

WE WALK ALONGSIDE THE WORLD

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YIZUMI伊之密

MG

Thixomolding Machine

Casting of Magnesium Alloy components-
as easy as Plastic Injection Molding.

Extensive applications in Automobile, 3C , Drone, Sports & Health.



GUANGDONG YIZUMI PRECISION MACHINERY Co., Ltd.

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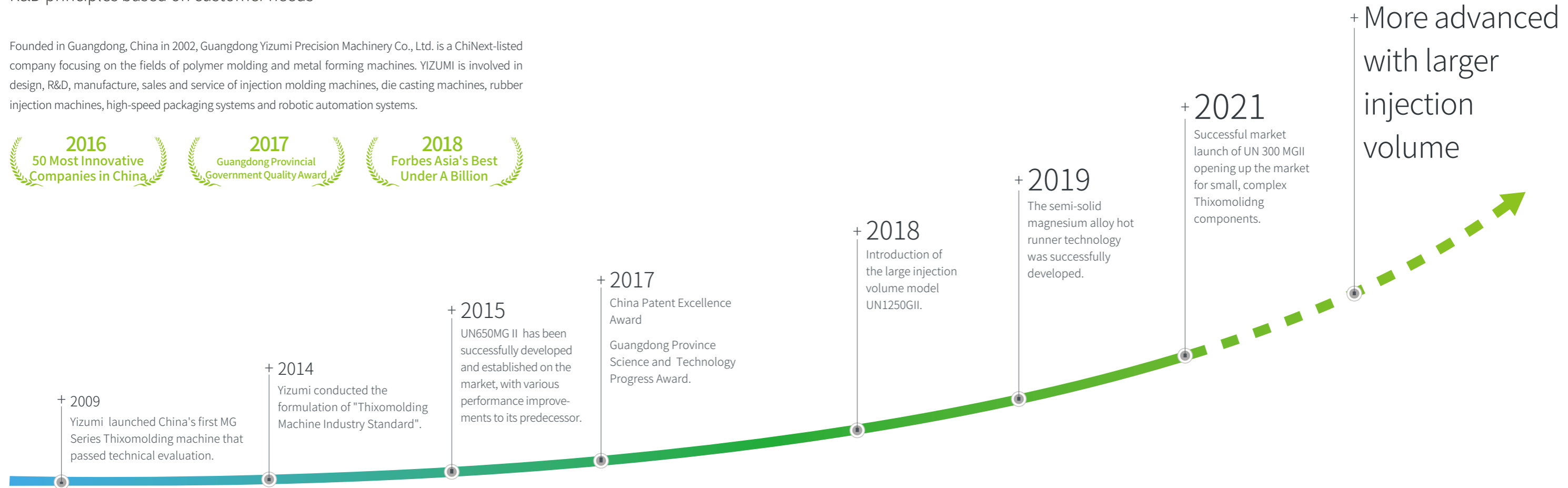
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2. The picture in the catalogue is for reference only. The real object should be considered as final.
3. The data in the catalogue is obtained from internal testing in YIZUMI laboratory.
Please refer to the actual machine for the final data. YIZUMI reserves the right of final interpretation upon disputes and ambiguities.



WE WALK ALONGSIDE THE WORLD

R&D principles based on customer needs

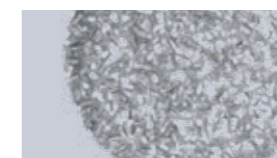
Founded in Guangdong, China in 2002, Guangdong Yizumi Precision Machinery Co., Ltd. is a ChiNext-listed company focusing on the fields of polymer molding and metal forming machines. YIZUMI is involved in design, R&D, manufacture, sales and service of injection molding machines, die casting machines, rubber injection machines, high-speed packaging systems and robotic automation systems.



SEMI-SOLID METAL FORMING TECHNIQS

Semi-solid metal is a kind of slurry in which solid particles are suspended in a liquid matrix. The rheological behavior of the semi-solid slurry enables a laminar flow and simplifies the general processing into metal parts.

With a Thixomolding machine, magnesium alloy chips are fed into a barrel, conveyed to and sheared by a rotating screw and gradually heated to the semi-solid state.



THIXOMOLDING MACHINE

More than 20 years of mature technology

In 2009, Yizumi succeeded in developing China's first Thixomolding machine which attracted intense interest within the industry. The new product, named after MG series, passed China technical evaluation inspection test and secured product development patent. In 2018, through the technical cooperation between Chinese and German teams, the large injection volume model UN1250MGII was developed, with an injection volume of 2.5kg, matching the maximum injection volume of any competitor's machines worldwide.



