

Zhafir Venus Series



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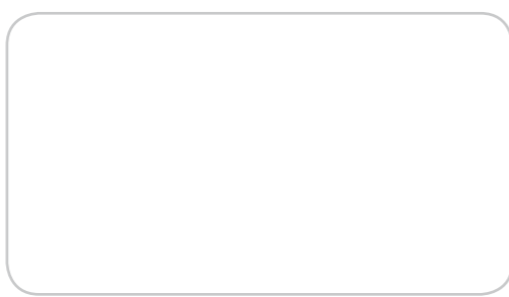
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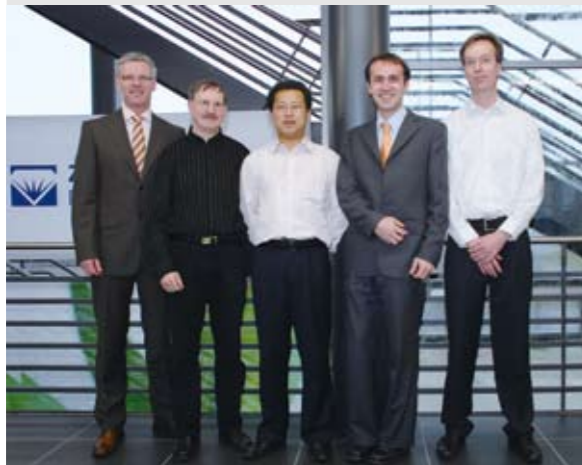
Haitian Partner:



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Zhafir Venus Series

The fully electrical injection molding machine.



Zhafir Venus Series machine, covering the clamping force from 400 kN to 4,100 kN, is the first generation of fully electrical injection molding machines at Zhafir Plastics Machinery, which targets the high tech market of plastics processing.

Considering 7 years of knowledge in the design of fully electrical machines and integrating the experience of the HTD series, Zhafir Venus Series machine has been upgraded with innovative solutions.

Solid driving structure, precise stable control, environmental protection, energy saving and high production efficiency are some of the excellent ideas which have been developed and realized by our experienced design engineers with open-minded flexibility. The Zhafir Venus Series is broadly applicable due to its outstanding performance. This applies in particular for the zero-defect standard electric and electronic industry, high quality requirements of the optical industry, the cleanroom applications, thin-wall and micro molding.

We extend advantage:

- » Upgraded design driven by customer benefits
- » High response servo drives for more precision and quicker performance
- » Uniform user interface with the latest control technology from Sigmatek
- » Module design concept to allow a choice of different injection units with three alternative screw sizes
- » Version for high speed injection
- » High efficiency due to parallel movement
- » Up to 70% less energy consumption compared to hydraulic machines
- » Excellent machine stability
- » Environmentally friendly operation
- » Long life time



Zhafir Venus Series 600/120h



Zhafir Venus Series 2300/750h

Zhafir Venus Series in detail.

The innovative Zhafir Venus Series is based on proven technology and implements qualified components to manage all processing tasks.

The powerful kinematics of the proven 5-point double toggle system supplies high speed and economical operation. This allows for higher sensitivity and increased protection in the opening and closing motion. It helps to reduce wear and tear of the customers molds.

The clamping unit is designed by using FEM analysis which optimizes and reduces strain for improved structural stiffness. This has the effect to reduce mold deformation and prolong the mold's working life. Specially designed ball screws and belts are used to facilitate high speed, high load and low noise characteristics.

The modular concept of Zhafir Venus Series provides high flexibility. There are four injection units available for each clamping force. You can select a variety of screw diameters depending on the material and demands on the plasticizing capacity, providing the optimum configuration for the machine to manage the task at hand.

The movements as for injection, mold close, mold open and the ejection are designed to be driven by independent servo-motors with closed-loop control, which allow parallel movements and provide more precision and higher response. Due to this the cycle time is significantly shortened to save production costs for customers benefits.



Quick response

Using high response servo motor and the "X" type mechanical structure for quick and responsive injection performance.



