

MK6.6/A *Artisan*

88 - 658 ton



202206

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 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 **800,000m²**
of production facilities
Global Presence

Global Reach



The Artisan's Touch Redefining Productivity



















The MK6.6/A series is a new offering from the same team who developed the industry-leading MK6 series. It is a product of decades of applications experience coupled with technical excellence, engineering savvy, and years of deep research on the needs of actual users.

Chen Hsong engineers took 60 years of expertise, enhanced by modern design concepts, and unified it with the proprietary Japanese *Precision Hydraulics™* technology to enable low-friction, silky-smooth, high-speed motion, making the MK6.6/A faster, more stable, and more reliable than ever.

MK6.6/A-“A” for “Artisan”- is homage to the unsung heroes of the industrial age – the tradesmen and craftsmen whose relentless pursuit of perfection created the modern world.

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/A Artisan



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



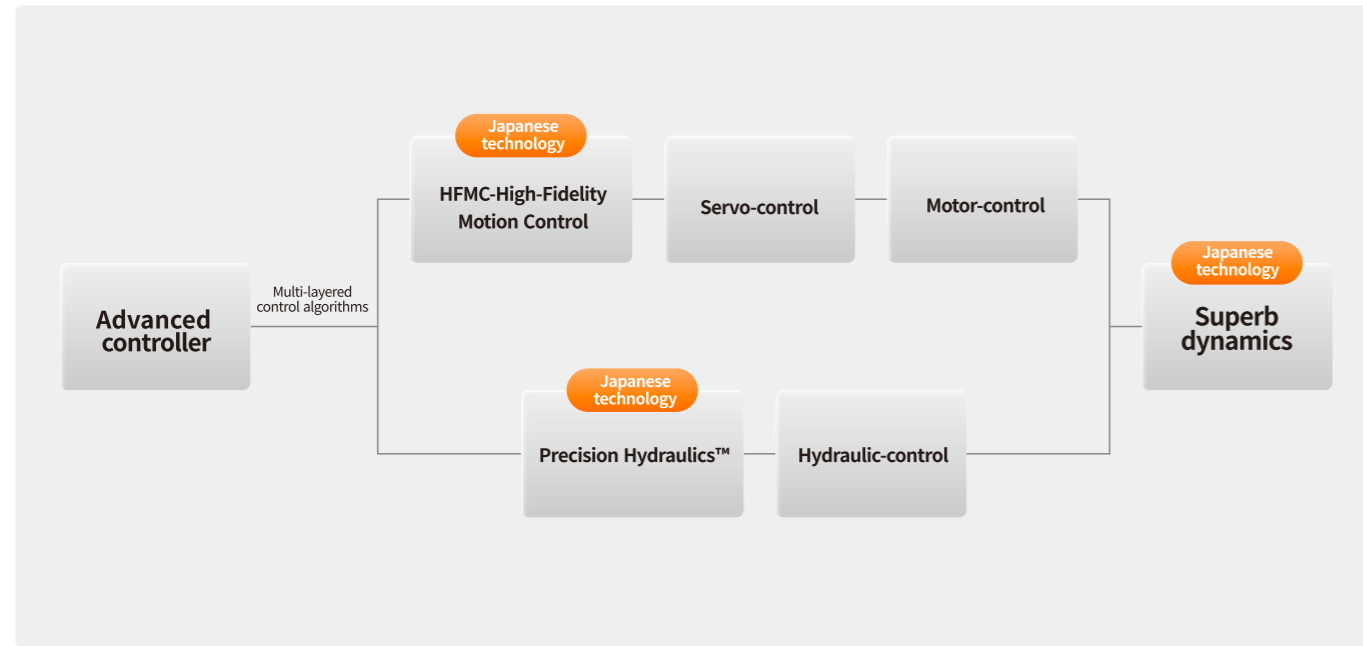
Perfect parts from perfectly-designed screws

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



It Takes Two to Run Fast

Hardware/Software Interlocked Optimisations



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.

