

BORCHE



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BM Multi-shot Series

20 Years' Experience in Multi-component Application,
Wide Variety & Full Range

BORCHE BM



PIONEERING IN CHINA, LEADING IN IMM INDUSTRY

Thanks to many years' technical foundation, we are honored with 13 awards related to Multi-Shot IMM techniques as follows: the first Chinese ultra-large rotary platen, the first Chinese large size two-platen three-shot IMM, the first Chinese five-shot IMM, the first Chinese electrical "one unit-dual mold" system, first Chinese sandwich-injection molding system, etc.

DIVERSE SERIES, DESIRABLE QUALITY

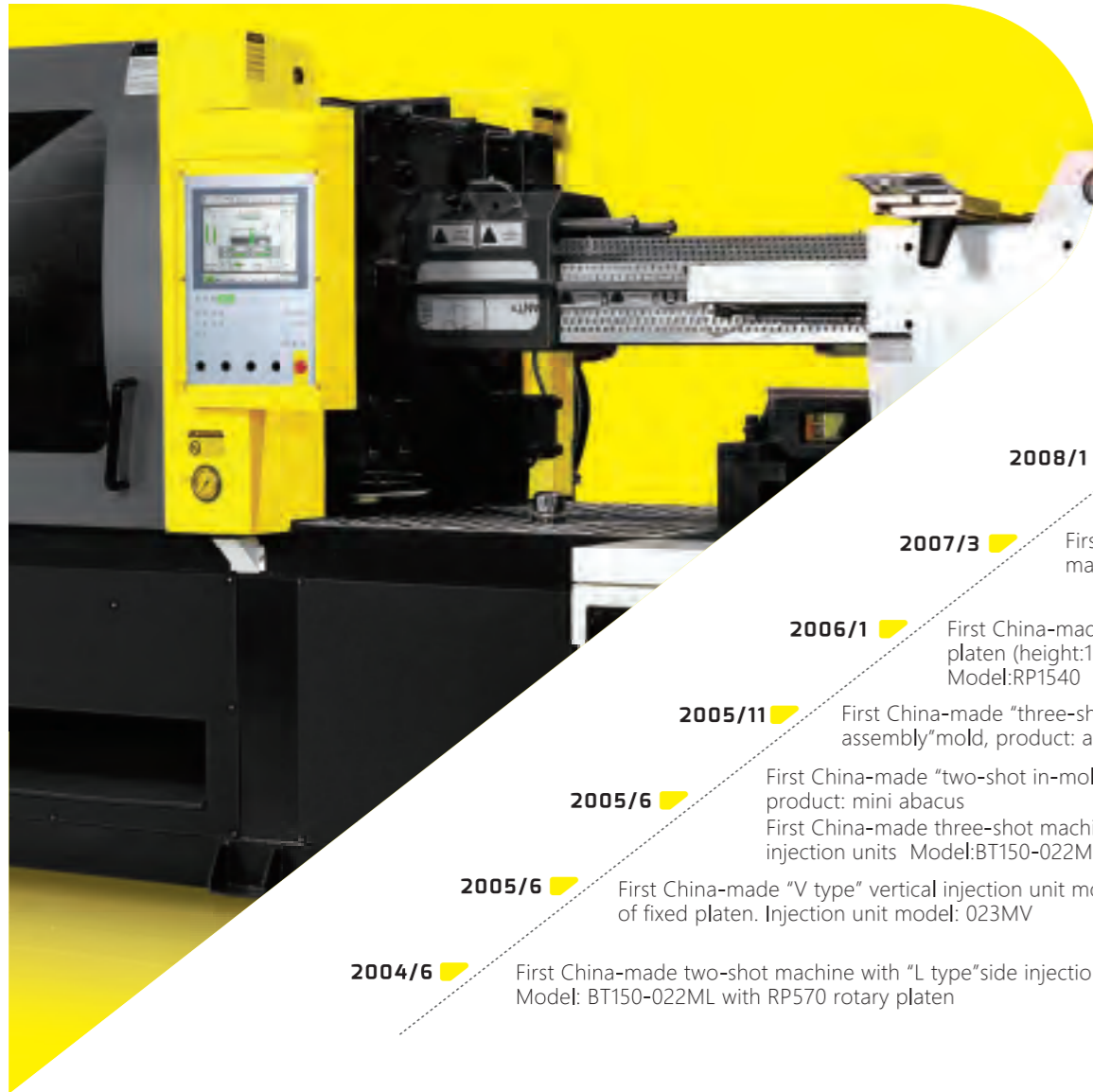
Five models of multi-shot BM series includes MT、ML、MV、MP、MK, meet the requirement from two-shot to five-shot injection molding. Borche BM Multi-shot series have the widest range in regarding of machine structure and machine models in IMM industry.

BORCHE BM

Improving for Further Excellency

Borch Machinery Co.,Ltd, focused on technology innovation and self-developed advanced multi-shot injection technology, can provide versatile multi-shot machines, including ML,MV,MK,MP and MT types. Clamping force ranges from 1200kN to 22000kN. Several different position of injection unit can be flexibly combined to realize up to four-shot solution. Modular designed RP rotary platen and TP indexing platen are freely collocated to suit different multi-shot application.

Borche BM series is widely applied in fields of automobile, electrical appliance, sanitary wares, food package, and has been well recognized as highly-productive machine with good price-quality ratio.



- 2008/1 First China-made sandwich injection molding system Model: BT260-4C
- 2007/3 First China-made four-shot machine Model:BT260-4C
- 2006/1 First China-made large rotary platen (height:1820mm weight:3.5 ton) Model:RP1540
- 2005/11 First China-made "three-shot in-mold assembly" mold, product: abacus
- 2005/6 First China-made "two-shot in-mold assembly" mold, product: mini abacus
- 2005/6 First China-made three-shot machine with three axes injection units Model:BT150-022ML-023MV
- 2005/6 First China-made "V type" vertical injection unit mounted on the top of fixed platen. Injection unit model: 023MV
- 2004/6 First China-made two-shot machine with "L type" side injection unit Model: BT150-022ML with RP570 rotary platen

BORCHE BM

- 2021/12 BU600-3C with Opposite Double Injection & Back Injection units for Plastic Floor Mat
- 2021/12 BM1350-MS with Opposite Double Injection System for Plastic Floor Mat
- 2020/8 BM500-MS with Opposite Double Injection System for Wash Machine Balance Ring
- 2019/4 BM1500-MT 2K cap machine
- 2018/12 BM1500-MT parallel injection car lamp machine
- 2017/8 BM1000-MT parallel injection car lamp machine
- 2016/9 BM500 balancing ring machine
- 2015/9 Two-shot machine BU2200-320ML with ultra-large rotary platen RP2340 (height:2780mm weight:8 ton) exported to the U.K.
- 2015/9 First China-made ultra-large rotary platen (height:2780mm weight:8 ton) Model:RP2340
- 2012/12 First China-made two platen three-shot Model:BM1500-3C
- 2012/4 First China-made five-shot machine Model:BM260-5C
- 2011/5 First China-made "In-mold automatic assembly" four-shot



BORCHE BM

BORCHE BM

MT Series

MT Series is a newly-developed two-shot machine series with wider platen and parallel injection units. Two injection units can be freely selected from injection unit of MT series.



Automatic Control
Austria made KEBA controller
model 2880



Movable Hopper Support
Machines up to 600T featured with
movable hopper support ($\geq 700T$
featured with feeding platform) .



Rotating Core

Rotary platen and indexing unit can be compatibly transferred from each other with little parts replaced.



Rotary Platen



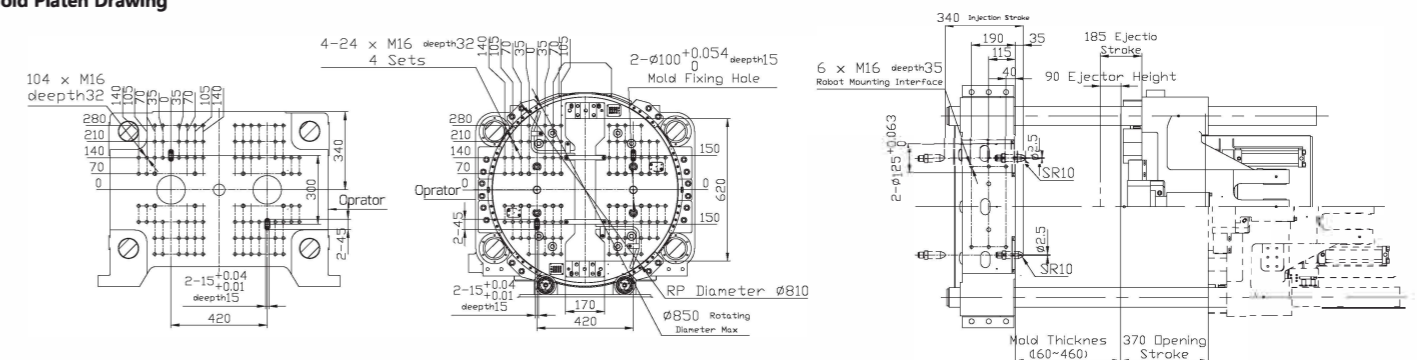
Linear Guide Rail

Linear guide rail adopted injection unit and built in carriage cylinder realize fast speed and stable movement.

