

# EKS Series



The Passionate Pursuit of Perfection

[en.bole-machinery.com](http://en.bole-machinery.com)



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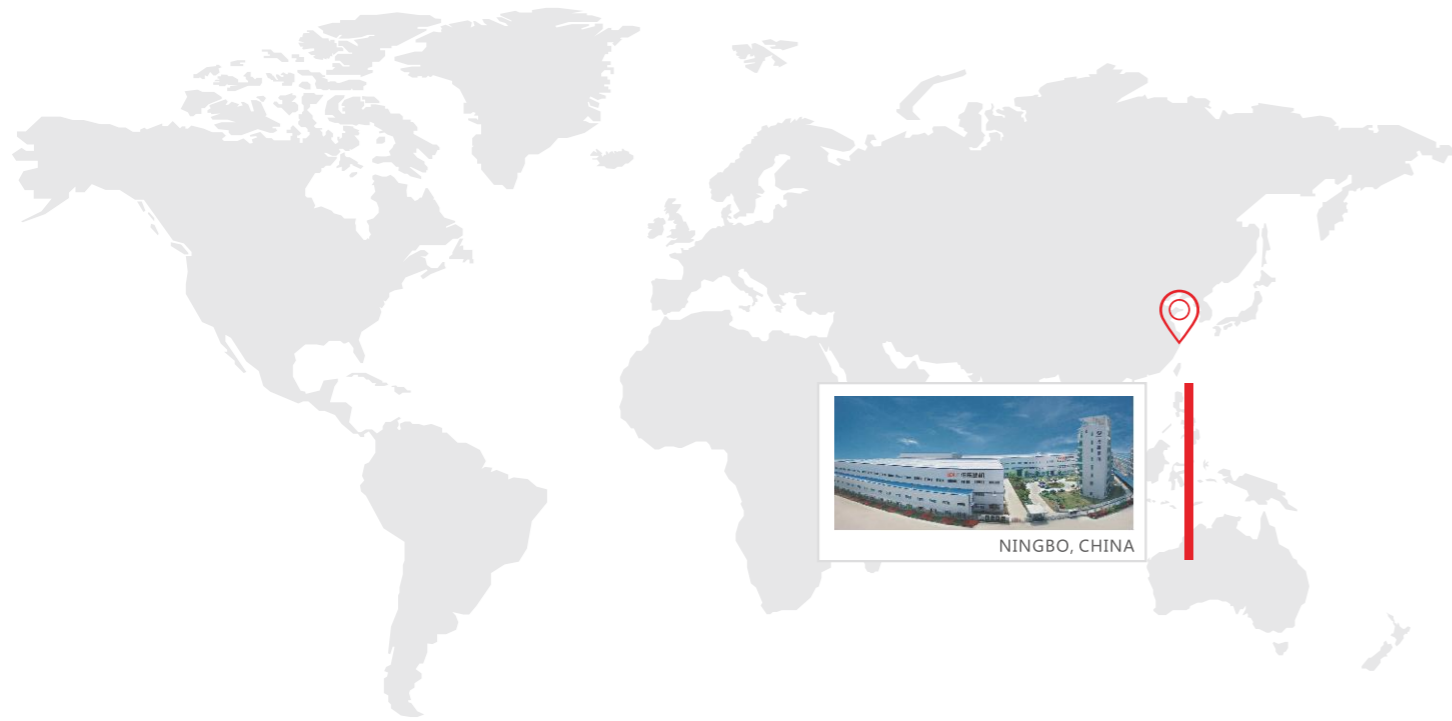
## EKS Series Supreme Edition

Precision hydraulic servo energy-saving  
injection moulding machine

Precision hybrid ECO version energy-saving  
injection moulding machine



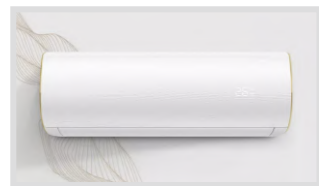
Injection Moulding Machine



Performance close to or even beyond fully electric injection moulding motor  
Central clamping toggle European quality Made by BOLE



Automobile industry



Household electrical appliance industry



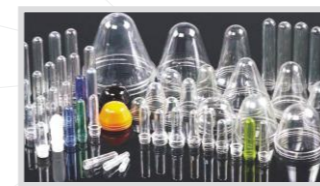
Medical products



Logistics building materials



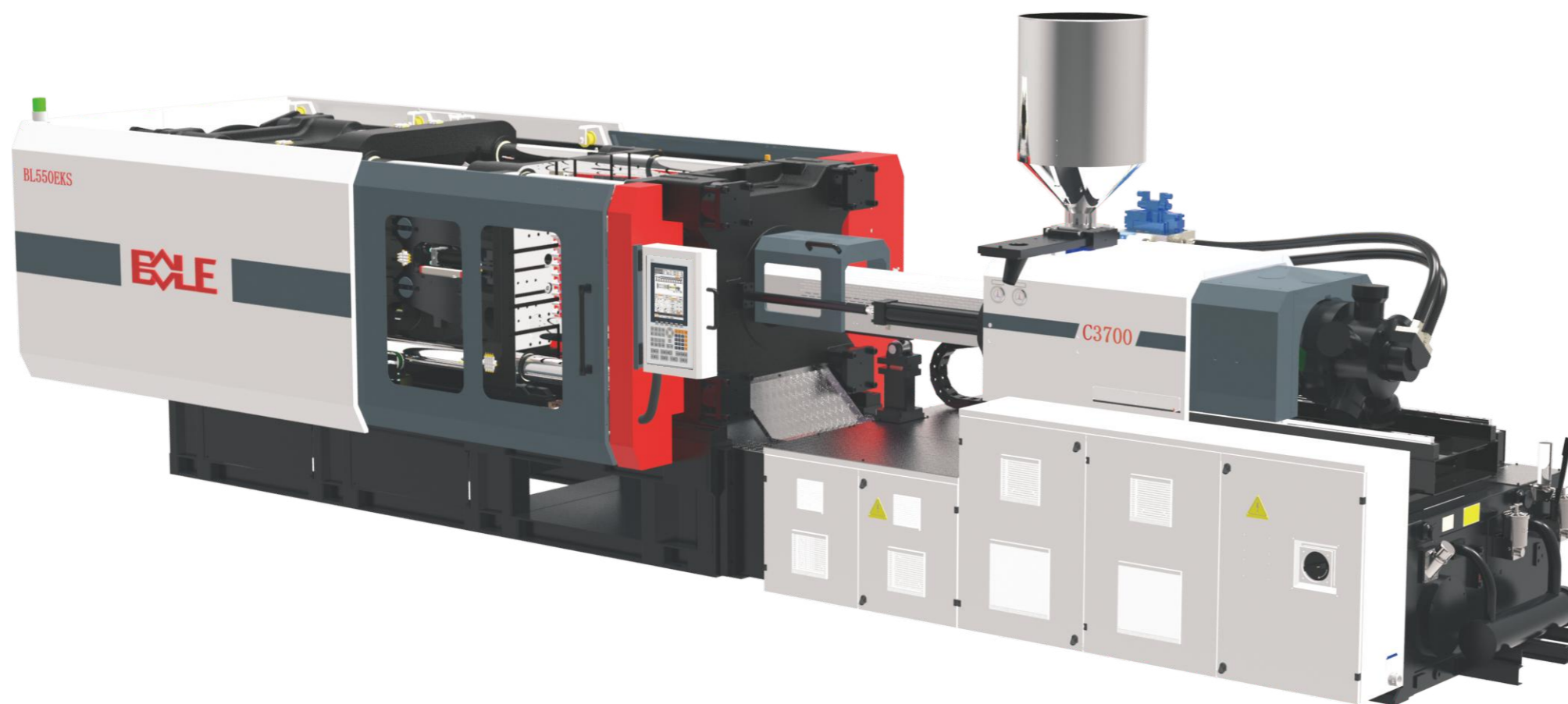
3C Electronics



Preform product



More than 60 technical upgrading in terms of mechanical , electrical ,hydraulic,software and assembling process.



## • Energy saving

After sampling testing by Bole, with the application of the latest servo system technology, the same tonnage model to produce the same product, under the same condition, It can save energy more than 15% than the traditional servo machine.  
The latest EKS-ECO hybrid energy saving injection molding machine is recommended  
With the integrated energy saving solution of electric charging function, new heating design and the latest servo system, the energy consumption of the whole machine can be saved more than 18%.

## • Economy

After sample survey, we conclude BOLE central clamping toggle design can save 2-5% material for 80% of customers' mould, comparing to traditional edge clamping toggle design.

## • Stable

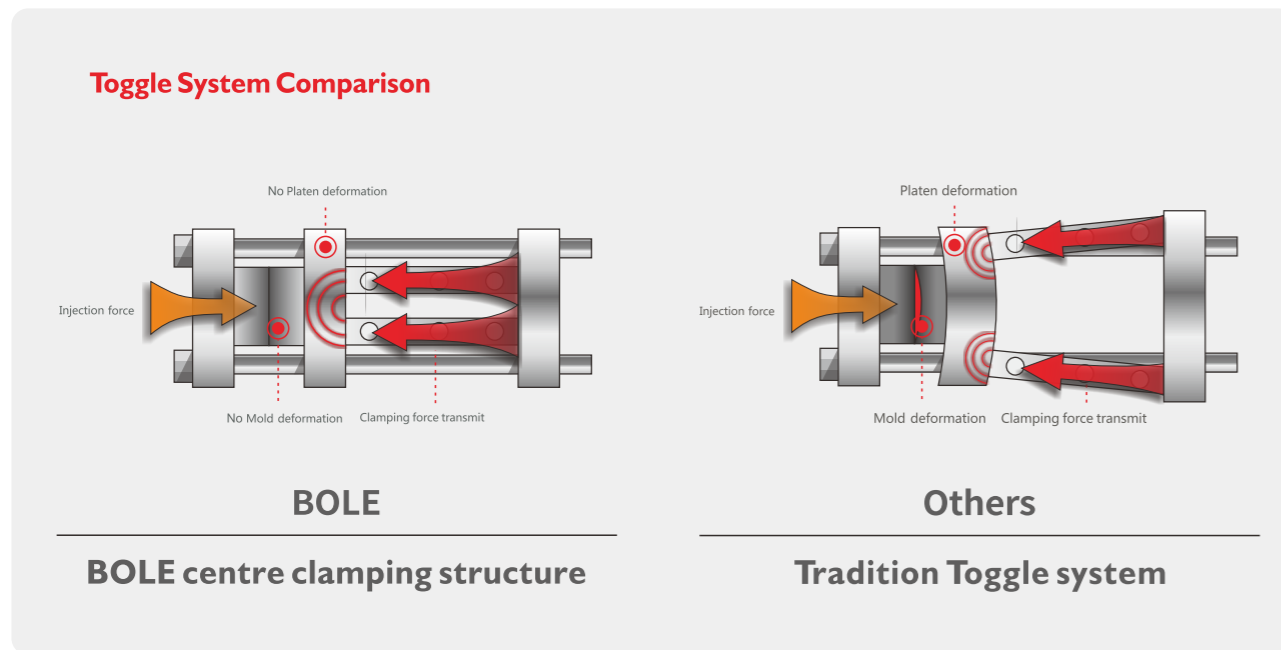
Structural rigidity increased by 30% with more than 60 technical innovations, excellent performance reaches to European standards.

