BORCHE

New Generation of Borche High speed machine

Stable and Durable, Efficient and Fast

CENTROTÉCNICA

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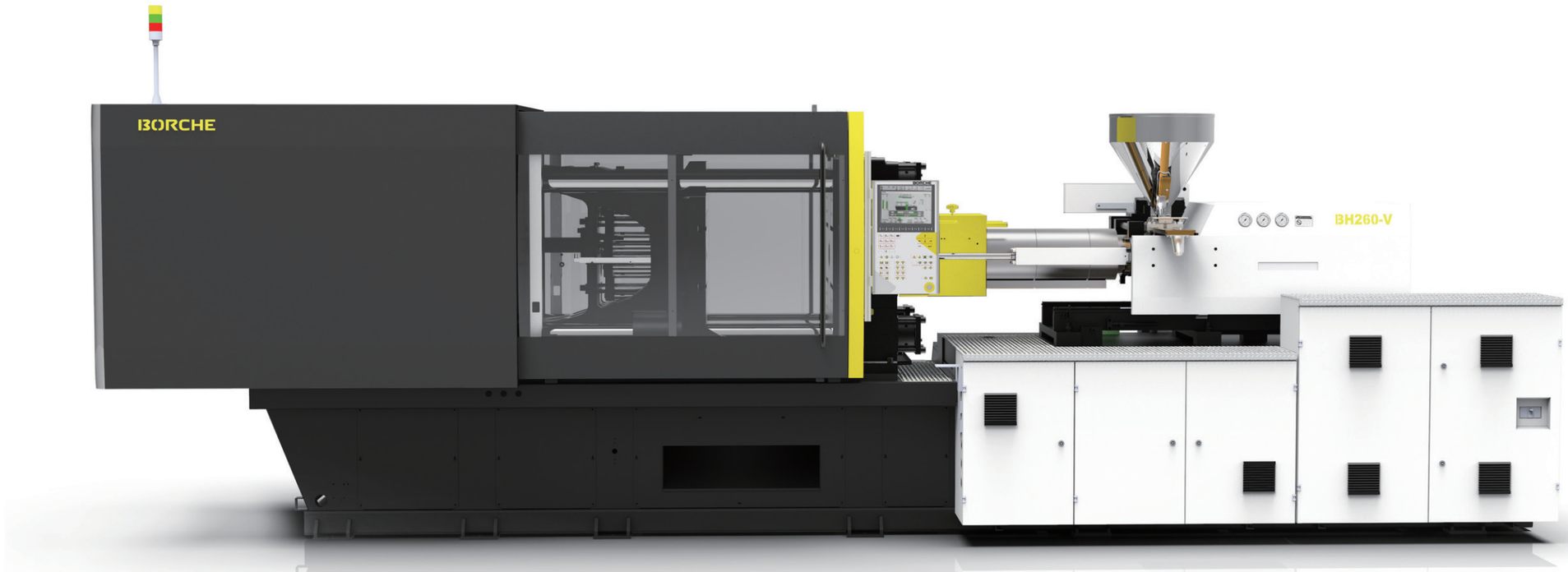

Stable and Durable

Specially designed tiebar to be applicable for high speed clamping with long tiebar service life

Patented clamping system design with enhanced structure, higher rigidity, less deformation, longer service life

New design of strong frame, stable during high speed clamping

Quantitative controlled grease lubrication, stable and reliable

Efficient and Fast

With fast response servo drive/servo motor and fast response algorithm in hydraulic control, less response time in injection speed.

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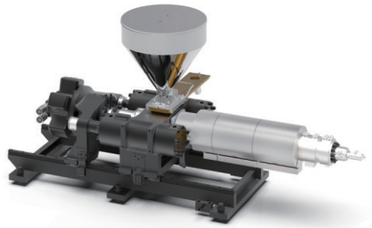
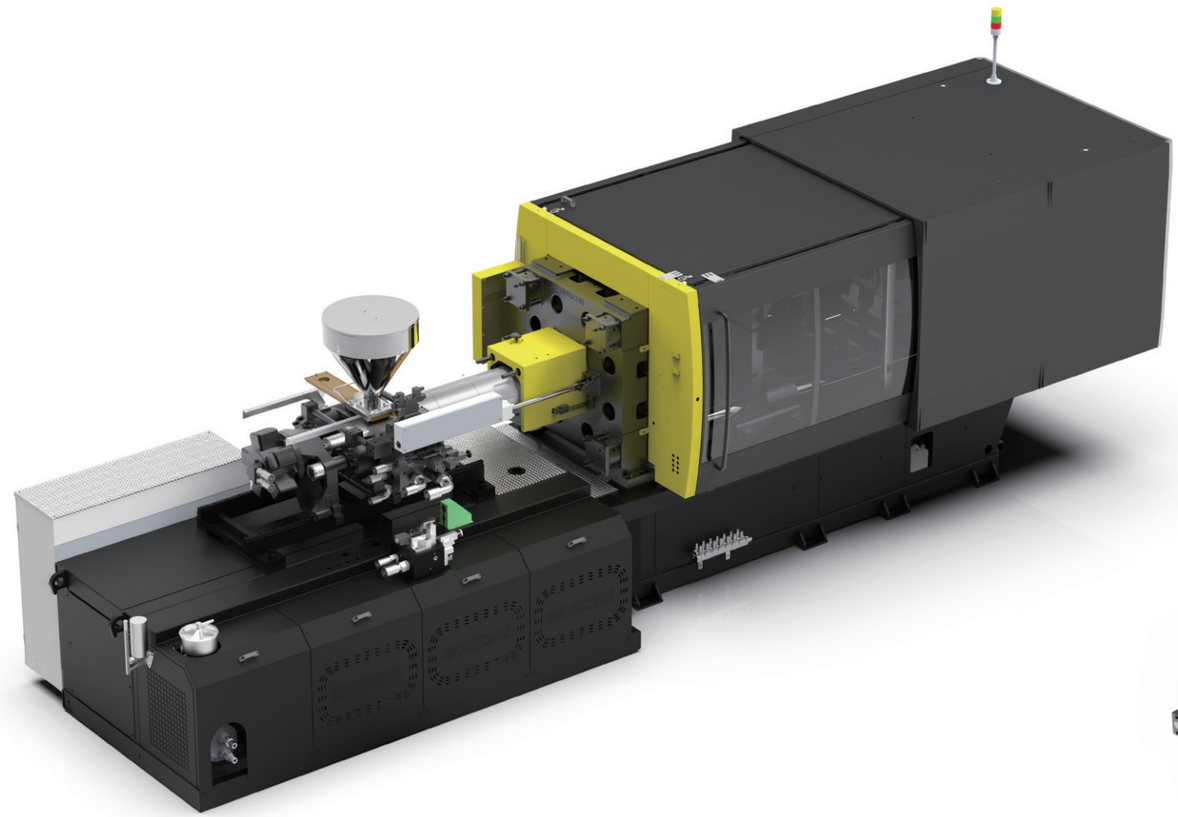
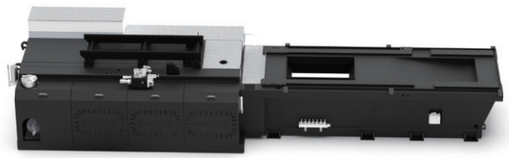


