

# Advantage

*Plastics News from Haitian International*

A Magazine of Haitian International | Issue 10/2014



CHINAPLAS 2014

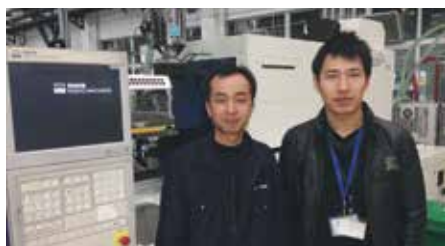
## EXTEND ELECTRICAL OPTIONS

... and discover the new Zhafir Zeres Series



# ZERES

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EDITORIAL

# DEAR READERS, DEAR CUSTOMERS, DEAR MEMBERS,

Advantage Magazine to Chinaplas 2014  
Chief Editor, Prof. h.c. mult. Helmar Franz



demand is not covered by the typical higher level of exhibits at the Chinaplas. This will be the exhibition where we will participate with our "Pluto Series" as well as with the economic versions of our "Mars Series", being exactly designed for this segment.

For Haitian the Chinaplas comes shortly after the announcement of another sensational successful year 2013, where our company reached new record highs in total sales and Net Profit, showing double digit growth. It has also been a new record year for Export. Tremendous success in a rather sluggish market environment in China and elsewhere in the world due to a number of reasons. 27,000 machines have been shipped to customers and this is an overwhelming sign of trust in our products and strategies. More than 100,000 machines with "Mars Technology" and 4,000 Venus all-electric machines delivered to the market since introduction in 2006 and 2008, respectively our new vision „Leadership has many Dimensions" takes shape in all its three pillars. **Communication**, having a very successful K show end of last year and a successful open house for Zhafir in Ningbo, presenting all-electric machines in medical application; **innovation** with our „Technology to the point" – more and more defining industry standards; and **efficiency** with the inauguration of our new head office, and the building of two new factories in Tong Tu Lu and in Chun Xiao, offering the possibility of new and even more efficient processes.

We at Haitian International well understand, that plastic parts have a great future, if quality and cost can be matched. This is why we pay

attention to the development of the injection technology, creating standards and making the machines more flexible. Our 2nd Generation machines MA, VE and JU received overwhelming response from the market and we got very positive feedback. This is the reason that at Chinaplas we can already introduce some special editions of our best sellers.

"Mars High Performance", "Jupiter High Performance" and the electrical "Zhafir Zeres Series" will allow us to address more tasks in new market segments with our standard machines.

We are also well aware about the growing need of automation. This process also gains importance in China, especially for customers operating for foreign companies. Here automation is not just to save workers, but adding to the quality of the process of manufacturing plastics parts by performing operations, which a human cannot or not as fast and as good do by himself. However, we are very sure, this automated solutions should contain a standard injection molding machine in order to make the solution flexible, easy to operate and to adapt to possible new application later and having affordable costs. At Chinaplas you will see an automated solution with a standard VE II machine on our booth.

We all believe a challenging yet exciting year 2014 lays in front of us. I would be very happy to see you at some of our venues. Welcome and have a successful year,

Sincerely yours,  
Prof. Helmar Franz

When you hold this edition of our Advantage Magazine in your hands, the Chinaplas will already have started. Traditionally this is a big event in the Chinese plastics processing and plastics machinery manufacturing industry. According to statistics it is the second largest exhibition in our industry, next to K Show in Germany.

For a machine supplier it is, no doubt, the best place in China to meet with one big group of China based customers, namely the ones which have an international background, such as Chinese subsidiaries of huge multinational conglomerates as well as plastic parts manufactures locally supplying to them. Furthermore Chinaplas is always a good address for visitors from other Asian countries and developing markets.

However the Chinese market has various types of customers and applications; and a large group of processors, who will predominantly work for the growing local consumption market in China will choose other exhibitions to visit, because their

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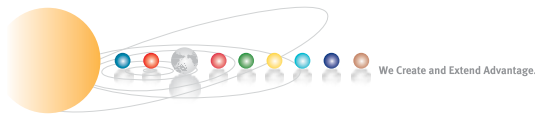
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# LEADERSHIP HAS MANY DIMENSIONS

Communication, innovation and efficiency are the cornerstones for future developments of Haitian International. In focus: "Technology to the point" for convenient customer solutions at a fair price.



