

THINK TECH FORWARD

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YIZUMI

VM

VERTICAL PLASTIC  
INJECTION MOLDING MACHINE



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  - [3] The data in the catalogue is obtained from internal testing in YIZUMI laboratory.
- Please refer to the actual machine for the final data. YIZUMI reserves the right of final interpretation upon disputes and ambiguities.



THINK TECH FORWARD

## V3 Series Vertical Machine

- ▶ High precision turntable
- ▶ Direct clamping + High-rigidity platen
- ▶ Standard servo drive, offering energy saving and high efficiency
- ▶ Vertical injection with a reliable injection unit
- ▶ Synchronous ejection, dual-station turntable, improved productivity
- ▶ KEBA control system with powerful features and precise control



## V4 Series Vertical Machine

- ▶ Precise control, reliable and stable operation, user-friendly design
- ▶ Direct clamping + High-rigidity platen
- ▶ Standard servo drive, offering energy saving and high efficiency
- ▶ Vertical injection with a reliable injection unit
- ▶ Suitable for molding of plastic products with inserts and multi-purpose injection molding process
- ▶ Low pressure and slow mold closing for mold protection



## Injection Unit



### Optimized plasticizing screw

The plasticizing efficiency is increased by 10%-30% and the quality of plasticizing and color mixing is improved as well.

Four sets of standard barrel assembly are available so that the machine has wider applicability.



### Proportional plasticizing back pressure control

Proportional back pressure facilitates accurate control of industrial controller and enhances the stability of injection.

## Electrical Control System



### Upgraded KEBA system

- Expandable with multiple modules including AO, AI, DO, DI, and TM to meet more requirements;
- Real-time monitoring machine signals from sensors to coordinate corresponding movements for higher operating safety;
- Support common RS232/485 communication interface, CANOPEN, Ethernet port, temperature compensation sensor connector, and USB port.



### Oil level detection

Automatic low oil level alarm prevents gas from being sucked in due to low oil level, avoiding consequent instability of hydraulic circuit.

## Hydraulic System

### YIZUMI's third-generation energy-saving servo technology

The third-generation servo system has been improved and optimized in the internal structure of motor, the standard of magnetic steel, the selection of oil pump and the development of drive software to achieve superior performance in stability, reliability, durability, energy conservation, efficiency and low noise; owing to the servo system, VM series machines use 30%-80% less energy than conventional hydraulic machines. The accuracy of closed-loop hydraulic oil temperature control, which is the new function, is  $\pm 0.5^{\circ}\text{C}$  with further increased stability



Professional brand-name motor



Imported high-pressure gear pump

Proven by years of practical application and higher configuration, the third-generation servo system is stable, reliable and durable and characterized by high efficiency, energy saving, low noise, strong power and fast response.

### Low noise

Under the same working conditions, the 3rd-generation servo system emits 20% lower noise than the previous generation when producing the same product.

### Strong power

The servo system has sufficient power and strong overload capacity. Owing to this, machines can raise no overload alarm at maximum speed and under maximum pressure for 5 minutes in a test.

