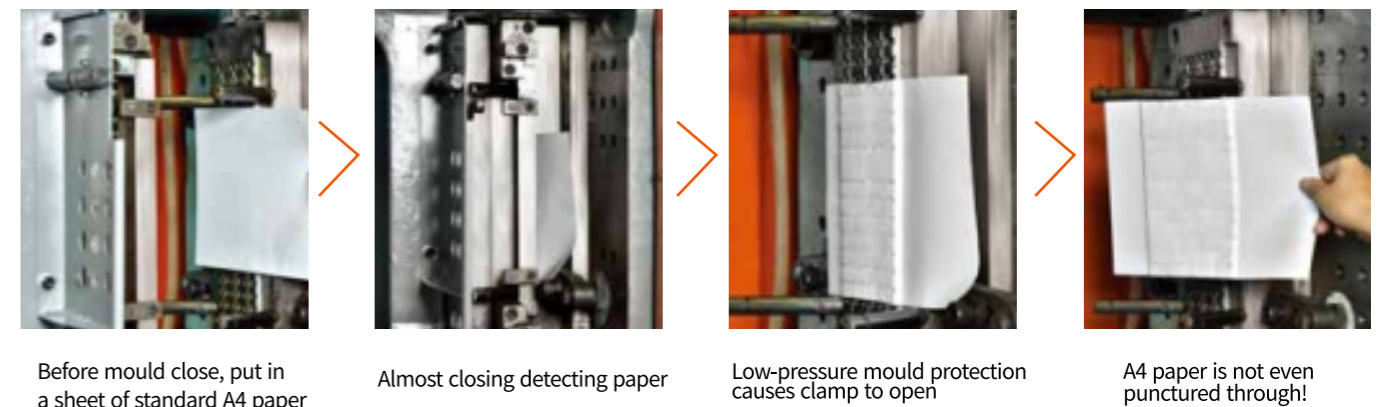
Highly Responsive Dynamic

AIR Buffer™

“Air-bag” system for your injection moulding machine! “AIR Buffer” stands for Algorithmic Interlocked Response — a superior mould-protection technology with such supreme sensitivity that it consistently detects and protects against even a single sheet of A4 paper (0.1mm thick) during top-speed clamp closing — a truly amazing feat of engineering made possible by the interlocking dynamics of very high hydraulics precision™, optimised mechanical design and advanced patented control algorithms!

Put a sheet of normal A4 paper between the mould of a machine (in this example a JM168-MK6) running at top speed (100%) and pressure (100%) settings, then watch the mould protection feature at work!

The piece of A4 paper is not even punctured through! Now THAT’S real mould protection!



