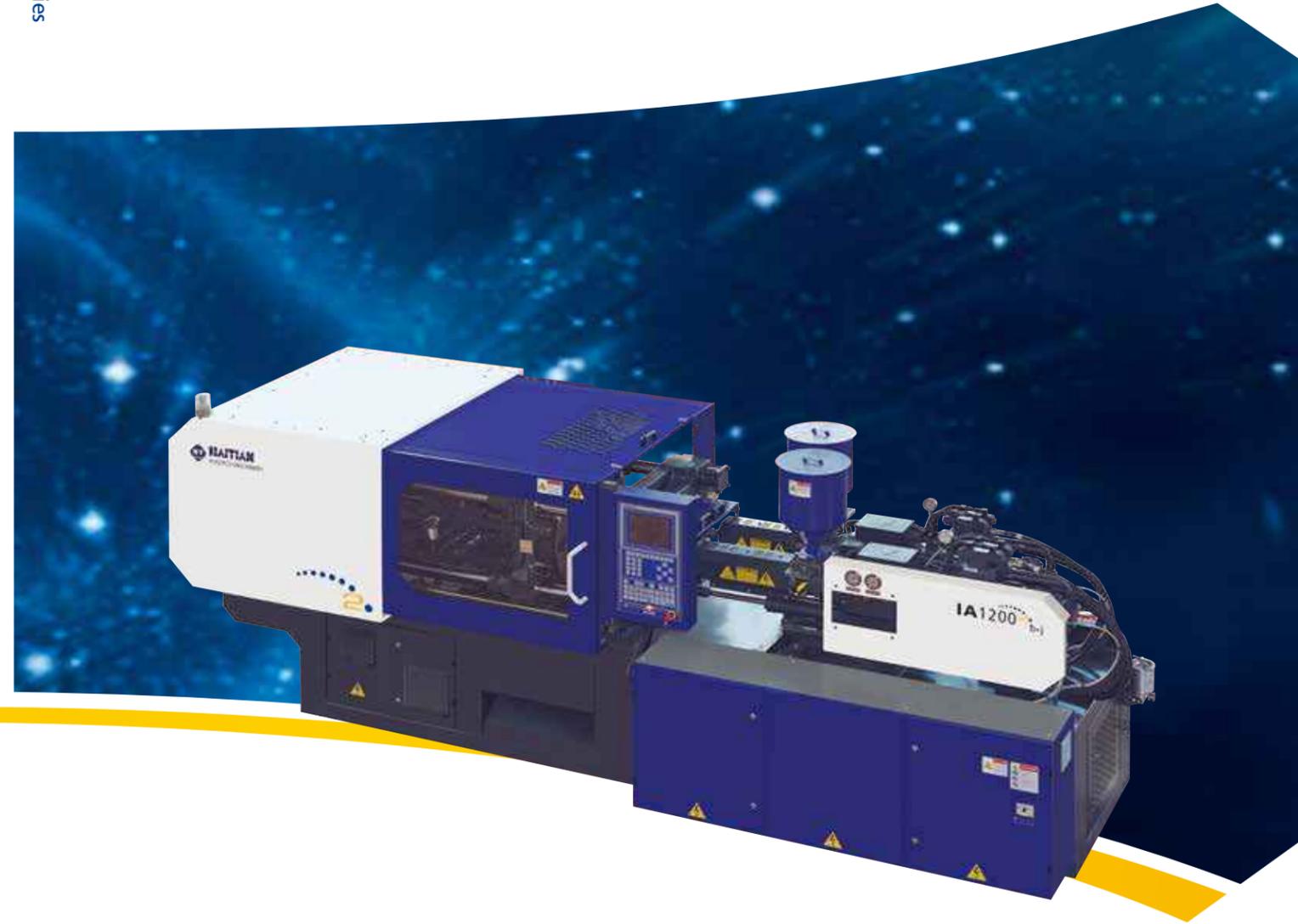


HAITIAN INTERNATIONAL HOLDINGS LIMITED
Unit 1105 level 11
Metroplaza Tower 2
223 Hing fong RD Kwai Fong N.T
haitian@mail.haitian.com
www.haitian.com

NINGBO HAITIAN HUAYUAN MACHINERY CO.,LTD.
Export Processing Zone, Ningbo 315800 China
+86-574-8617 7242
+86-574-8622 1864
haitian@mail.haitian.com
www.haitian.com



Haitian **Iapetus²** Series

Haitian Partner:

HT 20160701-IV

Haitian Iapetus II Series

Second generation Multi-material injection molding machine



Serving as an industrial leader and a technical pioneer in the field of plastic injection molding machines, Haitian started to research and develop multi-component injection molding machines in the early 1990s. Today, the company has yielded substantial results.

Our company philosophy of "Creating and Extending Advantage" for our customers is paramount in our Commitment for research and development for multi-component and multi-color plastic Injection molding machines.

