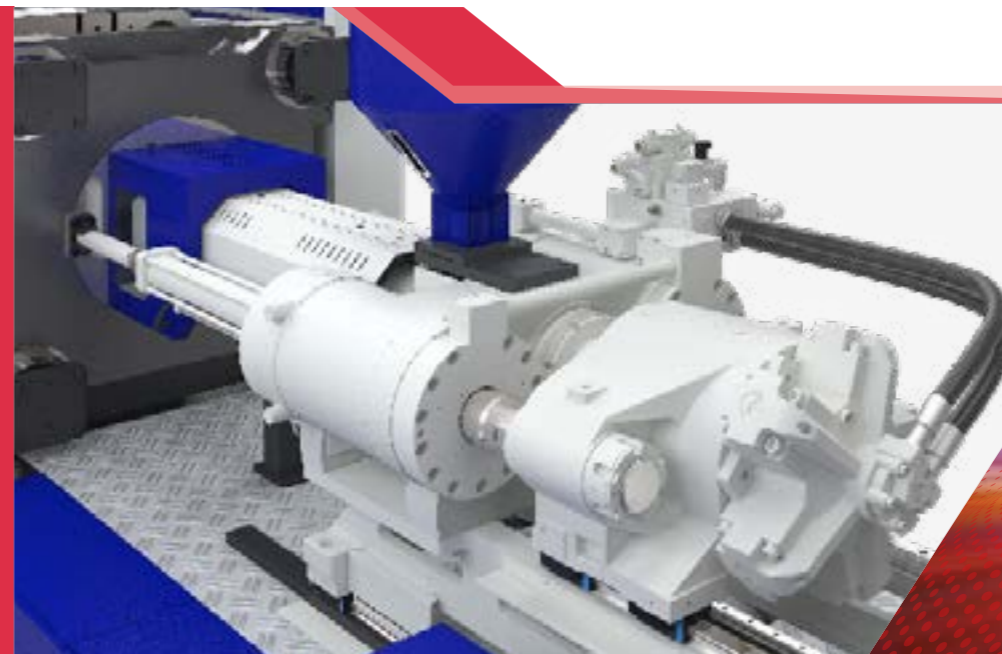


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GLOBAL



HAITIAN MARS III SERIES
Energy-saving servo injection molding machines
600 - 33,000 kN

HT 20200818-CV

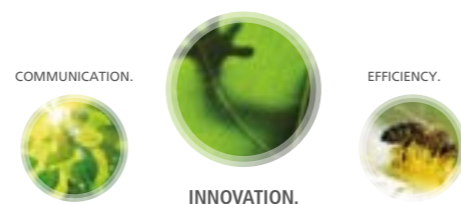


3rd GENERATION TECHNOLOGY

HAITIAN MARS III SERIES

INTELLIGENT⁺ DYNAMIC⁺ INTERACTIVE⁺. The new generation of our bestseller is more powerful than ever thanks to significant improvements. New motors and intelligent motion control provide more precise processes in a wide applications field like for consumer goods, toys and construction. Optimized core components such as the closed loop injection unit increase the efficiency and production quality of the world's most successful injection molding machine.

New software concepts complement the newly formed hardware base with all common interfaces for open connectivity with smart manufacturing solutions. The intelligent answer to the growing demands in the plastics processing industry - and a modern response to the environmentally relevant challenges of our time. The new Mars III Series is extremely energy-efficient, economically and very attractive in terms of price/performance ratio. Technology to the point like never before.



TECHNOLOGY TO THE POINT.

MARS SERIES

PRODUCTION BASE

As the best-seller product under Haitian International, the Haitian MA series production facilities are located in Ningbo, Guangzhou and Wuxi with a total area of about 500,000 square meters. The MA series is manufactured and engineered according to the different specifications and specific applications of the machines. Each production location has

advanced processing equipment and automated production lines. Through lean management and an efficient operation processes, it guarantees the efficiency and flexibility of production. This enables us to meet customer needs at competitive prices while ensuring quality and efficient delivery.