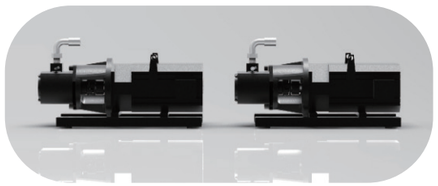
High plasticizing special screw/barrel set

With temperature monitor on feed throat and transmission shaft as standard feature

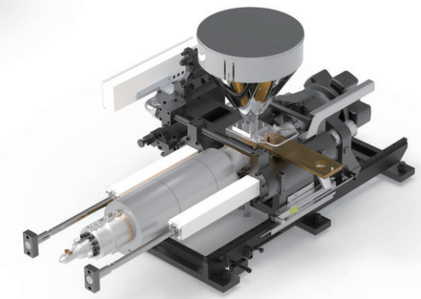


Optimized frame structure, rigidity increased, stability improved





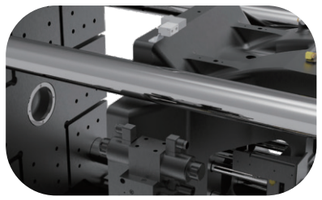
With fast response servo drive/servo motor and fast response algorithm in hydraulic control, less response time in injection speed.



With twin carriage cylinder, balanced force on nozzle, no leakage from nozzle

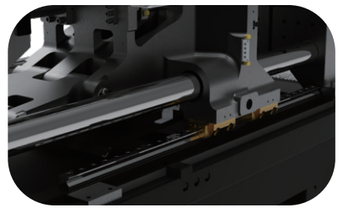
Linear guide on injection unit, less friction, shorter response time, better back pressure precision

T slot and thread hole platen, easier to change mold

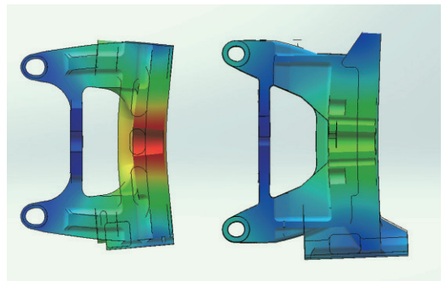


No contact between tie-bar and moving platen, cleaner platen surface and less pollution

Close-loop quantitative controlled grease lubrication, less consumption of grease, less pollution and more reliable



Linear guide under moving platen, better platen parallel, better platen position precision, smoother move, less friction and more energy-saving.

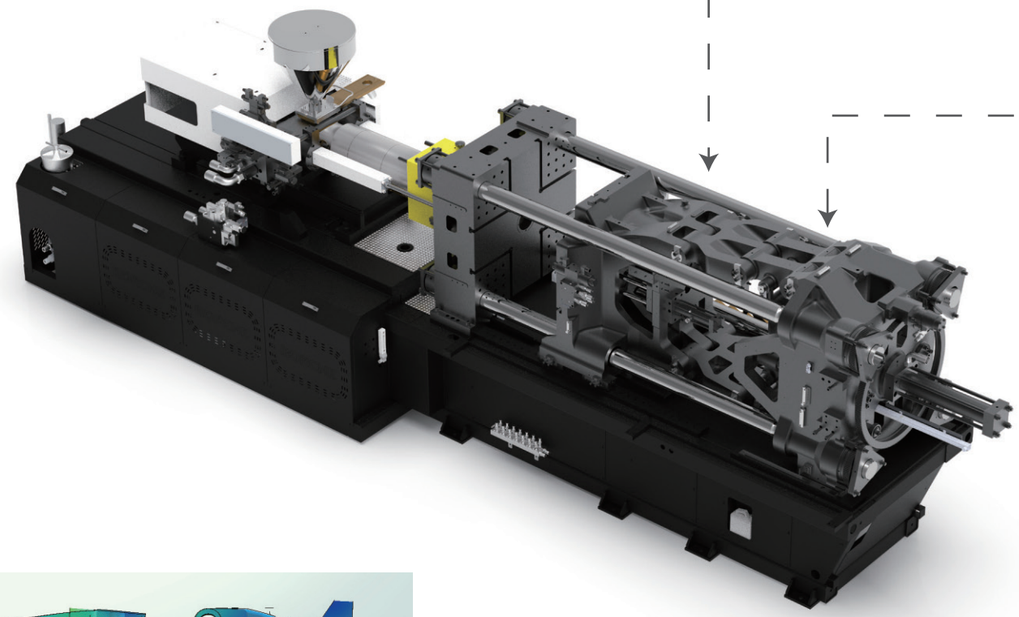


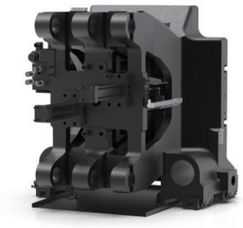
New clamping structure from new platform, enhanced toggle design and central clamping design on moving platen and fixed platen, platen deformation can be reduced by 25% or more and flashing or short shot can be avoided, so that less clamping force can be required and mold service life can be increased

With proportional valve for clamping, clamping speed can be increased and clamping position repeatability can reach 0.1mm

