



September 2022 Edition



EMH Series

Hydraulic Electric Hybrid High-speed & High-precision
Energy Saving Injection Molding Machine

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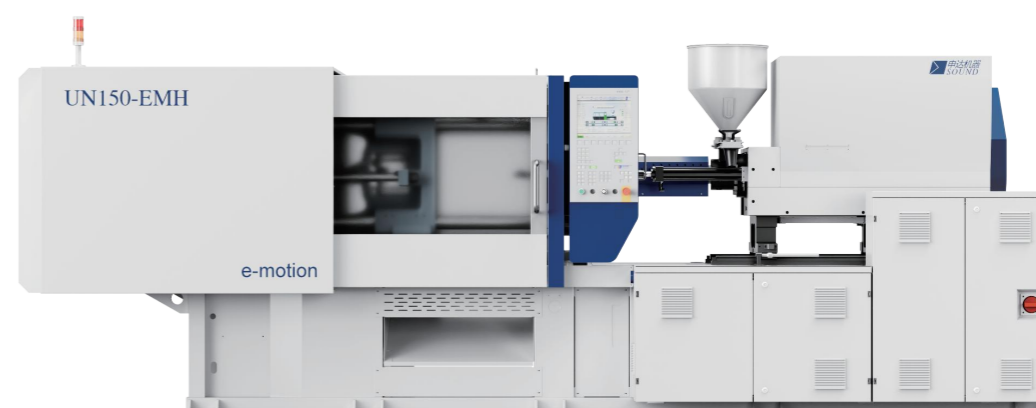
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ZHEJIANG ARTIKING GROUP • ZHEJIANG SOUND MACHINERY MANUFACTURE CO.,LTD.



ENTERPRISE INTRODUCTION

Founded in 1955, ZHEJIANG SOUND MACHINERY MANUFACTURE CO., LTD is one of the earliest professional manufacturers of injection molding machine in China, which is affiliated to ZHEJIANG ARTIKING GROUP CO., LTD . SOUND is the pioneer of China's plastic machinery industry, the first batch of national high-tech enterprises in the industry, the key enterprise of "a Group of Five" in Zhejiang province. SOUND has won the only National Silver Award in domestic plastic machinery industry, the second prize of National Science and Technology Progress Award, the first prize of Zhejiang Science and Technology Progress Award, etc. SOUND has scientific research institutions such as academician expert workstation, national post-doctoral scientific research workstation, provincial enterprise research institute, provincial enterprise technology center and provincial engineering research center. SOUND has obtained more than 180 patents and 16 invention patents.

In 2020, DEQING SOUND manufacturing base, with a total investment of RMB700 million and a covering area of 133,000M², had been completed and put into production. The base is equipped with more than 70 sets first-class processing equipments and testing equipments, including Czech SKODA floor-type boring and milling machining center, Japanese NIIGATA FMS flexible machining system, Japanese KURAKI planer table-type boring and milling machining center, Japanese Mitsubishi Gantry pentahedron machining center, Japanese OKUMA CNC lathe, Italian HEXAGON CMM three-coordinate measuring machine. It can achieve an annual production capacity of more than 6,000 sets injection molding machines.

SOUND successfully launched the 3rd generation high-efficiency precision universe series (UN), dual-plate series (DP), full electric series (FE), electric mixed hydraulic series (EMH), extrusion-injection integrated series for large volume (FJ), multi-component series and nearly 100 special models machine. The clamping force of machines is from 1,000KN to 60,000KN, and shot weight is from 100g to 550,000g. SOUND had exported the injection molding machines to more than 60 countries and regions such as Japan, France, Saudi Arabia, India, Indonesia, Russia and USA.

Facing the future, SOUND insists on customer-oriented, employee-oriented, innovation as the source, constantly surpassing itself and creating value, focusing on the one-stop overall solution for the future injection molding factory, and making SOUND a benchmark enterprise for intelligent manufacturing in the plastic injection machinery industry.





Value visible!

Perfect integration of full electric and hydraulic injection molding machine

Precise

Injection position accuracy: 0.02mm
 Position accuracy of mold opening and closing:
 0.1mm
 Repeatability of the product: 7‰-0.1‰

High

High response, high injection pressure, high precision
 Maximum injection pressure > 3000bar
 (screw A, Dia. ≤45mm)
 Response speed 30ms

Clean

Clean and energy saving

Stable

CPK ≥ 1.67
 Low residual amount of injection volume

Intelligent

Germany industry 4.0 standard, intelligent
 PID adjusts injection precision, can realize
 digital intelligent factory.

Value visible!

Stable

- High-precision and high-strength linear slide rail controls the moving platen, with small friction resistance and low energy consumption, making the opening and closing of the moving platen more stable and fast, and ensuring the high parallelism of the moving platen and accurate repeated positioning, to make the whole machine run more smoothly at high speed.