CONSUMER GOODS

- Plastics parts used in daily life
- Highly efficient and cost effective



CONSUMER ELECTRONICS

- Parts and components in the consumer electronics industry
- Highly efficient solutions for high cavity applications



HOME APPLIANCE

- Plastics parts in home appliance
- Flexible, highly efficient and stable solution



AUTOMOTIVE

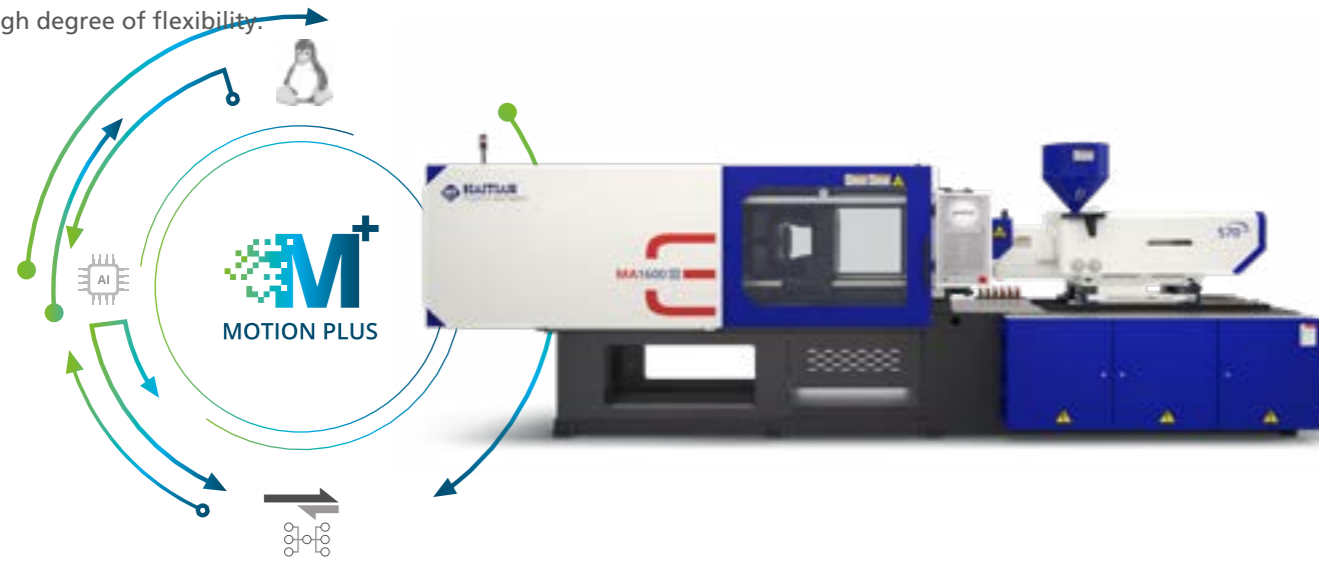
- Plastics parts in the automotive industry
- High efficient solution for a wide range of applications and process requirements

HAITIAN MARS III SERIES

INTELLIGENT⁺ DYNAMIC⁺ INTERACTIVE⁺

On the basis of mature and reliable hardware, the third generation of MA injection molding machine integrates the intelligent motion control core with various software applications. This forms a complete and powerful industrial ecology with high precision, system dynamic multi-order optional and a high degree of flexibility.

In addition, according to the customer's production needs, the third generation MA series can flexibly expand the interfaces, providing open data and information interconnection. Allowing the MA series to interact with different molding auxiliary products, as well as digital factories.







NEW MOTION CONTROL TECHNOLOGY

ADVANTAGES MOTION PLUS

MOTION PLUS is the bundle of already established and new developments around intelligent motion control. The new standard is an important step towards the digital future and opens up a wealth of possibilities for the user to use the enormous production capacities of the Haitian Generation 3 Series. It allows for ideal application matching while also maximizing the improvements in the machine's movements, process execution, as well as the efficient control of the molding production and equipment operations.

