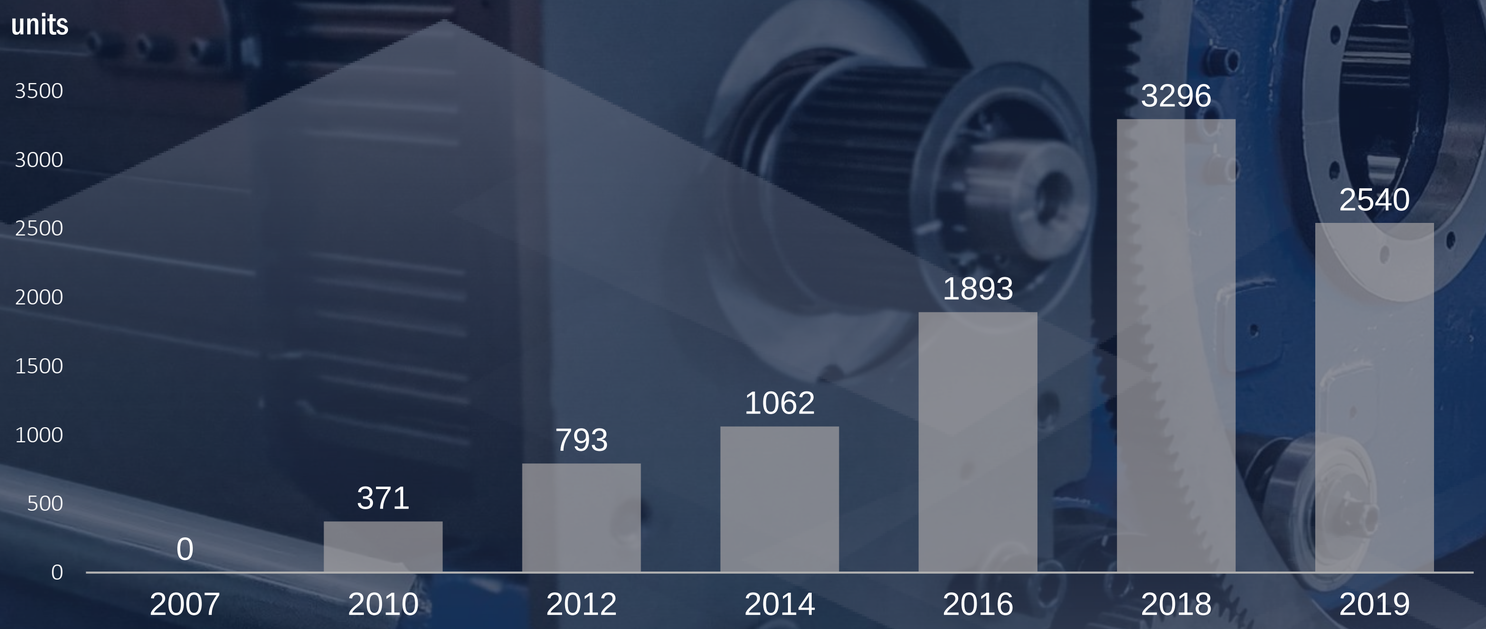
ZE - F

Electric fast-cycling Solution with integrated Hydraulics

ZHAFIR
PLASTICS MACHINERY

- Thinking electric since 20 years
- Foundation of Zhafir 2005
- Production start 2007



230,000+
SQM
Production area
in China

600+
EXPERTS
available worldwide

20,000+
MACHINES
delivered to customers
until now

Zhafir Family

FROM 400 - 33,000 kN

INJECTION PERFORMANCE

- (h) up to 350 mm/s for thinwall parts
- (hs) up to 500 mm/s for extremely thin wall parts

APPLICATION PERFORMANCE

- (F) ZERES
  Performance version for short cycles and high injection performance
- (M) For multi component precision parts

Applications

FMCG


Medical

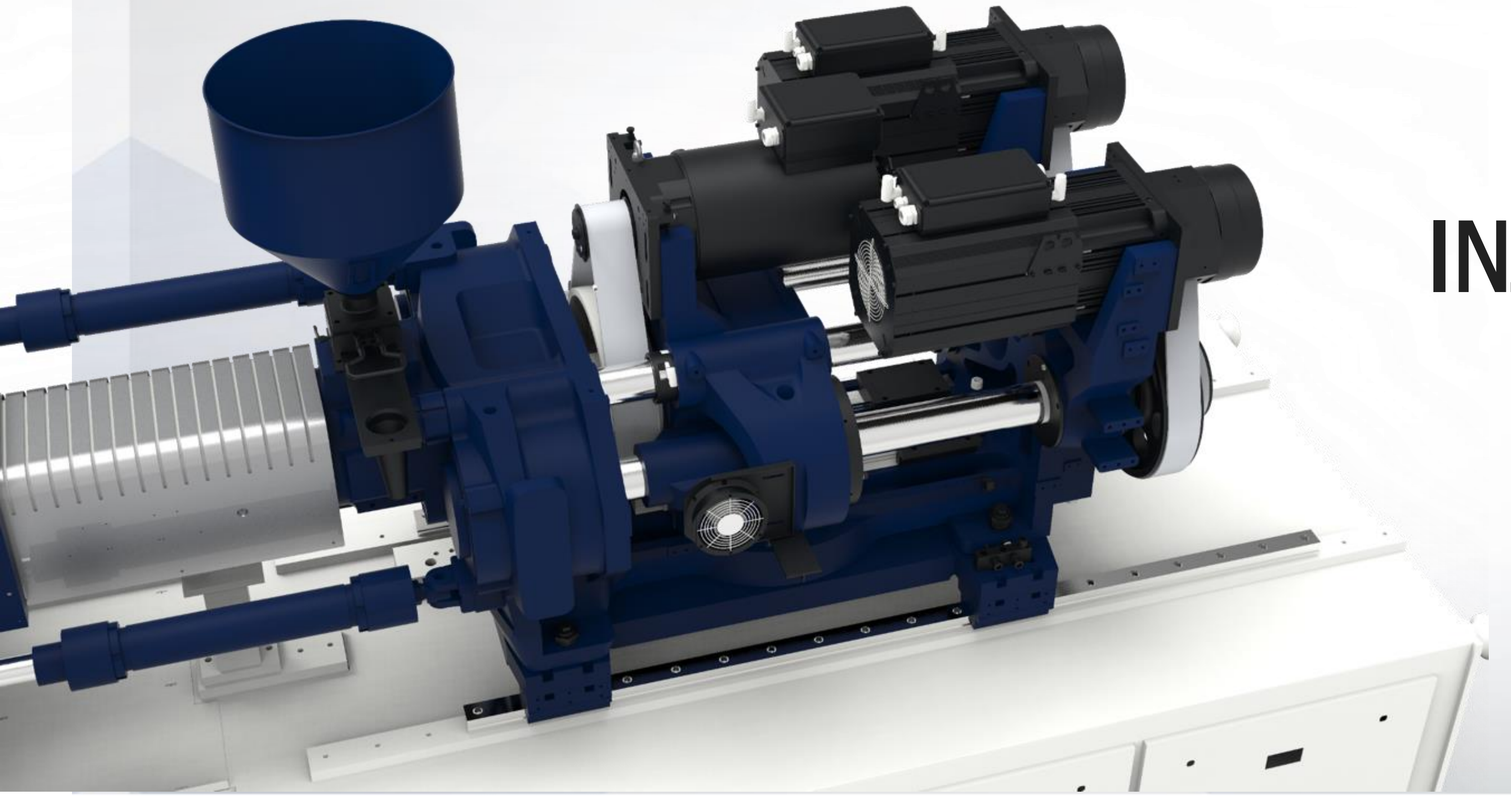

IML


Thin-wall


Closure system

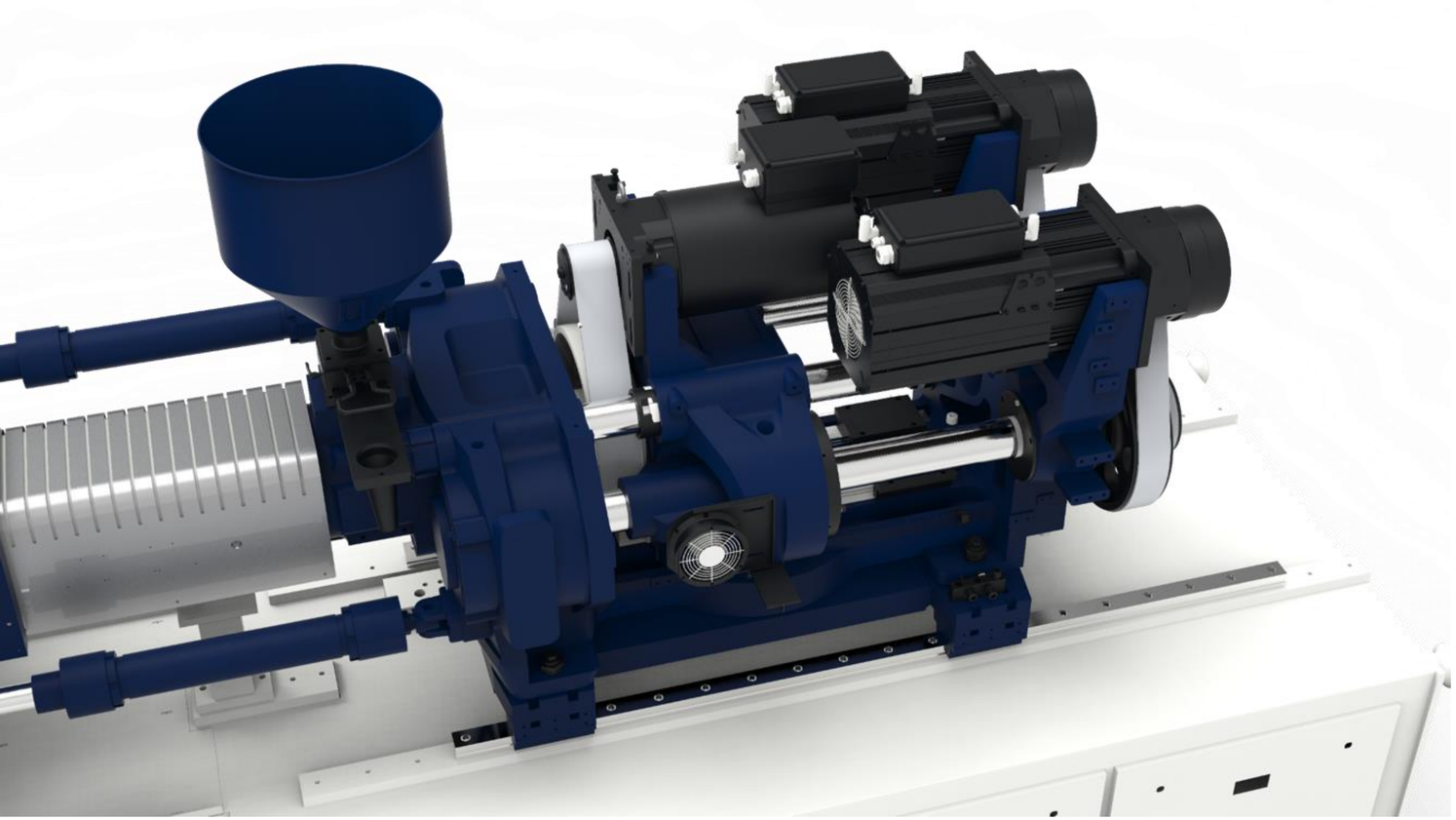
Machine Range

Clamping \ Injection	430	640	830	1100	1400	1700
1500	■	■				
1900		■	■			
2300			■	■		
3000				■	■	■
3800				■	■	■
4500					■	■



