



The Passionate Pursuit of Perfection

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# MG Series

High Energy Semi-solid Magnesium  
Alloy Injection Moulding Machine



Injection Moulding Machine

High energy semi-solid magnesium alloy injection molding machine

# Bole Machine- The leader in semi-solid magnesium injection molding!

- The best Solution of lightweight materials-Magnesium
- Light weight, stiffness, bending elasticity and tensile strength, strong impact resistance, thermal conductivity, Electromagnetic wave shielding, easy to add, easy to recycle, best choice for lightweight materials!



• Magnesium Material

Bole semi-solid injection molding has greatly improved the elongation, yield strength and tensile strength of magnesium-aluminum alloy products.

Alloy		Processing Status	Tensile Strength $\sigma_b$ /MPa	Yield Strength $\sigma_{0.2}$ /MPa	Elongation $\delta$ /%
Aluminum Alloy	ADC12	Die casting	250	180	3
Magnesium Alloy	AZ91	Die casting	200	140	3
		Aluminum	260 ↑	167 ↑	7 ↑
		Magnesium	285 ↑	216 ↑	4

## Application Area



New Energy Automobile



Defence



Aerospace



Communication electronic

# Bole technology makes metal forming so convenient!



## Safety

The entire process of molding injection is confidential and does not come into contact with air

## Simple

It integrates the preparation, transportation and molding process of semi-solid slurry into one, one-step molding

## Inflexibility

High rigidity clamping unit, central clamping structure, can effectively protect the mold and prevent overflow.

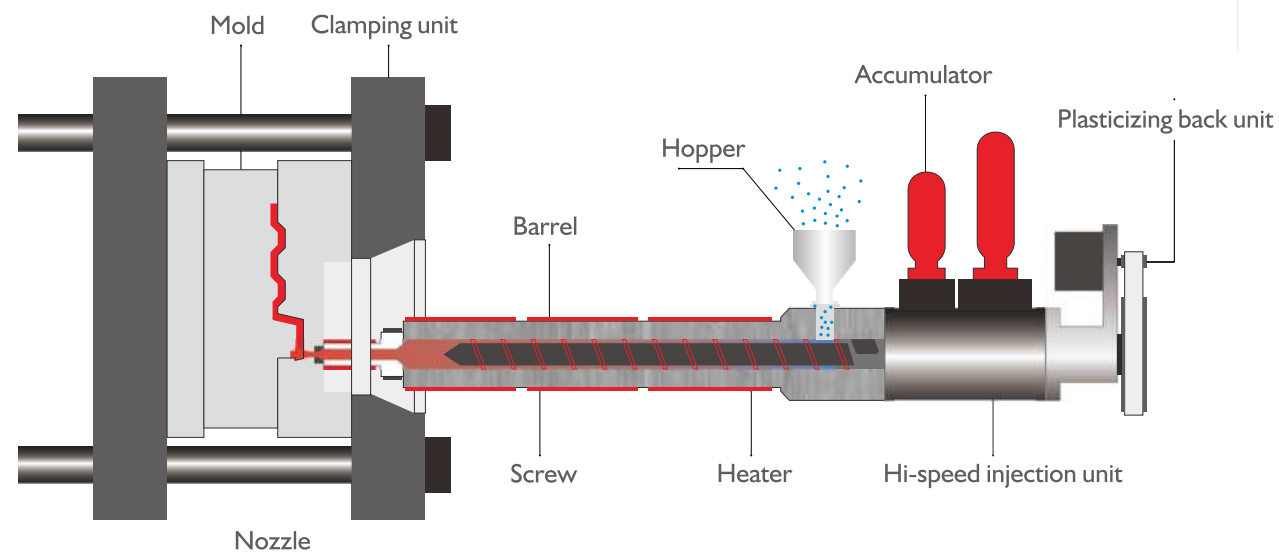
## Precise

High product qualification rate; repeat accuracy of mold opening and closing is  $\pm 0.5\text{mm}$

## Economize

Energy saving 50-60% without melting furnace; material saving;  
The equipment layout is compact, which can save 30% of the plant area

## Molding Process



- The magnesium alloy chip material is transported and sheared by the rotation of the screw. At the same time, the material is gradually transformed into a semi-solid slurry by the heating of the barrel, and then directly injected into the mold through high speed and high pressure, without contact with air during the process.

