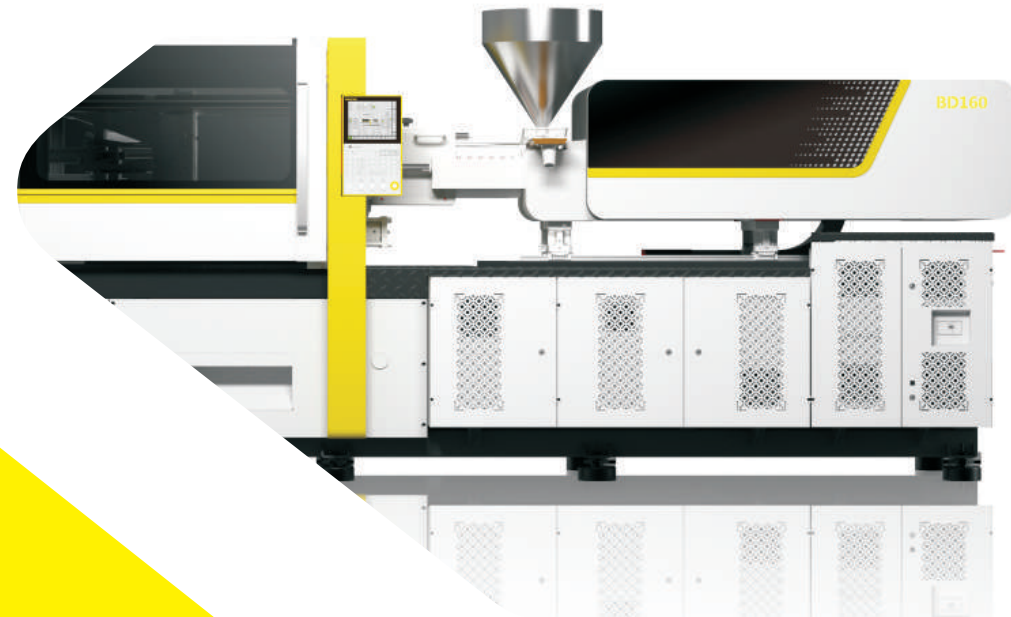


All data in this brochure are general information and shall not be regarded as contractual documents.
We reserve the right to make any change due to technical improvement without prior notice.

BORCHE



Aug 2022

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Website



Wechat

New Generation Electric Machine BD Series Direct Drive Technology

Achievement of 18 Years' Electric Machine Research
First Choice to Replace High-end Hydraulic Machine

BORCHE

BD

New Generation Electric Machine
Direct Drive Technology



Fast

Accuracy

Energy Saving

Aesthetic

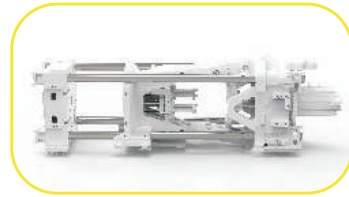
Fast Double Efficiency



Quick response: injection response time less than **50ms**



Overlapped movement: production time shortened by **30%**



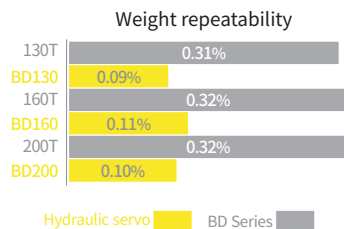
Fast mold open & close: **500mm/s**



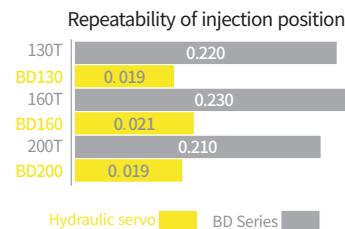
Fast cycle time: dry cycle decreased by **20%**

Accuracy Quality Guarantee

Repeatability precision of product weight increased by 3 times



Repeatability precision of injection position increased by 10 times



*The above parameters are obtained via internal test for reference only.