INJECTION UNIT

INJECTION UNIT

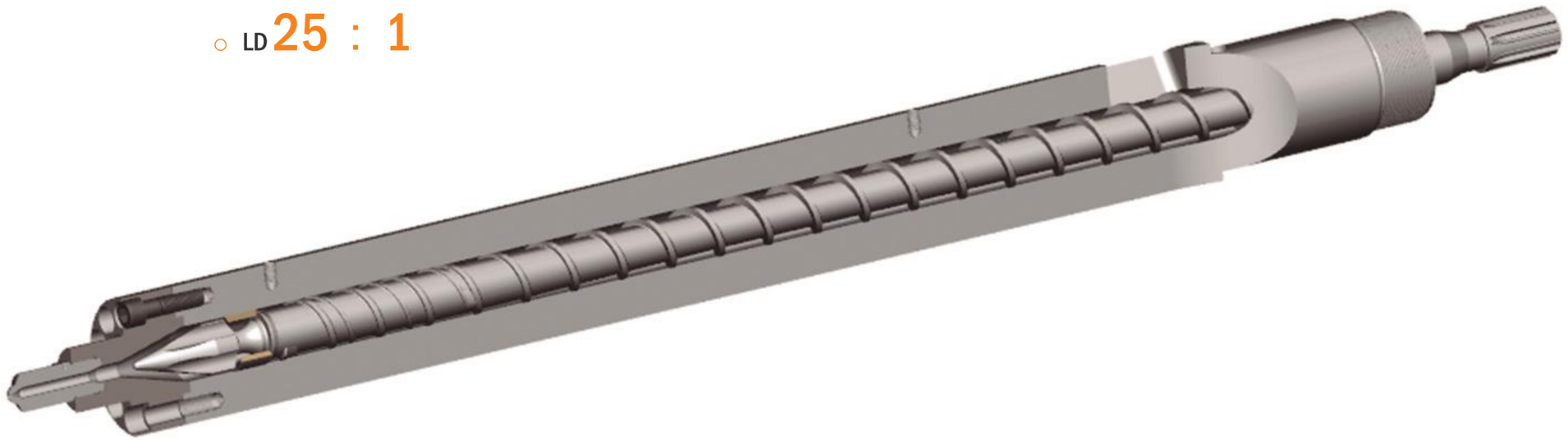


- Dedicated plasticizing components (L/D = 25), improve plasticizing capacity
- Injection speed up to 350 mm/s
- Constant injection speed and faster response
- Linear guides on the injection
- Optimized design of injection cooling system to enhance heat exchange efficiency
- Nozzle contact force
- Swiveling injection unit

More efficient plasticizing components (L / D = 25)

improve plasticizing capacity

- Screw special design
- LD 25 : 1

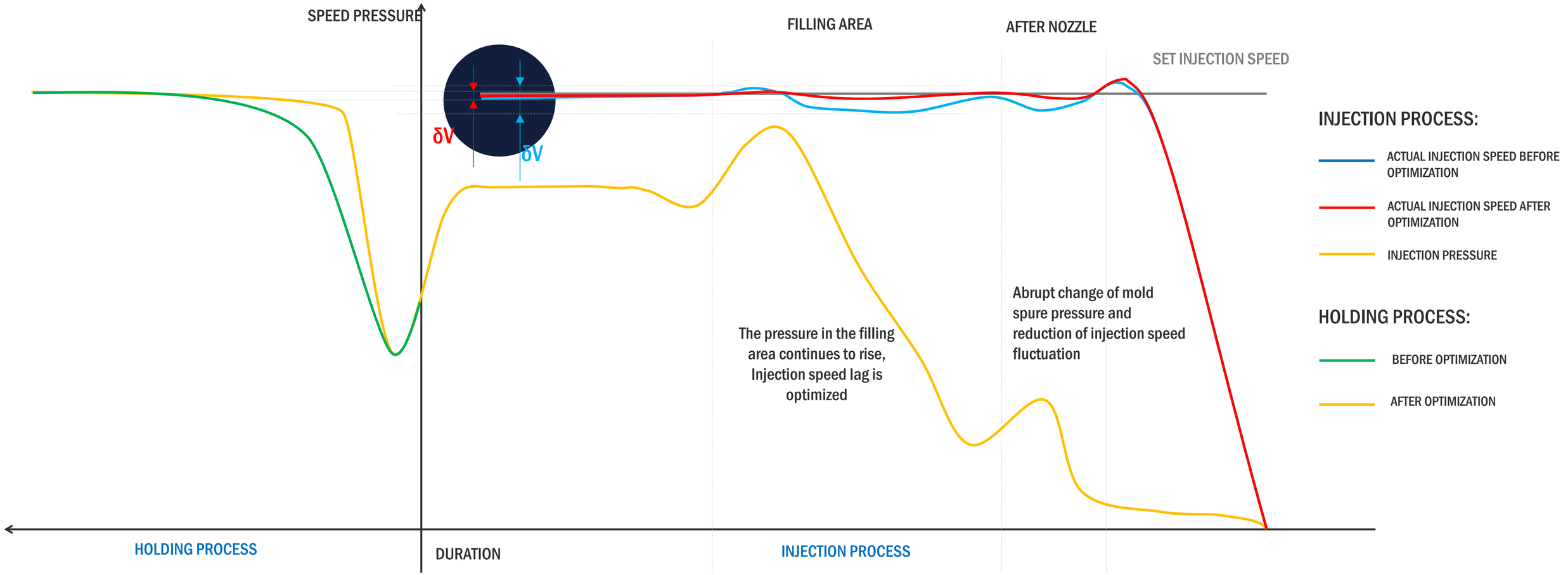


High injection speed promotion

- Fast injection speed in certain models
- Easy to deal with thin-wall products and low liquidity raw materials

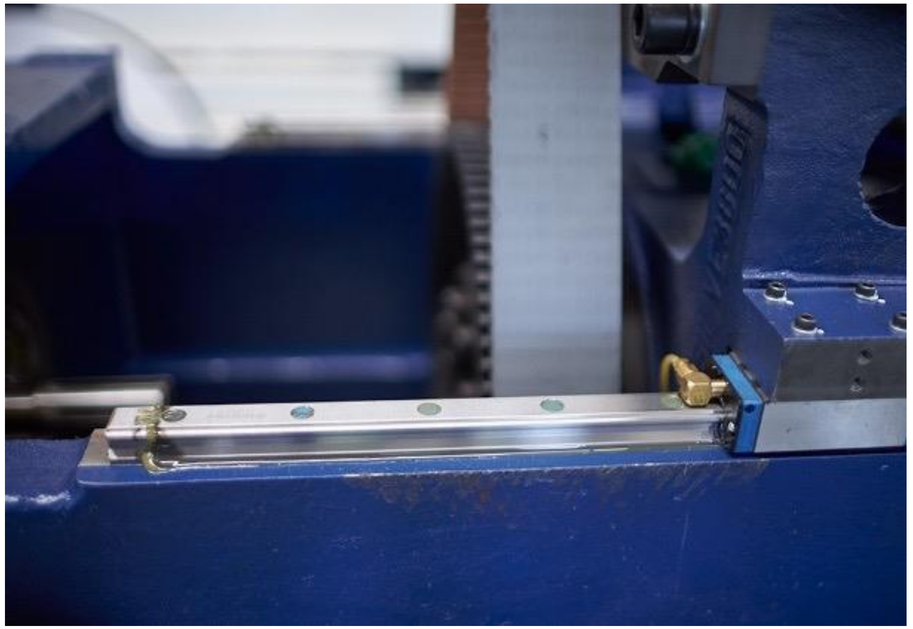
VE P	Inj. speed (mm/s)	ZE F	Inj. speed (mm/s)
430p	300	430h	350
640p	300	640h	350
830p	300	830h	350
1100p	300	1100h	350
1400p	300	1400h	350
1700p	300	1700h	350

CONSTANT INJECTION SPEED & FASTER RESPONSE



- Faster response for pressure holding
- More effective control over size and surface of the molded parts
- More constant injection speed
- Better quality of the molded parts