HIGH-SPEED MOLD OPENING AND CLOSING TECHNOLOGIES
Specific patented technologies ensure smooth and high-speed die opening and closing operation without impact;

HIGHER SAFETY AND SECURITY
Safety door of clamping unit and injection unit are monitored and controlled by safety relays for higher security;

INNOVATIVE TECHNOLOGY
New high-speed injection closed-loop control technology, quick response, high repeatability.

CLAMPING UNIT
A new structural design leads to uniform stress distribution and eventually less platen deformation.

CONTROL SYSTEM
User-friendly and easy-to-use controlsystem with a 10.4-inch color touch screen.

SCREW AND BARREL UNIT
Reliable and durable assembly with materials and technologies developed by Chinese and European teams

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HUMAN-CENTERED DESIGN CONTROL SYSTEM

Fast response, accurate control and powerful function

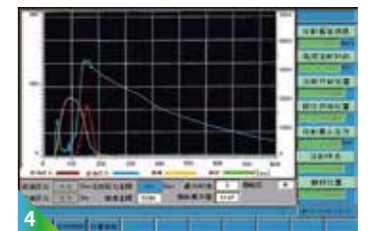
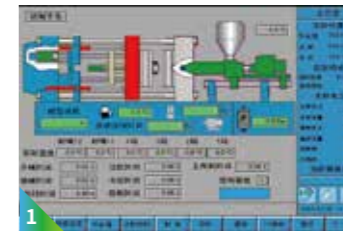
Fast response

- ① Easy-to-use controller with a 10.4-inch touch screen. The scan period is only 0.4ms, easily achieving high speed control.
- ② Modular design of the control system facilitates extending functions. An Ethernet interface is available as a standard feature which allows information exchange with other equipment and data management software.



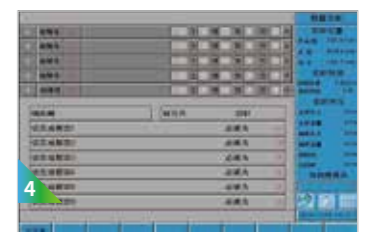
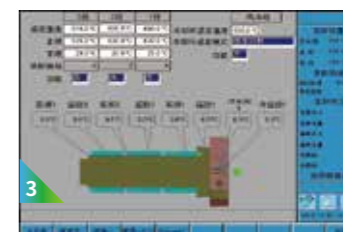
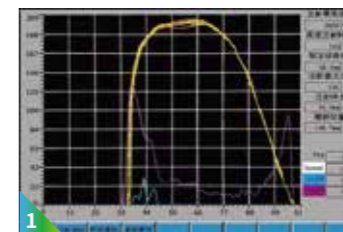
Accurate control

- ① Parameters of the machine are clearly displayed and monitored on screen in real time.
- ② Quick setup screen, where all molding parameters can be set.
- ③ The screen shows actual injection molding parameters statistics, in which the injection ending position deviation is 0.4mm and the mold-open ending position deviation is 0.1mm, indicating stable performance.
- ④ Real-time graphic display of the high-speed injection. Accurate display of the injection speed, oil pressure, return pressure and valve core position. The curve quality is comparable to that of high-end oscilloscopes, allowing the molding process parameters to be visible.



Powerful function

- ① High speed Position-Speed curve display.
- ② Barrel temperature control page.
- ③ Hot runner temperature control page.
- ④ Alarm monitoring page.



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Fast response powerful function human-centered design control system

Thixomolding machine equipped with a state of the art Industrial computer has powerful functions and fast responses, realizing synchronous and accurate control for multiple functional areas. Humanized design interface and buttons make the operation more comfortable and convenient.

INDUSTRY-LEADING INJECTION SYSTEM

High durability, fast response, large injection volume

- » The Screw/barrel assembly is made of European special steel, with high hardness (above HRC50), wear resistance and high temperature resistance (up to 650°C)
- » The barrel is equipped with standard infrared heating devices, providing a fast heating speed, a good thermal insulation effect and high efficiency.
- » Large diameter high-speed servo valve control oil input, with quick response speed and strong acceleration injection performance (up to 200 m/s²).
- » Large capacity bladder accumulator which ensures a flow rate up to 4200 L/min.
- » The material feed of the screw is realized by a servo motor with pulley drive, enabling large torques and a stable, controlled dosing behavior.
- » The entire injection unit can be moved back and forth, raised and lowered, and spun in/out. This allows for a wide variety of molds to be used and convenient maintenance to be carried out.