Energy Saving

Energy saving by 30%

Low water consumption

Raw material saving: low product defects

Low oil consumption, 80% less than hydraulic machine



Aesthetic

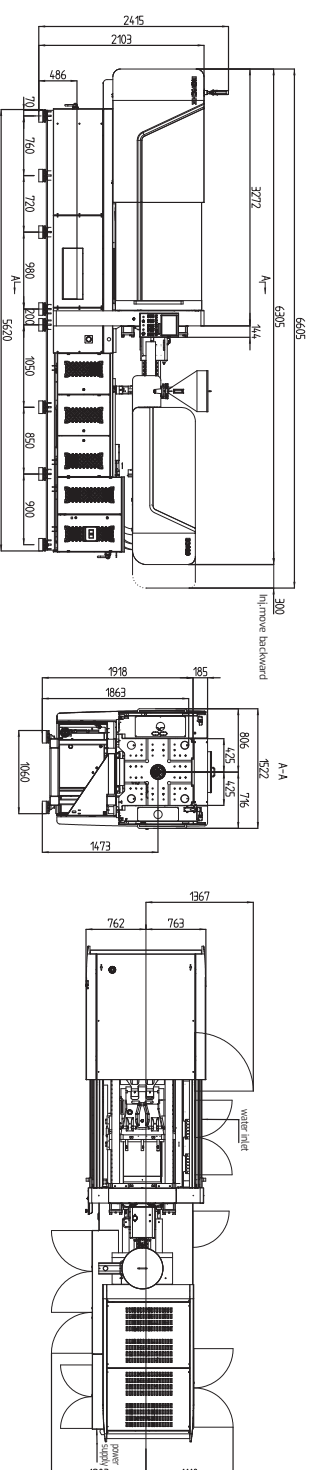
Brand new design, integration of aesthetics and ergonomics



