

BOLE 伯乐塑机

Injection Moulding Machine



www.bole-machinery.com

E-mail:bole-sales@shuangma-machinery.com



伯乐塑机公众号

宁波双马机械工业有限公司

NINGBO SHUANGMA MACHINERY INDUSTRY CO., LTD.

地址：浙江宁波北仑纬三路99号
ADD:NO.99 WEISAN ROAD,XIAOGANG,NINGBO,CHINA
咨询热线：400-777-6111

销售部电话：0574-86179688 86179588 TEL:+86-574-86188007
传真：0574-86175878 FAX:+86-574-86188008
售后服务电话：0574-86181111 PC:315821

DK系列二板机

来自德国 匠心之作
GERMAN ORIGIN

BOLE 伯乐塑机
Injection Moulding Machine

本手册受版权法保护，未经版权法明确许可的任何使用均需事先得到双马公司批准。
本手册为2017年1月印刷版本，之前印发的双马公司产品样本为无效版本。
个别插图和信息可能与实际交付的机器不同。

THIS CATALOGUE ARE PROTECT BY LAW OF COPY RIGHT,ANY USE WITHOUT THE EXPRESS PERMISSION OF THE LAW OF COPY RIGHT,MUST GET APPROVAL OF SHUANGMA IN ADVANCE.

THIS VERSION WAS PRINTED IN JANUARY 2017.
ANY DIFFERENCE SPECIFICATION FROM OLD VERSION SHOULD BE SUBJECT TO THIS VERSION.



德国品质·中国成本
GERMAN QUALITY · CHINESE COST

BOLE 伯乐塑机
Injection Moulding Machine



DK系列二板机

DK Series Two Platen Injection moulding machine

BOLE 伯乐塑机
Injection Moulding Machine

提供高精度、更可靠、高性价比的注塑解决方案。
Offer high precision, high performance,
more stable solution for Injection moulding machine.

更高的生产效率
与欧州品牌同步的干循环周期
Higher productivity
Dry cycle time equals to European machine

专利的拉杆设计
保护拉杆，超长寿命
Patented tie-bar design
Tie-bar protection, long lifetime

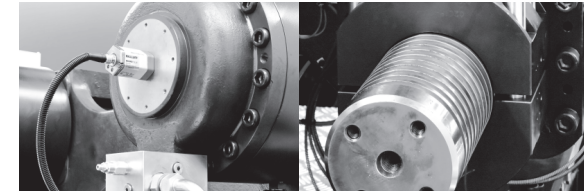
独特的结构设计
开合模控制，快速\平稳\精确
Unique structure design
Opening-closing control, fast\stable\precise

超强的控制系统
优秀的重复精度表现
Super-strong control system
Excellent repeatability

先进的模块化理念
快速响应客户的定制化要求
Advanced module design
High response solution to customization



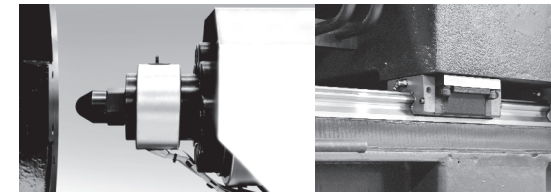
锁模单元-技术领先
Clamping unit
leading technology



- **专利拉杆设计**
攻克困扰中国三板机厂商的技术瓶颈。
- **独特的开模油缸及油路设计**
实现最佳的稳定性，与更快的干循环周期。
- **先进的抱闸设计**
双向缓冲，运行更可靠平稳。
- **高刚性模板**
专利设计，应力均匀，变形小。
- **灵敏的模保功能**
最大程度的保护模具。

- **patented tie-bar design**
broke the technology bottleneck of Chinese 2-platen manufacturers
- **unique opening-closing cylinder and hydraulic design**
best stability, shorter dry cycle time
- **advanced half-nut design**
double side buffer, stable movement
- **high rigid platen**
patented design, even stress, less deforming
- **sensitive mould protect fuction**
maximum protect mould