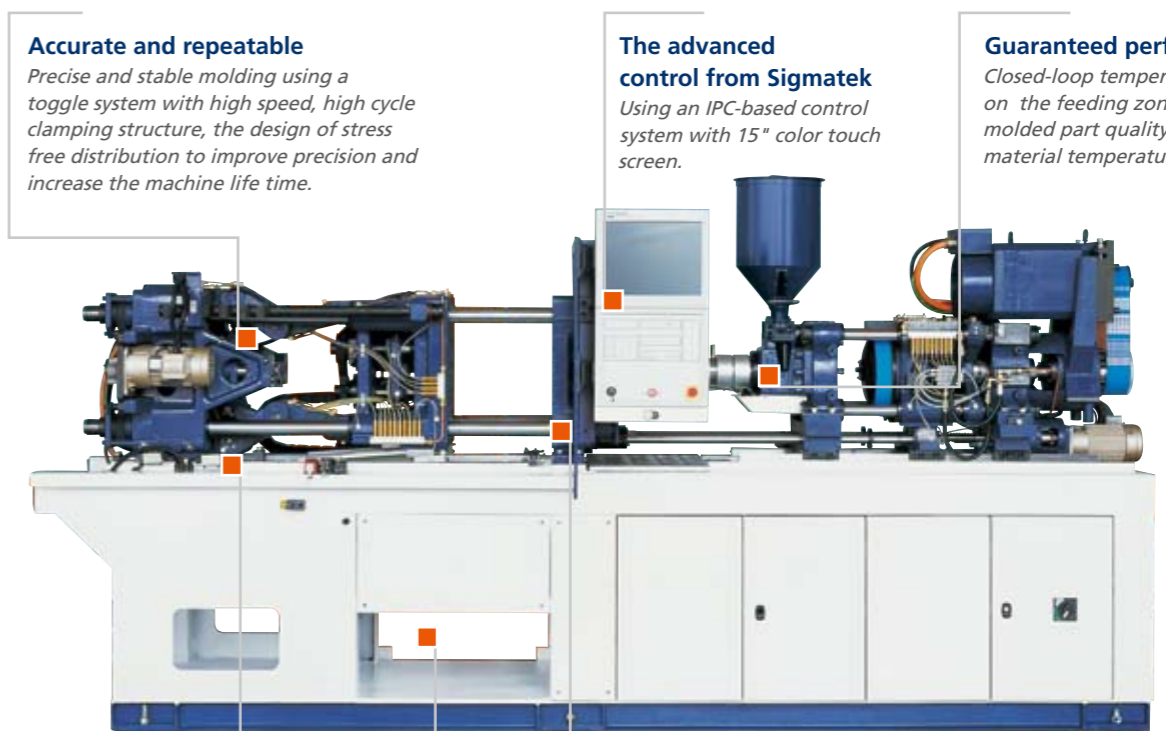
Precise and balanced

Servo driven twin ball screws provide balanced ejection motion with an accuracy of 0.01 mm



Safety concept

The solenoid interlocks the safety guard door on both operating and non operating sides, with a release force of 1,000 N. It is only released when the speed of the moving platen is zero.



Accurate and repeatable

Precise and stable molding using a toggle system with high speed, high cycle clamping structure, the design of stress free distribution to improve precision and increase the machine life time.

The advanced control from Sigmatek

Using an IPC-based control system with 15" color touch screen.

Guaranteed performance

Closed-loop temperature control on the feeding zone for optimal molded part quality at consistent material temperature.