With ejector/plasticizing on fly, production efficiency can be increased

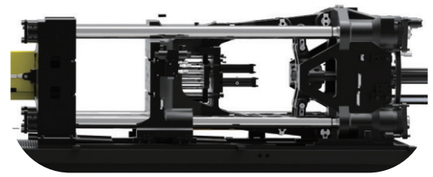
Specially designed tiebar to be applicable for high speed clamping with long tiebar service life





Twin ejector cylinder, balanced ejecting force

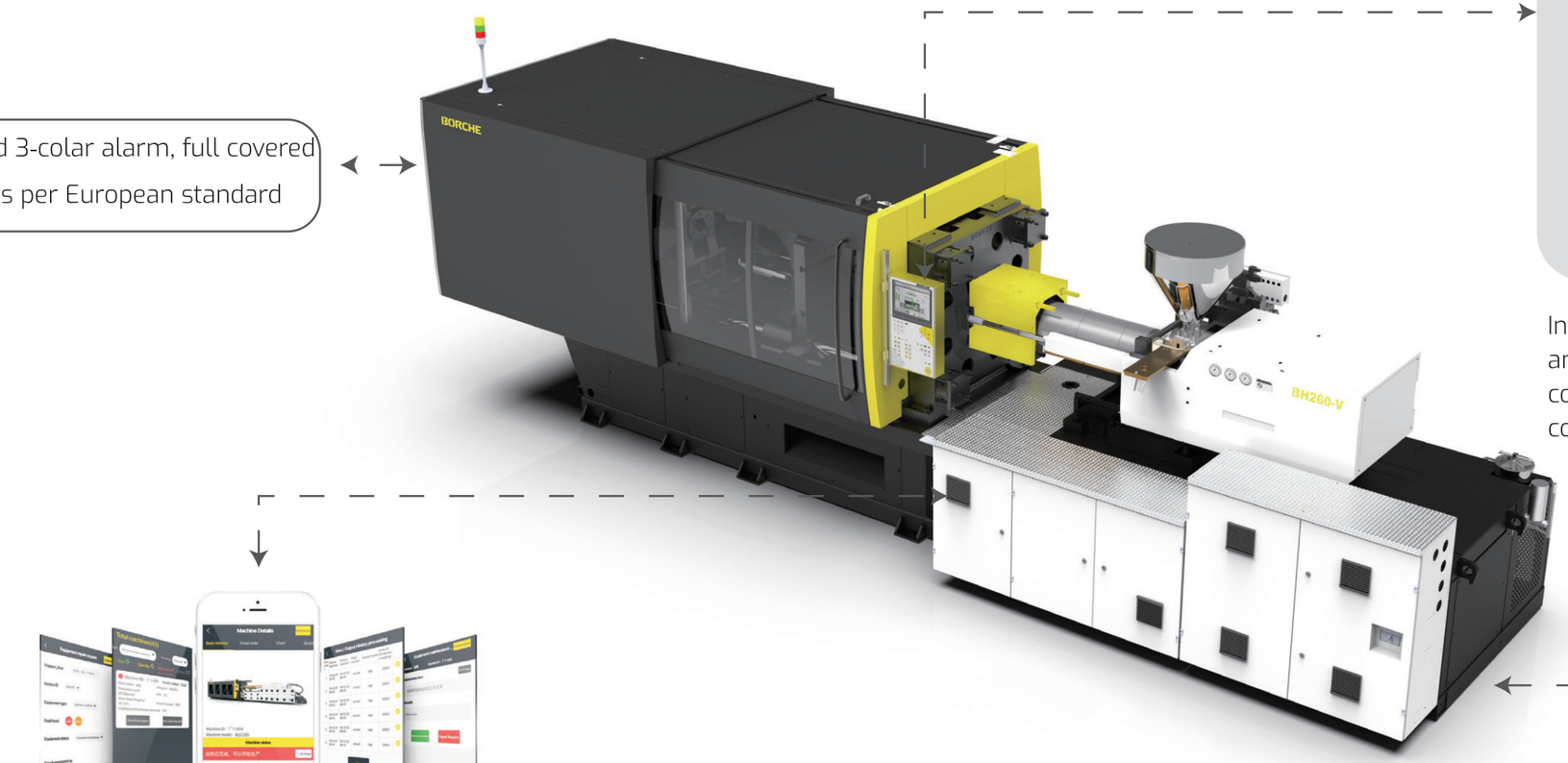
Same structure for central and side ejector, suitable for exchange



Optimized toggle design, faster and smoother, less dry cycle

Increased tiebar distance, compatible with bigger mold

Standard 3-colar alarm, full covered design as per European standard



Interconnection between injection machine and peripheral equipment with two-way communication, peripheral equipment can be controlled on controller interface.

Cooler is put inside, tidy design and less space occupation

BH-V Parameter Table

BORCHE

Model	unit	BH160-V	BH200-V	BH260-V	BH320-V	BH400-V	BH500-V
international class no.		408	603	809	1319	2164	2164
INJECTION UNIT							
Screw diameter	mm	40	45	50	60	70	70
Shot volume	cm^3	270	389	481	848	1346	1346
Shot weight (PS)	g	254	365	438	771	1225	1225
Injection pressure	Mpa	235	218	168	156	161	161
Theoretical Shot Rate	cm^3 /s	198	267	530	709	866	866
Theoretical Shot Rate (PS)	g /s	181	243	482	645	788	788
Plasticizing Rate with single pump (PS)	g/s	24	26	28	46	58	58
Screw RPM with single pump	rpm	265	205	200	200	165	165
Plasticizing Rate with twin pump (PS)	g/s			41	64	89	89
Screw RPM with twin pump	rpm			300	280	280	280
Injection Speed	mm/s	158	168	270	260	240	240
Screw stroke	mm	215	245	245	300	350	350
Nozzle contact force	kN	30	30	55	55	120	120
Nozzle stroke	mm	375	375	430	500	500	500
CLAMPING UNIT							
Clamping force	kN	1600	2000	2600	3200	4000	5000
Opening stroke	mm	430	510	570	650	730	850
Max.day light	mm	950	1060	1180	1320	1460	1700
Space between tie bars	mm x mm	520 x 520	570 x 570	630x630	730x730	830x830	930x930
Platen size	mm x mm	770x770	840x840	930x930	1080x1080	1190x1190	1340x1340
Mold thickness(min-max)	mm	180-520	200-550	220-610	240-670	250-730	320-850
Hydraulic ejection stroke	mm	120	150	180	180	180	180
Hydraulic ejection force	kN	44	44	83	83	83	111
Ejector pin	unit	4+1	4+4+1	8+4+1	8+4+1	4+8+4+1	8+8+4+1
POWER UNIT							
Hydraulic system pressure	Mpa	17.5	17.5	17.5	17.5	17.5	17.5
Pump motor	Kw	30	37	30+30	37+37	60+37	60+37
Heating capacity	Kw	9.6	10.4	11	18.6	22	22
Number of temp. control zones	unit	5	5	5	5	6	6
GENERAL UNIT							
Machine Dimensions(LxWxH)	m x m xm	5.70 x 1.66 x 1.87	6.06 x 1.75 x1.97	6.85 x 1.82 x 2.07	7.50 x 2.06 x 2.13	8.52 x 2.17 x 2.26	9.18 x 2.26 x 2.30
Theoretical oil tank capacity	L	350	420	680	850	1050	1050

