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Wechat

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BH Fast Speed Series

Fast Speed•Precise



■ INNOVATED STRUCTURE GUARANTEES FAST SPEED AND HIGH EFFICIENCY

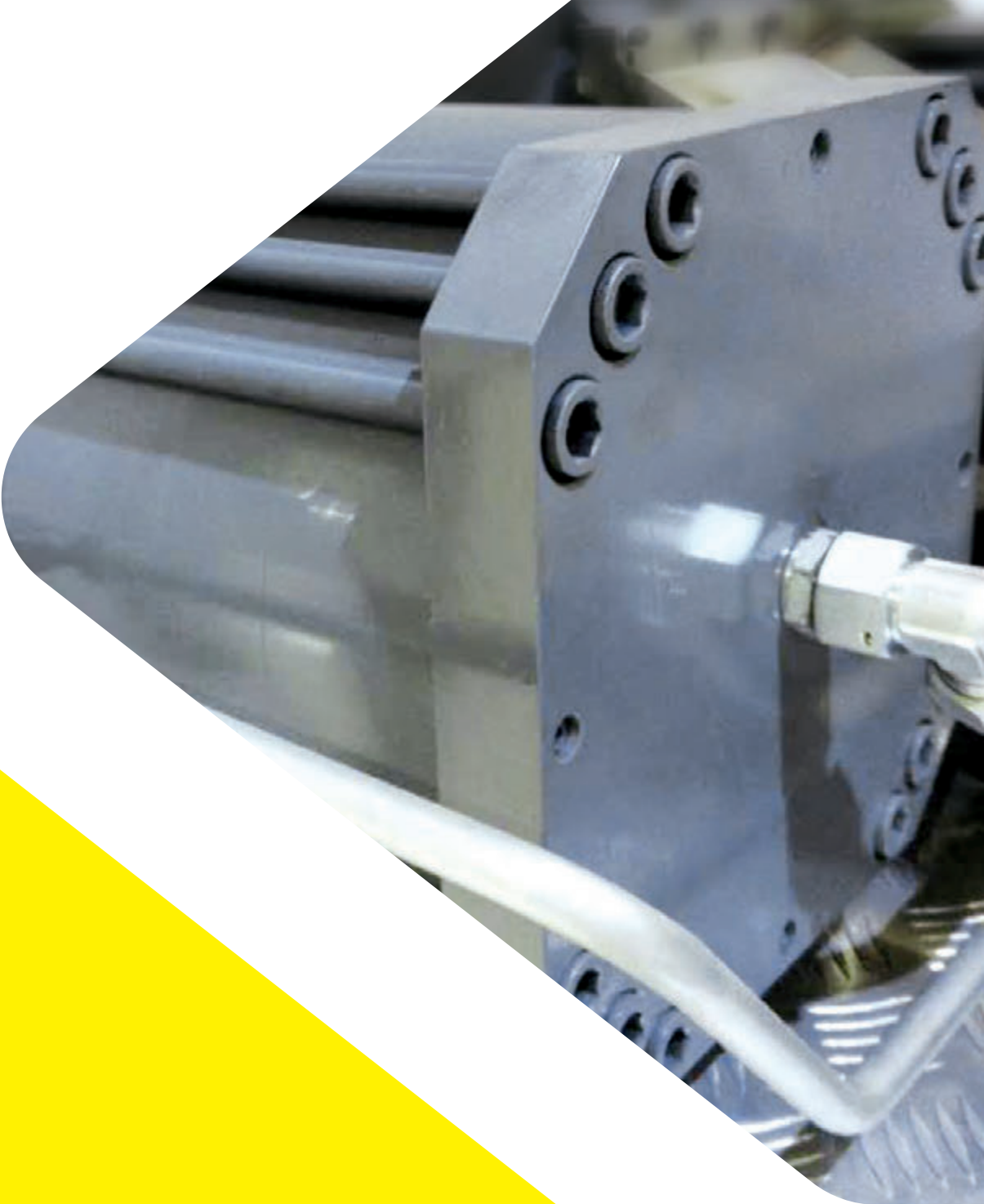
Hydraulic cylinder with reduced diameter doubles the mold moving speed, realizes fast speed and high efficiency.

■ PATENTED DESIGN ENSURES HIGH PRECISION

Clamping unit structure with four high pressure cylinders can ensure equal force on four tie bars. Clamping force can be set on line precisely.



BH Fast Speed Series



EFFICIENT PRODUCTION FAST PROFIT RETURN

- Compared to general machine, Borsche BH fast speed machine can increase 50% efficiency (You only need to invest two BH machines which can achieve three general machines' productivity).
- Fast speed injection can save plastic material cost by reducing 3%-5% product weight.
- Fast speed injection can solve problem of product deformation or shrinkage.



Patent :

- ZL201210111847.8 One type toggle direct clamp locking structure
- ZL201511022175.3 One type brake control of hydraulic circuit
- ZL201220026597.3 One type of high rigidity, low deformation moving platen
- ZL201220026611.X One type new fixed platen
- ZL201220399109.3 One type single cylinder injection unit with double tie bar
- ZL201320010647.3 One type new injection cylinder device

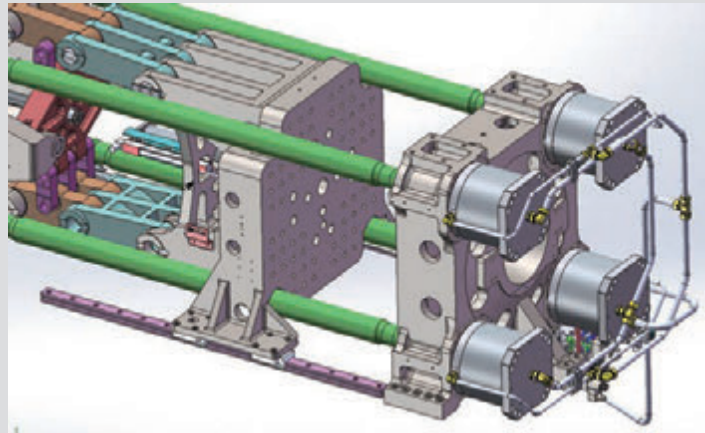
BH Machine Features

High Precision

- Patented toggle structure and hydraulic clamping system are adopted. Mold movement controlled by high speed proportional valve reduces position repeatability lower than 0.5mm.
- Linear guider rail for clamping unit increases mold moving precision and response.

