

All information in the brochures is general ones, which is not contractual contents. Borche reserves the right of any change without prior notice.

Mar 2023

BORCH MACHINERY CO., LTD

No.9 Xinxiang Road, Zengcheng Economic & Technological Development District, Guangzhou, Guangdong Province, P.R.C. www.borche.cn 400-655-9488



Website

Wechat

Inter-Connected IMM Redefines Innovation, Science and Technology



#### **Brand New Interconnected Bi Series**



#### **Technology patent certification**

One type double layer movable platen structurePOne type injection molding machine frame basePOne type adjustable computer operating box structurePInjection molding machine and its machine toggle clamping mechanismPOne type fixed platen of injection molding machinePOne type anti oil leakage structure for mold adjustment hydraulic systemPOne type gap adjustment mechanism of injection molding machinePMobile seat, mold locking device and injection molding machineP

Patent No.: 201621204053.6 Patent No.: 201621302443.7 Patent No.: 201721251433.X Patent No.: 201721926907.6 Patent No.: 201720275764.0 Patent No.: 201820099568.7 Patent No.: 201820098030.4 Patent No.: 201910842302.6 В И В И В И В И В И В И В И В И На селото на с

#### Interconnected

Modular design

#### Rigidity enhancement

### Performance upgrade



### Interconnected



Bi series is able to connect peripheral equipment, and realizes two-way data communication, which integrates the information of peripheral equipment into machine controller.

The machine is equipped with different interface for data collection and communication,uploading machine real status,technical parameters,and status of peripheral equipment to PlasCloud platform.

#### Peripheral equipment interface

Control			Cont	rol		
#03 Connect state		Power		#11 Connect state	Power	
Setting			Sett	ing		
Control temperture 000.0	000.0 °C	Run/Stop		Feed cycle 000	0.000 0.0	
Return water temperature	000.0 °C	Self tuning		Charge time 000	0.0 000.0 s	
Outlet water temperature	000.0 °C	Backward/Drainag	1	DAC1 error		
		Force cool		DAC2 error		
Heater	000.0 %	Buzzer		ADC error	i i i	
Cool	000.0 %	Timing		Motro 1 error	<u> </u>	
Forward rotation		Bachward	-	Motor 2 error		
Backward rotation		Dackward	<u>ko</u>	Hopper 1 material shorta	ige	
Make up water Alarm				Hopper 2 material shorta	ige	



Bi series is equipped with various sensors and interfaces. More can be updated.



### **Modular Design**

BORCHE

# **Improved Rigidity**





Machine with modular design, meet different needs flexibly; Optional injection units to cover bigger range of injection volume; Both standard power system and optional enlarged one stage power system are available;

Optional swing injection unit, for easier screw and barrel maintenance; Spare installation places for sockets.

### Optimized clamping structure strengthens clamping unit integral rigidity.















## BORCHE





### **Upgraded** Performance



# BORCHE

Self-adaptive motion control algorithm of clamping movement: simplify setting of process parameters and increase the