The specification above is only for reference. No further notice of any change in specification resulting from technical upgrading.

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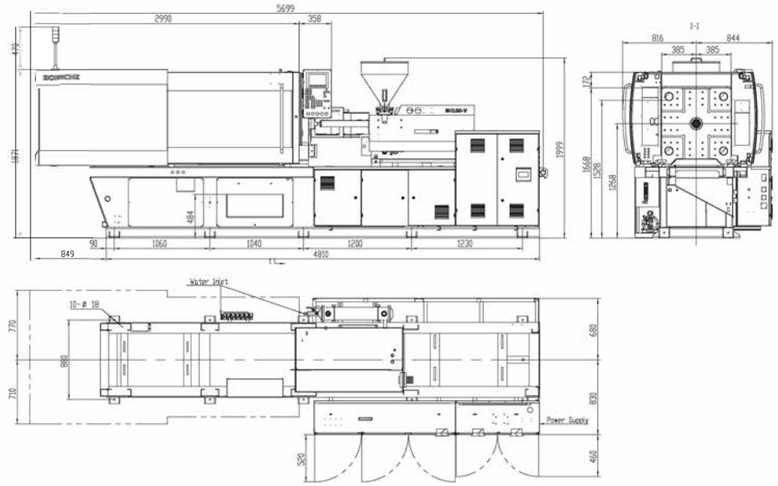
CENTRO TECNICA

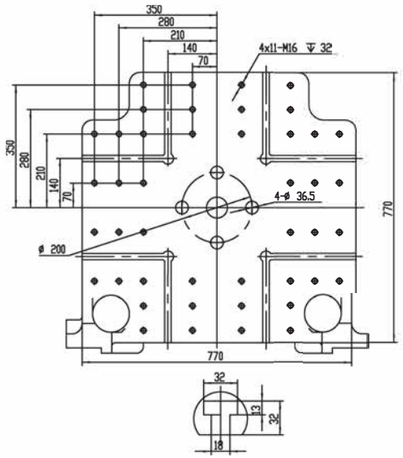
DESCRIPTION

INTERNATIONAL CLASS NO.	UNIT	408
INJIECTION UNIT		
Screw diameter	mm	**40**
Shot volume	cm^3	**270**
Shot weight (PS)	g	**254**
Injection pressure	MPa	**235**
Theoretical Shot Rate	cm^3/s	**198**
Theoretical Shot Rate (PS)	g/s	**181**
Plasticizing Rate with single pump(PS)	g/s	**24**
screw RPM with single pump	rpm	**265**
Plasticizing Rate with twin pump(PS)	g/s	
screw RPM with twin pump	rpm	
Injection Speed	mm/s	158
Screw stroke	mm	215
Nozzle contact force	kN	30
Nozzle stroke	mm	375
CLAMPING UNIT		
Clamping force	kN	1600
Opening stroke	mm	430
Max.day light	mm	950
Space between tie bars	mmxmm	520x520
Platen size	mmxmm	770x770
Mold thickness(min-max)	mm	180-520
Hydraulic ejection stroke	mm	120
Hydraulic ejection force	kN	44
Ejector pin	unit	4+1
POWER UNIT		
Hydraulic system pressure	Mpa	17.5
Pump motor	kw	30
Heating capacity	kw	9.6
Number of temp. control zones	unit	5
GENERAL UNIT		
Machine Dimensions(LxWxH)	m x m x m	5.7x1.66x1.87
Theoretical oil tank capacity	L	350