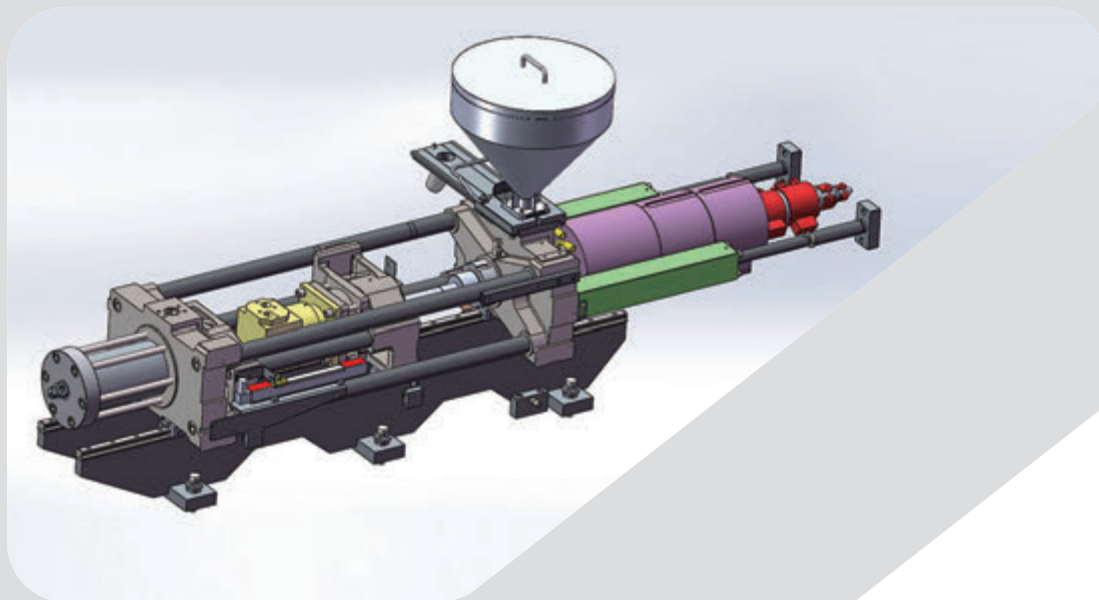
Fast Response

- Machines above BH260 are equipped with double servo drive systems. Plasticizing parallel movement is realized to reduce cycle time.
- Theoretical max. injection speed can reach to 220-300mm/s.



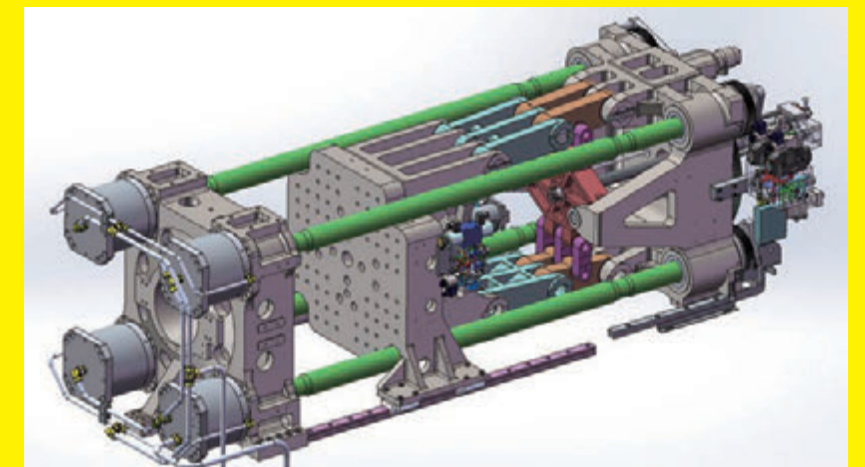
Environmental Protection

- Nanoinfrared energy-saving heater bands with high heating efficiency and heating transmission can save power by 20%-40%.
- Oil free lubrication and no pollution in mold and product dropping area, can meet clean production requirement.



Super Long Lasting Machine Parts

- Mold moving driven by toggle at fast speed (without generating clamping force). Toggle bushes are under "ZERO" wear and tear thanks to little load. The special clamping unit has longer life.
- The force on tie bars is equal, and can be monitored on line with automatic overload protection, theoretically avoiding tie-bar broken.
- Non-contact maglev transducers for injection and platen moving ensure high precision and longer life of parts.



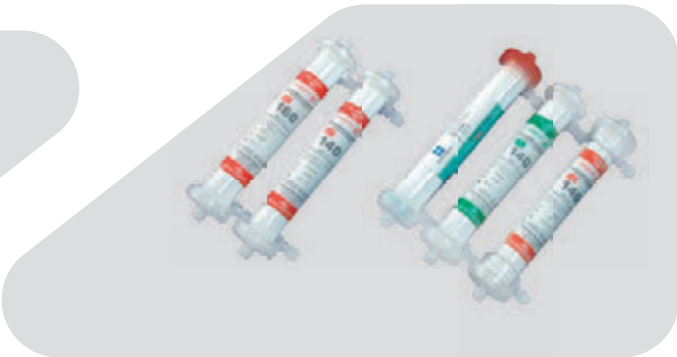
HIGH PRECISION FAST MOLDING
EFFICIENT PRODUCTION

Machine Model	BH200 /395	Product	250ml IML Ice Cream Container
Clamping Force	2000KN	Mold Cavity	2
Screw Diameter	30mm	Unit Weight	9.5g
Injection Speed	350mm/s	Wall thickness	0.46mm
Cycle Time	5s	Raw Material	PP



Machine Model	BH500 /1480	Product	Smart Cap
Clamping Force	5000KN	Mold Cavity	32
Screw Diameter	60mm	Unit Weight	11g
Injection Speed	300mm/s	Mold	Hot Runner with Valve Gate
Cycle Time	12s	Raw Material	PE

Machine Model	BH200 /660	Product	Food Container (500-750ml)
Clamping Force	2600KN	Mold Cavity	2
Screw Diameter	40mm	Unit Weight	10-15g
Injection Speed	300mm/s	Wall thickness	0.45mm
Cycle Time	4s	Raw Material	PP



Machine Model	BH200 /660	Product	Cover of Hollow Fiber Dialyzer (φ55×270)
Clamping Force	2000KN	Mold Cavity	2
Screw Diameter	40mm	Unit Weight	220g (Total Weight, Sprue Included)
Injection Speed	264mm/s	Mold	With Core pulling
Cycle Time	20s	Raw Material	PC

Machine Model	BH320/660	Product	Ice Cream Container (4500ml)
Clamping Force	3200KN	Mold Cavity	1
Screw Diameter	45mm	Unit Weight	105g
Injection Speed	325mm/s	Wall thickness	0.95mm
Cycle Time	7.5s	Raw Material	PP



Machine Model	BH320 /860	Product	Blood Collection Tube (φ12×100)
Clamping Force	3200KN	Mold Cavity	32
Screw Diameter	50mm	Unit Weight	5.2g
Injection Speed	500mm/s	Mold	Hot Runner with Valve Gate
Cycle Time	7s	Raw Material	PET