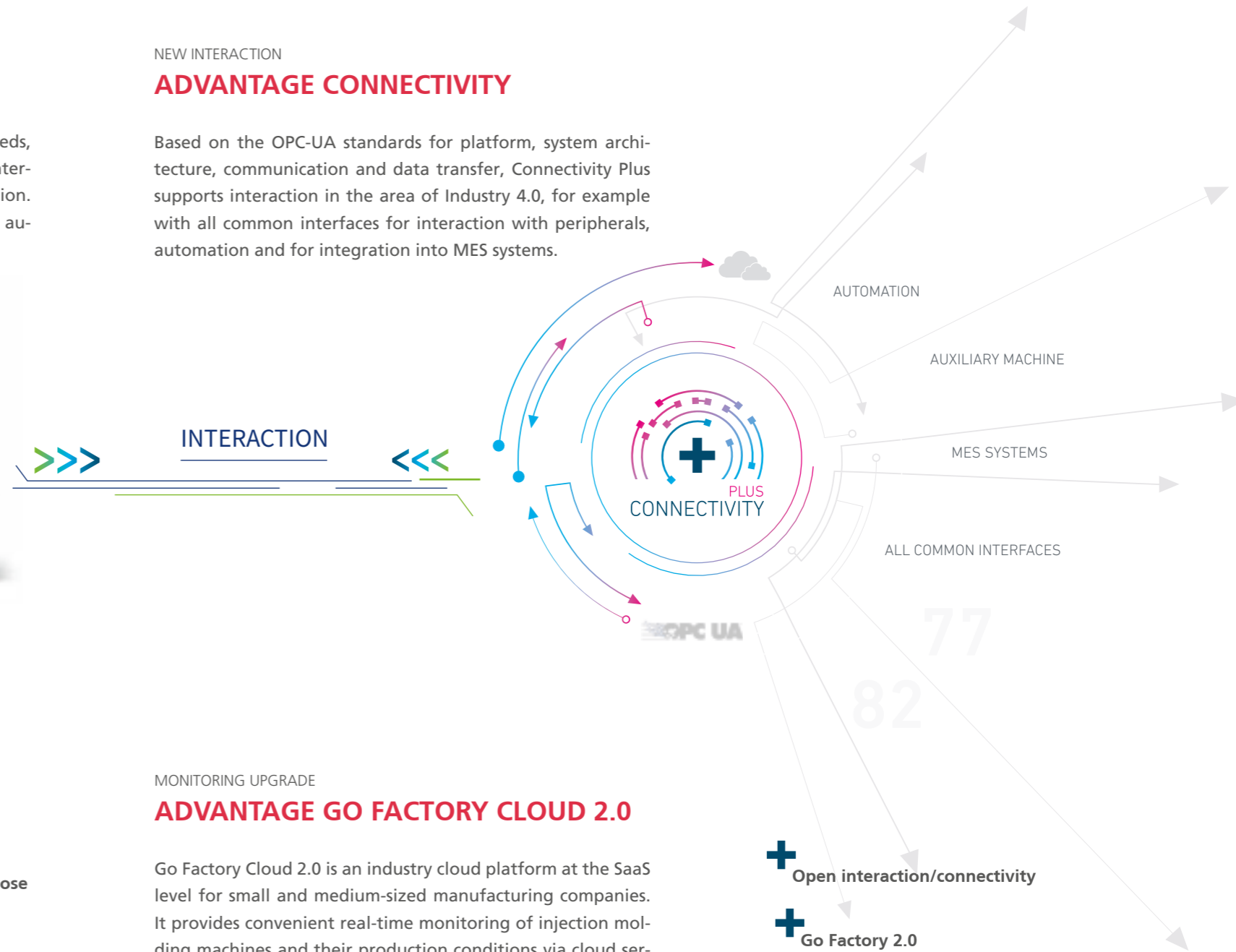


-  + Intelligent algorithm for mold open/close
-  + Intelligent injection motion control
-  + Full digital platform
-  + Multi-stage control of system dynamics

NEW INTERACTION

ADVANTAGE CONNECTIVITY

Based on the OPC-UA standards for platform, system architecture, communication and data transfer, Connectivity Plus supports interaction in the area of Industry 4.0, for example with all common interfaces for interaction with peripherals, automation and for integration into MES systems.