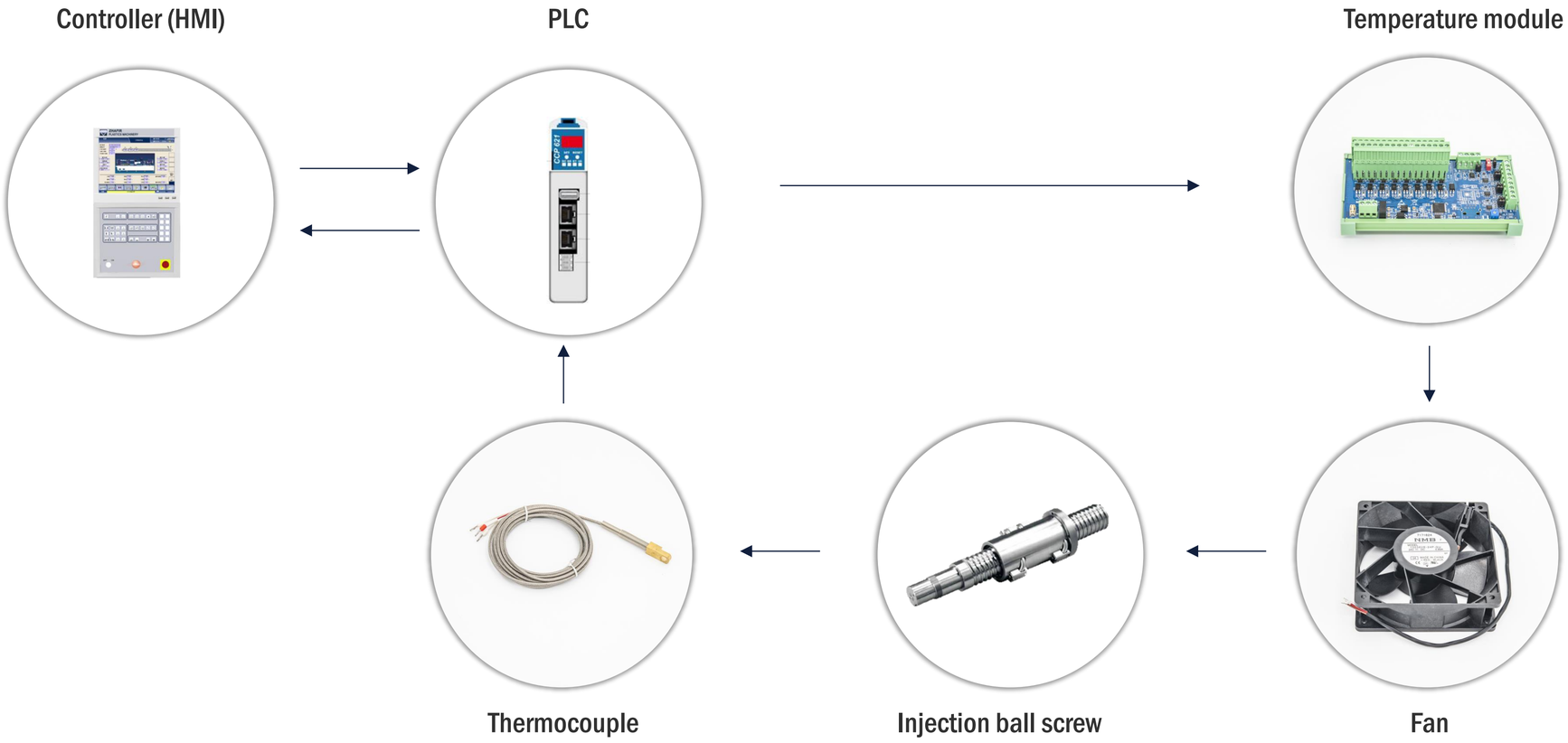
Linear Guides



- Low friction, fast response
- High loading capacity
- Clean operation

Optimized design of injection cooling system

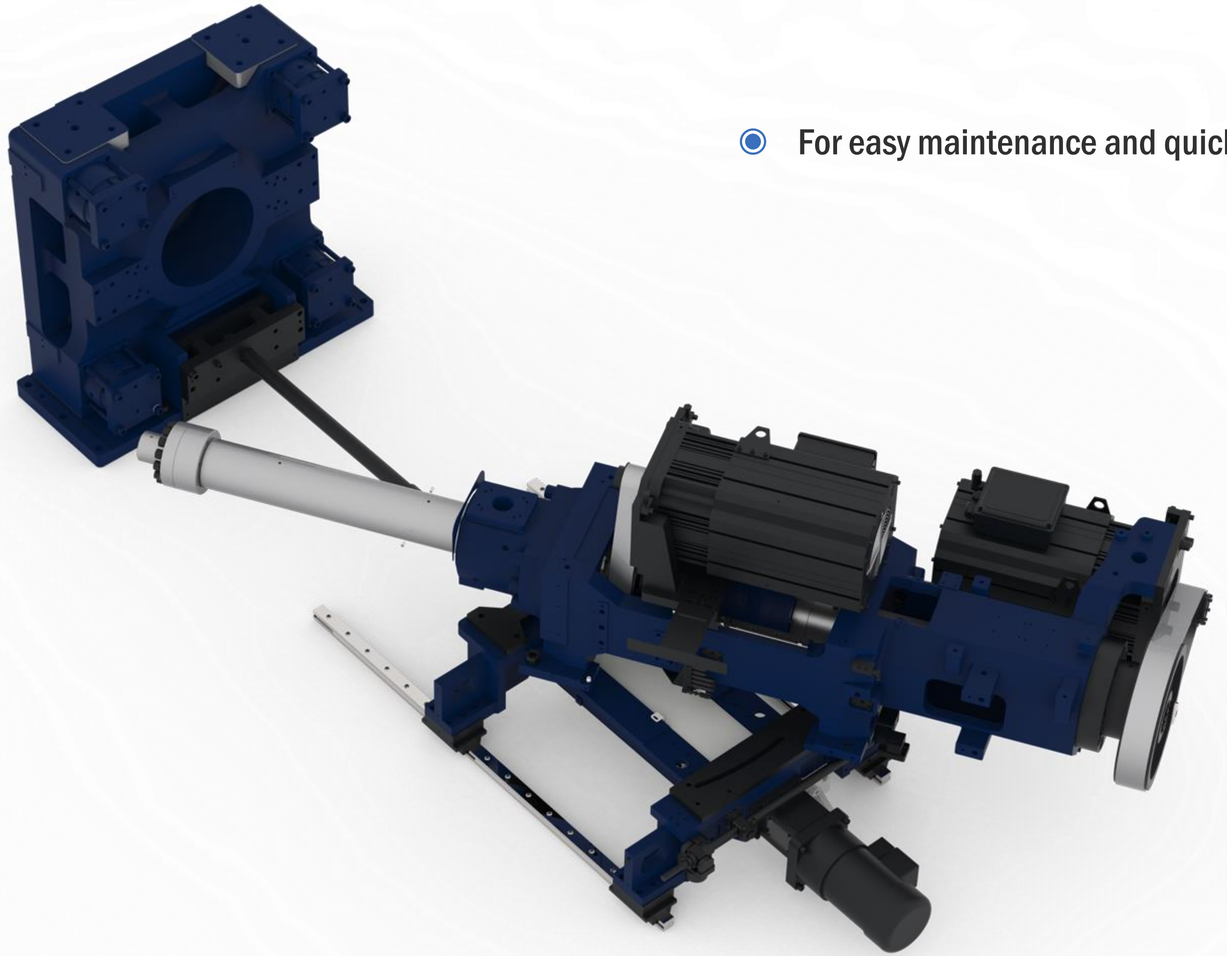
- Temperature closed-loop control of injection ball screw
- Fan locked rotor alarm system



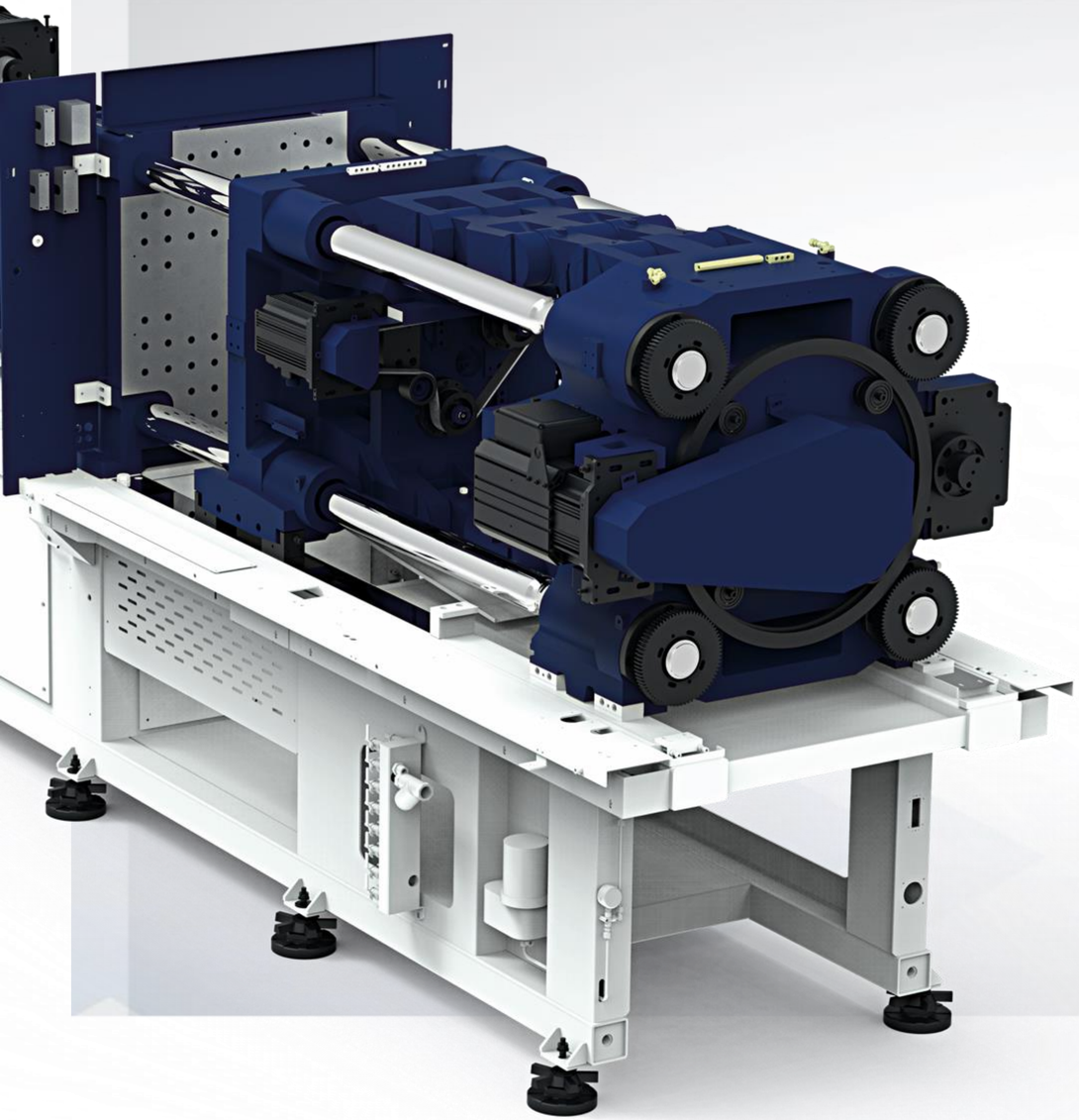
Nozzle contact force increases

VE p		ZE F	
Injection unit	Contact force (kN)	Injection unit	Contact force (kN)
430	29.4	430	63.7
640	39.2	640	63.7
830	54.0	830	88.2
1100	54.0	1100	88.2
1400	54.0	1400	88.2
1700	54.0	1700	88.2