BM Series	UNIT	BM180-MT																						
		Combined solutions 1						Combined solutions 2						Combined solutions 3						Combined solutions 4				
INJECTION UNIT		MT390			MT390			MT390			MT200			MT200			MT200			MT200		MT100		
Screw Diameter	mm	30	35	40	30	35	40	30	35	40	26	28	30	26	28	30	26	28	30	26	28	30	22	26
Shot Volume	cm ³	120	163	214	120	163	214	120	163	214	72.7	84.4	96.8	72.7	84.4	96.8	72.7	84.4	96.8	72.7	84.4	96.8	38	53
Shot Weight(PS)	g	109	149	194	109	149	194	109	149	194	66.2	76.8	88.1	66.2	76.8	88.1	66.2	76.8	88.1	66.2	76.8	88.1	35	48
Shot Weight(PS)	OZ	3.86	5.25	6.85	3.86	5.25	6.85	3.86	5.25	6.85	2.3	2.7	3.1	2.3	2.7	3.1	2.3	2.7	3.1	2.3	2.7	3.1	1.2	1.7
Injection Pressure	Mpa	326	240	184	326	240	184	326	240	184	285	246	214	285	246	214	285	246	214	285	246	214	261	187
Injection Speed	g/s	64	87	113	64	87	113	80	109	142	72	84	96	72	84	96	72	84	96	72	84	96	80	111
Screw L/D Ratio	L/d	24	20.5	18	24	20.5	18	24	20.5	18	23	21.5	20	23	21.5	20	23	21.5	20	23	21.5	20	20	20
Injection Stroke	mm	170			170			170			137			137			137			137		100		
Injection Speed max	mm/s	99			99			124			150			150			150			150		230		
Screw Rotary Speed max	rpm	260			260			265			170			170			170			170		200		
Distance btw Barrel	mm	420						420						420						420				
CLAMPING UNIT																								
Clamping Force	KN	1800																						
Opening Stroke	mm	370																						
Platen Size	mmxmm	950x675																						
Space btw.Tie Bars	mmxmm	705x425																						
Daylight Max	mm	800																						
Mold Thickness(min-max)	mm	160-460																						
Ejector Pin Holes	unit	3+3																						
Ejector Force	KN	33x2																						
Ejector Stroke	mm	100																						
RP Weight	T	1																						
PR Diameter	mm	800																						
POWER UNIT																								
System Pressure	MPa	17.5																						
Pump Motor	kw	11		11		11		11		11		11		11		11		11		11				
Heating Capacity	kw	8.9		8.9		8.9		6.5		6.5		6.5		6.5		6.5		6.5		5				
No. of Heater Zones	unit	4		4		4		4		4		4		4		4		4		4				
GENERAL UNIT																								
Oil Tank Capacity	L	450																						
Machine Dimensions(L*W*H)	mxm	5.8x2x2.1																						
Machine Weight(Without RP)	KG	7500																						

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Mold Platen Drawing



BM260-MT

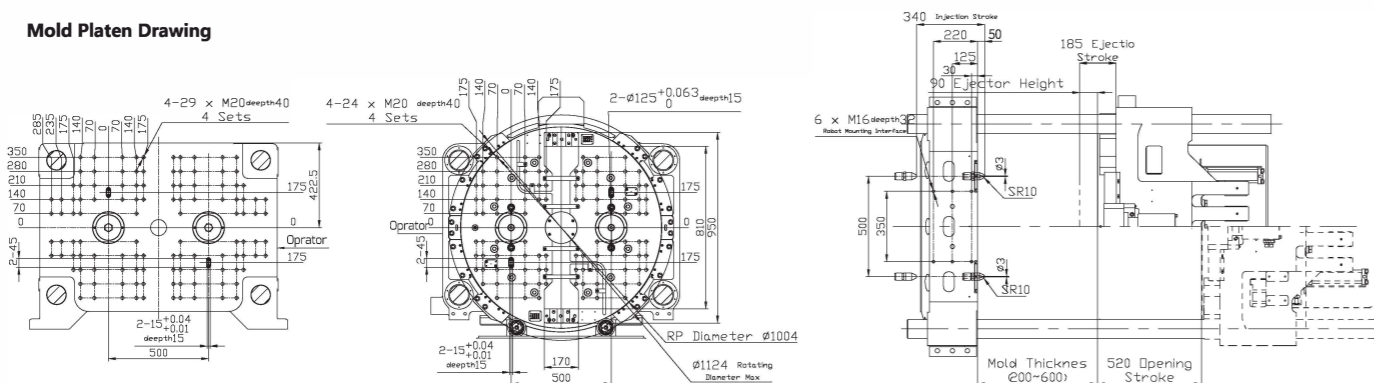
BM400-MT

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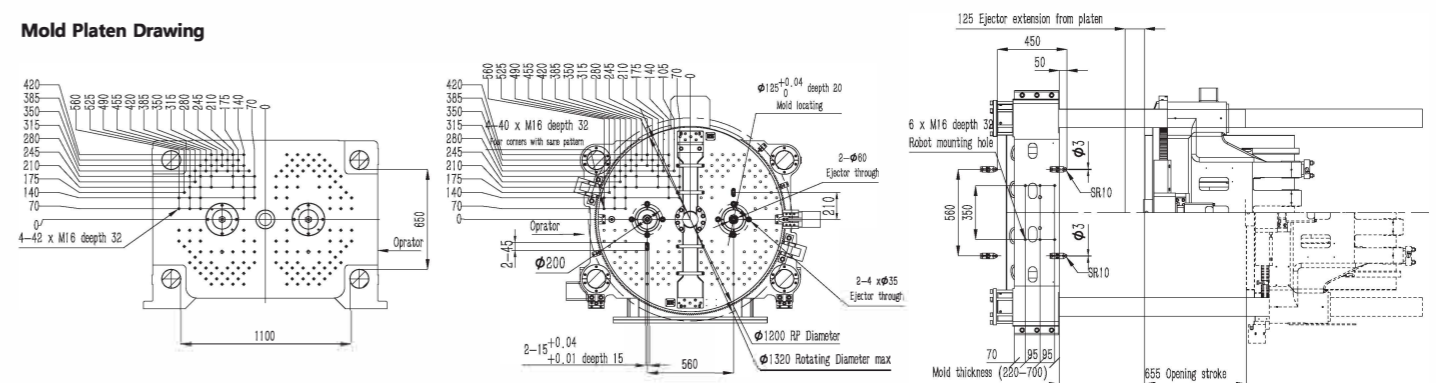
BM Series	UNIT	BM260-MT																							
		Combined solutions 1					Combined solutions 2					Combined solutions 3					Combined solutions 4								
INJECTION UNIT		MT390			MT335			MT440			MT200			MT390			MT200			MT200			MT100		
Screw Diameter	mm	30	35	40	30	35	40	35	40	45	26	28	30	30	35	40	26	28	30	26	28	30	22	26	
Shot Volume	cm ³	120	163	214	120	163	214	182	238	302	72.7	84.4	96.8	120	163	214	72.7	84.4	96.8	72.7	84.4	96.8	38	53	
Shot Weight(PS)	g	109	149	194	109	149	194	165.6	216.6	275	66.2	76.8	88.1	109	149	194	66.2	76.8	88.1	66.2	76.8	88.1	35	48	
Shot Weight(PS)	OZ	3.86	5.25	6.85	3.86	5.25	6.85	5.8	7.6	9.7	2.3	2.7	3.1	3.86	5.25	6.85	2.3	2.7	3.1	2.3	2.7	3.1	1.2	1.7	
Injection Pressure	Mpa	326	240	184	326	240	184	240	184	145	285	246	214	326	240	184	285	246	214	285	246	214	268	192	
Injection Speed	g/s	80	109	142	80	109	142	109	142	179	72	84	96	80	109	142	72	84	96	114	132	152	80	111	
Screw L/D Ratio	L/d	24	20.5	18	24	20.5	18	23.5	20.5	18	23	21.5	20	24	20.5	18	23	21.5	20	23	21.5	20	20	20	
Injection Stroke	mm	170			170			190			137			170			137			137			100		
Injection Speed max	mm/s	124			124			124			150			124			150			236			230		
Screw Rotary Speed max	rpm	260			260			260			170			260			170			170			200		
Distance btw Barrel	mm	500					500					500					500								
CLAMPING UNIT																									
Clamping Force	KN	2600																							
Opening Stroke	mm	520																							
Platen Size	mmxmm	1185x840																							
Space btw.Tie Bars	mmxmm	925x575																							
Daylight Max	mm	1120																							
Mold Thickness(min-max)	mm	200-600																							
Ejector Pin Holes	unit	3+3																							
Ejector Force	KN	33x2																							
Ejector Stroke	mm	125																							
RP Weight	T	1.5																							
PR Diameter	mm	1000																							
POWER UNIT																									
System Pressure	MPa	17.5																							
Pump Motor	kw	15	15	15	11	18.5	11	18.5	11	18.5	11	18.5	11	18.5	11	18.5	11	18.5	11	18.5	11	18.5	11		
Heating Capacity	kw	8.9	8.9	11.7	6.5	8.9	6.5	8.9	6.5	8.9	6.5	8.9	6.5	8.9	6.5	8.9	6.5	8.9	6.5	8.9	6.5	8.9	5		
No. of Heater Zones	unit	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
GENERAL UNIT																									
Oil Tank Capacity	L	450																							
Machine Dimensions(L*W*H)	mxmxxm	6.25x2x1.9																							
Machine Weight(Without RP)	KG	11000																							

