

ZHAFIR PLASTICS MACHINERY

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PREMIER MOULDING MACHINERY

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Zhafir Jenius Series



JENIUS

4,500 - 33,000 kN

Sales branches:



ZE-20180326-IV

Further extension of electric injection molding technology

ZHAFIR JENIUS SERIES

As a high-end brand under Haitian International, ZHAFIR is one of the world's largest suppliers of electric injection molding machines, being also a pioneer in this market. ZHAFIR's main products are precision electrical injection molding machines, including VE, ZE, JE.

Located in Chunxiao Town, Ningbo, China, ZHAFIR's manufacturing plant in China occupies an area of 220,000 square meters, which is a modern production site with functions covering R&D, application and technology center, manufacturing, processing of parts, machine assembly and commissioning.

ZHAFIR JE series is an innovative product which combines the electric drive technology and the two-platen servo hydraulic system. Using an innovative modular concept, the fully electric solution and the servo drive system can be combined in a highly efficient way, while their respective benefits are being re-tained. It is benefited from our profound application experience from customers and close attention to the development tendency of medium and large injection molding technologies. JE has been developed to address the specific quality requirements for industries such as white goods and automotive. With excellent stability, higher efficiency and faster investment return, JE is an ideal choice for the customers in the industry.



Prof. Dr. Helmar Franz,
Co-founder of Zhafir and Director of Board, Haitian International



Zhafir Germany

- » Parallel movements improve production efficiency
- » High stability ensures high yields
- » Improved dimensional accuracy and visual quality of the part
- » Bigger space for large molds
- » Increased opening stroke for deep cavity mold
- » Standard interface for various new technologies and new processes, such as IMD, MCF, EIPP, etc.

Scope of Application

The JE series is applicable for production of medium and large parts for various industries, especially for automotive industry and white goods industry. In the industries where quality of products plays a pivotal role, JE is an ideal choice with its high cost effectiveness and the ability to create better economic benefits.

Combination of different technologies

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True hybrid system does not only focus on producing high efficiency, but also on long-term stable operation and low energy consumption, in order to maximize the economic benefits of the factory. To maximize the return on investment and to recover the cost as soon as possible, is not only related to a

low price as a guarantee to the success of the product. The design according to the proven innovation strategy "Technology to the point", the production efficiency, high quality rate and low operation cost is key to guarantee the profit. Therefore, we are convinced that JE series will impress the customers even better in this sense.

Improved efficiency

The JE series has all of its moving axis completely independent to each other, which can be fully synchronized even at high speed. Benefiting from the perfect combination of the electric servo drive and servo hydraulic technology, it can produce products with high quality in shorter cycle times.

- » The parallel movements as standard, enabling shorter production cycle times
- » Improved production efficiency
- » Optimized servo hydraulic circuit and software design to shorten the dry cycle
- » High injection repeatability improves stability and precision

Lower energy consumption

JE series can save up to 60% more power in comparison to the conventional hydraulic injection molding machine

- » Less transmission during the injection molding process, with higher transmission efficiency
- » Optimized design for energy feedback system
- » Substantial reduction in water consumption