### Save

- The entire process of molding injection is confidential and does not come into contact with air, no gas protection is required to prevent deflagration and burns.

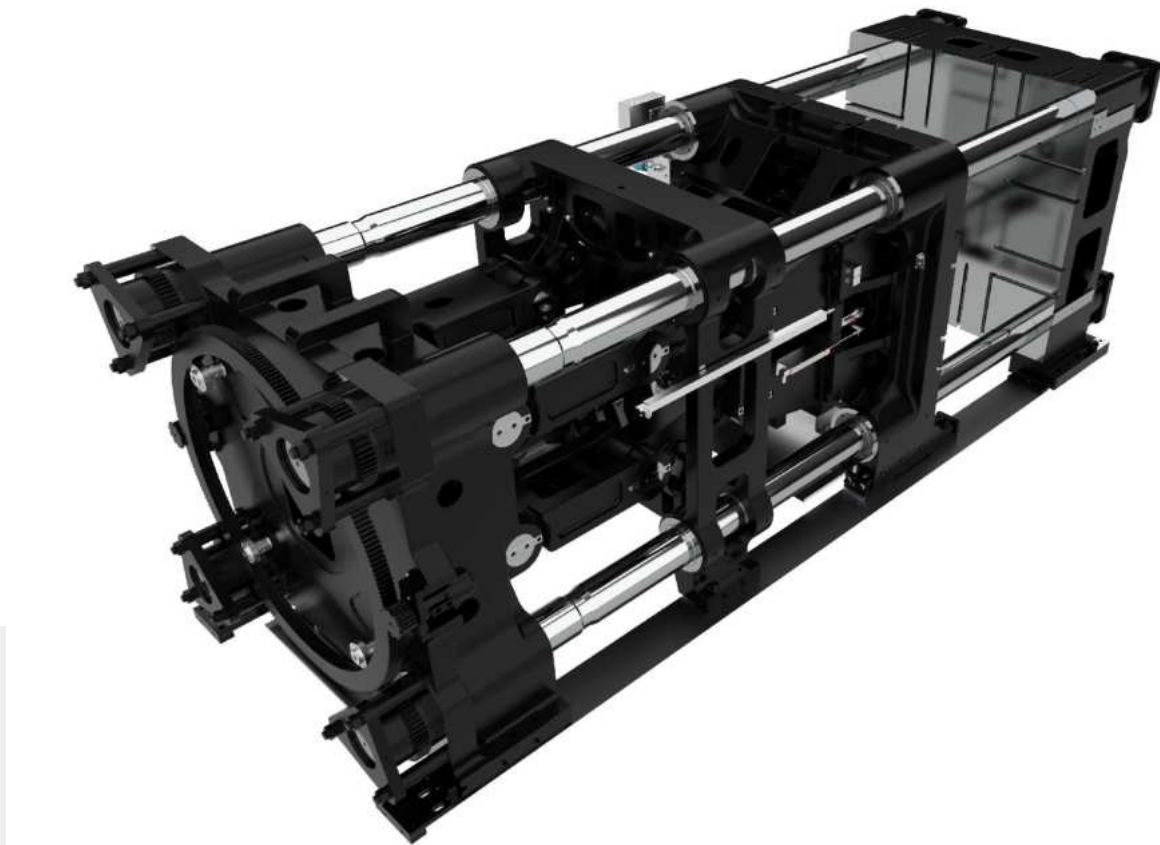
### Simple

- It integrates the preparation, transportation and molding process of semi-solid slurry into one, one-step molding