Before mould close, put in a sheet of standard A4 paper

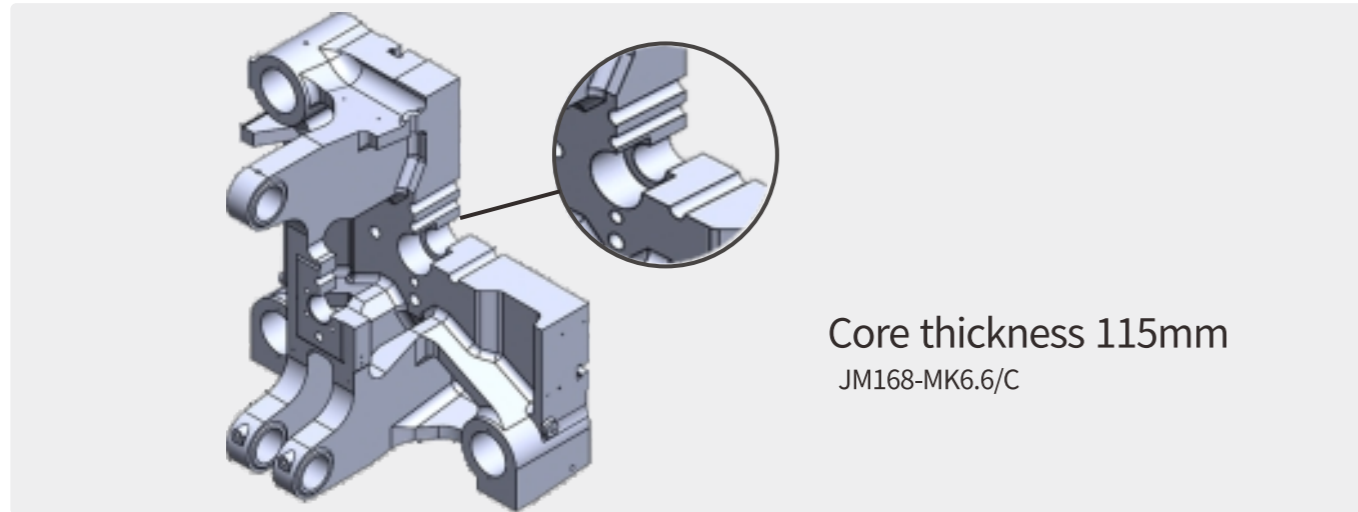
Almost closing detecting paper

Low-pressure mould protection causes clamp to open

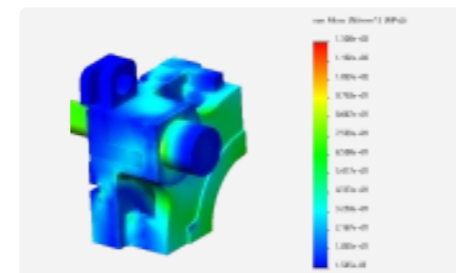
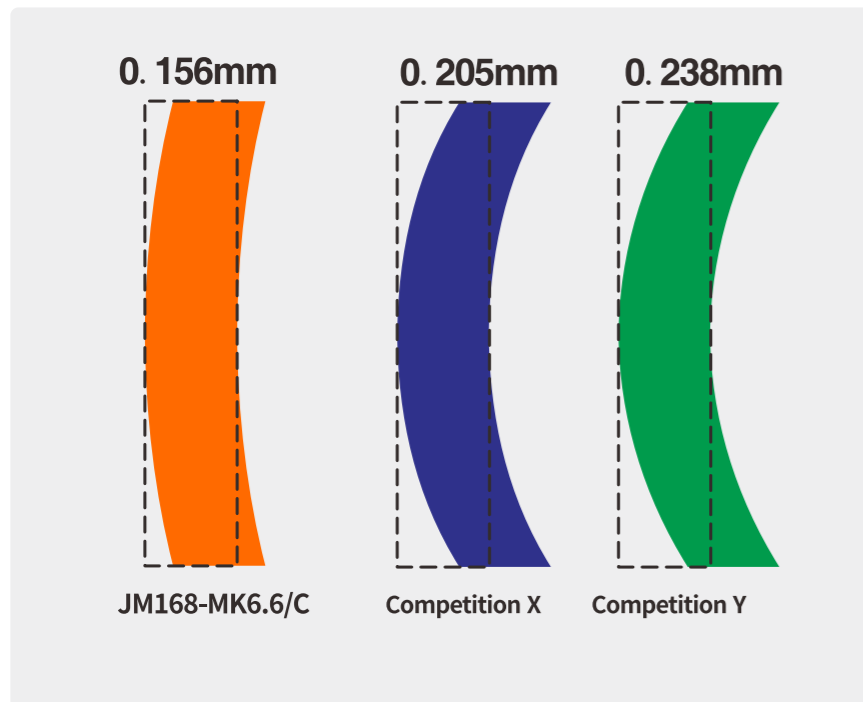
A4 paper is not even punctured through!

Strong Platens for High Quality Parts

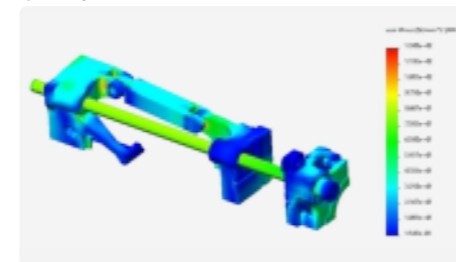
Patented high-strength platens with low deformation



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



Optimised platen design has superior stress distribution, ensuring perfect part quality



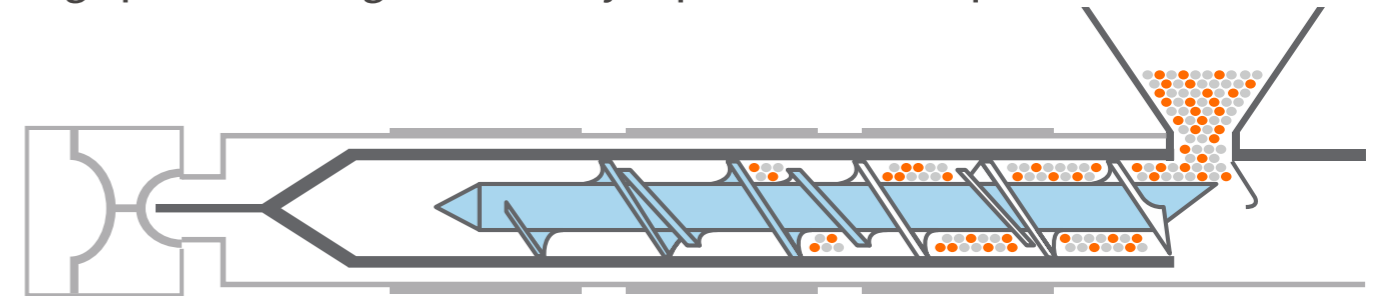
High-tensile tie-bars

Low platen deformation ensures high part quality and superior mould protection

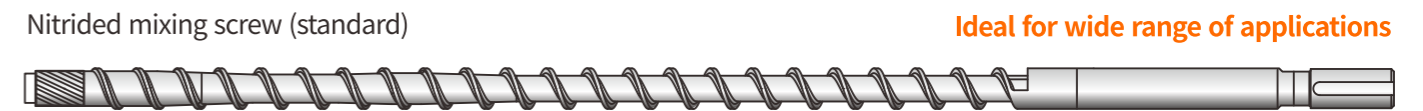
Professional Mixing Screw for Professional Results

State-of-the-art Japanese screw designs are well suited for most resins and mixing requirements