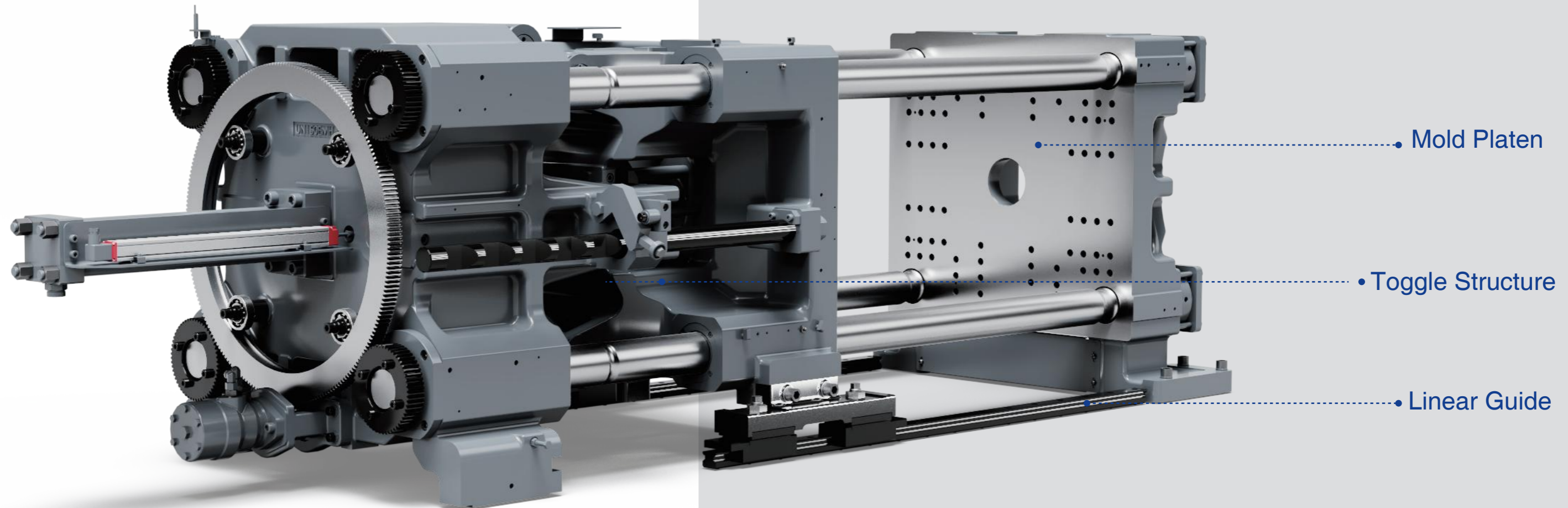
Precise

- European style portable ejector structure design, easy to disassemble and maintain the ejector pin.
- Standard configured in high rigidity mold platen and automatic mold thickness adjustment function make the mold replacement easier, faster and cleaner.

Clean

- High speed, High rigidity hydraulic cylinder clamping device, more powerful and more accurate.
- Quantitative centralized lubrication device can control the quantity of lubricating grease, reducing the consumption of lubricating oil and ensuring the cleanness of the machine surface, making the maintenance more convenient and maintenance cost reduced.
- Mechanical and electrical safety devices ensure the safety and efficiency in the production process and effectively protect the personal safety of workers.

Position accuracy of mold opening and closing: 0.1mm



• Mold Platen

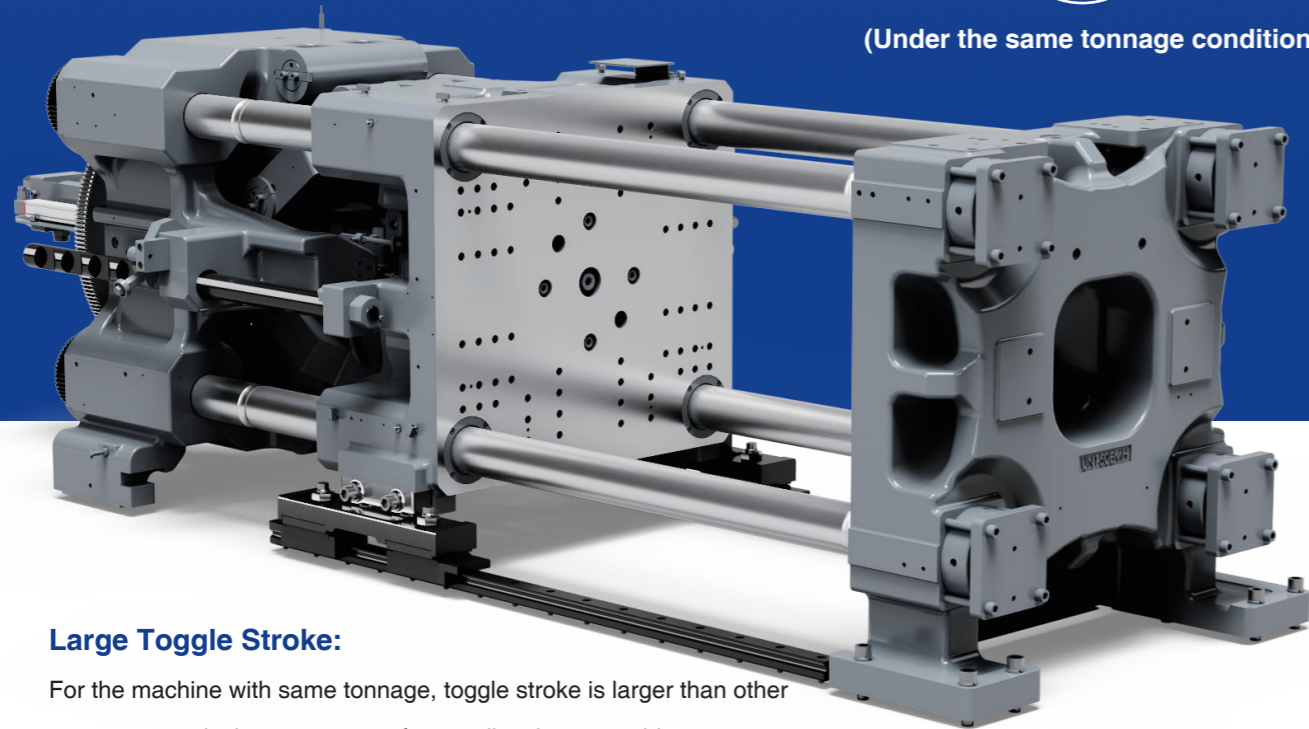
• Toggle Structure

• Linear Guide

Stable Precise Clean

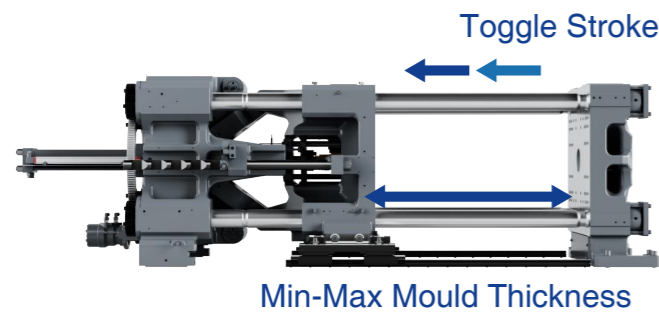
Large

(Under the same tonnage condition)



Large Toggle Stroke:

For the machine with same tonnage, toggle stroke is larger than other competitors, which is convenient for installing bigger mold.

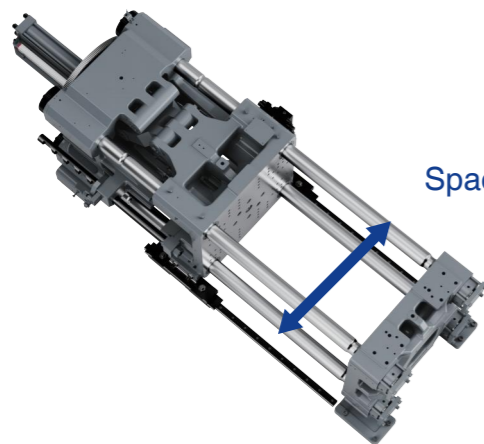


Toggle Stroke

Min-Max Mould Thickness

Large space between tie bars:

Suitable for big and small molds, and the molds are widely applicable. The mold platen has high flatness, which can better protect the mold and effectively prolong the working life of the mold.