MONITORING UPGRADE

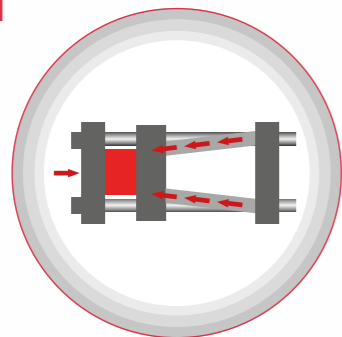
ADVANTAGE GO FACTORY CLOUD 2.0

Go Factory Cloud 2.0 is an industry cloud platform at the SaaS level for small and medium-sized manufacturing companies. It provides convenient real-time monitoring of injection molding machines and their production conditions via cloud services and mobile apps. An accurate, sensitive perception system can be implemented within one day.

-  Open interaction/connectivity
-  Go Factory 2.0



3rd GENERATION TECHNOLOGY
CLAMPING UNIT



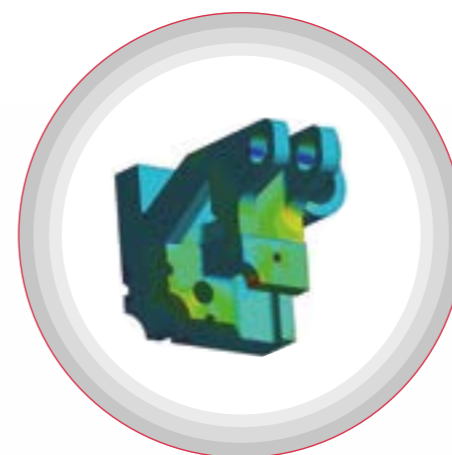
Optimised platen design for centralised force transmission to the mold



New graphite/steel bushings providing better lubrication and lower lubrication consumption which improves the life of the clamping unit



Optimized platen design based on Ansys software, for even distribution of clamping force and less deformation and higher precision of the parts

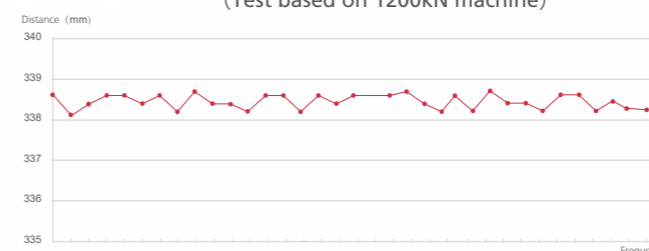


New lubrication structure for longer service life



- Three plate clamping unit
- Low pressure mold protection
- High rigid movable plate supports sliding foot
- Ejector rod inverted structure
- Standard with Haitian standard t-slot + threaded hole template
- Robots mounting threaded hole interface (EUROMAP 18)
- Automatic mold adjustment function
- Electrical and hydraulic double chain insurance
- Adjustable back and top stroke
- Three types of hydraulic ejection (vibration, hold, multiple times)
- Ejection delay function
- Controllable ejector program (2 paragraph ejection)
- Optional moving/fix platen hydraulic core
- Optional moving/fix platen cooling water interface

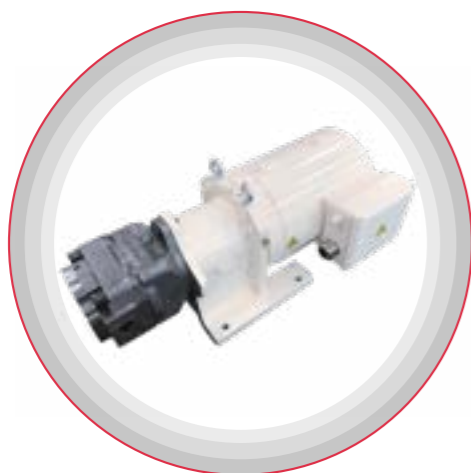
Repeatability Accuracy of Mold Open and Close
 (Test based on 1200kN machine)