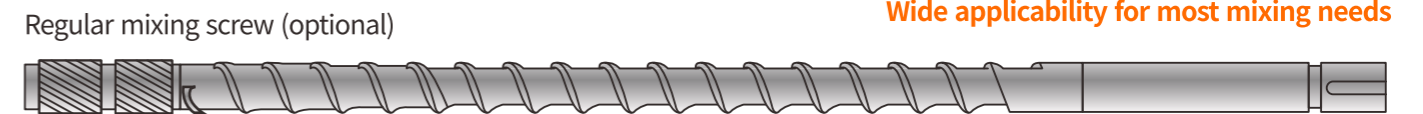
High performance guaranteed by Japanese screw experts



Well-suited for all applications



The Perfect Mix



Bimetallic Screws

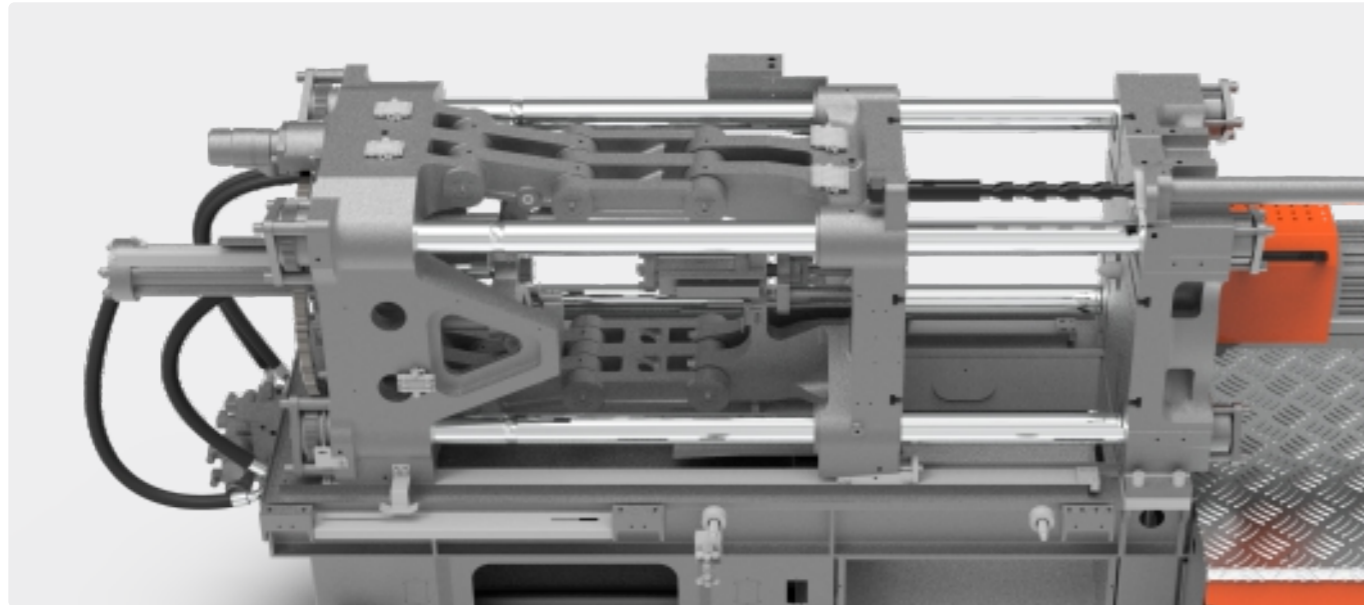


1.5-2mm bimetallic coating ensures long consistent usage life in corrosive or abrasive applications

Quality Demands No Compromises

Toggle design from decades of experience

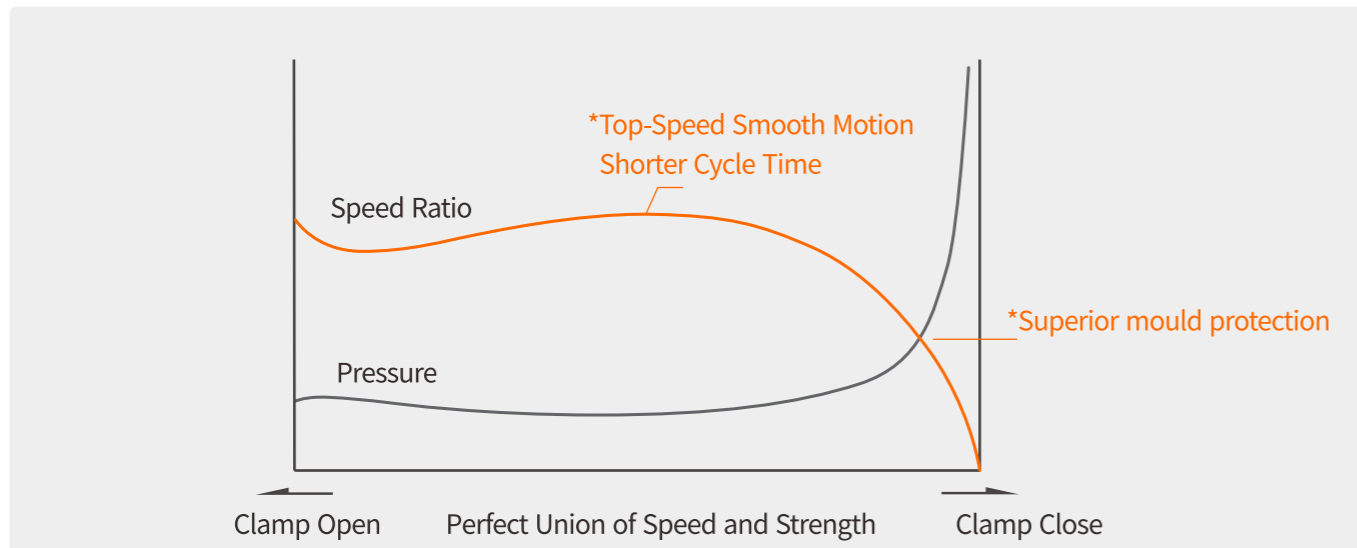
Optimised motion control profile guarantees high speed with high stability