Appearance and Installation Dimensions



Mold Platen Drawing



BH200-V

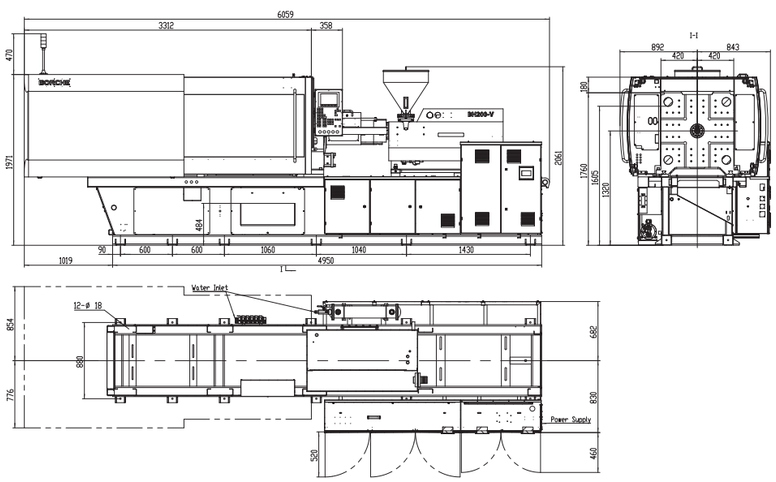
BORCHE

DESCRIPTION

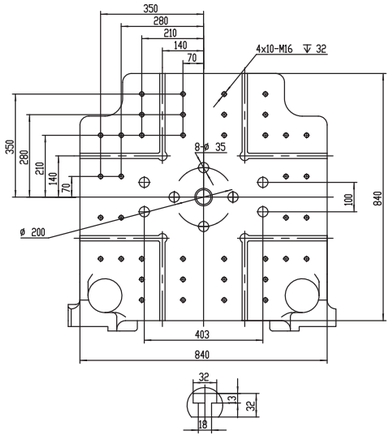
INTERNATIONAL CLASS NO.	UNIT	603

INJIECTION UNIT		
Screw diameter	mm	**45**
Shot volume	cm^3	**389**
Shot weight (PS)	g	**365**
Injection pressure	MPa	**218**
Theoretical Shot Rate	cm^3/s	**267**
Theoretical Shot Rate (PS)	g/s	**243**
Plasticizing Rate with single pump(PS)	g/s	**26**
screw RPM with single pump	rpm	**205**
Plasticizing Rate with twin pump(PS)	g/s	
screw RPM with twin pump	rpm	
Injection Speed	mm/s	168
Screw stroke	mm	245
Nozzle contact force	kN	30
Nozzle stroke	mm	375
CLAMPING UNIT		
Clamping force	kN	2000
Opening stroke	mm	510
Max.day light	mm	1060
Space between tie bars	mmxmm	570x570
Platen size	mmxmm	840x840
Mold thickness(min-max)	mm	200-550
Hydraulic ejection stroke	mm	150
Hydraulic ejection force	kN	44
Ejector pin	unit	4+1
POWER UNIT		
Hydraulic system pressure	Mpa	17.5
Pump motor	kw	37
Heating capacity	kw	10.4
Number of temp. control zones	unit	5
GENERAL UNIT		
Machine Dimensions(LxWxH)	m x m x m	6.06x1.75x1.97
Theoretical oil tank capacity	l	420

Appearance and Installation Dimensions



Mold Platen Drawing



BH260-V

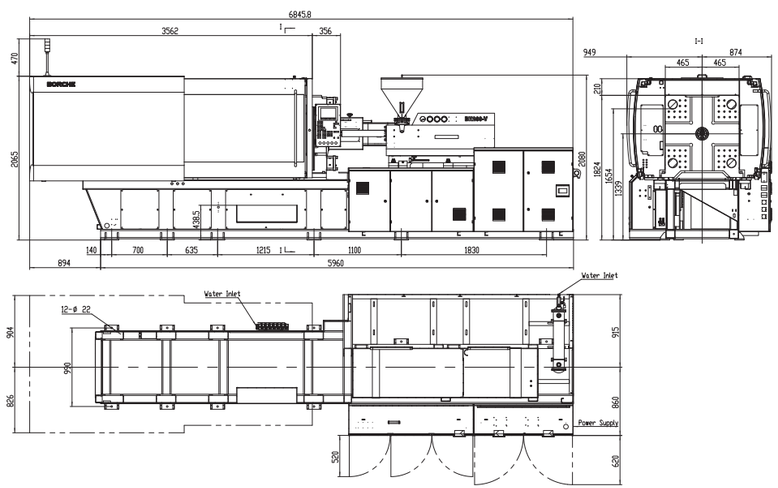
BORCHE

DESCRIPTION

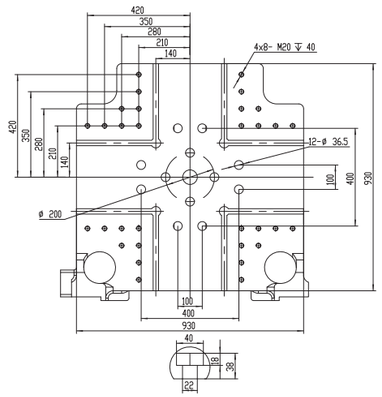
INTERNATIONAL CLASS NO.	UNIT	809

INJIECTION UNIT		
Screw diameter	mm	**50**
Shot volume	cm^3	**481**
Shot weight (PS)	g	**438**
Injection pressure	MPa	**168**
Theoretical Shot Rate	cm^3/s	**530**
Theoretical Shot Rate (PS)	g/s	**482**
Plasticizing Rate with single pump(PS)	g/s	**28**
screw RPM with single pump	rpm	**200**
Plasticizing Rate with twin pump(PS)	g/s	41
screw RPM with twin pump	rpm	300
Injection Speed	mm/s	270
Screw stroke	mm	245
Nozzle contact force	kN	55
Nozzle stroke	mm	430
CLAMPING UNIT		
Clamping force	kN	2600
Opening stroke	mm	570
Max.day light	mm	1180
Space between tie bars	mmxmm	630x630
Platen size	mmxmm	930x930
Mold thickness(min-max)	mm	220-610
Hydraulic ejection stroke	mm	180
Hydraulic ejection force	kN	83
Ejector pin	unit	8+4+1
POWER UNIT		
Hydraulic system pressure	Mpa	17.5
Pump motor	kw	30+30
Heating capacity	kw	11
Number of temp. control zones	unit	5
GENERAL UNIT		
Machine Dimensions(LxWxH)	m x m x m	6.85x1.82x2.07
Theoretical oil tank capacity	l	680