Environmental protection

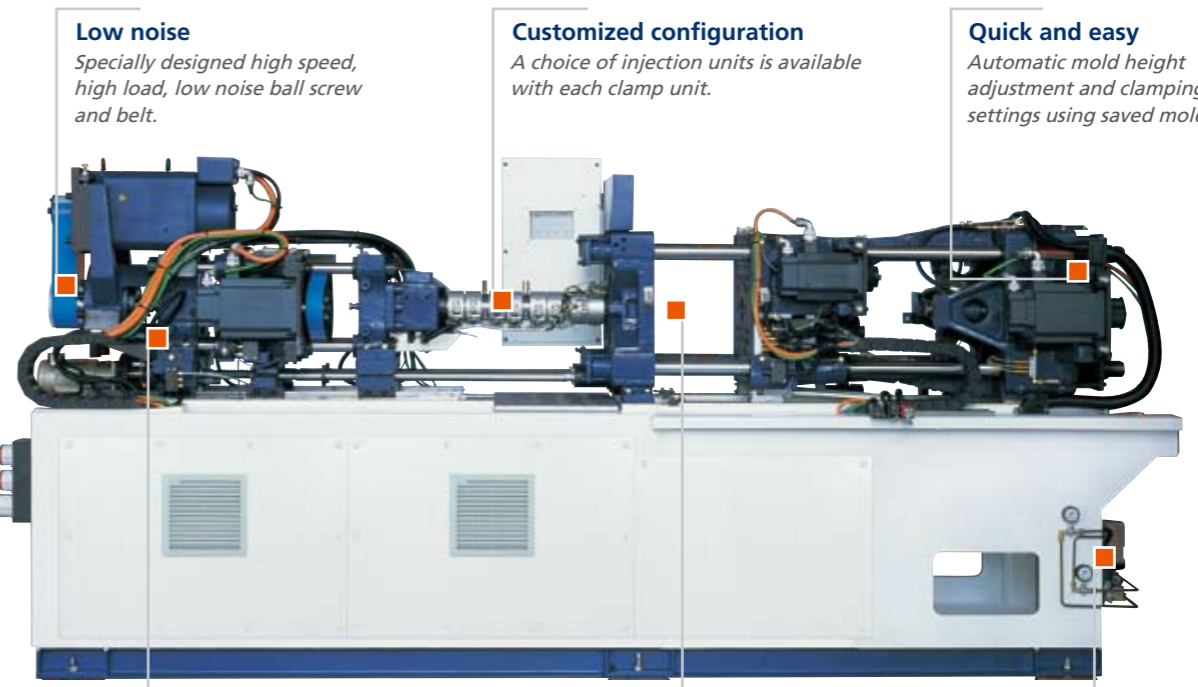
A convenient grease tray under the clamping unit area provides for easy machine cleaning.

Easily accessible

Discharge area opens on three sides to allow simple integration of peripheral components.

Enhanced flexibility

Suitable for a wide range of customer molds and applications.



Low noise

Specially designed high speed, high load, low noise ball screw and belt.

Customized configuration

A choice of injection units is available with each clamp unit.

Quick and easy

Automatic mold height adjustment and clamping force settings using saved mold data.

Stability for precision

"X" type pressure stabilization equalizer insures precise injection pressure feedback.

More space

Generous tie bar clearances and distance between platens provide the optimum mold space.

Long life time

High quality central lubrication system to provide excellent lubrication to reduce wear and maintain platen parallelism for long life time.

High sophisticated control

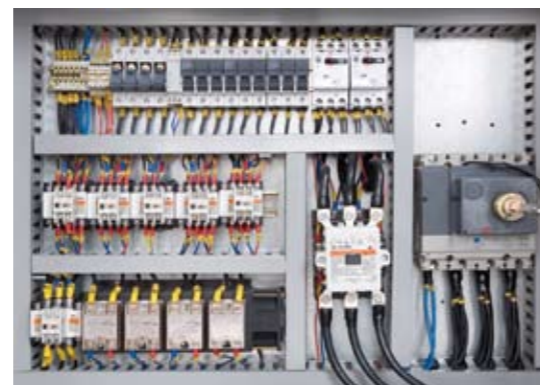
The latest technology from Sigmatek

The Zhafir Venus Series uses the latest control technology from Sigmatek. This high performance control system provides the ideal communication between the injection molding machine and the operator. The uniform operating concept and logical, clear structure of all functions make machine operation easy and user-oriented.

- » 15" color LCD with touch screen
- » Memory for storing 100 mold data
- » USB interface to transfer information
- » Multiple languages for selection
- » Metric and imperial units
- » Independent page for maintenance by after sales service engineer

A wide selection of function screens are provided for :

- Quality administration
- Production management
- Injection curve and memory
- Malfunction diagnostics
- Maintenance scheduling
- Sequence control
- Operational records