Borche **Bi / 08** 

# **Description**

Model			Bi90			Bi130			Bi160			Bi200			Bi260 Bi320		20		Bi400			Bi500							
Description International Class No.	Unit		255/90			390/130			630/160			850/200			1360	/260			2240	/320			3260	/400			3920	/500	
INJECTION UNIT																													
Screw Diameter	mm	30	35	40	35	40	45	40	45	50	45	50	60	50	55	60	70	60	65	70	80	70	75	80	90	75	80	85	95
Shot Volume	cm³	120	163	213	182	238	302	270	341	422	389	481	692	589	712	848	1154	989	1161	1346	1759	1539	1767	2010	2544	1877	2136	2411	3012
Shot Weight(PS)	g	109	148	194	166	217	275	246	310	384	354	438	630	536	648	772	1050	900	1057	1225	1601	1400	1608	1829	2315	1708	1944	2194	2741
Shot Rate(PS)	g/s	80	109	142	105	137	174	134	170	210	153	189	272	183	221	263	358	293	343	398	520	357	410	466	590	413	470	530	662
Shot Weight(PS)	OZ	3.9	5.2	6.8	5.8	7.6	9.7	8.7	10.9	13.5	12.5	15.4	22.2	18.9	22.9	27.2	37.0	31.7	37.3	43.2	56.5	49.4	56.7	64.5	81.7	60.2	68.6	77.4	96.7
Injection Pressure	MPa	252	185	142	240	183	145	235	185	150	218	176	123	232	191	161	118	226	193	166	127	212	184	162	128	209	184	163	130
Screw L/D Ratio	L/D	24	20.5	18	23.5	20.5	18	23	20.5	18.5	23	21	17	25	22.7	21	18	24.5	22.7	21	18.5	24	22.7	21	19	24	22.5	21	19
Injection Stroke	mm		170			190			215			245			30	)0			35	50			4(	00			42	5	
Injection Rotary Speed Max	rpm		265			240			265			190			18	5			18	5			16	5			16	5	
Nozzle Contact Force	kN		30			30			30			30			4	0	70		D	80			80						
Nozzle Stroke	mm		250			250			295			325			375 390		0		405		450								
CLAMPING UNIT																													
Clamping Force	kN		900			1300			1600			2000			26	00			32	00			40	00			50	00	
Opening Stroke	mm		330			370			430			510			550		650			710			820						
Platen Size	mm × mm		550x550			625 × 625	ō		690 × 690	)		770 × 770			850	× 850			990 >	< 990			1080 >	< 1080			1240 ×	1240	
Space btw. Tie Bars	mm × mm		360 × 360	)		410 × 410			470 × 470			530 × 530	)		580	× 580			680 ;	< 680			730 :	× 730			840 >	840	
Daylight Max	mm		730			820			950			1060			116	50			133	30			14-	40			167	70	
Mold-Thickness(min- max)	mm		130- 400			145-450			160-520			180-550			200	-610		250-680				260	-730		300-850				
Ejector Srtoke	mm		100			120			140			150			18	0			18	0			20	)5			25	0	
Ejector Force	kN		34.4			34.4			49.5			49.5			77	.3			77	.3			111	1.3			111	.3	
Ejector Pin Hole	unit		4+1			4+1			4+1			4+4+1			8+	4+1			8+	4+1			8+	4+1			4+8	+4+1	
POWERUNIT																													
System Pressure	MPa		17. 5			17.5			17.5			17.5			17	.5			17	.5			17	.5			17.	5	
Pump Motor	kW		15			18.5			22			30			3	7			5	5			37-	+30			45+	30	
Heating Capacity	kW		6.5			8.8			9.6			12.9			16	.2			2	2			30	).6			3	Э	
No.of Heater Zones	unit		4			4			5		5		6	5			e	5		6				E					
GENERAL UNIT																													
Oil Tank Capacity	L		160			200			230			270			34	10			53	80			6	10			69	0	
Machine Dimensions	m × m × m	4.	37x1.33x2.	02	4.	58x1.39x2	.08	5.0	)4x1.48x2	.16	5.6	5x1.65x2.	.28		6.39x1.	74x2.39			7.14x1.8	9x2.44			7.93x1.9	9x2.59			8.7x2.1	7x2.61	
Machine Weight	kg		3500			4100			5000			6700			88	00			121	.00	15000			19000					