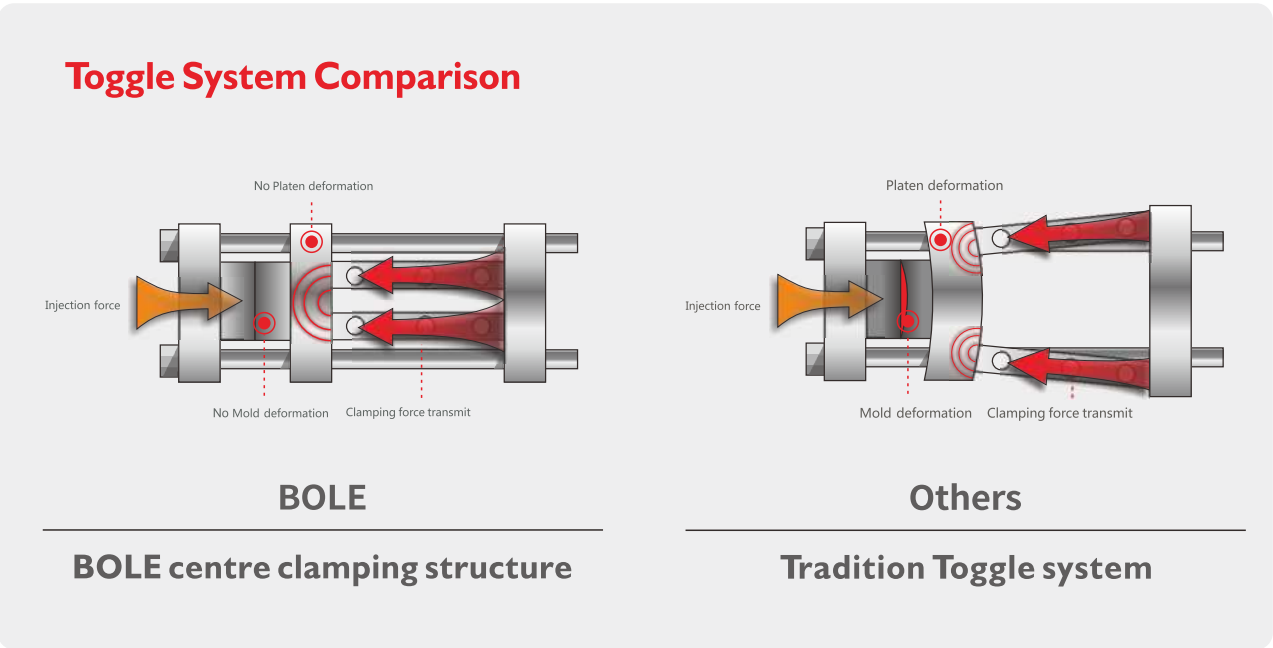


**Patented central locking toggle system**  
Clamping force effectively transferred to the mold  
High rigidity clamping unit, prevent overflow of mold.