## V3 Specifications (with turntable)

		UN60V3R			UN90V3R			UN125V3R			UN165V3R			UN215V3R			UN300V3R																				
DESCRIPTION		INJECTION UNIT									INJECTION UNIT																										
International specifications	UNIT	IU120			IU200			IU250			IU405			IU650			IU925			IU1270																	
		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	C	A	B	C						
Screw diameter	mm	22	26	30	26	30	35	26	30	35	30	35	40	30	35	40	35	43	48	35	43	48	43	48	53	43	48	53	48	53	60	48	53	60	53	60	68
Shot volume	cm <sup>3</sup>	46	64	85	74	99	135	74	99	135	99	135	176	99	135	176	154	232	290	154	232	290	290	362	441	290	362	441	425	518	664	425	518	664	585	749	962
Shot weight	g	42	59	78	68	91	124	68	91	124	91	124	162	91	124	162	142	214	266	142	214	266	267	333	406	267	333	406	391	477	611	391	477	611	538	689	885
Injection pressure	MPa	260	186	140	269	202	149	269	202	149	254	186	143	254	186	143	264	175	140	264	175	140	224	180	147	224	180	147	219	179	140	219	179	140	218	170	132
Screw L:D ratio	L/D	22	23	22	22	22	20	22	22	20	24	20	20	24	20	20	22	22.3	20	22	22.3	20	22.3	20	20	22.3	20	20	22.3	20	20	22.3	20	20	22.3	20	20
Injection rate	cm <sup>3</sup> /s	45	63	83	49	65	88	49	65	88	69	94	123	69	94	123	89	134	167	89	134	167	143	179	218	143	179	218	173	211	271	173	211	271	201	257	330
Max. injection speed	mm/s	117.9			91.8			91.8			97.6			97.6			92			92			98.7			98.7			95.8			95.8			90.9		
Screw stroke	mm	120			140			140			140			160			160			200			200			235			235			265					
Max. screw speed	r/min	205			180			180			190			190			225			225			275			275			217			217			188		
Number of temperature control zones	PCS	4			4			4			5			5			5			5			5			5			5			5					
CLAMPING UNIT									CLAMPING UNIT																												
Clamping force	KN	600			900			1250			1650			2150			3000																				
Movable platen opening force	KN	102			102			140			140			241			241																				
Min. mold thickness (to the mold surface of the turntable)	mm	200+100			200+100			200+100			250+100			300+100			400+100																				
Opening stroke	mm	250			250			300			300			400			400																				
Locating ring diameter	mm	100			120			120			120			120			120																				
Turntable diameter	mm	880			980			1170			1370			1800			2000																				
Ejector force	KN	11			11			23			23			23			23																				
Ejector stroke (from turntable)	mm	100			100			100			125			200			200																				
POWER UNIT									POWER UNIT																												
Heating power	kW	4.9			6.9			10.9			10.9			-			-																				
System pressure	MPa	17.5			17.5/21			17.5/21			17.5/21			17.5/21			17.5/21																				
Oil pump motor	kW	9.5			17.8			25.2			29.3			29.3			34.7																				
Oil tank capacity	L	300			350			350			410			-			-																				
GENERAL									GENERAL																												
Max. weight of turntable mold	T	1			1			1.5			2			3			4																				
Machine dimensions	m	-			3.15*1.9*3.7 (Max. machine height)			3.2*2.1*4.5 (Max. machine height)			3.4*2.3*4.6 (Max. machine height)			-			-																				
Machine weight	T	-			-			-			9			-			-																				

※ Data above come from YIZUMI lab, only for your reference.

## V4 Specifications (with standard platen)

		UN40V4			UN60V4			UN90V4								
DESCRIPTION		INJECTION UNIT														
International specifications	UNIT	IU120			IU120			IU200			IU200			IU250		
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Screw diameter	mm	22	26	30	22	26	30	26	30	35	26	30	35	30	35	40
Shot volume	cm <sup>3</sup>	46	64	85	46	64	85	74	99	135	74	99	135	99	135	176
Shot weight	g	42	59	78	42	59	78	68	91	124	68	91	124	91	124	162
Injection pressure	MPa	260	186	140	260	186	140	269	202	149	269	202	149	254	186	143
Screw L:D ratio	L/D	22	23	22	22	23	22	22.5	22	22	22.5	22	22	24	21	20
Injection rate	cm <sup>3</sup> /s	45	63	83	45	63	83	49	65	88	49	65	88	69	94	123
Max. injection speed	mm/s	117.9			117.9			91.8			91.8			97.6		
Screw stroke	mm	120			120			140			140			140		
Max.screw speed	r/min	205			205			184			184			190		
Number of barrel heating zones	PCS	4			4			4			4			5		
		CLAMPING UNIT														
Clamping force	KN	400			600			900								
Movable platen opening force	KN	82			104			102								
Space between tie bars	mm	370*210			445*255			500*385								
Min. mold thickness	mm	150/250			150/250			200/300								
Opening stroke	mm	200			250			250								
Locating ring diameter	mm	100			100			120								
Ejector force	KN	17			17			17								
Ejector stroke	mm	40			40			50								
		POWER UNIT														
Heating power	kW	3.7			3.7			4.6			4.6			6.9		
System pressure	MPa	17.5			17.5			17.5/21								
Oil pump motor	kW	8			11			15								
Oil tank capacity	L	130			130			245								
Machine dimensions	m	1.8*1.4*3			1.8*1.4*3			2*1.51*3.71								