## • Accurate

Mold open&close positioning accuracy :  $\pm 0.5\text{mm}$   
Injection weight accuracy : 3‰

## • Intelligent

Industry 4.0 support, U77 OPC-UA interface is accessible free.  
It can be connected with MES intelligent Internet of Things management system to open a new era of intelligent factories



**01 High clamping force efficiency**  
 After sample survey, clamping force efficiency of BOLE central clamping toggle design can reach 100%, and traditional edge clamping toggle design, clamping force efficiency only can reach 80-85%.

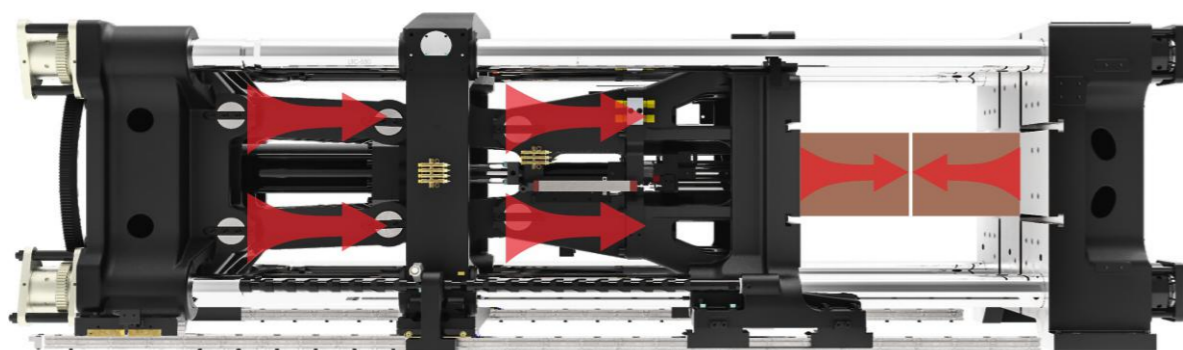
**02 Material Saving**  
 BOLE central clamping toggle design can save 2-5% material for 80% of customers mould (comparing to traditional edge clamping toggle design).

**03 High accuracy  
 Less possibility of flash**  
 AI intelligent control  
 Mold open&close positioning accuracy :  $\pm 0.5\text{mm}$   
 Injection weight accuracy :  $\leq 3\%$   
 Less possibility of flash, save flash trim work.

**04 Offer good protection to mould and platens**  
 New designed EKS clamping structure , bear averaged force ,Less platen distortion , effectively extend mould life.

**05 Suitable for small mould**  
 New designed EKS clamping structure . Bear averaged force ,Less platen distortion , apply for more moulds.

**06 Big open stroke**  
 Larger open&ejection stroke comparing with other brand, much easier to install larger mould (especially for deep cavity mould).





# Energy Saving

The latest electric charging scheme is optional, with patented control technology and the latest servo system, energy consumption can be saved by 15% (the same tonnage and conditions compared with traditional servo machine)



# Energy Saving

- 01 Latest servo control technology from Bole
- 02 Recommended to choose Bole's latest electric charging scheme
- 03 Patented control technology

After sample survey, by the application of the latest servo system technology, the same tonnage model to do the same product, under the same conditions, saving more than 15% compared with the traditional servo energy saving machine.

It is recommended to choose BOLE's latest electric charging scheme. At the same tonnage model, the energy consumption of electric charging scheme can save more than 35%, the energy consumption of the whole machine can save more than 15%, and the stability of final products can be improved by 30%.

The maximum 18 months to recover the cost of electric charging selection, and electric charging scheme can cover the whole series of models.

Reduce energy consumption and respond to the national plan of "Green, Energy-saving and Environmental protection".

# Clamping Unit

EKS centre clamping structure was design and stimulate by professional software . overall structure rigidity increased by 30%



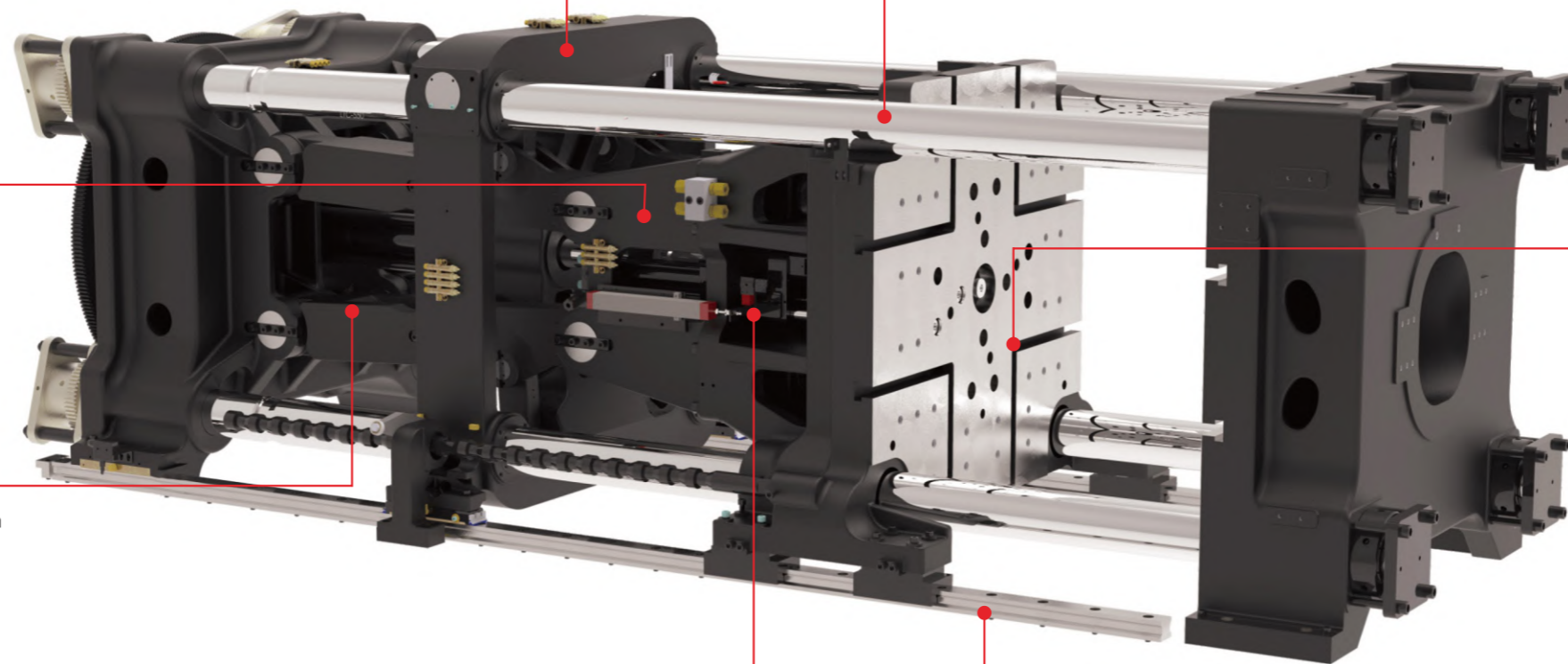
New designed EKS clamping structure . Bear averaged force ,Less platen distortion , apply for more molds

Use linear guide instead of tie bar without lubrication to keep mold area clean

New Toggle structure ,faster speed , more stable, short dry cycle time

T slot plus threaded hole platen, to avoid damage problem.

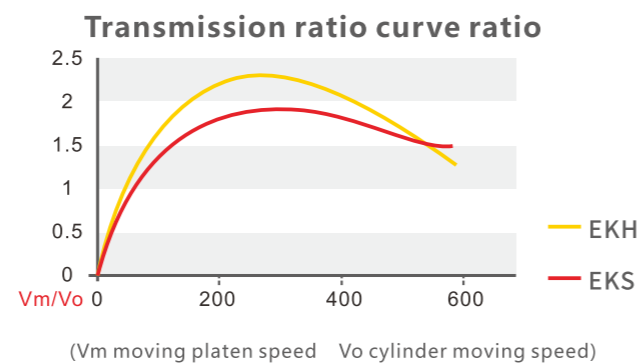
280- 1000 Ton offer more spaces with built-in clamping cylinder compared with previous model



Patented pneumatic fast forced resetting connector, assemble & disassemble easily, adapted to all ejector structure.

High precision & rigidity linear rail: The moving plate slide foot adopts the linear guide to ensure the positioning accuracy . Because of the low resistance , faster opening and closing speed can be obtained, and the lubricating oil spatter can be avoided, so the performance of the whole machine is smoother and faster.

Optimized platen structure , easy to install compulsive ejector back rod.



# Injection Unit

German Designed  
Plasticizing System



All series can fit with A\B\C screw, L/D ratio 23:1, to achieve the best plasticizing effect and efficiency

Originate form Germany design Plasticizing System, efficiency excess above 20% of domestic level (Common plastics such as ABS, PS, PP, etc).

Upgrade module design, high rigidity injection seat, linear guide supporting structure

The stable temperature of the feeding throat prevents the instability of the feed due to the change of the temperature, affects the screw plasticization and injection accuracy, and improves the stability of the whole machine.