Swiveling Injection Unit

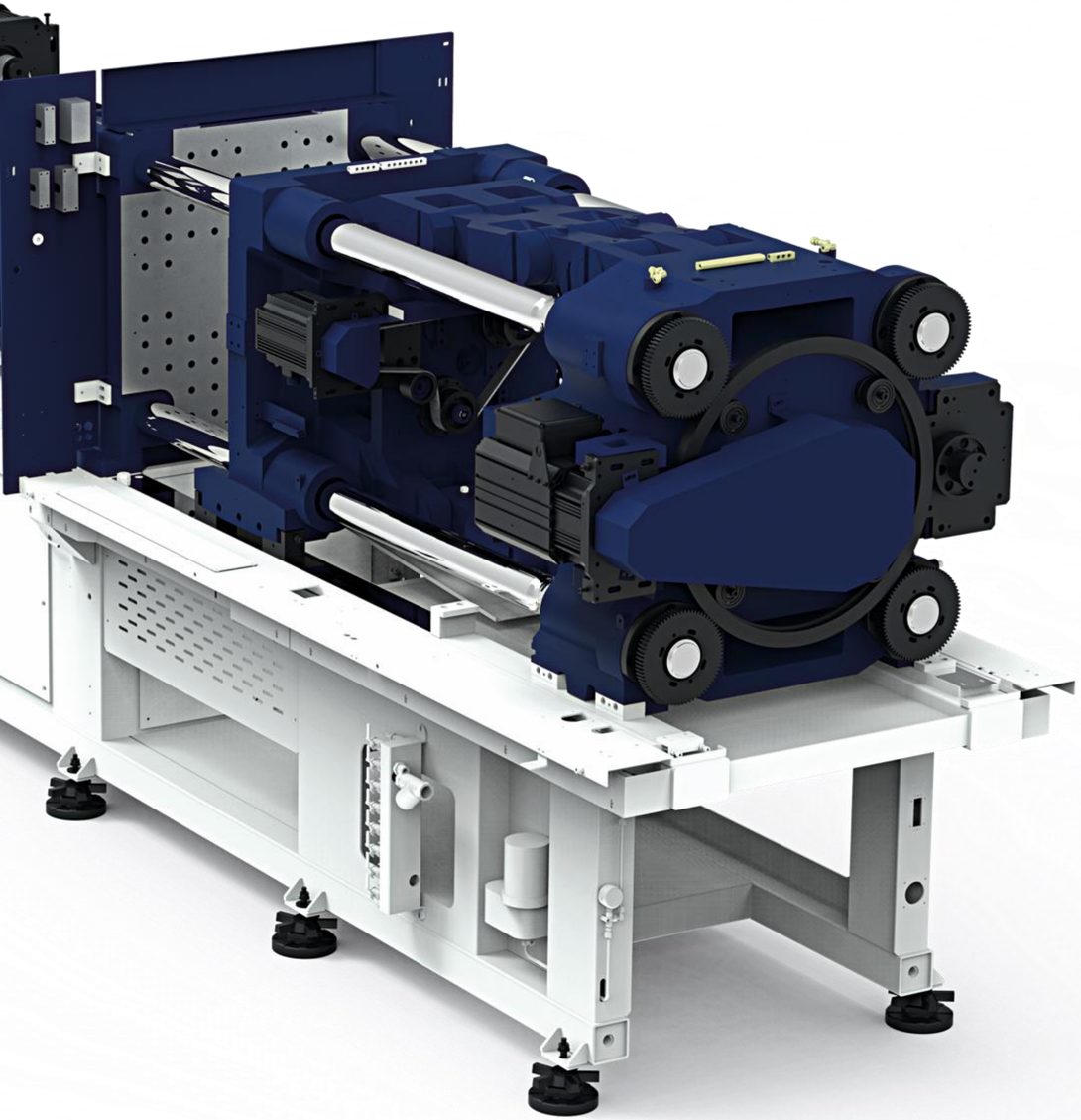


- For easy maintenance and quick screw change



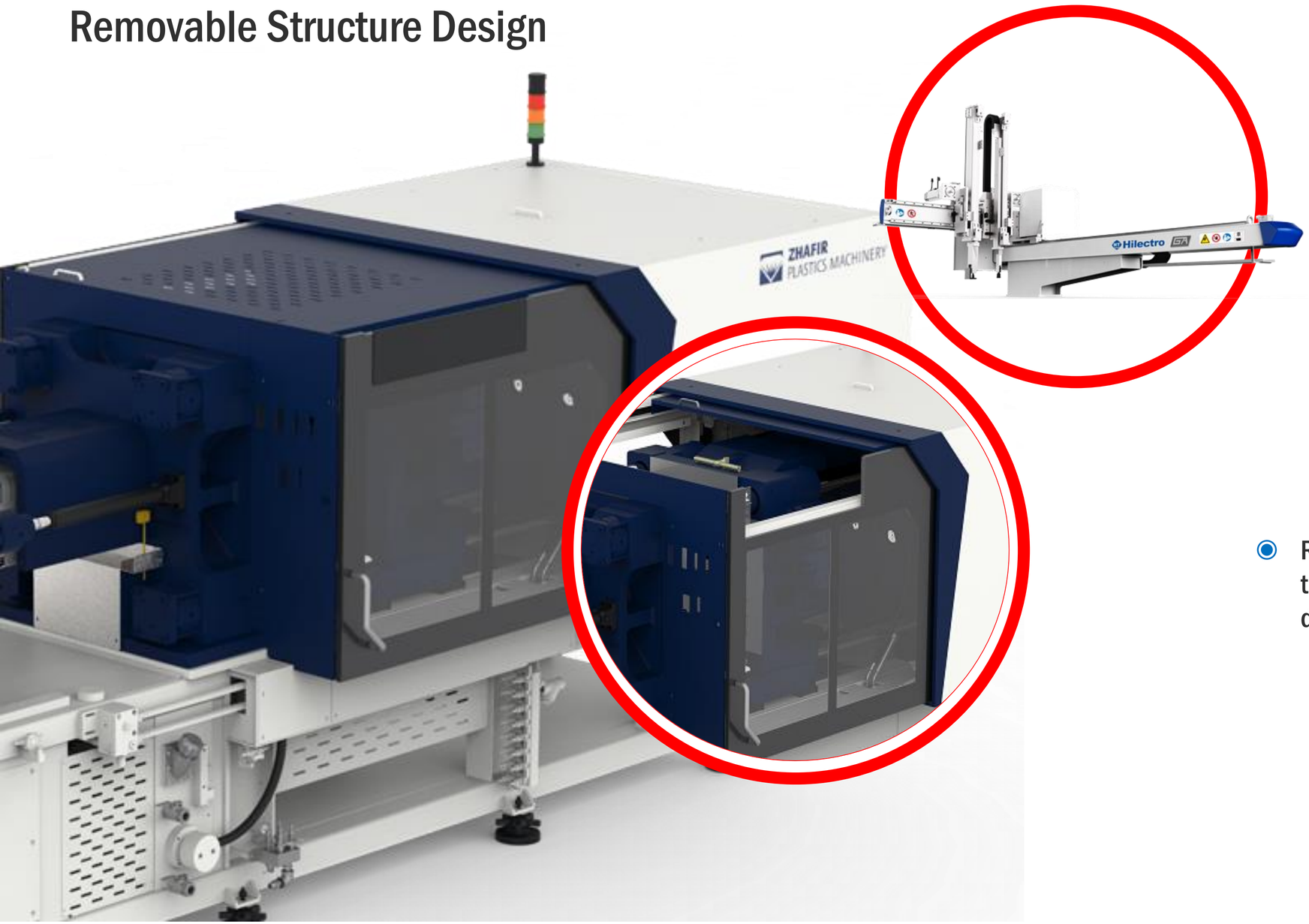
CLAMPING UNIT

CLAMPING UNIT



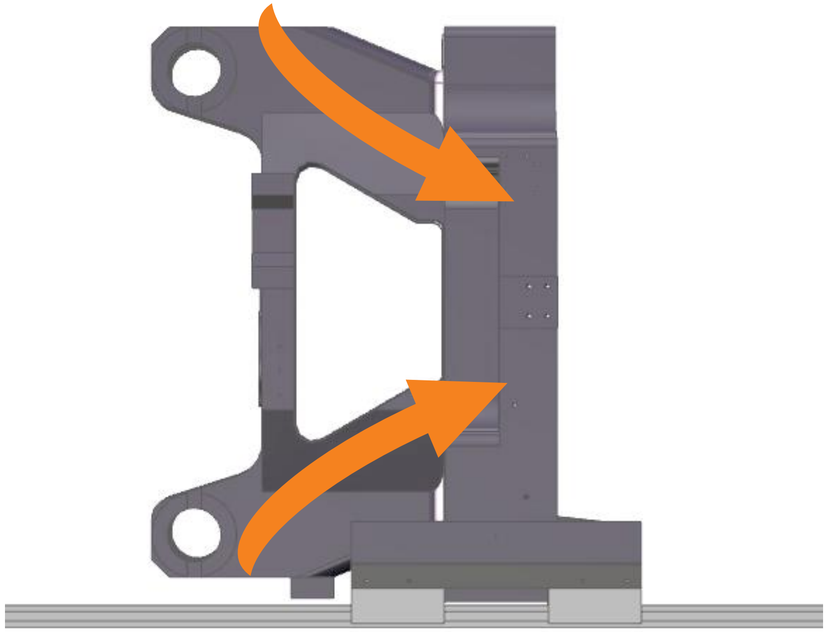
- Exterior design
- Rigid platen design
- Toggle structure
- Tie bar distance
- Dry cycle time
- S-Curve platen motion control
- Mold protection
- Moving platen support
- Linear guide for mold open/close (option)

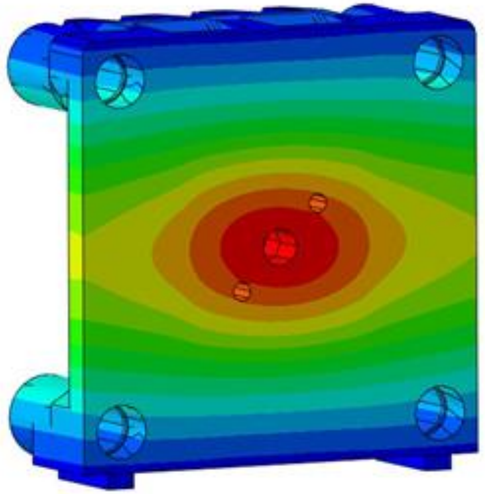
Removable Structure Design



- Reserved space for robot movement above the non-operation side (removable structure design)

Centralized Force Transmission on Platen

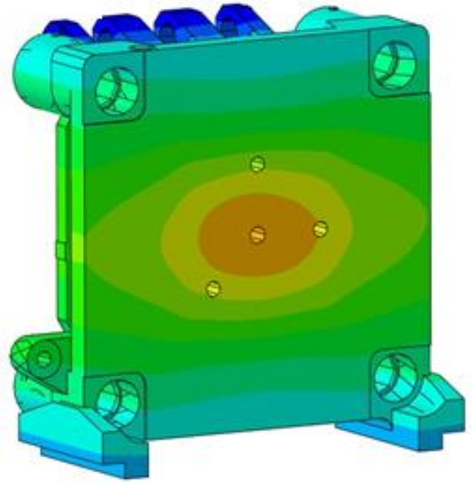




VE5500II

Deformation near center hole reduced by

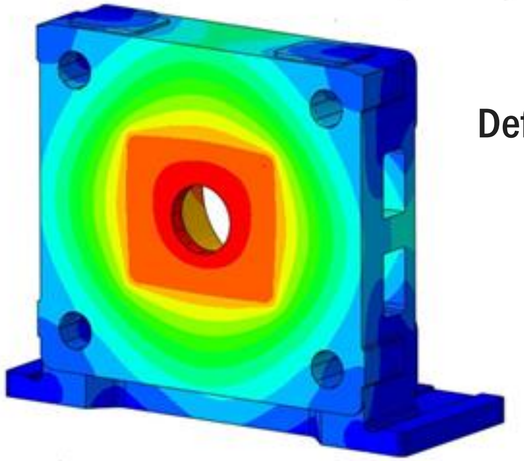
24%



VE5500III

- Highly Rigid Platen Design
- Surface pressure distribution in equality
- Structural design optimization ensures that stress is concentrated in the center of platen

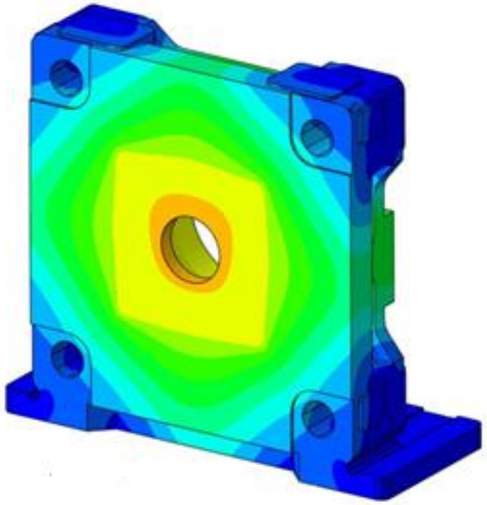
Improved Fixed Platen Design



VE5500II

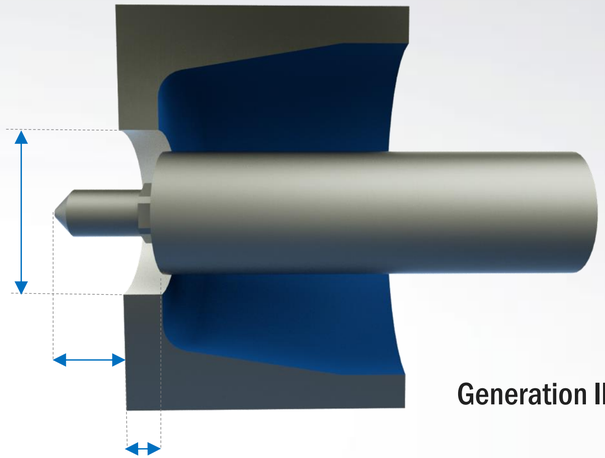
Deformation near center hole reduced by

14%

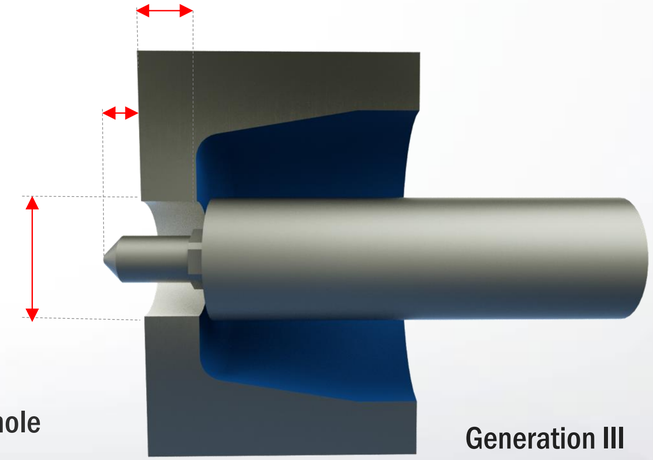


VE5500III

- More rigid and much more adaptable for high-cavity mold
- Ensure distribution in equality for products



Generation II

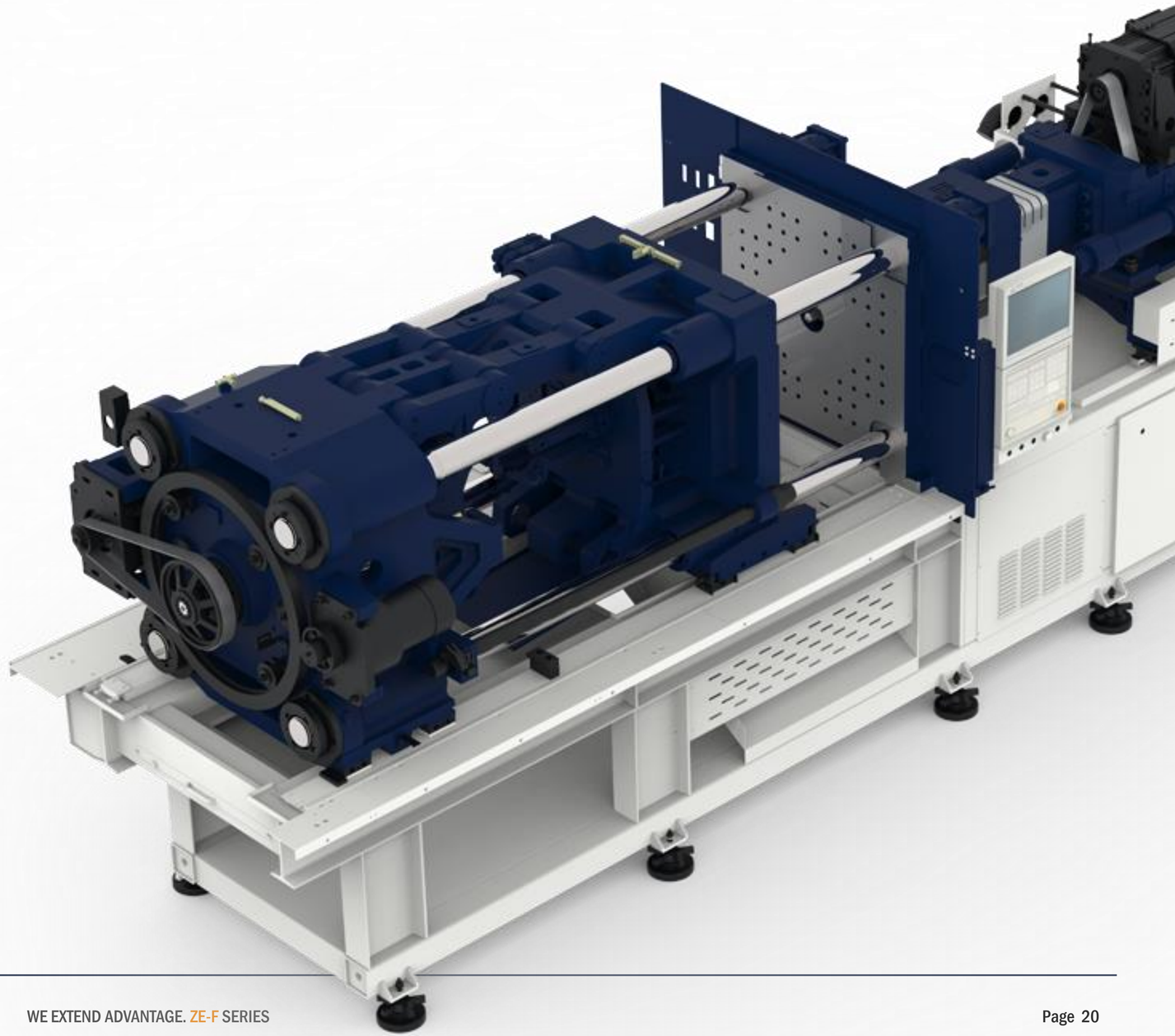


Generation III

- More rigid support for center hole
- Reduced nozzle extension from 50mm to 30mm
- Smaller center hole