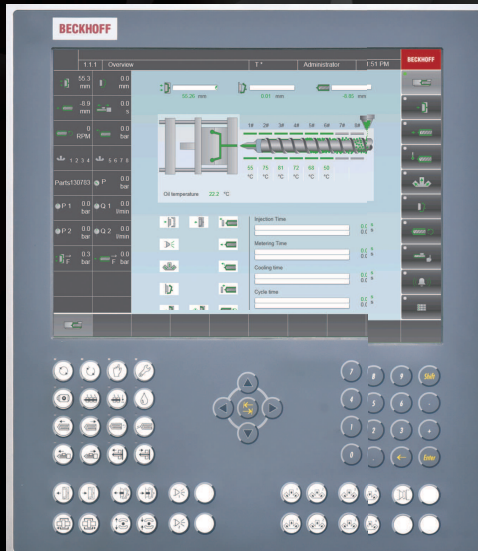
注射单元-效率最佳
Injection unit
high efficiency



- **德国设计的塑化系统**
塑化效率远超国内水平20%以上。
- **螺杆长径比统一**
全部螺杆长径比均为23:1，塑化效果极大提高。
- **注射单元的灵活组合**
锁模与注射单元易于搭配，以满足不同产品的成型。
- **模块化的电箱设计**
方便扩展，易于维护。

- **German designed plasticizing unit**
20% more than Chinese average design of plasticization
- **same L/D**
L/D of 23:1 for A\B\C type of screw, better plasticization
- **flexible adaption of injection units**
flexible adaption between injection and clamping units,
easy for customized molding
- **module electric cabinet**
flexible extension,easy maintenance

控制系统-性能卓越 controller excellent performance



- **德国原装进口的Beckhoff (倍福) 控制器**
采用15英寸的触摸式显示屏，性能强大。
- **基于PC的控制平台**
采用Windows® 系统，操作方便，易于扩展。
- **独有的XFC极速控制技术**
能够有效减少原料消耗，提高成型产品质量。
- **EtherCAT现场总线系统**
配置具实时特性的超高速/模块。
- **德国工业4.0标准**
易于实现的智能制造技术。
- BECKHOFF high end control system originally made in Germany, with 15 inch touch operation panel, and Intel® Celeron 1.4GHz high speed processor.
- PC-based Open platform with Windows® embedded real time operation system, user-friendly and easy for maintainance.
- XFC extremely fast control technology powered by BECKHOFF, can efficiently improve the precision of Switch over from Injection to holding pressure, improve molding efficiency, product quality and repeatability.
- Proven technology of EtherCAT real time communication with high speed remote IO module, machine status fast monitor timing up to 125us per cycle.
- Ready for Industrial 4.0, Internet of things, and intelligent manufacturing standards, equipped with several protocol such as OPC UA for data exchange.

注射部分 Injection Unit

项目 DESCRIPTION	单位 UNIT	BL520DK/Z2500			BL620DK/Z3600			BL750DK/Z4310			BL950DK/Z5200			BL1100DK/Z7210			BL1400DK/Z12010		
注射能力 Injection working capacity		Z2500			Z3600			Z4310			Z5200			Z7210			Z12010		
螺杆直径 Screw diameter	mm	65	70	80	70	80	85	75	85	90	80	90	100	90	100	110	110	120	130
螺杆长径比 Screw L/D ratio		23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
理论注射容积 Calculated injection volume	cm ³	1128	1308	1709	1501	1960	2213	1856	2383	2672	2262	2863	3534	3181	3927	4752	5512	6560	7698
注射重量,PS Shot weight,PS	g	1038	1204	1572	1381	1804	2036	1707	2193	2458	2081	2634	3252	2926	3613	4372	5071	6035	7083
	oz	37	42	55	49	64	72	60	77	87	73	93	115	103	127	154	179	213	250
注射速度 Injection piston speed	mm/s	114			119			111			105			106			111		
注射速率 Injection rate	cm ³ /s	377	436	572	459	600	677	491	631	707	527	667	823	675	833	1008	1050	1250	1467
	g/s	347	403	526	423	552	623	452	580	650	485	613	757	621	767	928	966	1150	1350
注射压力 Injection pressure	MPa	222	191	146	240	184	163	235	183	163	233	184	149	227	184	152	219	184	157
螺杆转速 Screw speed	rpm	190			168			158			134			120			105		