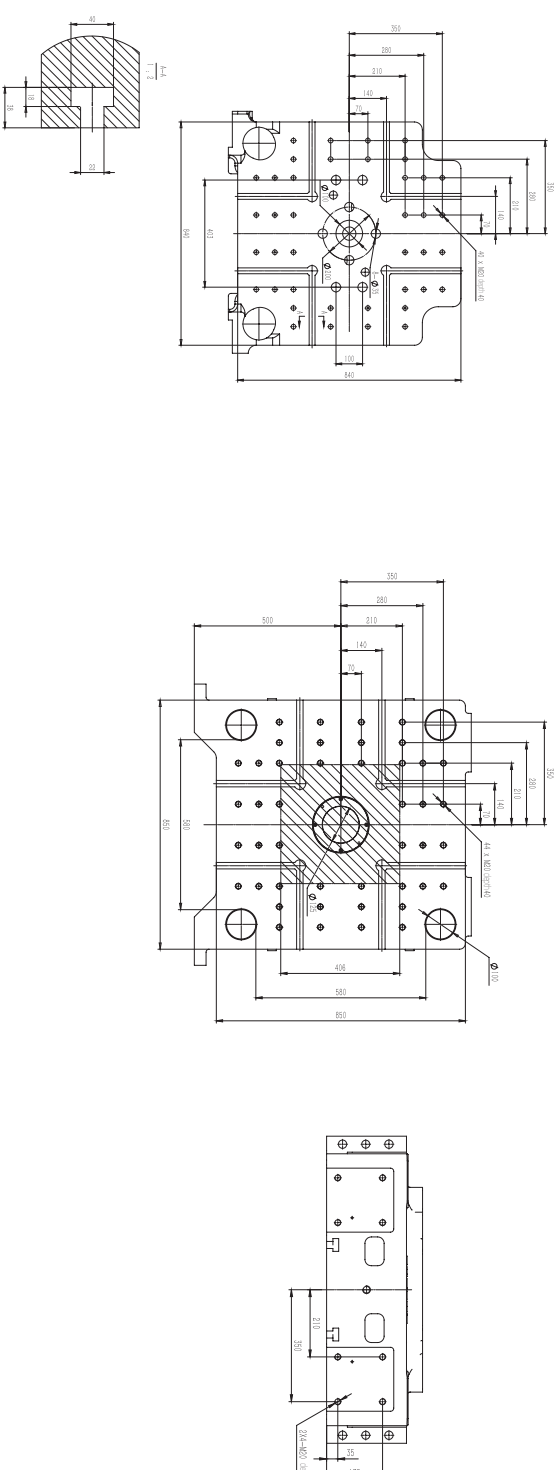
Specification

Model	Unit	BD200								
International Class No.		480	690	960						
INJECTION UNIT										
Screw Diameter	mm	35	40	45	40	45	50	50	55	
Screw L/D Ratio	L/D	23.5	20.5	18.0	23.0	21.0	17.0	23.0	21.0	17.0
Injection Stroke	mm	190	190	190	215	215	215	245	245	245
Shot Volume	cm ³	183	239	302	270	342	422	390	481	582
Shot Weight (P5)	g	166	217	275	246	311	384	355	438	530
Shot Weight (P5)	oz	5.9	7.7	9.7	8.7	11.0	13.6	12.5	15.4	18.7
Shot Rate (P5)	mm/s	250	200	200	200	200	200	200	200	200
Injection Pressure	Mpa	261	200	158	253	200	162	247	200	165
Holding Pressure	Mpa	209	160	126	203	160	130	198	160	132
Plasticizing Rate (P5)	g/s	208	299	413	262	361	483	330	444	257
Max. Injection Rotary Speed	rpm	400	350	350	320	320	320	320	320	320
Max. Injection Contact Force	kN	35	50	50	65	65	65	65	65	65
CLAMPING UNIT										
Clamping Force	kN	2000								
Opening Stroke	mm	510								
Platen Size	mmxmm	840x840								
Space btw The Bars	mmxmm	580x580								
Max. Daylight	mm	1070								
Max. Mold Thickness	mm	560								
Min. Mold Thickness	mm	200								
Ejection Stroke	mm	150								
Ejection Force	kN	50								
Ejector Pin	unit	4+4+1								
POWER UNIT										
System Pressure	Mpa	17.5								
Electric Motor	KW	524	582	628	628	628	628	628	628	
Heating Capacity	KW	118	123	184	184	184	184	184	184	
No of Heater Zones	unit	4	5	5	5	5	5	5	5	
GENERAL UNIT										
Oil Tank Capacity	L	100	100	100	100	100	100	100	100	
Machine Dimensions	mmxmmxmm	623x153x241	661x153x241	703x153x241	703x153x241	703x153x241	703x153x241	703x153x241	703x153x241	
Machine Weight	kg	8334	8767	8899	8899	8899	8899	8899	8899	