The new injection cylinder, with very low oil return resistance, is combined with the structure of the linear guide to reduce the friction of the injection part and greatly improve the control precision of the injection unit.

- Originate form Germany design Plasticizing System, efficiency excess above 20% of domestic level (Common plastics such as ABS, PS, PP, etc).
- Custom made complicated technical requirement, applied to special plasticizing system
- All series can fit with A\B\C screw, L/D ratio 23:1, to achieve the best plasticizing effect and efficiency

Strengthened charge unit, stable, long life

Compatible injection base for three different model (Special stage customization requirements are available)

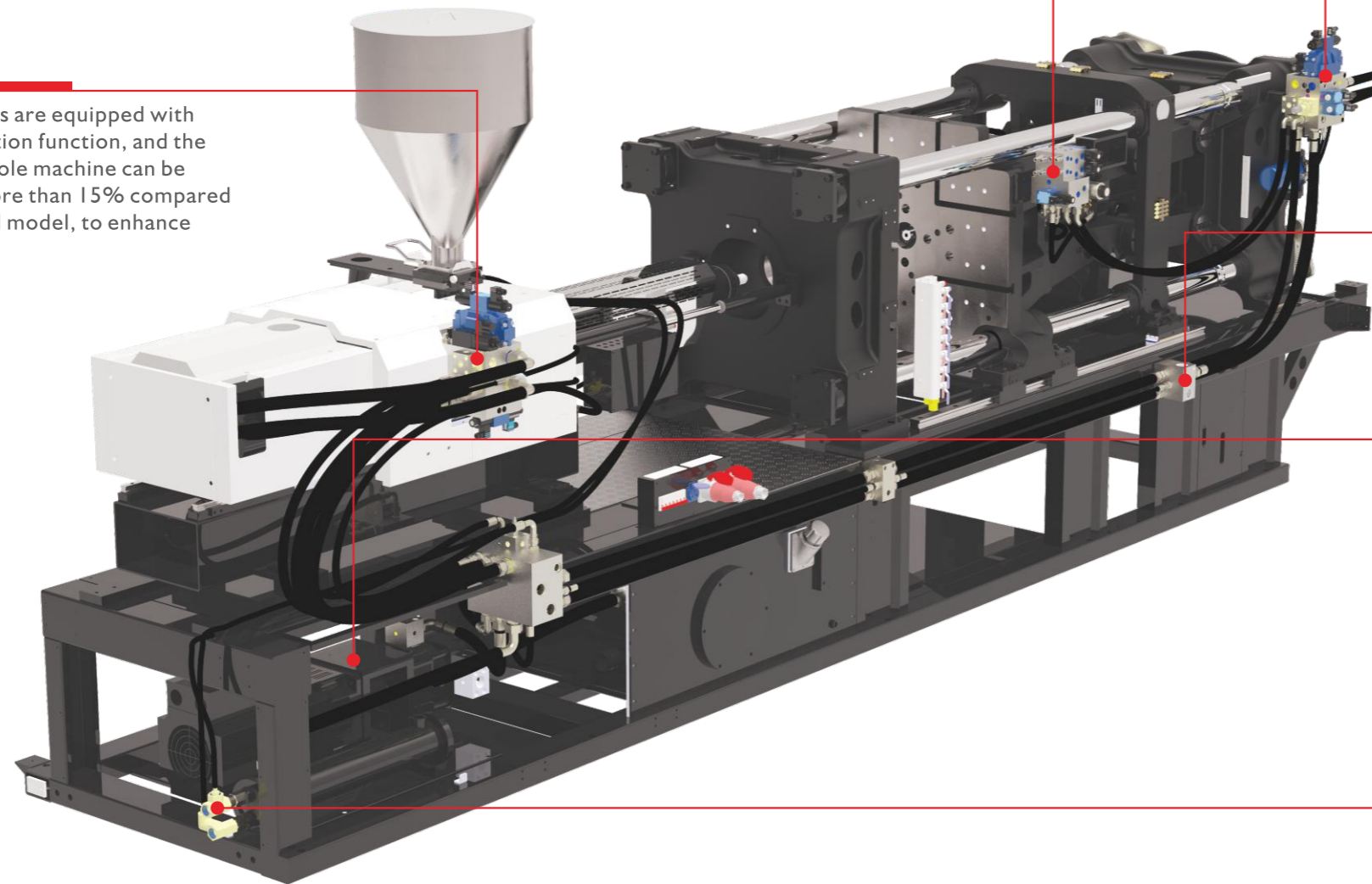
Optional rotary ejector, that screw is easy to disassemble and assemble



# Hydraulic Unit

Standard 1 sets of core valve manifold for 2 joint, fast combined terminal.  
Optional: core pressure holding, one press for core pressure release, hot runner valve etc

The whole series are equipped with patent acceleration function, and the speed of the whole machine can be increased by more than 15% compared with the original model, to enhance productivity.



The specially designed oil circuit, combined with the patent open mold positioning precision control software, the opening and closing mold positioning precision within  $\pm 0.5$  mm, and the patent intelligent injection process compensation control software, the precision of the product is within 0.3%.

Non welding hydraulic pipe system, avoiding oil leakage problem.

Use low momentum servo system, quick response time (30-50ms), system pressure rise up to 17.5Mpa, Injection pressure & speed increased greatly

The automatic control function of oil temperature ensures the stability of hydraulic system under different environments.



# Control Unit

- EKS series models are equipped with B & R (baccalais) computer as standard.

BLI00EKS-BL850EKS are equipped with B & R 10.4inch(baccalais) computer as standard, and EST and KEBAO" are optional.

BLI000EKS is equipped with B & R 18.5 inch full touch screen computer, and EST and KEBAi08012" are optional.



B & R 10.4 inch computer



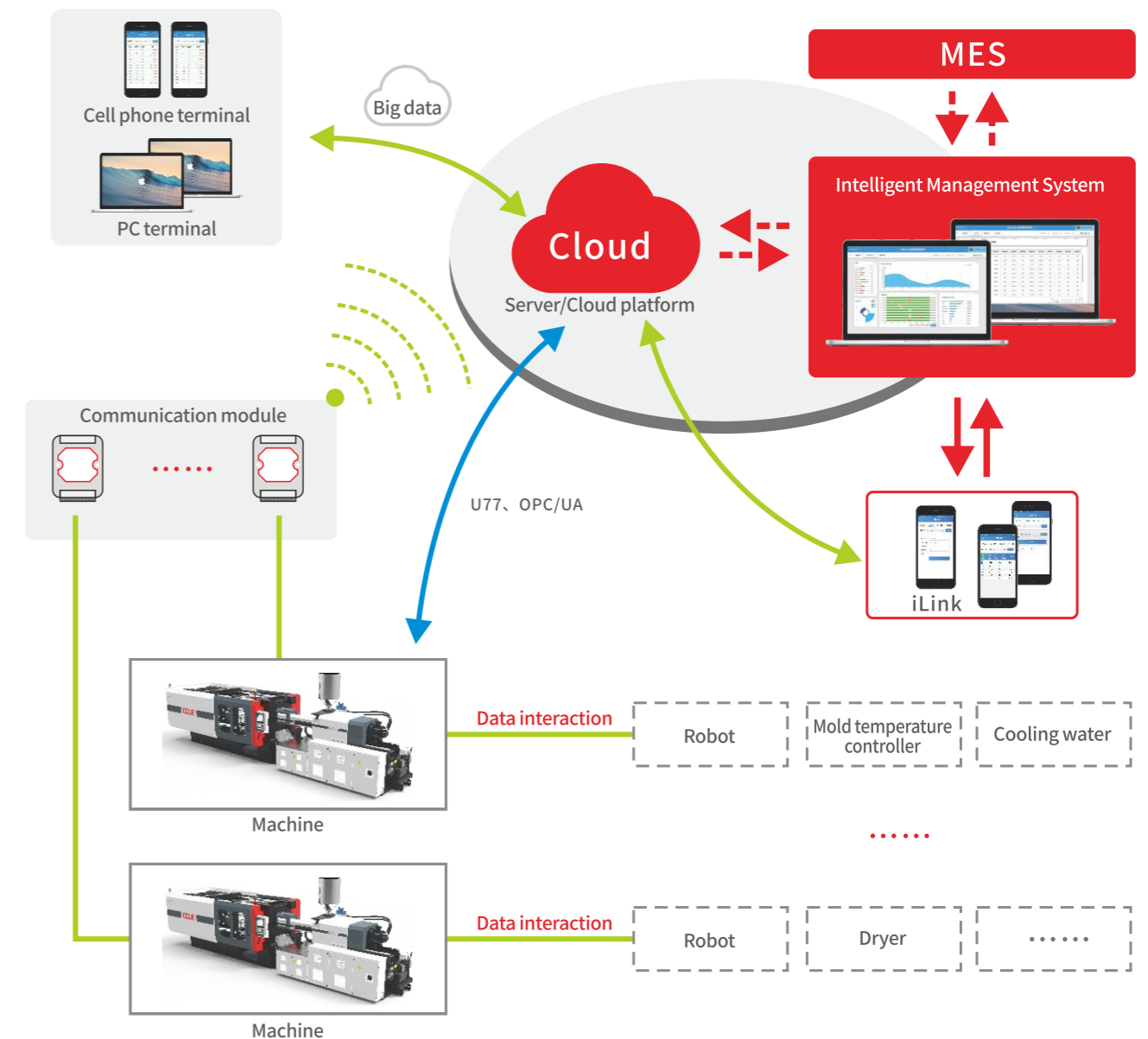
B & R 18.5 inch full touch screen computer

- B & R computer as standard, and industrial 4.0 expansion port OPC is open for free (free for U77, OPC, UA etc and chargeable for MES.)
- Equipped with I/O safety advice against short circuit.
- Unique hydraulic system for clamping combined with patent software, lead to repeatability precision.

- High accuracy, high intelligence and high scalability own designed control software with patent.
- Main electric component use brand Schneider Eaton,ABB, Fuji, which ensure long service life.
- Independent Strong and weak wire layout, high anti interference, Independent electric control box structure, convenient for installation, examination and repair.