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

# BORCHE

### BORCHE

# **Bi130**

#### Specification

Model	Unit		Bi90				
International Class No.			25	5/90			
INJECTION UNIT							
Screw Diameter	mm	1	30	35	40		
Shot Volume	cm <sup>3</sup>	cm <sup>3</sup>		163	213		
Shot Weight(PS)	g		109	148	194		
Shot Rate(PS)	g/s		80	109	142		
Shot Weight(PS)	OZ		3.9	5.2	6.8		
Injection Pressure	MPa	1	252	185	142		
Screw L/D Ratio	L/D		24	20.5	18		
Injection Stroke	mm	1		170			
Injection Rotary Speed Max	rpm	1	265				
Nozzle Contact Force	kN	kN 30					
Nozzle Stroke	mm	mm 250					
CLAMPING UNIT							
Clamping Force	kN			900			
Opening Stroke	mm	1	330				
Platen Size	mm ×	mm	550x550				
Space btw. Tie Bars	mm ×	mm	360 × 360				
Daylight Max	mm	1	730				
Mold-Thickness(min- max)	mm	1	13	30- 40	0		
Ejector Srtoke	mm	1		100			
Ejector Force	kN			34.4			
Ejector Pin Hole	unit			4+1			
POWERUNIT							
System Pressure	MPa	3		17. 5			
Pump Motor	kW			15			
Heating Capacity	kW			6.5			
No.of Heater Zones	unit			4			
GENERAL UNIT							
Oil Tank Capacity	L			160			
Machine Dimensions	m × m ×	٢m	4.37x1.33x2.02				
Machine Weight	kg			3500			

#### Appearance and Installation Dimensions







#### Specification

Model	Unit		Bi130				
International Class No.			39	0/130			
INJECTION UNIT							
Screw Diameter	mm		35	40	45		
Shot Volume	cm³		182	238	302		
Shot Weight(PS)	g		166	217	275		
Shot Rate(PS)	g/s		105	137	174		
Shot Weight(PS)	OZ		5.8	7.6	9.7		
Injection Pressure	MPa		240	183	145		
Screw L/D Ratio	L/D		23.5	20.5	18		
Injection Stroke	mm			190			
Injection Rotary Speed Max	rpm			240			
Nozzle Contact Force	kN		30				
Nozzle Stroke	mm	250					
CLAMPING UNIT							
Clamping Force	kN			1300			
Opening Stroke	mm 370						
Platen Size	mm × I	nm	1 625 × 625				
Space btw. Tie Bars	mm × I	nm	410 × 410				
Daylight Max	mm		820				
Mold-Thickness(min- max)	mm		14	45-45	0		
Ejector Srtoke	mm			120			
Ejector Force	kN			34.4			
Ejector Pin Hole	unit			4+1			
POWERUNIT							
System Pressure	MPa	1		17.5			
Pump Motor	kW			18.5			
Heating Capacity	kW			8.8			
No.of Heater Zones	unit			4			
GENERAL UNIT							
Oil Tank Capacity	L	200					
Machine Dimensions	m × m ×	m	4.58	x1.39>	2.08		
Machine Weight	kø			4100			





POWERUNIT		
System Pressure	MPa	17.5
Pump Motor	kW	18.5
Heating Capacity	kW	8.8
No.of Heater Zones	unit	4
GENERAL UNIT		
Dil Tank Capacity	L	200
Machine Dimensions	m × m × m	4.58x1.39x2.08
Machine Weight	kg	4100

### BORCHE

#### **Appearance and Installation Dimensions**

BORCHE

## **Bi200**

#### Specification

Model	Unit		Bi160			
International Class No.	Unit	Unit		0/160		
INJECTION UNIT						
Screw Diameter	mm	1	40	45	50	
Shot Volume	cm³		270	341	422	
Shot Weight(PS)	g		246	310	384	
Shot Rate(PS)	g/s		134	170	210	
Shot Weight(PS)	OZ		8.7	10.9	13.5	
Injection Pressure	MPa	9	235	185	150	
Screw L/D Ratio	L/D		23	20.5	18.5	
Injection Stroke	mm	1		215		
Injection Rotary Speed Max	rpm	1	265			
Nozzle Contact Force	kN			30		
Nozzle Stroke	mm	mm 295				
CLAMPING UNIT						
Clamping Force	kN		1600			
Opening Stroke	mm	1	430			
Platen Size	mm ×	mm	690 × 690			
Space btw. Tie Bars	mm ×	mm	470 × 470			
Daylight Max	mm	1		950		
Mold-Thickness(min- max)	mm	1	1	50-52	0	
Ejector Srtoke	mm	1		140		
Ejector Force	kN			49.5		
Ejector Pin Hole	unit			4+1		
POWERUNIT						
System Pressure	MPa	3		17.5		
Pump Motor	kW			22		
Heating Capacity	kW			9.6		
No.of Heater Zones	unit			5		
GENERAL UNIT						
Oil Tank Capacity	L			230		
Machine Dimensions	m × m ×	٢m	5.04	x1.48	×2.16	
Machine Weight	kg		Ę	000		