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Mold Platen Drawing



Mold Platen Drawing



BM550-MT

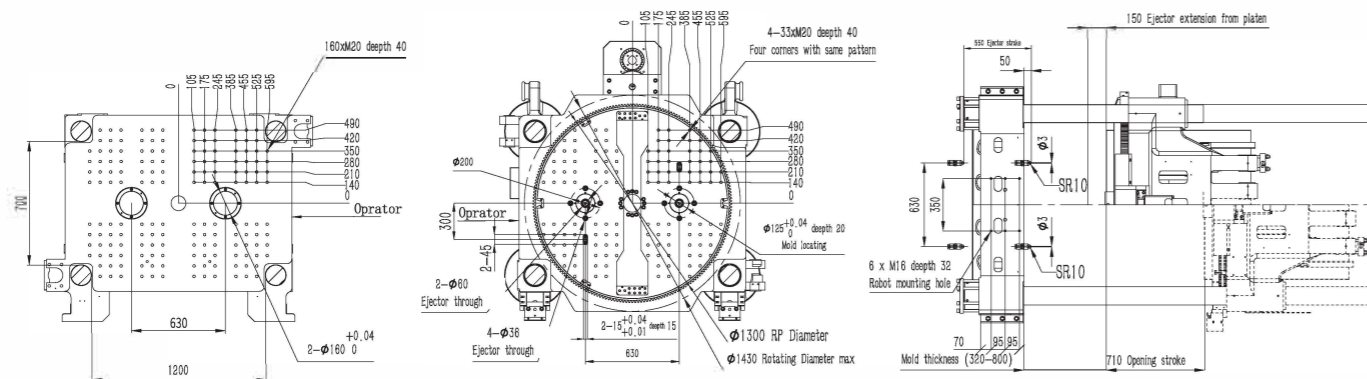
BM600-MT

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BM Series	UNIT	BM550-MT																	
		Combined solutions 1			Combined solutions 2			Combined solutions 3											
INJECTION UNIT		MT1320		MT1320		MT1075		MT1075		MT2300		MT390							
Screw Diameter	mm	50	60	65	50	60	65	45	50	55	45	50	55	60	65	70	30	35	40
Shot Volume	cm ³	589	848	995	589	848	995	389	481	582	389	481	582	989	1161	1347	120	163	214
Shot Weight(PS)	g	536	771	905	536	771	905	354	437	529	354	437	529	900	1057	1226	109	149	194
Shot Weight(PS)	OZ	18.9	27.2	31.9	18.9	27.2	31.9	12.5	15.4	18.7	12.5	15.4	18.7	31.7	37.3	43.2	3.86	5.25	6.85
Injection Pressure	Mpa	224	156	133	224	156	133	277	224	185	277	224	185	233	199	171	326	240	184
Injection Speed	g/s	195	280	329	195	280	329	158	195	236	158	195	236	293	344	399	80	109	142
Screw L/D Ratio	L/d	23.5	20.5	18	23.5	20.5	18	23.5	21	29	23.5	21	29	24.5	21	19.6	24	20.5	18
Injection Stroke	mm	300		300		245		245		185		170							
Injection Speed max	mm/s	109		109		109		109		114		124							
Screw Rotary Speed max	rpm	180		180		235		235		185		260							
Distance btw Barrel	mm	630			630			630											
CLAMPING UNIT																			
Clamping Force	KN	5500																	
Opening Stroke	mm	710																	
Platen Size	mmxmm	1610x1065																	
Space btw.Tie Bars	mmxmm	1200x700																	
Daylight Max	mm	1510																	
Mold Thickness(min-max)	mm	320-800																	
Ejector Pin Holes	unit	5+5																	
Ejector Force	KN	110x2																	
Ejector Stroke	mm	150																	
RP Weight	T	3																	
PR Diameter	mm	1300																	
POWER UNIT																			
System Pressure	MPa	17.5																	
Pump Motor	kw	45		15		37		15		37		15							
Heating Capacity	kw	30.7		11.7		20.4		11.7		18.4		8.9							
No. of Heater Zones	unit	6		4		6		4		5		4							
GENERAL UNIT																			
Oil Tank Capacity	L	1000																	
Machine Dimensions(L*W*H)	mmxmm	8.5x2.5x2.4																	
Machine Weight(Without RP)	KG	28000																	

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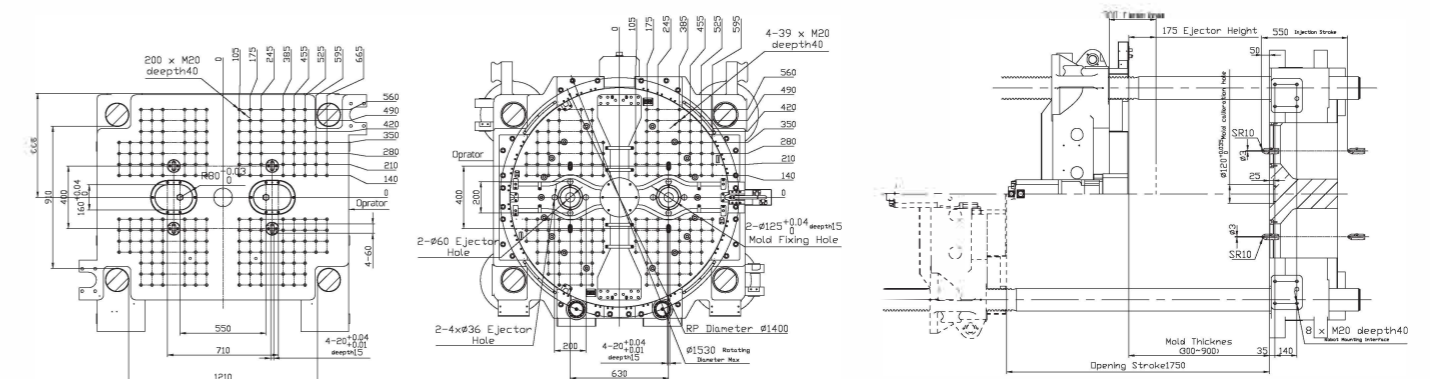
Mold Platen Drawing



BM Series	UNIT	BM600-MT											
		MT1380			MT482								
INJECTION UNIT	T												
Screw Diameter	mm	50		60		65		35		40		45	
Shot Volume	cm ³	589		848		995		182		238		302	
Shot Weight(PS)	g	536.0		771.7		905.5		165.6		216.6		274.8	
Shot Weight(PS)	OZ	18.8		27.1		31.8		5.8		7.6		9.6	
Injection Pressure	MPa	235		163		139		264		162		159.9	
Screw L/D Ratio	L/d	25		21		19.3		23.5		20.5		18	
Injection Stroke	mm	300			190								
Screw Rotary Speed max	rpm	145			225								
Max Nozzle Contact Force	KN	70			30								
Carriage Stroke	mm	550			550								
Distance btw Barrel	mm	550/630/710											
CLAMPING UNIT													
Clamping Force	KN	6000											
Opening Stroke	mm	1450/850											
Platen Size	mmxmm	1610x1310											
Space btw. Tie Bars	mmxmm	1210x910											
Daylight max	mm	1750											
Mold Thickness(min-max)	mm	300-900											
Ejector Pin	Unit	5+5											
Ejector Force	KN	110x2											
Ejector Stroke	mm	300											
RP weight	T	4											
RP Diameter	mm	1400											
POWER UNIT													
System Pressure	MPa	17.5			17.5								
Pump Motor	KW	55			22								
Heating Capacity	KW	16.2			8.8								
No. of Heater Zones	unit	6			4								
GENERAL UNIT													
Oil Tank Capacity	L	900											
Machine Dimensions(LxWxH)	mmxmm	7.8x2.7x2.2											
Machine Weight(Without RP)	KG	30000											

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Mold Platen Drawing



BM1000-MT

BM1500-MT

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BM Series	UNIT	BM1000-MT					
INJECTION UNIT	T	MT1380			MT1100		
Screw Diameter	mm	50	60	65	45	50	60
Shot Volume	cm ³	589	848	995	389	481	692
Shot Weight(PS)	g	536.0	771.7	905.5	354.0	437.7	629.7
Shot Weight(PS)	OZ	18.8	27.1	31.8	12.4	15.4	22.1
Injection Pressure	MPa	235	163	139	290	235	163
Screw L/D Ratio	L/d	25	21	19.3	23	21	17
Injection Stroke	mm	300			245		
Screw Rotary Speed max	rpm	145			175		
Max Nozzle Contact Force	KN	70			70		
Carriage Stroke	mm	550			550		
Distance btw Barrel	mm	550/630/710					
CLAMPING UNIT							
Clamping Force	KN	10000					
Opening Stroke	mm	1800/1200					
Platen Size	mmxmm	1740x1515					
Space btw. Tie Bars	mmxmm	1250x1025					
Daylight max	mm	2300					
Mold Thickness(min-max)	mm	500-1100					
Ejector Pin	Unit	9+9					
Ejector Force	KN	110x2					
Ejector Stroke	mm	350					
RP weight	T	7.5					
RP Diameter	mm	1580					
POWER UNIT							
System Pressure	MPa	17.5			17.5		
Pump Motor	KW	37x2			37		
Heating Capacity	KW	16.2			10.4		
No.of Heater Zones	unit	6			4		
GENERAL UNIT							
Oil Tank Capacity	L	1300					
Machine Dimensions(LxWxH)	mmxmm	10.5x3.3x3.2					
Machine Weight(Without RP)	KG	45000					

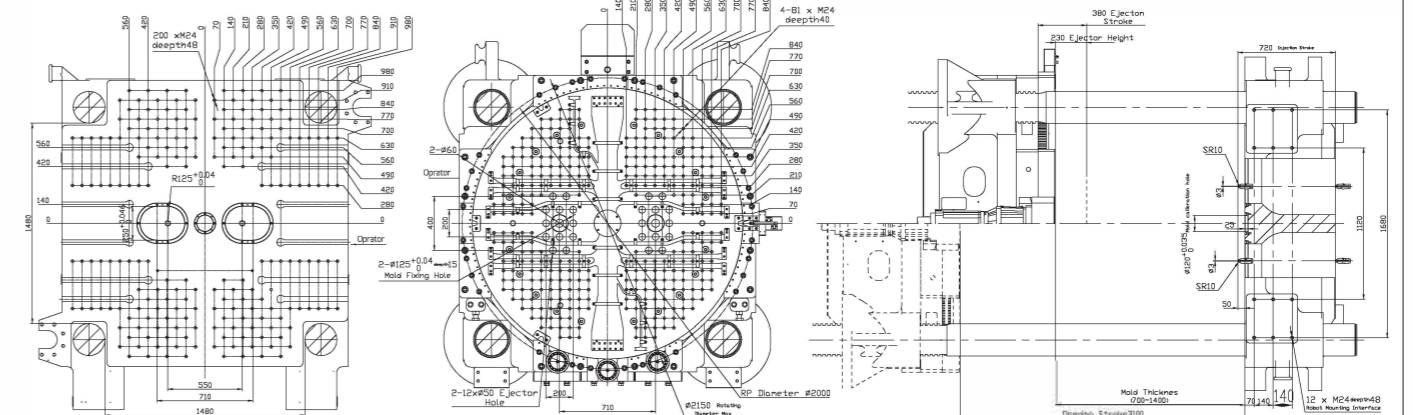
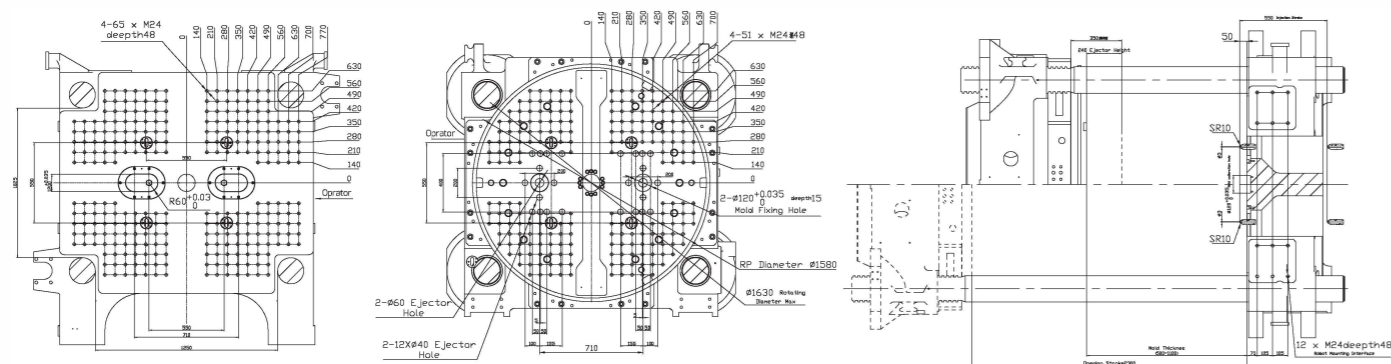
BM Series	UNIT	BM1500-MT					
INJECTION UNIT	T	MT2239			MT1380		
Screw Diameter	mm	60	70	80	50	60	65
Shot Volume	cm ³	989	1346	1759	589	848	995
Shot Weight(PS)	g	900.0	1224.9	1600.7	538.0	771.7	905.5
Shot Weight(PS)	OZ	31.6	43.0	56.2	18.8	27.1	31.8
Injection Pressure	MPa	240	176.7	135	235	163	139
Screw L/D Ratio	L/d	24.5	21	18.5	25	21	19.3
Injection Stroke	mm	350			300		
Screw Rotary Speed max	rpm	166			145		
Max Nozzle Contact Force	KN	70			70		
Carriage Stroke	mm	720			720		
Distance btw Barrel	mm	550/630/710					
CLAMPING UNIT							
Clamping Force	KN	15000					
Opening Stroke	mm	2400/1700					
Platen Size	mmxmm	2120x2120					
Space btw. Tie Bars	mmxmm	1480x1480					
Daylight max	mm	3100					
Mold Thickness(min-max)	mm	700-1400					
Ejector Pin	Unit	13+13					
Ejector Force	KN	210x2					
Ejector Stroke	mm	380					
RP weight	T	12					
RP Diameter	mm	2000					
POWER UNIT							
System Pressure	MPa	17.5			17.5		
Pump Motor	KW	45+37			45		
Heating Capacity	KW	16.2			10.4		
No.of Heater Zones	unit	6			4		
GENERAL UNIT							
Oil Tank Capacity	L	1800					
Machine Dimensions(LxWxH)	mmxmm	12.3x3.5x3.6					
Machine Weight(Without RP)	KG	63000					