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.

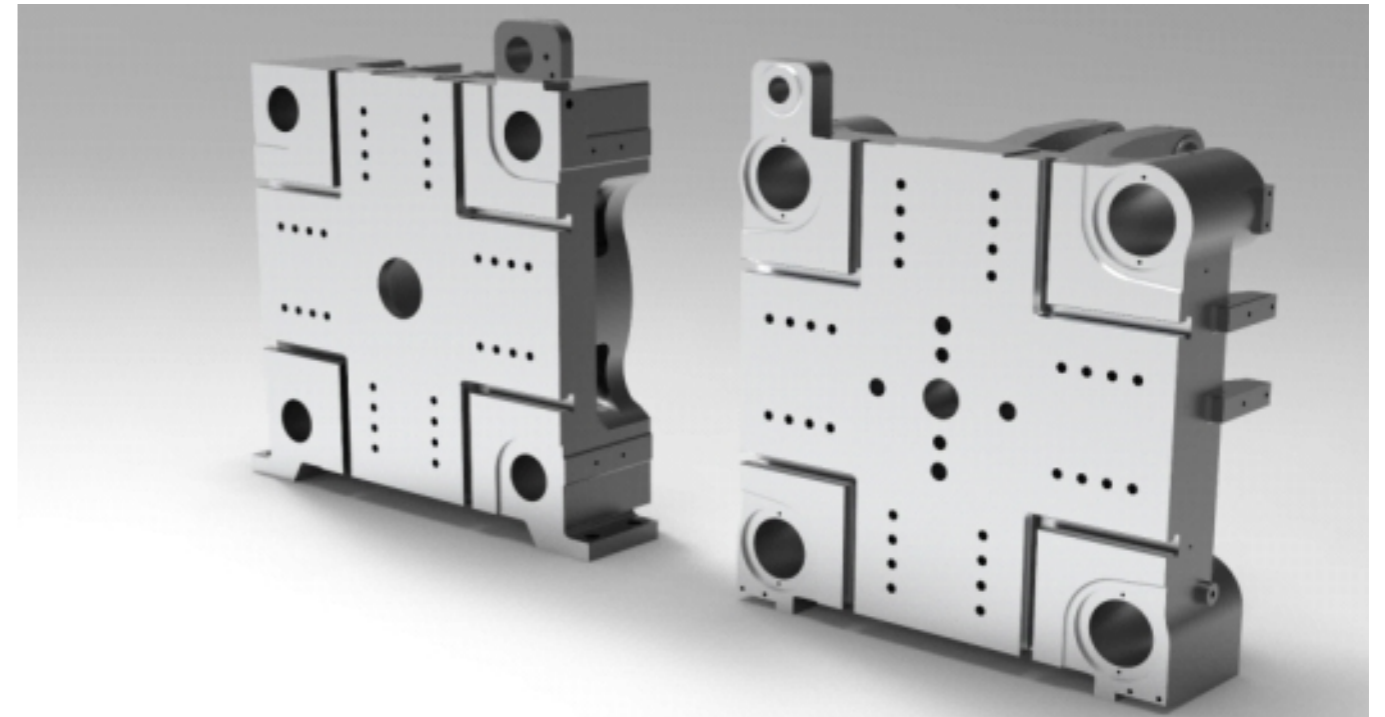
Perfect Union of Toggle Design and Hydraulics

Fast and Precise



T-slots + Mounting Holes on Platens

Easy and quick mould changes



Hydraulic Oil Temperature Control



Power Saving:

Oil temperature regulated by controller for higher stability and lower power consumption

Quality:

Improve yields and eliminate rejects through maintaining the stability of the hydraulics circuit at all times

Longer Life:

Extend usage life of hydraulic components by always keeping to optimal operating temperature