#### Mold Platen Drawing

32- M16#32



#### Specification

Model	11		Bi200				
International Class No.	Unit		850	)/200			
INJECTION UNIT							
Screw Diameter	mm		45	50	60		
Shot Volume	cm <sup>3</sup>		389	481	692		
Shot Weight(PS)	g		354	438	630		
Shot Rate(PS)	g/s		153	189	272		
Shot Weight(PS)	OZ		12.5	15.4	22.2		
Injection Pressure	MPa		218	176	123		
Screw L/D Ratio	L/D		23	21	17		
Injection Stroke	mm			245			
Injection Rotary Speed Max	rpm			190			
Nozzle Contact Force	kN			30			
Nozzle Stroke	mm			325			
CLAMPING UNIT							
Clamping Force	kN			2000			
Opening Stroke	mm			510			
Platen Size	mm × I	mm	n 770 × 770				
Space btw. Tie Bars	mm × I	mm	ו 530 × 530				
Daylight Max	mm			1060			
Mold-Thickness(min- max)	mm		18	30-55	0		
Ejector Srtoke	mm			150			
Ejector Force	kN			49.5			
Ejector Pin Hole	unit			4+4+	1		
POWERUNIT							
System Pressure	MPa	l		17.5			
Pump Motor	kW			30			
Heating Capacity	kW			12.9			
No.of Heater Zones	unit			5			
GENERAL UNIT							
Oil Tank Capacity	L			270			
Machine Dimensions	m × m >	m	5.65	x1.65	×2.28		
Machine Weight	kg			6700			



### BORCHE



#### Appearance and Installation Dimensions

Mold Platen Drawing





### BORCHE

### **Bi320**

#### Specification

Model	Unit	Bi260				
International Class No.	Unit	1360/260				
INJECTION UNIT						
Screw Diameter	mm	50 55 60 70				
Shot Volume	cm³	589 712 848 1154				
Shot Weight(PS)	g	536 648 772 1050				
Shot Rate(PS)	g/s	183 221 263 358				
Shot Weight(PS)	OZ	18.9 22.9 27.2 37.0				
Injection Pressure	MPa	232 191 161 118				
Screw L/D Ratio	L/D	25 22.7 21 18				
Injection Stroke	mm	300				
Injection Rotary Speed Max	rpm	185				
Nozzle Contact Force	kN	40				
Nozzle Stroke	mm	375				
CLAMPING UNIT						
Clamping Force	kN	2600				
Opening Stroke	mm	550				
Platen Size	mm × mn	N 850 × 850				
Space btw. Tie Bars	mm × mn	580 × 580				
Daylight Max	mm	1160				
Mold-Thickness(min- max)	mm	200-610				
Ejector Srtoke	mm	180				
Ejector Force	kN	77.3				
Ejector Pin Hole	unit	8+4+1				
POWERUNIT						
System Pressure	MPa	17.5				
Pump Motor	kW	37				
Heating Capacity	kW	16.2				
No.of Heater Zones	unit	6				
Oil Tank Capacity	L	340				
Machine Dimensions	m × m × m	6.39x1.74x2.39				
Machine Weight	kσ	8800				