Break-Away Performance Speaks for Itself

Application Cases

Product Specifications

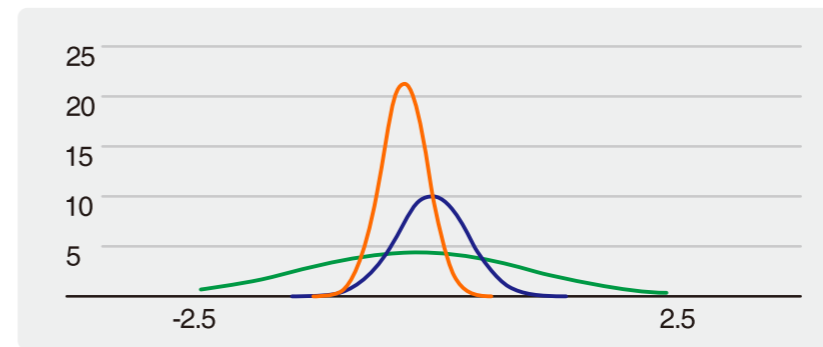
LED lighting part
 Shot Weight : 121g
 Cavities : 8
 Resin : PC
 Cycle Time : 32.4s

Mould
 Weight : 350kg
 Dimensions : 400mmx400mmx300mm



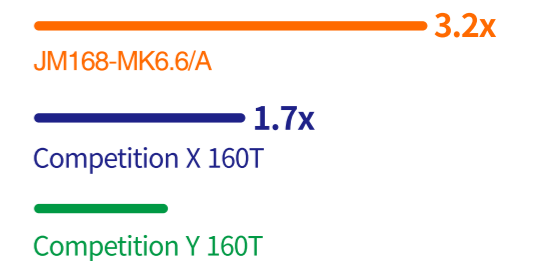
Production data for LED lighting part

Product Weight Distribution

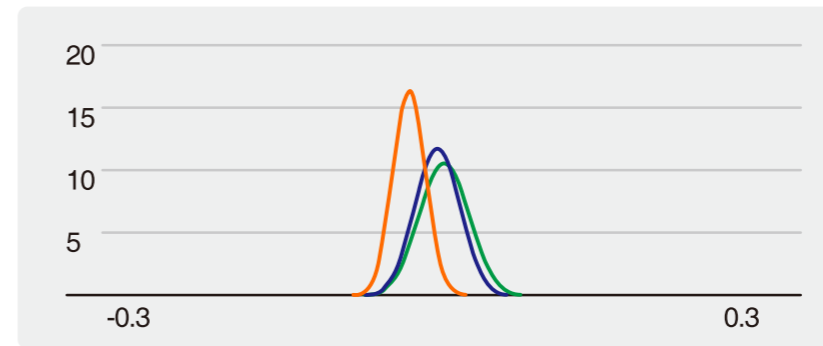


— JM168-MK6.6/A — Competition X 160T — Competition Y 160T

Product Weight CPK Comparison

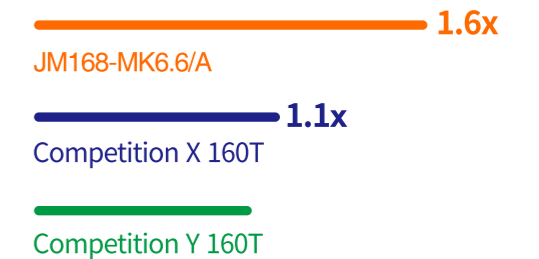


Wall Thickness Distribution



— JM168-MK6.6/A — Competition X 160T — Competition Y 160T

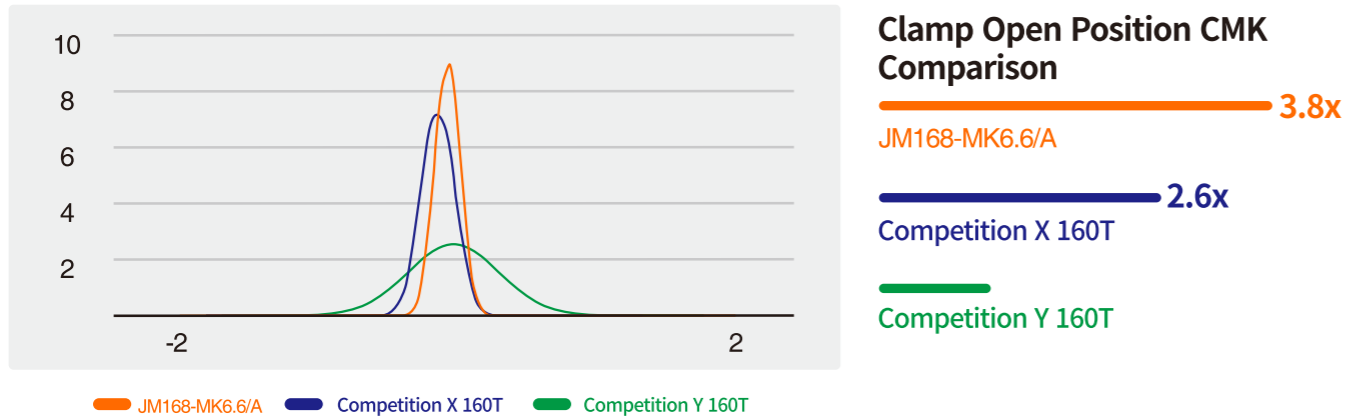