Leadership has many dimensions. With this motto, you have declared the new strategic direction of Haitian International at the recent K-Show. Efficiency underpins "sustainable growth". What does that actually mean?

In our belief, continuously improving efficiency can be the only source of sustainable growth, means growth which would be resistant to market ups and downs within certain limits. It requires us continuously to question our manufacturing process and improving it by efficient use of all kind of recourses, including electricity, raw material, medias like water, heat, air, and others. It also means increasing flexibility.

Although our lead times are already unmatched in the industry, we must provide even better and shorter lead times to have a sustainable competitive advantage. This also requires intelligent work shift models, further standardization, and complexity reduction including careful handling of inventories. This has to be performed as a common and coordinated effort of R&D and manufacturing, which are two partners of this process.

We are in process of building up two new factories, in Chun Xiao for all-electric machines and in Tong Tu Lu II for large two platen machines. Those two new factories will provide us with the opportunity to implement those process changes.

The future direction in the area of "Innovations" is "all-electric in small and two-platen in the large clamping force classes." This is an ambitious strategy in light of the successful hydraulic Mars Series. How do you see the road ahead?

Of course, we are exited by the positive response the MA II has received in the market, and as a result we already could sell more than 100,000 machines with the servo-hydraulic Mars System to the market since introduction. The success of Mars is the combination of energy efficiency, "Technology to the point" and reasonable cost. We believe this success is still sustainable and we provide new additions to the Mars Series, like our new "MA High Performance", to secure their further success in the mass market.

However, we still believe in the years to come, all-electric machines, especially for smaller clamping sizes, will dominate and take over the market, just because they will eliminate one media – hydraulic oil – from the process. Electric drives are now able to provide even better precision, energy

saving and speed, than hydraulic drives. The only argument, which at this very moment prevents

More than 100,000 machines with "Mars Technology" sold.

all-electric machines from replacing the hydraulic ones is the cost of electrical machines. However – looking carefully to it, the price of an electrical machine is a result of the technology, it provides. At this time an all-electric machine is at the same time also a high tech machine. But we think, this is not the end of all developments. We believe, if we design an all-electric machine with the technical parameters of a standard mass market hydraulic machine, and manufacture such machines in big numbers, we can also reach a similar cost structure. And if such target is reached – all other advantages of an electrical machine will add to it, silence and cleanness of operation amongst others.

There is still a way to go, but we strongly believe in it. On that path we just now introduce our Zeres Series, integrating a small hydraulic unit for cores, otherwise being a uncomfortable stand by equipment to the all-electric machine. In our believe this will allow many customers, who still operate a lot of molds with hydraulic core pullers to comfortably use this molds and at the same time get used to the superior advantages of an all-electric machine.

As a next step, we will have a look to a further development of an economic version of our very successful Venus Series so to provide new and cost effective solutions for customers with more standard kinds of plastics parts to manufacture. But more to this maybe later this year.



## 31 MARCH 2014 ANNUAL FIGURES

Haitian International wishes not only to consolidate its sustained market leadership in plastic injection-molding machines but also to expand it in the medium term. The company is pursuing this goal through a two-pronged strategy geared towards providing advantages for the customer: all-electric designs for the small and medium-sized ranges of clamping force; in-line with this, the expansion of space-saving two-platen technology, with the innovative "Mars Technology" offered as standard.