#### Appearance and Installation Dimensions





#### Mold Platen Drawing



#### Specification

•						
Model	Unit	<b>Bi320</b>		20		
International Class No.	Onic			/320		
INJECTION UNIT						
Screw Diameter	mm	60	65	70	80	
Shot Volume	cm³	989	1161	1346	1759	
Shot Weight(PS)	g	900	1057	1225	1601	
Shot Rate(PS)	g/s	293	343	398	520	
Shot Weight(PS)	OZ	31.7	37.3	43.2	56.5	
Injection Pressure	MPa	226	193	166	127	
Screw L/D Ratio	L/D	24.5	22.7	21	18.5	
Injection Stroke	mm		35	50		
Injection Rotary Speed Max	rpm		18	35		
Nozzle Contact Force	kN	70				
Nozzle Stroke	mm	390				
CLAMPING UNIT						
Clamping Force	kN	3200				
Opening Stroke	mm	650				
Platen Size	mm × mm	n 990 × 990				
Space btw. Tie Bars	mm × mm	n	680	× 680	)	
Daylight Max	mm		13	30		
Mold-Thickness(min- max)	mm		250	-680		
Ejector Srtoke	mm		18	30		
Ejector Force	kN		77	7.3		
Ejector Pin Hole	unit		8+	4+1		
POWERUNIT						
System Pressure	MPa		17	.5		
Pump Motor	kW		5	5		
Heating Capacity	kW		2	2		
No.of Heater Zones	unit		6	5		
GENERAL UNIT						
Oil Tank Capacity	L		5	30		
Machine Dimensions	m × m × m	7.1	14x1.8	39x2.	44	
Machine Weight	kg	12100				



### BORCHE



#### Appearance and Installation Dimensions

#### Mold Platen Drawing

### BORCHE

## **Bi500**

#### Specification

Model	Unit	Bi400					
International Class No.	Unit	3260/400					
INJECTION UNIT							
Screw Diameter	mm	70 75 80 90					
Shot Volume	cm³	1539 1767 2010 2544					
Shot Weight(PS)	g	1400 1608 1829 2315					
Shot Rate(PS)	g/s	357 410 466 590					
Shot Weight(PS)	OZ	49.4 56.7 64.5 81.7					
Injection Pressure	MPa	212 184 162 128					
Screw L/D Ratio	L/D	24 22.7 21 19					
Injection Stroke	mm	400					
Injection Rotary Speed Max	rpm	165					
Nozzle Contact Force	kN	80					
Nozzle Stroke	mm	405					
CLAMPING UNIT							
Clamping Force	kN	4000					
Opening Stroke	mm	710					
Platen Size	mm × mn	ו 1080 × 1080					
Space btw. Tie Bars	mm × mn	n 730 × 730					
Daylight Max	mm	1440					
Mold-Thickness(min- max)	mm	260-730					
Ejector Srtoke	mm	205					
Ejector Force	kN	111.3					
Ejector Pin Hole	unit	8+4+1					
POWERUNIT							
System Pressure	MPa	17.5					
Pump Motor	kW	37+30					
Heating Capacity	kW	30.6					
No.of Heater Zones	unit	6					
GENERAL UNIT							
Oil Tank Capacity	L	610					
Machine Dimensions	m × m × m	7.93x1.99x2.59					
Machine Weight	kg	15000					