# Intelligent Networking Management System

extensible interface (optional)



MMI high-performance PLC, which obtains robot information, from the mold temperature controller, cooling water, machine accessories, etc. It performs data processing and communicates wirelessly with the network management system. In addition, by PC or cell phone the terminal can always indicate machine information, the process of parameters, operation status, fault situation and product analysis at a glance. Controlled by the computer, it aims to maximize work efficiency, a better product, planning and operation control, production efficiency and improvement. We also offer data exchange with MES terminal, which allows to automate all the production.

# EKS-ECO Hybrid Energy-saving IMM

Center clamping Toggle / Triple energy saving / Made by Bole

Promote the standardization of energy-saving industry for hydraulic injection moulding machines



## EKS-ECO Hybrid Energy-saving Injection Moulding Machine

Because injection molding system is running continuous, consume too much electricity, called “electrical tiger”, reducing the electricity consumption of injection molding system already become technology development direction for each company, and also become the important job of energy saving and emission reduction for country and government, ECO series will be responsive of “green environment, energy saving and emission reduction” idea ,and try to achieve the lowest consumption for plastic machinery area.



## Hybrid trio

Be responsive of "green environment, energy saving and emission reduction" idea

ECO energy saving machine with Bole latest electric charging solution, for the same tonnage model, the energy consumption of charging unit can save more than 35%, and the energy consumption of the whole machine can save more than 18%, approaching the consumption of electrical injection moulding machine.

By sampling bole test, ECO energy saving machine with the latest servo driving system technology, with the same tonnage model and produce the same products, under the same condition, BOLE machine save 15% at least than the traditional servo energy saving machine.

The screw speed of ECO energy saving machine is constant, which improves product stability and realizes synchronous sol function, saves the cycle time and improves the efficiency. The whole of ECO energy saving machine can save at least 25% consumption compare with the traditional same tonnage and same screw diameter model.

# GREEN

### Electric Charging Energy Saving

Configure planetary reduction in one oil cooling servo charging motor, lower noise, lower heating, bigger torque, compact and perfect size, transit efficiency increase more than 25% compare with traditional hydraulic motor, achieve synchronize movement.



### New Series Servo Energy Saving

New series motor + new oil pump, higher efficiency and more energy saving. The 5th-generation oil-cooled servo motor jointly developed by BOLE and MODROL can further reduce energy consumption, combined with ECO hybrid energy-saving machine.



### Energy Saving Ceramic Heating

Configure energy saving series ceramic heating, compare with traditional heater, save more than 18%, energy saving is approaching the infrared heating, the advantage is that lower cost, long life (infrared quartz tube is easy to be damaged)





# New Electric Charging System

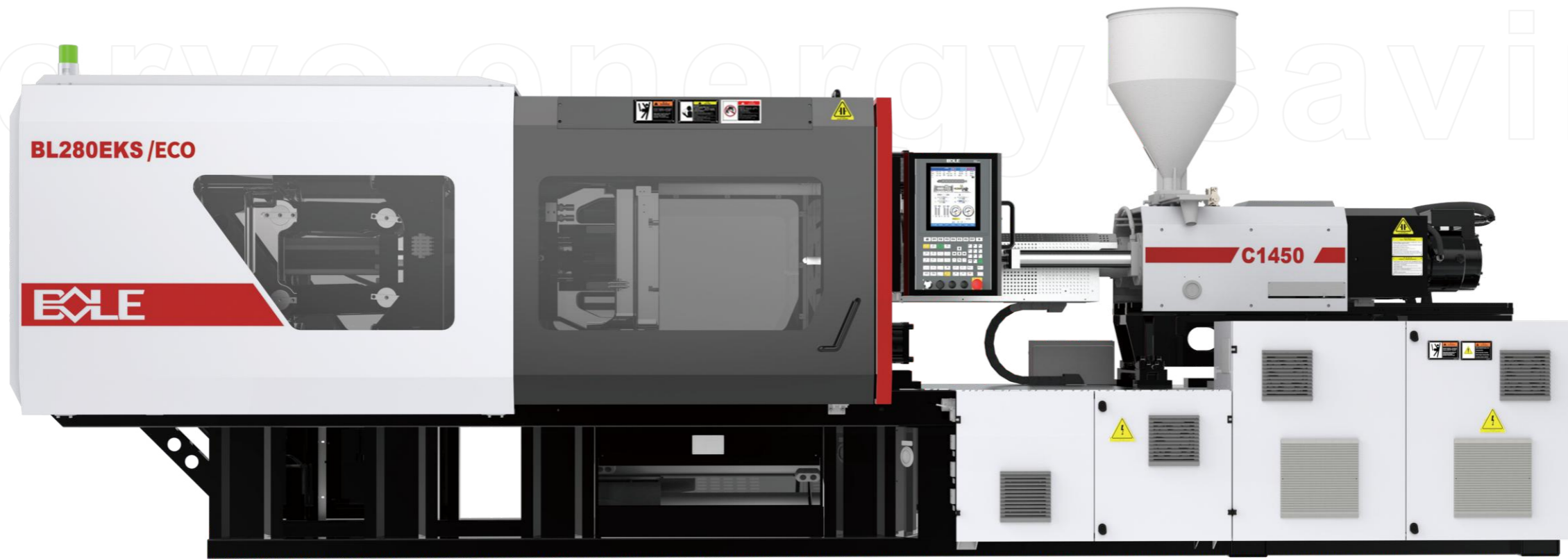
The energy consumption of charging action accounts for about 40%-50% of the total energy consumption for the injection molding machine. Reducing the energy consumption of charging action is the most effective scheme for injection molding manufacturer to realize energy saving. The charging transmission system equipped by BOLE can achieve the goal of reducing energy consumption by more than 20% under the same working conditions and the same cycletime.



Electric Charing Solution	Old Motor Solution
Lower consumption, the higher direct transit efficiency, energy saving 18%~40%, reduce the electricity cost	Higher consumption: lower hydraulic transit efficiency, higher electricity
Simple structure: through motor reduction box running, whole machine structure design simple, enviroment is simple and tidy	Complicated structure: through the hydraulic system driving, the whole machine structure design is complicated, enviroment is complicated
Lower noise, optimize design of gear box, the lowest noise, without the ticktack of hydraulic motor sound	Higher noise: charing time occupy more of cycle time, with higher speed and higher pressure, the noise of hydraulic system and noise of hydraulic motor will be superimposed
Higher efficiency: hydraulic motor transit efficiency increase more than 21%, opening mould and charing simultaneously, save production time and higher efficiency	Lower efficiency: through oil pressure system driving, higher electricity, lower efficiency
Simple charging : servo driver motor achieve the speed closed loop, rotate spped wave is less, charging accurate increase, more stable	Unstable speed: oil motor internal leakage will have a big difference according to loading and old temperature, cause charging speed is not stable
Invest higher cost one -offs: according to whole machine saving 18% energy,after running 18 months continously, saving electrcity is equal to the invest cost one -offs, after 18 months, it will take benefit for customers	Invest loweer cost one -offs: lower cost hydraulic motor, electricity cost is higher 18% when machine is running continously



# EKS-ECO Energy-saving Injection Molding Machine



## Power comparison between electric charging motor and oil pump motor

### BL100-850EKS:

Machine model	Screw Diameter (Screw B)	Screw Rotation Rate (Adopt hydraulic motor)	Oil pump motor power(KW)	Screw Rotation Rate of Electric Charging (r/min)	Motor Power of Electric Charging (KW)	Motor power reduction %
BL100EKS	36	250	13.4	245	8.9	34%
BL230EKS	50	221	20.5	220	17	17%
BL280EKS	60	210	26.7	210	21	21%
BL350EKS	65	175	40.9	210	30	27%
BL550EKS	80	143	61.4	150	52	15%
BL750EKS	90	139	77.4	150	52	33%
BL850EKS	100	122	101.4	130	65	36%

## Comparison of advantages of Electrical charging

**Energy saving:** Compared with the traditional hydraulic motor, the transmission efficiency is higher, and the power of the drive motor is significantly reduced. The general melt part of the injection molding machine accounts for 40% - 60% of the total energy consumption of the machine, and the use of electric melt adhesive can save energy at least between 18% - 40%.

**Improve efficiency:** driven by Hefu motor, the glue melting speed is stable, and the independent glue melting motor is used to control the products with short cooling time, which can realize the synchronous action of material storage and mold opening.

**High precision and low noise:** the servo motor speed can be controlled in a closed loop, with stable material storage, low speed fluctuation, and higher material storage accuracy. The optimized design of the gearbox has extremely low noise, and there is no clicking sound of the piston when the hydraulic motor is working.

# New Heating Energy-saving - Ceramic Heating Ring



**Ceramic Heating Ring**

Cylinder heating accounts for about 12% of the total energy consumption of injection molding machine, and meanwhile infrared heating cost and high maintenance cost are high.

The energy consumption can not save so much in normal production. Bole adopt energy-saving ceramic heating ring through field test: under the same production condition, the energy consumption of the new energy-saving modified ceramic heating ring is about 18% lower than that of the ordinary heating ring, which is close to the infrared heating ring.

- New ceramic energy saving heater heating is faster than common heater.
- New ceramic energy saving heater insulation is better, reduce the energy loss, more saving energy compare with common ceramic.
- New ceramic heater cooling speed is better than infrared energy saving heater, it is used different area widely.
- During constant temperature, less temperature impact.

## Comparative experiment between modified ceramic heating ring and ordinary ceramic heating ring

### 1. Product parameters

Name: Socket box  
Weight: 946g  
Material: PC+ABS

### 2. Test machine parameters

Model: BL550EKS/C3700  
Clamping force: 550Ton  
System pressure: 17.5MPa  
Heat power: 32.95KW



### 3. Test date

	Test content	Original electric heating coil (common ceramic)	Modified heating (energy-saving)
Electrothermal start	Initial temperature (°C) Normal temperature	31/31/31/31/31	42/44/45/45/44
	Setting temperature	220/220/220/210/200	220/220/220/210/200
	Start time	14:02	13:10
	End time	14:35	13:37
	Time	33MIN	27MIN
	Time difference		6
	Meter reading (starting value)	0.0	0.0
	Meter reading (ending value)	9.42	8.47
	Heating startup energy consumption (KWH)	9.42	8.47
	Power consumption difference (KWH)		0.95
Surface temperature of electric heating coil (°C)	87	66	
Production	Start time	14:49	14:00
	End time	16:20	15:30
	Time	1:31'	1:30'
	Product Quantity	75	75
	Meter reading (starting value)	9.78	8.85
	Meter reading (ending value)	10.72	9.61
	Electric heating consumption	0.94	0.76
Power consumption difference (KWH)		0.18	
Comparison	1. The modified heating ring heats up faster than the original heating ring, saving about 18% time.		
	2. The heating energy consumption of the modified heating coil is lower than that of the original heating coil, and the energy consumption of cold heating is about 10%.		
	3. The energy consumption of the modified heating coil is about 19% lower than that of the original heating coil in the production process.		