Stability and Repeatability You Can Count On

Application Cases of MK6.6/C

Product Specifications

LED lighting part

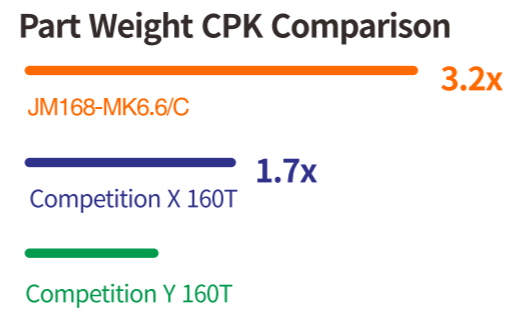
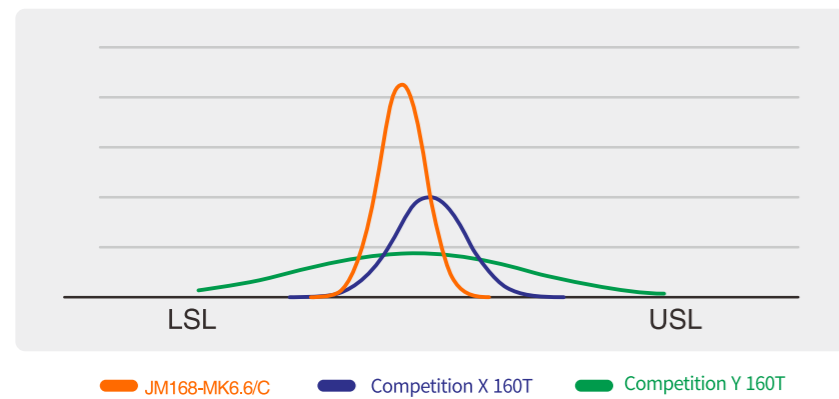
Shot Weight: 121g Cavities: 8
Resin: PC Cycle Time: 32.4s

Mould

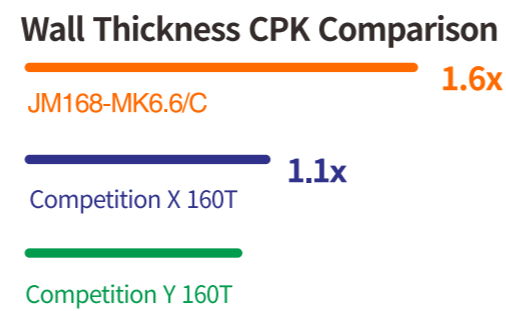
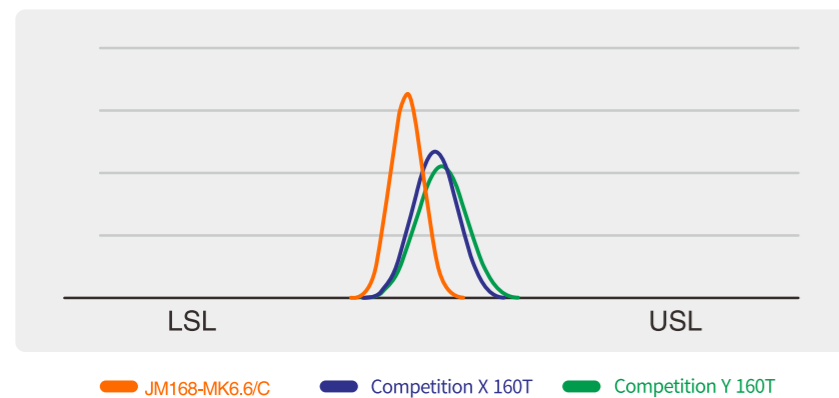
Weight: 350kg
Dimensions: 400mmx400mmx300mm