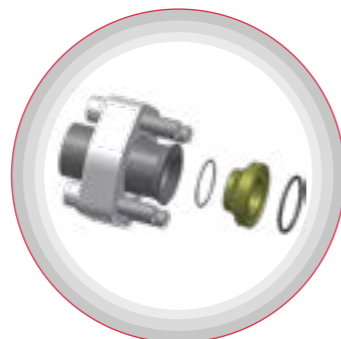
Highly optimized mold closing structure for higher repeatability accuracy

3rd GENERATION TECHNOLOGY

INJECTION UNIT/POWER SYSTEM



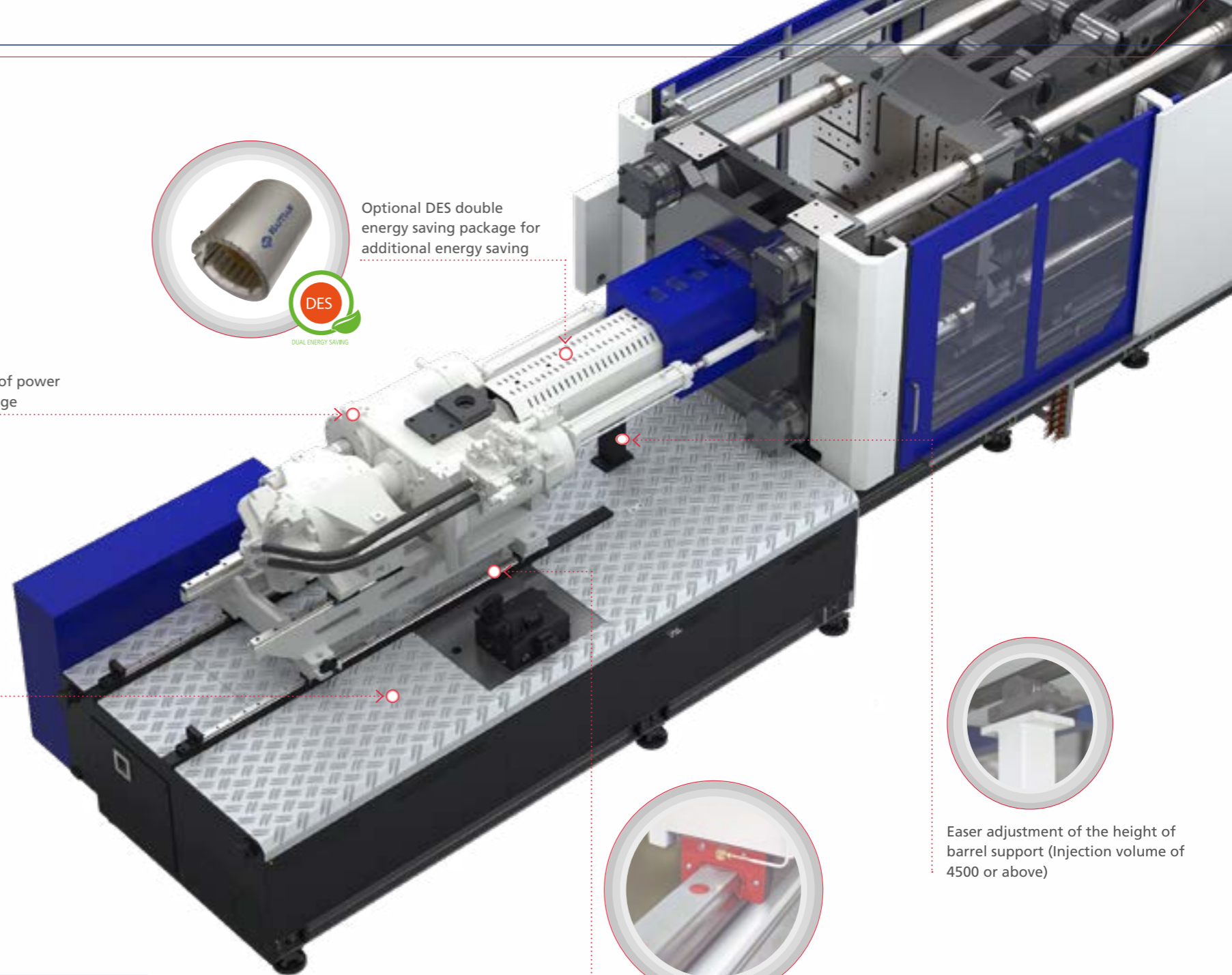
The new high performance servo drive system supported by the digital fieldbus, highly dynamic and highly responsive