# Fifth-generation Hydraulic Servo System

# Servo energy-saving



## New Servo System

**Different servo systems have different energy consumption;**

Bole ECO hybrid energy saving version is combined with the 5th-generation oil-cooled servo motor jointly developed by Bole and Modrol, which further reduces energy consumption to the advanced level in the industry and is more energy saving than traditional servo motors. After the field test at the same tonnage, similar parameters, Bole energy-saving version of the injection molding machine save about 15% than that of the ordinary servo machine.



**The fifth generation of oil-cooled servo power system**



# Technical Data

DESCRIPTION	UNIT	BLI00EKS/C340				BLI00EKS/C460			
International specification		340				460			
Screw specification		AA	A	B	C	AA	A	B	C
Screw diameter	mm	28	32	36	40	32	36	40	45
Screw L/D ratio	L/D	20	23	23	23	20	23	23	23
Theoretical injection capacity	cm <sup>3</sup>	111	145	183	226	161	203	251	318
Shot weight (PS)	g	102	133	168	208	148	187	231	292
	oz	3.6	4.7	6.0	7.3	5.2	6.6	8.2	10.3
Injection rate into Air	cm <sup>3</sup> /s	93	122	154	190	125	158	196	247
	g/s	85	111	140	173	114	144	178	225
Injection pressure	Mpa	313	239	189	153	291	230	186	147
Injection stroke	mm	180				200			
Max. injection speed	mm/s	152				156			
Screw speed	r/min	245				245			
Theoretical plasticizing speed	g/s (PS)	9	13	18	24	12.0	16.0	22.0	30.0
Sys. Pressure	MPa	17.5				17.5			
Total motor power	kW	13.4~15.3				16.4~17.1			
Power of electric charging motor (ECO only)	kW	8.9				8.9			
Total motor power(During ECO synchronization)	kW	22.3~24.2				25.3~26			
Heater power	kW	5.8	7	7.6	8.2	6.95	8.7	9.45	10.2
Number of temp. control zones		3+1				3+1			
Clamping force	kN	1000							
Opening stroke	mm	360							
Space between tie bar	mmXmm	410×360							
Min. mould height	mm	160							
Max. mould height	mm	420							
Max. Daylight	mm	780							
Ejector stroke	mm	100							
Ejector force forward	kN	34							
Ejector force backward	kN	22							
Number of ejector bar	PC	5							
Dry Cycle Period	S	1.9							
Energy consumption level	kW.h/kg	≤0.4				≤0.4			
Hopper capacity	kg	25							
Oil tank capacity	L	155							
Machine dimensions (L×W×H)	mXmXm	4.6x1.4x2.2							

BLI40EKS/C340				BLI40EKS/C460				BLI40EKS/C630			
340				460				630			
AA	A	B	C	AA	A	B	C	AA	A	B	C
28	32	36	40	32	36	40	45	36	40	45	50
20	23	23	23	20	23	23	23	20	23	23	23
111	145	183	226	161	203	251	318	229	283	358	442
102	133	168	208	148	187	231	292	211	260	329	406
3.6	4.7	6.0	7.3	5.2	6.6	8.2	10.3	7.4	9.2	11.6	14.4
117	152	193	238	125	158	196	247	132	163	207	255
106	139	176	217	114	144	178	225	120	149	188	232
313	239	189	153	291	230	186	147	275	223	176	143
180				200				225			
190				156				130			
245				245				220			
9.0	13.0	18.0	24.0	12	16	22	30	14.0	19.0	26.0	34.0
17.5				17.5				17.5			
16.4~17.1				16.4~17.1				16.4~17.1			
8.9				8.9				17			
25.3~26				25.3~26				33.4~34.1			
5.8	7	7.6	8.2	6.95	8.7	9.45	10.2	9.95	13.65	14.85	16.05
3+1				3+1				3+1			
1400											
420											
460x410											
180											
470											
890											
130											
49											
37											
5											
2.1											
≤0.4				≤0.4				≤0.4			
25								50			
125											
5x1.5x2.3								5.1x1.5x2.3			



# Technical Data

DESCRIPTION	UNIT	BL170EKS/C460				BL170EKS/C630				BL170EKS/C860			
International specification		460				630				860			
Screw specification		AA	A	B	C	AA	A	B	C	AA	A	B	C
Screw diameter	mm	32	36	40	45	36	40	45	50	40	45	50	55
Screw L/D ratio	L/D	20	23	23	23	20	23	23	23	20	23	23	23
Theoretical injection capacity	cm <sup>3</sup>	161	203	251	318	229	283	358	442	314	397	491	594
Shot weight (PS)	g	148	187	231	292	211	260	329	406	289	366	451	546
	oz	5.2	6.6	8.2	10.3	7.4	9.2	11.6	14.4	10.2	12.9	15.9	19.3
Injection rate into Air	cm <sup>3</sup> /s	125	158	196	247	132	163	207	255	166	210	259	313
	g/s	114	144	178	225	120	149	188	232	151	191	236	285
Injection pressure	Mpa	291	230	186	147	275	223	176	143	277	219	177	147
Injection stroke	mm	200				225				250			
Max. injection speed	mm/s	156				130				132			
Screw speed	r/min	220				220				220			
Theoretical plasticizing speed	g/s (PS)	12.0	16.0	22.0	30.0	14.0	19.0	26.0	34.0	19.0	27.0	35.0	46.0
Sys. Pressure	MPa	17.5				17.5				17.5			
Total motor power	kW	16.4~17.1				16.4~17.1				20.5~22.4			
Power of electric charging motor (ECO only)	kW	17				17				17			
Total motor power(During ECO synchronization)	kW	33.4~34.1				33.4~34.1				37.5~39.4			
Heater power	kW	6.95	8.7	9.45	10.2	9.95	13.65	14.85	16.05	11.45	13.95	14.85	16.65
Number of temp. control zones		3+1				3+1				4+1			
Clamping force	kN					1700							
Opening stroke	mm					480							
Space between tie bar	mmXmm					510×460							
Min. mould height	mm					200							
Max. mould height	mm					530							
Max. Daylight	mm					1010							
Ejector stroke	mm					150							
Ejector force forward	kN					49							
Ejector force backward	kN					37							
Number of ejector bar	PC					5							
Dry Cycle Period	S					2.3							
Energy consumption level	kW.h/kg	≤0.4				≤0.4				≤0.4			
Hopper capacity	kg	25				50							
Oil tank capacity	L					235							
Machine dimensions (L×W×H)	mXmXm	5.6x1.6x2.3								5.7x1.6x2.3			

BL230EKS/C630				BL230EKS/C860				BL230EKS/CI450			
630				860				I450			
AA	A	B	C	AA	A	B	C	AA	A	B	C
36	40	45	50	40	45	50	55	50	55	60	65
20	23	23	23	20	23	23	23	20	23	23	23
229	283	358	442	314	397	491	594	569	689	820	962
211	260	329	406	289	366	451	546	524	634	754	885
7.4	9.2	11.6	14.4	10.2	12.9	15.9	19.3	18.5	22.4	26.6	31.3
167	206	261	322	166	210	259	313	228	276	328	385
152	187	237	293	151	191	236	285	207	251	299	351
275	223	176	143	277	219	177	147	256	211	178	151
225				250				290			
164				132				116			
220				220				210			
16.0	21.0	29.0	37.0	19.0	27.0	35.0	46.0	33.0	44.0	55.0	69.0
17.5				17.5				17.5			
20.5~22.4				20.5~22.4				26.7~29.9			
17				17				21			
37.5~39.4				37.5~39.4				47.7~50.9			
9.95	13.65	14.85	16.05	11.45	13.95	14.85	16.65	16.1	20	21.3	22.6
3+1				4+1				4+1			
				2300							
				530							
				560×510							
				220							
				580							
				1110							
				150							
				67							
				39							
				9							
				2.7							
≤0.4				≤0.4				≤0.4			
				50							
				245							
				5.9x1.7x2.4				6.2x1.7x2.4			

# Technical Data

DESCRIPTION	UNIT	BL280EKS/C860				BL280EKS/C1450				BL280EKS/C2050			
International specification		860				1450				2050			
Screw specification		AA	A	B	C	AA	A	B	C	A	B	C	D
Screw diameter	mm	40	45	50	55	50	55	60	65	60	65	75	80
Screw L/D ratio	L/D	20	23	23	23	20	23	23	23	23	23	23	21.3
Theoretical injection capacity	cm <sup>3</sup>	314	397	491	594	569	689	820	962	918	1078	1435	1633
Shot weight (PS)	g	289	366	451	546	524	634	754	885	845	992	1320	1502
	oz	10.2	12.9	15.9	19.3	18.5	22.4	26.6	31.3	29.9	35.0	46.7	53.1
Injection rate into Air	cm <sup>3</sup> /s	210	266	329	398	228	276	328	385	322	378	503	573
	g/s	191	242	299	362	207	251	299	351	293	344	458	521
Injection pressure	Mpa	277	219	177	147	256	211	178	151	226	193	145	127
Injection stroke	mm	250				290				325			
Max. injection speed	mm/s	168				116				114			
Screw speed	r/min	210				210				210			
Theoretical plasticizing speed	g/s (PS)	21.0	30.0	39.0	51.0	33.0	44.0	55.0	69.0	46.0	58.0	85.0	100.0
Sys. Pressure	MPa	17.5				17.5				17.5			
Total motor power	kW	26.7~29.9				26.7~29.9				37~40.9			
Power of electric charging motor (ECO only)	kW	21				21				30			
Total motor power(During ECO synchronization)	kW	47.7~50.9				47.7~50.9				67~70.9			
Heater power	kW	11.45	13.95	14.85	16.65	16.1	20	21.3	22.6	24.65	26.25	29.45	29.45
Number of temp. control zones		4+1				4+1				4+1			
Clamping force	kN					2800							
Opening stroke	mm					580							
Space between tie bar	mmXmm					660×610							
Min. mould height	mm					240							
Max. mould height	mm					680							
Max. Daylight	mm					1260							
Ejector stroke	mm					190							
Ejector force forward	kN					68							
Ejector force backward	kN					44							
Number of ejector bar	PC					13							
Dry Cycle Period	S					3.6							
Energy consumption level	kW.h/kg	≤0.4				≤0.4				≤0.4			
Hopper capacity	kg					50							
Oil tank capacity	L					330							
Machine dimensions (L×W×H)	mXmXm	6.6x1.8x2.4				7.1x1.8x2.4							