### FINANCIAL HIGHLIGHTS

- Historical record in sales and profit
- 27,000 machines sold and delivered
- More than 100,000 Mars machines sold so far
- Nearly 4,000 Venus Series sold so far
- Ongoing success with Machine Generation II
- Top 10 brand value in Chinese machinery manufacturing industry

(RMB million)	FY2013
Sales	7,200.7
Gross Profit	2,273.7
Operating Profit	1,355.9
Profit before Income Tax	1,475.5
Profit Attributable to Shareholders	1,206.2



- ▶ Energy saving all-electric: Zhafir Venus Series increased by 22%
- ▶ Energy saving two-platen: Haitian Jupiter Series increased by 39%
- ▶ Energy saving hydraulic: Haitian Mars Series increased by 18%



ZHAFIR ZERES SERIES

# WE EXTEND ELECTRICAL OPTIONS

Zhafir | Product launch of Zeres Series

Zhafir has developed a new electrical injection molding machine, the Zhafir Zeres Series, a tremendously flexible solution. It is based on electric technology and equipped with an integrated energy-efficient hydraulic system, for example, for an efficient use of molds with hydraulic core pulls. This extends Zhafir’s range of electrical solutions, opening up new and enhanced possibilities, and offering plastics processors an optimal solution for their specific requirements to operate such molds.



400 - 2,300 KN

## ZERES

The Zeres is the optimal machine for molds with hydraulic core pulls. Molded parts, requiring high precision and high repeatability, rather than short cycle time, for example high precision optical components, will be ideally manufactured on this machine series. The Zeres is structurally identical to the Venus II Series, and it offers all the advantages of the electric injection-molding technology: precision, energy efficiency, independent parallel movement throughout the whole cycle, and, not least, easy maintenance.



Fit for molds with hydraulic core pulling function.

### SERVO-ELECTRIC CLAMPING UNIT



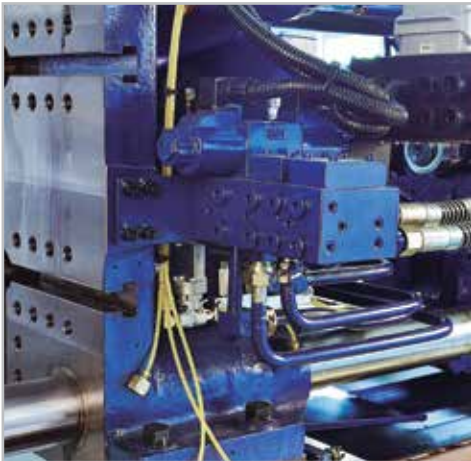
The redesigned 5-point-toggle-system increases the platen intensity, reduces platen inertia and joint stress. This secures optimized kinematics and reduced dry cycle times.

### SERVO-ELECTRIC INJECTION UNIT



The servo-electric injection unit provides improved response time and reliability; enables further improvement of the acceleration rate, realizing even more energy saving.

### INTEGRATED HYDRAULIC SYSTEM



Two integrated hydraulic core puller interfaces are fixed on the moving platen, providing even more flow and an increased pressure compared to external power pack solutions. Pressure and flow are adjustable on the control unit.



CUSTOMER STORY CHINA

# ON THE TEST BENCH WITH VENUS II AND A MOLDING



Haitian | Customer Magazine Advantage | Interview with Wu Huiwen  
Application Engineer of TRW Ningbo, China

The TRW (Ningbo) Components & Fastening Systems Co. Ltd. is an internationally in-demand manufacturer of automotive components and currently produces at three sites in China. Step by step, the Ningbo plant is being re-tooled for electric machines. First choice for this has been a Venus 1200 II, the second one was the bigger electric machine Zhafir Venus 4500 II, which will produce car ventilation shafts for the first time. We spoke with the applications engineer in charge, Mr. Wu Huiwen, who is putting the Venus through its paces.



**"The focus with the Venus Series is clear on precision"**

Mr. Wu Huiwen Application Engineer of TRW, Ningbo (left side). On the right side: Mr. Sun Xiangcheng, Application Engineer of Zhafir China.



TRW Ningbo manufactures interior space components such ventilation grilles

**Mr. Wu Huiwen your plant has been producing for a long time on hydraulic machines of the Mars I and II types. Now, all-electrics have caught your attention. How did that happen?**

During the relocation, we subjected everything to testing, and that included looking for any potential for technological optimization, and testing, by application, new approaches with which we can support our customers' processes even more efficiently.