Wall Thickness CPK Comparison



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

Breaks No Sweat – Sustainable Productivity

Clamp Open Position Distribution

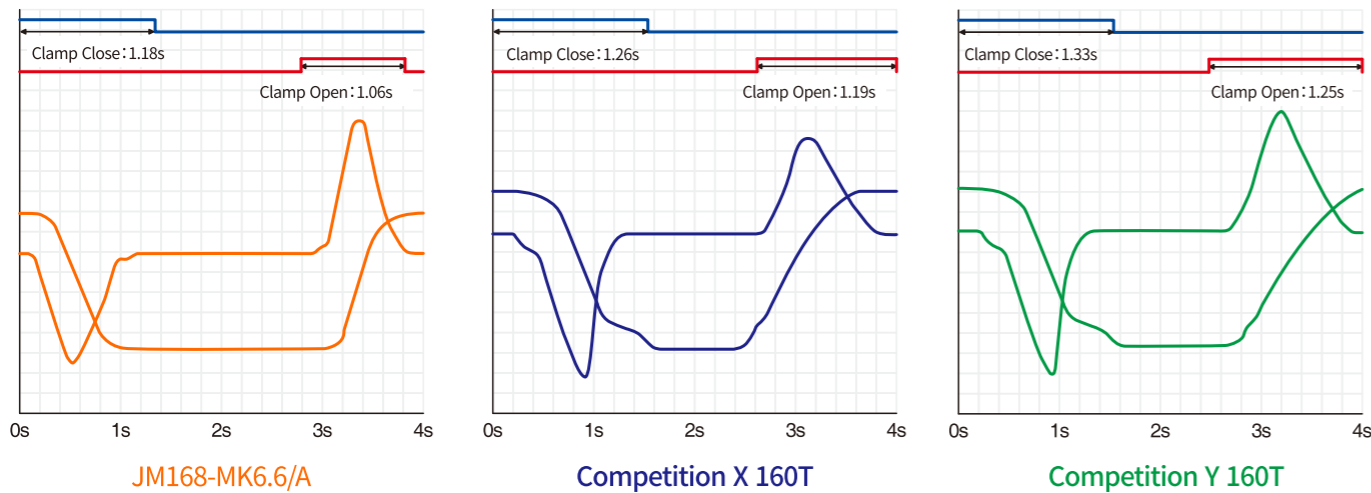


CMK (Machine Capability Index) – higher is better, indicating higher repeatability and better control

How Fast Is Fast Enough

Dry Cycle Comparison

Average (s)	Clamp Close (s)	Clamp Open (s)	Total Cycle (s)	Stroke (mm)
JM168-MK6.6/A	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/A	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/A 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/A produces 8 million shots in 10 years, saving about \$12,500 in energy costs