Production data for LED lighting part Product Weight Distribution



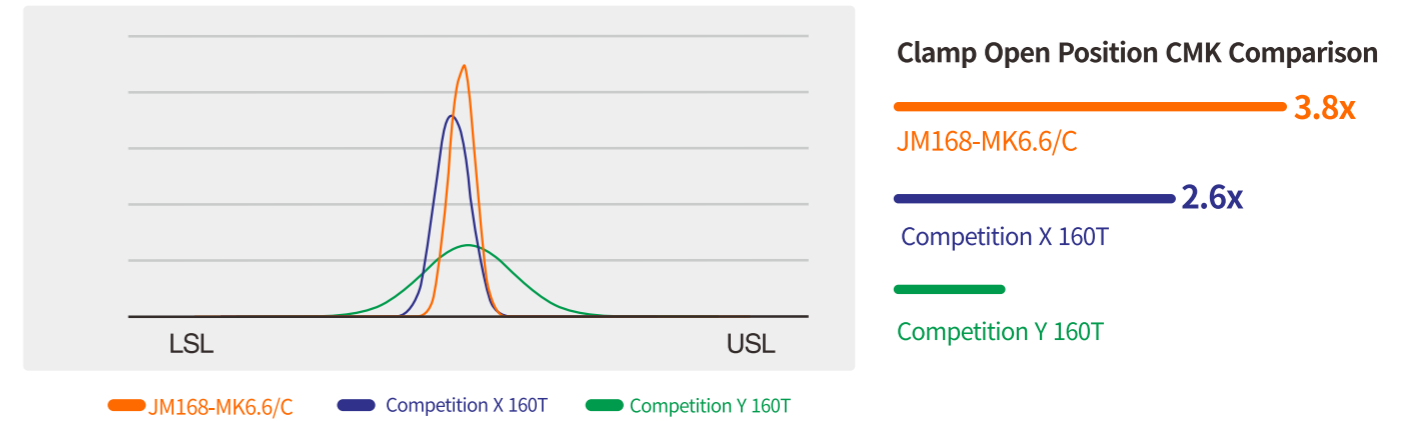
Product Weight CPK Comparison



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

Breaks No Sweat – Sustainable Productivity

Clamp Open Position Distribution

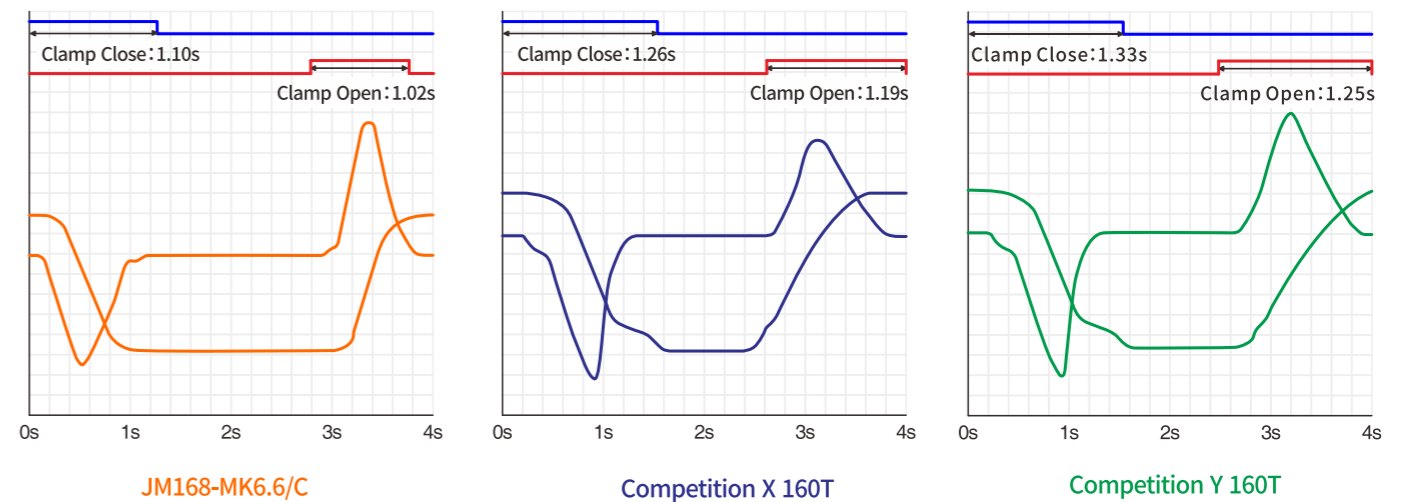


CMK (Machine Capability Index) – higher is better, indicating higher repeatability and better control

Show Me The Numbers

Dry Cycle Comparison

Average (s)	Clamp Close (s)	Clamp Open (s)	Total Cycle (s)	Stroke (mm)
JM168-MK6.6/C	1.10	1.02	2.12	300
Competition X 160T	1.26	1.19	2.45	300
Competition Y 160T	1.33	1.25	2.58	300



15% Faster Dry Cycle 18% More Speed

Productivity Always in Your Hands

The Economics of Production

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/C	30.6	8	52.8	941	113882	0.464	0.0561
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

\$0.1

\$0.1047/kWh

10Y

10 years of primary usage

Faster is always better

A JM168-MK6.6/C produces more shots than Same tonnage machine in 10 years

$(941-807) \times 3 \times 21 / 24 \times 30 \times 11 \times 10 =$

1,164,706 more shots

Efficiency is the name of the game

A JM168-MK6.6/C produces 8 million shots in 10 years, Saving \$12,900 in energy costs

$(0.0714 - 0.0561) \times 8,000,000 \times \$0.1047 =$

\$12,815,28

14% higher production volume

Standard Features

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. T-slots

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

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

Electricals

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

Optional Features

Clamping Unit

1. Core pulls
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

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. Enlarged power pack
5. Hydraulic oil pre-heat

