The Passionate Pursuit of Perfection

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INNOVATION

Improves Core Competitiveness
for Customers.

BOLE 伯乐智能

BOLE Intelligent Machinery

BOLE Machinery
Breakthrougher of Plastic Moulding Process

Six main series with more than 300 machine models

Central Clamping Toggle
Invention Patent in China

(Patent No.: ZL201110250342.5)

ABOUT BOLE

BOLE Machinery (hereinafter referred to as “BOLE”) was founded in 1998. As a subsidiary of CHENGLU group, BOLE is a high-tech enterprises that focus on the research, development and manufacture of precision machinery equipment. It adopts the mode of “technology from Germany, made in China”, integrates design, manufacture, assembly, testing and sales, and provides complete injection moulding devices special for customers. BOLE injection moulding machines are developed and directed by German experts. The machine range covers nearly 100 specifications and 6 main series, including high-precision Two-Platen DK series, hydraulic servo EK-S series, full-electric FE series, carbon-fiber products intelligent moulding line CIML series, high-speed HK series and multi-materials injection MK series. The clamping force range is from 70 ton to 6800 ton, and the injection weight range is from 65g to 60000g.

As a latecomer in China's injection moulding machine market, BOLE keeps competing continuously with other brands at markets, and wins the trust from customers with high-performance and high-stability product as well as customized service. BOLE injection moulding machines have been sold and exported to more than 70 countries so far. Especially in the last three years, the developed countries in America and Europe have grown into the main markets of BOLE.

BOLE proposes a comprehensive strategic partnership with the well-known household appliances enterprises including GREE, TCL, AUX, etc. Meanwhile, BOLE plays an important role in Auto industry and builds a strategic cooperation with famous auto-part suppliers including Ningbo HuaXiang Group, Germany Adler Pelzer Group, etc. So far BOLE has entered the supporting systems of Auto-part manufacturers and suppliers including Beijing Benz, Shenyang Huachen BMW, China FAW Group, Shanghai Volkswagen, Shanghai General Motors, Geely Automobile, etc.

In the future BOLE will take intelligence, efficiency, precision and energy saving as the direction of innovation and development, and concentrate on improving the core competitiveness of customers. Besides, BOLE will also continue to advance the path integrated by Hi-Tech industry development, professional production and perfect sales, and establish a sustainable modern high-tech brand.

Precess

1998
Ningbo shuangma machinery industry co. LTD. Was established

2002
Thousand-ton-level injection moulding machine was developed with proprietary intellectual property rights

2003
Listed as the Chinese Injection Molding Machine Characteristic Industrial Base

2004
Undertook the national 863 scientific research project, and built provincial engineering (technology) center

2005
Energy-saving servo system was developed with proprietary intellectual property rights, and the first set of super energy-saving servo injection moulding machine was produced

2006
Awarded Nation High-tech Enterprise by the ministry of science and technology

2007
CHENGLU Group wholly owned SHUANGMA Machinery, and invested 300 million RMB to build BOLE industrial park

1998-2007

2008
Invested 130 million RMB, Introduced top talent from abroad, and developed successfully EK series injection moulding machine with central locking mechanism

2009
Launched mall and medium-sized injection molding machines of EK series successfully; The Malaysian factory was completed and put into operation; Bole developed rapidly on transnational operation

2010
The third generation super-energy-saving servo precision injection molding machine EK series was developed and launched totally with cost effectiveness, outer-crank-shaft mechanism and larger parameters; BOLE's scientific research bases were established for servo energy-saving project in Chinese Academy of Sciences (CAS) and Nanjing University of Aeronautics and Astronautics (NUAA)

2011
BOLE entered the rapid development stage, and Central Locking Structure of EK series was awarded the national patent.
(Patent No.ZL20111O250342.5)

2012
Large-volume injection moulding machine was developed

2008-2012

2014
Became the Top 25 enterprise of comprehensive strength among China's plastic machinery industry; Became the Top 10 among injection moulding machine enterprises in China

2015
The team led by a senior German expert, developed world-leading Two-platen machine DK series successfully; Carbon-fiber products intelligent moulding line CIML series was developed and launched; became No.1 on the growth rate of China's plastics industry; established a Strategic cooperation with Gree Electric Appliances Inc

2016
Launched servo energy-saving injection moulding machine EKII series

2017
Joined China plastics processing industry association (CPPIA) and became the governing unit; R&D success on the next generation of EK-S series

2018
R&D success on well-built MK series
Successful development on MK series with multiple injection unit
Gain market recognition after application of Ultra-high Molecular Weight Polyethylene mould technology
In the down market environment of the overall industry, the performance has grown steadily and reached a record high.

2014-2018

2019
Successfully developed optical machine, tie machine, and have been put into the market.

2020
Successfully developed high-speed packaging machine, to create Bole Jiangxi Industrial Area.

2021
Developed magnesium alloy semi-solid injection molding machine.

2022
Widen-platen and servo energy-saving series EKW put into the markets.
MH Series two platen multiple injection moulding machine put into the markets
MM Series horizontal-rotary-table reversed injection moulding machine put into the markets
Jiangxi Factory Phase I was completed

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2019-2022

PEOPLEORIENTED

Talent has become the core competitiveness of the enterprise. For a long time, BOLE spares no effort to take various measures to cultivate and Introduce talents, and elevates it to an unprecedented strategic height to create an innovative and dynamic talent team.

Innovation

Be fearless of hardships and challenges, and always be the seeker of industry technology.

Preciseness

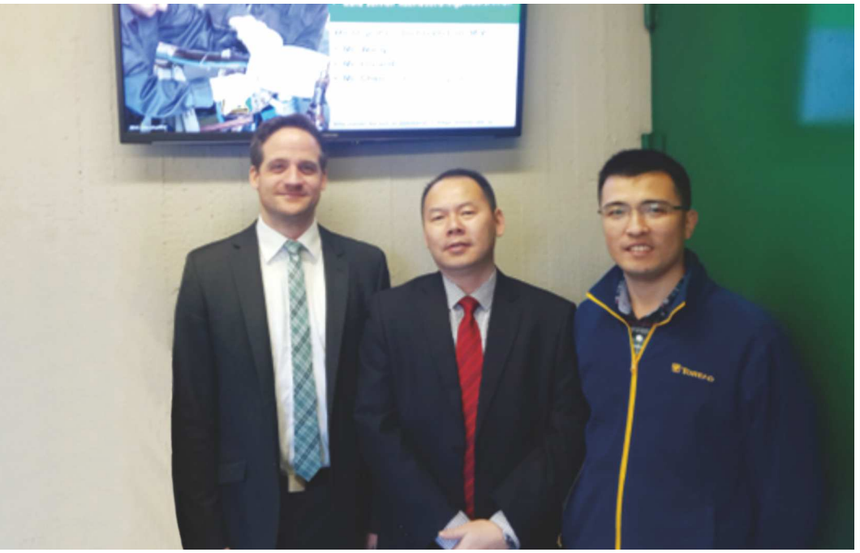
The foremost spirit of the BOLE's R&D team is the characteristic of seriousness, preciseness, carefulness and cautiousness.

Concentration

Concentration is an attitude. BOLE focus on seeking the most advanced technology in the world.

Inginuity

Carry forward the spirit of the Great-country craftsmen, work with great care and keep improving.



Cooperate with World's leading R&D institutions

Cooperate with World's leading R&D institutions, incl.

- Injection Moulding Machine R&D Center of University of Aachen in Germany
- Polymer Center of University of Pat Bourne in Germany

BOLE R&D CENTER

BOLE Research and Development Center

BOLE undertook the national 863 scientific research project and built the provincial engineering (technology) center in 2004. This technical center develops gradually into BOLE's injection moulding institution. German top technical expert Mr. Karl leads nearly 100 rich experienced design experts and engineers, works as 6 different teams, keeps research and development of new products and technology, and design all kinds of machines to meet different requirements from customers.

Quality-the basis of enterprise's survival

SHARP TOOLS MAKE GOOD WORK

MAZAK FH-8800 FMS

TOSHIBA CNC

FIVE-FACE CNC

Processing Equipment is the important part and the basic of productivity, it's the main tool when we doing Production and management, it's also the fortune for our living and development.

In order to ensure compliance with relevant technical requirements, and provide customers with high quality products, we introduces Japanese, European high-precision processing equipment, such as: original Japanese Mazak, Toshiba, Mitsubishi and other processing equipment to ensure product consistent, and high standards, of components configured to enhance the overall performance and quality, our company is one of top companies of the importers and exporters of injection molding machine in China.