Appearance and Installation Dimensions



Mold Platen Drawing



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BH320-V

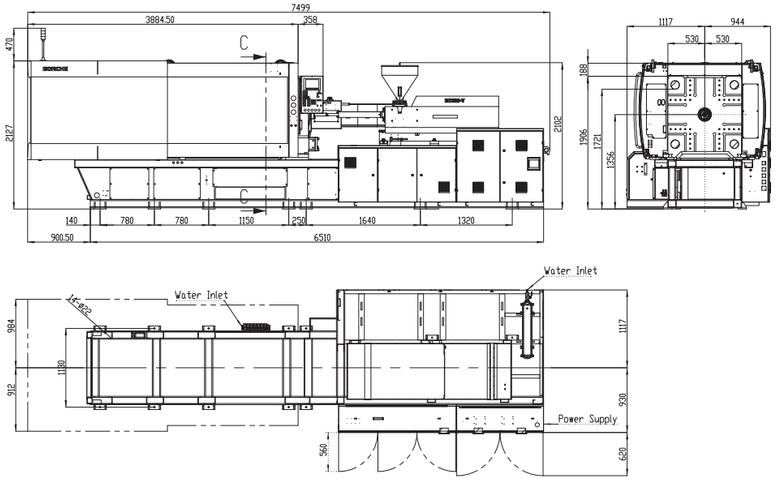
BORCHE

DESCRIPTION

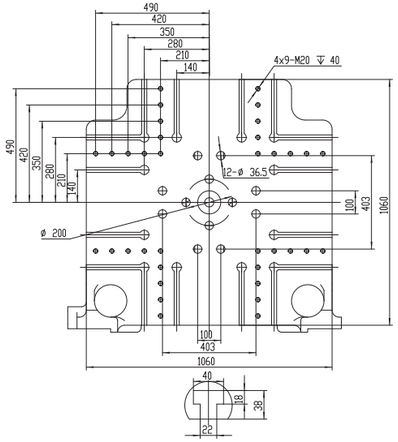
INTERNATIONAL CLASS NO.	UNIT	1319

INJIECTION UNIT		
Screw diameter	mm	**60**
Shot volume	cm^3	**848**
Shot weight (PS)	g	**771**
Injection pressure	MPa	**156**
Theoretical Shot Rate	cm^3/s	**709**
Theoretical Shot Rate (PS)	g/s	**645**
Plasticizing Rate with single pump(PS)	g/s	**46**
screw RPM with single pump	rpm	**200**
Plasticizing Rate with twin pump(PS)	g/s	64
screw RPM with twin pump	rpm	280
Injection Speed	mm/s	260
Screw stroke	mm	300
Nozzle contact force	kN	55
Nozzle stroke	mm	500
CLAMPING UNIT		
Clamping force	kN	3200
Opening stroke	mm	650
Max.day light	mm	1320
Space between tie bars	mmxmm	730x730
Platen size	mmxmm	1080x1080
Mold thickness(min-max)	mm	240-670
Hydraulic ejection stroke	mm	180
Hydraulic ejection force	kN	83
Ejector pin	unit	8+4+1
POWER UNIT		
Hydraulic system pressure	Mpa	17.5
Pump motor	kw	37+37
Heating capacity	kw	18.6
Number of temp. control zones	unit	5
GENERAL UNIT		
Machine Dimensions(LxWxH)	m x m x m	7.50x2.06x2.13
Theoretical oil tank capacity	l	850

Appearance and Installation Dimensions



Mold Platen Drawing



BH400-V

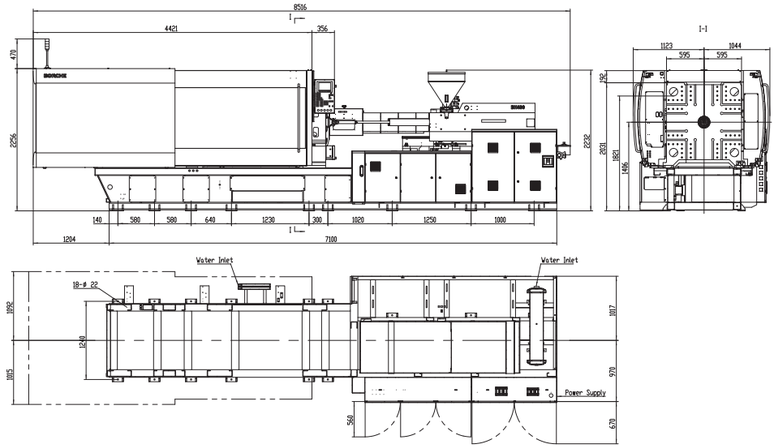
BORCHE

DESCRIPTION

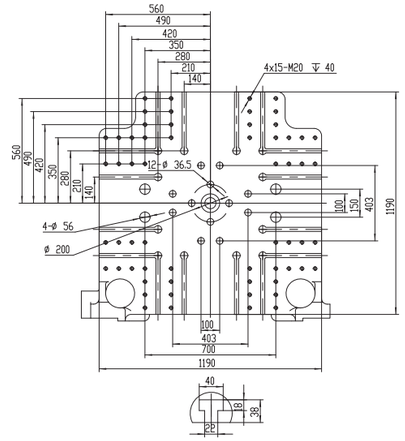
INTERNATIONAL CLASS NO.	UNIT	2164

INJIECTION UNIT		
Screw diameter	mm	**70**
Shot volume	cm^3	**1346**
Shot weight (PS)	g	**1225**
Injection pressure	MPa	**161**
Theoretical Shot Rate	cm^3/s	**866**
Theoretical Shot Rate (PS)	g/s	**788**
Plasticizing Rate with single pump(PS)	g/s	**58**
screw RPM with single pump	rpm	**165**
Plasticizing Rate with twin pump(PS)	g/s	89
screw RPM with twin pump	rpm	280
Injection Speed	mm/s	240
Screw stroke	mm	350
Nozzle contact force	kN	120
Nozzle stroke	mm	500
CLAMPING UNIT		
Clamping force	kN	4000
Opening stroke	mm	730
Max.day light	mm	1460
Space between tie bars	mmxmm	830x830
Platen size	mmxmm	1190x1190
Mold thickness(min-max)	mm	250-730
Hydraulic ejection stroke	mm	180
Hydraulic ejection force	kN	83
Ejector pin	unit	4+8+4+1
POWER UNIT		
Hydraulic system pressure	Mpa	17.5
Pump motor	kw	60+37
Heating capacity	kw	22
Number of temp. control zones	unit	6
GENERAL UNIT		
Machine Dimensions(LxWxH)	m x m x m	8.52x2.17x2.26
Theoretical oil tank capacity	l	1050