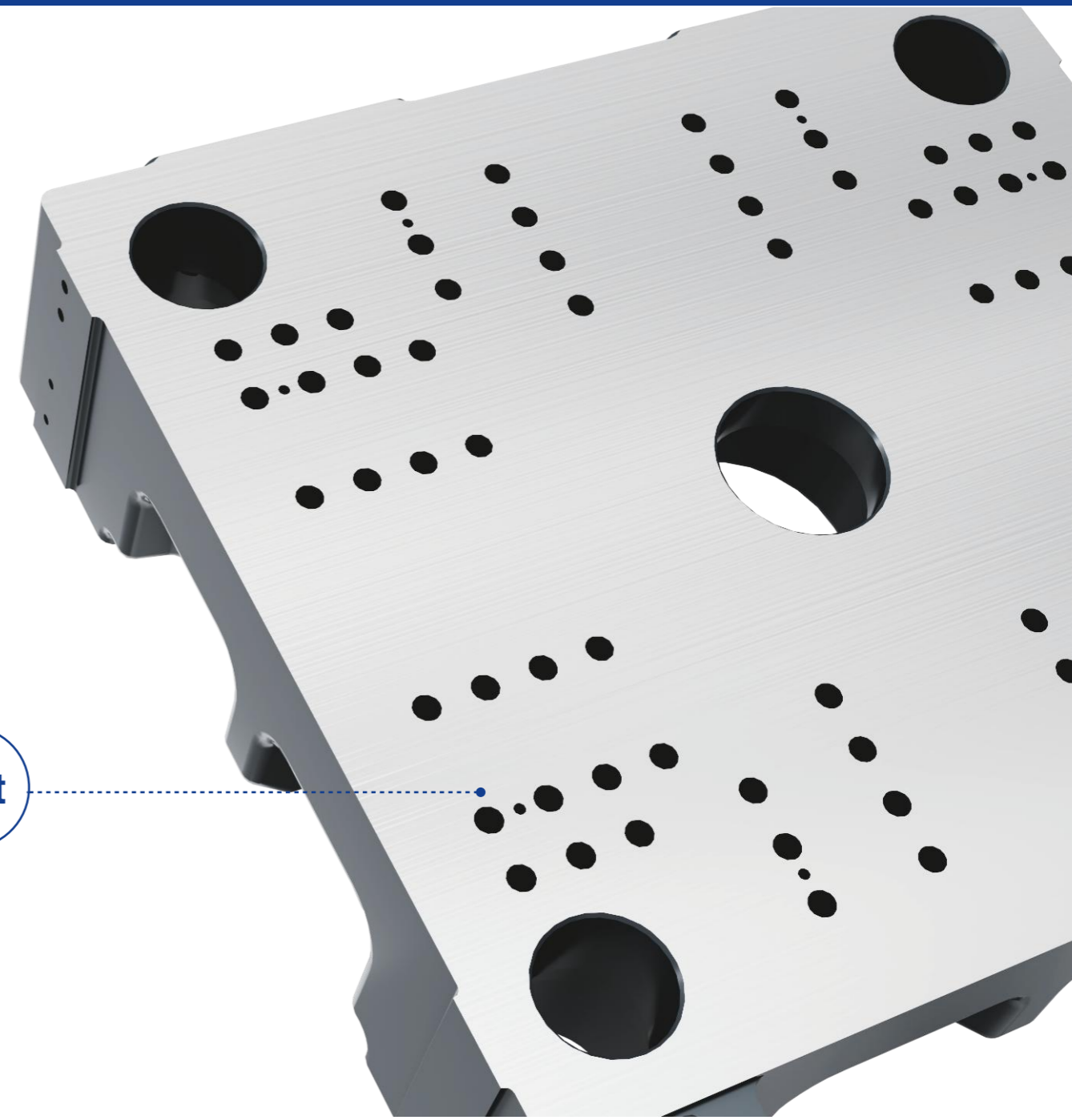
Space between tie bar

Large capacity modulus:

