THINK TECH FORWARD

Designed by YIZUMI, August 2023

YIZUMI

VM

VERTICAL PLASTIC INJECTION MOLDING MACHINE

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V3 Series Vertical Machine

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

V4 Series Vertical Machine

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

Note: the above specifications are for reference only, and design is subject to change without prior notice.

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 ±0.5℃ 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																														
International specifications	UNIT	IU120			IU200			IU200			IU250			IU250			IU405			IU405			IU650			IU650			IU925			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	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^3	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^3/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			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			5		
CLAMPING UNIT																																				
Clamping force	KN	600					900					1250						1650						2150						3000							
Movable platen opening stroke	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																																				
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																																				
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)

DESCRIPTION		UN40V4			UN60V4			UN90V4								
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^3	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^3/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 stroke	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)

DESCRIPTION		UN90V4S					
INJECTION UNIT							
International specifications	UNIT	IU200			IU250		
		A	B	C	A	B	C
Screw diameter	mm	26	30	35	30	35	40
Shot volume	cm^3	74	99	135	99	135	176
Shot weight	g	68	91	124	91	124	162
Injection pressure	MPa	269	202	149	254	186	143
Screw L:D ratio	L/D	22.5	22	22	24	21	20
Injection rate	cm^3/s	49	65	88	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 stroke	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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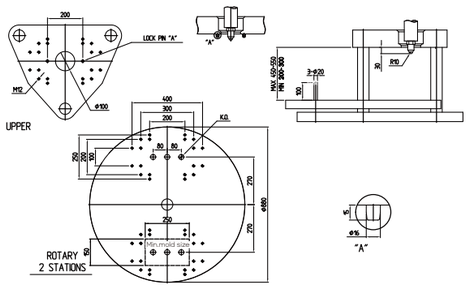
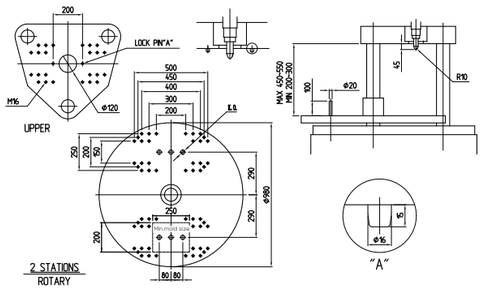
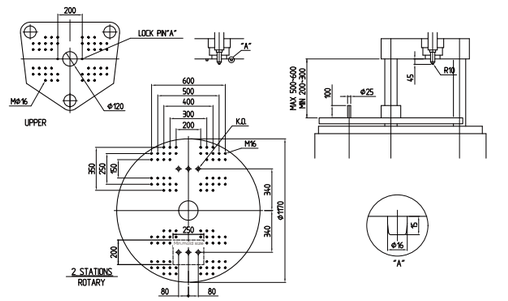
V3 Platen Dimensions