At present, Haitian offers the Haitian IA II Multi-material molding machines in the following variations, customers can select corresponding machine.

- | | |
|---|--|
| Turntable multi-color machine with wide mold platen | Rotating-shaft multi-color machine |
| Turntable multi-color machine with narrow mold platen | Co-injection multi-color machine |
| Turntable and rotating-shaft multi-color machine | Sandwich/interval Multi-material machine |

We Create Advantage 2

- » Enhancing products requiring multi-color's or different materials to enrich their design and Provide their customers attractive benefits.
- » As a leader in the manufacturing of PIMM we have been committed to the design and improvement of multi-component machines for more than 10 years
- » With a professional R & D design team, the machine has been developed into 6 model categories with many multiple specifications for different applications requirements
- » Covering different market segments, the IAII machine has different modular designs for customer flexibility

IA 1200 II / b-j



IA 18500 II / n-j



Haitian Iapetus II Series

Second generation Multi-material injection molding machine

The IA II turntable machine series is divided into three categories. IA/b (wide platen), IA/n (standard platen), IA/d (turning table + Rotating Shaft)



Turntable multi-color machine with wide Platen
Suitable to split-type mold (two mold frame + two cavities)

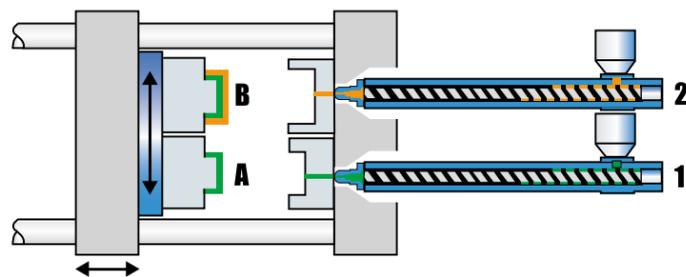


Turntable multi-color machine with standard Platen
Suitable to integral-type mold (one mold frame + two cavities)



Turntable and rotating-shaft multi-color machine
Customized machine, suitable to mold testing of mold companies, unsuitable to mass production (two mold frame + two cavities)

Working principle:



Injection Unit 1 and 2 work in parallel. Ejection (part A and part B), Then the table rotates 180°. After the mold is closed, Both part A and part B injection will be finished at the same time, then the mold opens. The process always repeats again as above.

Reliable clamping unit

The 5-point double toggle system optimized using finite element analysis.

Precise turntable and self parallel device

Automatic turntable, ensure that rotary surface with platen does not contact. Different loading weight moulds in turntable Keep in parallel with the platen

Servo hydraulic turntable device

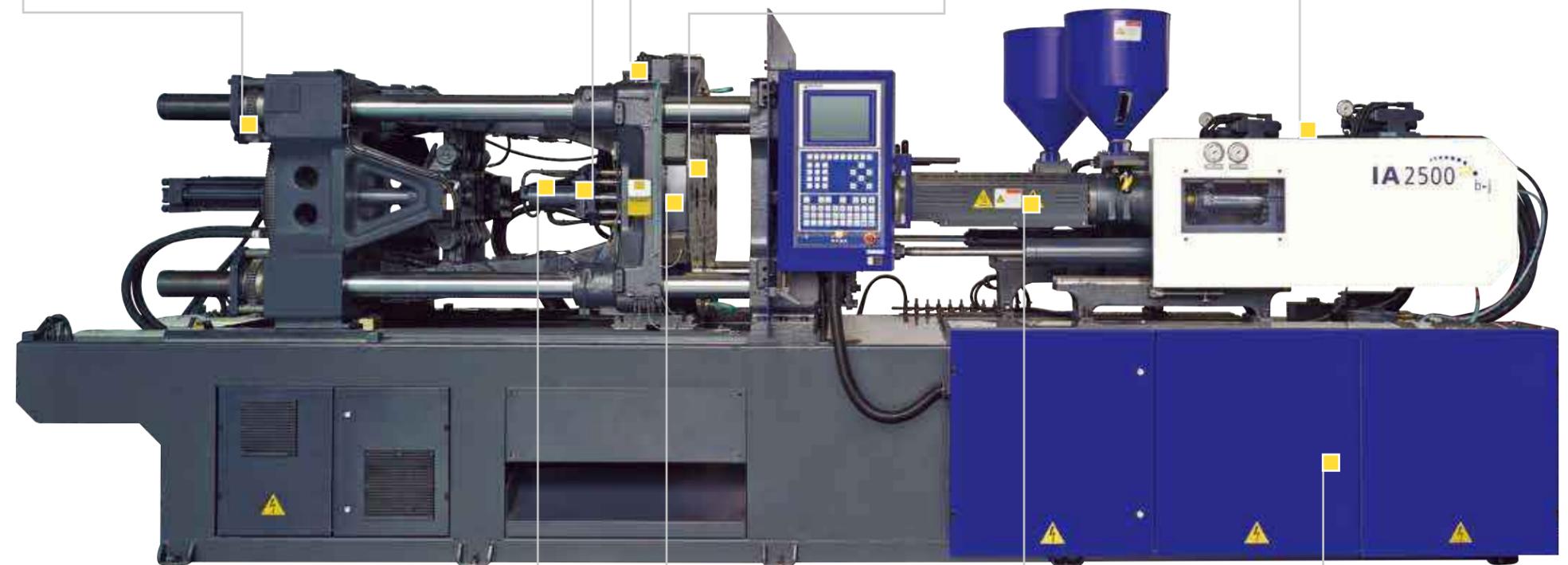
Because of proportional valve, hydraulic motor, rotary encoder and the motion control cards, the turntable become fast, smooth and accurate. So rotary time reduced by more than 50% (servo motor turntable is optional)