Appearance and Installation Dimensions



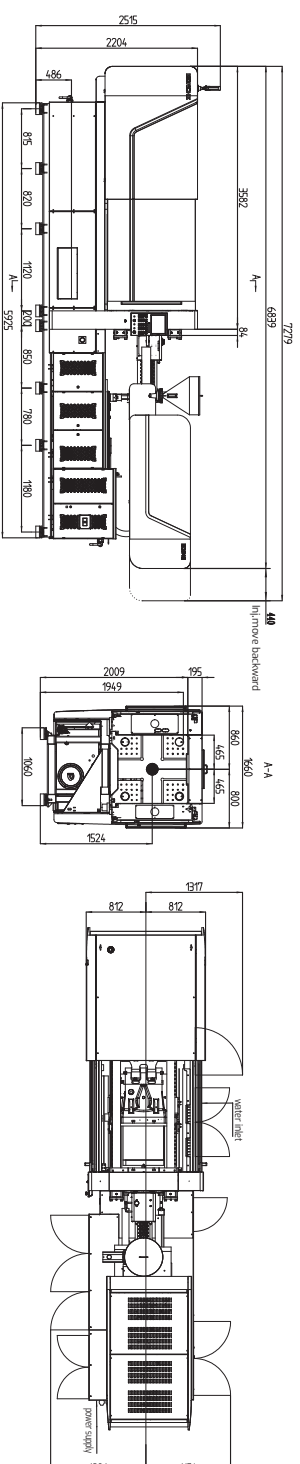
Mold Platen Drawing



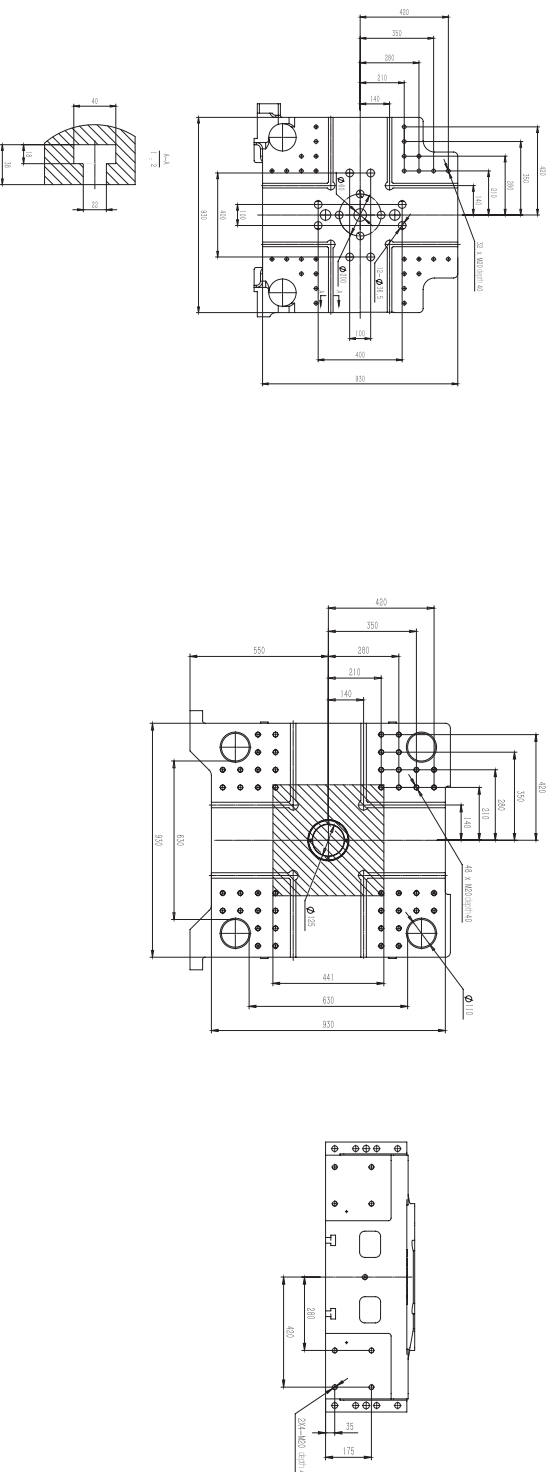
Specification

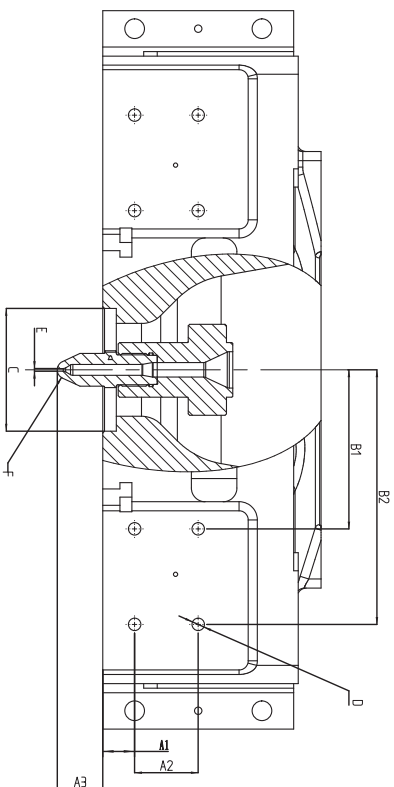
Model	Unit	BD240								
International Class No.		690	960	1440						
INJECTION UNIT										
Screw Diameter	mm	40	45	50	55	55	60	65		
Screw L/D Ratio	L/D	23.0	21.0	17.0	23.0	21.0	17.0	22.7	21.0	22.7
Injection Stroke	mm	215	215	245	245	245	300	300	300	
Shot Volume	cm ³	270	342	422	390	481	582	713	848	995
Shot Weight(PS)	g	246	311	384	355	438	530	649	772	906
Shot Weight(PS)	oz	8.7	11.0	13.6	12.5	15.4	18.7	22.9	27.2	32.0
Shot Rate(PS)	mm/s	200	200	200	200	200	160	160	160	
Injection Pressure	Mpa	253	200	162	247	200	165	202	170	145
Holding Pressure	Mpa	203	160	130	199	160	132	162	136	116
Plasticizing Rate(PS)	g/s	262	361	483	390	442	578	540	661	830
Max. Injection Rotary Speed	rpm	350	350	320	300	300	300	300	300	
Nezle Injection Rotary Speed	rpm	350	350	320	300	300	300	300	300	
Max. Injection Contact Force	kN	50	50	65	65	80	80	80	80	
CLAMPING UNIT										
Clamping Force	kN	2400								
Opening Stroke	mm	570								
Platen Size	mmxmm	930x930								
Space btw The Bars	mmxmm	630x630								
Max. Daylight	mm	1180								
Max. Mold Thickness	mm	610								
Min. Mold Thickness	mm	220								
Ejection Stroke	mm	180								
Ejection Force	kN	77.3								
Ejector Pin	unit	8*4+1								
POWER UNIT										
System Pressure	Mpa	17.5								
Electric Motor	KW	58.2	62.8	62.8	85.6	85.6				
Heating Capacity	KW	123	184	184	24.5	24.5				
No of Heater Zones	unit	5	5	5	6	6				
GENERAL UNIT										
Oil Tank Capacity	L	200	200	200	200	200				
Machine Dimensions	mmxmmxmm	686x166x252	728x166x252	748x166x252	748x166x252	748x166x252				
Machine Weight	kg	109.60	109.1	109.1	115.55	115.55				