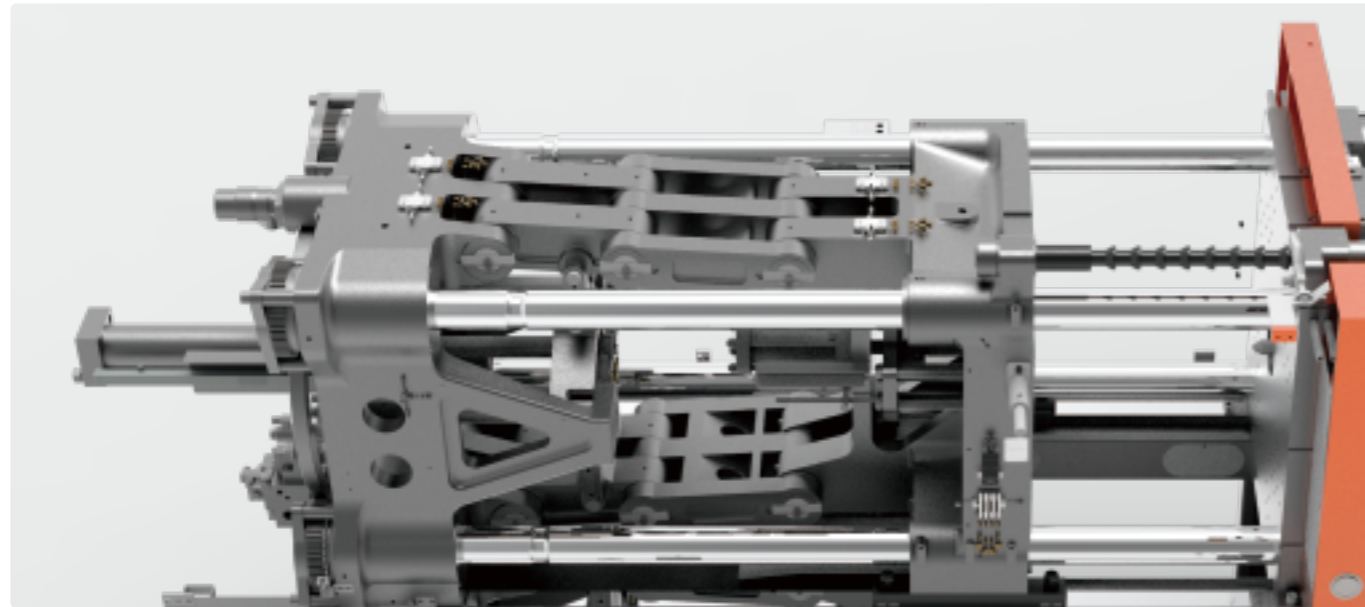
$(0.0714-0.0567) \times 8,000,000 \times 0.1047 =$

\$12,321.58

9% higher productivity

Toggle Design from Decades of Experience

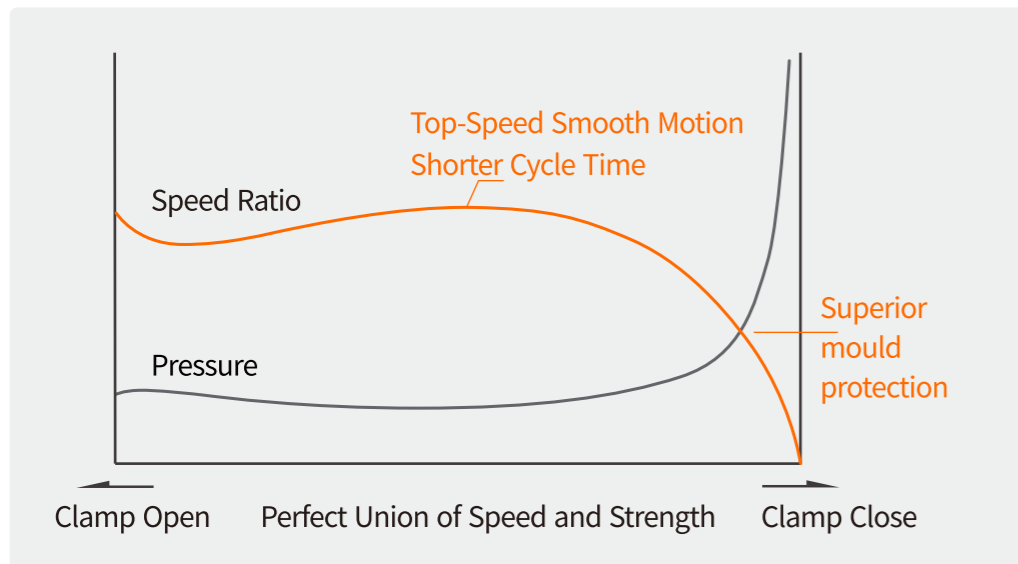
Optimised motion control profile guarantees high speed with high stability