Mold Interfaces

Cooling water and electrical interfaces are provided for convenient mold installation

Excellent Injection Performance

Single, co-axial injection cylinder with linear guidance for low inertia and precise control.



Flexible Ejector

Two independent ejector systems with high precision position transducers.

Excellent turntable support

Two sets of self lubricating high quality heavy duty needle roller bearings, support and position the rotating table.

Professional plasticizing unit

A variety of injection units are available for specific requirements with PID heating control.

High efficiency/Cost effective pump

Two independent hydraulic pumps with optional fixed or servo motor energy saving system.

Haitian Iapetus II Series

Second generation Large scale turntable machine

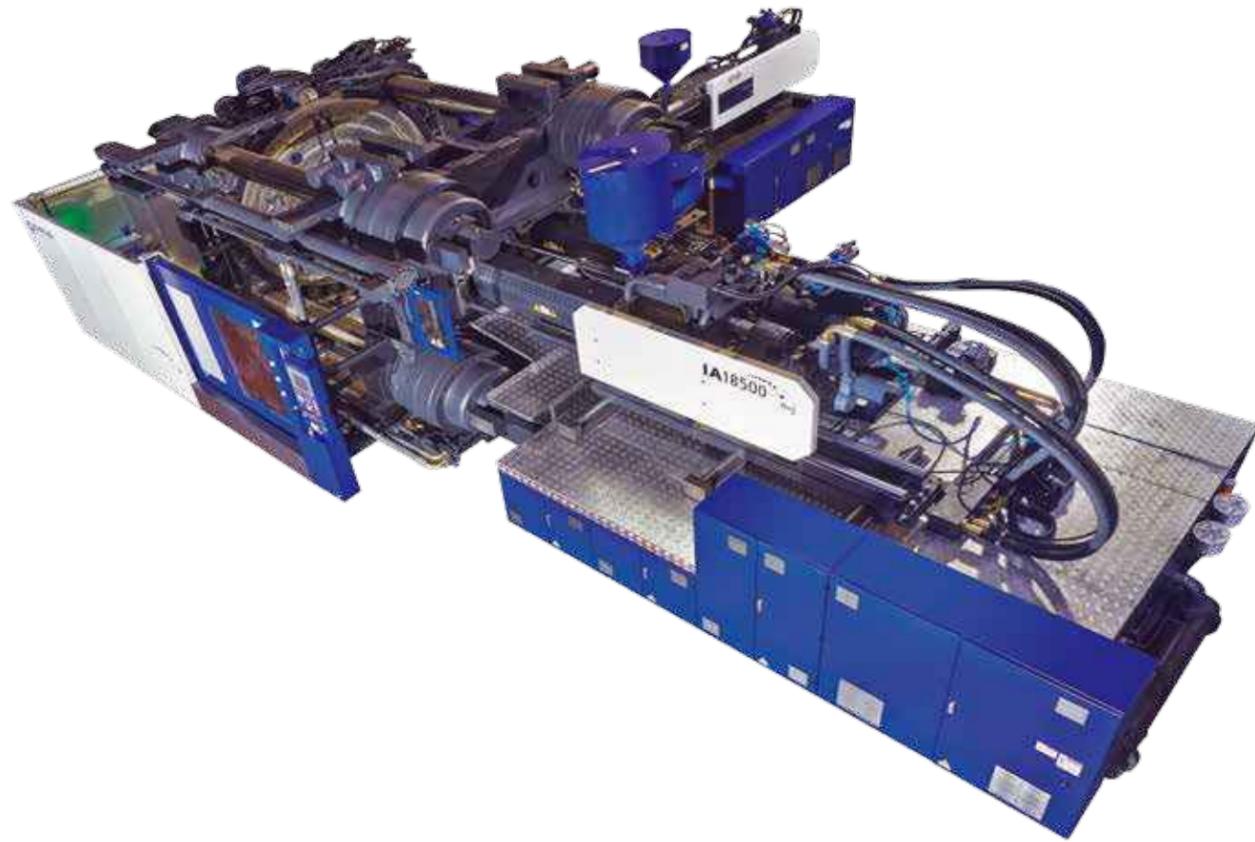
The large Multi-material turntable machine is customized to the customer's requirement for different applications.