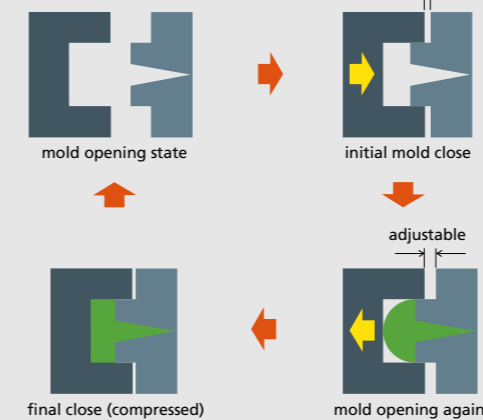
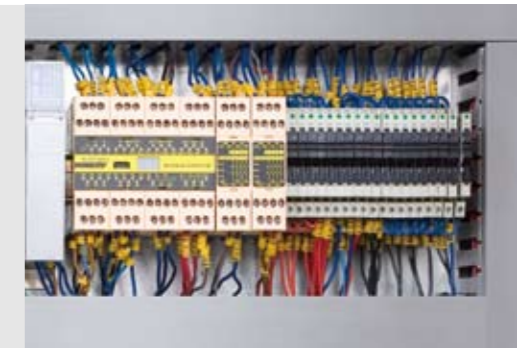
Concept for customer convenience

The control panel of the Zhafir Venus Series is equipped with three USB interfaces to transfer mold information, data printouts, motoring data and screen information. The data format is fully compatible to the PC. The USB interface also provides an effective interface for remote fault diagnosis and maintenance.



Safety concept

The electrical logic instruction operates via an interlock loop. The system instructions work serially with an electrical safety interlock to prevent any unsafe operation of the software.



Program for compression molding

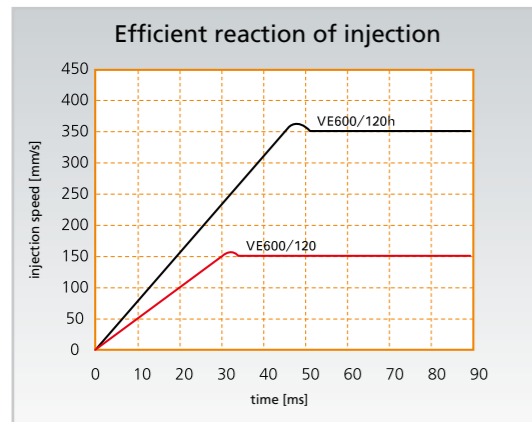
The compression cycle can be performed by easy programming. It's possible to freely programme the mold movements to synchronize with the injection movements.

This belongs to the low pressure molding technology category. It has the effect to improve the internal stress characteristic property for plastic product, reduce distortion, improve the product surface. With this control, the demand of injection force and clamp force parameters are truly optimized. It not only reduces the cost of equipment, but also greatly extends the equipment life time.

Zhafir Venus Series

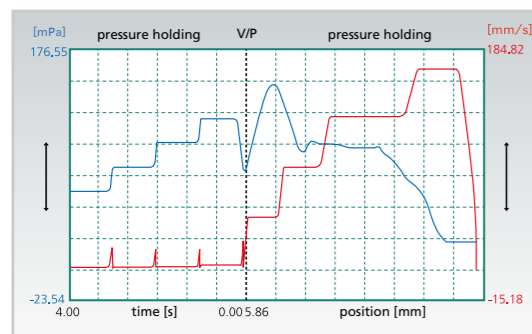
Stability in detail.

High-quality plastic products not only depend on the mold quality, but also depend on the accuracy of the injection molding equipment. The Zhafir Venus Series is designed on the basis of precise and complete data characteristics.

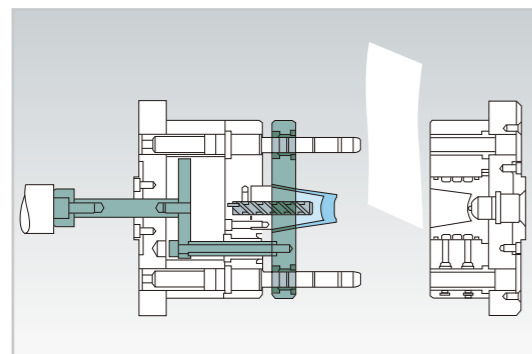


Outstanding injection acceleration response, and the compact design of injection components, reduce the inertial force of moving components. All these points improve the sensitivity of the start-up and brake, so that sufficient injection speed and holding pressure control provide a responsive performance.