Non-welding process of power pipeline, less oil leakage



Optional DES double energy saving package for additional energy saving



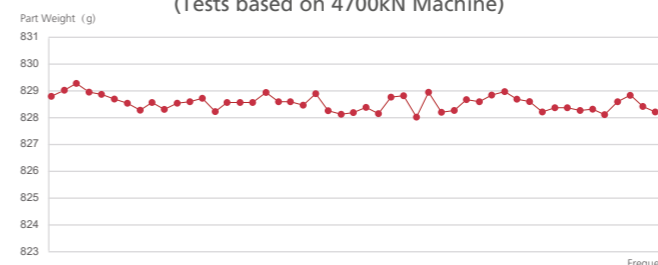
Linear guides on both carriage and injection for low friction and high precision



Easier adjustment of the height of barrel support (Injection volume of 4500 or above)

- Dual cylinder balanced injection system
- Nozzle alignment device
- Injection seat rotation function
- Injection and carriage adopt linear guide rail
- Charge adopts high torque hydraulic motor
- Barrel heating temperature closed-loop control (applicable to K type and J type)
- Anti-screw cold start function
- Injection curve monitoring function, memory function
- 6 stages of injection program control (1-6 stages can be set)
- 5 steps of holding pressure program control (1-5 steps can be set)
- The charge program controls 3 stages (1-5 stages can be set)
- Back pressure program control 5 stages (can be set 1-5 segments)
- V / P switching (position, time, pressure OPT)
- Three methods of carriage backwards (after storage, before mold opening, after injection)
- Back pressure control of charge
- Automatic purging function
- Cooling material function
- Secondary charge function
- Servo control hydraulic system
- Oil temperature detection Alarm function
- Bypass filter system
- Removable oil filter

Repeatability Accuracy of the Parts (Tests based on 4700kN Machine)



Full closed-loop control for high injection repeatability accuracy



3rd GENERATION TECHNOLOGY

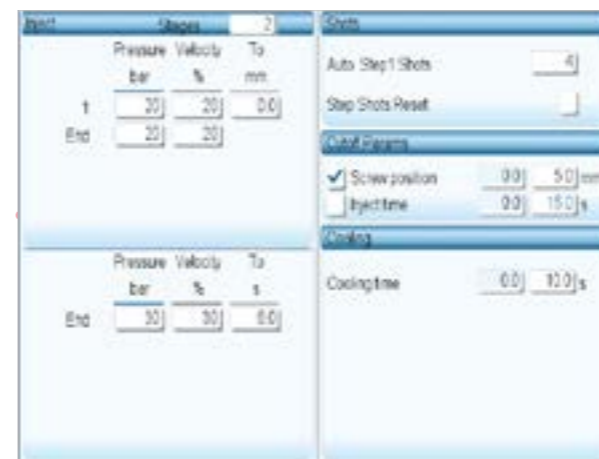
ELECTRONIC CONTROL UNIT BASED ON "MOTION+" PLATFORM

- As an important part of the "MOTION+" platform, The electric control unit allows for the optimization of the injection molding process and supports the compatibility with various common communication protocols.
- The self-developed "J6 control core" (picture on the right) is the intelligent key hardware of "MOTION+", which effectively reduces system load and provides operational reliability by screening, cleaning, reconstructing, buffering and forwarding large amounts of process data.
- Thanks to new digital technology, independent control of each motion by sensors and optimized algorithms for key process parameters, the "J6 control core" achieves a complete improvement in the accuracy and response of the execution of components.