BL350EKS/C1450				BL350EKS/C2050				BL350EKS/C3000			
1450				2050				3000			
AA	A	B	C	A	B	C	D	A	B	C	D
50	55	60	65	60	65	75	80	70	75	85	90
20	23	23	23	23	23	23	21.3	23	23	23	21.5
569	689	820	962	918	1078	1435	1633	1423	1634	2099	2353
524	634	754	885	845	992	1320	1502	1309	1503	1931	2164
18.5	22.4	26.6	31.3	29.9	35.0	46.7	53.1	46.3	53.1	68.2	76.5
285	345	410	482	322	378	503	573	430	493	634	710
259	314	373	438	293	344	458	521	391	449	576	646
256	211	178	151	226	193	145	127	212	185	144	128
290				325				370			
145				114				112			
210				210				170			
36.0	48.0	60.0	76.0	46.0	58.0	85.0	100.0	66.0	79.0	111.0	129.0
17.5				17.5				17.5			
37~40.9				37~40.9				47.2~50.7			
30				30				42			
67~70.9				67~70.9				89.2~92.7			
16.1	20	21.3	22.6	24.65	26.25	29.45	29.45	31	33	37	37
4+1				4+1				4+1			
				3500							
				660							
				710×660							
				270							
				720							
				1380							
				190							
				68							
				44							
				13							
				3.8							
≤0.4				≤0.4				≤0.4			
				50							
				350							
				7.4x2x2.5				7.8x2x2.5			

# Technical Data

DESCRIPTION	UNIT	BL470EKS/C2050				BL470EKS/C3000				BL470EKS/C3700			
International specification		2050				3000				3700			
Screw specification		A	B	C	D	A	B	C	D	A	B	C	D
Screw diameter	mm	60	65	75	80	70	75	85	90	75	80	90	95
Screw L/D ratio	L/D	23	23	23	21.3	23	23	23	21.5	23	23	23	21.7
Theoretical injection capacity	cm <sup>3</sup>	918	1078	1435	1633	1423	1634	2099	2353	1832	2085	2639	2940
Shot weight (PS)	g	845	992	1320	1502	1309	1503	1931	2164	1686	1918	2428	2705
	oz	29.9	35.0	46.7	53.1	46.3	53.1	68.2	76.5	59.6	67.8	85.8	95.6
Injection rate into Air	cm <sup>3</sup> /s	403	473	629	716	430	493	634	710	583	663	839	935
	g/s	367	430	573	652	391	449	576	646	530	603	764	851
Injection pressure	Mpa	226	193	145	127	212	185	144	128	204	179	142	127
Injection stroke	mm	325				370				415			
Max. injection speed	mm/s	143				112				132			
Screw speed	r/min	170				170				150			
Theoretical plasticizing speed	g/s (PS)	51.0	64.0	93.0	110.0	66.0	79.0	111.0	129.0	76.0	90.0	124.0	144.0
Sys. Pressure	MPa	17.5				17.5				17.5			
Total motor power	kW	47.2~50.7				47.2~50.7				59.4~61.4			
Power of electric charging motor (ECO only)	kW	42				42				52			
Total motor power(During ECO synchronization)	kW	89.2~92.7				89.2~92.7				111.4~113.4			
Heater power	kW	24.65	26.25	29.45	29.45	31	33	37	37	31.35	32.95	36.15	36.15
Number of temp. control zones		4+1				4+1				5+1			
Clamping force	kN					4700							
Opening stroke	mm					750							
Space between tie bar	mmXmm					810×760							
Min. mould height	mm					300							
Max. mould height	mm					820							
Max. Daylight	mm					1570							
Ejector stroke	mm					220							
Ejector force forward	kN					116							
Ejector force backward	kN					72							
Number of ejector bar	PC					17							
Dry Cycle Period	S					4.1							
Energy consumption level	kW.h/kg	≤0.4				≤0.4				≤0.4			
Hopper capacity	kg	50				100							
Oil tank capacity	L					430							
Machine dimensions (L×W×H)	mXmXm	8.1x2.2x2.5				8.6x2.2x2.5							

BL550EKS/C3000				BL550EKS/C3700				BL550EKS/C4800			
3000				3700				4800			
A	B	C	D	A	B	C	D	A	B	C	D
70	75	85	90	75	80	90	95	80	85	90	100
23	23	23	21.5	23	23	23	21.7	23	23	23	20.7
1423	1634	2099	2353	1832	2085	2639	2940	2286	2581	2893	3572
1309	1503	1931	2164	1686	1918	2428	2705	2103	2374	2662	3286
46.3	53.1	68.2	76.5	59.6	67.8	85.8	95.6	74.3	83.9	94.1	116.1
516	592	760	852	583	663	839	935	608	686	769	949
469	539	692	776	530	603	764	851	553	624	700	864
212	185	144	128	204	179	142	127	210	186	166	134
370				415				455			
134				132				121			
150				150				150			
72.0	86.0	122.0	140.0	76.0	90.0	124.0	144.0	88.0	103.0	121.0	163.0
17.5				17.5				17.5			
59.4~61.4				59.4~61.4				64.3~67.1			
52				52				52			
111.4~113.4				111.4~113.4				116.3~119.1			
31	33	37	37	31.35	32.95	36.15	36.15	39.1	41.1	43.1	43.1
4+1				5+1				5+1			
				5500							
				850							
				860×800							
				350							
				880							
				1730							
				220							
				116							
				72							
				17							
				4.2							
≤0.4				≤0.4				≤0.4			
50				100							
				540							
9x2.3x2.9				9.2x2.3x2.9							

# Technical Data

DESCRIPTION	UNIT	BL650EKS/C3700				BL650EKS/C4800				BL650EKS/C5900			
International specification		3700				4800				5900			
		A	B	C	D	A	B	C	D	A	B	C	D
Screw specification		A	B	C	D	A	B	C	D	A	B	C	D
Screw diameter	mm	75	80	90	95	80	85	90	100	80	90	100	110
Screw L/D ratio	L/D	23	23	23	21.7	23	23	23	20.7	23	23	23	21
Theoretical injection capacity	cm <sup>3</sup>	1832	2085	2639	2940	2286	2581	2893	3572	2512	3179	3925	4749
Shot weight (PS)	g	1686	1918	2428	2705	2103	2374	2662	3286	2311	2925	3611	4369
	oz	59.6	67.8	85.8	95.6	74.3	83.9	94.1	116.1	81.7	103.4	127.6	154.4
Injection rate into Air	cm <sup>3</sup> /s	626	712	901	1004	608	686	769	949	651	824	1017	1230
	g/s	569	648	820	914	553	624	700	864	592	750	925	1120
Injection pressure	Mpa	204	179	142	127	210	186	166	134	230	181	147	121
Injection stroke	mm	415				455				500			
Max. injection speed	mm/s	142				121				130			
Screw speed	r/min	150				150				150			
Theoretical plasticizing speed	g/s (PS)	80.0	94.0	130.0	151.0	88.0	103.0	121.0	163.0	80.0	109.0	148.0	189.0
Sys. Pressure	MPa	17.5				17.5				17.5			
Total motor power	kW	64.3~67.1				64.3~67.1				77.1~77.4			
Power of electric charging motor (ECO only)	kW	52				52				52			
Total motor power(During ECO synchronization)	kW	116.3~119.1				116.3~119.1				129.1~129.4			
Heater power	kW	31.35	32.95	36.15	36.15	39.1	41.1	43.1	43.1	44.05	48.85	53.65	53.65
Number of temp. control zones		5+1				5+1				5+1			
Clamping force	kN					6500							
Opening stroke	mm					950							
Space between tie bar	mmXmm					960×860							
Min. mould height	mm					400							
Max. mould height	mm					1000							
Max. Daylight	mm					1950							
Ejector stroke	mm					240							
Ejector force forward	kN					154							
Ejector force backward	kN					110							
Number of ejector bar	PC					21							
Dry Cycle Period	S					4.3							
Energy consumption level	kW.h/kg	≤0.4				≤0.4				≤0.4			
Hopper capacity	kg					100							
Oil tank capacity	L					650							
Machine dimensions (L×W×H)	mXmXm	9.7x2.4x3								10.1x2.4x3			

BL750EKS/C4800				BL750EKS/C5900				BL750EKS/C7900			
4800				5900				7900			
A	B	C	D	A	B	C	D	A	B	C	D
80	85	90	100	80	90	100	110	90	100	110	120
23	23	23	21.8	23	23	23	21	23	23	23	21
2286	2581	2893	3572	2512	3179	3925	4749	3465	4278	5177	6161
2103	2374	2662	3286	2311	2925	3611	4369	3188	3936	4763	5668
74.3	83.9	94.1	116.1	81.7	103.4	127.6	154.4	112.7	139.1	168.3	200.3
712	804	901	1112	651	824	1017	1230	793	979	1185	1410
648	731	820	1012	592	750	925	1120	722	891	1078	1283
210	186	166	134	230	181	147	121	230	186	154	129
455				500				545			
142				130				125			
150				150				130			
90.0	106.0	124.0	167.0	80.0	109.0	148.0	189.0	96.0	130.0	166.0	214.0
17.5				17.5				17.5			
77.1~77.4				77.1~77.4				92.6~101.4			
52				52				65			
129.1~129.4				129.1~129.4				157.6~166.4			
39.1	41.1	43.1	43.1	44.05	48.85	53.65	53.65	46	50	54	54
5+1				5+1				6+1			
				7500							
				1050							
				1060×960							
				450							
				1100							
				2150							
				270							
				198							
				129							
				21							
				4.8							
≤0.4				≤0.4				≤0.4			
				100							
				940							
				10.4x2.6x3.1				10.9x2.6x3.1			