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Mold Platen Drawing

Mold Platen Drawing



ML Series

BM-ML two component machine is upgraded based on B5 standard injection machine.

Taking BM150-022ML for example, the main and side injection units are equipped with ϕ 40 and ϕ 25 screws respectively. Mold thickness is increased from 500mm to 550mm while the clamping specification of the B5150-III remains unchanged. Different injection unit size can be changed as per customer's requirement.

Basic Model

- BM120-022ML
- BM150-022ML
- BM200-022ML
- BM260-080ML
-
- BM2200-320ML



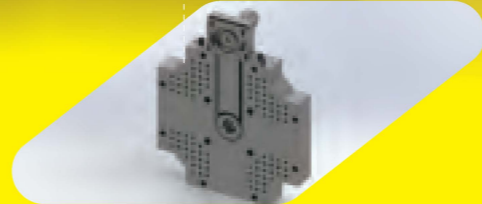
Automatic control
 Austria made KEBA controller model 2880



Movable Hopper Support
 Machines up to 600T featured with movable hopper support (\geq 700T featured with feeding platform)



Rotary platen



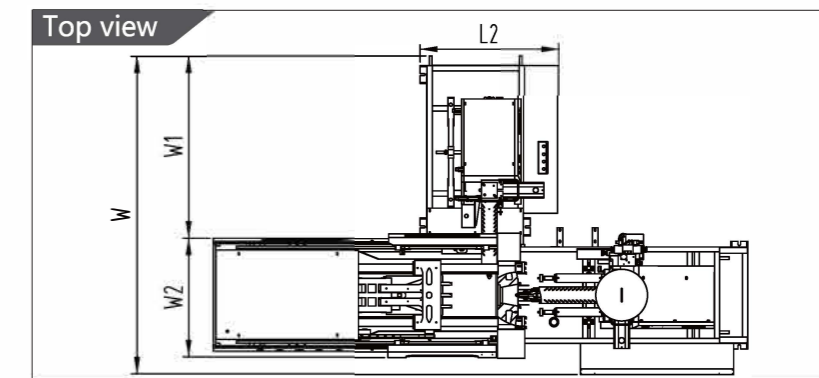
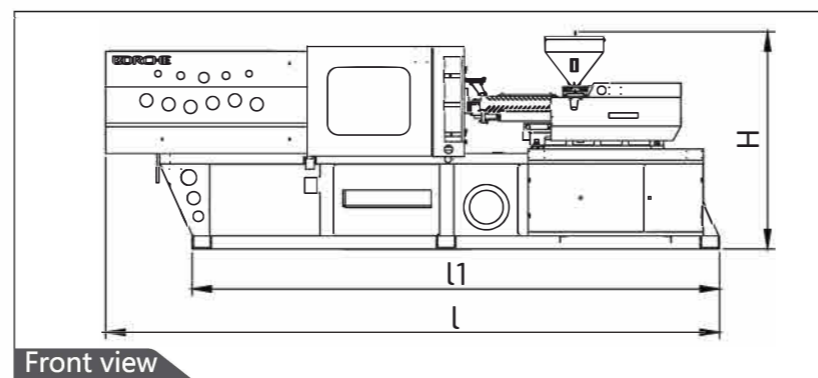
TP indexing unit

- Separate control of two injection units allows different injection sequences
- Separated rotary platen can be changed to TP indexing unit while needed

BM Series	UNIT	BM150-ML										BM200-ML										BM260-ML																		
INJECTION UNIT	L	BM150-060ML					BM150-080ML					BM200-060ML					BM200-080ML					BM260-120ML					BM260-080ML					BM260-060ML								
		ML634	ML153	ML634	ML252		ML634	ML252				ML849	ML153	ML849	ML252		ML849	ML153	ML849	ML252		ML1367	ML388	ML1367	ML252		ML1367	ML388	ML1367	ML252		ML1367	ML153	ML1367	ML153					
Screw Diameter	mm	40	45	50	25	28	40	45	50	30	35	40	45	50	60	25	28	45	50	60	30	35	40	50	60	70	35	40	45	50	60	70	30	35	40	45	50	60	25	28
Shot Volume	cm ³	270	341	422	68	86	270	341	422	120	163	213	389	481	692	68	86	389	481	692	120	163	213	589	848	1154	182	238	302	589	848	1154	120	163	213	389	481	692	68	86
Shot Weight(PS)	g	254	321	397	60	78	254	321	397	113	153	199	365	452	650	60	78	365	452	650	113	153	199	552	800	1085	171	225	283	552	800	1085	113	153	199	365	452	650	60	78
Shot Weight(PS)	OZ	9.0	11.3	14.0	2.1	2.8	9.0	11.3	14.0	4.0	5.4	7.0	13	16	23	2.1	2.8	13	16	23	4.0	5.4	7.0	19.5	28.3	38.3	6.0	8.0	10.0	19.5	28.3	38.3	4.0	5.4	7.0	12.9	16.0	23.0	2.1	2.8
Injection Pressure	MPa	235	185	150	223	178	235	185	150	209	154	118	218	176	123	223	178	218	176	123	209	154	118	232	161	118	212	162	128	232	161	118	209	154	118	218	176	123	223	178
Screw L/D Ratio	L/d	23	20.5	18.5	24.6	22	23	20.5	18.5	24	20.5	18	23	21	17	24.6	22	23	21	17	24	20.5	18	25	21	18	23.5	20.5	18	25	21	18	24	20.5	18	23	21	17	24.6	22
Injection Stroke	mm	215			140		215			170		245			140		245			170		300			190		300			170		245			140					
Screw Rotary Speed max	rpm/min	240			280		240			250		175			280		175			250		145			225		145			250		175			280					
Nozzle Contact Force	KN	30			25		30			30		30			25		30			30		40			30		70			30		70			25					
Nozzle Stroke	mm	250			200		250			250		280			200		280			250		350			550		350			250		350			200					
CLAMPING UNIT																																								
Clamping Force	KN	1500										2000										2600																		
Open Stroke	mm	410										465										520																		
Platen size	mmxmm	670x670										750x750										835x835																		
Space btw. Tie Bars	mmxmm	460x460										510x510										575x575																		
Daylight max	mm	795										940										1150																		
Mold Thinkness(min-max)	mm	135-385										180-480										230-630																		
Ejector Pin	Unit	4+1										4+1										12+1																		
Ejector Force	KN	41.6										50										77.3																		
Ejector Stroke	mm	130.0										150										180.0																		
Rp weight	t	0.6										0.8										1.0																		
Rotary Platen Model		RP570										RP700										RP800																		
RP Diameter	mm	500										600										700																		
POWER UNIT																																								
System Pressure	MPa	17.5	14.5	17.5	14.5		17.5	14.5	17.5	14.5		17.5	14.5	17.5	14.5		17.5	17.5	17.5	14.5		17.5	17.5	17.5	14.5		17.5	14.5	17.5	14.5		17.5	14.5							
Pump Motor	KW	15.0	8.6	15.0	11.0		18.5	8.6	45	11.0		22	11	22	11		22	11	22	11		22	11	22	11		22	8.6												
Heating Capacity	KW	9.6	4.8	9.6	6.5		10.4	4.8	16.2	6.5		16.2	8.8	16.2	6.5		16.2	8.8	16.2	6.5		16.2	6.5	16.2	6.5		16.2	4.8												
No.of Heater Zones	unit	5	4	5	4		5	4	6	4		6	4	6	4		6	4	6	4		6	4	6	4		6	4												
GENERAL UNIT																																								
Oil Tank Capacity	L	290										340										550																		
Machine Dimensions	mxm	5.1x2.5x1.6										5.7x2.7x1.7										6.7x2.8x1.9																		
Machine Weight	KG	5000										6500										12000																		

The specification above is only for reference. Borche reserves the right of change in specification resulting from technical upgrading.