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

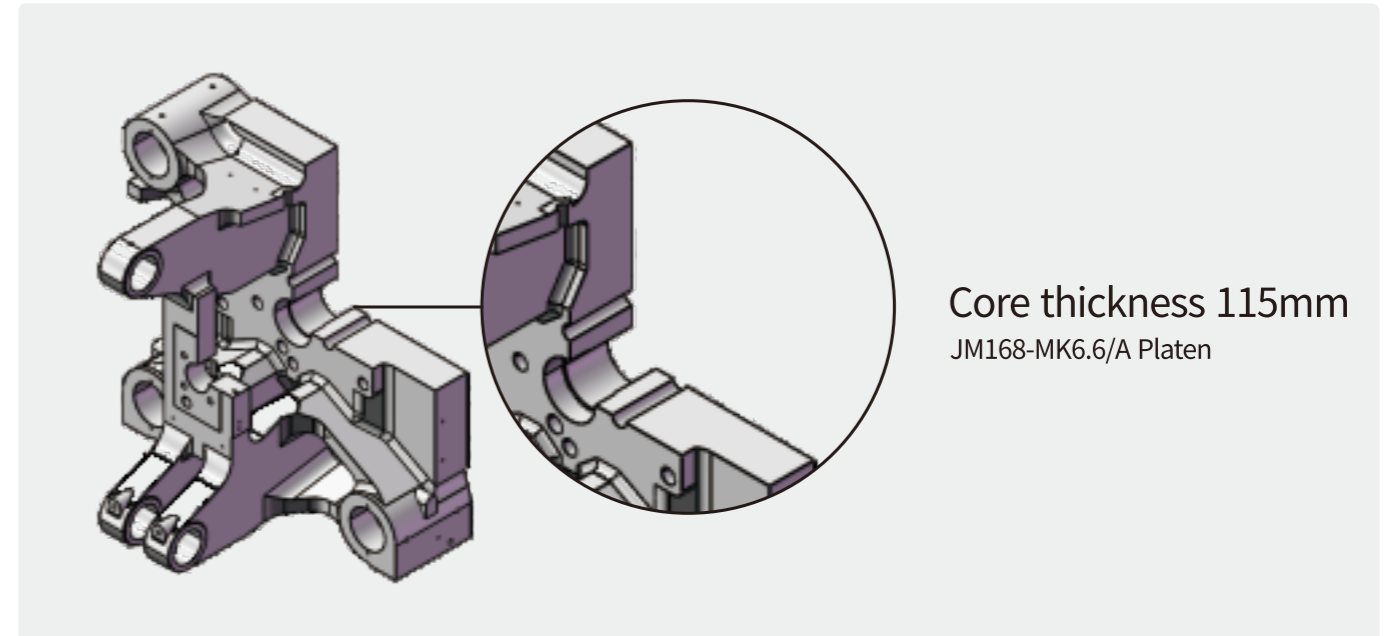
Fast and Precise



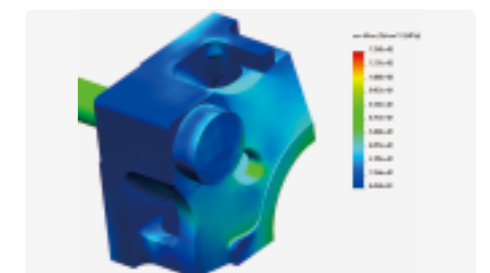
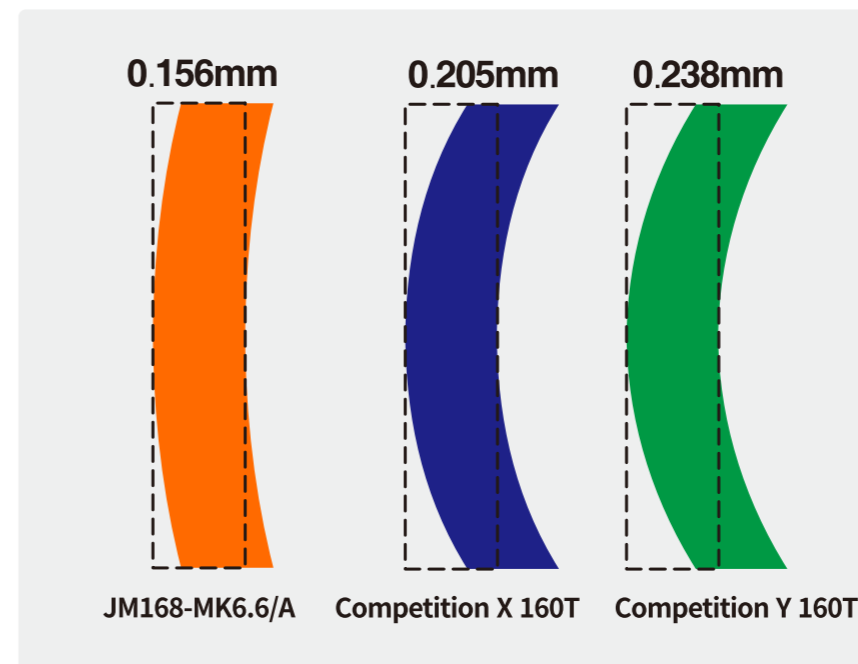
Finely tuned by leading Japanese hydraulic experts, and enhanced via proprietary fluid-dynamics simulation software, the entire hydraulic circuit is optimised to a high degree of perfection.