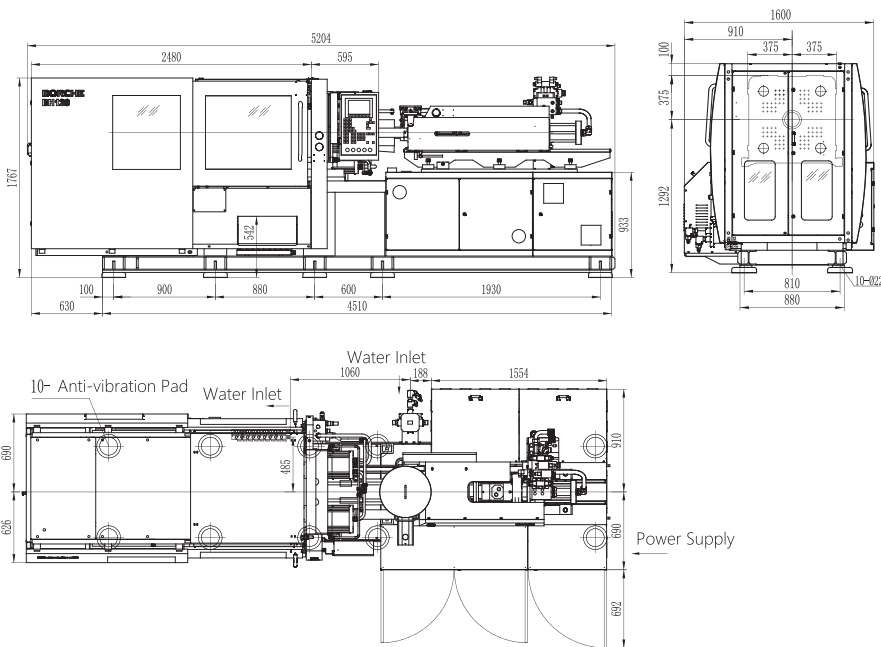
Clamping Model Injection Model	UNIT	BH120 283	BH150 408	BH200 603	BH260 809	BH320 1319	BH400 2164	BH500 2164
INJECTION UNIT		Single Cylinder	Single Cylinder	Double Cylinder	Double Cylinder	Double Cylinder	Double Cylinder	Double Cylinder
Short Volume	cm³	163	239	342	481	848	1346	1346
Shot Weight(PS)	g	149	217	311	438	771	1225	1225
Shot Weight(PS)	OZ	5.2	7.6	11	15.4	27.2	43	43
Screw Diameter	mm	35	40	45	50	60	70	70
Injection Pressure	Mpa	173	171	176	168	156	161	161
Screw L/D Ratio	L/D	22	22	20.5	21	21	21	21
Injection Rate	cm³ /s	273	323	387	530	709	866	866
Injection Rate(PS)	g /s	249	294	352	482	645	788	788
Plasticizing Rate(PS)	g/s	26	33	39	28	46	71	71
Srew Rotary Speed	rpm	350	350	320	200	200	200	200
Plasticizing Rate(PS)	g/s	-	-	-	41	64	89	89
Srew Rotary Speed	rpm	-	-	-	300	280	250	250
Injection Speed	mm/s	284	257	243	270	251	225	225
Injection Stroke	mm	170	190	215	245	300	350	350
Nozzle Contact Force	kN	55	55	55	55	55	120	120
Nozzle Stroke	mm	375	375	375	375	375	395	395
CLAMPING UNIT								
Clamping Force	kN	1200	1500	2000	2600	3200	4000	5000
Opening Stroke	mm	340	410	465	520	580	655	755
Daylight max	mm	790	910	1015	1120	1235	1375	1555
Space btw. Tie Bars	mm×mm	404x404	452x452	505x505	575x575	665x665	725x695	825x795
Platen Size	mm×mm	610x610	670x670	720x720	840x840	960x960	1060x1030	1175x1145
Mold Thickness(min-max)	mm	145-450	160-500	180-550	195-600	220-655	245-720	265-800
Ejecction Stroke	mm	100	130	150	180	180	205	250
Ejector Force	kN	34.4	41	49	77	77	111	111
Ejector Pin	unit	4+1	4+1	4+1	8+4+1	8+4+1	8+4+1	8+4+1
POWER UNIT								
System Pressure	Mpa	17.5	17.5	17.5	17.5	17.5	17.5	17.5
Pump Motor	kw	30	37	45	30+30	37+37	45+45	45+45
Heating Capacity	kw	9	10.2	10.5	14	17	25.5	25.5
No.of Heater Zones	unit	5	5	5	5	5	6	6
GENERAL UNIT								
Oil Tank Capacity	L	660	700	840	900	1000	1200	1200
Machine Dimensions	m*m*m	5.3x1.6x1.8	5.6x1.6x1.9	5.9x1.7x1.9	6.4x1.82x2	6.9x1.82x2	7.5x2.1x2.1	8.3x2.1x2.2
Machine Weight	KG	6000	6500	7000	10000	12000	18000	20000

DESCRIPTION

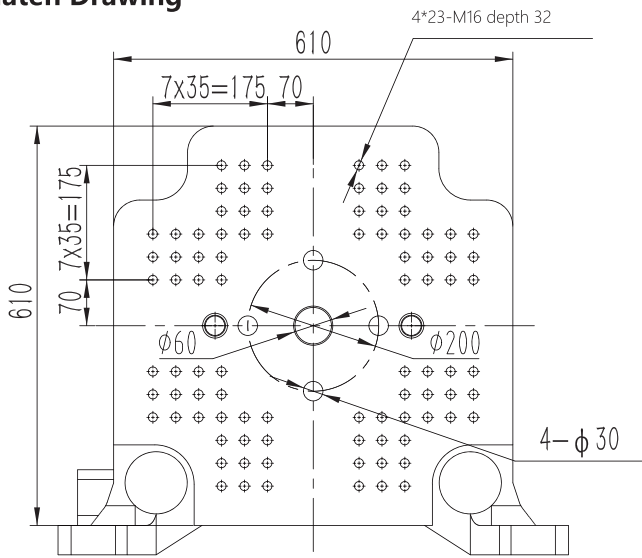
International Class NO.	UNIT	283
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INJECTION UNIT		
Short Volume	cm³	163
Shot Weight(PS)	g	149
Shot Weight(PS)	OZ	5.2
Screw Diameter	mm	35
Injection Pressure	Mpa	173
Screw L/D Ratio	L/D	22
Injection Rate	cm³ /s	273
Injection Rate(PS)	g /s	249
Plasticizing Rate(PS)	g/s	26
Srew Rotary Speed	rpm	350
Injection Speed	mm/s	284
Injection Stroke	mm	170
Nozzle Contact Force	kN	55
Nozzle Stroke	mm	375
CLAMPING UNIT		
Clamping Force	kN	1200
Opening Stroke	mm	340
Daylight max.	mm	790
Space btw. Tie Bars	mm×mm	404x404
Platen Size	mm×mm	610x610
Mold Thickness(min-max)	mm	145-450
Ejection Stroke	mm	100
Ejector Force	kN	34.4
Ejector Pin	unit	4+1
POWER UNIT		
System Pressure	MPa	17.5
Pump Motor	KW	30
Heating Capacity	KW	9
No.of Heater Zones	unit	5
GENERAL UNIT		
Oil Tank Capacity	L	600
Machine Dimensions	mxmxm	5.3x1.6x1.8
Machine Weight	KG	6000