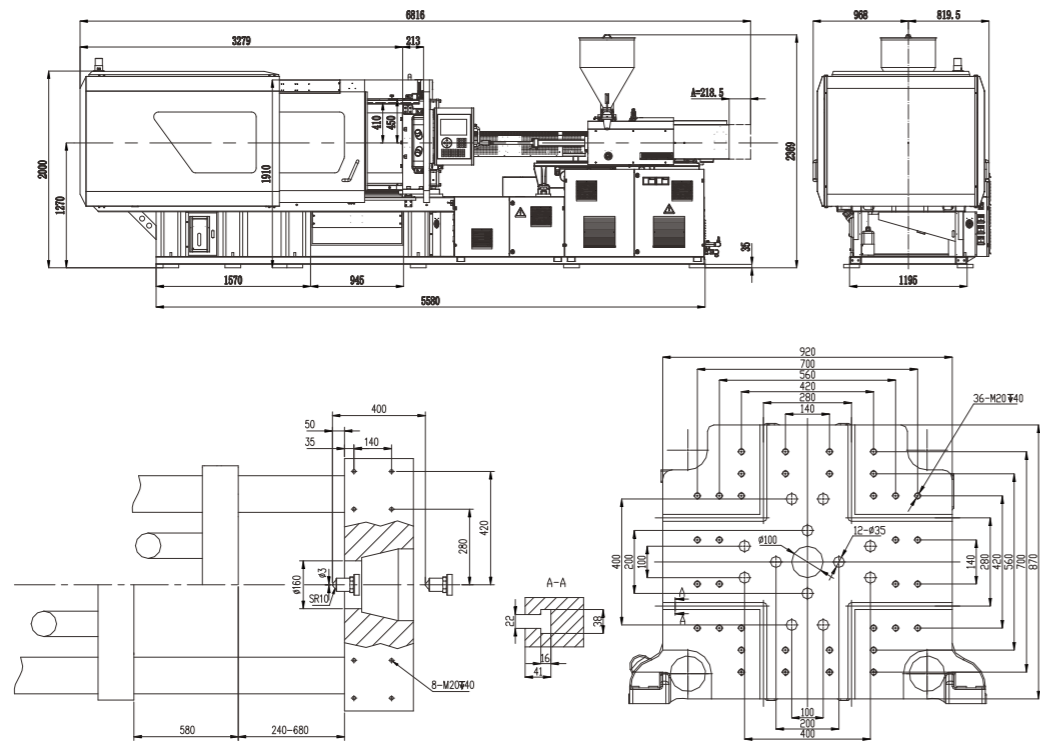
# Technical Data

DESCRIPTION	UNIT	BL850EKS/C5900				BL850EKS/C7900				BL850EKS/C10000			
International specification		5900				7900				10000			
		A	B	C	D	A	B	C	D	A	B	C	D
Screw specification		A	B	C	D	A	B	C	D	A	B	C	D
Screw diameter	mm	80	90	100	110	90	100	110	120	100	110	120	130
Screw L/D ratio	L/D	23	23	23	21	23	23	23	21	23	23	23	21
Theoretical injection capacity	cm <sup>3</sup>	2512	3179	3925	4749	3465	4278	5177	6161	4671	5652	6726	7894
Shot weight (PS)	g	2311	2925	3611	4369	3188	3936	4763	5668	4297	5199	6188	7262
	oz	81.7	103.4	127.6	154.4	112.7	139.1	168.3	200.3	151.8	183.7	218.7	256.6
Injection rate into Air	cm <sup>3</sup> /s	794	1004	1240	1500	793	979	1185	1410	976	1180	1405	1649
	g/s	722	914	1128	1365	722	891	1078	1283	888	1074	1278	1500
Injection pressure	Mpa	230	181	147	121	230	186	154	129	215	178	149	127
Injection stroke	mm	500				545				595			
Max. injection speed	mm/s	158				125				124			
Screw speed	r/min	130				130				125			
Theoretical plasticizing speed	g/s (PS)	84.0	114.0	155.0	198.0	96.0	130.0	166.0	214.0	129.0	164.0	212.0	253.0
Sys. Pressure	MPa	17.5				17.5				17.5			
Total motor power	kW	92.6~101.4				92.6~101.4				106.6~112.1			
Power of electric charging motor (ECO only)	kW	65				65				125			
Total motor power(During ECO synchronization)	kW	157.6~166.4				157.6~166.4				231.6~237.1			
Heater power	kW	44.05	48.85	53.65	53.65	46	50	54	54	57	61.8	69	69
Number of temp. control zones		5+1				6+1				6+1			
Clamping force	kN					8500							
Opening stroke	mm					1100							
Space between tie bar	mmXmm					1120×1020							
Min. mould height	mm					450							
Max. mould height	mm					1150							
Max. Daylight	mm					2250							
Ejector stroke	mm					300							
Ejector force forward	kN					198							
Ejector force backward	kN					129							
Number of ejector bar	PC					21							
Dry Cycle Period	S					5.8							
Energy consumption level	kW.h/kg	≤0.4				≤0.4				≤0.4			
Hopper capacity	kg	100				200				200			
Oil tank capacity	L					1200							
Machine dimensions (L×W×H)	mXmXm	10.7x2.8x3.1				11.2x2.8x3.1				11.2x3.5x4.2			

BL1000EKS/C7900				BL1000EKS/C10000				BL1000EKS/C13500			
7900				10000				13500			
A	B	C	D	A	B	C	D	A	B	C	D
90	100	110	120	100	110	120	130	110	120	130	140
23	23	23	21	23	23	23	21	23	23	23	21.3
3465	4278	5177	6161	4671	5652	6726	7894	6079	7235	8491	9847
3188	3936	4763	5668	4297	5199	6188	7262	5593	6656	7811	9059
112.7	139.1	168.3	200.3	151.8	183.7	218.7	256.6	197.6	235.2	276.0	320.1
914	1128	1365	1624	976	1180	1405	1649	1153	1373	1611	1868
831	1026	1242	1478	888	1074	1278	1500	1050	1249	1466	1700
230	186	154	129	215	178	149	127	221	186	158	137
545				595				640			
144				124				121			
125				125				125			
98.0	133.0	170.0	220.0	129.0	164.0	212.0	253.0	154.0	198.0	237.0	295.0
17.5				17.5				17.5			
106.6~112.1				106.6~112.1				129.6~142.3			
125				125				125			
231.6~237.1				231.6~237.1				254.6~267.3			
46	50	54	54	57	61.8	69	69	70.25	76.25	81.6	81.6
6+1				6+1				7+1			
				10000							
				1150							
				1160×1060							
				500							
				1200							
				2350							
				300							
				248							
				165							
				21							
				6.3							
≤0.4				≤0.4				≤0.4			
100				200				200			
				1400							
				11.2x3.5x4.2				11.5x3.5x4.2			