Dimensions Model	L	L1	L2	H	H1	W	W1	W2
BM150-060ML	5070	4435	1080	1645	1197	2490	1480	1100
BM200-060ML	5660	4970	1080	1715	1245	2740	1680	1150
BM260-080ML	6635	5830	1100	1860	1360	2790	1690	1250
BM320-080ML	7310	6230	1100	1855	1289	2750	1820	1450
BM400-120ML	8286	7121	1180	1930	1332	2663	1723	1700

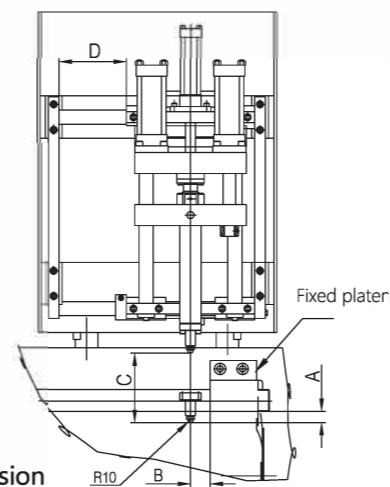


Appearance Dimension

BM Series	UNIT	BM320-ML												BM400-ML										BM500-ML										BM600-ML																																																						
INJECTION UNIT	L	BM320-120ML				BM320-080ML				BM320-060ML				BM400-150ML					BM400-120ML					BM400-080ML					BM500-150ML					BM500-120ML					BM600-150ML																																																	
		ML2239	ML388	ML2239	ML252	ML2239	ML153	ML3266	ML634	ML3266	ML388	ML3266	ML252	ML3266	ML634	ML3266	ML388	ML3266	ML634	ML3266	ML388	ML3266	ML634	ML3266	ML388	ML3266	ML634	ML4155	ML634																																																											
Screw Diameter	mm	60	70	80	35	40	45	60	70	80	30	35	40	60	70	80	25	28	70	80	90	40	45	50	70	80	90	35	40	45	70	80	90	30	35	40	70	80	90	40	45	50	70	80	90	35	40	45	80	85	95	40	45	50																																		
Shot Volume	cm ³	989	1346	1759	182	238	302	989	1346	1759	120	163	213	989	1346	1759	68	86	1539	2010	2544	270	341	422	1539	2010	2544	182	238	302	1539	2010	2544	120	163	213	1539	2010	2544	270	341	422	1539	2010	2544	182	238	302	2262	2554	3190	270	341	422																																		
Shot Weight(PS)	g	928	1266	1652	171	225	283	928	1266	1652	113	153	199	928	1266	1652	60	78	1446	1890	2366	254	321	397	1446	1890	2366	171	225	283	1446	1890	2366	113	153	199	1400	1829	2315	254	321	397	1400	1829	2315	171	225	283	2058	2324	2902	254	321	397																																		
Shot Weight(PS)	OZ	32.8	44.7	58.4	6.0	8.0	10.0	32.8	44.7	58.4	4.0	5.4	7.0	32.8	44.7	58.4	2.1	2.8	51.1	66.8	82.5	9.0	11.3	14.0	51.1	66.8	82.5	6.0	8.0	10.0	51.1	66.8	82.5	4.0	5.4	7.0	49	65	82	9.0	11.3	14.0	49	65	82	6.0	8.0	10.0	184	82	102	9.0	11.3	14.0																																		
Injection Pressure	MPa	226	166	127	212	162	128	226	166	127	209	154	118	226	166	127	223	178	212	162	128	235	185	150	212	162	128	212	162	128	212	162	128	209	154	118	212	162	128	235	185	150	212	162	128	212	162	128	22.3	163	130	235	185	150																																		
Screw L/D Ratio	L/d	24.5	21	18.5	23.5	20.5	18	24.5	21	18.5	24	20.5	18	24.5	21	18.5	24.6	22	24	21	19	23	20.5	18.5	24	21	19	23.5	20.5	18	24	21	19	24	21	19	24	21	19	23	20.5	18.5	24	21	19	23	20.5	18.5	21	19	23	20.5	18.5																																			
Injection Stroke	mm	350				190				350				170					350					140					400					215					400					190					400					170					400					215																								
Screw Rotary Speed max	rpm/min	166				225				166				250					166					280					140					240					140					225					140					250					145					240					145					225					145					240				
Nozzle Contact Force	KN	70				30				70				30					70					25					80					30					80					30					80					30					80					30					80					30														
Nozzle Stroke	mm	360				250				360				250					360					200					395					250					395					250					395					250					450					450					450					450					510					450				
CLAMPING UNIT																																																																																								
Clamping Force	KN	3200												4000										4000										5000					6000																																																	
Open Stroke	mm	580												655										655										1335/770					1450/880																																																	
Platen size	mmxmm	940x940												1060x1030										1060x1030										1210x1180					1310x1310																																																	
Space btw. Tie Bars	mmxmm	670x670												730x700										730x700										860x830					910x910																																																	
Daylight max	mm	1310												1405										1405										1600					1750																																																	
Mold Thickness(min-max)	mm	280-730												280-750										280-750										265-830					300-870																																																	
Ejector Pin	Unit	12+1												12+1										12+1										4+8+4+1					8+8+4+1																																																	
Ejector Force	KN	77.3												111.3										111.3										110.0					135.0																																																	
Ejector Stroke	mm	180.0												205.0										205.0										250.0					280.0																																																	
Rp weight	t	1.1												2.0										2.0										3.0					4.0																																																	
Rotary Platen Model		RP920												RP1050										RP1050										RP1150					RP1360																																																	
RP Diameter	mm	800												900										900										1050					1200																																																	
POWER UNIT																																																																																								
System Pressure	MPa	17.5				17.5				17.5				14.5					17.5					14.5					17.5					14.5					17.5					17.5					17.5					17.5					17.5					17.5																								
Pump Motor	KW	37				11				37				11					37					8.6					45					15					45					11					30+22					15					30+22					11					30+30					15.0														
Heating Capacity	KW	18.5				8.8				18.5				6.5					18.5					4.8					24.5					9.6					24.5					8.8					24.5					6.5					25					9.6					25					8.8					32					9.6				
No.of Heater Zones	unit	6				4				6				4					6					4					6					5					6					4					6					5					6					5																								
GENERAL UNIT																																																																																								
Oil Tank Capacity	L	785												900										900										800/200					800/200																																																	
Machine Dimensions	mxmxm	7.3x2.8x1.9												8.3x2.9x2										8.3x2.9x2										7.3x3.2x2.2					7.5x3.4x2.2																																																	
Machine Weight	KG	15000												19000										19000										25000					25000																																																	

The specification above is only for reference. Borche reserves the right of change in specification resulting from technical upgrading.

Model	Dimensions	A	B	C	D
-060ML		40	70	250	235
-080ML		50	80	250	300
-120ML		50	80	250	300

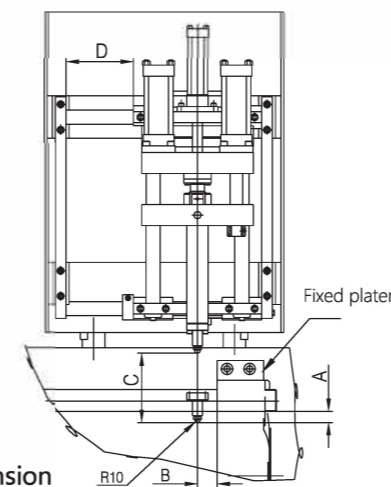


Side Injection Unit Dimension

INJECTION UNIT	UNIT	BM1500-ML												BM1800-ML								BM2200-ML																																	
		BM1500-320ML				BM1500-260ML				BM1500-200ML				BM1800-320ML				BM1800-260ML				BM1800-200ML				BM2200-400ML				BM2200-320ML				BM2200-260ML																					
		ML3266		ML2239		ML3266		ML1367		ML3266		ML849		ML17650		ML2239		ML17650		ML1367		ML17650		ML849		ML29500		ML3266		ML29500		ML2239		ML29500		ML1367																			
Screw Diameter	mm	70	80	90	60	70	80	70	80	90	50	60	70	80	90	45	50	60	130	140	150	60	70	80	130	140	150	50	60	70	130	140	150	45	50	60	150	160	170	70	80	90	150	160	170	60	70	80	150	160	170	50	60	70	
Shot Volume	cm ³	1539	2010	2544	989	1346	1759	1539	2010	2544	589	848	1154	1539	2010	2544	389	481	692	9291	10776	12370	989	1346	1759	9291	10776	12370	589	848	1154	9291	10776	12370	389	481	692	16611	18900	21336	1539	2010	2544	16611	18900	21336	989	1346	1759	16611	18900	21336	589	848	1154
Shot Weight(PS)	g	1446	1890	2366	928	1266	1652	1446	1890	2366	552	800	1085	1446	1890	2366	365	452	650	8455	9806	11257	928	1266	1652	8455	9806	11257	552	800	1085	8455	9806	11257	365	452	650	15116	17199	19416	1446	1890	2366	15116	17199	19416	928	1266	1652	15116	17199	19416	552	800	1085
Shot Weight(PS)	OZ	51.1	66.8	82.5	32.8	44.7	58.4	51.1	66.8	82.5	19.5	28.3	38.3	51.1	66.8	82.5	13	16	23	298	346	397	32.8	44.7	58.4	298	346	397	19.5	28.3	38.3	298	346	397	13	16	23	533	607	685	51.1	66.8	82.5	533	607	685	32.8	44.7	58.4	533	607	685	19.5	28.3	38.3
Injection Pressure	MPa	212	162	128	226	166	127	212	162	128	232	161	118	212	162	128	218	176	123	191	164	143	226	166	127	191	164	143	232	161	118	191	164	143	218	176	123	178	156	139	212	162	128	178	156	139	226	166	127	178	156	139	232	161	118
Screw L/D Ratio	L/d	24	21	19	24.5	21	18.5	24	21	19	25	21	18	24	21	19	23	21	17	24	22	20	24.5	21	18.5	24	22	20	25	21	18	24	22	20	23	21	17	23	21.5	20	24	21	19	23	21.5	20	24.5	21	18.5	23	21.5	20	25	21	18
Injection Stroke	mm	400		350		400		300		400		245		700		350		700		300		700		245		940		400		940		350		940		300																			
Screw Rotary Speed max	rpm/min	140		166		140		145		140		175		81		166		81		145		81		175		71		140		71		166		71		145																			
Nozzle Contact Force	KN	80		70		80		70		80		30		200		70		200		40		200		30		290		80		290		70		290		40																			
Nozzle Stroke	mm	395		550		395		350		395		450		920		550		920		550		920		550		1065		550		1065		550		1065		550																			
CLAMPING UNIT																																																							
Clamping Force	KN	15000												18000								18000								22000																									
Open Stroke	mm	2400/1700												2500/1700								2500/1700								2500/1900																									
Platen size	mmxmm	2120x2120												2400x2240								2400x2240								2620x2370																									
Space btw. Tie Bars	mmxmm	1480x1480												1650x1550								1650x1550								1850x1600																									
Daylight max	mm	3100												3200								3200								3600																									
Mold Thickness(min-max)	mm	700-1400												700-1500								700-1500								800-1700																									
Ejector Pin	Unit	8+8+8+1												8+8+8+1								8+8+8+1								8+8+8+1																									
Ejector Force	KN	300.0												300.0								300.0								390.0																									
Ejector Stroke	mm	380.0												380.0								380.0								450.0																									
Rp weight	↑	11.0												15.0								15.0								15.0																									
Rotary Platen Model		RP2190												RP2340								RP2340								RP2340																									
RP Diameter	mm	2000												2150								2150								2150																									
POWER UNIT																																																							
System Pressure	MPa	17.5		17.5		17.5		17.5		17.5		17.5		17.5		17.5		17.5		17.5		17.5		17.5		17.5		17.5		17.5		17.5		17.5		17.5		17.5		17.5		14.5													
Pump Motor	KW	45+37x2		37		45+37x2		22		45+37x2		18.5		45x3		37		45x3		22		45x3		18.5		45x3+30		45		45x3+30		37		45x3+30		22																			
Heating Capacity	KW	64		18.5		64		16.2		64		10.4		79		18.5		79		16.2		79		10.4		97		24.5		97		18.5		97		16.2																			
No.of Heater Zones	unit	8		6		8		6		8		5		8		6		8		6		8		5		9		6		9		6		9		6																			
GENERAL UNIT																																																							
Oil Tank Capacity	L	1900/630												2200/630								2200/630								2700/630																									
Machine Dimensions	mxmxm	12.1x6.1x3.4												12.9x6.7x3.4								12.9x6.7x3.4								15.8x6.7x3.4																									
Machine Weight	KG	75000												80000								80000								150000																									