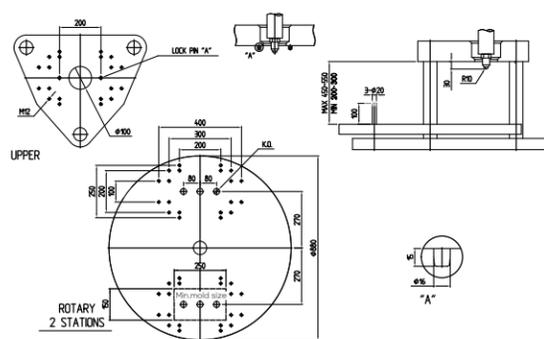
※ Data above come from YIZUMI lab, only for your reference.

## V4 Specifications (with slide plate)

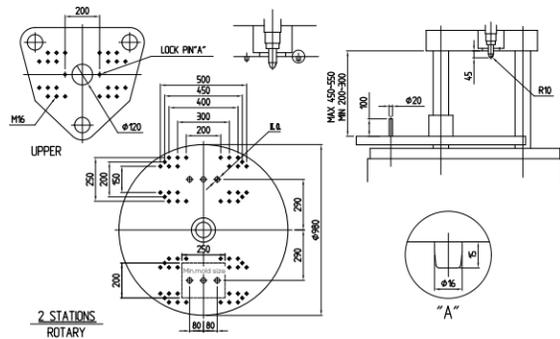
		UN90V4S														
DESCRIPTION		INJECTION UNIT														
International specifications	UNIT	IU200						IU250								
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Screw diameter	mm	26	30	35	30	35	40	30	35	40	30	35	40	30	35	40
Shot volume	cm <sup>3</sup>	74	99	135	99	135	176	99	135	176	99	135	176	99	135	176
Shot weight	g	68	91	124	91	124	162	91	124	162	91	124	162	91	124	162
Injection pressure	MPa	269	202	149	254	186	143	254	186	143	254	186	143	254	186	143
Screw L:D ratio	L/D	22.5	22	22	24	21	20	24	21	20	24	21	20	24	21	20
Injection rate	cm <sup>3</sup> /s	49	65	88	69	94	123	69	94	123	69	94	123	69	94	123
Max. injection speed	mm/s	91.8						97.6								
Screw stroke	mm	140						140								
Max.screw speed	r/min	250						250								
Number of barrel heating zones	PCS	4						5								
		CLAMPING UNIT														
Clamping force	KN	900														
Movable platen opening force	KN	102														
Space between tie bars	mm	500*385														
Min. mold thickness	mm	200/300														
Opening stroke	mm	250														
Locating ring diameter	mm	120														
Slide plate size	mm	490*540														
Slide plate stroke	mm	570														
Ejector force	KN	27														
Ejector stroke	mm	100														
		POWER UNIT														
Heating power	kW	4.6						6.9								
System pressure	MPa	17.5/21														
Oil pump motor	kW	15														
Oil tank capacity	L	245														
Machine dimensions	m	2.6*1.51*3.71														

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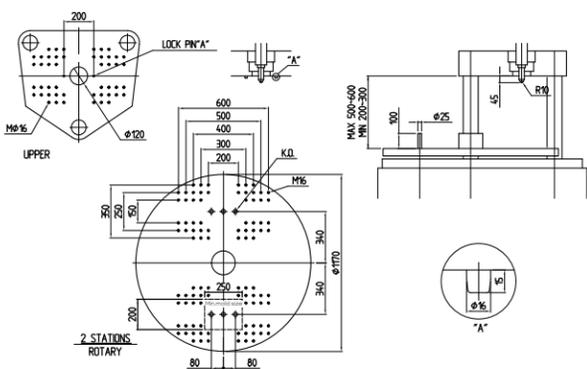
## V3 Platen Dimensions