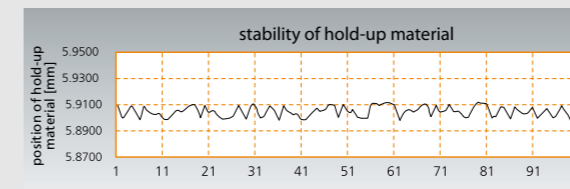
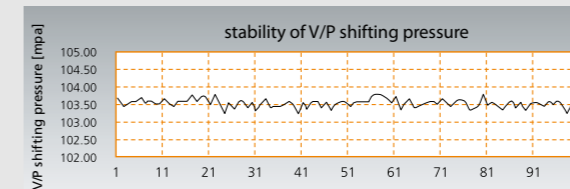
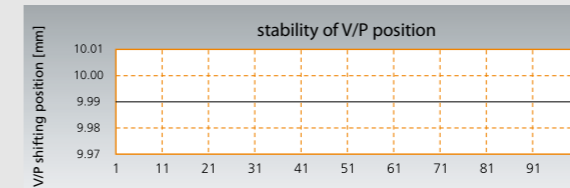
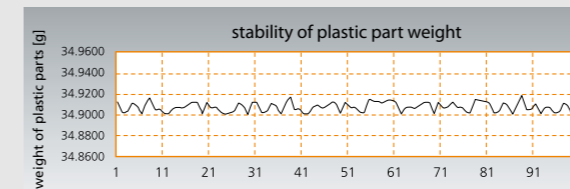
For a VE 600/120h machine the acceleration time would be about 45 ms, which provides high performance to produce thin-wall articles.



With independently developed closed-loop feedback control and high performance injection speeds, the Zhafir Venus Series can realize the superior injection pressure tracking. The pressure curve tracking is smooth and accurate. The repeatability is extremely stable, and the actual performance data accurately follows the set data. It is a very effective tool for the stability of product quality.



The Zhafir Venus Series uses the highly-accurate low force mold protection function which judges the mold safety by detecting momentary speed and force rate changing. As example a paper of 0.05 mm thickness will have the effect of preventing the mold entering the high force clamp stage and show an alarm. This highly effective protection will avoid mold damage.



Graphical representation is from the VE900/210 machine, using the standard round ruler test mold. Material POM, cycle time 7.6 s

Maximum value = 34.9188 g
Minimum value = 34.9007 g
Average value = 34.9069 g
Weight repeatability is within 0.052%

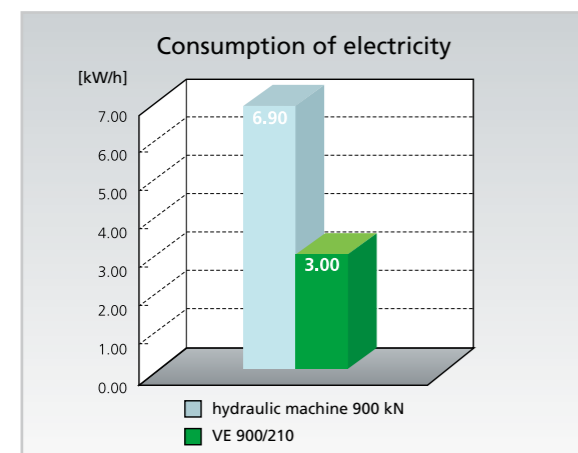
Stable production and high quality of plastic products has been the ultimate objective during the design of the Zhafir Venus Series. A stable and reliable injection unit, highly-accurate closed-loop temperature control for barrel heating distribution, professional resin optimized plasticizing devices and a highly sophisticated control system are the main features of the Zhafir Venus Series.

Zhafir Venus Series

The intelligent cost saving concept.

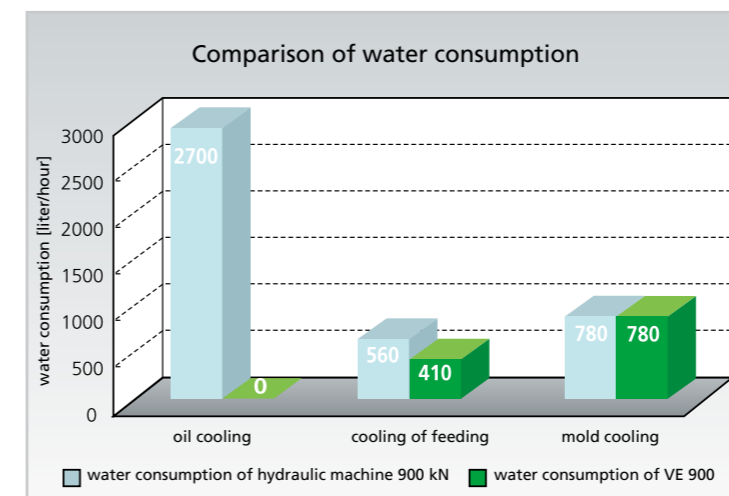
The Zhafir Venus Series has reached the level of perfection in the injection molding machinery sector in the area of the power consumption, water consumption and the time resources which are required for highly efficient production.