NEW GENERATION CONTROL SYSTEM

- Multi-PID control for different control objects and operating conditions makes the control more accurate and efficient;
- Power system integration based on EtherCAT bus with high signal accuracy and high anti-interference capability;
- Linux operating system with better compatibility; more possibilities for third-party software integration;
- Extendable to the latest OPC UA communication protocol, and fully compatible with the latest international and national communication standards;
- Servo control systems, intelligent sensors and other important equipment status parameters control a quantitative display to make the use of equipment more friendly;
- A new generation of intelligent algorithms that can effectively sense process deviations and correct in real time to ensure the stability of process results.;
- Centralized control combined with edge computing, modular control of key functions, flexible system, scalable, tailorable, taking into account universal performance and flexibility;
- New dynamic temperature control algorithm.

OPTIONS (EXAMPLES)



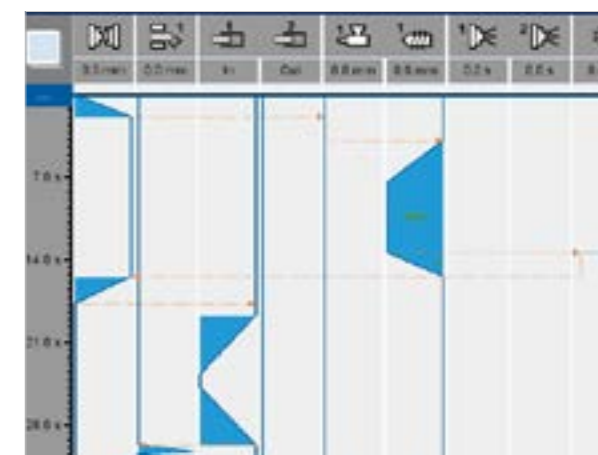
Start-up cycles control for production



Energy consumption management



Programmable I/O



Flexible sequence control



12inch TECHMATION 5530 (600-5,300kN)



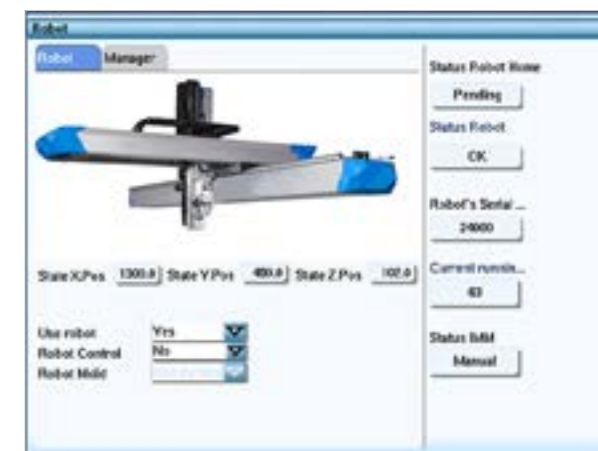
15 inch KEBA i2985 touch screen (6,000-33,000kN)



J6 BOX



Integrated TCU interface



Integrated robot interface

3rd GENERATION TECHNOLOGY

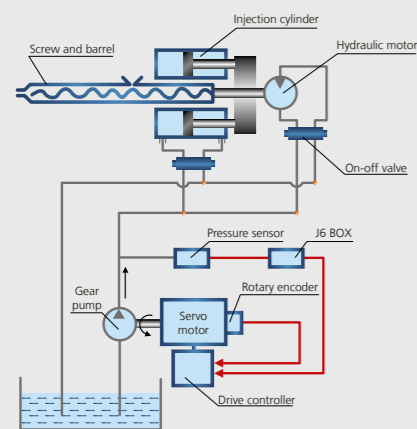
OPTIONAL FEATURES

The MAIII series of injection molding machines offers a wide range of optional functions to meet the individual processing needs of customers and to ensure the quality and accuracy of the injection molded products.