锁模部分 Clamping Unit

锁模力 Clamping force	Ton	531			633			765			969			1122			1429		
	kN	5200			6200			7500			9500			11000			14000		
模板尺寸(hxv) Size of mould platens(h x v)	mm × mm	1260 × 1210			1380 × 1280			1500 × 1360			1560 × 1420			1855 × 1715			2130 × 2030		
拉杆内间距 Clearance between tie bars (h x v)	mm × mm	860 × 810			960 × 860			1060 × 920			1160 × 1020			1260 × 1120			1420 × 1320		
开模行程1) Opening stroke	mm	1100/600			1300/750			1400/800			1600/950			1870/1150			2200/1500		
最小模具厚度 Mould height min.	mm	350			350			400			450			480			650		
最大模具厚度 Mould height max.	mm	850			900			1000			1100			1200			1350		
最大模板距离 Max. daylight	mm	1450			1650			1800			2050			2350			2850		
顶出行程 Ejector stroke	mm	250			250			280			280			320			360		
顶出力 Ejector force forward	kN	124			124			232			232			232			309		
顶针回缩力 Ejector force backward	kN	75			75			155			155			155			210		
顶出杆数 Number of ejector rods	Pcs	13			21			17			17			25			25		

动力电热 Driving and Heating

电热功率 Installed heating power	kW	22	25	29	28	33	37	32	38	42	37	42	56	42	56	72	72	75	87
电机功率 Drive power	kW	44			30+37			25+47			47+30			47+30+25			47+47+47		
系统压力 Working pressure	MPa	17.5			17.5			17.5			17.5			17.5			17.5		
干循环周期2) Dry cycle time(Euromap 6)/stroke	s/mm	2.8/602			3.0/672			3.2/742			3.6/812			4.2/882			4.8/994		
油箱容积 Oil tank capacity	L	720			800			900			1000			1400			2000		

重量和尺寸 Weight and Dimensions

最大模具重量 Maximum mould weight	kg	6500			8000			9500			12000			15000			21000		
整机净量 Net weight	ton	20			22			26			38			50			75		
整机尺寸(LxWxH) Machine dimensions (LxWxH)	m × m × m	7.4 × 2.2 × 2.1			7.3 × 2.6 × 2.3			9.3 × 3.0 × 2.4			10.2 × 3.2 × 2.5			10.5 × 3.4 × 2.5			12.0 × 3.7 × 2.9		

备注: 1) 最小模具厚度时开模行程为最大值, 最大模具厚度的开模行程为最小值
2) 干循环周期按EUROMAP6计算
3) 整机高度不包含料斗

由于不断进行产品提升, 本公司保留调整个别参数的权利, 恕不另行通知。
Due to the continuous product improvement, we reserve the right to adjust the individual parameters, without notice.

由于不断进行产品提升, 本公司保留调整个别参数的权利, 恕不另行通知。
Due to the continuous product improvement, we reserve the right to adjust the individual parameters, without notice.

注射部分 Injection Unit

项目 DESCRIPTION	单位 UNIT	BL1700DK/Z17000			BL2000DK/Z17000			BL2300DK/Z24000			BL2300DK/Z27300*		BL2700DK/Z36300			BL3000DK/Z36300		
注射能力 Injection working capacity		Z17000			Z17000			Z24000			Z27300*		Z36300			Z36300		
螺杆直径 Screw diameter	mm	120	135	145	120	135	145	140	150	160	170	160	170	185	160	170	185	
螺杆长径比 Screw L/D ratio		23	23	23	23	23	23	23	23	23	22	23	23	23	23	23	23	
理论注射容积 Calculated injection volume	cm ³	7351	9304	10733	7351	9304	10733	11545	13254	15080	19293	17291	19520	23117	17291	19520	23117	
注射重量,PS Shot weight,PS	g	6763	8560	9875	6763	8560	9875	10622	12193	13873	17750	15908	17959	21268	15908	17959	21268	
	oz	239	302	348	239	302	348	375	430	489	626	561	633	750	561	633	750	
注射速度 Injection piston speed	mm/s	111			111			95			95		91			91		
注射速率 Injection rate	cm ³ /s	1256	1590	1834	1256	1590	1834	1464	1680	1912	2158	1823	2058	2437	1823	2058	2437	
	g/s	1156	1463	1688	1156	1463	1688	1347	1546	1759	1985	1677	1893	2242	1677	1893	2242	
注射压力 Injection pressure	MPa	232	183	159	232	183	159	209	182	160	142	210	186	157	210	186	157	
螺杆转速 Screw speed	rpm	100			100			84			84		69			69		