The output power for the all electric servo drive unit follows the load changes, using the advanced DC bus technology to rapidly transmit changes to effect dynamic braking energy. This is 10% lower power consumption than other general servo systems. It also reduces heat dissipation dependent on the type of product and mold used. The Zhafir Venus Series can reduce the electric energy consumption by approximately 50-70% compared to the traditional fixed displacement pump.

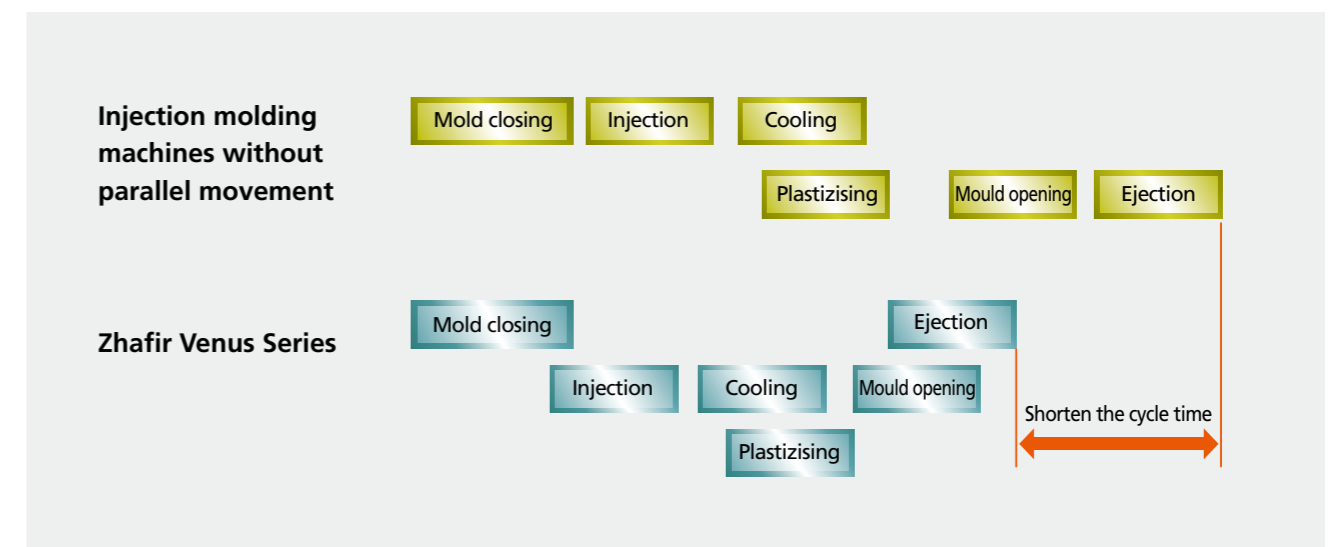


Machine [900 kN]	Consumption of electricity per unit	Consumption of electricity of 300 PCS [kW/h]	Cycle [s]	Passing rate
Hydraulic machine	0.023	6.90	9.00	saving 56.5%
VE 900/210	0.01	3.00	9.00	

Without requiring hydraulic oil, the Zhafir Venus Series all electric injection molding machine can operate in cleanroom environment and achieves the perfect combination between the equipment and environment. These features also provide great economic benefits for the customer.



The Zhafir Venus Series has an extremely low water consumption which helps to save costs and protects environment. It will save water resources by 80-90% (not including mold cooling water) compared to the common hydraulic machines.



As the modern molding industry improves, it requires the optimization of molding machines. The Zhafir Venus Series has highly-effective parallel movement since each axis has an independent drive source. This means different movements can be performed simultaneously with ease, such as charging during mold opening, ejecting during mold opening, cooling during mold opening, injecting during mold closing. Zhafir Venus Series all electric injection molding machine reduces the cycle time significant, offering improved production efficiency for cost saving though extending the competitive advantages.