High durability fast response and large injection volume

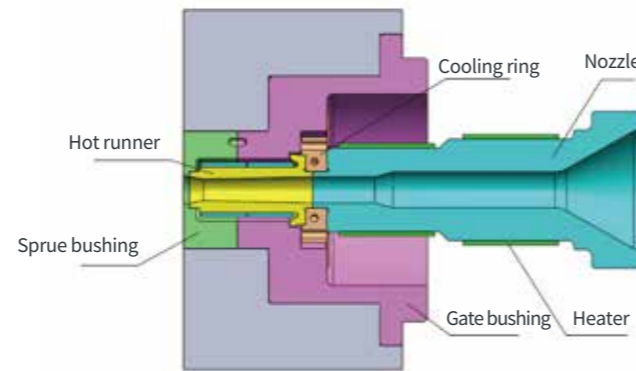
A barrel made of European special steel; large diameter high-speed servo valve and bladder accumulators. The acceleration of the injection piston can reach 200m/s², and the flow rate a maximum of 4200 L/min.

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HOT RUNNER TECHNOLOGY

Low cost, quality improvement, excellent performance

The hot runner technology keeps the magnesium alloy material in the runner of the mold within a semi-solid state by heating. The hot runner system is an extension of the nozzle that eliminates the need to remove the barrel from the hot runner after shutdown and only needs to be heated to bring the hot runner to the desired temperature for the next injection. This technology is especially suitable for mass production in general, also of components with high raw material cost as well as high product quality requirements.

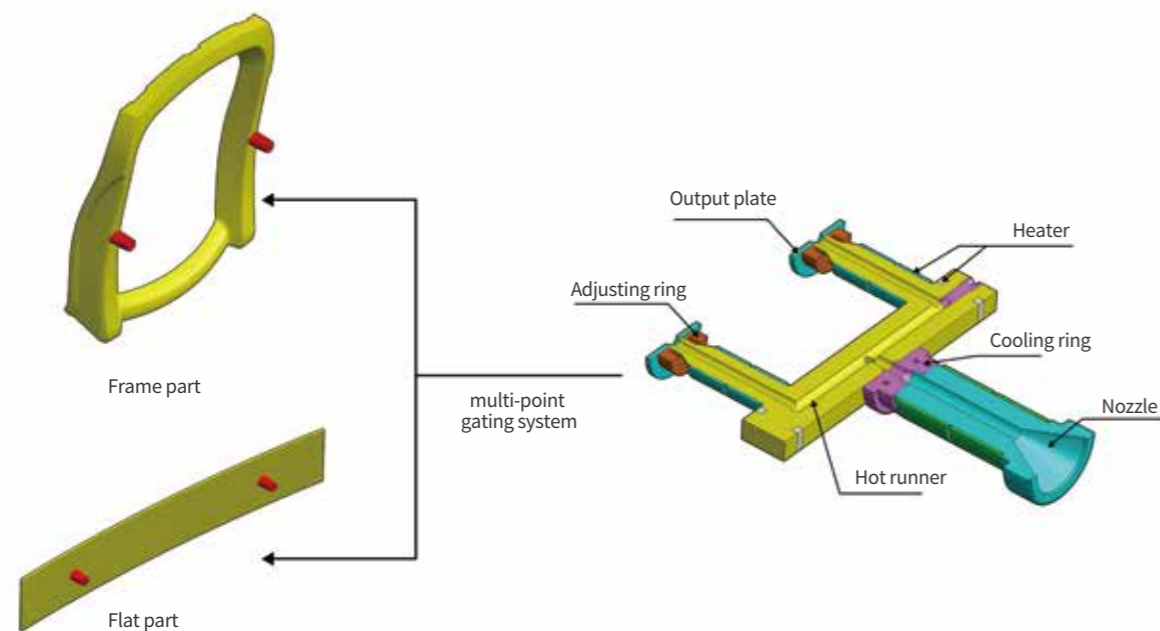


- » Reduce manufacturing cost
- » Improve product quality
- » Excellent process control

Hot runner outlooks—Multi-gate injection system (patent No.: 202021425128. X)

Yizumi adopts multi-gate injection system solutions for frame and flat parts. By controlling the melt temperature in hot runner, the melt temperature and pressure in the mold cavity are more uniform, improving the filling of large and thin wall parts, and reducing the flow length ratio of the mold cavity. It also provides better filling and reduces insufficient injection at the end of the process. Multi-gate injection system has the following advantages compared with single-gate injection:

- » Reduce most of the gating, save 15% to 30% of mold materials
- » Reduce processing procedures and recycling costs;
- » Easy to achieve standardization with good interchangeability



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STANDARD AND OPTIONAL FEATURES