Appearance and Installation Dimensions



Mold Platen Drawing





Robot Installation Dimensions

BD Series	BD90	BD130	BD160	BD200	BD240	BD300	BD380	BD460
A1	35	35	35	35	35	35	35	35
A2	70	70	70	140	140	140	140	140
A3 (Nozzle extension distance)	50	50	50	50	50	50	50	50
B1	175	175	175	210	280	350	350	420
B2	280	280	280	350	420	490	490	560
C (Mold positioning hole)	160	135	160	190	160	190	190	190
D	M16	M16	M16	M20	M20	M20	M20	M20
E (Nozzle hole diameter)	3	3	3	3	3	3	3	4
F (Nozzle spherical surface SR)	10	10	10	10	10	10	10	10

SAFETY UNIT

1. Other new safety standard
2. Full guarding in accordance with the European Machine Directive
3. Mechanical safety bar
4. Standard electrical independent security module structure
5. and reserved III - protection requirements
6. Electromagnetic safety door lock (operating side)
7. Double emergency button
8. Standard overrold of hydraulic system pressure relief function

INJECTION UNIT

1. Electric direct drive on injection electric screw drive
2. High precision and quick response pressure sensor
3. Wear-resistant barrel
4. Chrom-plated screw
5. Open type nozzle
6. A/B/C size screw available
7. Hydraulic carriage
8. Injection unit movement control mode
9. Nozzle centering calibration
10. Linear guide for nozzle movement
11. Movable hopper device with slider
12. Ceramic heat band
13. Nozzle safety guard with electric lock
14. High pressure/temperature tube for cooling ring on hopper throat
15. Stainless steel material cleaning tray
16. Double insulation cover for barrel
17. Low pressure/speed movement control under setup mode
18. Prevent overfilling function
19. Injection curve monitoring function
20. Injection speed response adjustable
21. Injection pressure control mode (conventional/high response)
22. Multiple V/F switches via combination of position pressure and time
23. Injection compression function
24. Parallel plasticizing function
25. Injection function
26. Auto purge function
27. Suck back function
28. PID temperature control on nozzle
29. PID temperature control on barrel
30. Screw cold start prevention
31. Timing heating function
32. Temperature optimization function
33. 6 stages control for injection pressure/speed adjustable
34. 5 stages control for holding pressure/speed adjustable
35. 5 stages control for plasticizing back pressure/speed adjustable
36. 4 ways of nozzle backward
37. Temperature monitor of feeding zone
38. Temperature monitor of shaft bearing
39. Screw rotation speed setting and display
40. Injection pressure calibration function
41. Real-time display function of injection pressure
42. Real-time display function of plasticizing back pressure
43. Set value alert signal on program
44. Set alarm signal on program

CLAMPING UNIT

1. Electric direct drive mold movement
2. Balanced double line joint locking system
3. Mold platen with T-slot and mounting holes
4. Center-lock clamping unit
5. High rigidity fixed platen
6. Linear guide rail under moving platen
7. Independent location ring for fixing platen
8. Hard chrome plated tie bar
9. Dual ejector cylinders
10. Cooper wash guide for ejector platen
11. Quick change coupling for center platen
12. 3 modes for ejector control
13. Adjustable ejector backward confirmation switch