#### Appearance and Installation Dimensions



#### Mold Platen Drawing





#### Specification

Model	Unit	Bi500						
International Class No.	Unit	3920/500						
INJECTION UNIT								
Screw Diameter	mm	75 80 85 95						
Shot Volume	cm³	1877 2136 2411 3012						
Shot Weight(PS)	g	1708 1944 2194 2741						
Shot Rate(PS)	g/s	413 470 530 662						
Shot Weight(PS)	OZ	60.2 68.6 77.4 96.7						
Injection Pressure	MPa	209 184 163 130						
Screw L/D Ratio	L/D	24 22.5 21 19						
Injection Stroke	mm	425						
Injection Rotary Speed Max	rpm	165						
Nozzle Contact Force	kN	80						
Nozzle Stroke	mm	450						
CLAMPING UNIT								
Clamping Force	kN	5000						
Opening Stroke	mm	820						
Platen Size	mm × mm	n 1240 × 1240						
Space btw. Tie Bars	mm × mm	n 840 × 840						
Daylight Max	mm	1670						
Mold-Thickness(min- max)	mm	300-850						
Ejector Srtoke	mm	250						
Ejector Force	kN	111.3						
Ejector Pin Hole	unit	4+8+4+1						
POWERUNIT								
System Pressure	MPa	17.5						
Pump Motor	kW	45+30						
Heating Capacity	kW	39						
No.of Heater Zones	unit	6						
GENERAL UNIT								
Oil Tank Capacity	L	690						
Machine Dimensions	m × m × m	8.7x2.17x2.61						
Machine Weight	kg	19000						





		Γ
	$\bigcirc$	
	••••	<b>₩</b>
342		2
8-0365	••••	, 
Г	$\bigcirc$	

### BORCHE

#### Appearance and Installation Dimensions





#### Mold Platen Drawing



### Clamping Unit Dimension

BORCHE

# **Features Configuration**

Standard F	eatures
------------	---------

	Safety Unit
1	Hydraulic safety lock, China New Safety Standard •
2	Full covered design •
3	Double emergency button
	Injection Unit
1	Twin carriage structure
2	Balancing twin injection cylinder •
3	Wear resistant screw and barrel
4	Chrome plated screw
5	Nozzle centering calibration
6	Electric lock on nozzle cover
7	Protection cover on heater band
8	Linear guide for injection and carriage
9	A/B/C size screw available •
10	Leakage protection when sunk back
11	Screw RPM sensor
12	Screw cold start protection
13	High torque hydraulic motor
14	6 stages of injection pressure/speed adjustable •
15	6 stages of pressure holding, pressure/speed adjustable •
16	5 stages of plasticizing pressure/speed adjustable •
17	Temp.sensor on hopper throat
18	Temp. sensor on transmission shaft •
19	High pressure/temperature tube for cooling ring on hopper throat
20	Non-slip embossed aluminum sheet •
21	4 ways of carriage backward •
22	Hopper with bearing slider (≥400t) ●
	Clamping Unit
1	5points dobule toggle design •
2	T-slot together with mounting hole •
3	Independent location ring for fixing platen
4	Strong chrome plated tie bar •
5	With robot mounting hole •
6	5 stages of closing,pressure/speed adjustable
7	5 stages of opening, pressure/speed adjustable •
8	Toggle auto-grease with end sensor •
9	With topcover on clamping area( $\leq$ 200t) $\bullet$
10	Adjustable mounting feet for moving platen •
11	Abrasion resistance strip •
12	Multi-ejector function •
13	With adjustable ejector backward confirmation switch
14	With oil collector on moving platen •
15	Clamping force auto adjustment •
16	Integrated oil sunk with outlet •
17	Mold adjustment by hydraulic motor drived gear •
18	Controller height adjustable •
19	With hopper(≤260t) ●
20	One Set Air Blow (moving Platen)

	Bi90	Bi130	Bi160	Bi200	Bi260	Bi320	Bi400	Bi500
A1	17.5	35	35	35	35	35	35	35
A2	52.5	105	105	105	175	175	175	175
A3	—	_	_	—	—	—	_	—
B1	140	175	175	175	210	280	350	350
B2	210	280	280	280	350	420	490	490
d	M12	M16	M16	M16	M20	M20	M20	M20



**Robot Installation Dimension** 





Hopper Dryer Installation Dimension

	Bi90	Bi130	Bi160	Bi200	Bi260	Bi320	Bi400	Bi500
A (Opening stroke)	330	370	430	510	550	650	710	820
B (Max mold thickness)	400	450	520	550	340	680	730	850
C (Max mold thickness)	130	145	160	180	200	250	260	300
D (The distance of nozzle extension from fixed platen)	35	35	45	45	45	45	45	50
E (Dia of nozzle hole )	3	3	3	3	3	3	5	5
F (Radius of nozzle <sub>tip)</sub>	10	10	10	10	10	10	10	10
G Dia of locaing ring	100	125	125	125	160	160	160	160