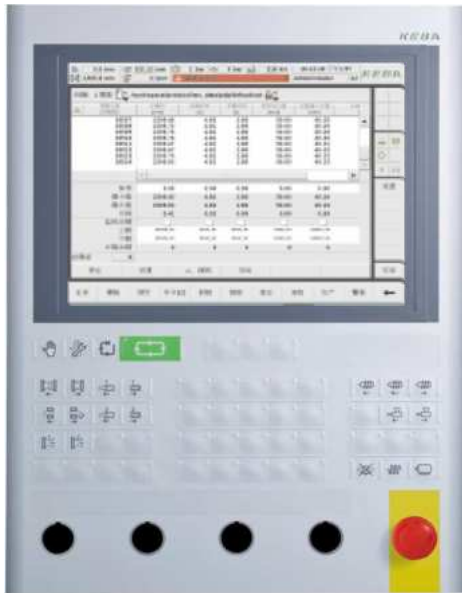
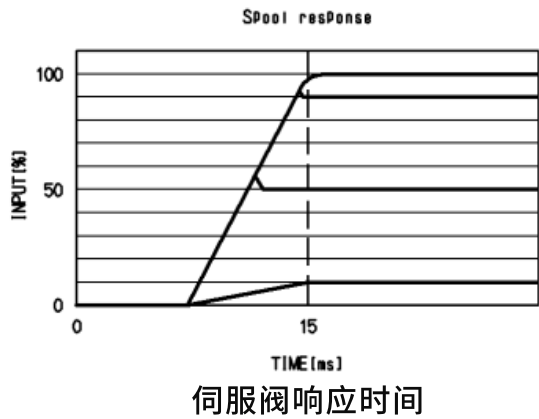
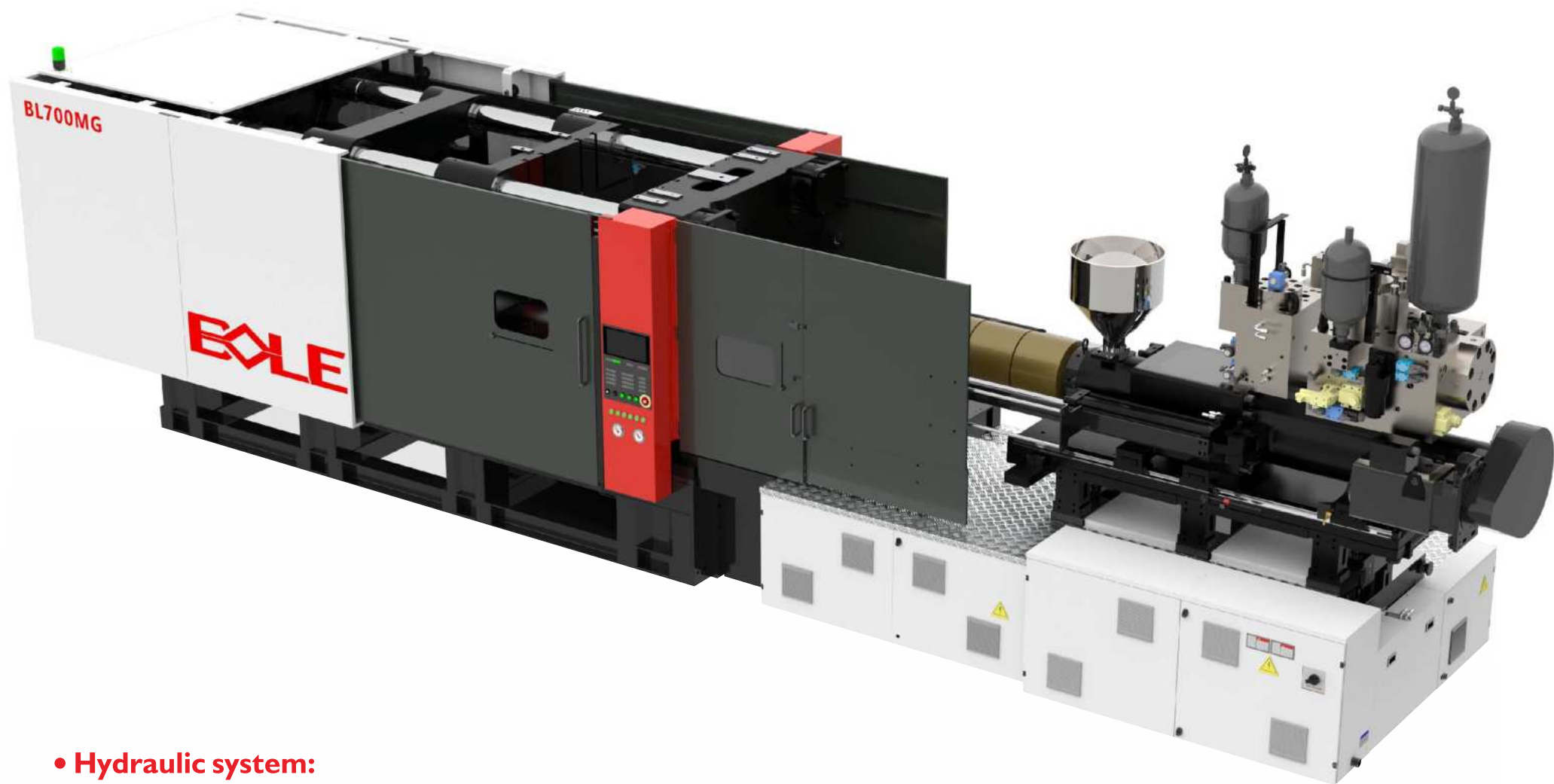
**National Patent of Invention  
Central Mold-locking system**

**Center-clamping Structure**  
Obtained the National Invention Patent of China  
(Patent No.: ZL2011 10250342.5)



- 01 High clamping force efficiency
- 02 Material Saving
- 03 High accuracy  
Less possibility of flash
- 04 Offer good protection to mould and platens
- 05 Suitable for small mould
- 06 Big open stroke