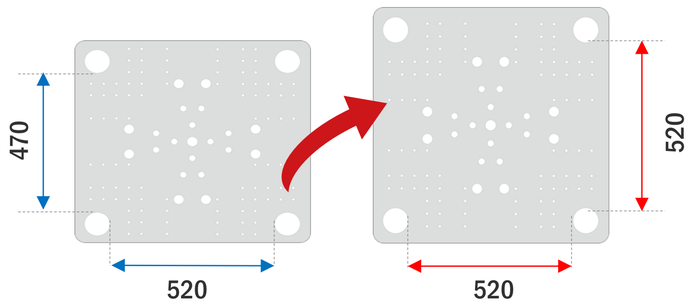
COMPACT TOGGLE SYSTEM

- Redesigned, compact structure of the toggle system
- High rigidity and optimum platen parallelism
- Fast dry cycle time
- T Slot is optional



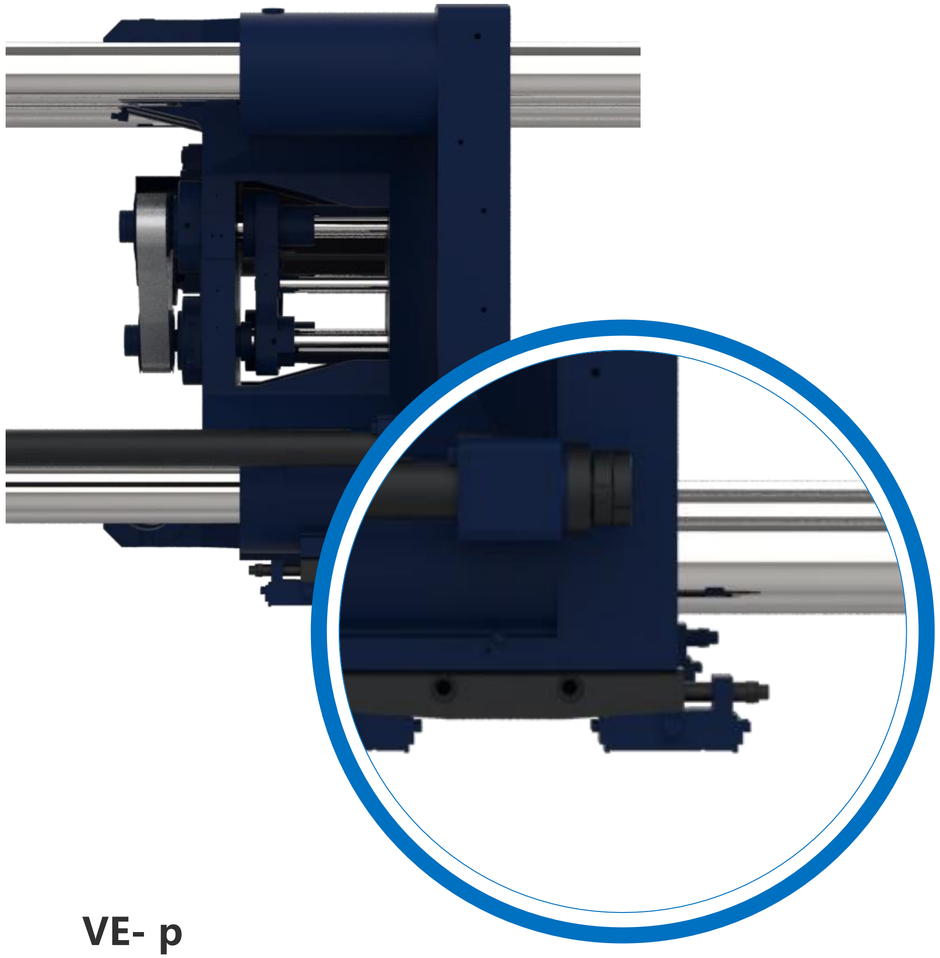
SQUARE PLATEN DESIGN

- Square platen design for whole series
- Bigger mold space
- The mold has better operability in all directions
- More even distribution of force on the platen

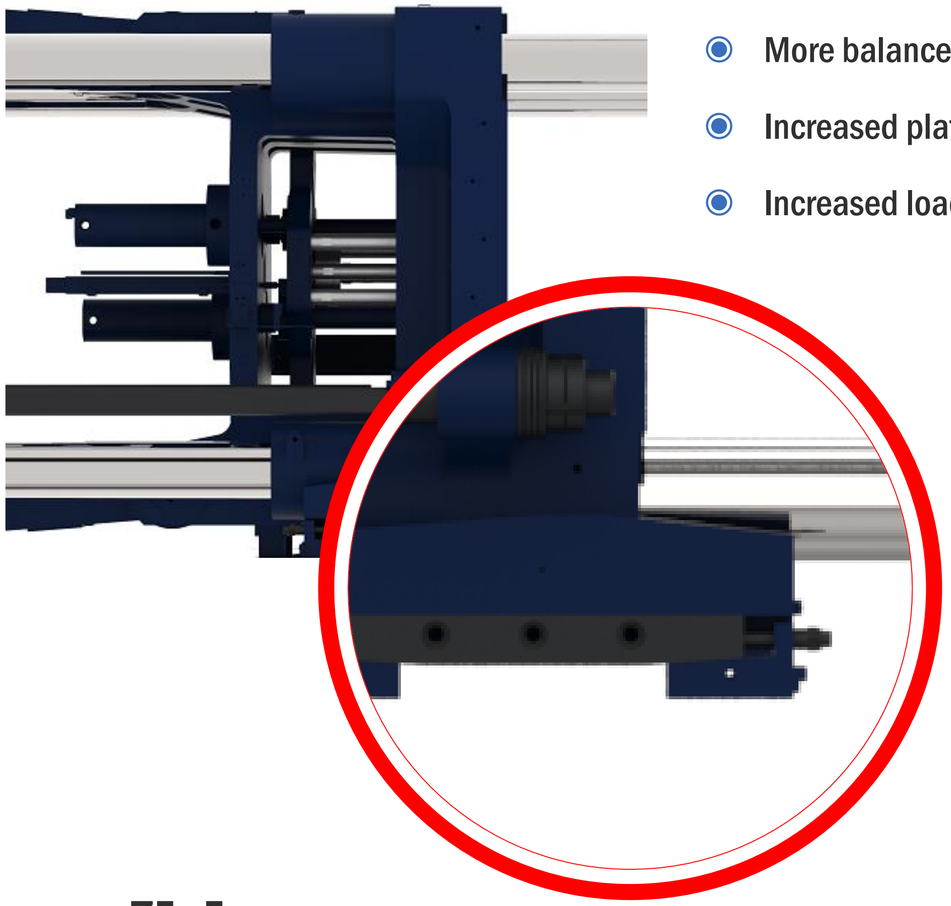


Clamping ton (kN)	VE p tie-bar distance H×V (mm)	ZE F tie-bar distance H×V (mm)
1500	520×470	520×520
1900	570×520	570×570
2300	620×570	620×620
3000	670×620	670×670
3800	770×770	770×770
4500	820×820	820×820

RIGID MOVABLE PLATEN SUPPORT



VE- p



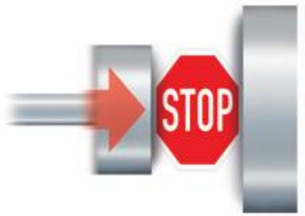
ZE- F

- More balanced supporting structure
- Increased platen parallelism
- Increased loading capacity

LINEAR GUIDE FOR MOLD OPEN/CLOSE
(OPTION)

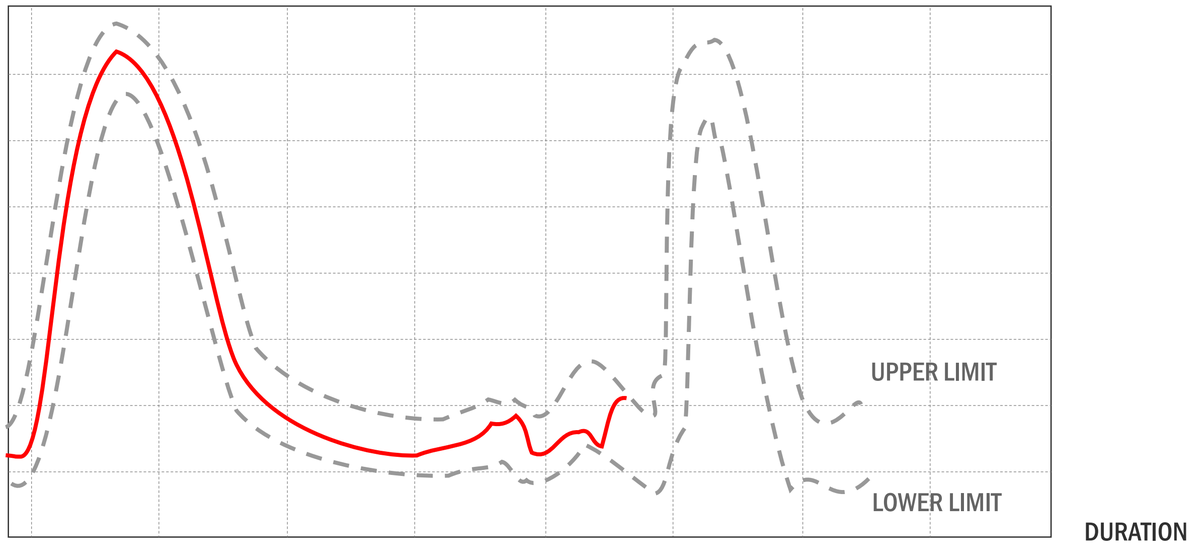
- Non-contact tie bar design
- More clean and much higher parallelism of the platen
- To effectively prevent mold from tilting, extending the service life of the mold and ensure higher precision