Appearance and Installation Dimensions



Mold Platen Drawing

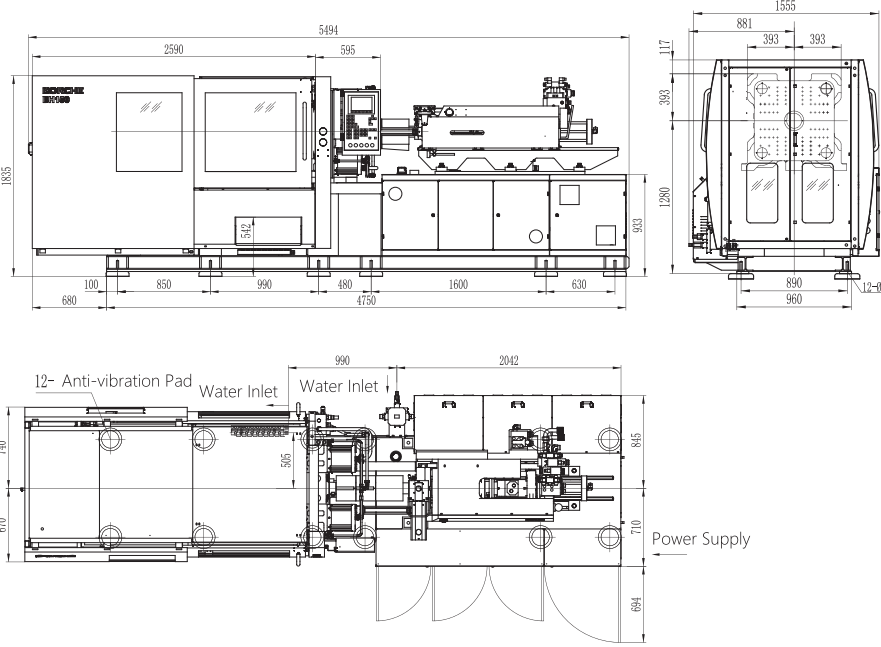


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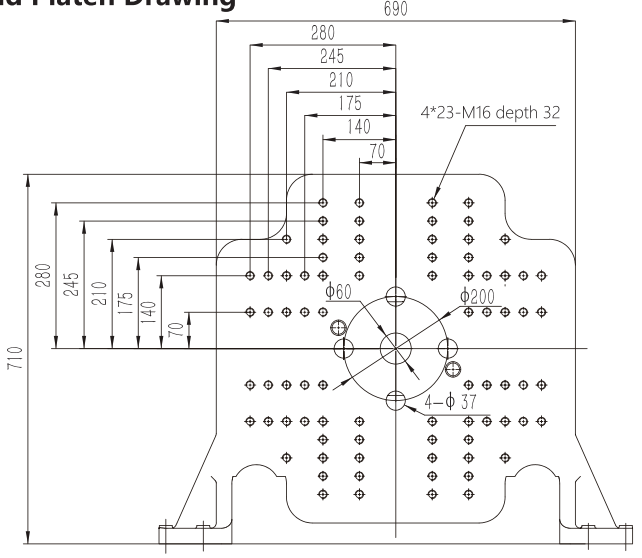
International Class NO.	UNIT	408
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INJECTION UNIT		
Short Volume	cm³	239
Shot Weight(PS)	g	217
Shot Weight(PS)	OZ	7.6
Screw Diameter	mm	40
Injection Pressure	Mpa	171
Screw L/D Ratio	L/D	22
Injection Rate	cm³ /s	323
Injection Rate(PS)	g /s	294
Plasticizing Rate(PS)	g/s	33
Srew Rotary Speed	rpm	350
Injection Speed	mm/s	257
Injection Stroke	mm	190
Nozzle Contact Force	kN	55
Nozzle Stroke	mm	375
CLAMPING UNIT		
Clamping Force	kN	1500
Opening Stroke	mm	410
Daylight max.	mm	910
Space btw. Tie Bars	mm×mm	452x452
Platen Size	mm×mm	670x670
Mold Thickness(min-max)	mm	160-500
Ejection Stroke	mm	130
Ejector Force	kN	41
Ejector Pin	unit	4+1
POWER UNIT		
System Pressure	MPa	17.5
Pump Motor	KW	37
Heating Capacity	KW	10.2
No.of Heater Zones	unit	5
GENERAL UNIT		
Oil Tank Capacity	L	700
Machine Dimensions	mxmxm	5.6x1.6x1.9
Machine Weight	KG	6500

Appearance and Installation Dimensions



Mold Platen Drawing



DESCRIPTION

International Class NO.	UNIT	603
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INJECTION UNIT

Short Volume	cm³	342
Shot Weight(PS)	g	311
Shot Weight(PS)	OZ	11
Screw Diameter	mm	45
Injection Pressure	Mpa	176
Screw L/D Ratio	L/D	20.5
Injection Rate	cm³ /s	387
Injection Rate(PS)	g /s	352
Plasticizing Rate(PS)	g/s	39
Srew Rotary Speed	rpm	320
Injection Speed	mm/s	243
Injection Stroke	mm	215
Nozzle Contact Force	kN	55
Nozzle Stroke	mm	375

CLAMPING UNIT

Clamping Force	kN	2000
Opening Stroke	mm	465
Daylight max	mm	1015
Space btw. Tie Bars	mm×mm	505x505
Platen Size	mm×mm	720x720
Mold Thickness(min-max)	mm	180-550
Ejection Stroke	mm	150
Ejector Force	kN	49
Ejector Pin	unit	4+1