**"The Venus is very green!"**

**This suggests a basically new approach**

It's not really quite like that. The tip for the Venus came from one of our sister plants, where our colleagues are already manufacturing using several Venus Series machines, and they commended the great reliability of the technology. But of course, a conversion like this one from hydraulics to all-electrics is always a trend-setting decision, for our plant as well, and that decision was made at TRW headquarters in Shanghai.

**What goals are you setting with this conversion in terms of production technique?**

Basically, the most important goals are a significantly higher degree of precision and more energy savings, but also we want to do without oil. The Venus II is attractive in this regard, offering excellent performance parameters at an unbeatable price.

**Which molding are you testing at present on your new Venus?**

A ventilation shaft for Chevrolet, which is used below the windshield. The mold consists of two halves, injection-molded with a shot weight of 220 g in 40 seconds. Before assembly, the halves are taken off by robot and then go through a camera inspection system first. So the focus is quite clear on precision and component quality.

**How does the Venus perform? What was your first impression, in detail?**

Really very good. The molding has a lot of thin spots, so the Venus, with its high injection speed and short reaction times, scores very effectively. The injection consistency is 0.5 bar. The plate position with open mold has a consistency of 0.01 mm. That is really very precise and extremely important, especially with automation. Also, the cushion, between 11.30 and 11.44 mm, means a variation of only 0.09 mm.

**Then the chances are, that your first Venus was not the last?**

It's still too early to come to a final conclusion, but after the first few days we are very satisfied. It is very "green", surprisingly quiet, and the results are impressive. It's also pleasingly comfortable to have the mold height and clamping force setting directly in the controls. All we have to do is enter the mold height and everything else is a piece of cake. To answer your question: If this Venus passes the test phase, and everything looks fine according to that, there will certainly be others to follow.

Ventilator shaft for Chevrolet

- Injection pressure consistency 0.5 bar
- Melt cushion 11.30-11.44 mm
- For take out with robot important: platen position consistency 0.01 mm



## ABOUT TRW

TRW (Ningbo)  
Components & Fastening Systems Co. Ltd.  
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[www.trw.com](http://www.trw.com)

The TRW (Ningbo) Components & Fastening Systems Co. Ltd. was founded in 1998 in Ningbo as a joint venture company, and in 2005 it was integrated into the TRW Group as a fully owned subsidiary. Headquarters are in Shanghai.

TRW operates three plants in Shanghai, Ningbo, and Langfang for the engineered fasteners and components sector, and each one specializes in particular kinds of assemblies. Ningbo manufactures interior space components such ventilation grilles, air vents or seat-belt components, for example. In September, the plant relocated from the Jiandong District to the Beilun District.

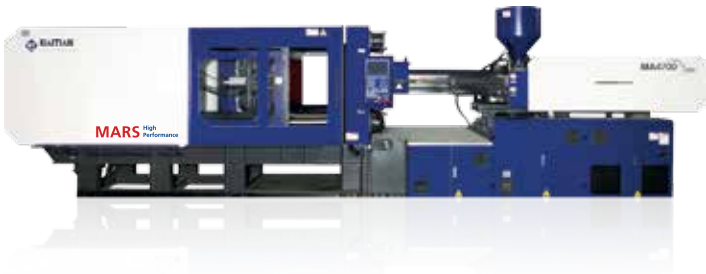
TRW in Ningbo has been a customer of Haitian's for more than 15 years and during that time it has ordered a total of 58 units, with clamping force sizes between 50 and 800 tons; this includes 43 Haitian Mars machines, Generations I and II, and two Zhafir electric machines VE 1200 II and VE4500 II.