Strong adaptability, suitable for larger molds

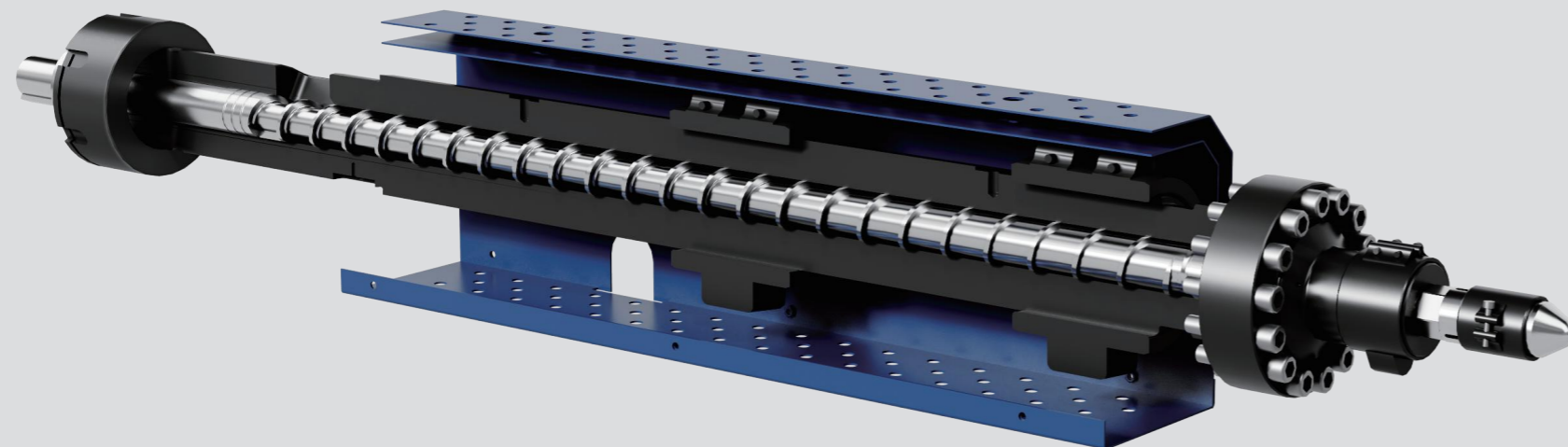
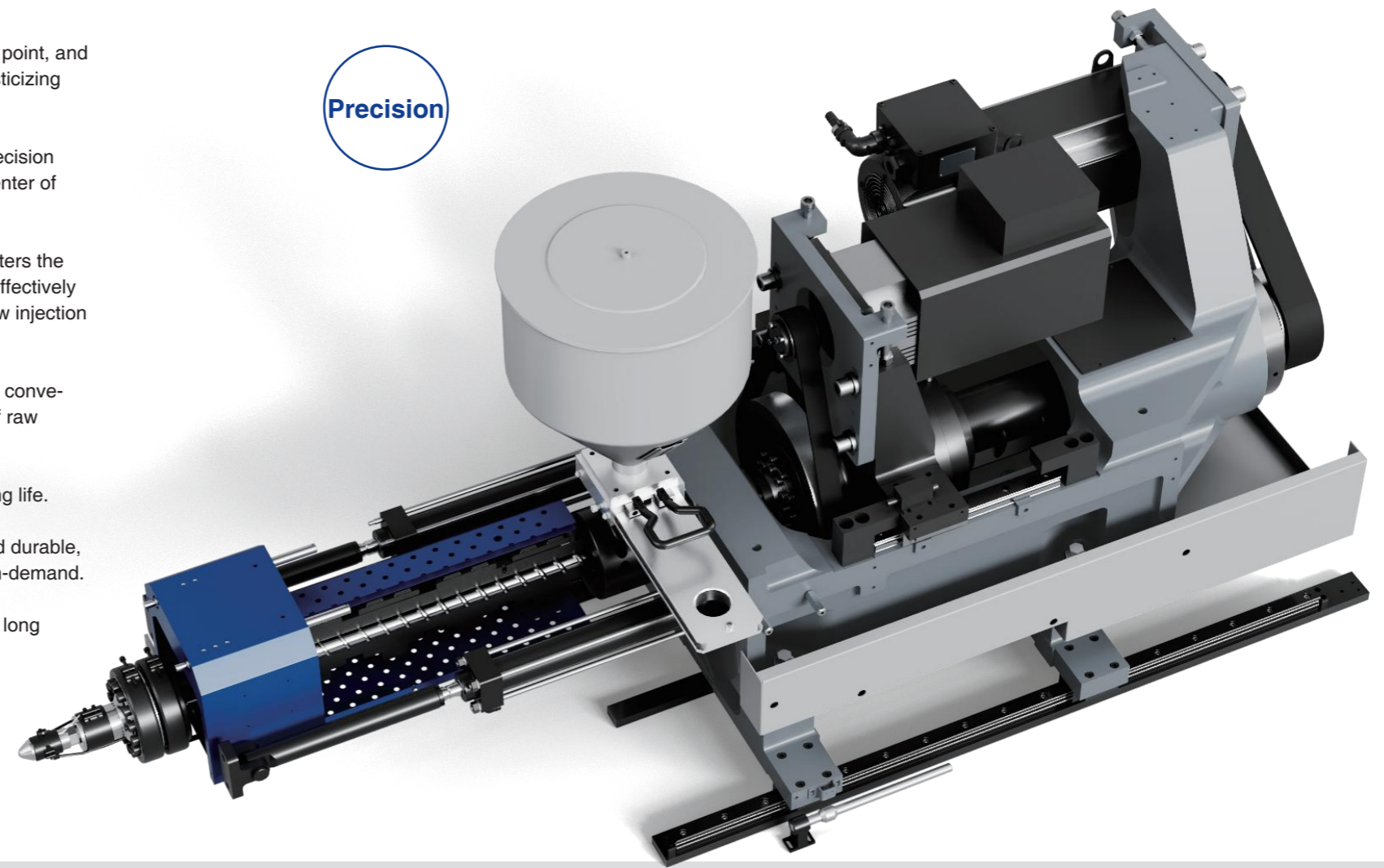
High rigidity, high flatness and high precision mold platen surface

High flatness and parallelism of mold platen surface greatly reduce mold damage, especially suitable for high standard and high precision medical and electronic products. Quick start response of mold platen opening and closing, the mold area is clean enough and comparable to the imported medical special machine.



Flat

- The small injection machine adopts a double-layer integrated injection structure, no welding point, and accurate processing and positioning, which greatly improves the injection accuracy and plasticizing stability. At the same time, it saves space and increases the utilization rate of factory space.
 - High rigidity injection base, double-layer integrated injection structure, supported by high-precision slide rail (0.03mm), triple guarantee ensures high center symmetry, uniform stress on the center of injection screw, faster and more accurate response.
 - SSR barrel temperature control system, using non-contact control, once the raw material enters the feeding area, it has been incorporated into the temperature closed-loop control unit, which effectively improves the accuracy and efficiency of the injection unit, and avoids the phenomenon of low injection precision caused by raw material caking and unsmooth feeding at the same time.
 - Automatic material cleaning circuit design makes the customer's material replacement more convenient and efficient, effectively improves the production efficiency and eliminates the waste of raw materials.
 - High response ball screw rod drive injection device, fast response, accurate and long working life.
 - Consigured the imported high-precision ball type special screw rod, precise, controllable and durable, especially suitable for the products with requirements of high-precision, high-quality and high-demand.
- Fully closed cover structure, dust-proof, noise-proof, aesthetics appearance, easy to clean, long service life.