More compact, less floor space

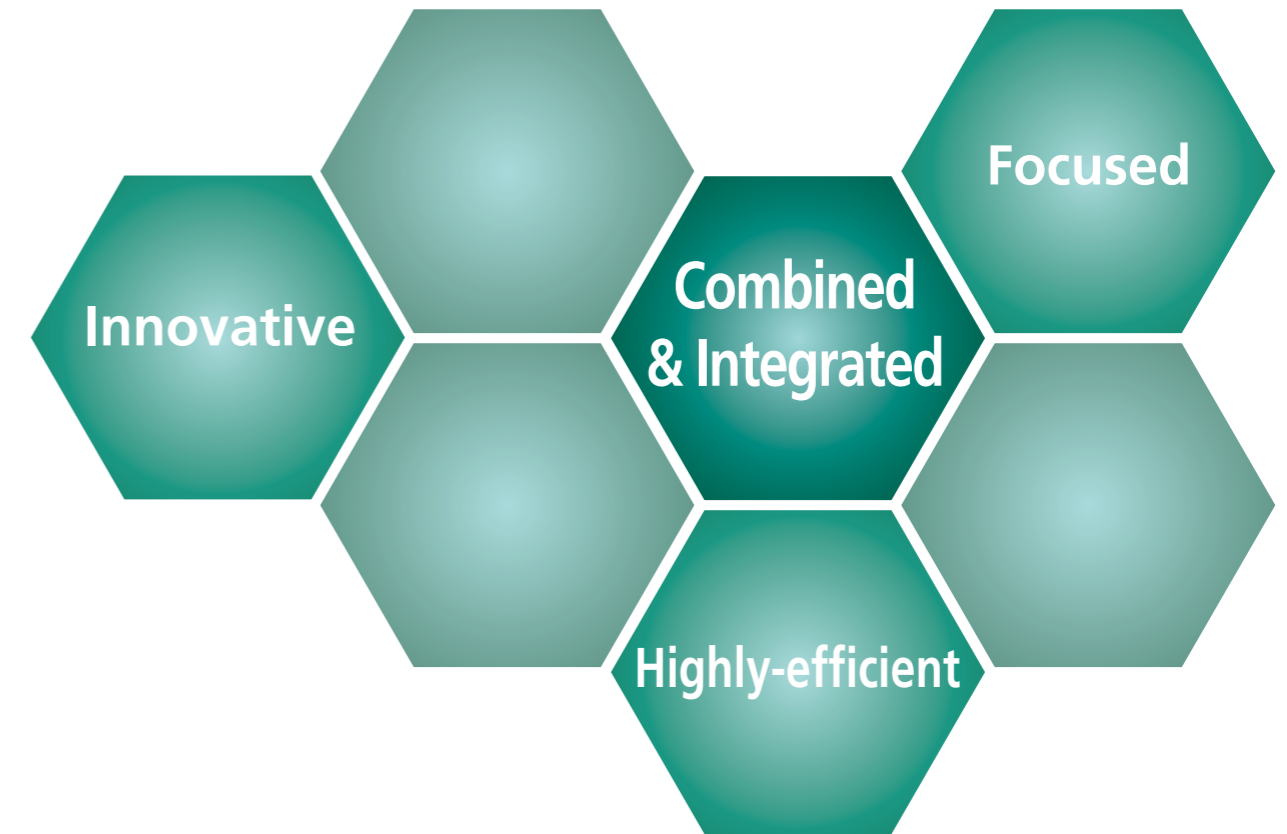
With the compact two-platen design, JE series provides a smaller footprint.

- » Reduced investment into infrastructure
- » Reduced transportation and installation costs
- » Reduced operating costs

Process window with full coverage

With regard to linear injection molding function at different injection speed, or with injection speed requirement up to 160mm/s, the JE series can fulfill a wide variety of application requirements in different industries.

- » Linear injection function for full interval
- » High injection speed for wider range of process adjustment
- » More convenient process



High injection repeatability

With precision closed-loop control and rigid transmission mechanism from the electric drive, the weight repeatability is within 0.1%.

- » Servo motor and synchronous transmission are applied for axial movement
- » Position accuracy 0.01mm
- » Speed accuracy 0.01mm/s
- » Pressure accuracy 0.01Mpa

Professional services and solutions

ZHAFIR Application and Services Department provides comprehensive service, including technical support and solution, such as equipment upgrading, maintenance, spare parts supply and all levels of training.

- » Low maintenance cost
- » Project consulting, application optimization
- » 400 global hot line service
- » Professional training at all levels
- » Smart manufacturing solutions

* The above data is obtained through the test, and different data may be obtained due to different conditions.

Further extension of electric injection molding technology

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Fast cycle time

Multi-synchronized to minimize the cycle time of production. To establish the clamping force within short time and high-speed operation of the servo motor is key to shorten the cycle time.

Larger mold space

Larger mold space as compared to the traditional injection molding machine. Extended mold movement stroke and ejection stroke to satisfy the needs of the relevant industries.

High stability

The combination of servo driven and mechanical precision transmission ensures high stability of the injection process.



Smaller footprint

The compact design of two-platen structure, save the space.