Appearance and Installation Dimensions



Mold Platen Drawing



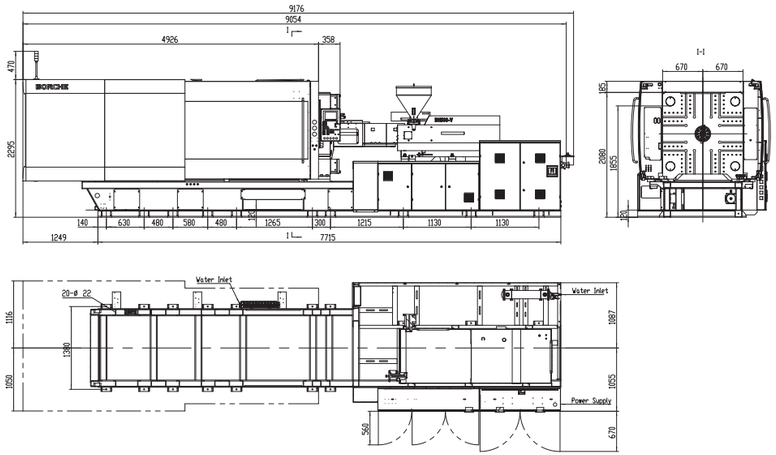
CENTROTÉCNICA

DESCRIPTION

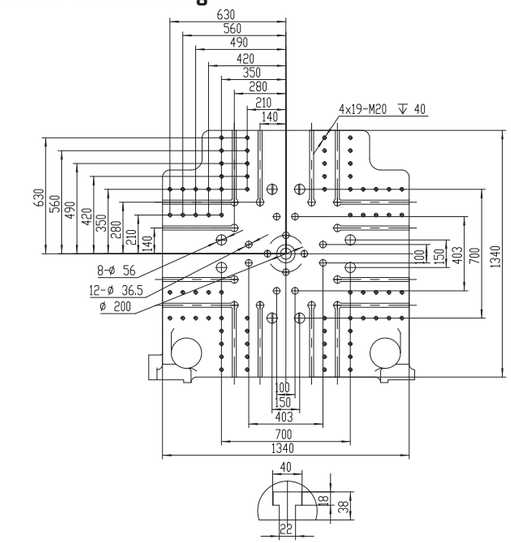
INTERNATIONAL CLASS NO.	UNIT	2164

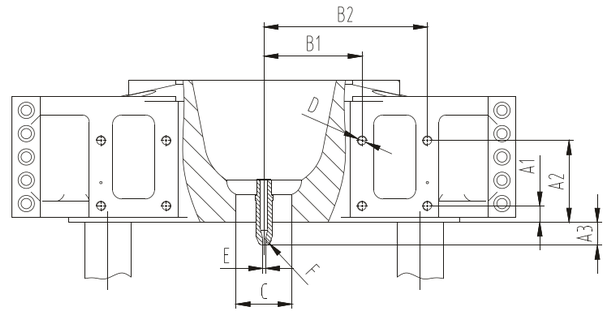
INJIECTION UNIT		
Screw diameter	mm	**70**
Shot volume	cm^3	**1346**
Shot weight (PS)	g	**1225**
Injection pressure	MPa	**161**
Theoretical Shot Rate	cm^3/s	**866**
Theoretical Shot Rate (PS)	g/s	**788**
Plasticizing Rate with single pump(PS)	g/s	**58**
screw RPM with single pump	rpm	**165**
Plasticizing Rate with twin pump(PS)	g/s	89
screw RPM with twin pump	rpm	280
Injection Speed	mm/s	240
Screw stroke	mm	350
Nozzle contact force	kN	120
Nozzle stroke	mm	500
CLAMPING UNIT		
Clamping force	kN	5000
Opening stroke	mm	850
Max.day light	mm	1700
Space between tie bars	mmxmm	930x930
Platen size	mmxmm	1340x1340
Mold thickness(min-max)	mm	320-850
Hydraulic ejection stroke	mm	180
Hydraulic ejection force	kN	111
Ejector pin	unit	8+8+4+1
POWER UNIT		
Hydraulic system pressure	Mpa	17.5
Pump motor	kw	60+37
Heating capacity	kw	22
Number of temp. control zones	unit	6
GENERAL UNIT		
Machine Dimensions(LxWxH)	m x m x m	9.18x2.26x2.30
Theoretical oil tank capacity	l	1050

Appearance and Installation Dimensions



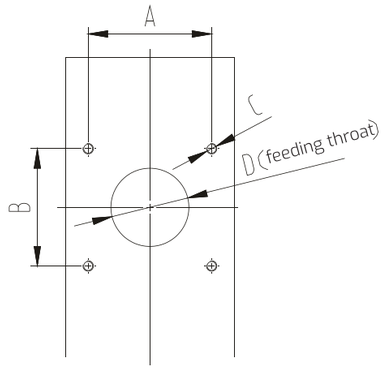
Mold Platen Drawing





Robot Mounting Interface

BH-V	BH130-V	BH160-V	BH200-V	BH260V	BH320-V	BH400-V	BH500-V
A1	35	35	35	35	35	35	35
A2	105	105	175	175	175	175	175
B1	175	175	210	280	350	350	420
B2	280	280	350	420	490	490	560
C (Dia of locating ring)	100	100	125	125	160	160	160
D	M16	M16	M20	M20	M20	M20	M20
A3 (The distance of nozzle extension from fixed platen)	35	45	45	45	45	45	50
E (Dia of nozzle hole)	3	3	3	4	4	4	4
F (Radius of nozzle tip)	10	10	10	10	10	10	10



Hopper Dryer Installation Dimension

BH-V	BH130-V	BH160-V	BH200-V	BH260V	BH320-V	BH400-V	BH500-V
A/mm	80	90	90	90	110	110	110
B/mm	80	95	95	95	110	110	110
C/mm	M8	M8	M8	M8	M10	M10	M10
D/mm	50	50	6	60	70	80	80

Standard Features

BORCHE

SAFETY UNIT		
1	Hydraulic safety lock, china new standard	●
2	Fully covered design	●
3	Double emergency button	●

INJECTION UNIT		
1	Twin carriage structure	●
2	Wear-resistant barrel	●
3	Chrome-plated screw	●
4	Nozzle centering calibration	●
5	Nozzle safety guard with electric lock	●
6	Linear guide for nozzle moverment	●
7	Leakage protection when screw suckback	●
8	Screw rotation speed setting and display	●
9	Screw cold start prevention	●
10	6 stage of injection pressure/speed adjustable	●
11	5 stages of pressure holding, pressure/speed adjustable	●
12	5 stages of plasticizing, pressure/speed adjustable	●
13	5 stages of back pressure	●
14	Temperature monitor of hopper feed throat	●
15	Temerature monitor of shaft	●
16	Holding pressure time setting	●
17	High pressure/temperature tube for cooling ring of hopper throat	●
18	Non-slip embossed aluminum cover	●
19	4 ways of nozzle backward	●
20	V/P switchover mode (position,pressure,speed.time)	●