Suitable Industries: computer front panels/ High Gloss LED-LCD TV Panels

Automotive multi-color applications such as two,three or four color injection for rear light.

Large mold rotation capacity , reliable bearing of rotary table, precise rotation, customized plasticizing units, high efficiency energy-saving system.

Fully customized large-scale turntable machine with Multi-material injection unit



Reliable table locking system

The table is guided and locked during mold open/close movements to make sure the turntable parallel with the platen.



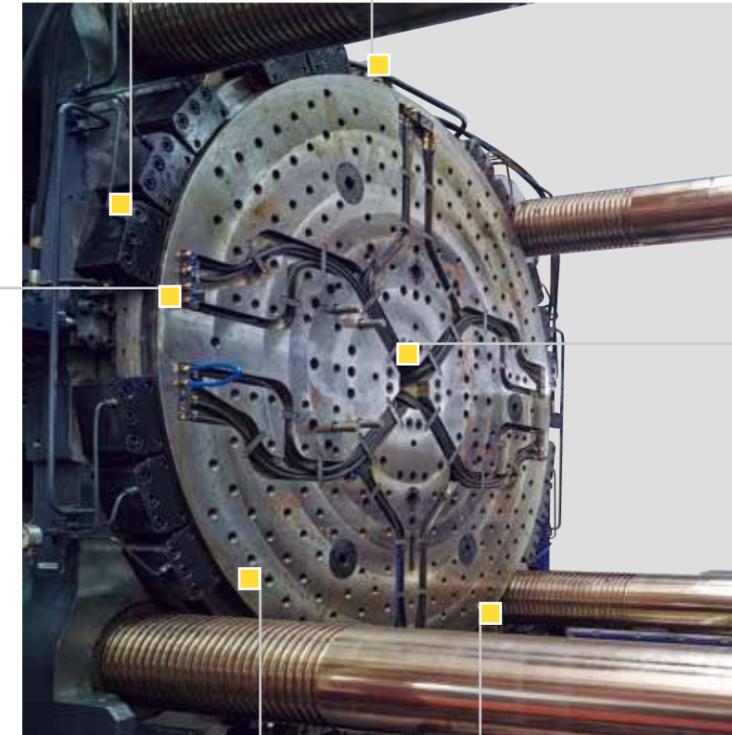
Servo hydraulic turntable device

Optional servo motor turntable device



Convenient interfaces for mold auxiliary connections

Customized electric, hydraulic core and connections interface of mold cooling water



Heavy duty turntable axis support

Optimized axial support and bearing spacing to reduce the list of the turntable



back support structure for turntable

ensure stable and fluent rotation



Adjustable table support

Improved bearing support structure for the turntable ensures rotating stability operation

Haitian Iapetus II Series

Second generation Sandwich/interval machine

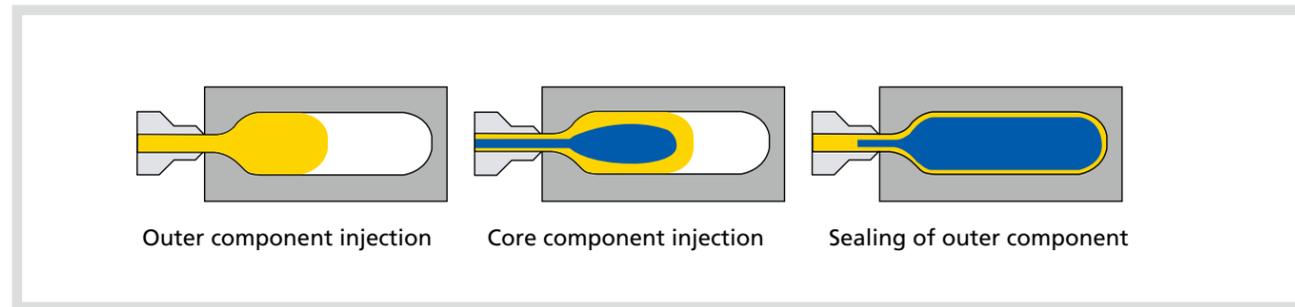
The Iapetus IA II/i sandwich/interval machine can be used as a sandwich injection or two or more component/single color injection machine.

Thanks to a segregation valve installed in front of the Iapetus IA II/i sandwich/interval machine's nozzle, which is program controlled, different requirements can be met:

The valve turns one time - sandwich injection;
the valve turns several times - multi-color injection;
both barrels are filled the same material - single color injection.