The Japanese team independently developed and designed the plasticizing system:

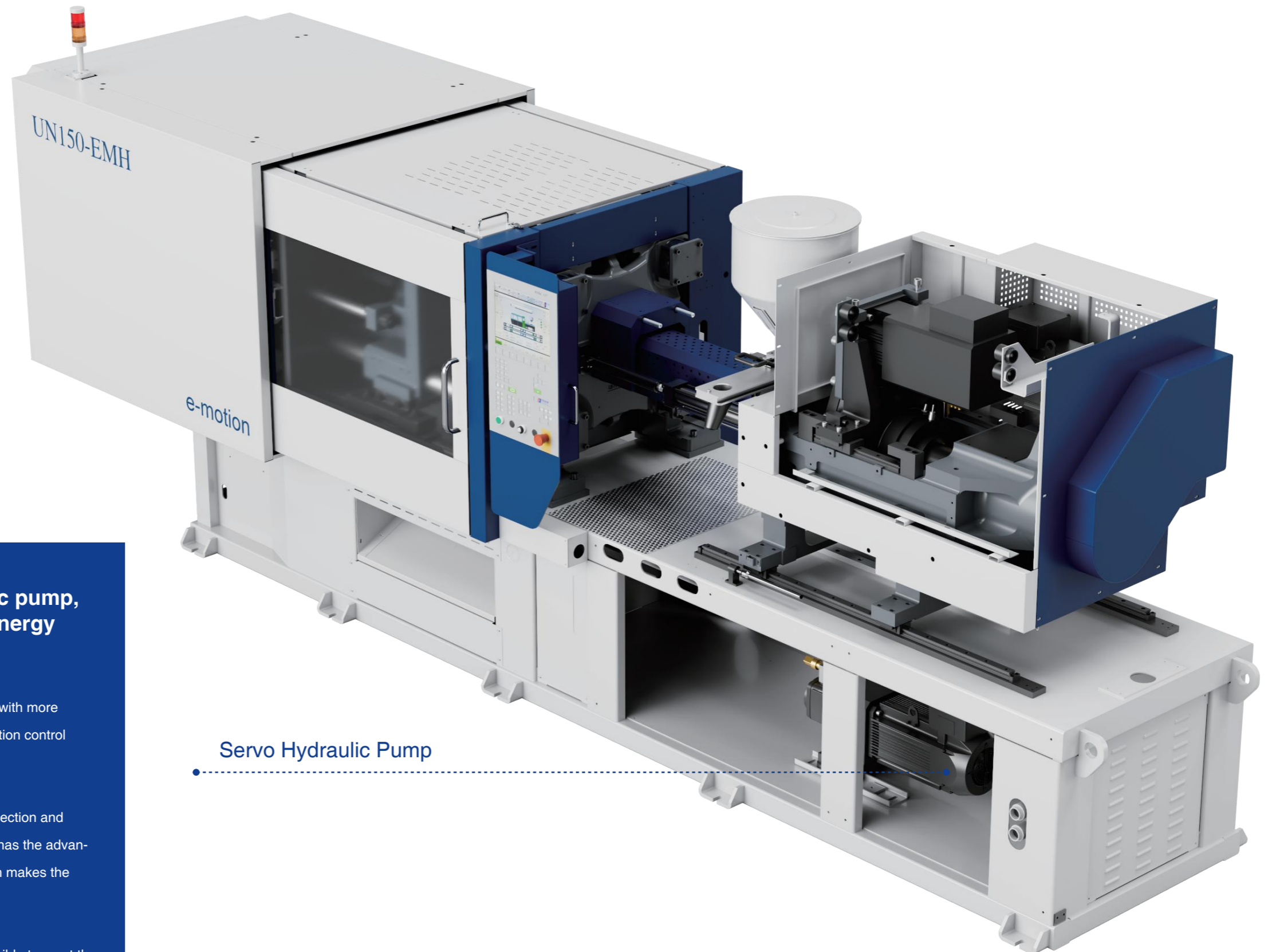
- The newly designed plasticizing components to improve the plasticizing efficiency, equipped with wear-resistant and corrosion-resistant full-hard bi-metal screw and barrel as standard.
- It can be customized for various process requirements and special plasticizing system for various applications, with strong adaptability.
- The screw suckback function makes the screw back forcibly, effectively preventing the dripping from nozzle.
- Production injection visualization and graphics, real-time display of screw speed, position and injection pressure, controllable production process, high efficiency and high precision.



- Standard KEBA Controller keplast i1180-0110-00 with 12" large screen controller, friendly new UI interface, easy operation and strong performance.
- Germany industry 4.0 standard, easy to realize digital factory and intelligent production.
- Back pressure closed-loop control system
The electric charging make the back pressure more stable. The loadcell sensor is installed to monitor the pressure in the barrel in real time. The injection motor and the charging motor are adjusted in real time according to the feedback pressure to realize the back pressure closed-loop controlled. At the back pressure stabilization stage, the back pressure value can be accurately controlled within ± 1 bar.

- The pressure holding closed-loop control
The loadcell sensor monitor the pressure in the barrel in real time. The pressure is closed-loop controlled according to the feedback pressure, which is more accurate. At the pressure holding stable stage, the pressure can be accurately controlled within ± 1 bar.
- The product quality monitoring function
Monitor the key actual data in the production process, analyze the data with the big data, the setting value and the actual value, then judge whether it is a defective product, and realize industrial intelligence.

Intelligence



**Built-in servo motor and hydraulic pump,
high speed, high efficiency and energy
saving.**

The motor is equipped with an absolute value encoder, with more reliable position feedback, high resolution and high position control accuracy.

Servo control of injection and charging. The speed of injection and charging is controlled by servo motor. The servo motor has the advantages of fast response and more accurate control, which makes the control accuracy of injection position reach 0.01mm.

Standard hydraulic ejector and core pulling function, flexible to meet the use of different molds.