Electricals

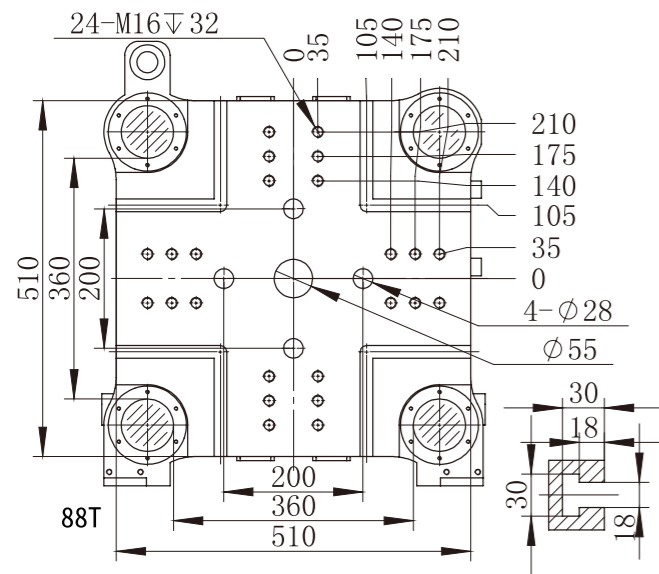
1. Multi-zone hot-runners control

JETMASTER MK6.6/C		JM88-MK6.6/C			JM128-MK6.6/C			JM168-MK6.6/C			JM208-MK6.6/C			JM268-MK6.6/C			JM328-MK6.6/C			JM408-MK6.6/C			JM488-MK6.6/C					
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			
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			
Screw Stroke	mm	180			205			230			260			300			335			375			415					
Swept Volume	cm ³	135	183	237	208	270	340	303	382	488	431	551	734	636	847	1057	946	1180	1479	1321	1655	2027	1832	2244	2638			
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			
	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			
Injection Pressure (Max.)	kgf/cm ²	2529	1875	1446	2302	1775	1410	2233	1774	1388	2295	1796	1349	2460	1847	1481	2263	1815	1448	2255	1800	1470	2165	1765	1504			
Injection Rate	cm ³ /s	96	129	167	132	172	216	160	201	257	198	253	336	240	319	398	316	395	495	413	518	634	481	589	693			
Screw Rotation Speed (Max.)	rpm	270			275			275			225			225			220			200			180					
Screw Nozzle Force (Max.)	t	4.5			4.5			4.5			4.5			9.0			9.0			9.0			9.0					
Nozzle Stroke	mm	250			250			250			280			330			360			420			420					
Clamping Unit																												
Clamping Force (Max.)	t	88			128			168			208			268			328			408			488					
Opening Stroke	mm	330			370			420			490			530			600			670			770					
Space Between Tie Bars (HxV)	mm	360x360			410x410			460x460			530x530			580x580			660x660			730x730			810x810					
Max. Mould Thickness	mm	380			450			520			550			610			660			730			810					
Min. Mould Thickness	mm	130			145			160			180			195			220			250			275					
Max. Daylight	mm	710			820			940			1040			1140			1260			1400			1580					
Ejector Force	t	2.8			4.2			4.2			6.7			7.7			7.7			11.1			11.1					
Ejector Stroke	mm	100			120			140			150			170			170			220			220					
Mould Register Hole	mm	100			100			100			160			160			160			200			200					
Power Pack																												
System Pressure	Mpa	17.5			17.5			17.5			17.5			17.5			17.5			17.5			17.5			17.5		
System Power	kW	16			19			24			31			48			60			63			80					
Barrel Heating	kW	6.4			10.1			12.2			15.5			18.9			24.8			30.4			35.9					
Temperature Control Zones	Zones	3+1			3+1			3+1			3+1			4+1			4+1			5+1			5+1					
Machine Dimensions (LxWxH)	m	4.3x1.2x1.8			4.6x1.3x1.8			5.2x1.4x2.0			5.7x1.5x2.1			6.4x1.6x2.3			6.7x1.7x2.4			7.5x1.8x2.3			8.3x1.9x2.3					

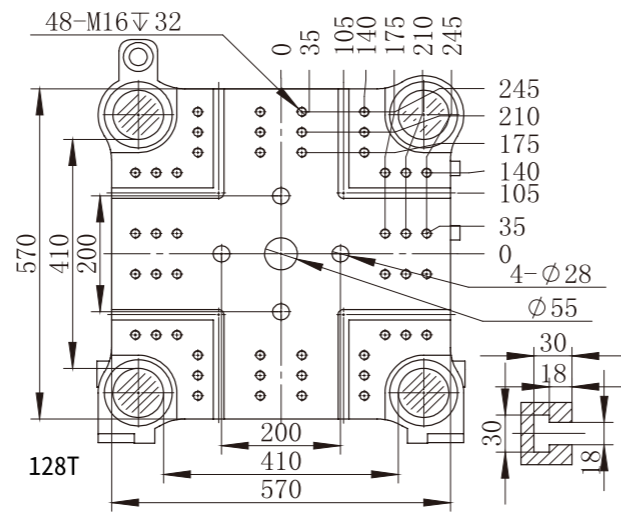
*The technical parameters above are for reference only and discrepancies may arise in different circumstances. The company keeps upgrading the products and reserves the right to change the product specifications and parameters without prior notice. The final interpretation to the above specifications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