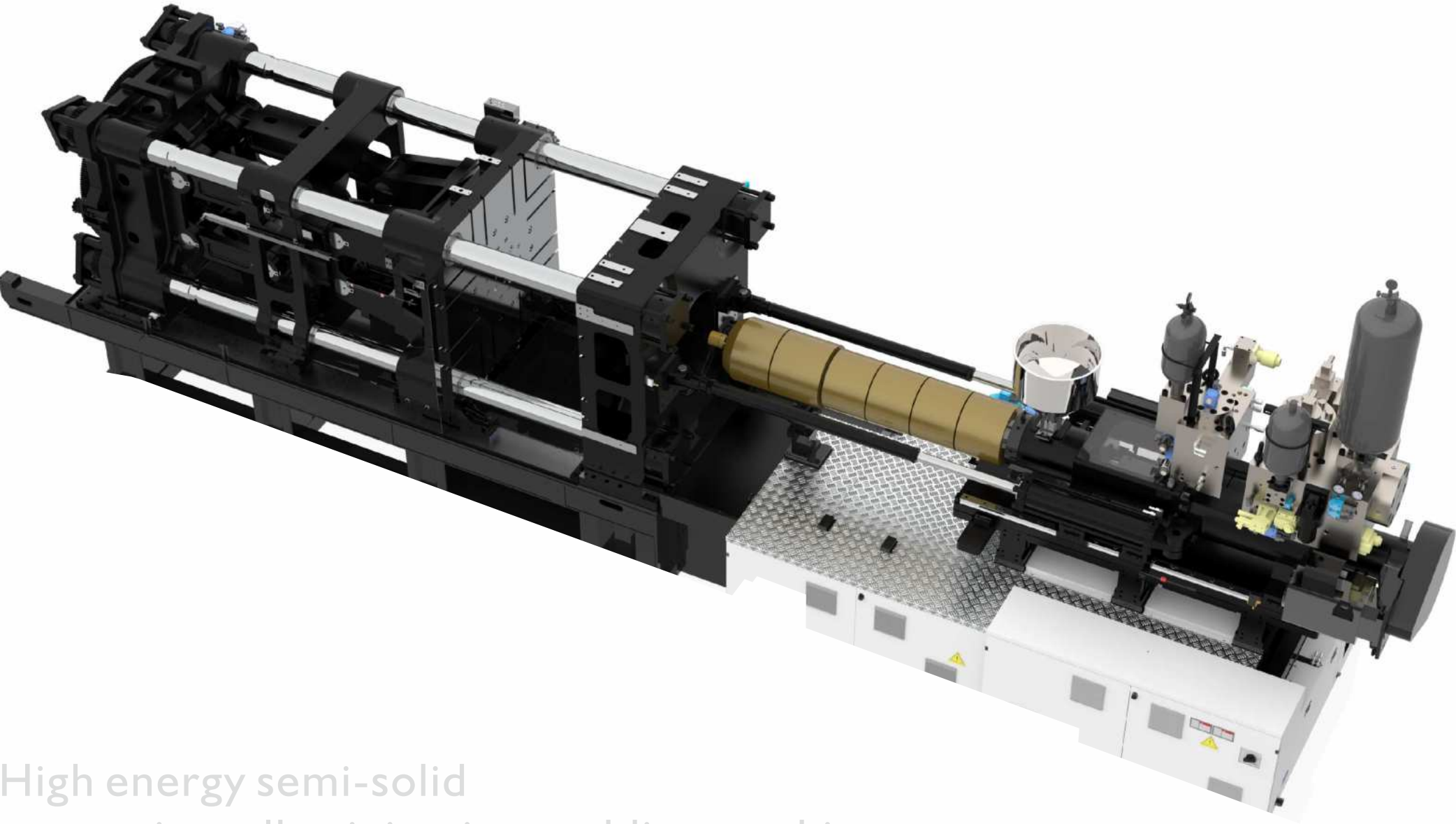


- **Hydraulic system:**  
With low momentum servo system, the response time is faster(30-50ms), system pressure rises up to 17.5 Mpa, injection pressure&speed increased greatly.
- **Central locking toggle system:**  
With special hydraulic system for clamping and patent software algorithm, repeat accuracy can compare with proportional directional valve. ( $\pm 0.5\text{mm}$ )
- **Injection unit:**  
With new injection cylinder design, the injection oil back resistance is lower.
- **Controller:**  
Quick response controller with OPC system. Showing the curve of injection speed, oil pressure, and the position of Valve.