Working principle

 Sandwich/multi-color injection molding machine

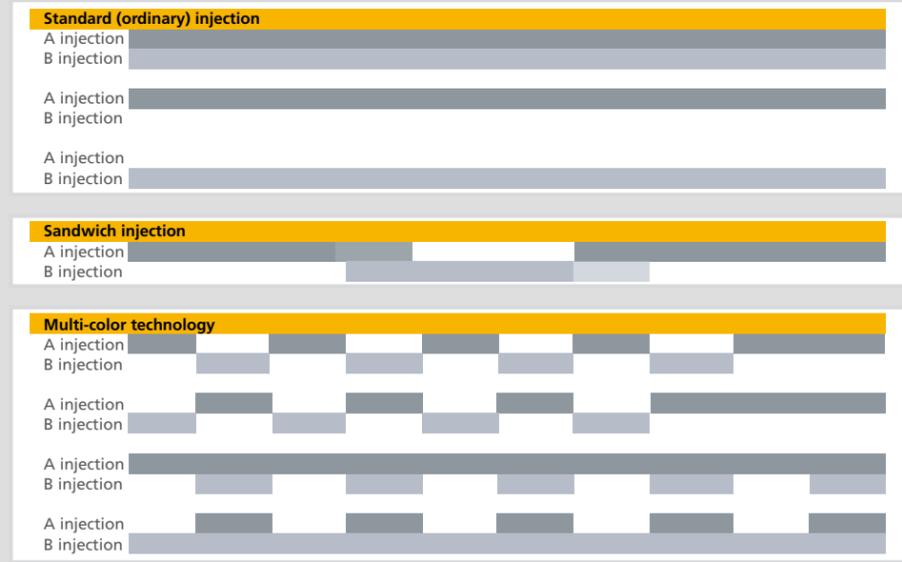


Features and advantages

- » Cost reduction and increase of product value
Re-grinded, recycled or other low cost material can be used as core component material.
- » Improvement of product design
Color effects can be added to transparent products using sandwich injection.
Special flow effects can be added to multi color products using color assortment.
- » Reduction of internal stress and improvement of part quality.
The core component provides significant improvement of the part quality as it reduces internal stress and strengthens the stability, therefore it ensures that the produced parts meet their application requirements.



Basic sandwich / multi-color injection moulding process



Integrated parallel single cylinder injection unit

Compact structure, simple appearance, high modularized, a more flexible composition of the injection unit

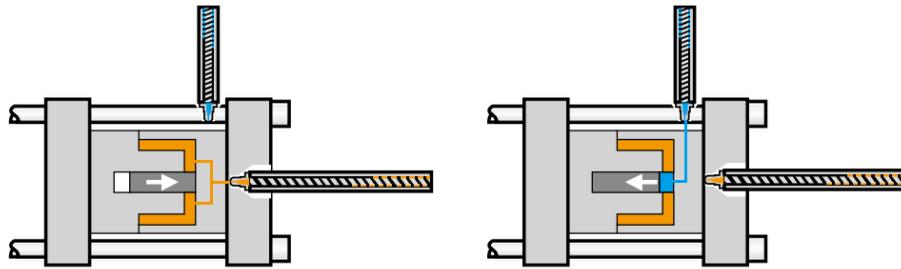
Haitian Iapetus II Series

Second generation co-injection molding machine

The Iapetus IA II/m Series was constructed according to customer demand, its clamping unit does not contain a turntable nor a rotating shaft. It provides the independent control of injection unit and multi-material injection by the change of the core of the mold.

Working principle

Co-injection molding machine

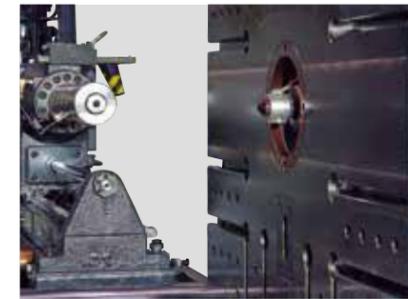
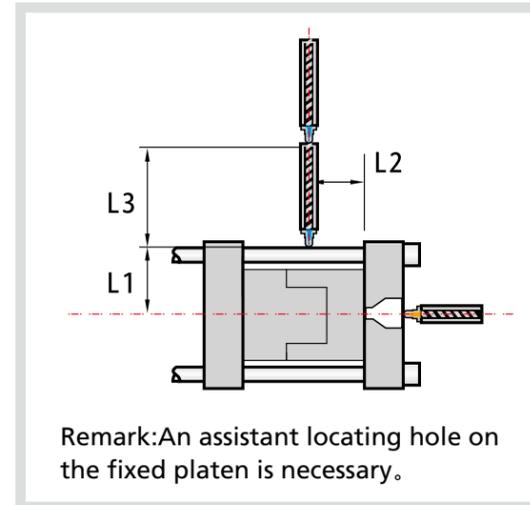