T-slots + Mounting Holes

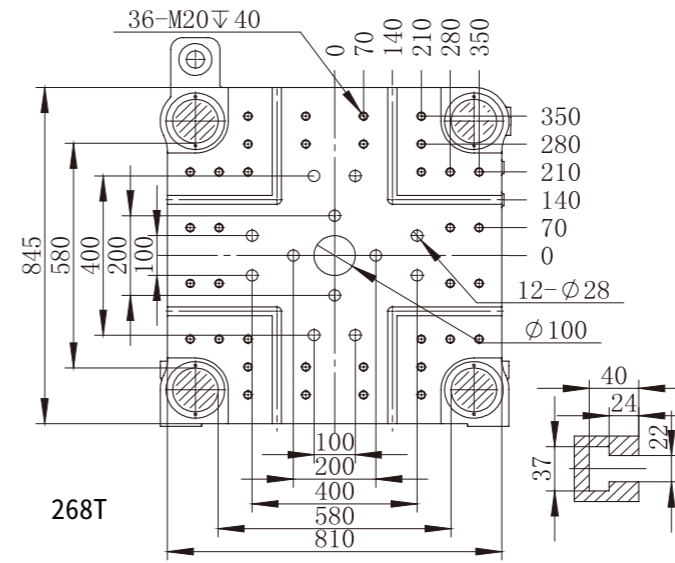
JM88-MK6.6/C



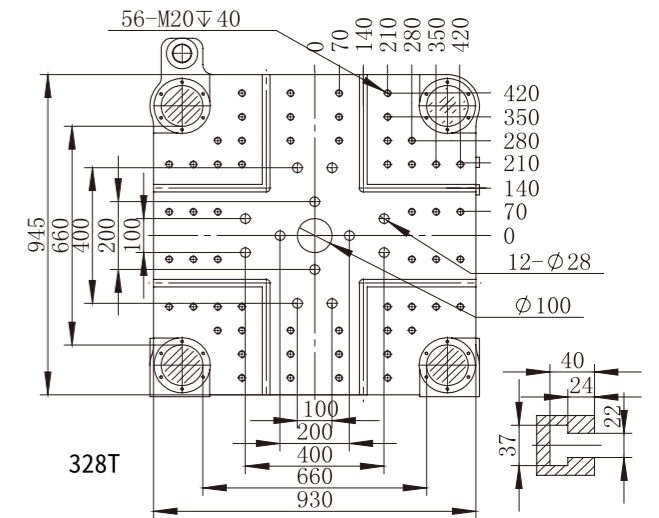
JM128-MK6.6/C



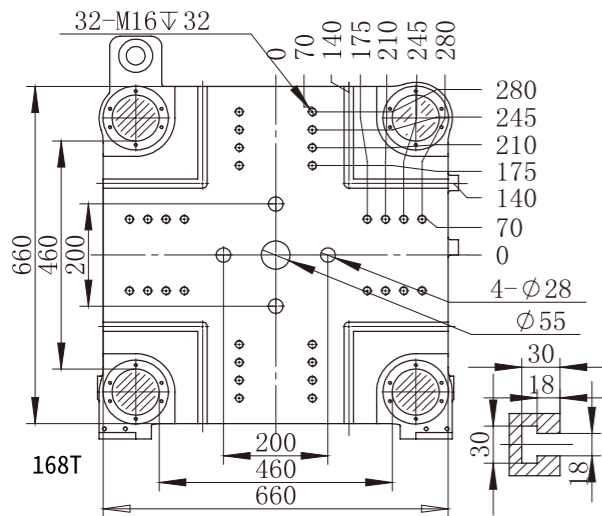
JM268-MK6.6/C



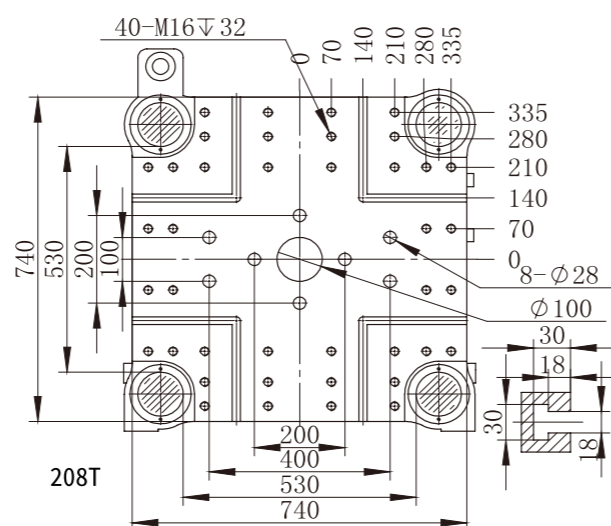
JM328-MK6.6/C



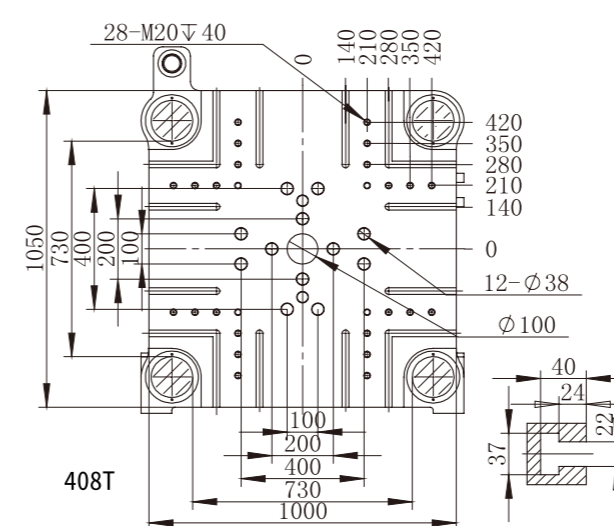
JM168-MK6.6/C



JM208-MK6.6/C



JM408-MK6.6/C



JM488-MK6.6/C