NEW EDITIONS

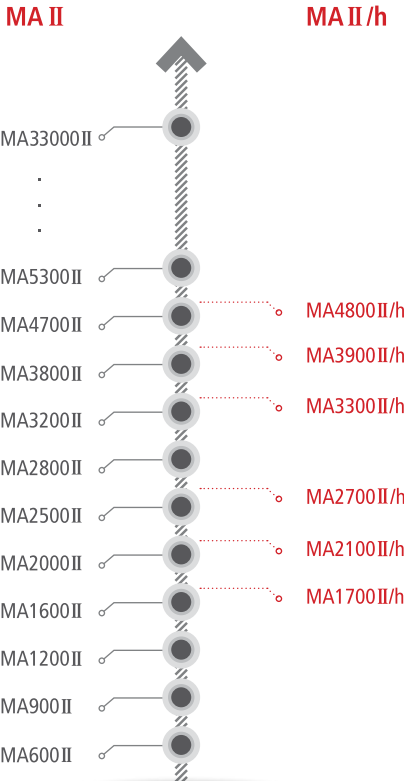
Enhancing its product offering Haitian is addressing specific requirements of various applications with special versions of its machines, thus meeting customer demands by "Technology to the point". The new "High Performance" editions of the best-selling Mars and Jupiter Series each addresses specific applications applying specific features in limited machine clamping force sizes. Therefore the potential applications for the successful Mars and Jupiter machine concepts are specifically expanded.

WELCOME MA II /h

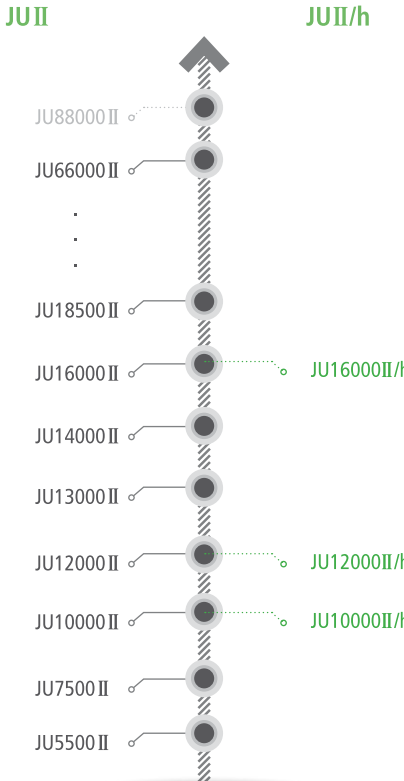


MA II /h  
DYNAMIC INJECTION  
FOR HIGH CAVITIES

With its Mars "High Performance" edition, Haitian is also addressing to customer needs for specific scopes of application, e.g. in the manufacture of standard shaped thin-walled packaging components made of PP, PS, ABS and PET-based materials. With this in mind, the Mars High Performance is available in the clamping sizes 1,700, 2,100, 2,700 and 3,300 kN. Here too, the proven energy-efficient "Mars Technology" ensures very low energy consumption. Further advantages derive from a tailored injection unit for injection speeds of up to 180 mm/s, special screw designs that can be selected depending on material and requirements, and increased mold space area for molds with high cavities.



WELCOME JU II /h



JU II /h  
UP TO 20% MORE  
MOLD SPACE

With the Jupiter "High Performance" edition, available in 10,000, 12,000 and 16,000 kN, Haitian intends to address the requirements of many processors, manufacturing large and flat parts; specifically in the automotive, but also in other industries. It enables them to increase their production efficiency. The main feature is a substantially larger mold space area to run big molds. The tie bar distances were increased by up to 20% and the whole clamping unit modified so that heavy molds can be easier handled.





CUSTOMER STORY GERMANY

# INDIVIDUAL PRODUCTION AT SERIES LEVEL

Haitian | Customer Magazine Advantage | Interview with Thilo Hofmann  
Plant Manager of Wolpert Modell- und Formenbau AG, Germany.



Wolpert Modell- und Formenbau AG in Bretzeld-Schwabbach is one of the leading companies in producing prototypes, mini-series, and special series. Their product portfolio includes complete front aprons, dashboard padding, and door paneling for the automobile industry. Wolpert places a great emphasis on efficient solutions in all areas, from the design to outsourcing and extending to the training of qualified workers. We spoke with Plant Manager Thilo Hofmann.



"It does matter, whether I get two machines or three for the money." Thilo Hofmann,  
Plant Manager of Wolpert Modell- und Formenbau AG

**Mr. Hofmann, your colleagues were in China recently and visited Haitian in Ningbo. What was their impression?**

My colleagues were very surprised; that's a pretty big place there. You can see it on the internet, and it is beautifully photographed. Then when you see how many machines are actually in the production hall, you are really surprised.