锁模部分 Clamping Unit

锁模力 Clamping force	Ton	1735			2041			2347			2347		2755			3061		
	kN	17000			20000			23000			23000		27000			30000		
模板尺寸(hxv) Size of mould platens(h x v)	mm × mm	2260 × 2100			2480 × 2320			2560 × 2360			2560 × 2360		2700 × 2500			2840 × 2640		
拉杆内间距 Clearance between tie bars (h x v)	mm × mm	1620 × 1460			1720 × 1560			1820 × 1620			1820 × 1620		1920 × 1720			2020 × 1820		
开模行程1) Opening stroke	mm	2570/1700			2580/1700			2720/1800			2720/1800		2920/1900			3020/2000		
最小模具厚度 Mould height min.	mm	680			720			780			780		780			880		
最大模具厚度 Mould height max.	mm	1550			1600			1700			1700		1800			1900		
最大模板距离 Max. daylight	mm	3250			3300			3500			3500		3700			3900		
顶出行程 Ejector stroke	mm	400			450			450			450		500			500		
顶出力 Ejector force forward	kN	309			465			465			465		465			465		
顶针回缩力 Ejector force backward	kN	210			310			310			310		310			310		
顶出杆数 Number of ejector rods	Pcs	25			25			25			25		29			29		

动力电热 Driving and Heating

电热功率 Installed heating power	kW	75	96	115	75	96	115	109	123	128	145	128	158	173	128	158	173	
电机功率 Drive power	kW	37+47+47+47			37+47+47+47			47+47+47+47			47+47+47+47		47+47+47+47+47			47+47+47+47+47		
系统压力 Working pressure	MPa	17.5			17.5			17.5			17.5		17.5			17.5		
干循环周期2) Dry cycle time(Euromap 6)/stroke	s/mm	5.4/1134			6.2/1204			6.8/1274			6.8/1274		7.5/1344			8.2/1414		
油箱容积 Oil tank capacity	L	2500			2500			3000			3000		3200			3200		

重量和尺寸 Weight and Dimensions

最大模具重量 Maximum mould weight	kg	35000			42000			50000			50000		68000			72000		
整机净重 Net weight	ton	88			100			120			125		135			155		
整机尺寸(LxWxH) Machine dimensions (LxWxH)	m × m × m	12.2 × 3.8 × 3.6			12.6 × 3.9 × 3.6			13.5 × 4.0 × 3.8			14.0 × 4.0 × 3.8		15.5 × 4.3 × 4.1			16.5 × 4.5 × 4.2		

备注: 1) 最小模具厚度时开模行程为最大值, 最大模具厚度的开模行程为最小值
2) 干循环周期按EUROMAP6计算
3) 整机高度不包含料斗

由于不断进行产品提升, 本公司保留调整个别参数的权利, 恕不另行通知。
Due to the continuous product improvement, we reserve the right to adjust the individual parameters, without notice.

由于不断进行产品提升, 本公司保留调整个别参数的权利, 恕不另行通知。
Due to the continuous product improvement, we reserve the right to adjust the individual parameters, without notice.

注射部分 Injection Unit

项目 DESCRIPTION	单位 UNIT	BL3500DK/Z56000			BL4000DK/Z74000			BL5000DK/Z74000			BL6800DK/Z100000		
注射能力 Injection working capacity		Z56000			Z74000			Z74000			Z100000		
螺杆直径 Screw diameter	mm	185	200	220	200	220	240	200	220	240	220	240	260
螺杆长径比 Screw L/D ratio		23	23	23	23	23	23	23	23	23	23	23	23
理论注射容积 Calculated injection volume	cm ³	26074	30473	36873	35186	42575	50668	35186	42575	50668	49417	58811	69021
注射重量,PS Shot weight,PS	g	23988	28036	33923	32371	39169	46614	32371	39169	46614	45464	54106	63499
	oz	846	989	1197	1142	1382	1644	1142	1382	1644	1604	1908	2240
注射速度 Injection piston speed	mm/s	66			58			58			57		
注射速率 Injection rate	cm ³ /s	1783	2083	2521	1816	2197	2615	1816	2197	2615	2155	2565	3010
	g/s	1640	1917	2319	1671	2022	2406	1671	2022	2406	1983	2360	2770
注射压力 Injection pressure	MPa	215	184	152	211	174	146	211	174	146	206	173	148
螺杆转速 Screw speed	rpm	60			54			54			55		