The specification above is only for reference. Borsche reserves the right of change in specification resulting from technical upgrading.

Model	Dimensions			
	A	B	C	D
-060ML	40	70	250	235
-080ML	50	80	250	300
-120ML	50	80	250	300



MV Series

MV two-shot machine is designed with vertical injection structure. The injection unit mounted vertically on the top of fixed platen, so machine covers the same footprint of standard machine.

Basic Model

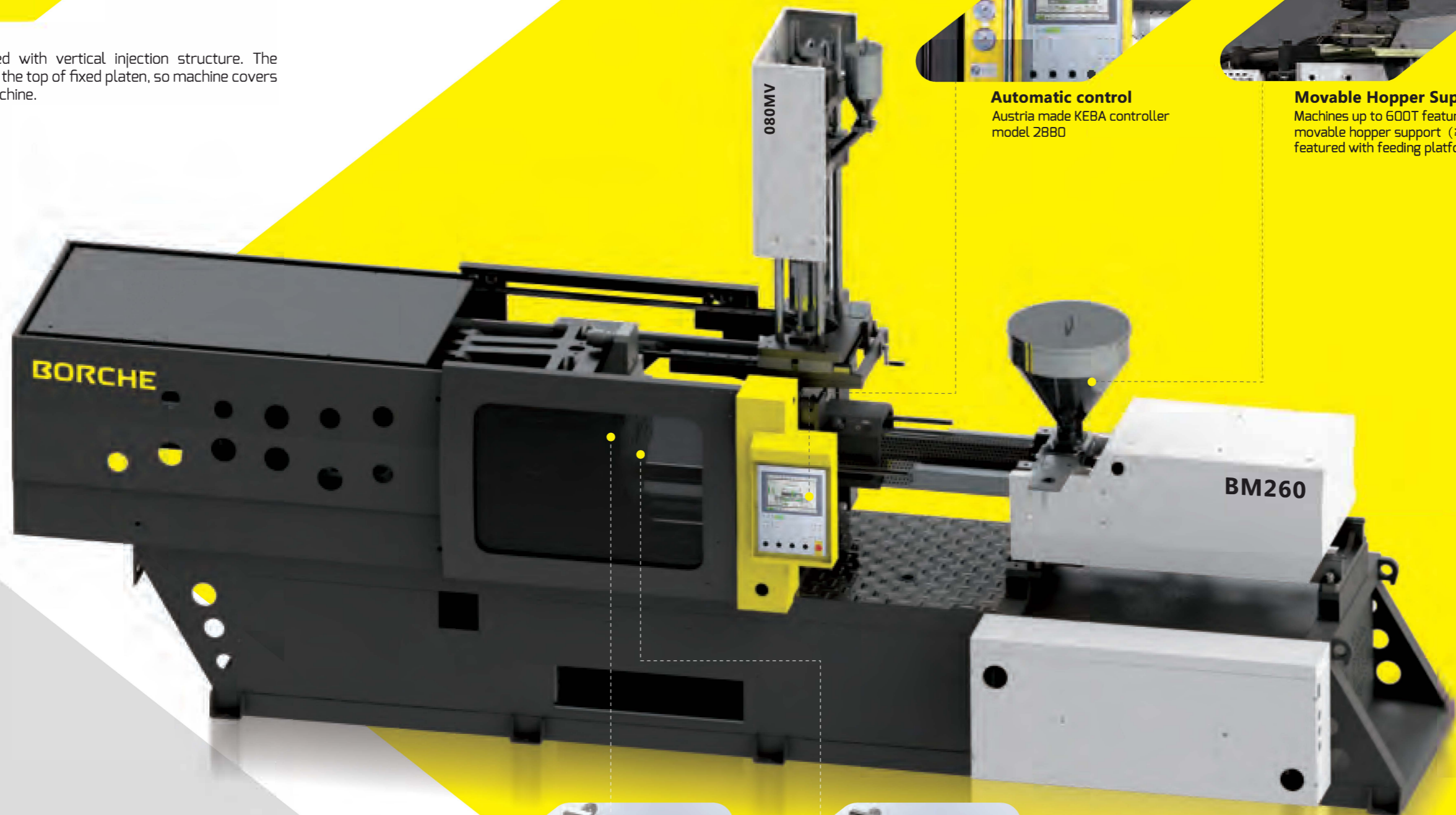
BM150-060MV
 BM200-060MV
 BM260-060MV



Automatic control
 Austria made KEBA controller model 2880



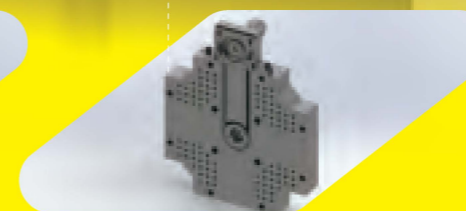
Movable Hopper Support
 Machines up to 600T featured with movable hopper support (≥ 700T featured with feeding platform)



- Separate control of two injection units allows different injection sequences
- Separated rotary platen can be changed to TP indexing unit while needed