Without a shadow of a doubt, Haitian is a big company that not only manufactures injection-

molding machines to meet customer demands, but also offers high-standard series production.

**At the beginning of 2013, you bought a Haitian Mars machine with 12,000 kN ...**

An order finally gave the impulse to the purchase of a Mars Series machine.

When the machine was ready in China, our technicians were on site, and were pleasantly surprised by the results. Outstanding cost effec-

tiveness. It's also gratifying that we had everything customized at an attractive price.

**Do you produce the molds for prototypes and small series yourselves, or do the customers bring them to you?**

We solve that internally. The customer comes to us for the sampling and then the mold is produced here at the plant or in China. We have partners there in the greater Hong Kong area.

**There is more hesitancy to purchase injection molding machines from Asian countries than there is in purchasing molds. Why is this the case?**

That's my impression too. With the machine, it's still a matter of prestige. But in the last few years, they've gotten off their "high horse", simply because the pressure has increased, and in the end the investment costs are what count. Now, it does matter whether for the same money I get two machines from one manufacturer or three from another one.

**Where do you see Wolpert as different from the competition?**

95% of our orders come from the automotive sector. The manufacture of prototypes in itself is no longer a niche, since the market is growing ever bigger, due to the constantly changing number of vehicle models and types. This of course gives rise to specialization in competition. We supply complete modules to our customers. This



Flexibility is in demand: on average 5 mold changes per week and shot weights between 10 g and 2.8 kg.

means that the parts that we produce or finish in-house are refined, assembled, and then delivered to the customer. We purchase any further processing and refinement such as, for example, galvanizing. Only when we have a lower utilization rate, for example, we do recover for ourselves sub-areas, so that our workers are used to capacity.

**That means, you always decide on the basis of profitability what is outsourced and what is not?**

Exactly. We purchase from 30% to 50% externally, but when it gets tight, we bring individual operations back in-house so that we can work at 100%. So far we have not introduced short-time work and neither have there been wage losses. Over the year for example, we bring in molds and plastic components valued at 1 to 1.5 million Euros. These are mostly standard parts that we integrate into our assemblies and supply to the customers in the time planned and in the quality demanded.

**How important is the energy cost curve in your future planning?**

Very important. At the moment, we are preparing ourselves for an energy audit. Obviously, we have been concerned for years about developments in energy costs, and we have external consultants who support us in power procurement. This year, fortunately, we are in a position to have more favorable energy costs than in the previous year, because we bought at the right time. The energy consumption of our machines is also very important. In the large machines sector, we have to make a change because we have energy costs of around 20,000 Euros per month.

**Then, flexibility is surely also what you expect of a machine?**

Absolutely. Each of our machines must be extremely flexible and multi-faceted. And the range is already very wide: On our 1,200 metric tons clamping force Mars machine, parts are produced with a shot weight of from 10 g to 2.8 kg. We pushed the performance to the maximum and were extremely surprised that the Mars machine molds even small parts with such precision. At all events, the investment has already proven worthwhile.

**How many mold changes do you have per week on the machine?**

The Mars, for example, operated almost around the clock last year with 7 mold changes per week. Overall, it varies between five and ten changes. Per day, it generally requires at least one change, at certain times even two. Naturally, we always try to be sure to use as many of the same materials at one stretch. But it's not inconceivable that we may have five different changes of material on the machine in one week.

**How many tons of raw materials do you process per year? And how many products does that amount produce?**

Annually, we process roughly around 150 tons. In 2013, we supplied close to 2,000 modules. Together with the individual parts, that gives us around 200,000 to 300,000 parts.

**Does the greatest challenge for you consist in achieving a high degree of standardization in a relatively individual process? Is that the trick to being competitive on the basis of costs and delivery times?**

Quite clearly, this is the task that we have set ourselves so that we can work at the highest level. The basic concept is the series. Last year,

for example, we produced for a customer that was very taken with our production processes. We have a structural plan that defines when and which vehicles are built in which colors, and when and which bumper is needed of that color and design. In this way, on Monday we produce five of one, on Tuesday five of the other, etc. The employee plans the goods, so to speak, with the warehouseman, who then makes it available for production so that the daily plan can be met. After that, it goes out to the customer.