# Modular Design Industry 4.0 Control system

- The control system adopts a modular design and opens the industry 4.0 expansion interface, which can facilitate function expansion and information exchange.

# Efficiently Economize On Energy



High energy semi-solid magnesium alloy injection molding machine

## Efficient

- Reduce production steps
- Standard servo motor, shorten the molding cycle
- Fast cycle time, continuous 24-hour production
- Rotated injection unit, easy maintenance.

## Energy saving

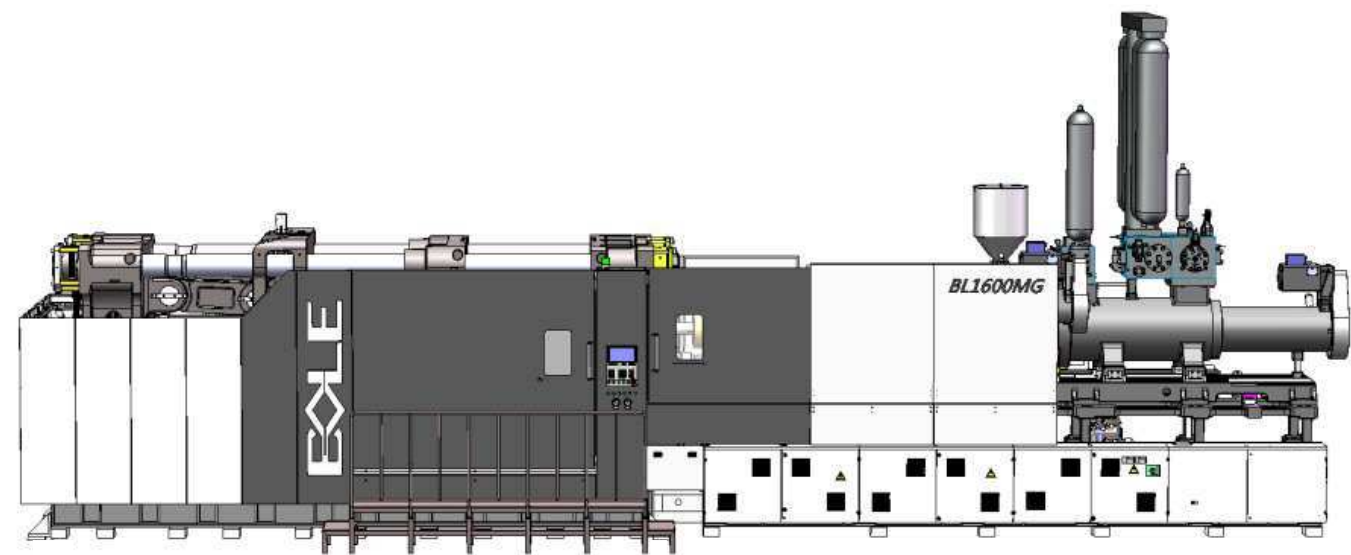
- No melting furnace is required, saving 50-60% of energy
- The mold entry temperature is low, effectively prolonging the life time of the mold,
- Material saving
- The equipment layout is compact, which can save 30% of the plant area

• Model: 300-900T



Model	Clamping force (T)	Injection capacity (g)	Platen size (mm)	Tie bar distance (mm)	Mold height (mm)
BL300MG	300	500	960 × 910	660 × 610	250-600
BL500MG	500	1095	1200 × 1140	810 × 750	320-800
BL700MG	700	2126	1400 × 1400	950 × 950	350-950
BL900MG	900	3820	1550 × 1550	1060 × 1060	500-1100

• Model: 1100-2000T



Model	Clamping force (T)	Injection capacity (g)	Platen size (mm)	Tie bar distance (mm)	Mold height (mm)
BL1100MG	1100	6032	1750 × 1750	1150 × 1150	500-1150
BL1300MG	1300	8028	1870 × 1870	1250 × 1250	500-1250
BL1600MG	1600	15024	2000 × 2000	1300 × 1300	500-1400
BL2000MG	2000	20358	2450 × 2350	1600 × 1500	600-1500