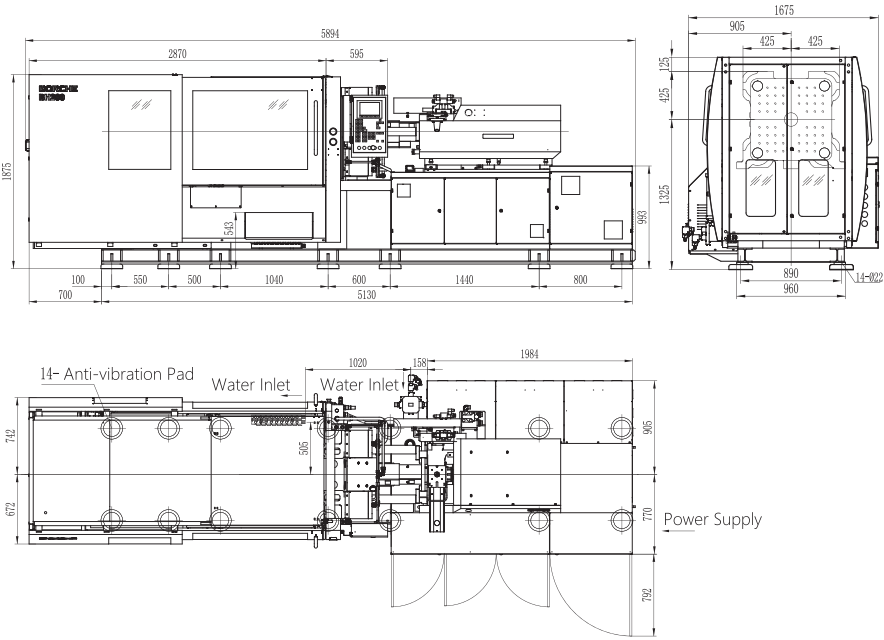
POWER UNIT

System Pressure	MPa	17.5
Pump Motor	KW	45
Heating Capacity	KW	10.5
No.of Heater Zones	unit	5

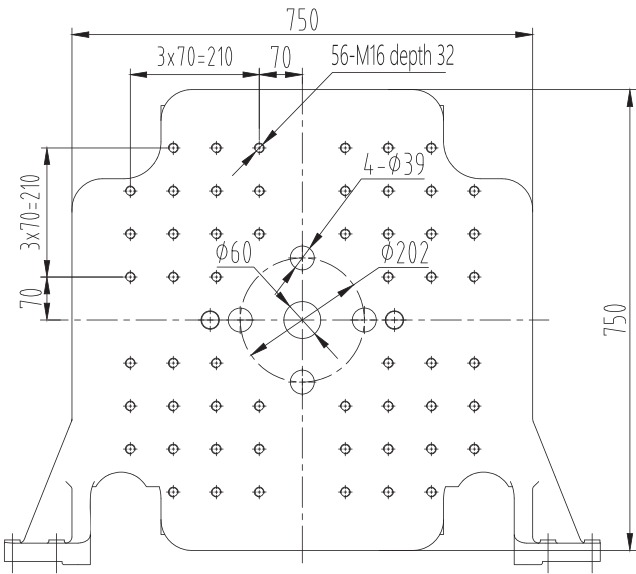
GENERAL UNIT

Oil Tank Capacity	L	840
Machine Dimensions	mxmxm	5.9x1.7x1.9
Machine Weight	KG	7000

Appearance and Installation Dimensions



Mold Platen Drawing



DESCRIPTION

International Class NO.	UNIT	809
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INJECTION UNIT

Short Volume	cm³	481
Shot Weight(PS)	g	438
Shot Weight(PS)	OZ	15.4
Screw Diameter	mm	50
Injection Pressure	Mpa	168
Screw L/D Ratio	L/D	21
Injection Rate	cm³ /s	530
Injection Rate(PS)	g /s	482
Plasticizing Rate(PS)	g/s	28
Srew Rotary Speed	rpm	200
Injection Speed	mm/s	270
Injection Stroke	mm	245
Nozzle Contact Force	kN	55
Nozzle Stroke	mm	375

CLAMPING UNIT

Clamping Force	kN	2600
Opening Stroke	mm	520
Daylight max	mm	1120
Space btw. Tie Bars	mm×mm	575x575
Platen Size	mm×mm	840x840
Mold Thickness(min-max)	mm	195-600
Ejection Stroke	mm	180
Ejector Force	kN	77
Ejector Pin	unit	8+4+1

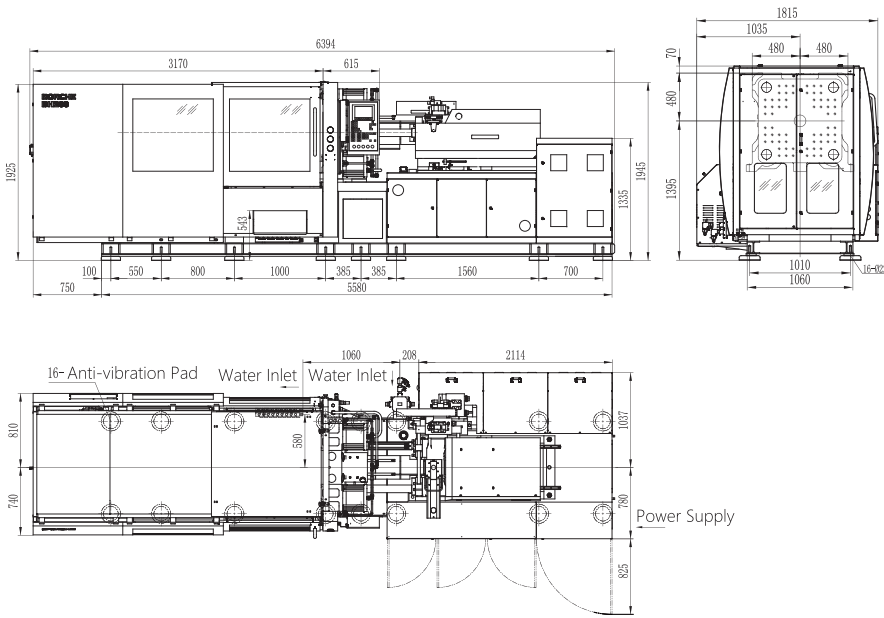
POWER UNIT

System Pressure	MPa	17.5
Pump Motor	KW	30+30
Heating Capacity	KW	14
No.of Heater Zones	unit	5