14. Centralized lubrication system with end sensor
15. Top cover on clamping area (±2001)
16. Location of tray under moving platen
17. Robot mounting holes
18. Hydraulic mold adjustment
19. Mold adjustment with limit protection
20. Auto clamping force adjustment
21. Auto mold height adjustment
22. Pre - high pressure relief function
23. 5 stages of mold closing pressure/speed adjustable
24. 5 stages of mold opening pressure/speed adjustable
25. 3 stages of ejector control pressure/speed adjustable
26. 2 sets air blow signal without valve
27. 2 sets core puller signal without valve
28. Mold ejector function
29. Adjustable mold area lighting function
30. Product drop chute (90°/240°)
31. Ejector during mold open
32. Low pressure mold safety protection
33. Empty recycling operation functions
34. Opening and Closing mode signal
35. Water distributor (90T-300T: 6 x D10 quick plug, 3/4" water connector)
36. Water distributor (980T-460T: 9 x D12 quick plug, 1" water connector)

HYDRAULIC UNIT

1. Servo motor power with multi-term national patents
2. Real-time monitoring of hydraulic system
3. Divergency direction valve for carriage
4. Hydraulic oil level indicator and low level alarm
5. Oil temperature monitor and alarm
6. 5 micron filter
7. Explosion-proof chain for high-pressure oil pipe

CONTROL UNIT

1. 12 - inch intelligent controller
2. Internet connection port
3. Interconnection interfaces
4. Three color alarm light (red/yellow/green)
5. Alarm buzzer
6. 2 sets USB ports
7. Electric heating protection by fuse or auto switch
8. 5000 sets mold data (external USB drive extension)
9. Data protect lock
10. Real-time monitor on servo motor
11. Operation history record
12. Alarm record
13. Switch of international units
14. I/O status display function
15. Multi-language available (CN/Standard)
16. Self-diagnosis system
17. PIP process data records
18. SPC quality control
19. Process parameter quick setting
20. User permission management function
21. Pre-check and real-time monitor of machine movement
22. Cycle time analysis function
23. Three modes available for touch screen button style
24. Real-time display of servo action curve of mold open and close
25. Parallel movement (injection and core)
26. Plasticizing curve function
27. Real-time display of injection and plasticize curve
28. Auto purge function
29. Time heating function
30. PID temperature control of barrel heating
31. Production count function
32. DRY cycle function
33. Switch off function
34. Switch off function
35. Robot interface (include defective products and mold open signal)
36. Mold eject and back protection signal interfaces

OTHER

1. Borch standard vibrator
2. 220V/0.1kw 380V/0.5kw 380V/2kwZ
3. Adjustable level pads
4. Tool box
5. Standard spare parts

Optional Features

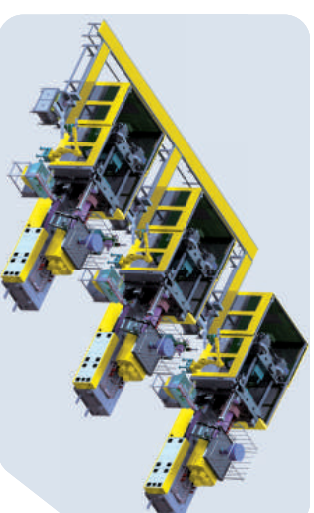
SAFETY UNIT	
1	CE safety standard
INJECTION UNIT	
1	Bi-metal screw and barrel
2	PC screw
3	Extended nozzle
4	Self-seal shut-off nozzle (hydraulic/pneumatic)
5	Spring type shut-off nozzle
6	Temperature control of hopper feed throat
7	Carriage transducer
8	V/P switch over of mold pressure
9	Stainless hopper
CLAMPING UNIT	
1	Multiple sets of hydraulic core pulling
2	Multiple sets of pneumatic core pulling
3	Hydraulic unscrewing
4	Electric unscrewing
5	Multiple sets of air blast
6	Enlarged mold thickness
7	Mold locking ring with tailored size
8	Close loop control of mold clamping force
9	Photo sensor for product drop detector
10	Extra water manifold
11	Extra water distributor
12	Mold platen heat insulation board
13	Manual centralized lubrication for rear platen
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 EU20
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 stabilizer
15	UPS

INTELLIGENT EDGE TERMINAL(MEC)	
1	Temporary authorization of PaaS/Cloud App, basic version
2	Machine Kanban status, cycle time and output, etc.
3	HMII, M2M & M2H interconnection
4	Process control, real-time setting, history setting
5	Remote support, process parameter, parameter setting
6	Machine self-check

Intelligent Unmanned IMM Factory

BORCHE

- 01** Factory Layout- Borché 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.