Strong Platens for High Quality Parts

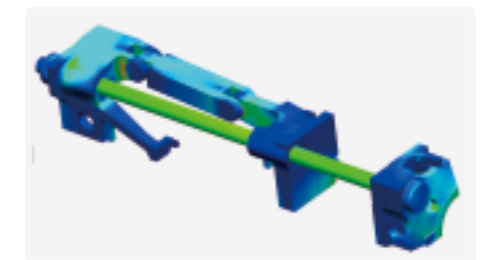
Patented high-strength platens with low deformation



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



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



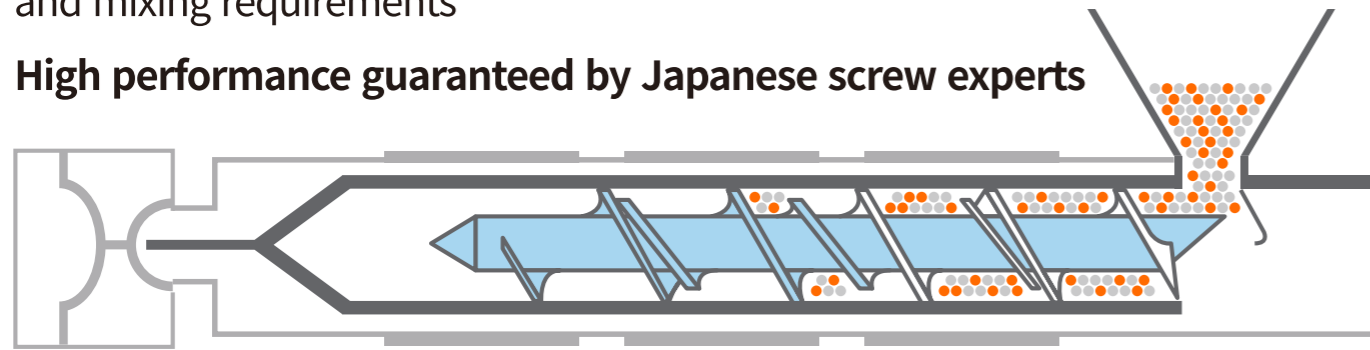
High-tensile tie-bars

Low platen deformation ensures high part quality and superior mould protection

The Part Is Only as Good as the Screw

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

High performance guaranteed by Japanese screw experts



Well-suited for all applications

Nitrided screw (standard)

Ideal for wide range of applications



Chrome-plated, corrosion-resistant with optional mirror surface finish for PVC (optional)

PVC



Chrome-plated, optionally bimetallic, for engineering resins (optional)

Professional screw for engineering resins, common for household appliances and automotive applications



The Perfect Mix

Regular mixing screw (optional)

Wide applicability for most mixing needs



High mixing screw (optional)

For extremely demanding mixing application



Bimetallic Screws

Bimetallic Screws (optional)

Perfect for highly corrosive or abrasive engineering resins (e.g. glass or carbon filled)



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

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

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 T-slots
- 4 EUROMAP/SPI holes pattern
- 5 Air blows
- 6 Ejection-on-fly / core-pull-on-fly
- 7 Longer ejector stroke
- 8 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