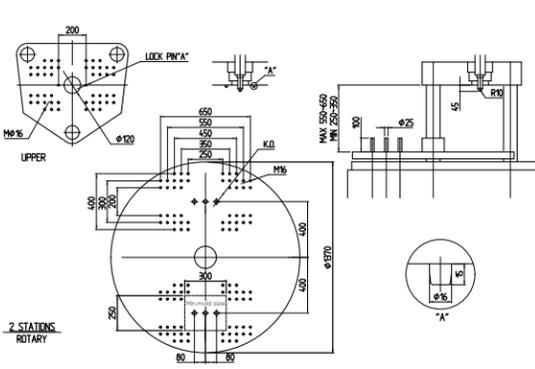
UN60V3R



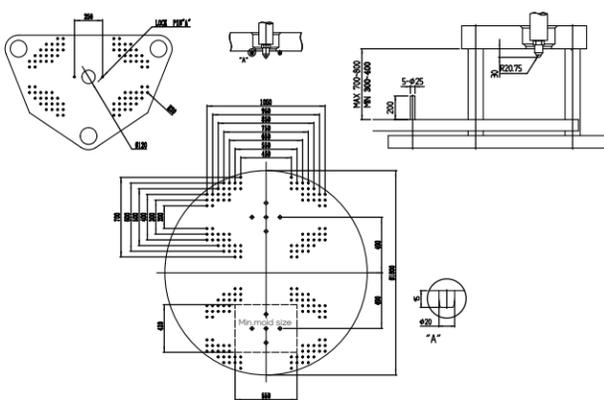
UN90V3R



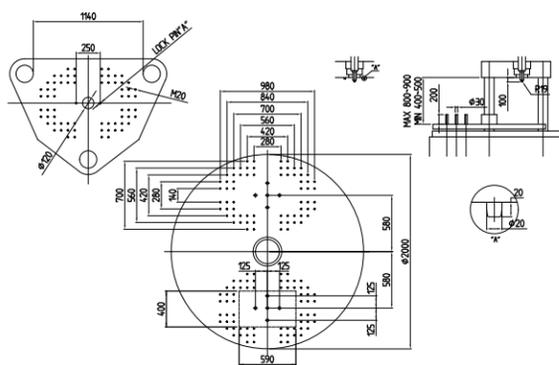
UN125V3R



UN165V3R

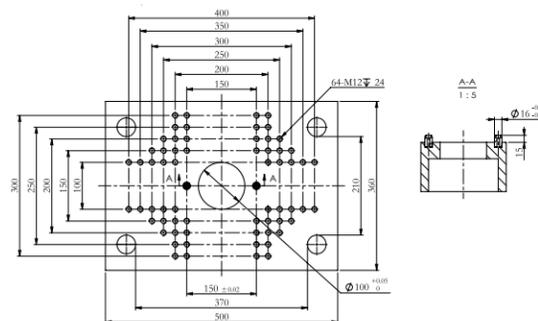


UN215V3R

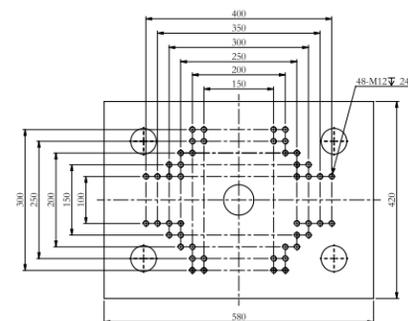


UN300V3R

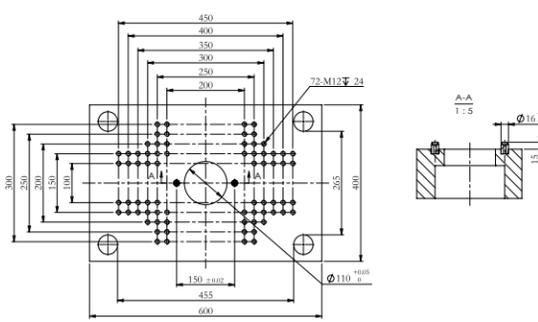
## V4 Platen Dimensions



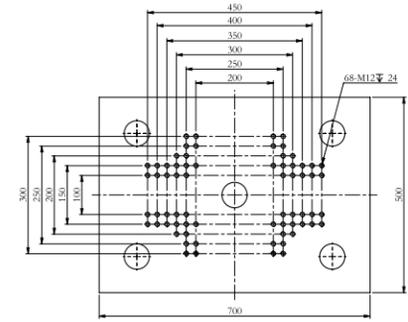
UN40V4  
Upper platen