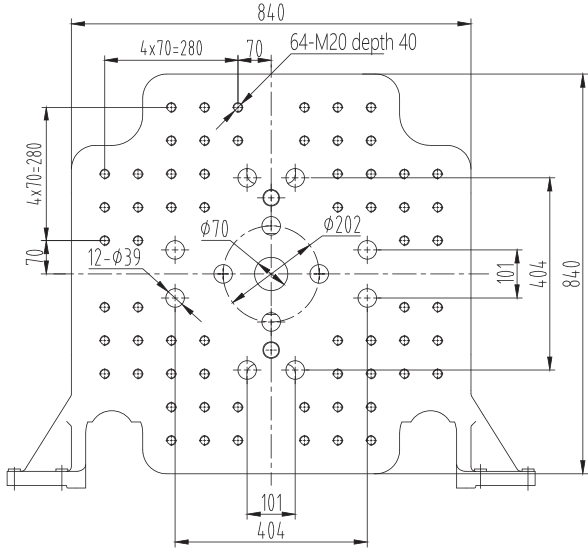
GENERAL UNIT

Oil Tank Capacity	L	900
Machine Dimensions	mxmxm	6.4x1.82x2
Machine Weight	KG	10000

Appearance and Installation Dimensions



Mold Platen Drawing



DESCRIPTION

International Class NO.	UNIT	1319
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INJECTION UNIT

Short Volume	cm ³	848
Shot Weight(PS)	g	771
Shot Weight(PS)	OZ	27.2
Screw Diameter	mm	60
Injection Pressure	Mpa	156
Screw L/D Ratio	L/D	21
Injection Rate	cm ³ /s	709
Injection Rate(PS)	g /s	645
Plasticizing Rate(PS)	g/s	46
Srew Rotary Speed	rpm	200
Plasticizing Rate(PS)	g/s	64
Srew Rotary Speed	rpm	280
Injection Speed	mm/s	251
Injection Stroke	mm	300
Nozzle Contact Force	kN	55
Nozzle Stroke	mm	375

CLAMPING UNIT

Clamping Force	kN	3200
Opening Stroke	mm	580
Daylight max	mm	1235
Space btw. Tie Bars	mm×mm	665×665
Platen Size	mm×mm	960×960
Mold Thickness(min-max)	mm	220-655
Ejection Stroke	mm	180
Ejector Force	kN	77
Ejector Pin	unit	8+4+1

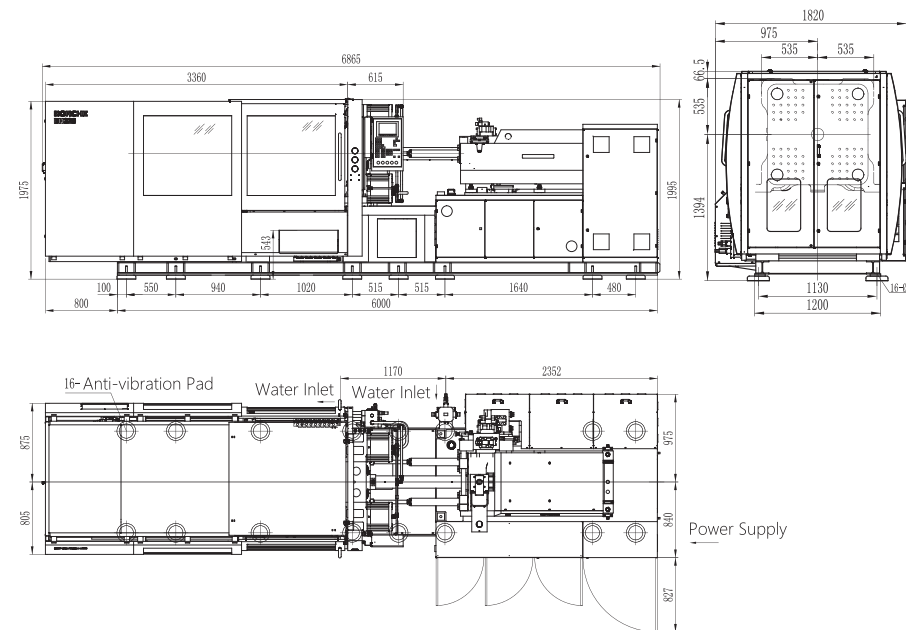
POWER UNIT

System Pressure	MPa	17.5
Pump Motor	KW	37+37
Heating Capacity	KW	17
No.of Heater Zones	unit	5

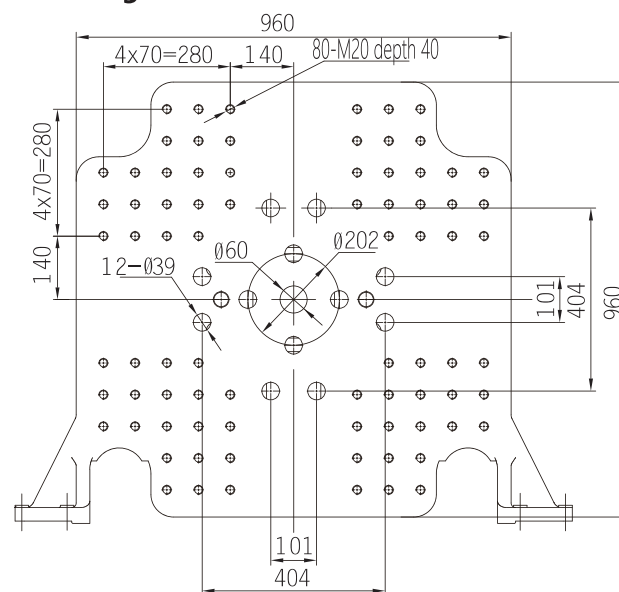
GENERAL UNIT

Oil Tank Capacity	L	1000
Machine Dimensions	mxmxm	6.9x1.82x2
Machine Weight	KG	12000

Appearance and Installation Dimensions



Mold Platen Drawing



DESCRIPTION

International Class NO.	UNIT	2164
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INJECTION UNIT

Short Volume	cm ³	1346
Shot Weight(PS)	g	1225
Shot Weight(PS)	OZ	43
Screw Diameter	mm	70
Injection Pressure	Mpa	161
Screw L/D Ratio	L/D	21
Injection Rate	cm ³ /s	866
Injection Rate(PS)	g /s	788
Plasticizing Rate(PS)	g/s	71
Srew Rotary Speed	rpm	200
Plasticizing Rate(PS)	g/s	89
Srew Rotary Speed	rpm	250
Injection Speed	mm/s	225
Injection Stroke	mm	350
Nozzle Contact Force	kN	120
Nozzle Stroke	mm	395

CLAMPING UNIT

Clamping Force	kN	4000
Opening Stroke	mm	655
Daylight max	mm	1375
Space btw. Tie Bars	mm×mm	725x695
Platen Size	mm×mm	1060x1030
Mold Thickness(min-max)	mm	245-720
Ejection Stroke	mm	205
Ejector Force	kN	111
Ejector Pin	unit	8+4+1