Three coordinates detector

Metal hardness tester

Universal material testing machine

Melt folw index tester

Metallographic microscope device

Mobile metallographic instrument

Laser absolute tracker

QUALITY CONTROL

In order to ensure performance and stability of the product can surpass the level of Chinese plastic machinery comprehensively, BOLE Machinery introduced the European management experience, promoted the quality management method of failure mode and effects analysis (FMEA), through the development and review the failure modes and effect analysis (DFMEA) which is designed to control the source of the quality, and pursued the quality's process failure mode and effect analysis (PFEMEA) during production, the quality standards to meet the European standard gradually. Ensuring that product quality is stable and reliable, as a strong support, is provided for the research and development of new projects.

USER SATISFACTION IS THE PURPOSE

The service only starts, the satisfaction has no end,
the user's satisfaction is our eternal pursuit!

Our sales network covers more than 73 countries,
such as, U.S., Turkey, Mexico, etc.

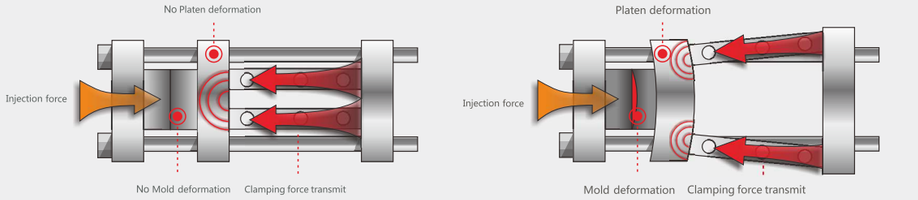
TOSHIBA AUX TCL Haier GREE SHARP BMW CHERY
Midea Panasonic LG CHIGO KIA Ford TOYOTA

Mercedes-Benz FOXCONN TESLA CITROËN 东风雪铁龙 HYUNDAI SAMSUNG MATTEL
中国南车 TATA BEIFA Adler Pelzer Andy Yanfeng 白云清洁

Central Clamping Toggle Invention Patent in China

EKH Series
Hydraulic Servo Energy Saving Injection Moulding Machine

Toggle System Comparison



BOLE centre clamping structure

Traditional toggle system

Central Clamping Toggle Invention Patent in China

(Patent No.:ZL2011 10250342.5)

01 High utilization of clamping force

After sample survey, clamping force efficiency of BOLE central clamping toggle design can reach 100%, Clamping force efficiency of traditional edge clamping force only can reach 80-85%.

02 Material Saving

BOLE central clamping toggle design can save 2-5% material for 80% of customers mould(comparing to customer's moulds clamping toggle design).

03 High accuracy Less possibility of flash

Repetitive positioning accuracy of mould opening&closing: ± 1mm
Product weight repetitive accuracy: ≤0.5%
Less possibility of flash, and save flash trim process

04 Offer better protection for moulds and platens

The latest design of clamping structure, averaged force and less distortion for mould platen. Precise low- pressure function for mould closing, proportional pressure control, iso-stress mould platen design, to extend mould life.

05 Wide mould size application rage

The latest clamping structure with less platen distortion, can bear averaged force and apply for the smaller moulds.

06 Bigger opening stroke

Central clamping structure can provide bigger opening stroke&ejection stroke than other brands' stroke, and can install larger moulds easier (Especially for deep cavity working condition.)

Big

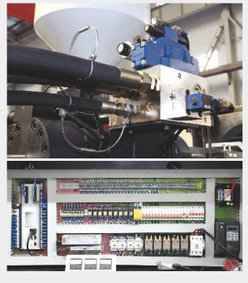
Dimension-one level bigger than competitors

Precise

Finished products with high precision

Save

Save 2-5% material for customers



- Central clamping toggle,invention patent in China
- Fully optimized hydraulic system,improve efficiency
- Hydraulic parts from famous international manufacturers, ensure machine with reliable performance
- Optimized electrical cabinet design,conform to CE,UL,KCS or other safety standard.
- Electrical parts from famous international manufacturers,ensure machine with reliable performance;EST controller is standard.
- Plasticizing system originated from German design,and the efficiency improve 20% above the performance of other Chinese manufacturers. (Common plastic materials ABS,PS,PP,etc.)

Champion of Three-platen I.M.M.

EKW Hydraulic Servo Energy Saving Injection Moulding Machine

Large

With widen platen and central clamping toggle, at the same tonnage model, larger opening stroke, wider tie bar space and greater mold height.

Energy-saving

By sampling test, the application of the latest servo system technology for the same tonnage model to do the same product, under the same condition, Bole machines save 15% at least than the traditional servo energy saving machine;

It is recommended to choose the latest electric charging solution onto Bole. For the same tonnage model, the energy consumption of charging unit can save more than 35%, and the energy consumption of the whole machine can save more than 15%.

Accurate

Precision control adopts the latest hydraulic oil circuit design & patent intelligent software control. The repeat precision of opening/closing mold position reach ±0.5mm;

Injection unit adopts linear guide rail & special cylinder with low oil return resistance & patent intelligent software control, and the repeat accuracy of injection weight reach 0.2% according to the new international standard GB/T25156-2020.

Efficient

By sampling test, Bole central clamping structure can save 2-5% raw materials for more than 80% of molds. For example, using the same mold with the same amount of raw materials to do 100 pcs, Bole machine can produce 102-105 pcs.

With Germany design plasticizing unit, plasticizing efficiency is greater, saving the charging time.

Alternative of Fully-electric I.M.M.

EKS Hydraulic Servo Energy Saving Injection Moulding Machine

Material saving

By Bole's sampling survey, Bole central clamping structure compared with the other traditional structure, will save 2%-5% of raw materials on more than 80% of molds.

Energy saving

After sampling and testing by Bole, when the latest servo control technology is applied to produce the same products with the same tonnage machine under the same working conditions, compared with the traditional servo energy-saving control, the energy consumption will be saved by more than 15%.

Stable running

More than 60 of the latest technologies are applied to ensure that the mechanical strength and stability reach the industry's advanced level.

Accuracy movement

Precision Dimensional Index: Repetition accuracy of mold opening /closing position: ±0.5mm;
Repetition accuracy of injection weight: 3‰.

Intelligent control

Industry 4.0 related, the U77 OPC/UA interface is open for free, which can be connected with the MES intelligent IoT management system to open a new era of intelligent factory.

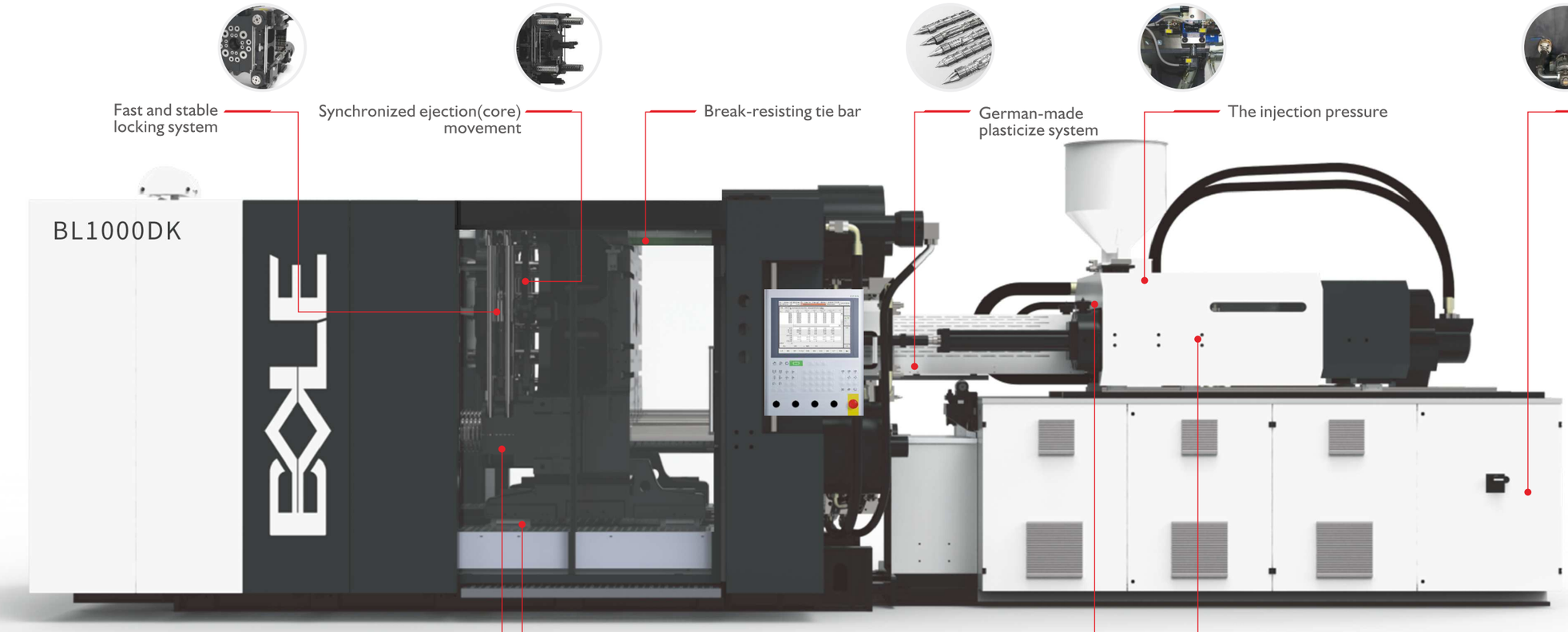
BOLE EKS hydraulic servo energy-saving injection moulding machine perfectly combines the advantages of traditional machine, and applies more than 60 new technologies in mechanical structure units, electrical, hydraulic and software systems, assembly processes, etc.