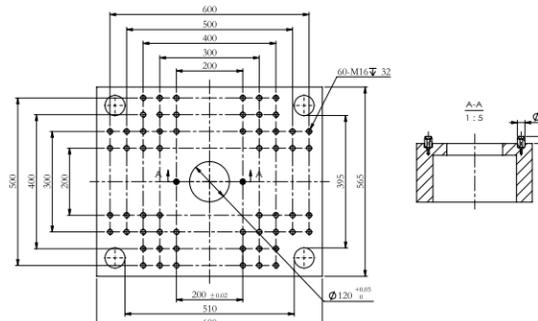
UN40V4  
Lower platen



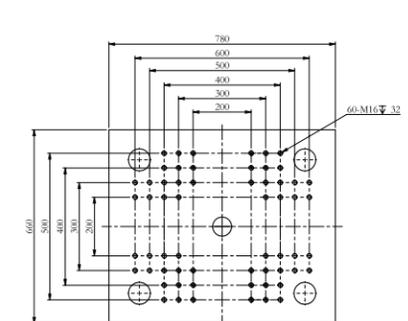
UN60V4  
Upper platen



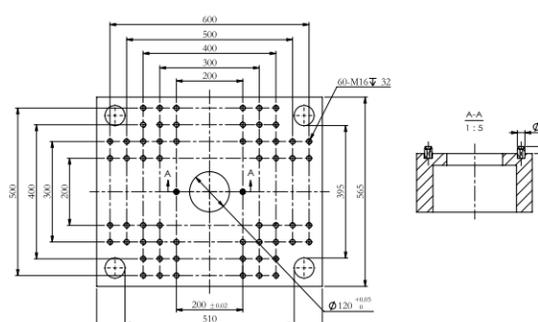
UN60V4  
Lower platen



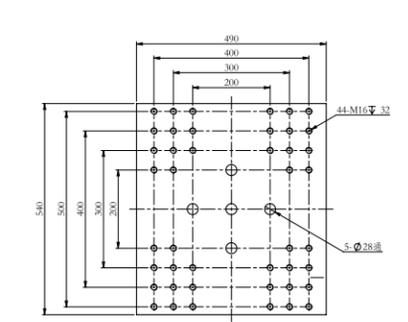
UN90V4  
Upper platen



UN90V4  
Lower platen



UN90V4S  
Upper platen



UN90V4S  
Slide plate

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## V3 Series Standard & Optional Features