MOLD PROTECTION

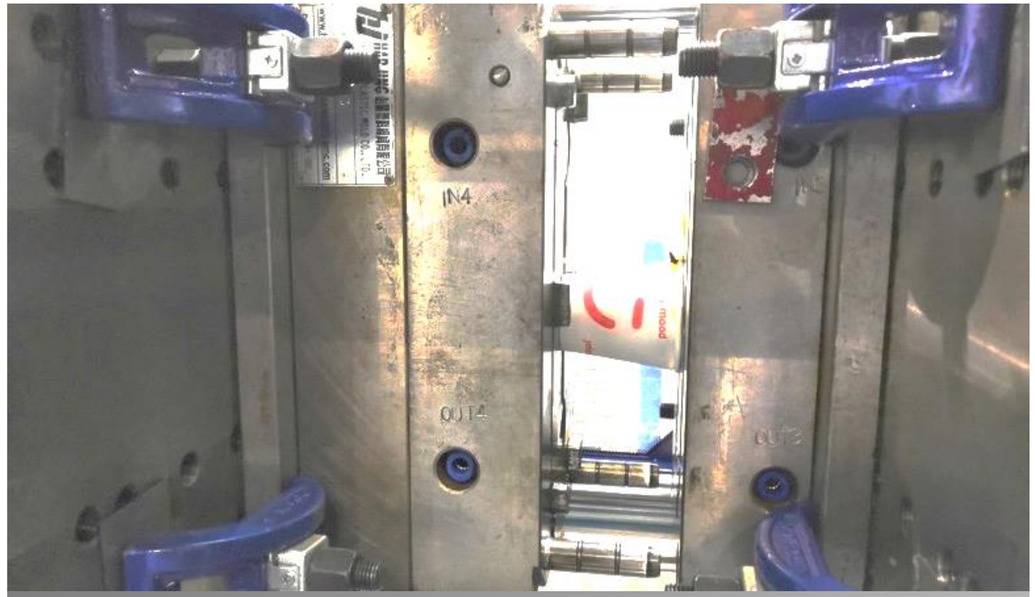


- Intelligent algorithms ensure highly reactive and precise mold protection
- Mold protection throughout the entire clamping stroke

CLAMPING CURVE



Testing examples :



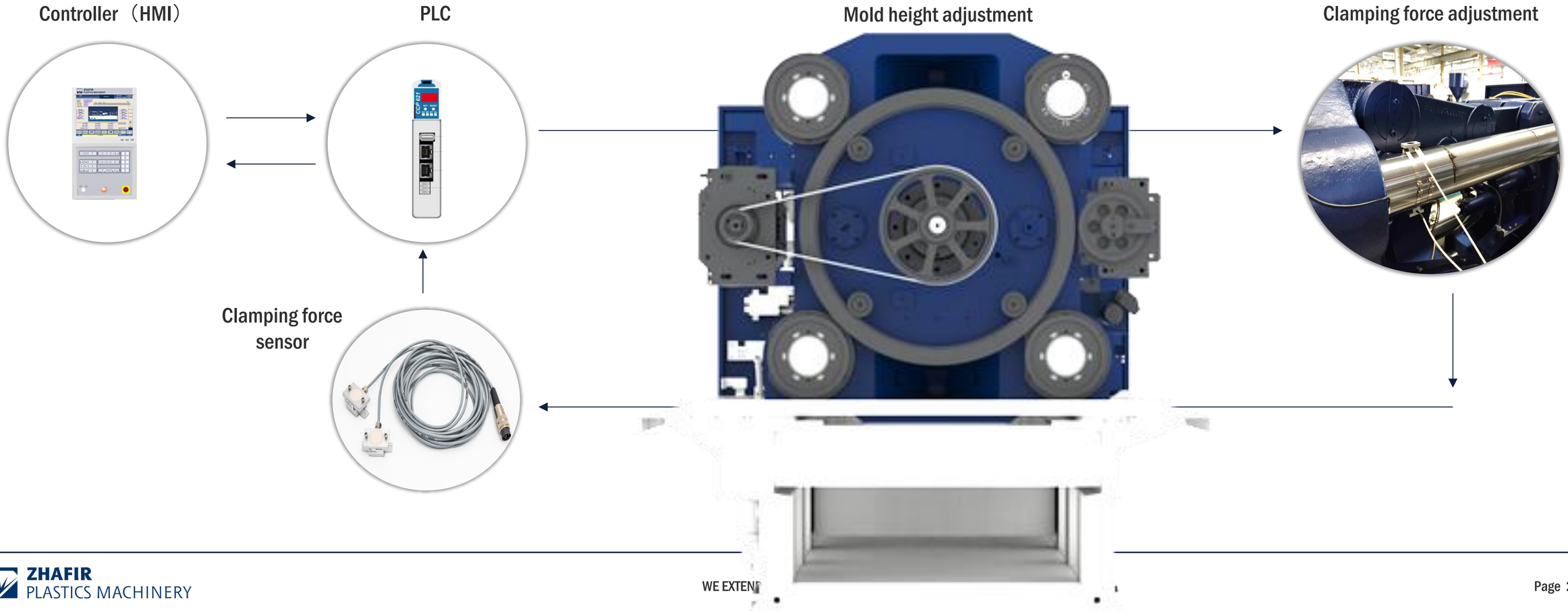
Original

With Mold Protection function

Without Mold Protection function

Clamping force closed-loop control

- High precision mode-adjusting positioning encoder can realize fast mode-adjusting and locking force according to software algorithm
- Low pressure mold installation mode to prevent damage during mold installation
- Closed-loop sensor of clamping force is selected to achieve extremely high clamping force.

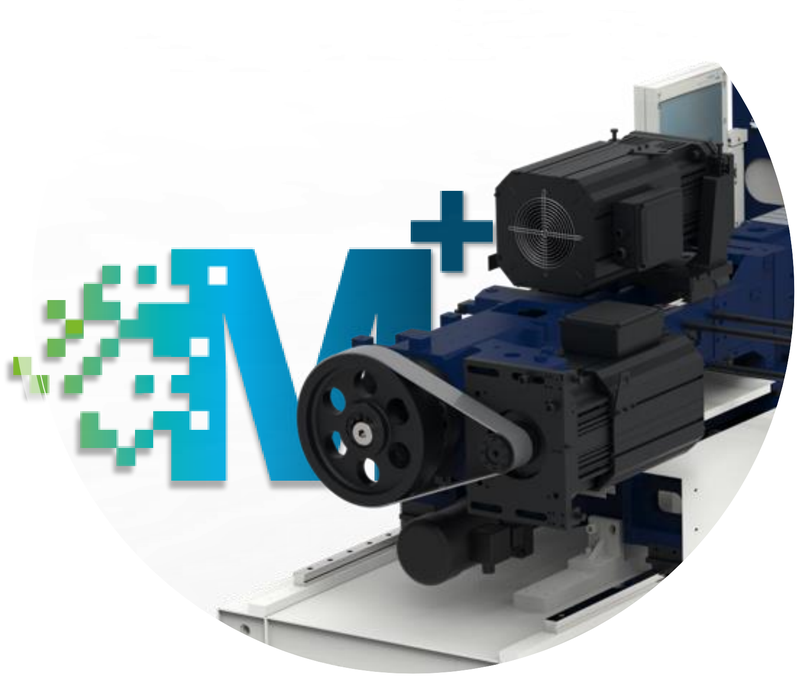


DRIVE TECHNOLOGY

DRIVE TECHNOLOGY

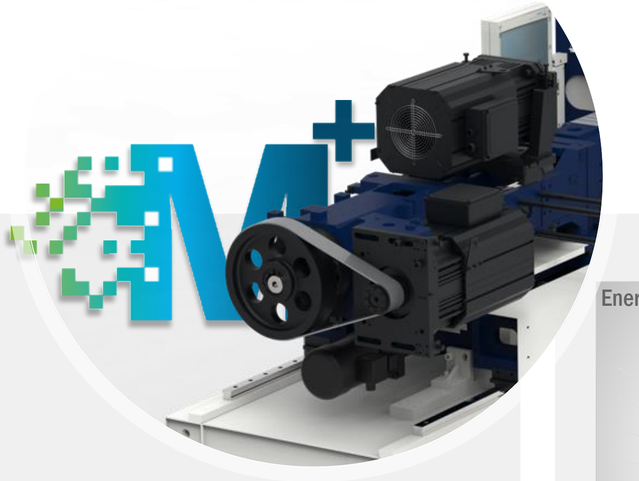
- Servo drive system
- Optimizations
- Increased System Pressure
- Reduced Tank Volume

SERVO DRIVE SYSTEM



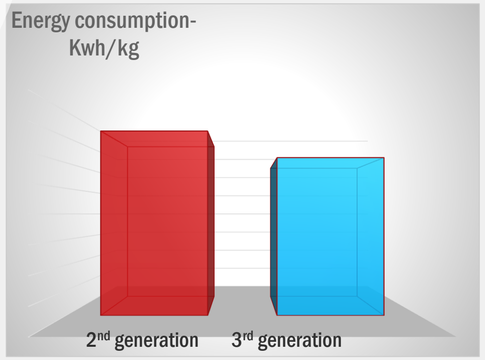
- Based on Motion Plus platform
- New servo drive system offers performance versions of injection units from low speed high holding pressure to high speed
- Constant injection speed
- Highly energy saving
- Highly responsive holding control

SERVO DRIVE SYSTEM OPTIMIZATION



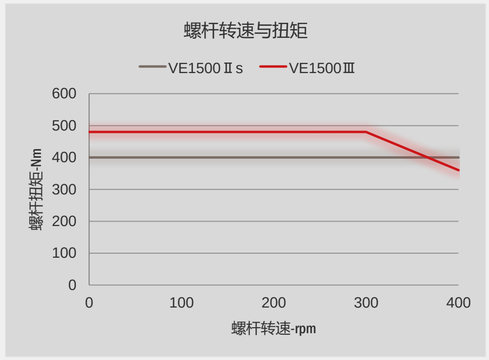
Shorter dry cycle

Due to design and control optimization, dry cycle time can be shortened up to 10%



Lower energy consumption

- Compared with the original, 3rd technology greatly reduces the energy consumption, and ZE-F reaches the 1st level of China standard



Stronger charging ability

- Up to 20% torque increase at low and medium speeds;
- More suitable for the actual application of raw materials

Stronger injection ability

- Higher Injection response is up to 10%
- More constant injection speed and higher repeatability accuracy of the parts
- Higher energy efficiency, lower temperature rise, and pressure retention capacity increased by up to 20%

SOFTWARE & CONTROL

SOFTWARE & CONTROL

- Control technology
- Features
- PAD production management
- Built-in hot runner function
- Input/output programmable
- In-mold pressure control(Optional)
- OPC UA & EU77 interface (Optional)

OPTIMIZED CONTROL SYSTEM

MOTION PLUS

SIGMATEK

KEB

The latest servo control technology

注射

预塑

合模

顶出

ZERES

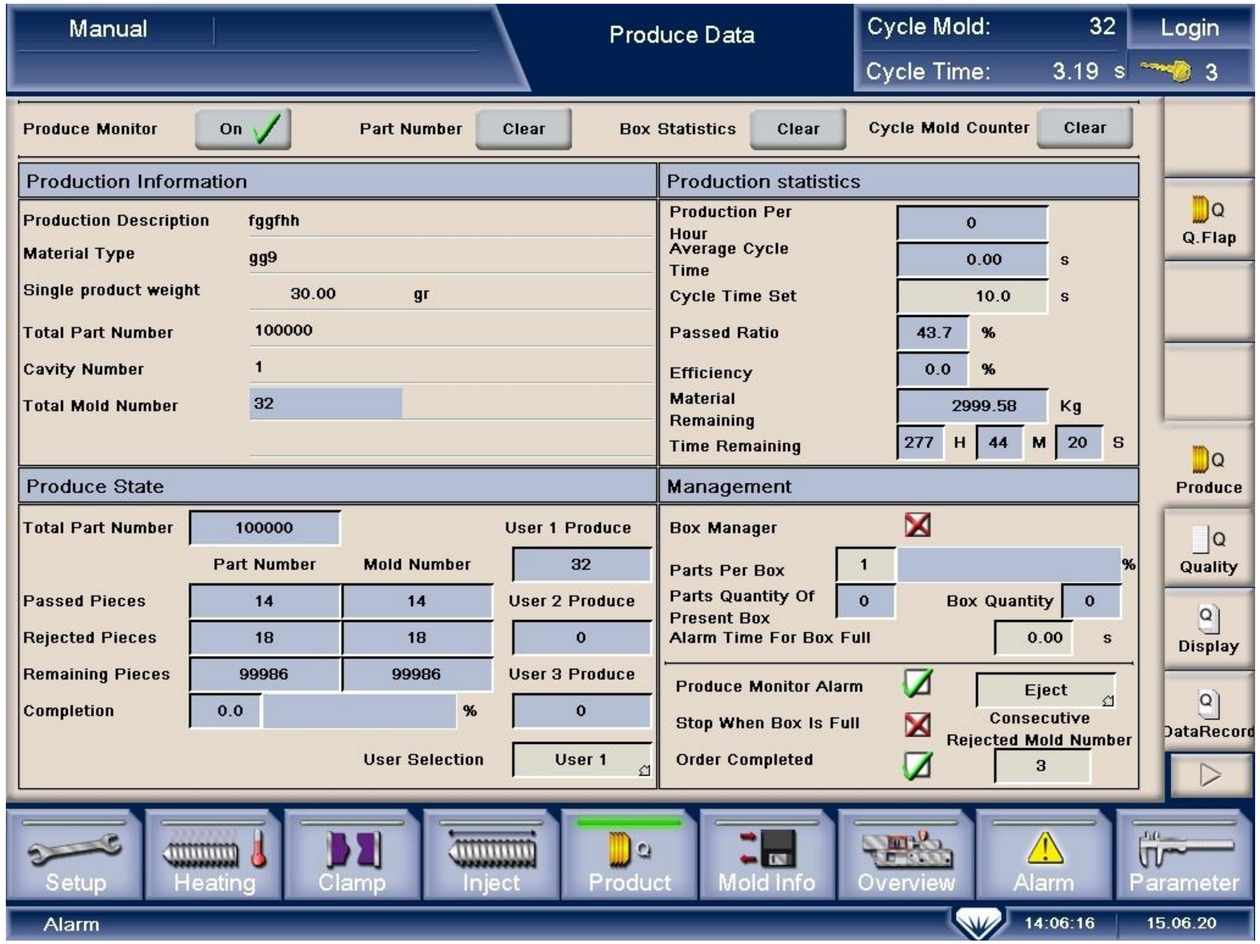
Servo drive system
(Carriage, ejector, Core, sequence valve, etc.)