DK Series
Two-platen Injection Moulding Machine

GERMAN TECHNOLOGY MADE IN CHINA

DK Series two-platen injection moulding machine, designed by BOLE German chief engineer, will bring big change to two-platen machine market of China.

Operated by independent team, ensure machine with German level quality and European grade machine performance.
More than 100 tests and 20 patents, all-round improvement in speed, precision, stability.
Benchmarking European IMM brand, DK already become the best choice for auto industry.



Fast and stable locking system

Synchronized ejection(core) movement

Break-resisting tie bar

German-made plasticize system

The injection pressure

Independent filter cooling system

Tie bar clamp nut with progressive screw teeth design

High precision&rigidity linear rail

Stable feeding zone temperature

Special injection cylinder design

FE Series
Electrical Injection Moulding Machine

Precise High-speed Common Reliable

E-version of Central Clamping Toggle System

Central clamping toggle,invention petent in China

(Patent NO:ZL2011 10250342.5)

- **Saving**
  - Save material
  - Save electricity
  - Save nr. Of machine
  - Save maintenance
- **Precise**
  - Precise position
  - Precise speed
  - Reliable mold protection
  - Precise parallelism
- **Large**
  - Large space between tie-bars
  - Large open stroke
- **Clean**
  - The product area is free of oil

Advantage Of Full Electrical Injection Moulding Machine

Compared to the traditional hydraulic injection moulding machine

Energy Saving
Efficient energy conversion, Reduce power consumption. No need water for hydraulic oil cooling.

Efficient
Synchronous machine movement is possible to achieve a short cycle time

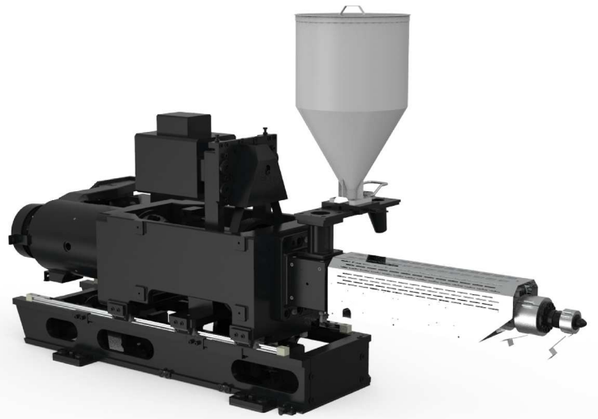
Precise
Up to 0.01mm high position control accuracy, ensure product quality

Clean
No pressure hydraulic oil, keep a clean production environment

High Speed
High-speed & smart movement control for mold and injection, fulfill different application

Quiet
Low noise level, create comfortable environment

Patented Encapsulated Ball Screw Structure



Breakthrough

- Encapsulated ballscrew, reduce the requirement of workshop environment
- The heat created by friction is taken by oil bath, Ballscrew is well kept cool.
- Lubrication is kept on the friction surface by oil bath

MH Series
Two Platen Multiple Injection Moulding Machine

German Origin
Breakthrough and Innovation

Optimize molding solutions
To provide the most suitable solution with multi-injection unit

Large servo turntable system

With wide plate design, the mold volume is big and has a wide range of applications.
Meanwhile, it also has variety of functions and can meet customers' specific needs

Single cylinder injection structure

Based on this special structure, the injection piston won't rotate together with screw to avoid the risk of oil leakage.

Break-resisting tie-bar

Patented break-resisting design of the tie-bar, with integral structure and large-radium fillet during high-pressure piston and tie-bar, is 5 times stronger than the normal threaded connection, it can eliminate stress concentration and assure the stability of long-time running.

Diversified mobility (Center distance adjustable)

The center distance of the mold can be adjusted and moved in a variety of ways.
Distance between two nozzles is changable as the injection unit is left or right adjustable.
Three components can be produced by adding another universal injection unit.

Fast and stable electric nut brake system

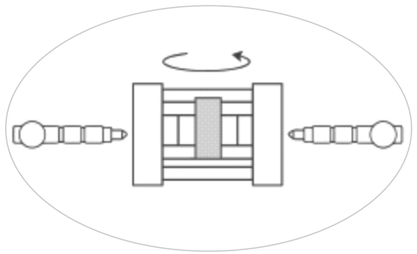
Adopt direct driving motor, high efficiency and energy saving. Closed loop control, fast and accurate. Left and right independent control, stable and reliable. Easy to maintain, clean without stains.

Linear guide in clamping unit

- The movable platen is supported by linear guide with high accuracy and intensity in cooperation with sliding shoes, the friction of the linear guide is low (f=0.2 with traditional sliding shoes ,f=0.004 with linear guide), so that the movement of the platen is smoother and steadier, and the control precision is higher and energy consumption is lower.
- The linear guide with rolling friction needs less lubrication which can avoid the splashing of the lubricating oil and make the machine more clean and tidy!
- Linear guide with high intensity can help avoid the swing and tilt of the mold during the movement to protect the mold.

MM Series
Horizontal-rotary-table reversed
Injection Moulding Machine

Perfect integration of technology and production



Horizontal-rotary-table multi color machine

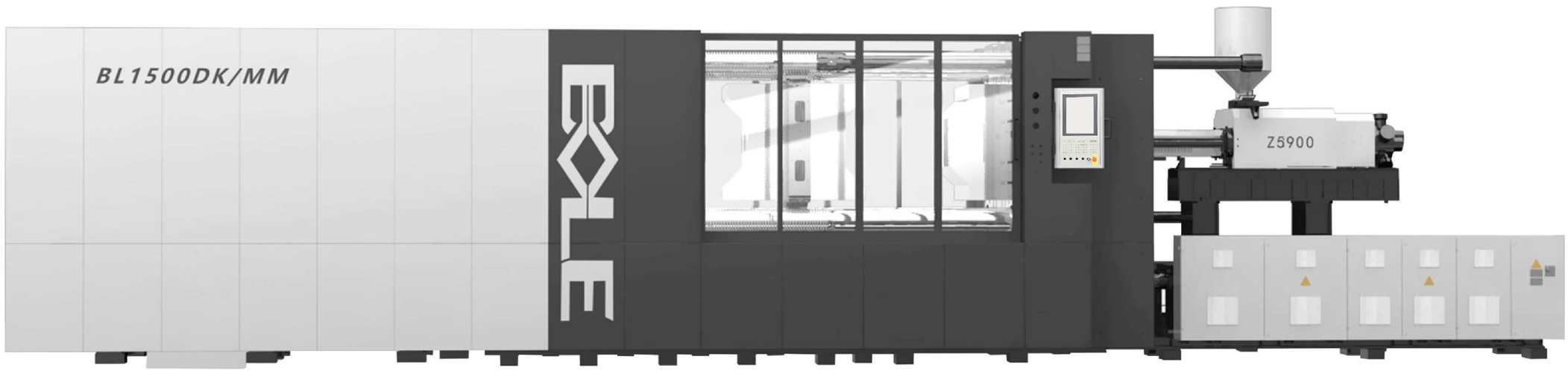
The horizontal rotary table is used for two-color production, which can avoid the inertia problem of vertical rotary table rotation and the influence of gravity. With high bearing capacity, it is suitable for medium and large two-color products.

Two-Platen structure

The clamping unit adopts two-platen structure, two set reversed injection units are designed horizontally and coaxially. With stack mold technology, the machine save workshop space and meet the large-size two-color mold production requirement.

One machine serves multiple purposes

It can be applied to the production of monochrome products, with the production capacity increased by twice. The mold has a wider scope of application, and one machine can be used for multiple purposes.