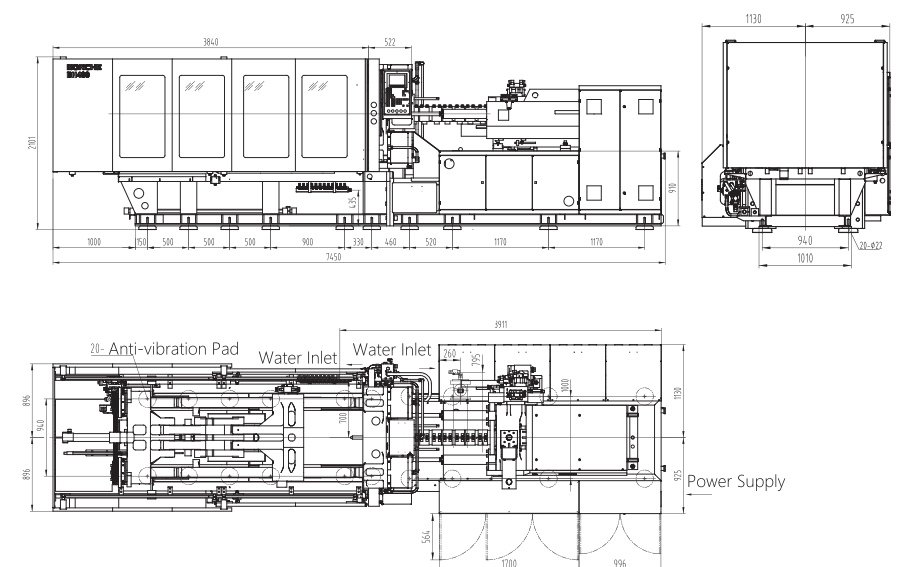
POWER UNIT

System Pressure	MPa	17.5
Pump Motor	KW	45+45
Heating Capacity	KW	25.5
No.of Heater Zones	unit	6

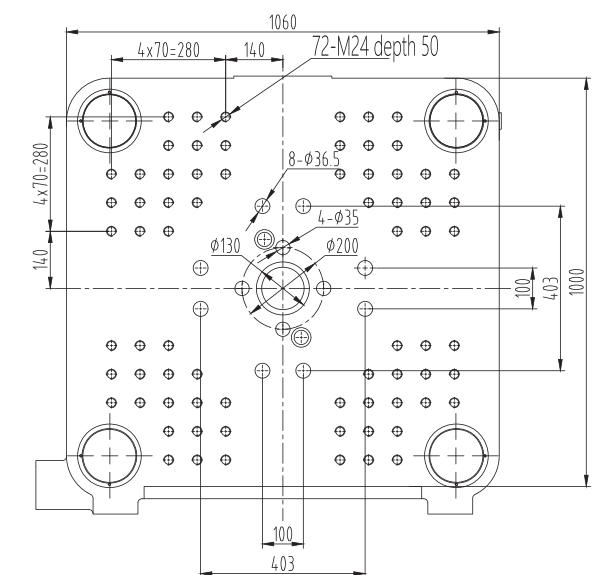
GENERAL UNIT

Oil Tank Capacity	L	1200
Machine Dimensions	mxmxm	7.5x2.1x2.1
Machine Weight	KG	18000

Appearance and Installation Dimensions



Mold Platen Drawing



Standard Features

SAFETY UNIT		
1	New National Safety Standard (≥260T)	•
2	European technical standard totally enclosed cover(≥260T)	•
3	Double emergency button	•

CLAMPING UNIT		
1	5 points-doubt toggle structure	•
2	Tie bar with high intensity chromeplate technics	•
3	Separate lock ring on fixed platen	•
4	Extra-large space for ejection operation	•
5	Linear guider	•
6	Centralized Lubrication system with end position pressure monitoring	•
7	Low pressure mold protection system	•
8	Online mold clamping force setting	•
9	Mold adjustment gear ring driven by hydraulic motor	•
10	Multi-hydraulic ejection device	•
11	Robot interface	•

HYDRAULIC UNIT		
1	Servo control	•
2	Servo power saving system	•
3	Low pressure mold protection function	•
4	Fast speed clamp locking system	•
5	Oil level indicator and oil temperature detector	•
6	High efficiency heat exchanger	•
7	Oil temperature alarm device	•
8	Plasticizing back pressure	•
9	Self-closed type absorb oil filter (≥400T)	•
10	Iron-separator	•
11	Plasticizing during mold open(BH260-500)	•

INJECTION UNIT		
1	Double carriage structure	•
2	Single injection cylinder (BH120-150)	•
3	Double injection cylinder (BH200-500)	•
4	High abrasion resistance screw and barrel	•
5	Nozzle center adjust device	•
6	Nanoinfrared energy-saving heater bands	•
7	Injection unit adopts linear guide rail	•
8	Movable hopper support	•
9	High-torque hydraulic motor drive screw	•
10	Screw speed testing device	•
11	Plasticizing Screw cold protection	•
12	Screw backward function	•
13	Five stages for injection control, pressure/speed can be adjusted	•
14	Three stages for holding control, pressure/speed can be adjusted	•
15	Three stages for plasticizing control, pressure/speed can be adjusted	•

CONTROL UNIT		
1	Transducer	•
2	KEBA controller	•
3	Malfunction self-diagnosis system	•
4	Emergency stop both at operation and nonoperation side	•
5	Multi-language (Standard with Chinese and English)	•
6	SPC quality control	•
7	Auto purge function	•
8	Clocking heating function	•
9	Fuse protection for heater band power leakage	•
10	PID program for hearting	•
11	Data protect lock	•
12	Parameter quick settings	•
13	Robot interface	•

Optional Features

SAFETY UNIT		
1	CE safety standard	○
2	Main power with rotation handle	○
3	Mechanical safety lock device(≥260T)	○
4	Core pulling with pressure relief function	○

CLAMPING UNIT		
1	Multiple sets hydraulic core pulling	○
2	Hydraulic unscrewing	○
3	T slot platen	○
4	Multiple sets air blower	○
5	Enlarged mold thickness	○
6	Mechanical position control for mold open	○
7	Quick change of central ejector pin	○
8	Special size mold locking ring	○
9	Transducer on moving platen	○
10	Manual centralized lubrication for rear platen	○
11	4 in-4 out water regulator	○
12	Photo sensor	○
13	Extra water manifold	○
14	Alarm lights	○