Parameters for equipment

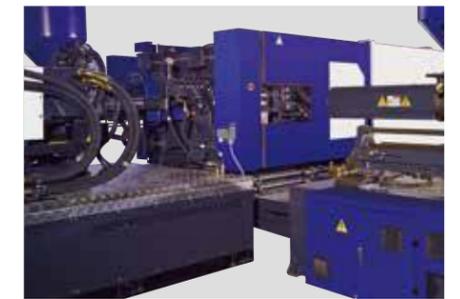
- » L1 the minimum distance of the nozzle.
- » L2 the distance from the side injection nozzle center to the installation plane of the fixed platen, which is the distance between nozzle center of the side mold to the installation plane of the fixed platen.
- » L3 the nozzle stroke of the side injection unit, which can be adjusted according to the parameters of different machine types.

Features

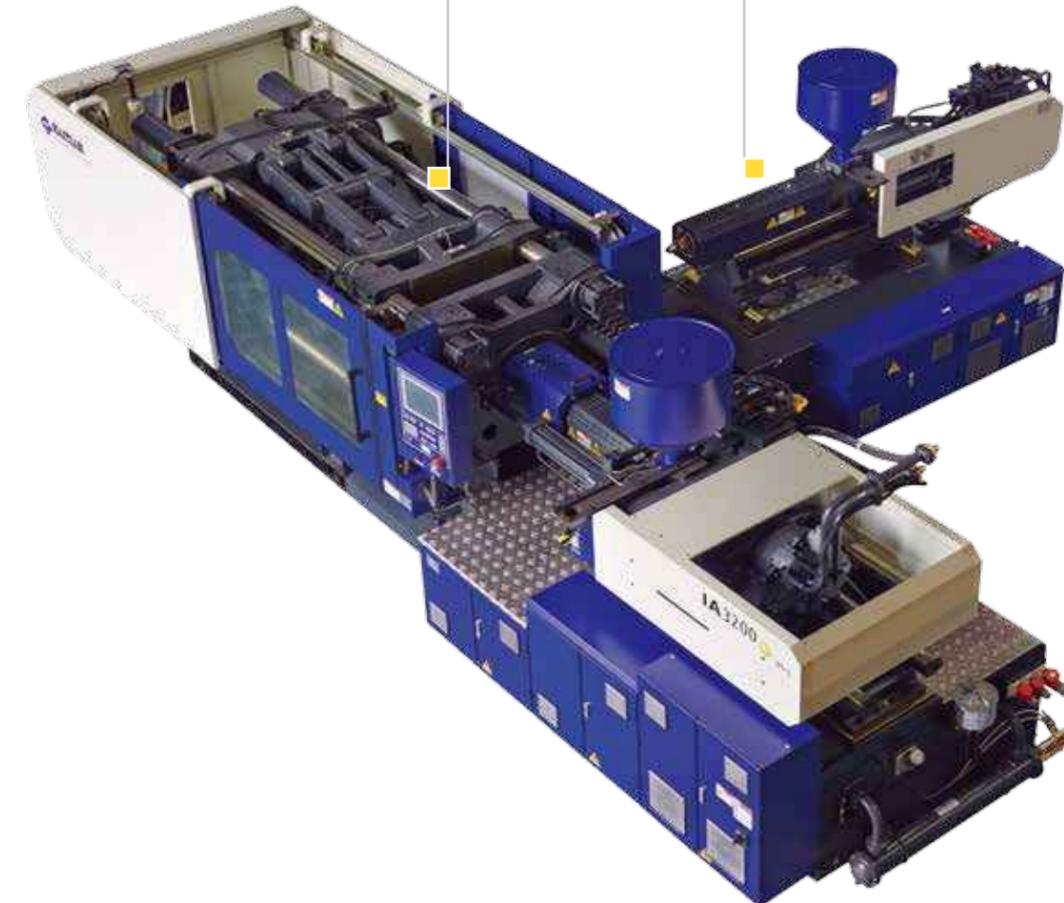
- » It can be used as a standard single color injection molding machine as well as a multi-component injection molding machine.
- » Both injection units can be controlled and switched off independently, which reduces energy consumption.
- » Requires more floor space than the standard machine.



Mold fixed side position interface
Avoids mold movement during side injection



Flexible side injection unit positioning
The injection unit can be adjusted to suit different mold heights.