MK Series
Multiple Injection Moulding Machine

With excellent performance and quality, BOLE MK series multiple IMM will better meet the demand of automobile, household appliances, daily necessities, food packing and toy industries for their appearance and personalized design and will help customers improve their core competitiveness.

Rotary Platen
With wide plate design, the mould volume is big and has a wide range of applications. Meanwhile, it also has variety of functions and can meet customers'specific needs.

Standard with servo turntable system
Turntable is fast, stable and precise in movement;
Easy to operate. Stable in oil pressure and oil temperature.

Tie-bar detach
Without lubrication on the connection between tie bars and platens, so clamping unit keeps clear.
No copper bush to be wear out for machines from 170-450Ton

Linear guide
MK series from 170-450Tn, all adopt linear guide. High-precision and high-rigidity linear guide, matches with slide foot to assure excellent parallelism and positioning accuracy.
Linear guide with low friction and little energy consumption, makes mould opening and closing faster and more stable. Meanwhile, avoid the problem of lubricating oil splashing, making the whole machine run more stable and faster.

Two sets of independent injection cylinders at Injection Unit
Two sets of independent injection cylinders at Injection Unit, which can be matched according to customers' requirements.

Single injection cylinder structure
Based on this special structure, the injection piston won't rotate together with screw to avoid the risk of oil leakage.

German designed plasticizing system
German designed plasticizing system,based on common materials, e.g. ABS, PS, PP, the plasticizing efficiency is at least 20% better than that of domestic level.

Stable feeding zone temperature
Temperature at feed opening is under control of closed loop at temperature unit. It improves the efficiency and accuracy of Injection Unit.

High rigidity frame
All modes of MK adopt high-rigidity machine frame, linear guide and modular design to achieve better performance.

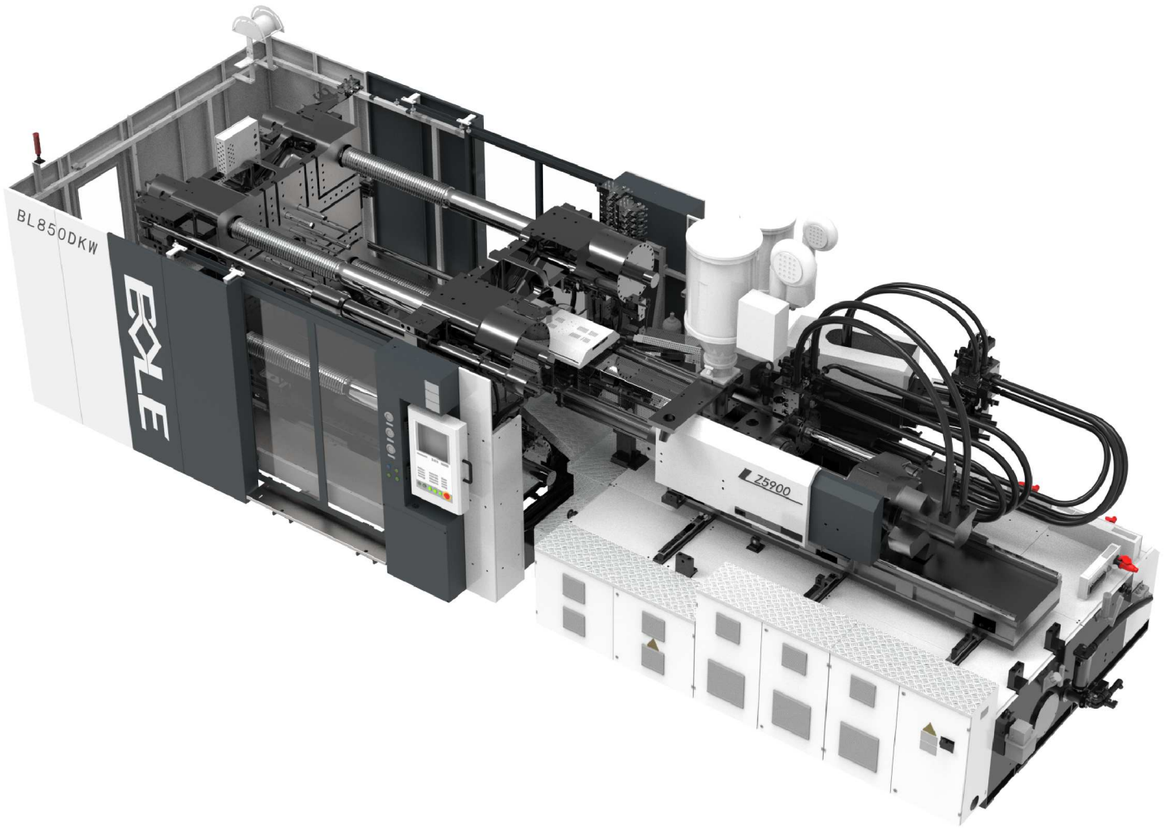
Precise
Mould open & close positioning accuracy: ±0.5mm
Injection weight accuracy: 3‰

Flexible
The injection moulding progress is set according to the characteristics of product to ensure product quality

Energy saving
Hydraulic servo system has advantages of saving energy, protecting environment and high control accuracy

Economy
After sample survey, BOLE central clamping toggle design can save 2-5% material for 80% of customers mould(comparing to customer's moulds clamping toggle design).

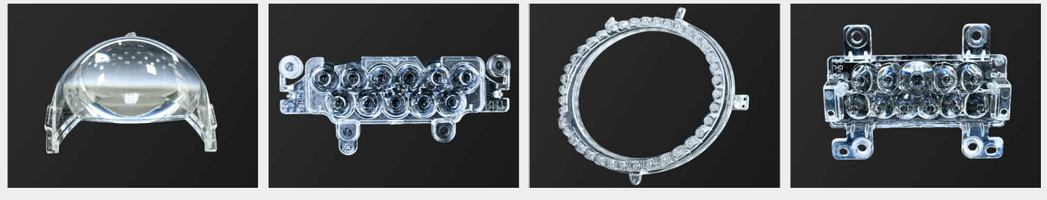
Bole optical lamp-guide Machine



Automobile Lamp

Application

Suitable for front/rear lamp, Interior atmosphere lamp and signal lamp of vehicles.



Fiber Reinforced Thermoplastic Composites

Designed Specially For Lightweight
Application Requirement

Committed To Growing into a One-Stop Solution Provider In The Field Of Fiber Reinforced Composite Molding

Light weight
Accelerate the lightweight process of the whole industry, ensure the qualified rate of products, can control the products weight be reduced by 65%.

High strength
Products performance far beyond the ones made by traditional process.

Configuration is programable
Allocate the product / fiber configuration flexibly, can be designed according to your requirement.

Environment protection
Considering of the investment cost ,products can be recycled.

Process technology
Is diverse ,compression moulding, injection moulding and hot press are selectable.

Short production
Period reduce tedious production process, raise the production efficiency.

High accuracy
It also be applicable to high accuracyproducts, repeatability accuracy ±0.05%.

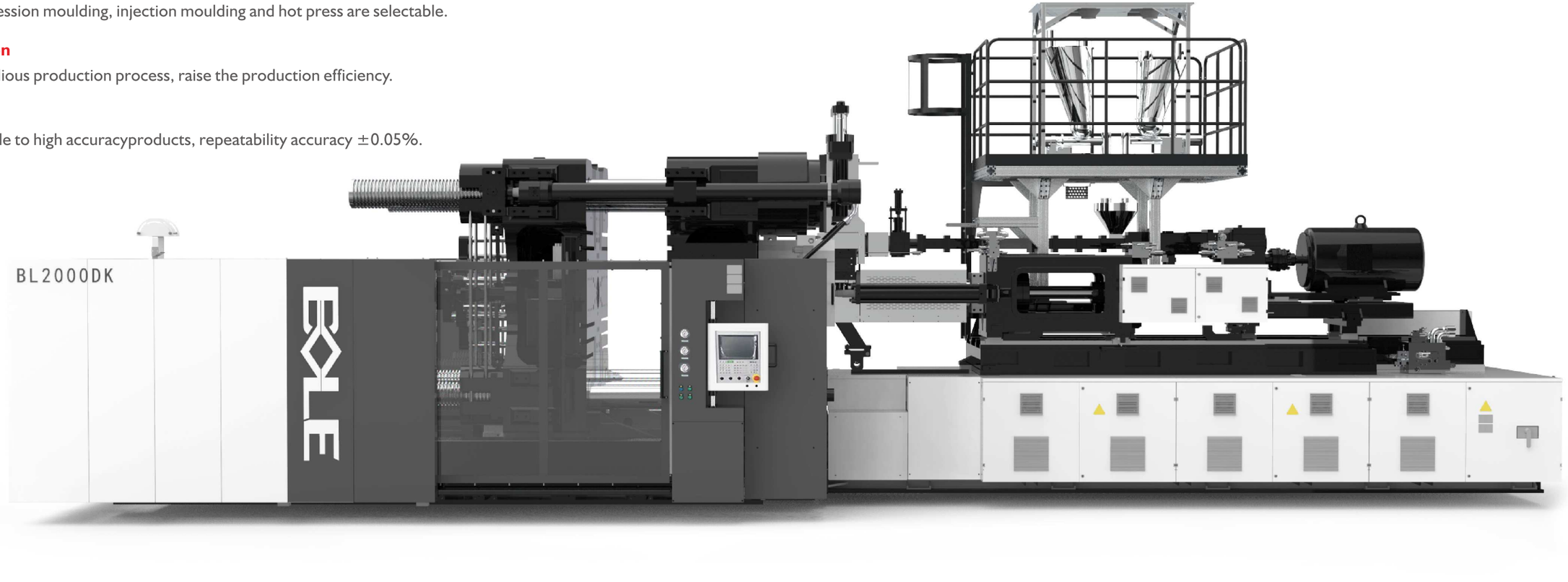
A variety of processes, with flexible and diversity