Precision control

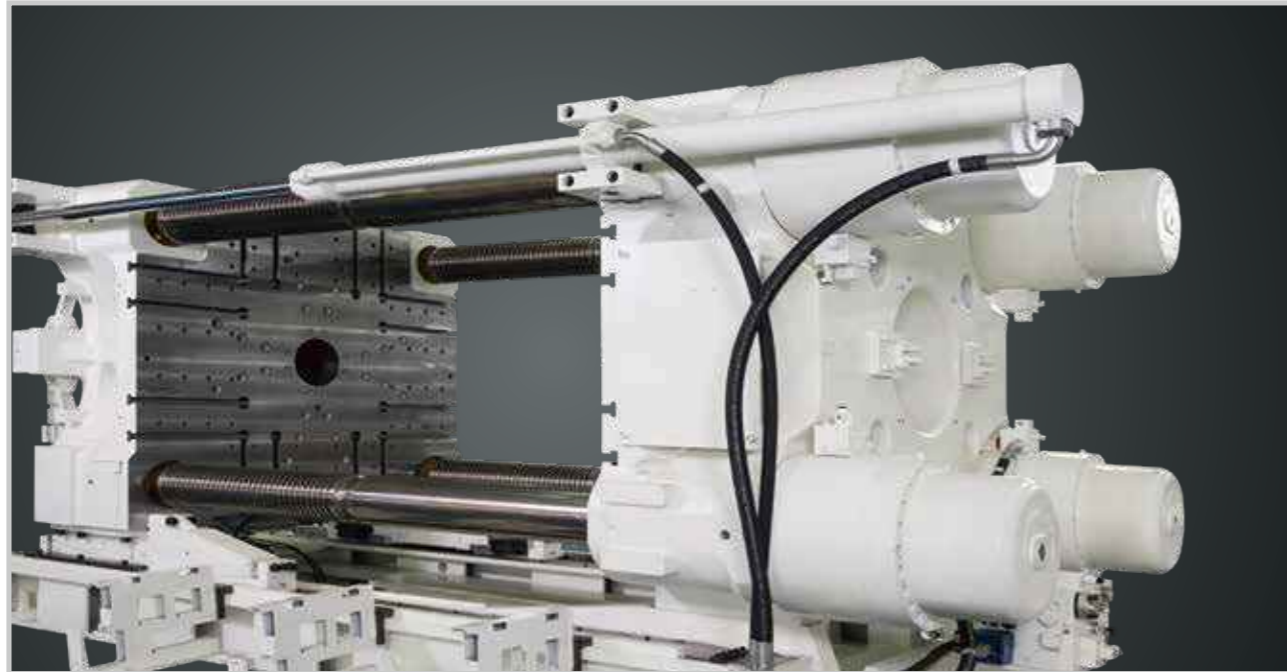
The high performance controller and the user-friendly machine interface makes it more convenient to operate the machine.

Low energy consumption

With the fully electric injection molding system, energy consumption of the machine has been reduced to minimum.

Clamping unit - the compact design of two-platen structure

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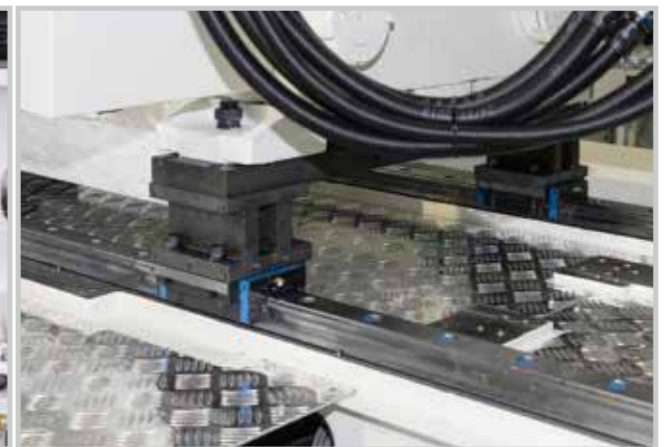
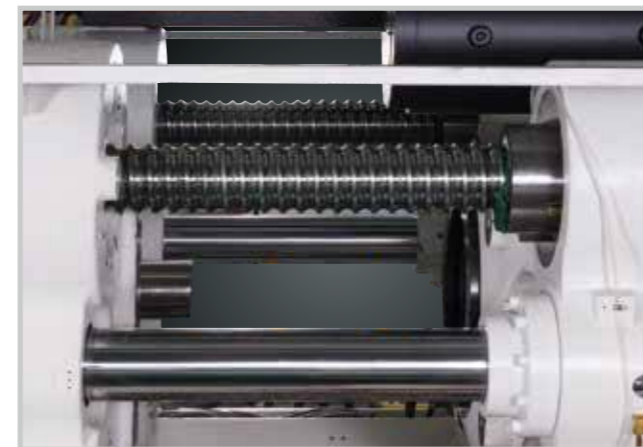


The compact design of the two-platen clamping structure has been integrated into the JE series, with optimized space layout and providing larger mold space, extended mold movement stroke and ejector stroke.