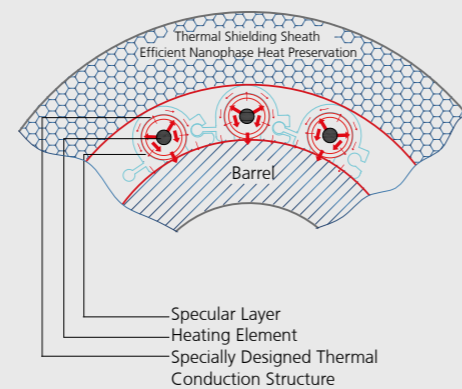
- The clamping unit matches the size of the injection unit
- Mold temperature control device
- Mold close simultaneously with preplasticizing
- Electric pre-plasticizing
- Hydraulic (pneumatic) nozzle
- Injection servo closed-loop control
- Injection direction proportional control
- Proportional control of mold opening
- Closed-loop temperature control at feed opening
- Mold hot runner control
- Pneumatic cores
- Function of multiple-set cores
- Glass tube flowmeter
- Valve gate (pneumatic/hydraulic)
- Manipulator electrical and mechanical interface
- Magnetic template electrical interface
- OPC DA data interface
- Mold position ring
- Tie bar extraction function
- Hydraulic clamp
- Side automation equipment
- Dryer, dehumidifier and feeder 3-in-1 machine
- Cooling and heating machine
- Conveyor belt

HAITIAN DES DUAL ENERGY SAVING INJECTION MOLDING MACHINE

Servo energy saving technology + heating energy saving technology



Hydraulic servo drive system schematic diagram



Quartz superconducting energy-saving heating system schematic diagram



DES technology supports additional energy saving about by 10%-30%, on the basis of the servo drive machines



Electric plasticizing

Improved plasticizing speed and quality with reduced energy consumption



Extended interfaces

Hot runner, core, sequential valve and other interfaces can be tailor-made



Hydraulic nozzle

Plasticizing during mold opening, to shorten the cycle time



Proportional Valve

For faster and more accurate mold open and close



Magnetic Template

Fast mold exchange and higher efficiency



The tie bar extraction

To facilitate the installation and disassembly of molds, less height requirement of the plant

GLOBAL NETWORK

Headquarters



China
 :: More than 1,540,000 sqm total area coverage
 :: Production capacity of more than 32.000 units/year

Subsidiaries



Germany
 :: Located in Ebermannsdorf
 :: Sales and service for German market
 :: Training and technical support for customers and distributors in 18 countries
 :: Covering an area of about 25,000 sqm



India
 :: Located in Gujarat
 :: Sales and service organization
 :: Covering an area of about 51,800 sqm
 :: Application center for mold testing



Mexico
 :: Located in Mexico City
 :: Sales and service organization
 :: 2.300 sqm for spare parts and stock machines
 :: 200 sqm application center for mold testing



Vietnam
 :: Located in Binh Duong Province
 :: Sales and service organization
 :: Covering an area of about 25,000 sqm
 :: 80 sqm application center for mold testing



Brazil
 :: Located in Sao Paulo
 :: Sales and service organization
 :: Covering an area of about 12,000 sqm



Turkey
 :: Located in Istanbul
 :: Sales and service organization
 :: Covering an area of about 11,000 sqm
 :: Application center for mold testing



Thailand
 :: Located in Bangkok
 :: Sales and service organization
 :: 1.400 sqm for spare parts and stock machines
 :: 200 sqm application center for mold testing



Japan
 :: Located in Odawara Kanagawa, Japan
 :: Sales and service organization
 :: 300 sqm for service and stock control
 :: Application center for mold testing



Indonesia
 :: Located in North Jakarta
 :: Sales and service organization
 :: Application center for mold testing
 :: 3.000 sqm for spare parts and stock machines