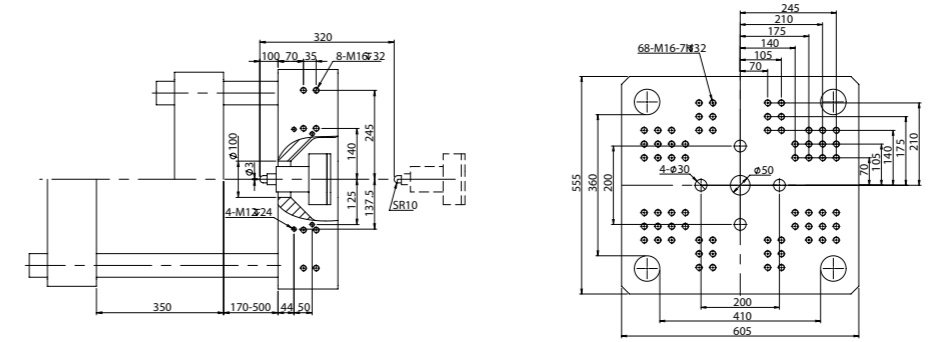
Servo Hydraulic Pump

EMH Specification

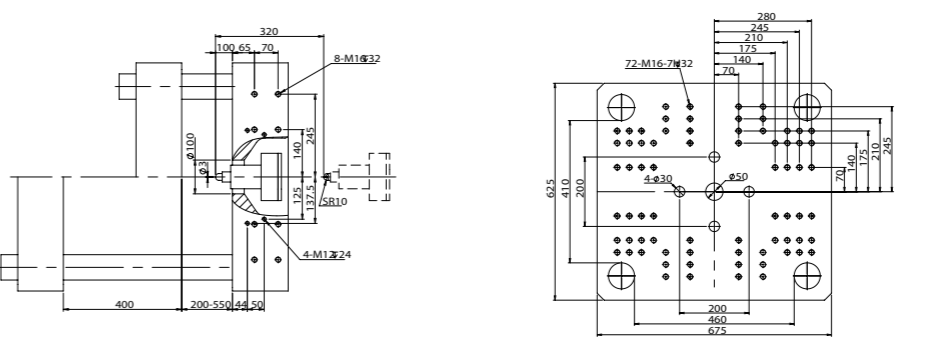
DESCRIPTION	UNIT	UN110-EMH				UN150-EMH				UN190-EMH				UN240-EMH											
		200	240	280	340	400	480	530	600	A	B	C	D	A	B	C	D	A	B	C	D				
INJECTION UNIT																									
International Size Rating		200	240	280	340	400	480	530	600																
screw diameter	mm	26	28	32	36	28	32	36	40	32	36	40	45	36	40	45	50								
Screw L:D ratio		21.5	20.0	22.5	20.0	22.9	20.0	22.2	20.0	22.5	20.0	22.5	20.0	22.2	20.0	22.2	20.0								
Shot volume	cm ³	61	71	113	143	80	105	163	201	121	153	226	286	163	201	318	393								
Shot weight(PS)	g	56	64	102	130	73	95	148	183	110	139	206	261	148	183	289	357								
	oz	2.0	2.3	3.6	4.6	2.6	3.4	5.2	6.5	3.9	4.9	7.3	9.2	5.2	6.5	10.2	12.6								
Injection pressure	Bar	3260	2811	2152	1700	3469	2656	2099	1700	3359	2654	2150	1699	3281	2658	2100	1701								
Holding pressure	Bar	2608	2249	1722	1360	2775	2125	1679	1360	2687	2123	1720	1359	2625	2126	1680	1361								
Injection rate	cm ³ /s	167	194	253	321	194	253	321	396	253	321	396	501	321	396	501	619								
Plasticizing capacity	g/s	9.1	13.1	20.4	32.3	9.6	13.6	20.4	32.3	14	20.4	32.3	42.5	14	20.4	32.3	42.5								
Injection stroke	mm	115	140	130	160	150	180	160	200																
Injection speed	mm/s	350				350				350				350											
Max.screw speed	r/min	400				400				400				400											
CLAMPING UNIT																									
Clamping force	KN	1100				1500				1900				2400											
Space between tie bars(H×V)	mm	410×360				460×410				530×470				580×530											
MIN.mold dimension(H×V)	mm	310×310				340×340				380×380				430×430											
Toggle stroke	mm	350				400				460				520											
Min.mold height	mm	170				200				220				250											
Max.mold height	mm	500				550				620				670											
Distance between platens(daylight)	mm	850				950				1080				1190											
Ejector stroke	mm	110				130				170				200											
Ejector force	KN	45				53				53				84											
Number of ejector	Pcs	5				5				5				9											
POWER UNIT																									
System pressure	Bar	190				190				190				190											
Total Power	KW	43.0				55.0				71.5				103.0											
Heating capacity	KW	5.0	5.0	8.0	8.0	7.0	7.0	9.0	9.0	11.0	11.0	13.0	13.0	14.0	14.0	16.0	16.0								
GENERAL																									
Oil tank capacity	L	120				150				200				240											
Machine dimension(L×W×H)	m×m×m	5.0×1.4×1.9				5.2×1.5×1.9				5.1×1.3×2.0				5.4×1.4×2.2											
Machine weight	t	4.5				5.4				6				8.5											
Hopper capacity	kg	25				25				50				50											