FEATURES	Standard	Optional
<b>CLAMPING UNIT</b>		
Direct clamping unit (3 tie bars)	●	
180° reciprocating dual-station turntable (available for single station)	●	
Hydraulic turntable	●	
Hydraulic ejection device	●	
Low-pressure mold protection	●	
Automatic clamping force adjustment	●	
Ejector back protection device	●	
Protective light grid of operation side	●	
Safety gate	●	
Platen and injection unit made of high-rigidity ductile iron /steel 45	●	
Electrical safety device	●	
Safety pedal in the rear side of clamping area	●	
Transducer for mold open/close control	●	
Mold with reset spring	●	
Synchronized ejection, core pulling system	●	
Secondary mold clamping		○
Increased mold thickness		○
Increased ejector stroke		○
Mold thermal insulation plate		○
Special mold mounting hole		○
Increased opening stroke		○
Increased ejector force		○
Servo-driven turntable		○
<b>ELECTRICAL CONTROL</b>		
Manual, semi-auto and fully-auto operating mode	●	
Closed-loop PID barrel temperature control	●	
Input/output inspection	●	
Automatic display of alarm messages and acousto-optic alarm system	●	
Built-in software with the oscilloscope function	●	
More than 200 process parameters storage memory	●	
Automated mold height adjustment	●	
Chinese and English operating system	●	
Online cycle monitoring	●	
10" TFT true color display	●	
PDP interface	●	
Injection monitoring protection	●	
Mold-close monitoring protection	●	
Statistical process control (SPC) interface	●	
Electrical enclosure rated IP54	●	
Screw speed detecting device	●	
Time/ position/ time + position control modes for switchover to holding phase	●	
Multi-level user access to protect data	●	
Automatic heat retaining and automatic heating setting	●	
Power socket (380V 32A)		○
Power socket (380V 16A)		○
Reserved robot interfaces for SPI, Euromap12, etc.		○
Servo injection system		○
Hot runner interface		○
Stop buttons		○
Air blow device		○
Change of power supply voltage		○
Central (networked) monitoring system		○
Protective light grid of rear safety gates		○
<b>INJECTION UNIT</b>		
Nitrided alloy-steel screw and barrel	●	
Transducer for injection position control	●	
Heat retaining cover	●	
SSR for barrel heating control	●	
Solid state SCR for Nozzle temperature control	●	
Selectable suck-back before or after plasticizing	●	
6-stage injection speed / pressure /position control	●	
5-stage holding pressure speed / pressure / time control	●	
3-stage plasticizing speed / pressure / time control	●	
Cold start protection	●	
Manual centralized lubrication system	●	
Automatic purging	●	
Screw rotation measuring device	●	
Injection carriage transducer		○
Mixing screw		○
Bi-metallic barrel unit		○
Extended nozzle (50/100/150/200mm longer)		○
Special screw components		○
Energy-saving barrel heat retaining device (silicone cover)		○
Spring shut-off nozzle		○
Increased injection stroke		○
Closed-loop temperature control at feeding hole		○
<b>HYDRAULIC SYSTEM</b>		
Proportional plasticizing back pressure control	●	
Oil pre-heating system	●	
2 sets of water circuit for turntable, 1 set for upper platen	●	
Automatic correction of system pressure and flow	●	
Automatic oil temperature detection and alarm	●	
High-performance servo pump system	●	
Multiple sets of sequence (injection) valve interface		○
Variable displacement pump system		○
Closed-loop proportional variable displacement pump system		○
High-response servo injection system with accumulator		○
Enlarged oil cooler		○
Larger oil pump and motor		○
Larger plasticizing motor		○
Servo injection (closed-loop control of injection, plasticizing, holding pressure and back pressure)		○
Multiple sets of core pull or unscrewing devices with electrical		○
<b>GENERAL</b>		
Leveling pad	●	
Operation manual	●	
Nozzle wrench	●	
Mold clamp	●	
Hydraulic oil		○
Mold temperature controller		○
Auto loader		○
Dehumidifier		○