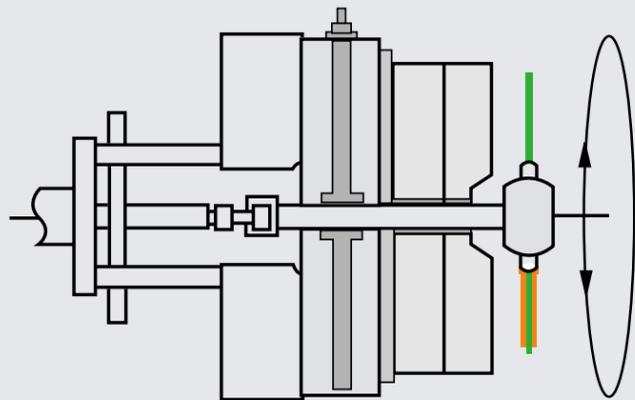
Haitian Iapetus II Series

Second generation Rotating-shaft multi-color machine

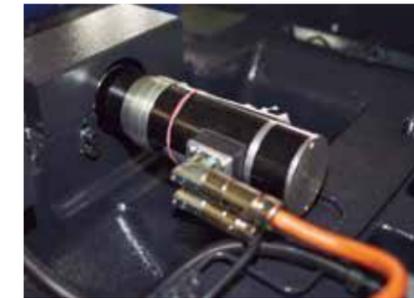
The IA II/p (rotating shaft multi-color machine) has been developed for applications requiring multi cavity two color/component molding. The cavities are rotated using the centre core mechanism for increased efficiency and flexible mold design.

Working principle

Rotating-shaft multi-color machine



Injection unit 1 and 2 can work parallel
Parts (material A and B) are ejected, rotating-shaft turns 180°, mold close, finish injection of two materials at the same time, mold open, rotating-shaft (mold core+parts) turns 180° in positive and negative directions.



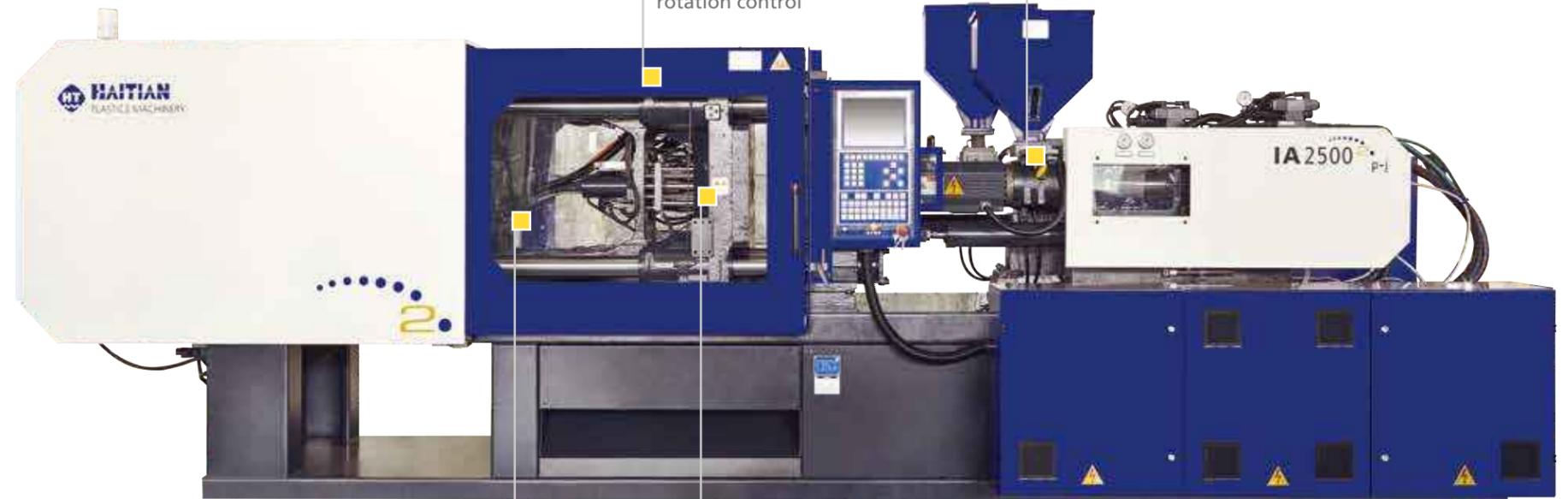
Precise rotating shaft control

The imported servo motor, synchronous belt and spline shaft provide precise and accurate position control for repeatable rotation control



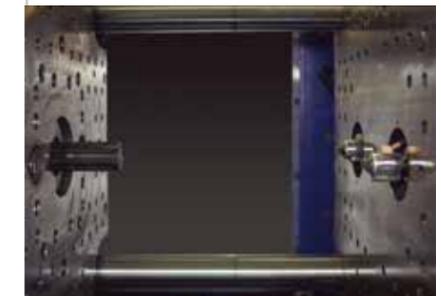
Compact injection units

Two single coaxial injection units provide stable and accurate injection control



High precision filtration system

Equipped with high precision filtrator; increase of service life of the seal of the rotary joint of the spindle