Mold Platen Drawing

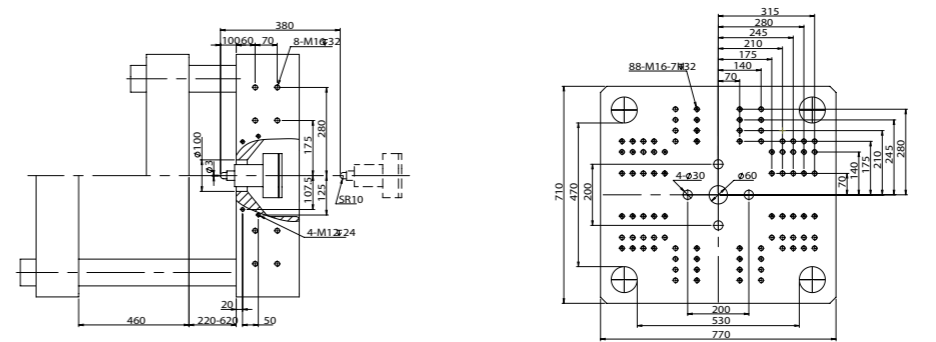
UN110-EMH



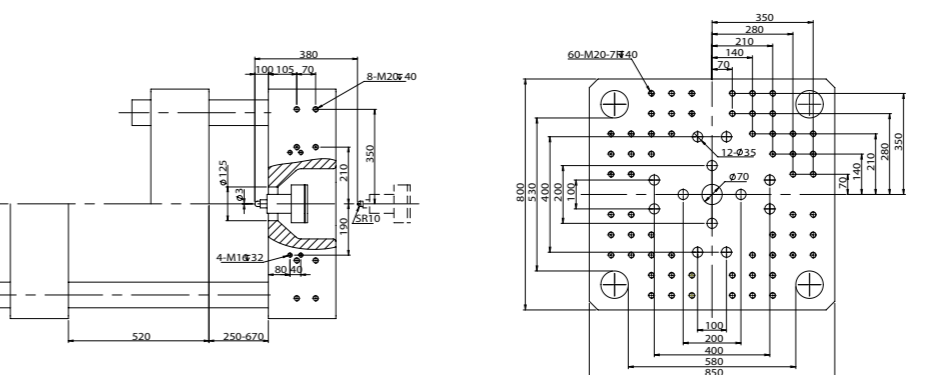
UN150-EMH



UN190-EMH



UN240-EMH

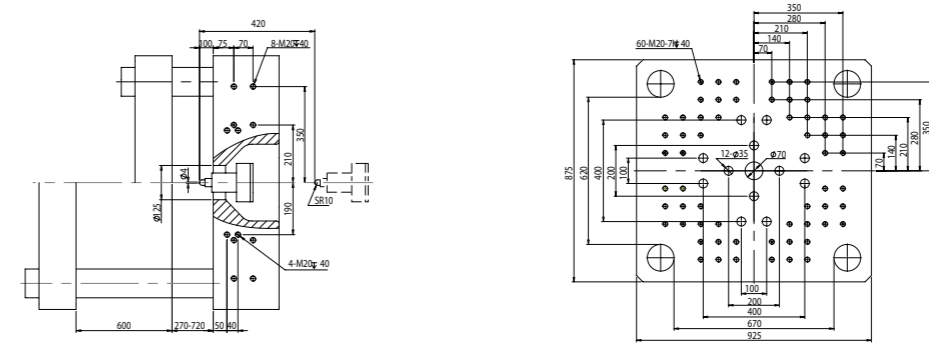


EMH Specification

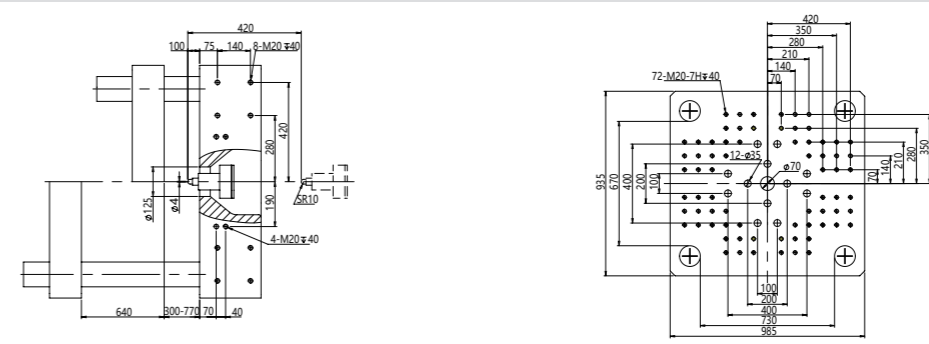
DESCRIPTION	UNIT	UN280-EMH				UN310-EMH				UN360-EMH				UN450-EMH			
		1000		1200		1200		1400		1500		1750		1750		2000	
International Size Rating		A		B		A		B		A		B		A		B	
INJECTION UNIT		A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
screw diameter	mm	45	50	55	60	50	55	60	65	55	60	65	70	60	65	70	75
Screw L:D ratio		22.2	20.0	21.8	20.0	22.0	20.0	21.7	20.0	21.8	20.0	21.5	20.0	21.7	20.0	21.4	20.0
Shot volume	cm ³	334	412	582	693	452	546	763	896	594	707	962	1116	763	896	1212	1392
Shot weight(PS)	g	304	375	530	630	411	497	695	815	541	643	876	1016	695	815	1103	1266
	oz	10.7	13.2	18.7	22.2	14.5	17.5	24.5	28.8	19.1	22.7	30.9	35.8	24.5	28.8	38.9	44.7
Injection pressure	Bar	3020	2446	2021	1699	2701	2232	1875	1598	2590	2176	1854	1599	2343	1996	1721	1499
Holding pressure	Bar	2416	1957	1617	1359	2161	1786	1500	1278	2072	1741	1483	1279	1874	1597	1377	1199
Injection rate	cm ³ /s	358	442	535	636	442	535	636	747	491	585	686	796	585	686	796	914
Plasticizing capacity	g/s	35	42.5	51.9	66.1	43	51.9	66.1	80.3	47	59.5	72.3	85.0	60	72.3	85.0	106.3
Injection stroke	mm	210		245		230		270		250		290		270		315	
Injection speed	mm/s	250				250				230				230			
Max.screw speed	r/min	333				333				300				300			
CLAMPING UNIT																	
Clamping force	KN	2800				3100				3600				4500			
Space between tie bars(H×V)	mm	670×620				730×670				820×770				870×820			
MIN.mold dimension(H×V)	mm	450×450				500×500				600×600				750×750			
Toggle stroke	mm	600				640				720				800			
Min.mold height	mm	270				300				330				380			
Max.mold height	mm	720				770				850				900			
Distance between platens(daylight)	mm	1320				1410				1570				1700			
Ejector stroke	mm	200				220				220				240			
Ejector force	KN	84				108				108				135			
Number of ejector	Pcs	13				13				13				17			
POWER UNIT																	
System pressure	Bar	190				190				190				190			
Total Power	kW	98.4				115.0				118.0				131.0			
Heating capacity	kW	19.0	19.0	22.0	22.0	20.0	20.0	23.0	23.0	23.0	23.0	25.0	25.0	28.0	28.0	30.0	30.0
GENERAL																	
Oil tank capacity	L	300				400				400				500			
Machine dimension(L×W×H)	m×m×m	6.0×1.5×2.2				6.5×1.6×2.3				7×1.7×2.4				7.7×1.85×2.4			
Machine weight	t	9				11				14.5				18			
Hopper capacity	kg	75				75				75				75			