CONTROL TECHNOLOGY

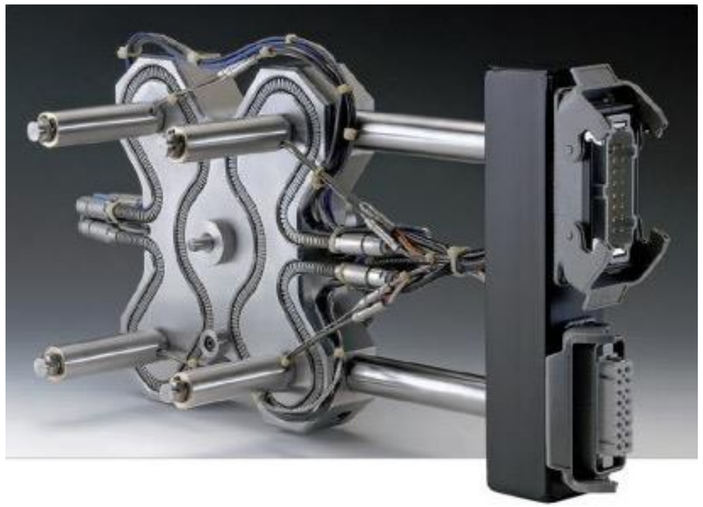
- 15 inch color TFT screen
- 3 USB interface
- 200 set mold datum store
- Production assistance device
- Friendly HMI
- Aplenty software function
- LED action indicator
- Keyboard layout, Simple and Clear
- Shortcut keys are clearly identified
- Multi-language
- RFID to meet authority management

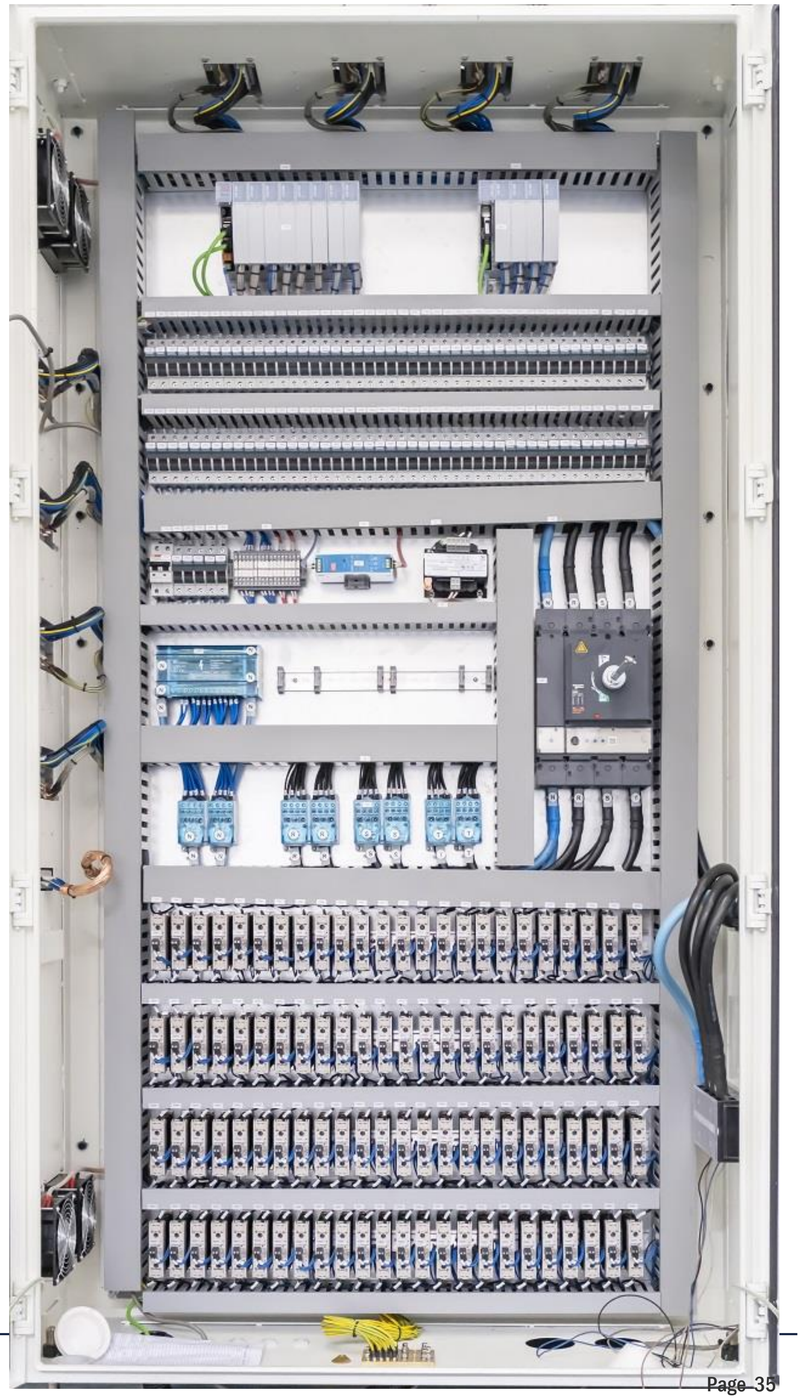
PAD PRODUCTION MANAGEMENT

- Production Statistics
- Production Order Management
- Product Testing
- Defective Product Screening



BUILT-IN HOT RUNNER FUNCTION



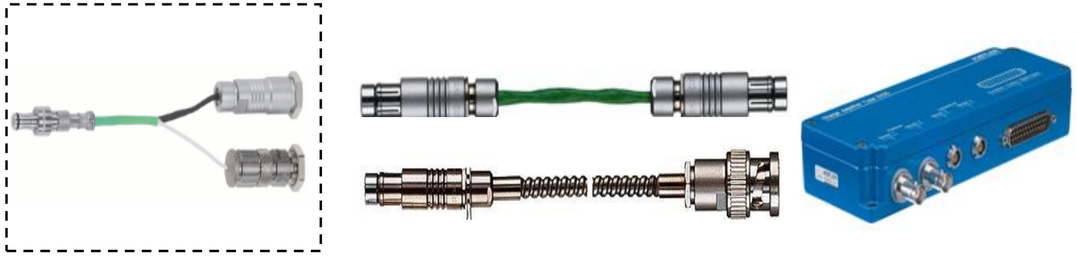


INPUT/OUTPUT PROGRAMMABLE

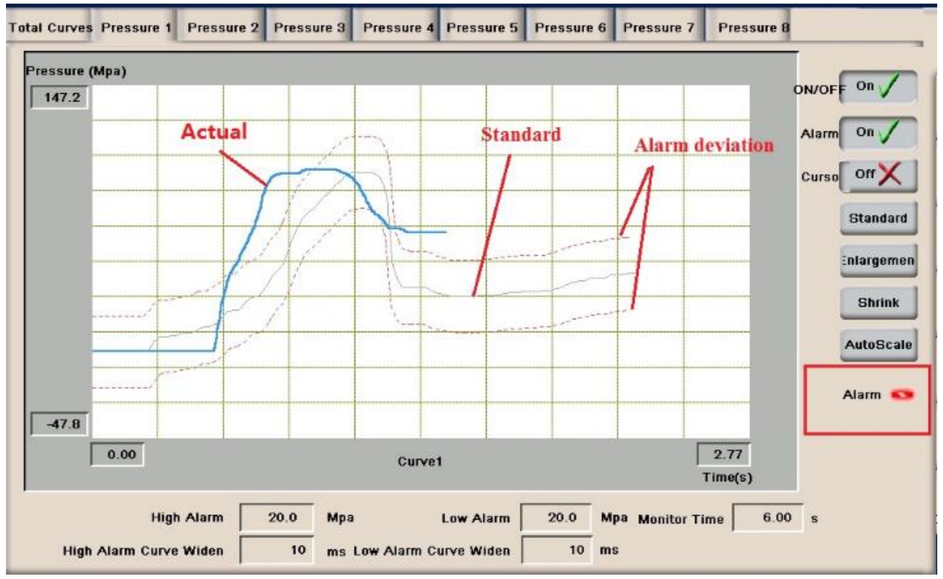
- Custom Digital IO
- Logic Editing Function
- Support Multiple Loops

IN-MOLD PRESSURE CONTROL
OPTIONAL

- Accessible up to 8 groups of cavity pressure channels
- Visualization of filling process
- Optimizing injection process parameters
- Optimizing cycle time
- Real-time monitoring of product quality
- Record and save product quality data in production

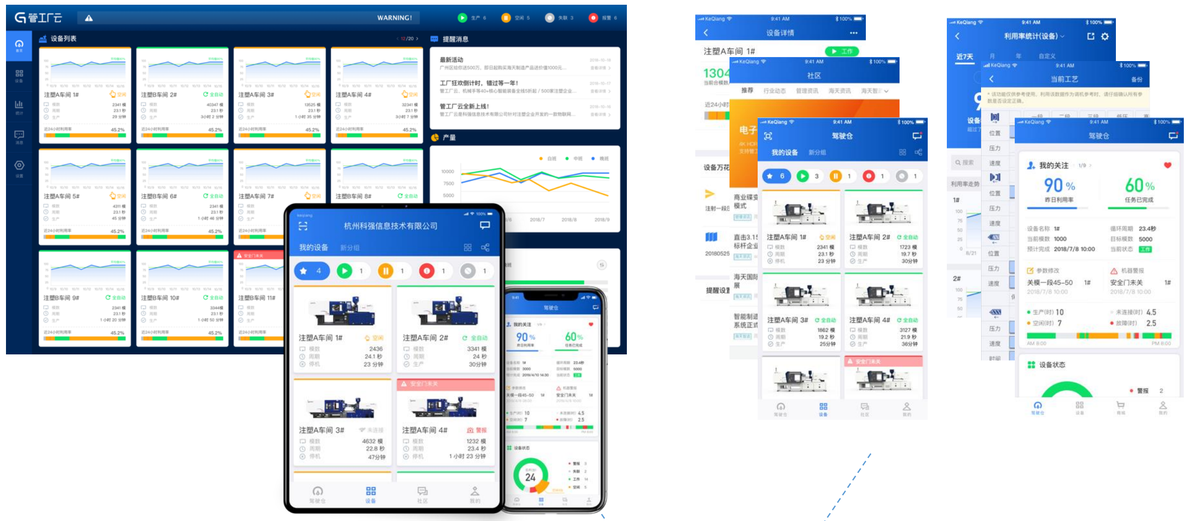


Visualization of filling process



OPC UA & EUROMAP77 INTERFACE (Option)

- Faster, highly compatible and flexible (operative in both Windows and Linux system)
- Euromap 83 and 77 based on OPC UA supports MES system



THANK YOU.

www.zhafir.com

ZHAFIR
PLASTICS MACHINERY

INTRODUCTION & HIGHLIGHTS

HEADQUARTER OF ZHAFIR IN CHINA

- Chunxiao, Ningbo
- Manufacturing site with 226,000 sqm
- Application center for mold testing