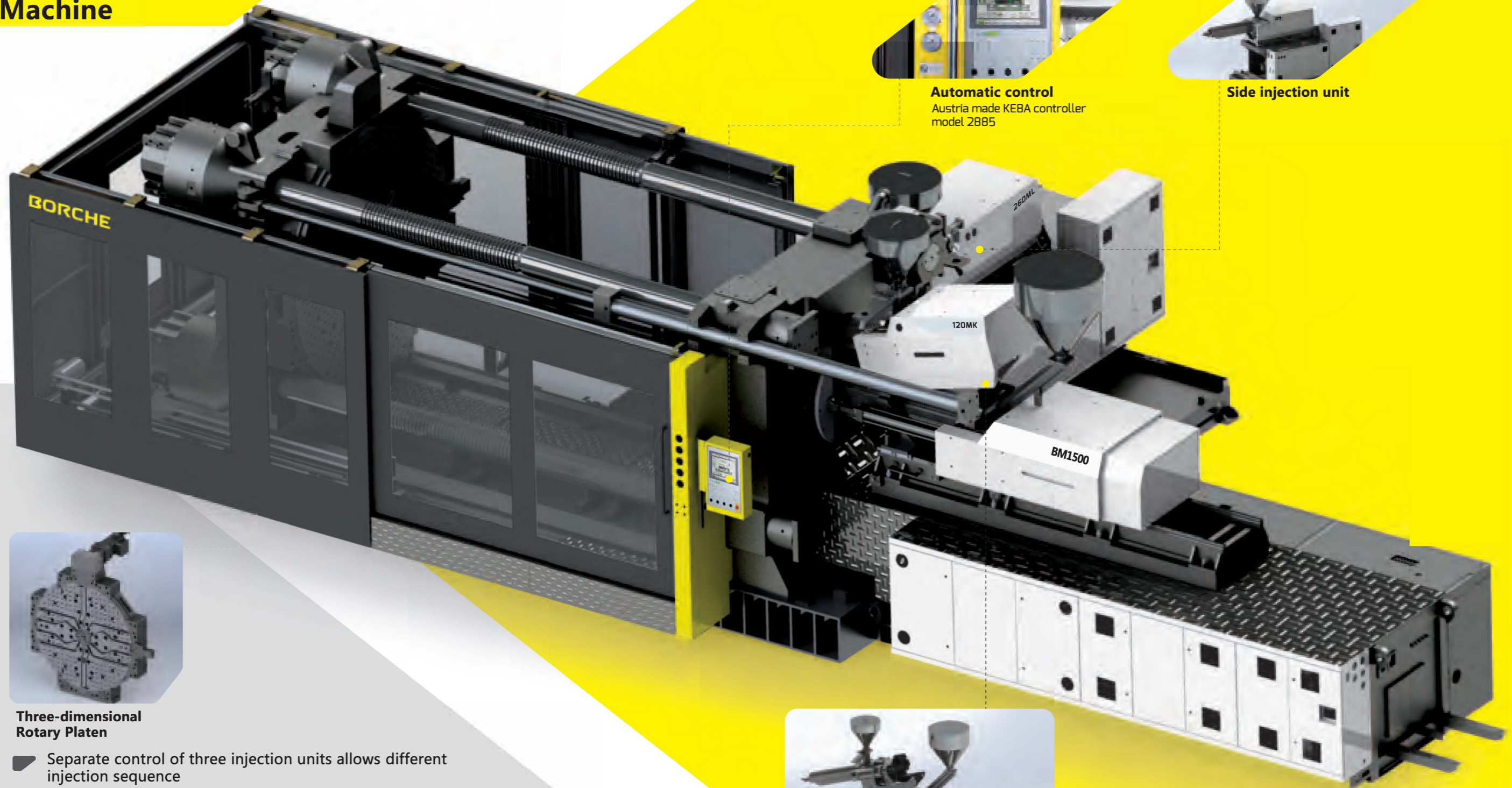


Rotary Platen



TP Indexing Unit

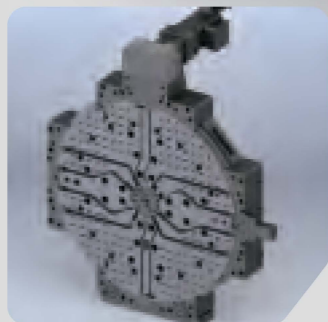
**Three-shot
Machine**



Automatic control
Austria made KEBA controller
model 2885



Side injection unit



**Three-dimensional
Rotary Platen**

- Separate control of three injection units allows different injection sequence
- Three-dimensional rotary platen driven by servo hydraulic motor
- Borche self-developed three-shot co-injection program
- Customized four-shot and five-shot machines are available

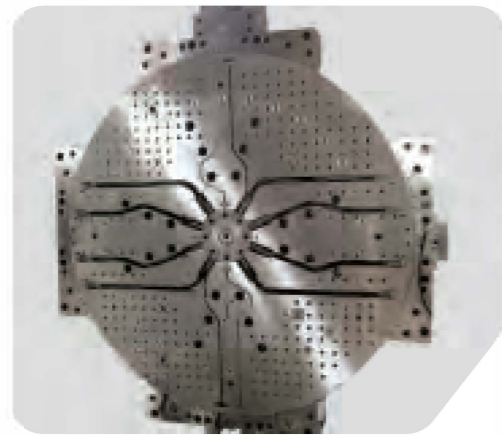


**Piggyback K type injection
molding unit**

Rotary Platen

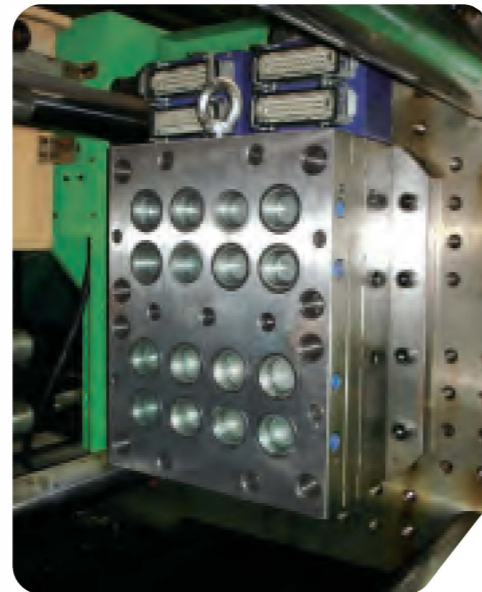
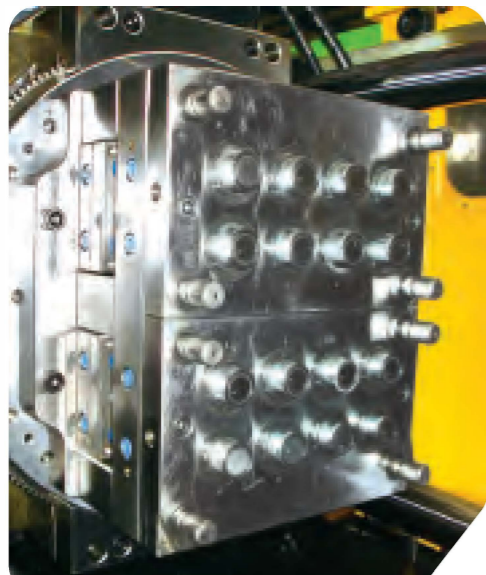
Side Injection Unit

1. Latest water-running axis is designed with low pressure loss. As the seal of central axis adopts TRELLE BORG ring, it features better performance and longer life.
2. Hydraulic motor is standard feature; servo drive is available as option.
3. Friction factor can be lowered, thanks to rotary plate made of special wear-resistant material and patented circular bearing.
4. Specific supporter offsets the gap between bearings to prevent the rotary plate from drooping
5. Before the rotating of rotary plate, the base doesn't need to be lifted by mechanical device to remove the "friction" .
6. Equipped with high-pulse rotary encoder, rotary plate rotates at the angle of $0^{\circ}\sim 180^{\circ}\sim 0^{\circ}$, $0^{\circ}\sim 120^{\circ}\sim 240^{\circ}\sim 0^{\circ}$, $0^{\circ}\sim 240^{\circ}\sim 120^{\circ}\sim 0^{\circ}$, which ensures its rotating accuracy. With pin positioning, its position accuracy is less than 0.02mm. The switch from "two-position" to "three-position" can be operated in computer.



Models:

RP570 for BM 120 & BM150 machine
 RP700 for BM200 machine
 RP800 for BM260 machine
 RP920 for BM320 machine
 RP1050 for BM400 machine
 RP1150 for BM500
 RP1360 for BM600
 RP1450 for BM700
 RP1540 for BM800
 RP1720 for BM1000&BM200
 RP2190 for BM1500
 RP2340 for BM1800& BM2200



TP Indexing Unit

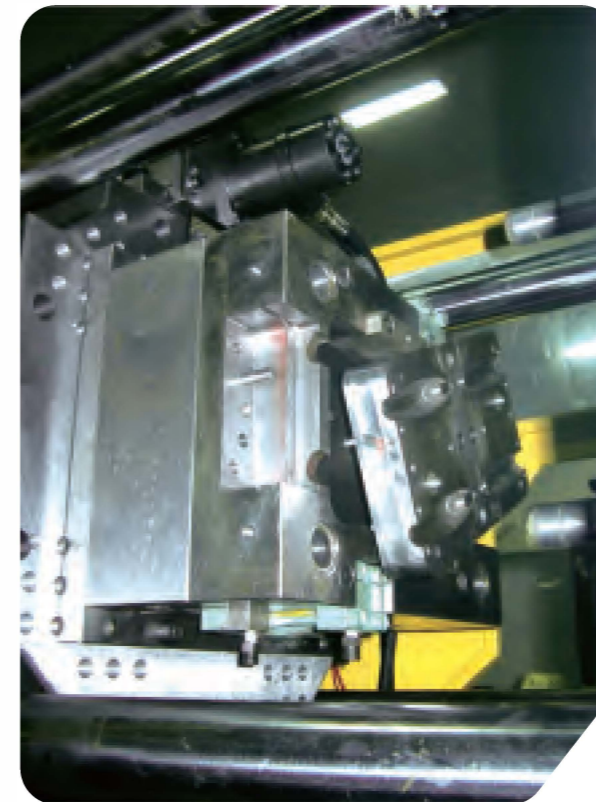
1. Central spindle connected to mold core enable mold core forward movement, and retract to original position after 180° rotation making ready for second shot.
2. Central spindle equips with two water channels providing cooling for mold core, its length can be modified according to customer's request.
3. Choice of three models compatible with injection molding machine from 120-320 tons, can be tailor-made in accordance with customer requirement.
4. AC servo motor system as an option can provide multi angle control at 90°, 120° and 180°



Two-shot pen



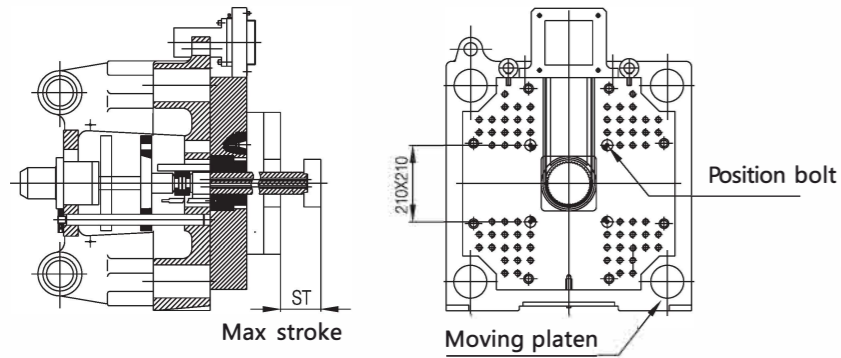
Indexing Shaft with Cooling System



Models:

TP580 for BM120 BM150
 TP700 for BM200 BM260
 TP900 for BM320

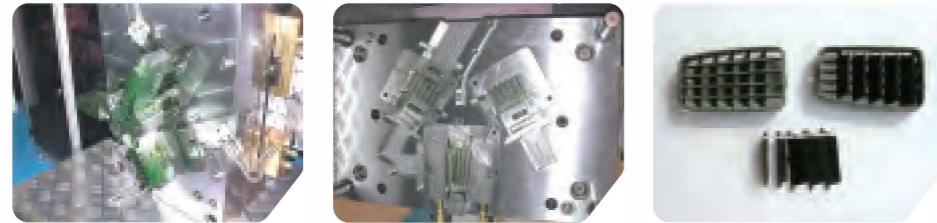
TP Indexing Unit



TP Indexing Unit Dimension

TP Mode		TP580		TP700	
Stroke	Model	BM120	BM150	BM200	BM260
	ST	90	130	150	180

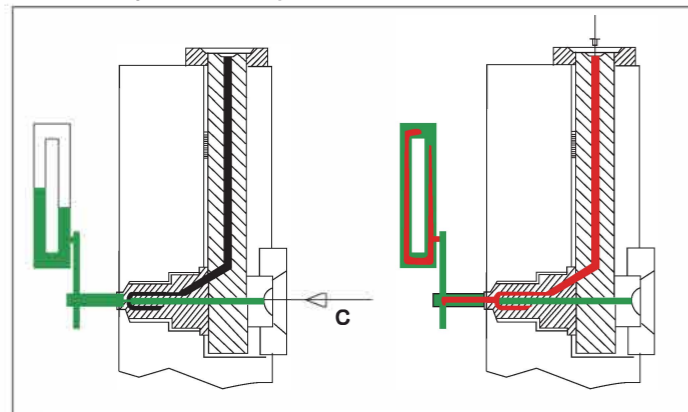
Three-shot machine with three shot indexing unit can realize parts moving and assembly inside the mold, which greatly improves quality and productivity.