UN300MG II -UN1500MG II

ITEMS	UN300MG II	UN650MG II	UN1250MG II	UN1500MG II
General				
Yizumi green	●	●	●	●
Customer specified color	○	○	○	○
Manual safety door (front, back)	●	●	●	●
Pneumatic door (front)	●	●	●	●
Electrical safety door (front)	○	○	○	○
Electrical safety door (back)	○	○	○	○
Electrical System				
B&R control system	●	●	●	●
10.4-inch touch screen	●	●	●	●
Electric cabinet cooling fan	●	●	●	●
Air conditioner	○	○	○	○
Mold parameters storage	●	●	●	●
Electronic clamping force display	○	○	○	○
Clamping System				
High-speed clamping system	●	●	●	●
Manual mold height adjustment	●	●	●	●
Automatic mold height adjustment	○	○	○	○
Hydraulic tie-bar extraction (1 pc)	-	○	●	●
Hydraulic tie-bar extraction (2 pcs)	-	○	○	○
Mechanical safety lock	○	○	○	○
Safety footboard	-	○	○	○
Hydraulic System				
TOKIMEC vane pump	-	●	●	●
SUMITOMO gear pump	●	-	-	-
Cores and Ejectors				
2 sets of core pulls on moving platen	●	●	●	●
1 set of core pull on fixed platen	○	○	○	○
2 sets of core pulls on fixed platen	○	○	○	●
Ejector stroke with linear transducer control	●	●	●	●

YICMS CONDITION MONITOR SYSTEM (OPTION)

Production monitoring - production status at a glance

Based on the Industry 4.0 concept "Internet and Integration", Yizumi's machine is equipped with interfaces for various peripheral devices and software programs to achieve a unified and standardized automation platform, providing customers with seamless integrated solutions.



Equipment monitoring

- » Real-time visibility of operating status
- » Dynamic calculation of operational indicators
- » Real-time collection of alarm information
- » Timely warning of abnormal shutdown

Process monitoring

- » Process parameter real-time acquisition
- » Abnormal parameter warning
- » Historical processing parameters
- » Process parameter SPC control

Production statistics

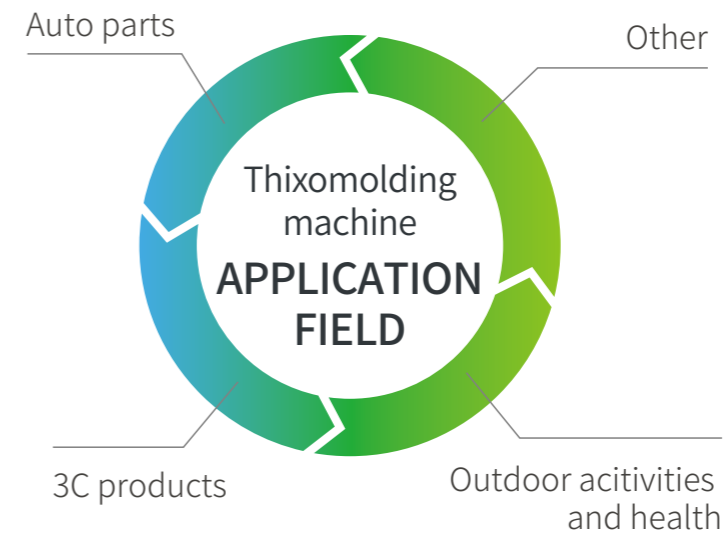
- » Production progress monitoring
- » Quality statistical analysis
- » Hourly output statistics
- » KPI abnormal warning

WIDE RANGE OF APPLICATIONS

Apply to produce high-end magnesium alloy products

Apply to ultra-thin products, complex products and high-end products with high tightness and density. Widely used in automotive, 3C, drone, sports and health fields.

Car display screen holder, producing 1.2m wide products



Stable molding of 0.55mm thin-walled products



Bicycle forks have high requirements on product density and tightness, and products must withstand the pressure of 5bar without leakage for 10s.

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YFO: 6 PREMIUM SERVICE ELEMENTS

Focus on machines and care more about customer experience



Telephone follow-up

Setting up customer files and providing consulting and guidance services.



Door-to-door service

Regular on-site inspection by service engineers, providing preventative maintenance.



Spare part service

Convenient spare part supply network, quick and accurate delivery.



Training

Focused training for professionals and customers.



Engineer grading

Grading for YFO service engineers to regulate service standards



24-hour service

365-day, 24-hour hotline service, about 200 maintenance experts for your needs.

(some services are only available in China or in Chinese language)

YIZUMI e-service

Real-time on-line customer service system



Through YIZUMI e-service, you can expect a full-day, online support with an additional availability of a mobile and rapid remote repair and maintenance service. Regardless of where you are, YIZUMI can deliver a rapid, convenient, online after-sales service, ensuring the equipment to be maintained in the best condition for the long term.

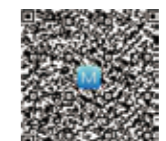
- Rapid
- Reliable
- Effective
- Visual
- Recordable
- Can be evaluated
- Cost effective

YIZUMI E-SERVICE CAN DELIVER THE FOLLOWINGS TO YOU



Mobile Operation: Smart Phone/Tablet/PC Multiplatform available.

Download the APP, enter equipment serial number /scan equipment QR code and the registration is completed.



IOS

Android

(some services are only available in China or in Chinese language)