## V4 Series Standard & Optional Features

FEATURES	Standard	Optional
<b>CLAMPING UNIT</b>		
Direct clamping unit (4 tie bars)	●	
Low-pressure mold protection	●	
Automatic clamping force adjustment	●	
Ejector back protection device	●	
Safety gate	●	
Electrical safety device	●	
Safety pedal in the rear side of clamping area	●	
Transducer for mold open/close control	●	
Secondary mold clamping		○
Increased mold thickness		○
Increased ejector stroke		○
Mold thermal insulation plate		○
Special mold mounting hole		○
Increased opening stroke		○
Increased ejector force		○
<b>ELECTRIC CONTROL</b>		
Manual, semi-auto and fully-auto operating mode	●	
Closed-loop PID barrel temperature control	●	
Input/output inspection	●	
Automatic display of alarm messages and acousto-optic alarm system	●	
Built-in software with the oscilloscope function	●	
More than 200 process parameters storage memory	●	
Automated mold height adjustment	●	
Chinese and English operating system	●	
Online cycle monitoring	●	
10" TFT true color display	●	
PDP interface	●	
Injection monitoring protection	●	
Mold-close monitoring protection	●	
Statistical process control (SPC) interface	●	
Electrical enclosure rated IP54	●	
Screw speed detecting device	●	
Time/ position/ time + position control modes for switchover to holding phase	●	
Multi-level user access to protect data	●	
Automatic heat retaining and automatic heating setting	●	
Power socket (380V 32A)		○
Power socket (380V 16A)		○
Reserved robot interfaces for SPI, Euromap12, etc.		○
Servo injection system		○
Hot runner interface		○
Stop buttons		○
Air blow device		○
Change of power supply voltage		○
Central (networked) monitoring system		○
Protective light grid of rear safety gates		○
<b>INJECTION UNIT</b>		
Nitrided alloy-steel screw and barrel	●	
Transducer for injection position control	●	
Heat retaining cover	●	
SSR for barrel heating control	●	
<b>HYDRAULIC SYSTEM</b>		
Solid state SCR for Nozzle temperature control	●	
Selectable suck-back before or after plasticizing	●	
6-stage injection speed / pressure /position control	●	
5-stage holding pressure speed / pressure / time control	●	
3-stage plasticizing speed / pressure / time control	●	
Cold start protection	●	
Manual centralized lubrication system	●	
Automatic purging	●	
Screw rotation measuring device		○
Injection carriage transducer		○
Mixing screw		○
Bi-metallic barrel unit		○
Extended nozzle (50/100/150/200mm longer)		○
Special screw components		○
Energy-saving barrel heat retaining device (silicone cover)		○
Spring shut-off nozzle		○
Increased injection stroke		○
<b>HYDRAULIC SYSTEM</b>		
Proportional plasticizing back pressure control	●	
Oil pre-heating system	●	
A set of water circuit for upper/lower platen	●	
Automatic correction of system pressure and flow	●	
Automatic oil temperature detection and alarm	●	
High-performance servo pump system	●	
Multiple sets of sequence (injection) valve interface		○
Variable displacement pump system		○
Closed loop variable displacement pump system		○
High-response servo injection system with accumulator		○
Enlarged oil cooler		○
Larger oil pump and motor		○
Larger plasticizing motor		○
Servo injection system (injection, plasticizing, holding pressure, closed-loop back pressure control)		○
<b>GENERAL</b>		
Leveling pad	●	
Operation manual	●	
Nozzle wrench	●	
Mold clamp	●	
Hydraulic oil		○
Mold temperature controller		○
Auto loader		○
Dehumidifier		○

## 500T Vertical Clamping Horizontal Plastic Injection Molding Machine

### Highlights

- Servo system, fast response, strong power and low energy consumption
- Accurate control, humanized design, reliable and stable
- Direct clamping + High-rigidity platen
- Vertical clamping, horizontal injection
- Suitable for molding of plastic products with inserts and multi-purpose injection molding process
- Low pressure and slow mold closing for mold protection
- Low work table



YH-R 5000		
DESCRIPTION	UNIT	INJECTION UNIT
Screw diameter	mm	80
Theoretical shot volume	cm <sup>3</sup>	1858
Shot weight	g	1659
Injection pressure	kg/cm <sup>2</sup>	2043
Injection rate	cm <sup>3</sup> /s	456
Theoretical injection speed	mm/s	90
Temperature control	ZONE	5
Hopper capacity	L	60
CLAMPING UNIT		
Clamping force	ton	500
Opening stroke	ton	29
Min. mold thickness	mm	450
Opening stroke	mm	600
Max. daylight	mm	1050
Space between tie bars	mm	—
Ejector stroke	mm	150
Ejector force	ton	7
Nozzle center height	mm	380±50
Nozzle center distance	mm	200
SLIDE PLATE UNIT		
Slide plate size	mm	—
Slide plate stroke	mm	—
Round set diameter	mm	1800
Mold size	mm	670*670
HYDRAULIC POWER UNIT		
Max. hydraulic pressure	kg/cm <sup>2</sup>	175
Pump output	L	960
Servo motor	L	320
Heating power	KW	34
GENERAL		
Machine dimensions	m	6.4*2*4.6
Machine weight	ton	29

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