锁模部分 Clamping Unit

锁模力 Clamping force	Ton	3571			4082			5102			6939		
	kN	35000			40000			50000			68000		
模板尺寸(hxv) Size of mould platens(h x v)	mm × mm	3120 × 2820			3340 × 2940			3820 × 2420			4350 × 3750		
拉杆内间距 Clearance between tie bars (h x v)	mm × mm	2220 × 1920			2420 × 2020			2800 × 2400			3200 × 2600		
开模行程1) Opening stroke	mm	3180/2160			3480/2360			3680/2460			4200/2900		
最小模具厚度 Mould height min.	mm	980			980			1080			1200		
最大模具厚度 Mould height max.	mm	2000			2100			2300			2500		
最大模板距离 Max. daylight	mm	4160			4460			4760			5400		
顶出行程 Ejector stroke	mm	550			550			550			1000		
顶出力 Ejector force forward	kN	465			619			619			891		
顶针回缩力 Ejector force backward	kN	310			420			420			616		
顶出杆数 Number of ejector rods	Pcs	33			33			33			33		

动力电热 Driving and Heating

电热功率 Installed heating power	kW	173	216	236	216	236	263	216	236	263	236	263	290
电机功率 Drive power	kW	47+47+47+47+47			47+47+47+47+47			47+47+47+47+47			37+47+47+47+47+47		
系统压力 Working pressure	MPa	17.5			17.5			17.5			17.5		
干循环周期2) Dry cycle time(Euromap 6)/stroke	s/mm	9/1554			12/1694			16/1960			20/2240		
油箱容积 Oil tank capacity	L	3500			3500			3500			3800		

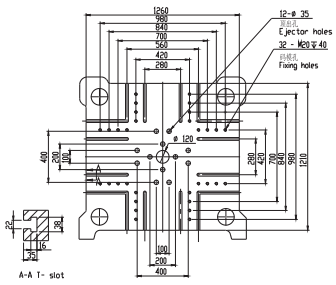
重量和尺寸 Weight and Dimensions

最大模具重量 Maximum mould weight	kg	80000			100000			100000			180000		
整机净量 Net weight	ton	195			254			330			420		
整机尺寸(LxWxH) Machine dimensions (LxWxH)	m × m × m	19.5 × 4.9 × 4.7			20.5 × 5.2 × 5.0			23.5 × 5.3 × 5.0			25.5 × 5.8 × 5.3		

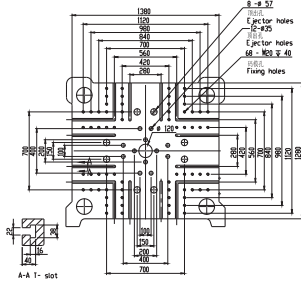
备注: 1) 最小模具厚度时开模行程为最大值, 最大模具厚度的开模行程为最小值
2) 干循环周期按EUROMAP6计算
3) 整机高度不包含料斗

由于不断进行产品提升, 本公司保留调整个别参数的权利, 恕不另行通知。
Due to the continuous product improvement, we reserve the right to adjust the individual parameters, without notice.

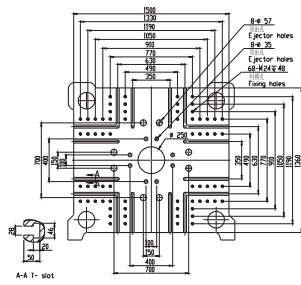
由于不断进行产品提升, 本公司保留调整个别参数的权利, 恕不另行通知。
Due to the continuous product improvement, we reserve the right to adjust the individual parameters, without notice.