STF Injection moulding

LFT-G Injection moulding

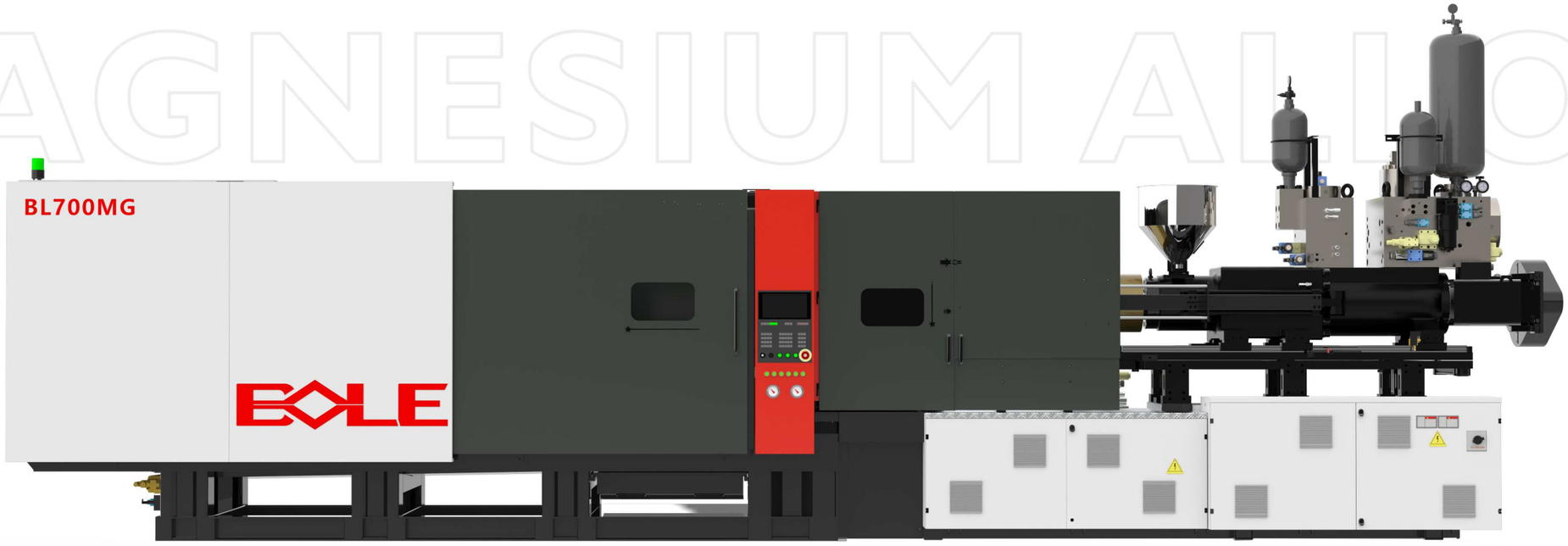
online mixing injection moulding(LFT-D-IM)

Injection and heating pressing moulding(IHM&OIHM)



High Energy Semi-solid Magnesium Alloy Injection moulding Machine

BOLE technology makes metal forming so Convenient



Safe

It is directly injected into the mold for cooling and molding. The injection process is closed and does not contact with the air.
It does not need gas protection, so as to prevent explosion, scald, mechanical injury and other accidents;
Safety, environmental protection and good working environment

Simple

A one-step forming method integrating the preparation, transportation and forming process of semi-solid slurry;
Effectively avoid the oxidation of magnesium alloy;
Excellent microstructure and properties

Rigid

Invention patent——central clamping toggle, clamping force effectively acting on the mold.
Higher clamping rigidity, protection of the mold, effectively prevent the mold from overflowing

Accurate

High speed injection curve display, which can accurately display the injection speed, oil inlet pressure, oil return pressure and valve core position, so that the molding process parameters can be displayed

Efficient

The production process is compact, the rhythm is fast, and the cumbersome production process is reduced;
The product production cycle is fast, and it can be produced continuously for 24 hours

Energy-saving

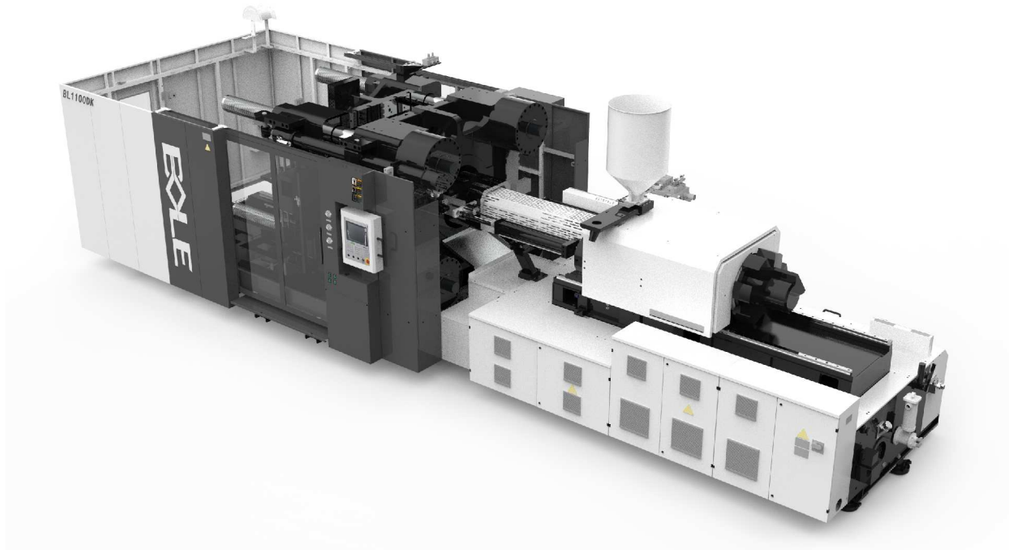
No melting furnace is required, saving 50-60% of energy;
Low mold entry temperature, effectively prolonging the service life of the mold;
The material handle is short, the slag bag is small, the raw material is saved, and the production cost is saved.
The equipment layout is compact, which can save 30% of the workshop.

UItra-high Molecular Weight Polythylene Moulding Machine

GERMAN TECHNOLOGY MADE IN CHINA

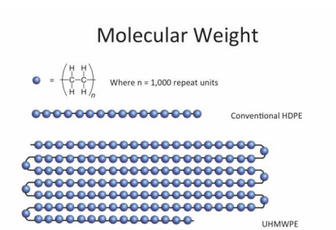
Advantages of UHMW-PE injection moulding machine

- **One-step moulding technology, no need secondary processing and welding, high efficiency and less manpower.**
- **Injection moulding technology can guarantee the high repeatability of products.**
- **Moulding in one, high intensity product, no leakage risk.**
- **Less materials waste, low production cost.**



(UHMW-PE：Ultra-high Molecular Weight Polyethylene)

UHMW-PE is a linear material that have more than 1,500,000 polyethylene chains without branch in one molecule. A common UHMW-PE chains are about 1,000,000-6,000,000. The highest one can reach 10,000,000. It's an engineering thermoplastic with excellent comprehensive performance. UHMWPE is a subset of the thermoplastic polyethylene. It has extremely long chains resulting in a very tough material

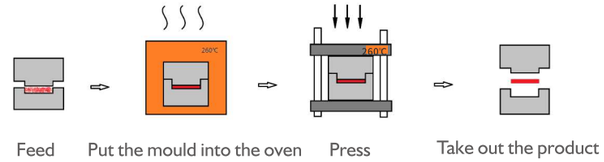


Four major difficulties encountered in the forming of UHMW-PE by the usual thermoplastic processing method :

- The melt viscosity is high, the melt viscosity is as high as 108 Pa.s, and the melt flow rate is almost zero.
- The friction coefficient is small, so it is easy to slip in the feeding section during the feeding process and cannot advance forward.
- The critical shear rate is low, and at very low shear rates (10-2/s), melt fractures may occur, which decrease with increasing molecular weight.
- The moulding temperature range is narrow and easy to oxidize and degrade.