TP Indexing Unit Sketch

The sandwich molding unit is mounted on the fixed platen of "L type" or "V type" two-shot machine. The mold with its conventional sprue system is installed in front of the unit. Sandwich and Color effects are created during interval injection molding by the flowing together of the two plastics.
Advantages: Recycle plastic or foaming plastic material can be used as core material to save cost.

Sandwich Injection Theory Sketch



Models:
 SW-150N for 150T machine
 SW-200N for 200T machine
 SW-260N for 260T machine
 SW-320N for 320T machine

Machine tonnage > 320T can be tailor-made in accordance with mold requirement.



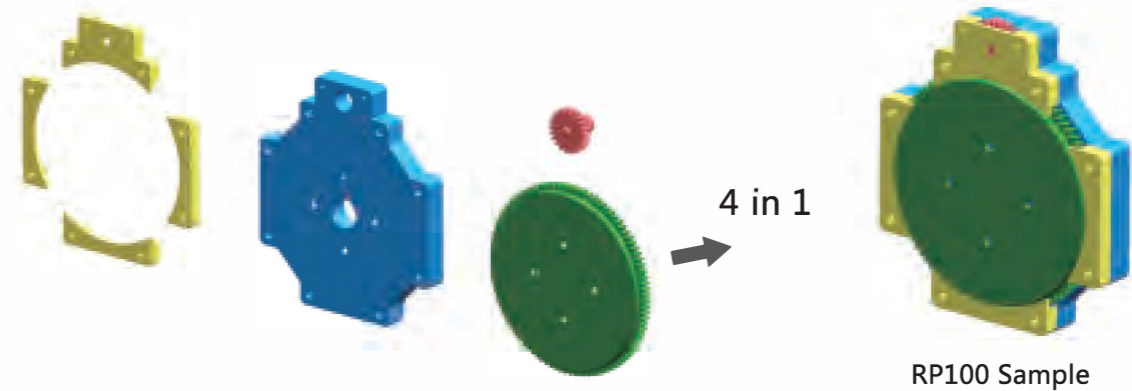
Multi-shot Injection + In-mold Automation

The prime requirement of "molding the future" is to process some of the secondary processing inside the mold. The implementation of the mold design, made plastic parts becomes the final product after leaving the cavity. This is not a traditional automation, but is the integration of modern injection molding machine and peripherals as well as advanced tooling, thus creates a modern intelligent plastic process.

The "innovative 4- shot Production Cell" includes "BM260-4C 4 color injection molding machine", a "4 color in-mold assembly mold". This system is to produce a "4 color PR100 rotary platen model" the turn table and the gear can rotate freely after taken out from mold.

This "multi-color injection + in-mold assembly process" is the first time operated in China. The "4 color in-mold assembly mold" itself is acted as a macro machine. Moving parts, hydraulic core pulling and position sensors are equipped inside the mold. The four-color injection molding machine supplies hydraulic power connects the sensor signals and controls the sequence action of the mold.

The four-color injection molding machine is starting injection respectively, molding seven pieces of parts in the mold cavities. These seven parts defined as the four stations, then carrying out a series of opening and closing of mold, plus core pulling activities. The four stations functioning in-mold assembly to complete 4 in 1 of the RP100 model.



Application

Personal care: Teeth brush

Model : BM260-080ML
 Clamping force : 2600KN
 Screw diameter : D50/D30
 Number of cavity : 12+12
 Material : PP+TPE
 Production cycle : 50s



Automobile spare part: Taillight lampshade

Model : BM1500-260ML
 Clamping force : 15000KN
 Screw diameter : D80/D5
 Number of cavity : 2+2
 Material : PC+PC
 Production cycle : 55s



Electric tool: Handle

Model : BM320-080ML
 Clamping force : 3200KN
 Screw diameter : D50/D30
 Number of cavity : 2+2
 Material : PA6+TPE
 Production cycle : 53s



Electric outdoor fitness tool: Fitness handle

Model : BM260-080ML
 Clamping force : 2600KN
 Screw diameter : D50/D30
 Number of cavity : 4+4
 Material : PA66+TPE
 Production cycle : 39s



Features Configuration

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Standard Features

SAFETY UNIT		
1	New National Safety Standard	●
2	European technical standard totally enclosed cover	●
3	Double emergency button	●
4	Safety platform under mold area (≥700T)	●

CLAMPING UNIT		
1	5 points-doubt toggle structure	●
2	Two platen clamping	●
3	Tie bar with high intensity chromeplate technics	●
4	Separate lock ring on fixed platenA	●
5	Extra-large space for ejection operation	●
6	Anti-abrasion strip	●
7	Centralized Lubrication system with end position pressure monitoring	●
8	Low pressure mold protection system	●
9	Automatic mold clamping force adjustment function	●
10	Mold adjustment gear ring driven by hydraulic motor	●
11	120-500T Hydraulic driving RP/TP (120-500T)	●
12	600-2200T Servo driving RP/TP(600-2200T)	●
13	Multi-hydraulic ejection device	●
14	Robot interface	●
15	Electric safety door (≥700T)	●

INJECTION UNIT		
1	Double carriage structure-right angle	●
2	Double injection cylinder-right angle	●
3	Single injection cylinder- parallel	●
4	High abrasion resistance screw and barrel	●
5	Nozzle center adjust device	●
6	Barrel protection cover	●
7	Injection unit adopts linear guide rail	●
8	Movable hopper up to 650T	●
9	Feeding platform above 1650T	●
10	Three size screw and barrel available	●
11	High-torque hydraulic motor drive screw	●
12	Screw speed testing device	●
13	Plasticizing Screw cold protection	●
14	Screw backward function	●
15	Ten stages injection control, pressure/speed can be adjusted	●
16	Ten stages pressure holding control, pressure/speed can be adjusted	●
17	Five stages plasticizing control, pressure/speed can be adjusted	●

HYDRALL LINIT		
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 (≥500T)	●
9	Self-closed type absorb oil filter (≥400T)	●
10	Iron-separator	●
11	Two sets core puller both fix platen & moving platen	●

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 heating	●
11	Data protect lock	●
12	Parameter quick settings	●
13	Robot interface	●

INTERCONNECTED UNIT		
1	Temporary authorization of OPC-UA/DA	●
2	PlasCloud App, basic version	●
3	Machine Kanban: status, cycle and output,etc.	●
4	Remote view: process parameter, SPC, machine setup	●
5	Machine management: spot check, maintenance, repair	●
6	Report: daily report, monthly report	●

Features Configuration

BORCHE

Optional Features

SAFETY UNIT		
1	Main power with rotation handle	○
2	Mechanical safety lock device	○
3	Core pulling with pressure relief function	○

CLAMPING UNIT		
1	Multiple sets hydraulic core pulling	○
2	Hydraulic unscrewing	○
3	T slot platen (≤800 T)	○
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	Graphite copper bush on moving platen	○
10	Transducer on moving platen	○
11	Manual centralized lubrication for rear platen	○
12	4 in-4 out water regulator	○
13	Photo sensor	○
14	Extra water manifold	○
15	RP/TP servo driving	○
16	Alarm lights	○

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	Enlarge 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 cylinder	○
14	Ceramic heater band	○
15	Infrared energy saving heater band	○
16	Manual centralized lubrication for injection unit	○
17	Stainless steel hopper	○

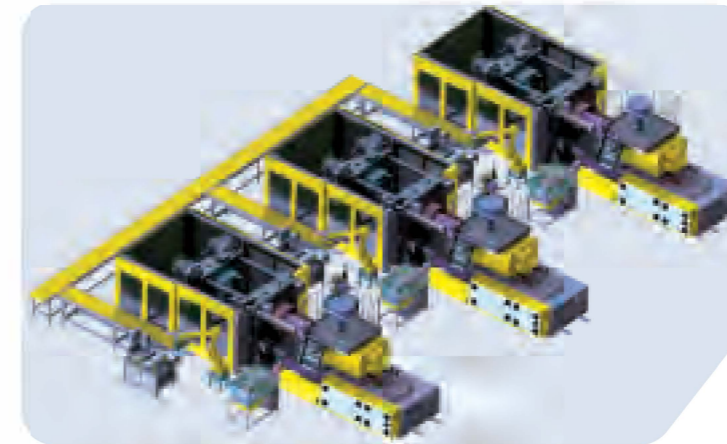
HYDRAULIC UNIT		
1	Proportional back pressure (≤1000T)	○
2	Close loop cooling system	○
3	Filter on heat exchanger inlet port	○
4	Enlarge one stage motor and pump	○
5	VDP system	○
6	Ejector on fly	○
7	Parallel charging	○
8	High pressure bypass oil filter (≤500 T)	○
9	High speed proportional valve for 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	○

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	○

Optional Functions Of Intelligent Manufacturing:

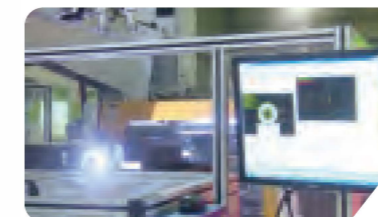
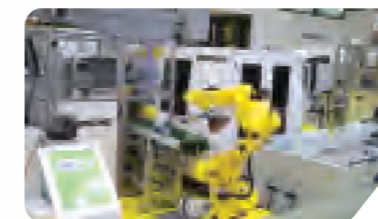
1	With Industry 4.0 on IMM, three mold change ways can be realized with mold change platform: one-stop automatic mold change, semi-automatic mold change and manual mold change. IMM can automatically identify mold and acquire parameter of mold change, technique and peripherals. The hole of IMM should 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 Prognosis 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 on 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.