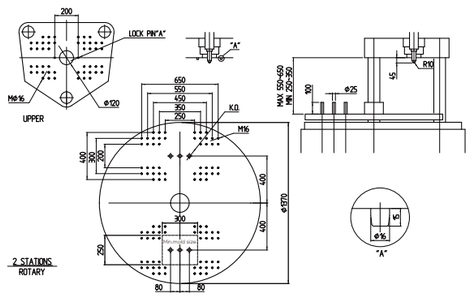
UN60V3R



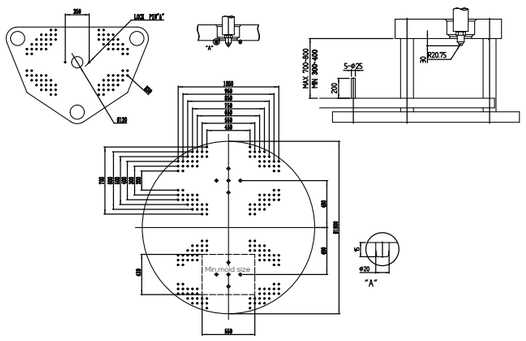
UN90V3R



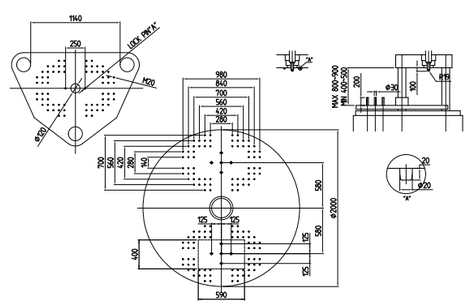
UN125V3R



UN165V3R



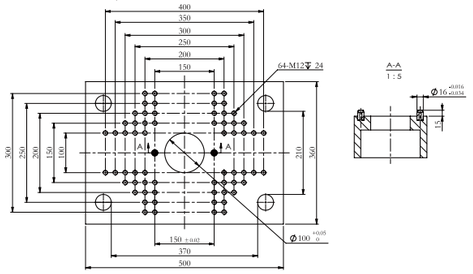
UN215V3R



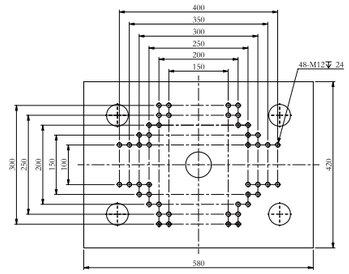
UN300V3R

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

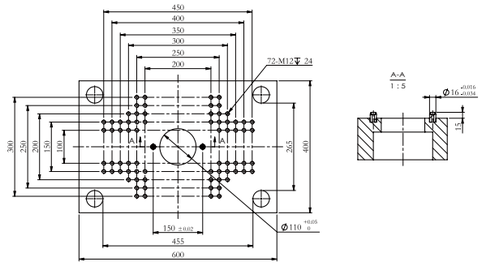
V4 Platen Dimensions



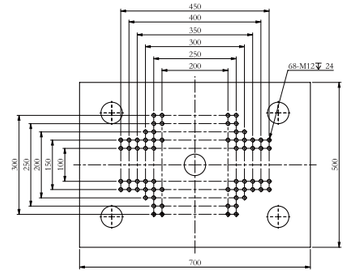
UN40V4
Upper platen



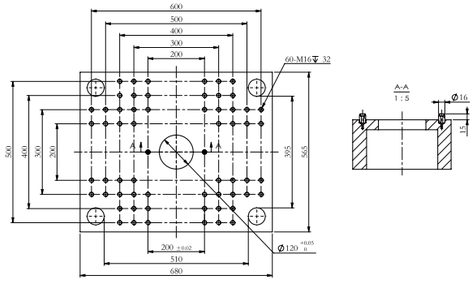
UN40V4
Lower platen



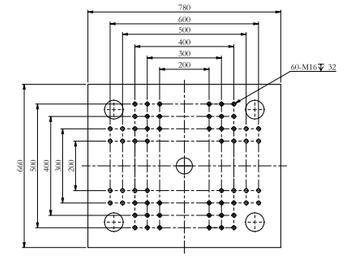
UN60V4
Upper platen



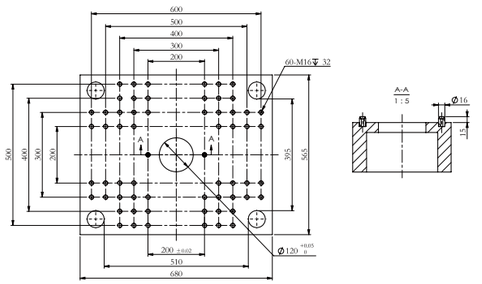
UN60V4
Lower platen



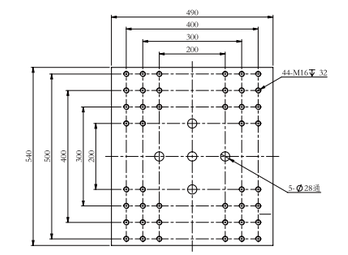
UN90V4
Upper platen



UN90V4
Lower platen



UN90V4S
Upper platen



UN90V4S
Slide plate

V3 Series Standard & Optional Features

FEATURES	Standard	Optional
CLAMPING UNIT		
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		○
ELECTRICAL CONTROL		
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		○

	Standard	Optional
Change of power supply voltage		○
Central (networked) monitoring system		○
Protective light grid of rear safety gates		○
INJECTION UNIT		
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		○
HYDRAULIC SYSTEM		
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 interfaces		○
GENERAL		
Leveling pad	●	
Operation manual	●	
Nozzle wrench	●	
Mold clamp	●	
Hydraulic oil		○
Mold temperature controller		○
Auto loader		○
Dehumidifier		○

V4 Series Standard & Optional Features

FEATURES	Standard	Optional
CLAMPING UNIT		
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		○
ELECTRIC CONTROL		
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		○
INJECTION UNIT		
Nitrided alloy-steel screw and barrel	●	
Transducer for injection position control	●	
Heat retaining cover	●	
SSR for barrel heating control	●	

	Standard	Optional
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		○
HYDRAULIC SYSTEM		
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)		○
Multiple sets of core pulling/ unscrewing hydraulic electrical interface		○
GENERAL		
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^3	1858
Shot weight	g	1659
Injection pressure	kg/cm^2	2043
Injection rate	cm^3/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^2	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

THINK
TECH FORWARD