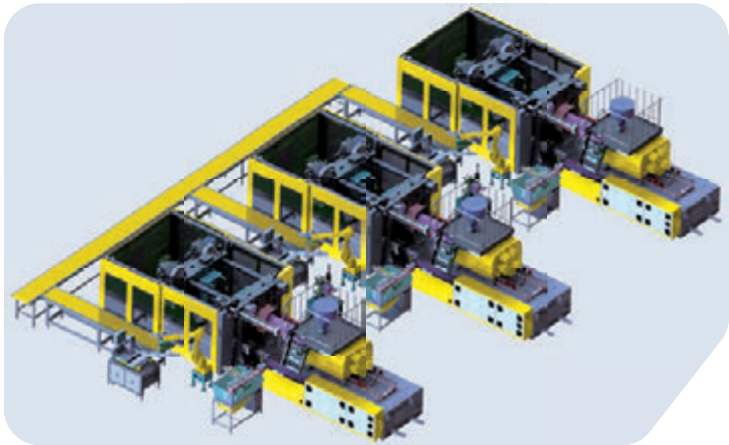
CONTROL UNIT		
1	Robot interface	○
2	Voltage stabilizer	○
3	Hot runner control	○
4	Phase protection	○
5	Multi sets sockets	○
6	Electricity meter	○
7	Special power voltage	○

INJECTION UNIT		
1	Bi-metallic screw	○
2	Chrome plated screw	○
3	PC screw	○
4	Bi-metallic screw and barrel	○
5	PET machine	○
6	UPVC machine	○
7	Enlarged one stage injection unit	○
8	Decrease one stage injection unit	○
9	Extended nozzle	○
10	Shut off nozzle (Hydraulic/ Pneumatic)	○
11	Feeding throat temperature detect and control	○
12	Enlarge one stage hydraulic motor	○
13	Carriage transducer	○
14	Ceramic heater band	○
15	Manual centralized lubrication for injection unit	○
16	Stainless steel hopper	○

HYDRAULIC UNIT		
1	Proportional back pressure	○
2	Close loop cooling system	○
3	Filter on heat exchanger inlet port	○
4	Enlarge one stage motor and pump	○
5	VDP system	○
6	Ejector on fly	○
7	Parallel charging	○
8	High pressure bypass oil filter (≤500	○
9	High speed proportional valve for Injection	○
10	High speed proportional valve for locking	○
11	Oil level low limit alarm	○
12	Pressure sensor for injection	○
13	Ball valve at suction port	○
14	Enlarge one stage heat exchanger	○

Optional Functions Of Intelligent Manufacturing:	
1	With Industry 4.0 on IMM, three mold change ways can be realized with mold change platform: one-stop automatic mold change, semi-automatic mold change and manual mold change. IMM can automatically identify mold and acquire parameter of mold change, technique and peripherals. The hole of IMM should be tailored to suit that of the mold change platform and hydraulic clamp. IMM will evaluate the safety of above holes. Safety lock is active when matching signal received. IMM plays a responsible role in mold change platform and hydraulic clamp.
2	IMM controller can display all machines'(peripherals included)operation condition and malfunction alarm. There are eight malfunction alarm interfaces for following peripherals: one robot, two mould temperature controllers, one water cooler, one dryer and all-in-one compact dryer. The communication and alarm function of other peripherals are connected to IMM through external connection cabinet so that intelligent interconnection of IMM and peripherals is built.
3	Plug and play, intelligently inter-connected water cooler operated and controlled in IMM with close-loop connection. Intelligent interconnection of IMM and chiller can be operated and controlled by IMM controller. Data is close-loop interconnection.
4	Intelligent interconnection of IMM and mould temperature controller can be operated and controlled by IMM controller. All data is close-loop interconnection.
5	Intelligent interconnection of IMM and all-in-one compact dryer can be operated and controlled by IMM controller. All data is close-loop interconnection.
6	Compression injection molding technique
7	High speed proportional valve for mold open and close and non-contact maglev linear transducer realize real-time monitor
8	Robot connects with IMM in real-time, which reduce the interference of robot, IMM and mold. Robot can be fixed on the top or side of fixed platen according to parts pick requirements
9	Automation system of IMM and peripherals interact with MES management system 1) Order Monitor 2) CProduction Status Display 3) Alarm Monitor 4) Technique Parameter Management 5) Equipment Management 6) Production Report
10	iPHM, IMM Prognoties and Health Management (Equipment Online Doctor) 1) Safe and reliable bidirectional terminal is equipped with built-in firewall and remote VPN connection; various networking is available. Cloud platform connects IMM controller in real-time 2) Data of equipment operation, malfunction alarm and worker operation is collected in real time.IMM data visualization on Cloud Platform is realized. 3) Self diagnose module of failure and performance based one the dynamic data, can reduce the malfunction rate, and improve the equipment performance. 4) Operation and maintenance system connects the on-line management platform of after-sales service. It realizes remote on-line program upgrading, and improves the maintenance efficiency and quality. 5) IMM condition and performance report can be checked through mobile terminal; After-sales service request can be reported via WeChat.
11	Mold Visual Monitor 1) Low pressure mold protection for higher precision and efficiency 2) CAccurate checkup 3) Self-adaption to exterior light change 4) Self-adaption to inaccurate mold open position 5) Real-time record
12	Visual Detective System for surface quality checking 1) Fast detection, detection precision reaches to 0.001mm 2) Defectives check of contamination, color difference, flake, and short injection. 3) Wide application
13	Vision-induced System 1) Accurate positioning 2) Sensitive identification 3) Wide application

01 Factory Layout- Borche specializes in intelligent IMM factory design. Many intelligent factory cases carried out worldwide in IMM industry.

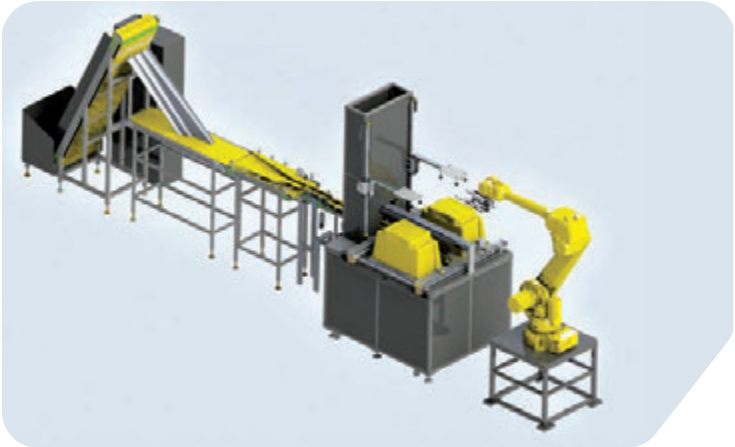


02 Flexible Automation -360° visual detection, robot operation, automatic assembling, parts insert, polishing and deburring...

Visual Detective System



Robot Application (part pick-up, casting insert, assembling, stacking, deburring, degating)



03 Intelligent Logistics- AGV, rolling line, automatic packing, wrapper.