Moulding

In the processing method of UHMW-PE, the molding-sintering method is the largest and most primitive method so far. After pressurizing the mold, the mould and the raw materials are put together in a heating furnace for heating and plasticization, and then Remove the cooling and finally remove the product.



Feed | Put the mould into the oven | Press | Take out the product

In this moulding process, the key is to control the pressure, sintering temperature and time. The pressure is small, the product texture is not dense, and the physical and mechanical properties are poor; otherwise, it will cause additional power consumption. The sintering temperature and time are selected according to different products, and it is preferred that the product be transparent. If the time is short and the temperature is low, the product will not be plasticized and will have a white core; otherwise, it will undergo discoloration and degradation.

VS

Introduction of BOLE's moulding

Advantages：

Moulding mechanization, automation, and higher efficiency

Lower energy consumption, better working environment and reduced manpower

Consumption and raw materials are more economical.

Our process flow

Clamping → Mould pre-heat → Injection

↓

Ejection ← Open ← High pressure (with cooling and charging)

Special Machine Series
—Optics Injection Moulding Machine

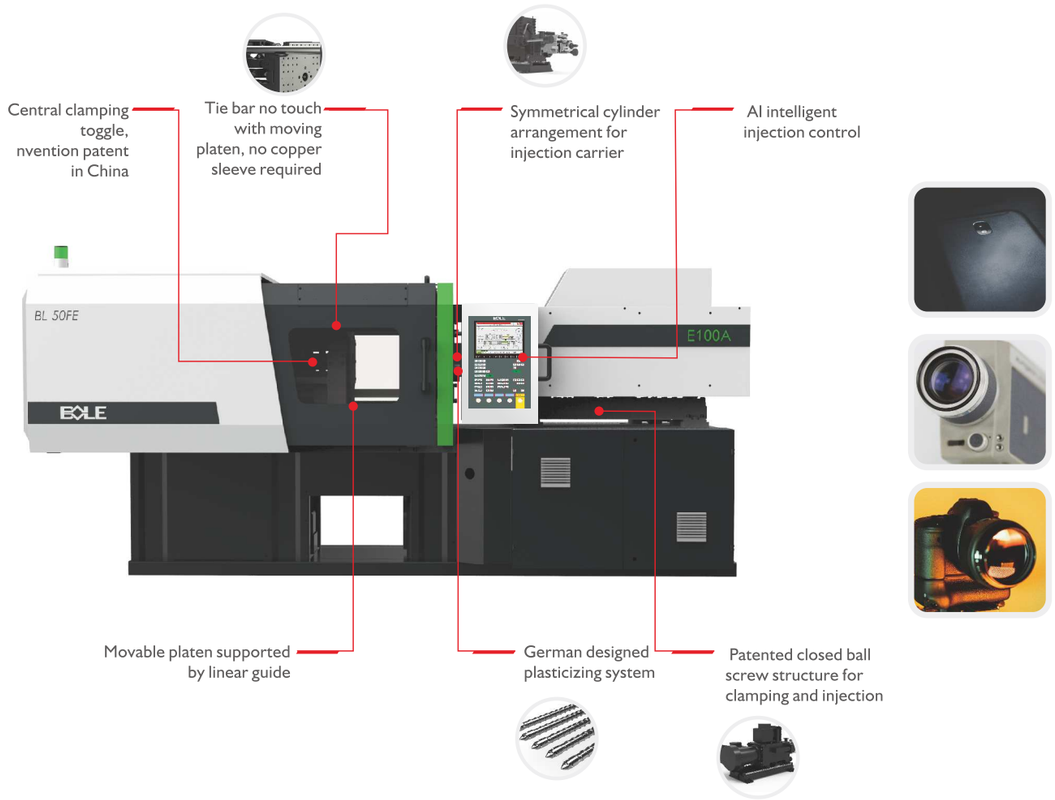
Bole ultra-precision full-electric optics injection moulding machine can effectively solve the following problems for you

The deformation of the mould platen is caused by the conduction of the mold temperature, which makes the amount of the optical axis offset and the surface precision of the two curved surfaces of the lens too large

Tilting the fixed template and opening the mold to tilt the template
Moving template straight forward accuracy is not smooth
Frame deformation, moving template sinking
Move template horizontal and vertical offset

Products have white spots and black spots

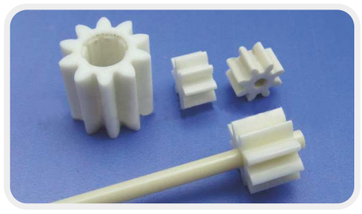
Injectable products have poor stability and low pass rate



Special Machine Series
—CIM MIM Injection Moulding

MIM CIM Injection Moulding Technology Introduction

Ceramic Injection Moulding (CIM) is similar to Metal Powder Injection Moulding (MIM), which is the main branch of powder injection molding (PIM) technology. It is based on polymer injection molding technology developed.
It is the fastest growing and most widely used manufacturing technology in the world due to its ability to produce complex shaped products with high dimensional accuracy, low machining volume, smooth surface, low cost and suitable for mass production.



Special Machine Series —Special Machine for Mobile Phone Accessories

Mobile Phone Accessories Industry Status

According to statistics, the national quarterly sales of smart phones is about 100 million units in recent years, smartphones have become a necessity for people. The so-called "water rise"The ship is high", the hot market of the smartphone bring the smartphone accessories market hot rise.

For the characteristics of this product, such as thin wall, light weight and difficult to form, with the advantage of the patented clamping structure, and the characteristics of the industry, Bole machinery designs the special machine for mobile phone accessories, focusing on the application of phone accessories (frame, case, button), electronic connectors, electricity sub-consumer products etc mainly made by PC and elastomers.

Advantages oF injection moulding machine for mobile phone accessories

- Central clamping toggle,invention patent in China
- Special screw for phone accessories, prevent black-spot, while-spot or yellowing
- Stable feeding zone temperature enhance working stability
- Prevent black-spot plating treatment for feeding zone
- High-performance soft tube, without any welding, prevent oil leakage.
- Intelligent software design/ EST Controller as standard
  Mold open& close positioning accuracy ±0.5mm
  Product weight repeating accuracy ≤0.3%

Machine model:BL130EKII/C290

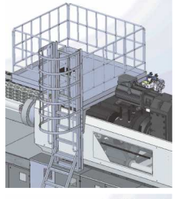
Row material: TRU 1090
Cavity: 2
Product : 5.5 soft phone shell
Thickness ： 0.7mm
Cycle time ： 14.0s

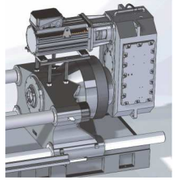
Two Stage Plunger Injection Large Shot Volume IMM

Solve the traditional problems on two-step machine, such as color change and carbon deposition

- Clamping force range from 4400-40000KN, injection volume from 10000cm³-300000cm³
- Double-cylinders for carriage, single cylinder for injection.
- Tie-bared efficient aerosol transforming mechanism.
- Multi-core pulling modes for choosing.
- Self-developed efficient, energy-saving servo system.
- Low pressure and high pressure pattens for option, suitable for different products.

Electric plasticizing advantage





- Stable output, high change precision
- More silent, more energy efficient
- Simplify structure and reduce pollution
- Bigger transmission ratio
- Synchronization of change , high production efficiency
- Provide custom-made solution as the special requirements, and the largest injection capacity reach to 250000g.
- Traditional injection structure can meet multiple moulding requirement for plastic products and decrease the exchange time of colour and materials.

Special Machine Series
—Dustbin Injection Molding Machine

The cost you saved can buy a new machine after 2 years

Save cycle time

Quick charging recovery
Cycle time save 1/3 (VS standard IMM)

Save energy

Electrical charging save energy
Power consumption save 1/3 (VS standard IMM)

Save investment

Special made dust bin producing IMM
Investment save 1/3 (VS standard IMM)

Save material

With same quantity material and same mould,
BOLE DB IMM can produce 3% more products.
Material cost save 3%.