\* : No locating ring available

Clamping Unit Schematic Drawing

IA \ Rolcue R	19	/	Bo	rch	ne E	3i
---------------	----	---	----	-----	------	----

# BORCHE

	Hydraulic Unit	
1	Servo motor power	•
2	Low pressure protection	•
3	Digital back pressure	٠
4	Pump with oil release function	•
5	One way valve for carriage	٠
6	Boost clamping	٠
7	Temperature sensor on servo motor	٠
8	Oil level indicator and alarm	٠
9	Efficient hydraulic oil cooler	٠
10	Oil temp.sensor	٠
11	Inlet oil net filter(≤260t)	•
12	With inlet ball valve(≤260t)	٠
13	Inbuilt oil return filter	•
14	Self-close inlet oil filter(≥320t)	٠
15	Filter cartridge block alarm(≥320t)	•
16	Bypass oil filter(≥320t)	٠
17	Anti-explosion high pressure tube	٠
18	One set core pull ( moving platen)	•
	Control Unit	
1	Keba controller	٠
2	Internet connnection port	•
3	Multi-language available	٠
4	Self-diagnosis system	•
5	With SPC function	•
6	Process parameter quick setting	•
7	Robot interface	٠
8	Auto-purge	٠
9	Timer heating function	•
10	Electric heating protection by fuse or auto-switch	٠
11	Pid programmable barrel heating	٠
12	Precise position sensor	٠
13	With 2G CF card, capable for 200 sets of parameter	•
14	Parameter lock	٠
15	Solid relay temperature setting	•
16	3-color alarm	٠
	Other Unit	
1	Borche standard VI	•
2	Backup socket	•
3	Adjustable level pad	•
4	Without hopper	•
5	With hopper slide	•
6	With standard tool kit	•
7	With standard spare parts set	•

### Industry 4.0 for IMM

BORCHE

### **Intelligent Unmanned IMM Factory**

#### **Optional Functions of Intelligent Manufacturing:** With Industry 4.0 on IMM, three-mold can be realized with mold chanae platform: one-stop automatic mold chanae.semi-automatic mold change and manual mold change. MM canautomatically identify mold and acauire parameter of mold change. techniaue and peripherals, The hole of IMM should be tailored to suit that of the mold change platform and hydraulic camp.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. 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. 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. Intelligent interconnection of IMM and mould temperature controller can be operated and controlled by IMM controller. All data is close-loop interconnection. Intelligent interconnection of IMM and all-in-one compact dryer can be operated and controlled by IMM controller. All data is close-loop interconnection. Compression injection molding technique High speed proportional valve for mold open and close and non-contact maglev linear transducer realize real-time monitor Robot connects with IMM in real-time, which reduces the interference of robot, IMM and mold. Robot can be fixed on the top or side of fixed platen according to parts pick requirements 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 Intelligent Manufacturing (imec) 1) PlasCloud App, basic version(1-year available) 2) Machiner monitor: status, cycle and output, etc. 3) Human-computer interaction: Provides M2M and M2H connection and interaction functions 4) Process management: View real-time data, historical process, etc 5) Remote support: Share real-time machine operation, set parameters and remote checking to machine status 6) Intelligent examination: The self-developed algorithm is used to predict and visually score the machine's health condition Mold Visual Monitor 1) Low pressure mold protection for higher precision and efficiency 2) Accurate checkup 3) Self-adaption to exterior light change 4) Self-adaption to inaccurate mold open position 5) Real-time record 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

Vision-induced System 1) Accurate positioning

- 2) Sensitive identification
- 3) Wide application

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



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

Visual Detective System

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