Mold Platen Drawing

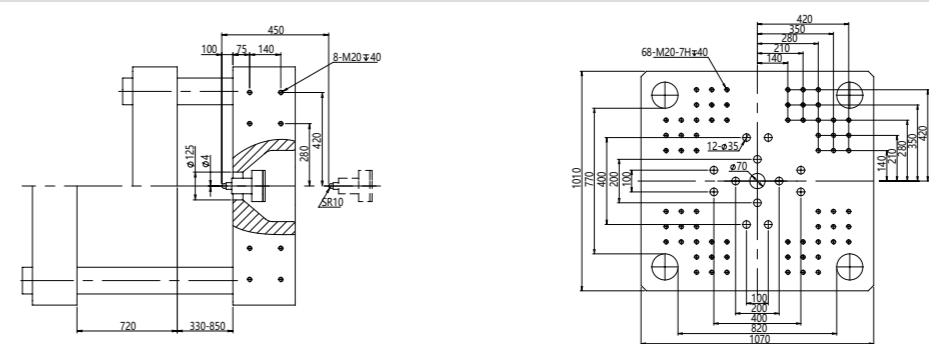
UN280-EMH



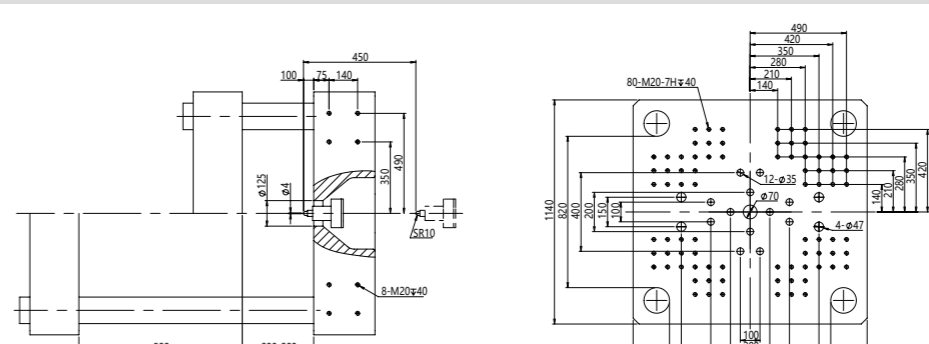
UN310-EMH



UN360-EMH



UN450-EMH



Feature and Function **Machine Model**

INJECTION UNIT	UN110-150EMH	UN190-240EMH	UN280-310EMH	UN360-450EMH
Full hard screw+Bi-metal Screw:B/C/D screw	●	●	●	●
A: Electroplated hard chromescrew + Bi-Metal Barrel	●	●	●	●
Bi-Metal screw&barrel	○	○	○	○
Full hard screw+Bi-Metal Barrel	○	○	○	○
High wear resistance and corrosion resistance screw&barrel	○	○	○	○
Shut-off nozzle	○	○	○	○
Hydraulic air shut-off nozzle	○	○	○	○
Full electric injection system	●	●	●	●
Balanced dual cylinder carriage unit	●	●	●	●
Highly rigid injection mechanical structure	●	●	●	●
Injection unit increase&decrease	○	○	○	○
Injection power increased	○	○	○	○
Feeding mould temp auto controlled	○	○	○	○
Ceramic heater	●	●	●	●
Infrared heating	○	○	○	○
Fan cooler	○	○	○	○
Auto material cleaning	●	●	●	●
Cold start protection	●	●	●	●
Nozzle cover	●	●	●	●
Center lubrication device of injection unit	○	○	○	○
Mold chamber pressure V/P changed	○	○	○	○
Balanced injection function	●	●	●	●

CLAMPING UNIT

Mold plate with thread hold	●	●	●	●
Magnet mold plate	○	○	○	○
Mold size bigger (Min-mold thickness equal increased)	○	○	○	○
Mold size reduce (Max-mold thickness equal reduced)	○	○	○	○
Mechanical&electrical safety device	●	●	●	●
Clamping eject transducer	●	●	●	●
Product slide with photo cell	○	—	—	—
Product QS function device	○	—	—	—
Mold adjustment limited switch	●	●	●	●

Remarks: "●" Standard, "○" Option, "—" Unavailable.

Feature and Function **Machine Model**

CLAMPING UNIT	UN110-150EMH	UN190-240EMH	UN280-310EMH	UN360-450EMH
Auto mold adjustment function	●	●	●	●
Clamping force display	○	○	○	○
Clamping force control close-loop	○	○	○	○
Widen safety door	○	○	○	○
Auto safety door	○	○	○	○
Safety step board in Mold zone	○	○	○	○
Safety light curtain in mold zone	○	○	○	○
Separated type machine body	—	—	○	○
Mold lifting hanger	○	○	○	—
Quantitative centralized lubrication device	●	●	●	●
Glass tube cooling Flowmeter	○	○	○	○
Quick plug distributor	●	●	●	●
Hydraulic\electric unscrew device	○	○	○	○
Air valve (1 unit)	○	○	○	●
Core pulling (2 unit from 280ton)	●	●	●	●
Electric&Hydraulic unscrew device	○	○	○	○
Unscrewing counter sensor	○	○	○	○
Mold open&closed proportional valve	●	●	●	●
Synchronous action (ejector, core pulling)	○	○	○	●
Valve control in proper order	○	○	○	○
Thermal baffle	○	○	○	○

HYDRAULIC UNIT

SVP Servo Motor/pump control system	●	●	●	●
Self-sealing magnetic oil sucking filter	●	●	●	●
Pump/motor power increase	○	○	○	○
Cooler increase	○	○	○	○
Oil temperature display	●	●	●	●
Oil temp auto control	○	○	○	○
Oil level alarm	○	○	○	○
Oil temp pre-heating function	○	○	○	○
Oil tank magnet	●	●	●	●
High pressure on-line filter	○	○	○	○
Low pressure return filter	○	○	○	○
Passby oil filter	○	○	○	○

Remarks: "●" Standard, "○" Option, "—" Unavailable. Mold cooling: 6 ways loop (less 240Ton) ,10 ways loop (280Tons-450Tons)

FUNCTION	Machine Model			
	ELECTRONIC UNIT	UN110-150EMH	UN190-240EMH	UN280-310EMH
KEBA 12" color screen	●	●	●	●
Hardware input output function	●	●	●	●
Action monitoring function	●	●	●	●
Producing monitoring function	●	●	●	●
Error alarm display	●	●	●	●
3 color alarm light	●	●	●	●
Euromap 12 robot interface	○	○	○	○
Euromap 67 robot interface	○	○	○	○
Solid state relays heat the (SSR)	●	●	●	●
Rear safety door emergency button	●	●	●	●
3hase-5line socket (16A)	●	●	○	○
3hase-5line socket (32A)	○	○	●	●
Single phase socket (10A)	●	●	●	●
European 3hase-5line socket (16A)	○	○	○	○
European 3hase-5line socket (32A)	○	○	○	○
European 3single phase socket (10A)	○	○	○	○
Hot runner control system and interface	○	○	○	○
Data exchange OPC interface	○	○	○	○
OTHERS				
Nomal hopper	●	●	●	●
Tool box / damageable spare part / operation manual	●	●	●	●
Level pad	●	●	●	●
Mold damping board	●	●	●	●
Stainless steel hopper	○	○	○	○
Hopper dryer	○	○	○	○
Hopper magnet	○	○	○	○
Special color	○	○	○	○
Robot	○	○	○	○
Water chiller	○	○	○	○
Mold temperature controller	○	○	○	○
Dehumidifier	○	○	○	○
Autoloader	○	○	○	○
Fumigated wooden package	○	○	○	○

Remarks: "●" Standard, "○" Option, "—" Unavailable.

Partner



Meet the sun, moon and stars on the top of the mountain,
create an infinite future together!