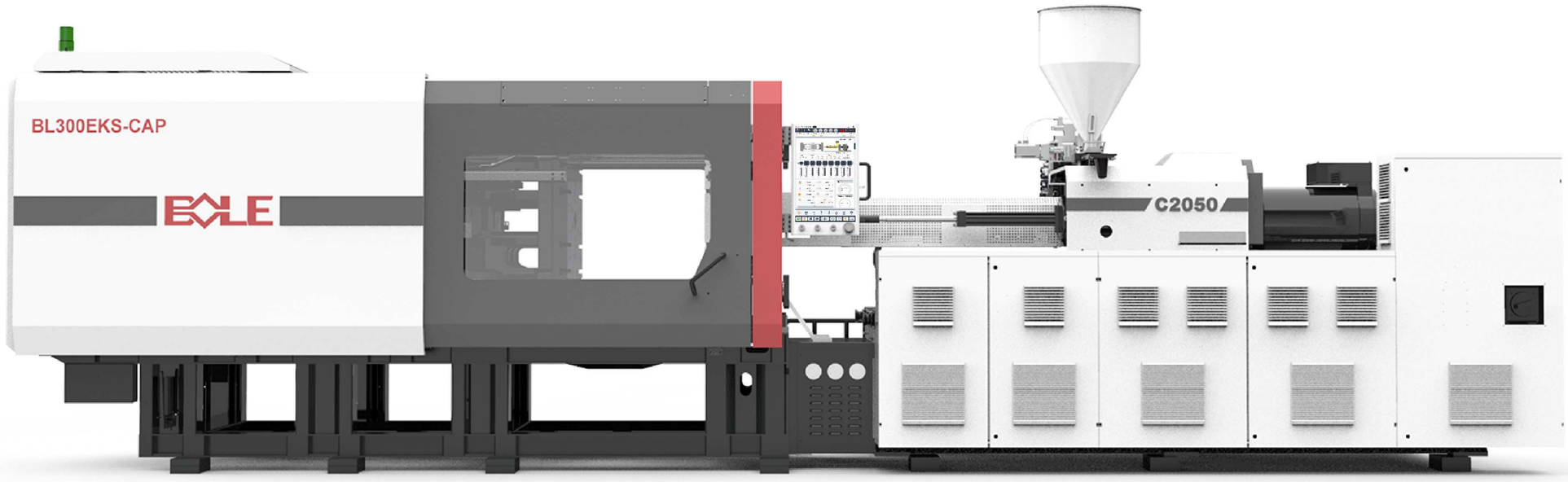
EKS-CAP center-locking high-speed packaging machine

Advantages

- Fully hydraulically driven, the injection unit adopts ACC auxiliary injection, the maximum shooting speed is 600mm/S;
- The special plasticizing system is customized for commonly used plastics in the packaging industry, and the plasticizing efficiency far exceeds the domestic level by more than 20%;
- Optional e-charging unit to realize synchronous pre-plasticizing function.
- European standard platen size, suitable for bottle caps, thin-walled multi-cavity products, and products with higher requirements for moulding cycle.

plasticizing efficiency far exceeds the domestic level by

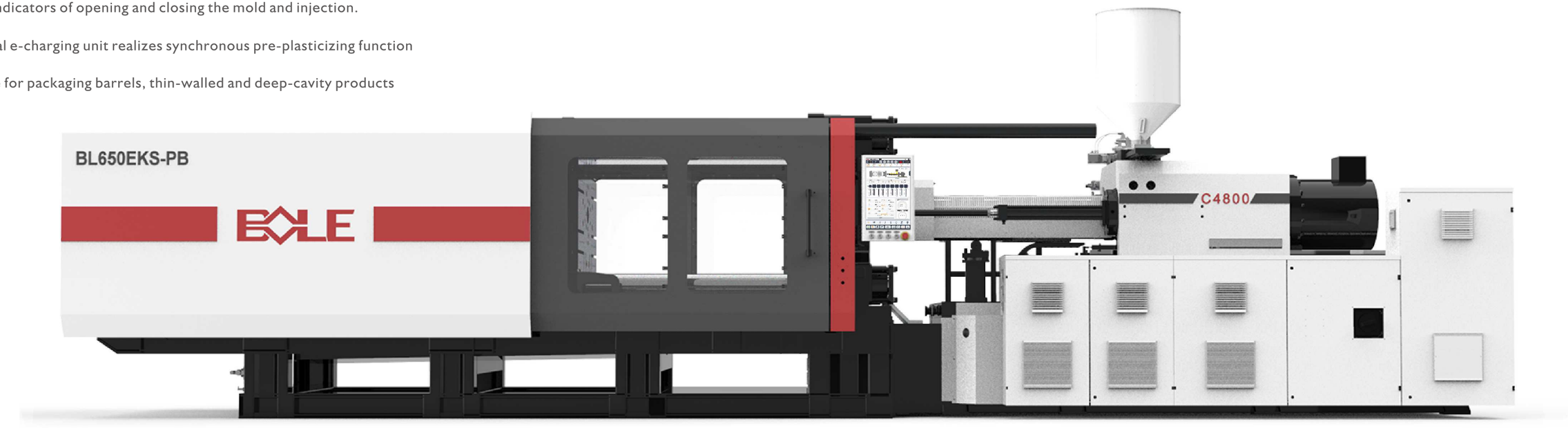
more than 20%



EKS-PB center-locking barrel type high-speed packaging machine

Advantages

- Fully hydraulic drive, increase the opening stoke, suitable for deep cavity product, the injection unit adopts ACC auxiliary injection, the maximum shooting speed is 600mm/S
- The special plasticizing system is customized for commonly used plastics in the packaging industry, and the plasticizing efficiency far exceeds the domestic level by more than 20%
- Adopts central clamping structure, the center of the template is stressed, the moving template is not deformed and moved, the wall thickness of the product is uniform, and weight close to the mold design value.
- The mold opening positioning and injection repeatability are high, matching the Austrian KEBA controller combined with BOLE patented control software to improve the accuracy of the two major indicators of opening and closing the mold and injection.
- Optional e-charging unit realizes synchronous pre-plasticizing function
- Suitable for packaging barrels, thin-walled and deep-cavity products



EKS-PB center-locking barrel type high-speed packaging machine

HK thin-walled high-speed packaging machine

Advantages

- Fully hydraulic drive, the third-generation servo pump drive technology of the injection unit, the maximum shooting speed is 500mm/S; the response time is less than 35ms;
- The special plasticizing system is customized for commonly used plastics in the packaging industry, and the plasticizing efficiency far exceeds the domestic level by more than 20%;
- Optional synchronous pre-plasticizing function.
- Main application scenarios, thin-walled packaging for lunch boxes, and thin-walled multi-cavity products for milk tea cups;
- A special plasticizing system for biodegradable materials can be selected for wider adaptability.

EKW-DN High-speed special machine

Advantages

- With widen platen and central clamping toggle, at the same tonnage model, larger opening stroke, wider tie bar space and greater mold height. Bole central clamping structure can save 2%-5% raw materials for more than 80% of molds.
- When the latest servo control technology is applied to produce the same products with the same tonnage machine under the same working conditions, compared with the traditional servo energy-saving control, the energy consumption will be saved by more than 15%.
- Bole's latest electric charging solution is optional for all series models. At the same tonnage models, charging energy saves more than 35%, overall energy saves more than 15%, product stability is increased by 30%. It is estimated to recover optional cost of the electric charging unit within 18 months.
- Equipped with patented software algorithm to improve control accuracy, human-computer interaction and optional industrial interface (OPC/U77, etc.), Bole support customers to crate a new era of intelligent factory.
- With Germany design plasticizing unit, plasticizing efficiency is greater, saving the charging time.
- Save dry cycle time. Patent intelligent increasing function makes the machine speed up by 20%.

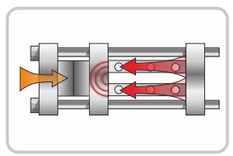


Stronger / More faster / More beautiful / More accurate

BL-EKS High-speed special machine

Bole EKS hydraulic servo energy-saving high-speed special machine, combines with the advantages of direct-press machine and traditional toggle machine. More than 60 emerging technologies have been applied in mechanical structural units, electrical systems, hydraulic systems, software systems and assembly processes.