- » Free "hanging" tie-bars
- » Platen with high rigidity
- » Synchronized nut locking system
- » Improved weight stability of moving platen slides
- » Inverted ejector unit

Injection unit - fast and precise electric injection molding

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In comparison to a hydraulic injection unit, the servo motor and ball-screw driven injection unit, has substantially improved precision of the injection speed, pressure and position repeatability. It thereby ensures the high precision and high stability of JE series.

- » Injection unit based on multi ball-screw synchronous control technology
- » Electric driven plasticizing and injection
- » Swiveling injection unit design
- » Modular injection unit

Control unit - flexible and fast
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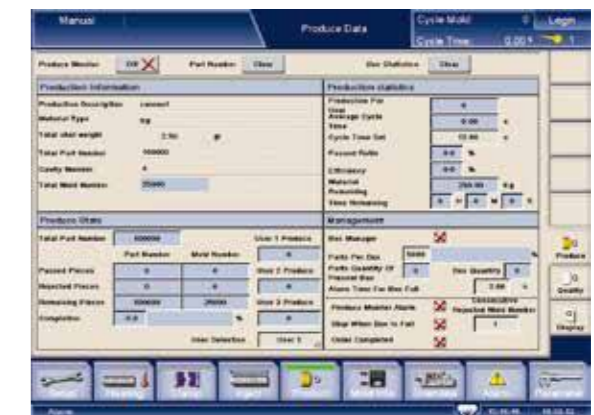
Programmable core movement



Controllable core velocity/pressure



Programmable I/O points



Optimized production management screen



With optimized layout and cycle instruction in the control system, the signal processing speed has improved, which can be seamlessly connected with the peripheral automation equipment. More user-friendly interface, makes it more convenient for the user.

- » Latest CPU, substantial increase of operational performance
- » Optimal layout
- » Automatic equipment for convenient interconnection
- » Multitude of application software
- » interfaces for integration into cyber physical system (CPS)

Modular design

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Mold closing unit parameters

Mold closing unit		JE4500	JE5500	JE6500	JE7500	JE9000	JE10800	JE13000	JE16000	JE18000	JE18500	JE21000	JE24000	JE28000	JE33000
Clamping force	KN	4500	5500	6500	7500	9000	10800	13000	16000	18000	18500	21000	24000	28000	33000
Mold opening stroke	mm	1050/550	1300/750	1350/800	1400/900	1600/1000	1900/1200	2250/1500	2550/1700	2600/1700	2600/1750	2700/1800	3000/2000	3300/2100	3200/2200
Mold thickness range	mm	850-350	900-350	950-400	950-450	1100-500	1200-500	1350-600	1550-700	1600-700	1600-750	1700-800	1800-800	2000-800	2000-1000
Spacing between tie bars HxV mm		810x800	920x830	1040x910	1110x960	1180x1000	1260x1100	1420x1170	1570x1285	1680x1520	1870x1425	1855x1410	2020x1620	2185x1755	2270x1820
Ejector stroke	mm	250	250	250	300	300	350	350	400	450	450	450	500	500	550
Ejector force	KN	110	110	110	195	195	230	230	330	450	450	450	450	450	580

Mold closing unit		JE6500W	JE7500W	JE9000W	JE13000W	JE16000W	JE18500W
Clamping force	KN	6500	7500	9000	13000	16000	18500
Mold opening stroke	mm	770-1400	1070-1600	1690-2250	1970-2550	1890-2600	2250-3000
Mold thickness range	mm	1080-450	1030-500	1160-600	1280-700	1460-750	1550-800
Spacing between tie bars HxV mm		1125x975	1200x1020	1460x1210	1595x1310	1885x1440	2055x1655
Ejector stroke	mm	300	300	350	400	450	500
Ejector force	KN	195	195	230	330	450	450