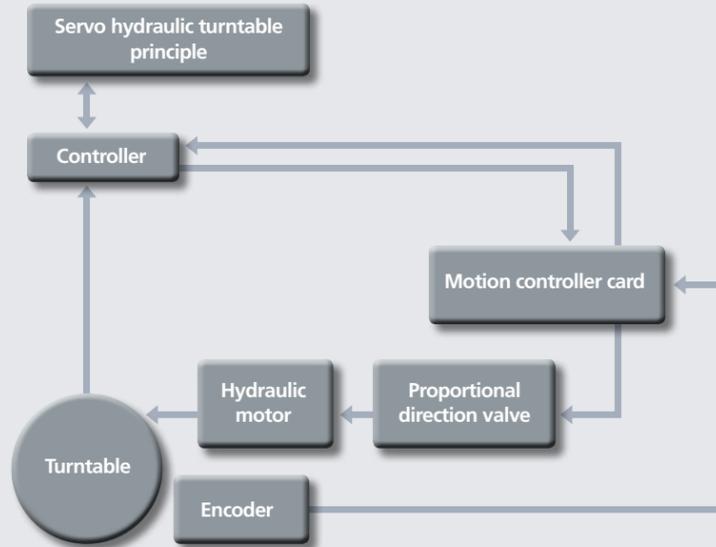
Unique rotating shaft support

Equipped with special rotating centre shaft support and interfaces for mold cooling water

Haitian Iapetus II Series

Second generation Multi-material injection molding machine

Servo hydraulic turntable principle

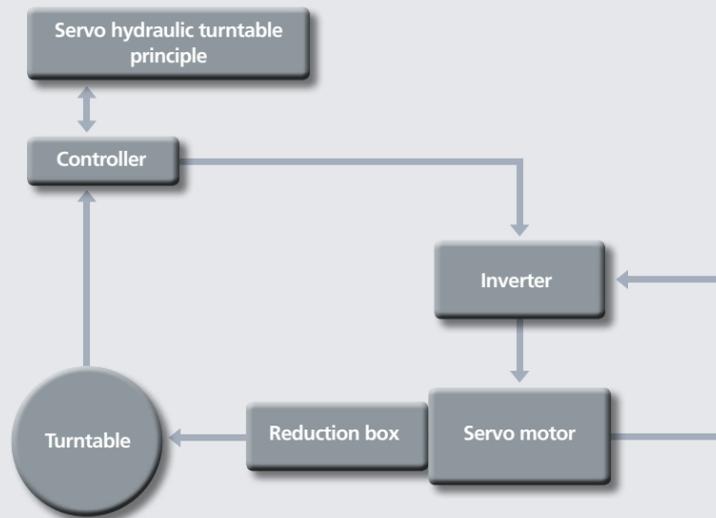


Servo hydraulic turntable setting screen



The control system of the servo hydraulic turntable is equipped with a rotating encoder, which provides immediate feedback on the turntable location. By changing the degree of opening of the turntable's proportional direction valve as well as the system's pressure and flow, the closed loop control is established.

Servo motor turntable principle



Servo motor turntable setting screen



The servo motor turntable system is equipped with an electric servo motor and inverter, to feedback on the turntable position, by changing the speed and torsion of the electric servo motor, the closed loop control is established. The servo motor electrical turntables has got the advantage of speed, stability and precision.

Options

- » Customized three color above multi-material machine
- » Servo motor turntable device
- » Proportional valve control for mold open and close
- » Proportional valve control for injection
- » Oil pre-heating device
- » Specialized screw for special material
- » Temperature controller for mold heating
- » Temperature sensor at the feeding throat
- » Hydraulic or air nozzle
- » Spring shut-off nozzle
- » Air valve
- » Core puller
- » Heat insulating board for platen
- » Flow meter
- » Autoloader
- » Hopper dryer
- » Dehumidifier
- » Magnet frame in hopper dryer
- » Air compressor



Control system especially for the multi component injection molding machines, with two CPU for the parallel processing of data. The newest, easy to use computer control system, with a faster response cycle.

- » Screen protection function to prolong the display's service life, more powerful software, increased scalability of the injection molding machine, for example gas and robot etc. expanded support
- » Electrical control box is sealed, high quality of all electrical components, rational composition, integrated protection cover for external wire, strong antiinterference ability, reliable operation.
- » Built-in access system of multiple sets of mould data, easy to mould factory management and realize rapid mould parameters to be obtained, high-speed an efficient for preparation work of production.

- » Combination of system dynamics ,optimization of switching mode maximum realize energysaving and improve the response speed
- » Barrel temperature can be precisely controlled by computer settings and PID closed loop, the temperature can be set in a range from 0-450°C
- » The mandatory I-net network managing system provides rational management tools and functions for controlling, diagnosing and maintenance for each injection molding machine.