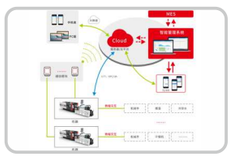
Advantages



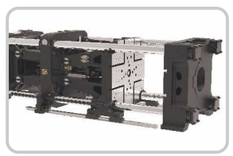
Clamping system of central clamping structure

Optional injection proportional valve control

Efficient plasticizing screw



Industry 4.0 Interface (intelligent Factory)



Linear guide rail for moulding platen support

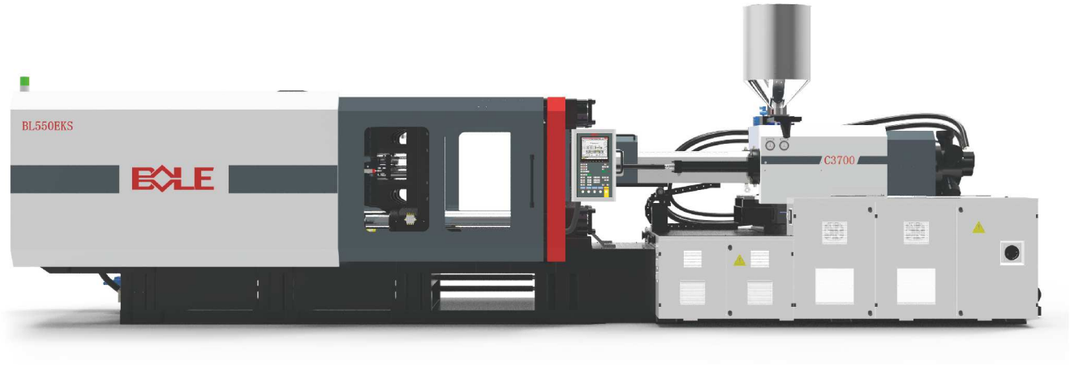
Linear guide rail for injection unit support

Optional electric charging function

Optional ACC injection function

Special Machine Series
—Make-up Injection Moulding Machine

EKS series has variable advantages. According to the characteristics of the cosmetic packaging, BOLE machine can solve the problems of black and white spot of transparent PC/PMMA,MS,PS products ; white spot and black spot of PETG tube and nozzle products.

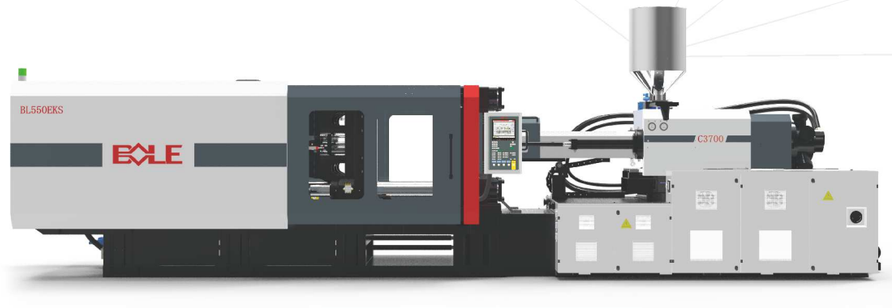


Special Machine Series
—SCFoam

Supercritical Microcellular Foaming Injection Process Introduction

Microcellular supercritical Foaming Technology is a new technology, it break through the limitations of traditional injection molding. This new technology is the mixture of supercritical co2 or N2 injection to the special plasticizing device, make the gas and molten material fully mixing/diffusion, injection the mixed material into the mold , make huge pressure drop, so that its internal precipitation form a large amount of bubbles nuclear; During the cooling process, the inside bubble nuclear growing till finalize design, eventually get the supercritical microcellular plastic products.

DK Series Two Platen
Injection Moulding Machine



EKS Hydraulic Servo Energy Saving
Injection Moulding Machine

Special Machine Series —PET Special Injection Moulding Machine

Advantages

- Large R/D high efficiency plasticizing screw designed by Germany
- The plasticizing efficiency is 20% higher than domestic level.
- Compared with traditional toggle machine, BOLE patented central clamping structure can save 2-5% material for more than 80% molds.
- Larger plasticizing motor,faster plasticizing speed.
- Bigger ejecting force
- Multiple core pulling modes
- Low inertia and high efficiency servo saving system

EKW-PET Special Injection Moulding Machine

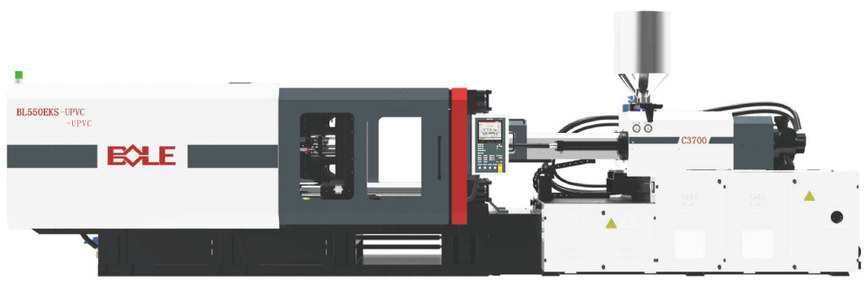
EKS-PET Special Injection Moulding Machine

Special Machine Series —PVC Special Injection Moulding Machine

Advantages

- Designed by Germany PVC special screw, the plasticizing efficiency is 20% higher than domestic level.
- Barrel cooling by air(fan or compressed air)
- Compared with traditional toggle machine,BOLE patented central clamping structure can save 2-5% material for more than 80% molds.
- Larger plasticizing motor,faster plasticizing speed.
- Wider safe door for PVC products
- Multiple core pulling modes
- Low inertia and high efficiency servo saving system

EKW-PVC Special Injection Moulding Machine



EKS-PVC Special Injection Moulding Machine

Special Machine Series
—BMC Special Injection Moulding Machine

- BMC special plasticizing pressure and loading system,more adaptation.
- Designed by Germany BMC special bi-metal screw and barrel, the plasticizing efficiency is 20% higher than domestic level.
- Water cooling device for barrel has the anti-condensation.
- Insulation platen and 12 groups mould temperature controller
- Larger plasticizing motor, faster plasticizing speed.
- Compared with traditional toggle machine, BOLE patented central clamping structure can save 2-5% material for more than 80% molds.

As a well-known manufacturing enterprises in injection molding machine Industry, we should be actively undertake social responsibility, this is an important content of scientific development and building a harmonious society, When the company is in the pursuit of economic efficiency and protect the interests of the shareholders, at the same time, they have the good faith with suppliers and customers, and the actively engaged in public welfare undertakings such as the protection of environment, so as to promote the harmonious development of the company and the whole society.

Bole excellent enterprise culture not only make employees have sense of responsibility and mission, and inspire employees work actively, make staff full of hope for the future, improve the staff awareness and the staff of noble longings, everyone in Bole has a great affection on the company, wherever they go , they will be filled with nostalgia with every object of the Bole.

TEAM STYLE

GREE AND BOLE ACHIEVE SEAMLESS COOPERATION

To Create IMM Automatic Unmanned Workshop

Gree automation devotes to create fully automatic unmanned workshop, they have had mature practice case in the field of injection moulding machine. Gree injection moulding workshop project the core with Gree manipulator, with the automation linkage function of Bole injection moulding machine, realized the concentrated feeding, man-machine ratio, production efficiency optimization by a wide margin.

The concentrated feeding system:
through the central feeding system, the injection moulding workshop realized the automatic feeding, personnel reduction, high efficiency.

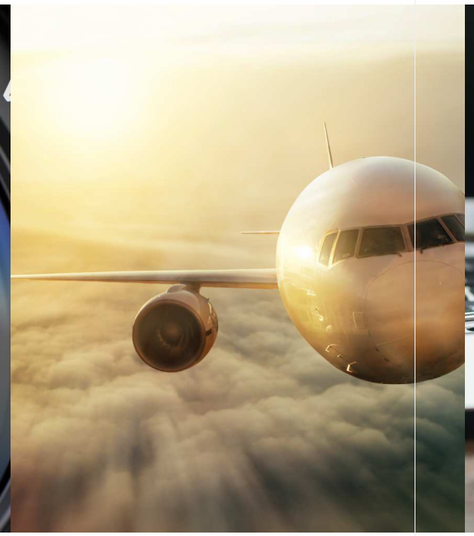
The manipulator pick-up application:
as one of the most mature and stable Gree automation equipment, Gree manipulator has powerful function, stable performance, positioning precision.

Hot stamping printing integration:
Gree manipulator accomplish hot stamping, silk screen in all process, high efficient, stable and safe.

Automatic transfer:
project with Gree manipulator, the whole workshop automatic conveyor belt will packaged injection molded parts with centralized processing, optimization for workshop, personnel reduction for efficiency.

AGC material:
by AGC logistics vehicles of Gree automation equipment, with the central dispatching control system, to realize the automatic workshop logistics distribution, high intelligent degree, strong stability.






INNOVATION
TECHNOLOGY
THE FUTURE