HYDRAULIC UNIT		
1	Servo motor power	●
2	Pump with auto decompression function	●
3	One-way direction valve for carriage	●
4	Temperature monitor for servo motor	●
5	Hydraulic oil level indicator and low level alarm	●
6	High effiency hydraulic oil cooler	●
7	Oil temperature alarm	●
8	Proportional valve for clamping	●
9	Digital back pressure	●
10	Boost clamping	●

CLAMPING UNIT		
1	Balanced,double, five point toggle locking system	●
2	Mold platen with T-slot and thread holes	●
3	Independent location ring for fixing platen	●
4	Chrome-plated, high rigidity tie-bar	●
5	Robot mounting holes	●
6	5 stages of mold closing, pressure/speed adjustable	●
7	5 stages of mold opening, pressure/speed adjustable	●
8	5 stages of ejector control, pressure/speed adjustable	●
9	Centralized lubrication system with end sensor	●
10	Top cover on clamping area (≤260T)	●
11	Linear guide for moving platen	●
12	Adjustable ejector backward confirmation switch	●
13	With oil collecting plate under moving platen	●
14	Clamping force setting	●
15	Integrated oil sunk, with reserved oil drain at the end of machine frame	●
16	Hydraulic motor drives gear to adjust mold	●
17	Controller height adjustable	●
18	Product drop chute(≤260T)	●
19	Parrel plasticizing during mold opening	●
20	Low pressure mold safety protection	●

CONTROL UNIT		
1	Keba controller: made in Austria	●
2	Internet connection port	●
3	Multilanguage available	●
4	Self-diagnosis system	●
5	SPC quality control	●
6	Process parameter quick setting	●
7	Robot interface	●
8	Auto purge function	●
9	Timer heating function	●
10	Electric heating protection by fuse or auto switch	●
11	PID temperature control of barrel heating	●
12	Data protect lock	●
13	Solid state relay for temperature control	●
14	Three color alram light (Red/Yellow/Green)	●

OTHRE UNIT		
1	Borche standard VI color	●
2	Power outlet	●
3	Adjustable level pads	●
4	Hopper as optioanal spare	●
5	Hopper slider	●
6	Tool box	●
7	Standard spare parts	●

Option Features

BORCHE

SAFETY UNIT		
1	CE safety standard	●
2	Main power withrotation handle	●

INJECTION UNIT		
1	Bi-metal screw and barrel	●
2	PC screw	●
3	Extended nozzle	●
4	Shut-off nozzle (Hydraulic/penumatic)	●
5	Spring type shut off nozzle	●
6	Ceramic heater band	●
7	Temperature control ofhooper feed throat	●
8	Carriage transducer	●
9	V/P switch over of mold pressure	●
10	Stainless hoper	●

CLAMPING UNIT		
1	Extra hydraulic core puller	●
2	Extra penumatic core puller	●
3	Hydraulic unscrewing	●
4	Electric unscrewing	●
5	Multiple sets of air blast	●
6	Enlarged mold thickness	●
7	Quick change of central ejector pin	●
8	Mold locking ring with tailored size	●
9	Photo sensor for product drop detector (≤320T)	●
10	Extra water manifold	●
11	Extra water distributor	●
12	Mold platen heat insulation board	●
13	Manual centralized lubrication for rear platen	●

HYDRAULIC UNIT		
1	Independent oil temperature control	●
2	Oil cooler with inlet filter	●
3	Highly precise by-pass oil filter	●
4	Pilot check valve for mold adjustment	●
5	Pilot check valve for core pulling	●
6	Decompression function for core pulling	●
7	Quick coupling for core pulling	●

CONTROL UNIT		
1	Hot runner control by program.comply with EU14	●
2	Robot interface, comply with EU12/EU67	●
3	Core pulling electric interface, comply with EU13	●
4	Quick mold change electric interface, comply with EU70	●
5	Gas-assist injection electric interface	●
6	Mold cavity pressure detect electric interface	●
7	Energy meter	●
8	Phase loss or phase failure protection for motor	●
9	Specified power and voltage	●
10	External voltage transformer	●
11	Heater band leakage detection	●
12	Four color alarm light	●
13	Extra sockets	●
14	Power stablizer	●
15	Mold backward protection signal interface	●
16	UPS	●

CENTROTÉCNICA

Industry 4.0 for IMM

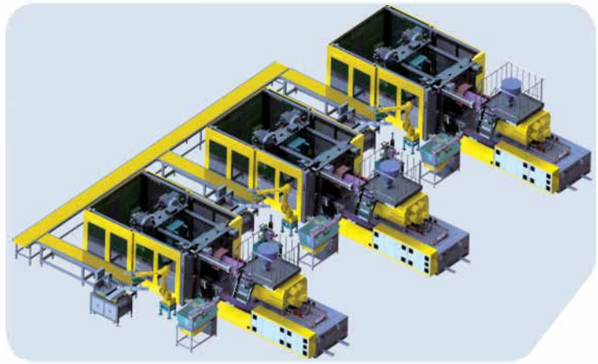
BORCHE

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	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
8	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
9	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.
10	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
11	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
12	Vision-induced System 1) Accurate positioning 2) Sensitive identification 3) Wide application

Intelligent Unmanned IMM Factory

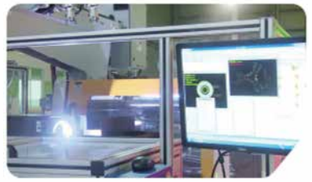
BORCHE

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

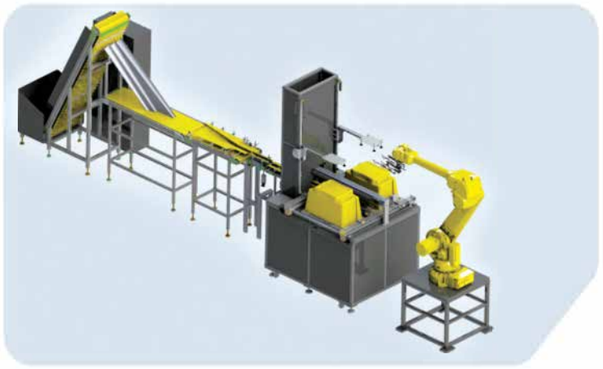


02 Flexible Automation -360° visual detection, robot operation, automatic assembling, parts insert, polishing and deburring...

Visual Detective System



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



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