ZHAFIR IN GERMANY

- Zhafir Germany, Ebermannsdorf
- Manufacturing site with 12,000 sqm
- Sales and service for German market
- Training and technical support for customers and distributors in 18 countries

LABEL DESCRIPTION

Model abbreviation

High performance character ‘F’

Clamping ton (kN)

ZE 3800F

Injection character ‘h’

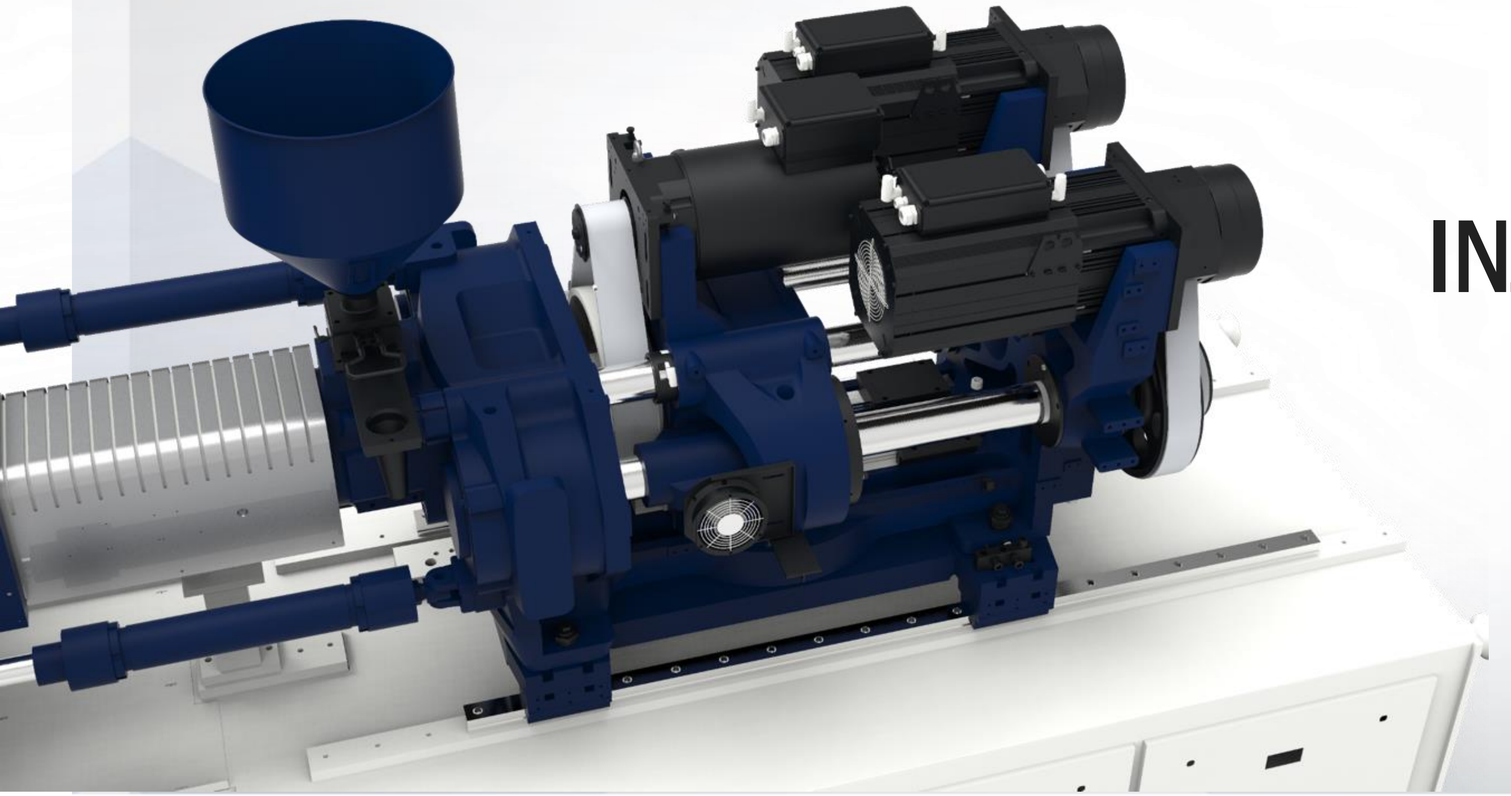
Injection capacity

1700h

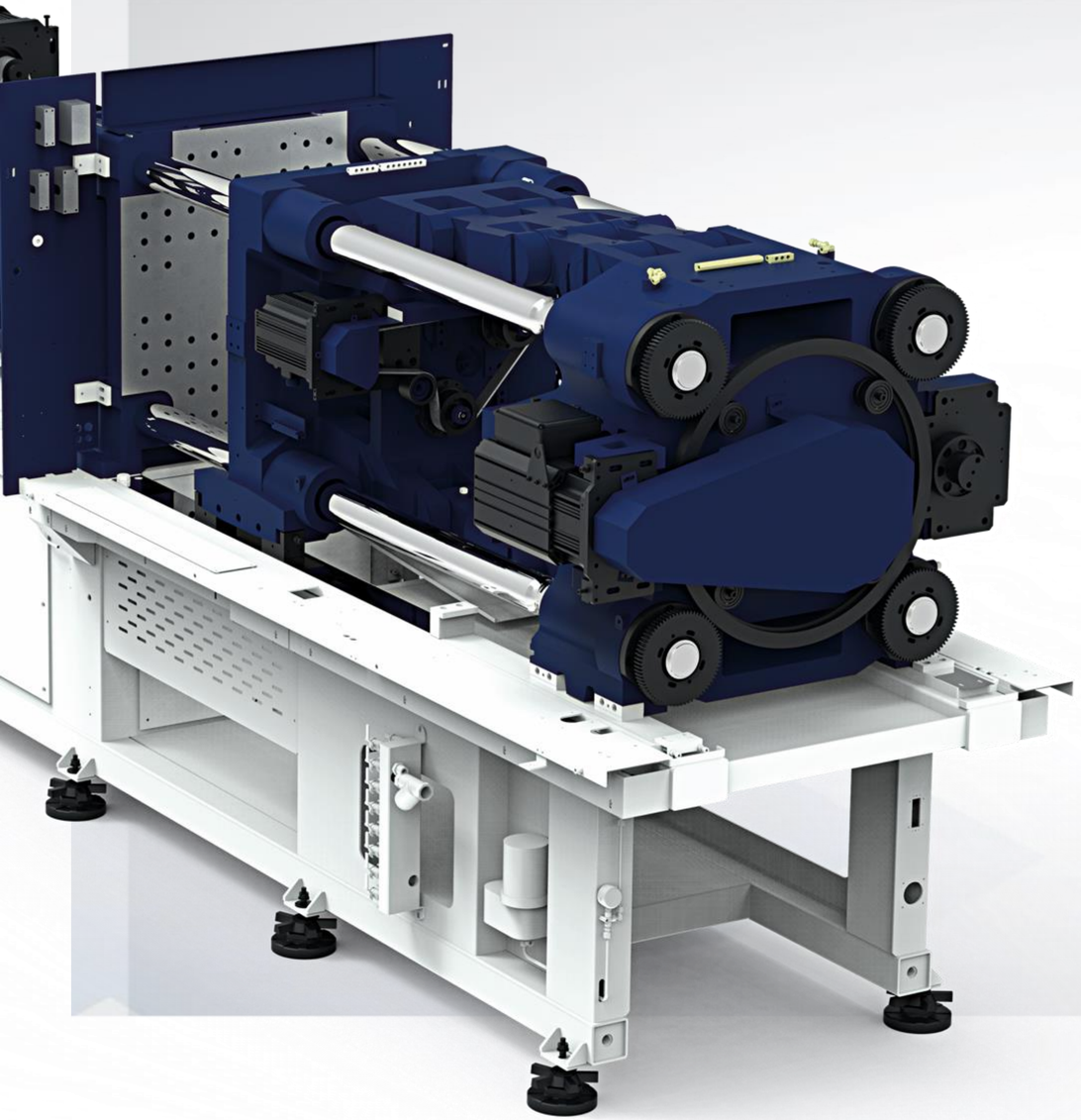
Clamping unit labels

Injection unit labels

Metal grey + ZHAFIR blue + model
CI Representative color

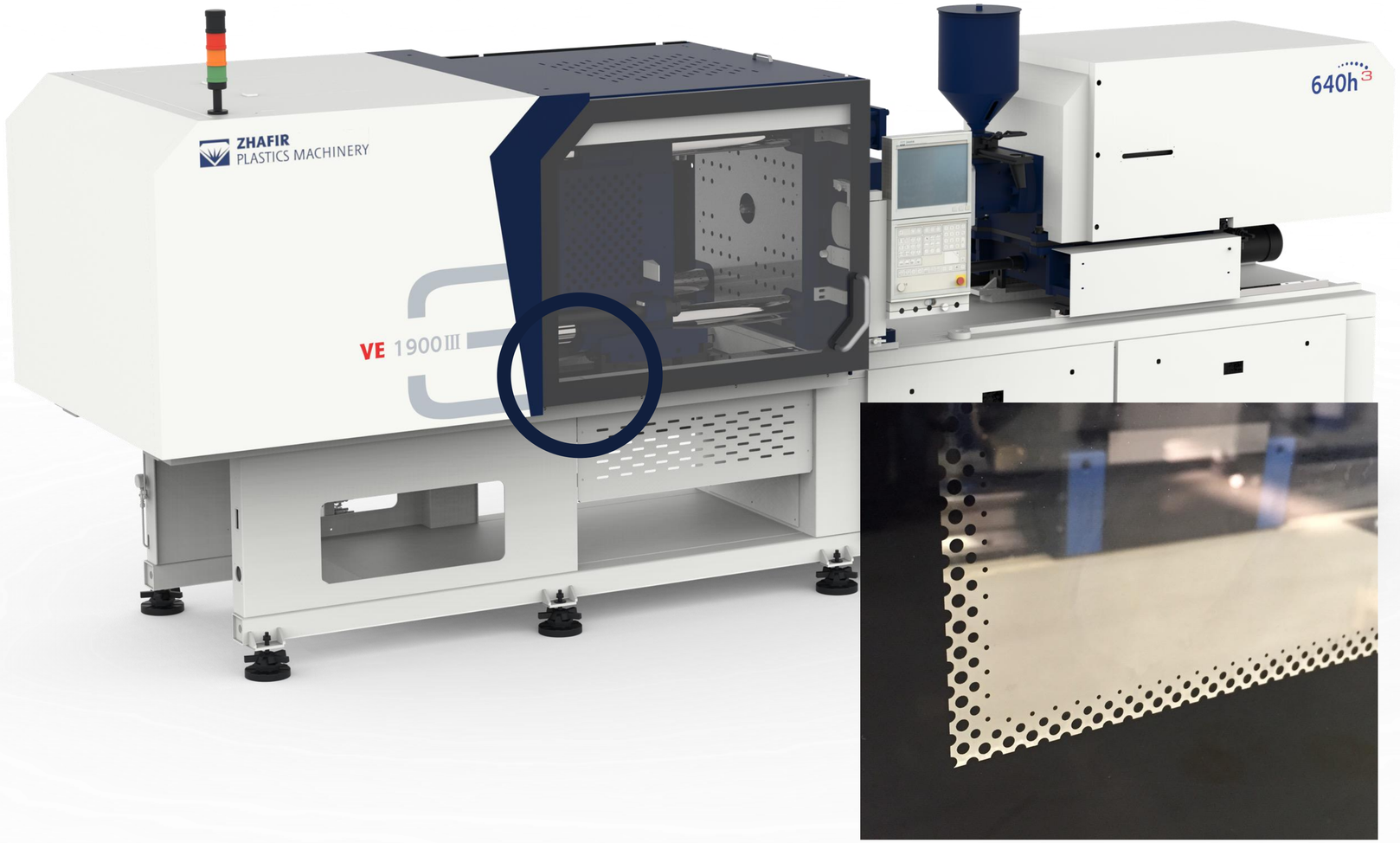


INJECTION UNIT



CLAMPING UNIT

New Exterior Design



- Movable door
- Wider window
- More clean and elegant looking
- Compact Design

DRIVE TECHNOLOGY

SOFTWARE & CONTROL