**Mr. Hofmann, have you demystified the complex field of mold making in the last few years and made it profitable?**

We have adapted it to the requirements of the market, yes. And we've adapted ourselves to the competition in order to meet the demands of our customers long-term. To put it in Haitian's own words: "Technology to the point".



## ABOUT WOLPERT

- Plastic injection molds
- Prototypes and series production mainly for automotive industry
- Most modern processing machines in Europe

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# WELCOME TO CHINAPLAS

EXHIBITS AT A GLANCE



innovation.



## Haitian Mars<sup>2</sup> Series



1700 / 2100 / 2700 / 3300 kN

**NEW EDITION  
HIGH PERFORMANCE**

## Haitian Jupiter<sup>2</sup> Series



10,000 / 12,000 / 16,000 kN

**NEW EDITION  
HIGH PERFORMANCE**

## Zhafir Venus<sup>2</sup> Series



1,500-3,800 kN

**ALL-ELECRIC  
PACKAGING MACHINE**

## Zhafir Zeres Series



400-2,300 kN

**NEW ELECTRIC SERIES  
WITH INTEGRATED HYDRAULIC**

### Haitian MA II /h Series

Mars High Performance edition enhance the application field of the best seller Mars Series: For special ranges of application, e.g. in the manufacture of thin-walled packaging components. The proven "Mars Technology" inside ensures very low energy consumption. Injection speeds of up to 180 mm/s and increased mold space area with high cavities.

Machine type ..... MA3300 II /1700h  
Application ..... Bottle spout  
Part weight ..... 3.4 g  
Cavity ..... 24  
Material ..... PET  
Cycle time ..... 12.5 s



ENERGY SAVING  
TECHNOLOGY



### Haitian JU II /h Series

Jupiter High Performance edition enhance the application field of the success range Jupiter II Series: Haitian intends to address the wishes of many processors, specifically in automotive but also in ohter industries, and enable them to increase their production efficiency. With substantailly larger mold space area by up to 20% for big molds and a modified clamping unit for heavy molds.

Machine type ..... JU10000 II /8400h  
Application ..... Center console /automotive  
Part weight ..... 900 g  
Cavity ..... 1  
Material ..... PP  
Cycle time ..... 50 s



ENERGY SAVING  
TECHNOLOGY



### Zhafir VE II /P Series

The strongest sales driver for the Zhafir brand continues to be the Venus Series. The "p" version of the second generation of Venus machines, specially designed for the manufacturing of packaging and mass-produced packaging-components. Available in clamping forces from 1,500 to 3,800 kN and with injection rates of up to 350 mm/s, this is a very economical and energy-saving solution for high-speed components in the standard sector.

Machine type ..... VE3000 II /1700p  
Application ..... Caps  
Part weight ..... 2.2 g  
Cavity ..... 48  
Material ..... HDPE  
Cycle time ..... 3.5 s



ENERGY SAVING  
TECHNOLOGY



### Zhafir Zeres Series

The Zeres offers all the advantages of electric injection molding technology: precision, energy efficiency, independent parallel movement throughout the whole cycle, and, not least, easy maintenance. Servo-electric drives for injection, dosing, and mold movement ensure a high level of dynamics. In addition, an integrated hydraulic unit for minor movements the Zeres for applications with core pulls or standard precision parts.

Machine type ..... ZE1900/640  
Application ..... Car ashtray  
Part weight ..... 83.3 g  
Cavity ..... 2  
Material ..... PA6 + 30%GF  
Cycle time ..... 25 s



ENERGY SAVING  
TECHNOLOGY







Haitian Plastics Machinery  
manufacturing hall in Ningbo, China



Zhafir Plastics Machinery  
manufacturing hall in Ebermannsdorf, Germany



Zhafir Plastics Machinery  
manufacturing hall in Ningbo, China



## Proximity to customers create advantage

Because of the permanent availability of important customer services, replacement parts and service features, our customers are always able to develop clear competitive advantages and to use them lucratively, both now and in the future.

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