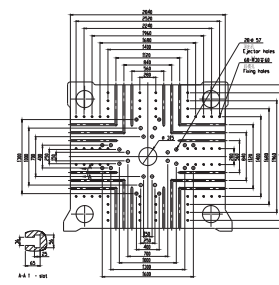
BL520DK



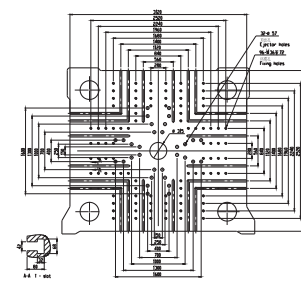
BL620DK



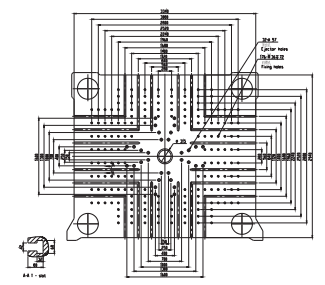
BL750DK



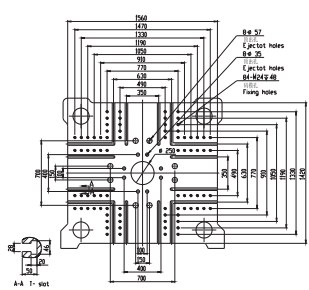
BL3000DK



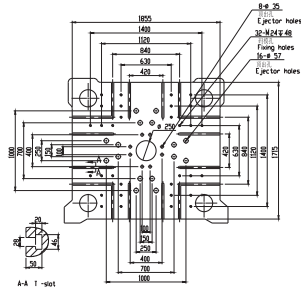
BL3500DK



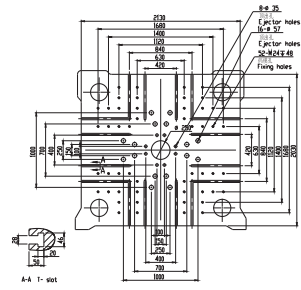
BL4000DK



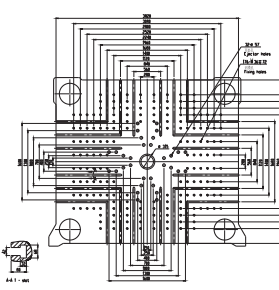
BL950DK



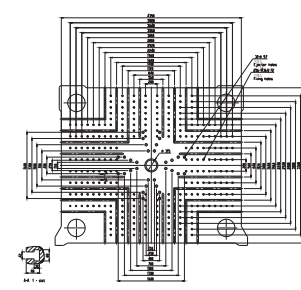
BL1100DK



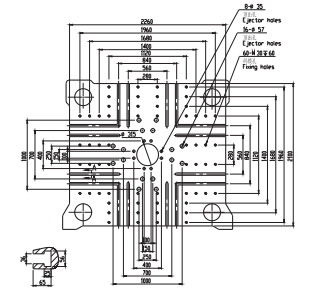
BL1400DK



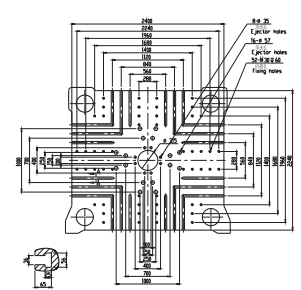
BL5000DK



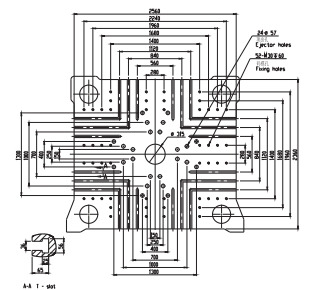
BL6800DK



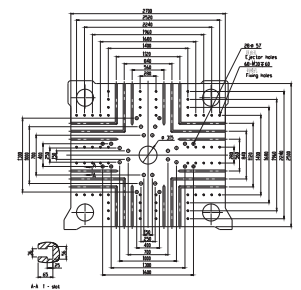
BL1700DK



BL2000DK



BL2300DK



BL2700DK

二板机锁模和射台搭配表

Combination of clamp unit and injection unit

注塑部分规格 Injection unit	Z2500	Z3600	Z4310	Z5200	Z7210	Z12010	Z17000	Z24000	Z27300*	Z36300	Z56000	Z74000	Z100000
锁模部分规格 Clamp unit	65/70/80	70/80/85	75/85/90	80/90/100	90/100/110	110/120/130	120/135/145	140/150/160	170	160/170/185	185/200/220	200/220/240	220/240/260
锁模力(kN) Clamping force	拉杆内间距 Space between tie bar												
	860 × 810												
5200	●	◎	◎										
6200	◎	●	◎	◎									
7500		◎	●	◎	◎								
9500			◎	●	◎	◎							
11000				◎	●	◎	◎						
14000					◎	●	◎	◎					
17000						◎	●	◎					
20000							◎	●	◎				
23000						◎	◎	●	◎				
27000							◎	◎	●	◎			
30000								◎	◎	●	◎		
35000									◎	◎	●	◎	
40000										◎	◎	●	◎
50000											◎	◎	●
68000												◎	◎

备注：●标志标准配置，◎表示可选配置 Remark：●Standard ◎Optional