Injection unit parameters

Injection unit		1700			2250			3350			5200			7000			9200			12800			17800			22800	
Injection unit model		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B
Diameter of screw	mm	60	65	70	65	70	80	75	80	90	80	90	100	90	100	110	100	110	120	110	120	130	130	140	150	140	150
Injection capacity	cm ³	792	929	1078	1068	1239	1619	1634	1860	2354	2262	2863	3534	2990	3691	4467	4006	4847	5768	5227	6220	7300	8362	9698	11133	10468	12017
Injection speed	mm/s	160			160			160			160			150			150			130			130			130	
Injection rate	g/s	411	483	560	483	560	731	643	731	926	731	926	1143	868	1072	1297	1072	1297	1543	1123	1337	1569	1569	1820	2089	1820	2089
Injection pressure	Mpa	210	180	155	210	180	138	205	180	142	227	180	145	234	190	157	230	190	160	230	205	175	213	184	160	218	190
Injection pressure	kgf/cm ²	2140	1830	1580	2140	1830	1400	2090	1830	1450	2310	1830	1480	2380	1930	1600	2350	1930	1630	2350	2091	1836	2172	1876	1632	2224	1939

Standard equipment list

Injection Unit

- » Abrasion-resistant screw unit(open nozzle)
- » nozzle safety guard
- » 6 injection steps
- » 4 pressure hold steps
- » 3 dosing steps
- » 3 back pressures
- » Screw suck back select(after holding/after dosing)
- » Screw suck back delay function
- » Injection delay function
- » Dosing delay function
- » Intrusion/filling by rotating screw
- » V/P switch over mode (position, time, pressure, speed)
- » Injection speed response mode select
- » Injection pressure segment control
- » Speed limit during holding pressure
- » Screw position setting (unit:0.01mm)
- » Screw rotational speed setting
- » Holding pressure time setting (unit:0.01s)
- » Mold opening during dosing function availability
- » Barrel heating closed-loop control (K/J type available)
- » Barrel temperature holding function
- » Barrel temperature auto tuning function
- » Barrel pre-heating function
- » Barrel temperature synchronous control
- » Material overheating prevention function
- » Screw cold start prevention
- » Auto purge function
- » Screw rotational speed display
- » Setting for nozzle movement (switch/time)
- » Selection of nozzle retract (3 modes)

- » Nozzle contact device
- » Nozzle center adjustable
- » Feeding throat temperature closed-loop control
- » Injection unit swiveling device
- » Independent nozzle temperature control

Clamping Unit

- » Two platens clamping unit based on 4 lock cylinders
- » 5 mold clamping segments
- » Clamping safety device (mechanical and electrical)
- » Mold safety protection
- » Haitian patented platen
- » Multiple hydraulic ejection modes
- » Rigid moving platen support
- » Automated central lubrication system for clamping unit
- » Safety treadle
- » Quick mold adjustment device
- » Open/close mold & ejection position control by transducer
- » Multi hydraulic ejection velocity/pressure settings
- » Auto mold adjustment
- » Multi segment control of clamping force
- » Safety limitation of mold release pressure
- » Safety limitation of mold stroke
- » Inverted double cylinder ejection device
- » Safety limitation of clamping force
- » Ejector inverted structure
- » Ejection backward end position adjustable
- » T Slotted Platens for quick mold change
- » Clamping force sensors monitoring function
- » Random lock function

- » Symmetrical locking device
- » EUROMAP mechanical interface
- » Clamping force holding during mold installment after switch-off
- » Clamping force pre-release after switch-off

Controller & Monitor

- » 15 inch TFT color touch screen
- » Mold profile data memory(up to 200 sets)
- » Alarm history
- » Data setting record
- » 3USB R/W interface
- » Injection pressure and speed curve display & record
- » Euromap robot interface
- » Multi-language available (Chinese, German,English,Japanese etc.)
- » Metric/Imperial unit select
- » I/O monitor display
- » Printer interface(USB connector)
- » Production profile monitor
- » Production cycle monitor
- » Production data record (5000 cycles display, 100,000 cycles record)
- » Production data graphics
- » Quality parameters tolerance setting
- » Quality abnormal alarm
- » Cycle counter
- » Machine over view display
- » Quick set molding parameters
- » Machine maintenance administration

- » Clamping force curve display
- » Barrel temperature monitor
- » Display cycle time sequences in each phase
- » 3 Color alarm lamp(red/yellow/green)
- » Alarm buzzer
- » Injection overflow prevention(HPM)
- » Display of actual performance data
- » Multi-action selectable during machine alarm

Others

- » Standard Zhafir color
- » Adjustable machine pads
- » 3 Power sockets (two 16A and one 32A)
- » Accessory box
- » Spare parts