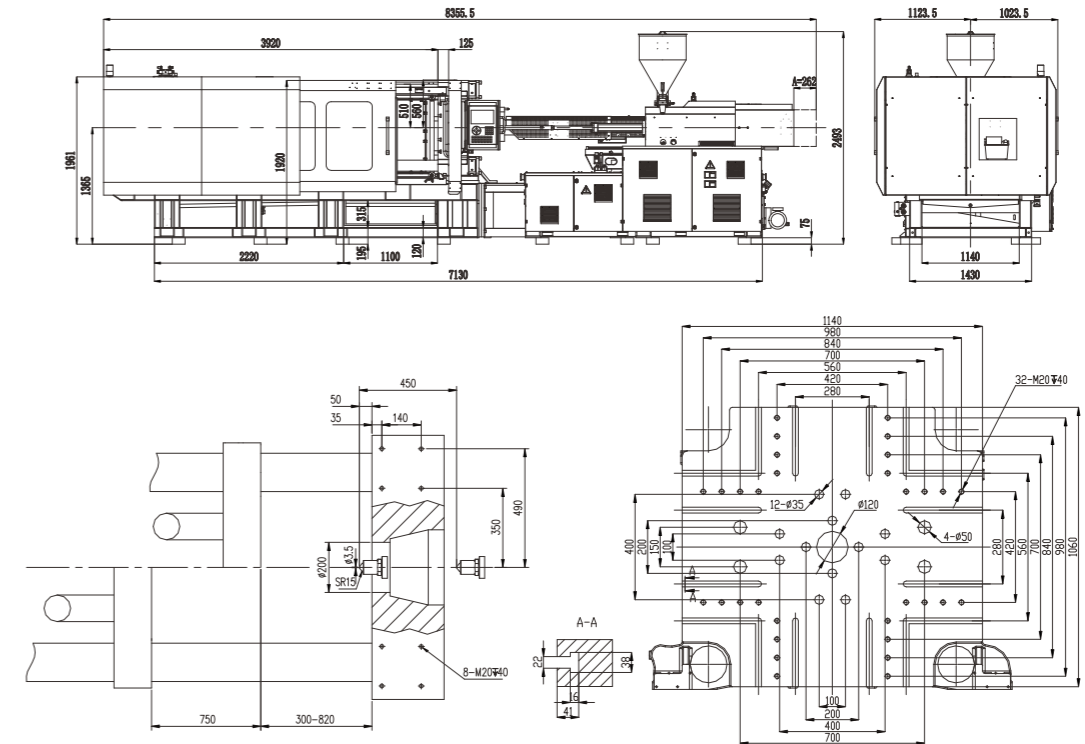


# Platen Dimensions & Machine Dimensions



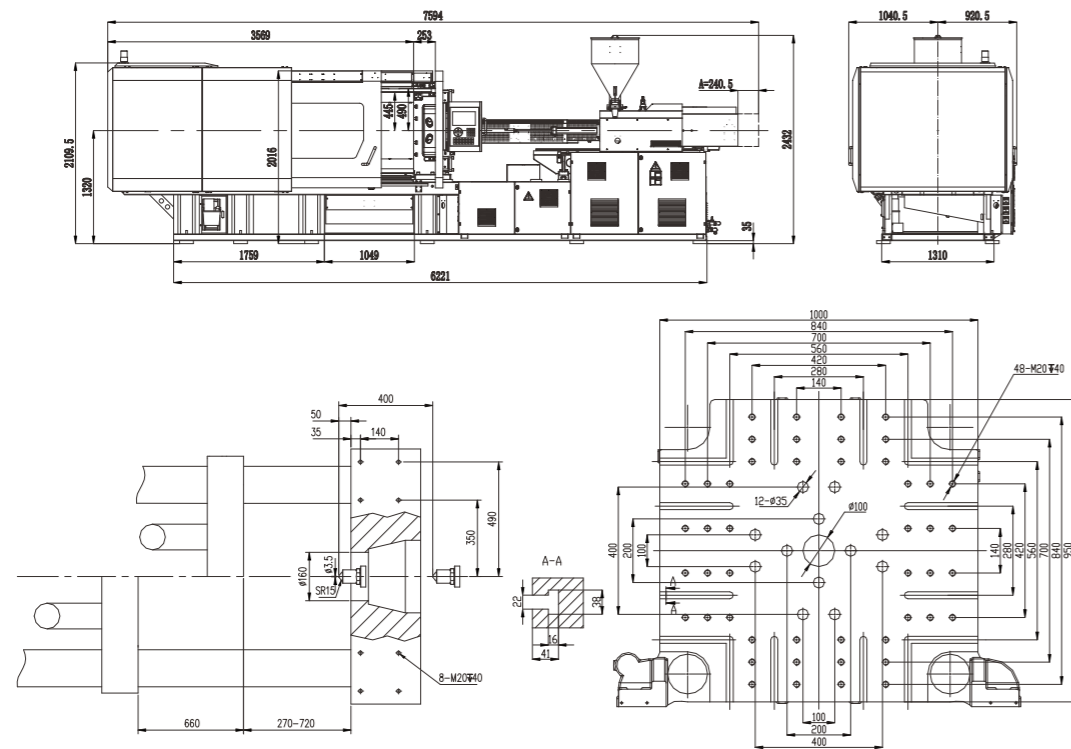
**BL280EKS**

Note: A indicates the addition of electric charging to increase the size



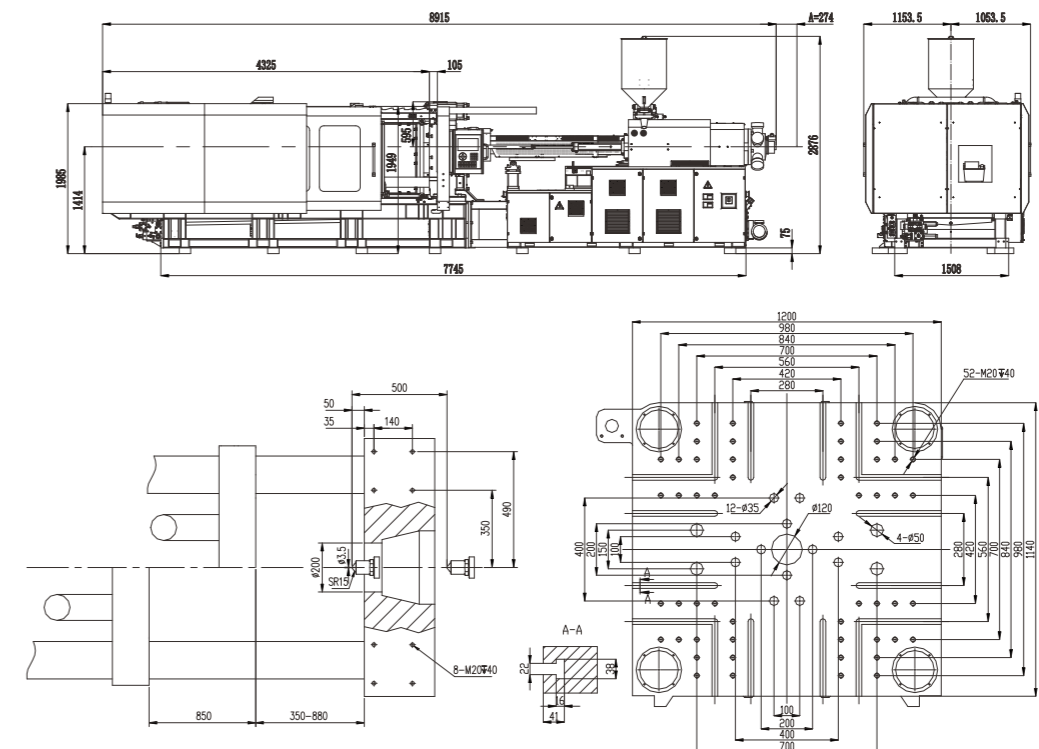
**BL470EKS**

Note: A indicates the addition of electric charging to increase the size



**BL350EKS**

Note: A indicates the addition of electric charging to increase the size



**BL550EKS**

Note: A indicates the addition of electric charging to increase the size





● Standard ◎ Optional

Clamping Unit	100-470EKS		550-1000EKS	
	Standard	Optional	Standard	Optional
Optimized version of the patented outside five-point mold clamping structure	●		●	
Manual lubrication of mold adjustment nut	●		●	
Platen /cross head/toggle use qt500-7 high rigid ductile iron	●		●	
T slot platen	●		●	
The sliding foot of moving plate is supported by linear guideway (100-1000EKS)	●			
Hydraulic and Electric, dual security protection	●		●	
Machanical safety protection	●		●	
hydraulic motor drive gear automatic mould high adjust mould	●		●	
Automatic adjustment of clamping force on demand	●		●	
EU18 robot postion	●		●	
Low pressure mould protect with high precisionlow pressure mould protect with high precision	●		●	
Auto-door control and safety switch in its bottom and confirmed button in mold closing.			●	
The operation of the open/close mold ,ejection is controlled by a high precision electronic ruler.	●		●	
High precision open-close mold positioning control system, positioning repetition accuracy up to ±0.5 mm (patent design)	●		●	
Optional:multiple ejector model, saperated setting pressure, speed.	●		●	
Equipped with synchronous ejector and core pulling system. (1000EKS)			●	
Five process in mold opening and mold closing, adjustable pressure	●		●	
Self-detector for volumetric central oil lubrication, equiped with terminal pressure detection	●		●	
Fully enclosed safety sheet metal, movable safety door	●		●	
Open type security door(1000eks)			●	
Safe top cover plate for clamping area (100-280EKS)	●			
I set water manifold (100-140EKS 5-5;170-470EKS 7-7)	●			
water distributor each on. fixed and the moving platen (550-850EKS 9-9;5-5;1000EKS 9-9;8-8)			●	
Buffer strip for security door	●		●	
EU2 mold mounting dimension		◎		◎
Magnetic platen		◎		◎
Hydraulic clamber		◎		◎
Moveable tiebar (230-1000EKS)		◎		◎
Mould heat shielded plate		◎		◎
Bigger mould height		◎		◎
Electric/dydraulic spin demolding system		◎		◎
Mold lifting rod		◎		
Wider machine cover&door		◎		◎
Heightened frame(100-850EKS)		◎		
Central ejector rod reinforce reseting function		◎		◎
Bigger eject force		◎		◎
Bigger eject stroke		◎		◎
Compulsive ejector back device		◎		◎
Special water manifold(flow meter)		◎		◎
Valve device		◎		◎
Automatic lubrication of mold adjustment nut		◎		◎
Screw hole platen		◎		◎

● Standard ◎ Optional

Injection Unit	100-470EKS		550-1000EKS	
	Standard	Optional	Standard	Optional
A new type of double cylinder balanced injection system with ultra low oil return resistance	●		●	
Linear guide rail support structure	●		●	
Low speed but in large torque hydraulic motor	●		●	
Design of high quality nitride steel high efficiency plasticizing screw barrel in germany	●		●	
Ceramic heating band	●		●	
Multi-section pid temperature control for nozzle and barrel	●		●	
Fully enclosed heat shield	●		●	
Twin injection cylinder design	●		●	
Injection stroke control with precise transducer	●		●	
The strimming device of the nozzle	●		●	
Time-setting heating function,to start	●		●	
Screw anti-fluid device (pull-out/retract/suck back)	●		●	
High rigid beam supporting structure	●		●	
Six stages of injection,five stages of holding pressure,five stages of charging,pressure/speed can be adjusted	●		●	
Screw rotation speed detection	●		●	
Auto purge function for cleaning the barrel function	●		●	
Proportional back pressure	●		●	
Central lubrication in injection unit	●		●	
Hopper temperature control	●		●	
Bearing type mobile hopper seat with ordinary hopper(100-850 EKS)	●		●	
Feeding plate, without hopper (1000EKS)			●	
Barrel supporting structure			●	
Anti-slip board for injection base	●		●	
Extented nozzle,extent to 50mm.	●			◎
Extented nozzle,extent to 100mm.		◎	●	
Spring or hydraulic,penumatic and self-locking nozzle		◎		◎
Enlarging the carriging structure		◎		◎
Reducing shot out the structure		◎		◎
Special special screw barrel (electroplating, alloy, all hard pcmma, pbt,pa, etc.)		◎		◎
Central self-lubrication in injection unit		◎		◎
Infrared heating band		◎		◎
Barrel fan cooling system		◎		◎
Electrical charge		◎		◎
Hydraulic synchronous melting system		◎		◎
Penumatic assistant injection signal interface		◎		◎
Signal interface of color machine		◎		◎
Micro - foaming molding		◎		◎
Manual lubrication pump(1000 EKS)		◎	●	

● Standard ◎ Optional

Control Unit	100-470EKS		550-1000EKS	
	Standard	Optional	Standard	Optional
B&R computer( 18.5 inch)(BL1000EKS)			●	
B&R computer( 10.4 inch)(BL100EKS-BL850EKS)	●		●	
Transducer, weak current switch, solenoid valve line, control line with waterproof bellows.	●		●	
Equipped set value reference & online operation help function	●		●	
Simple robot interface	●		●	
Multiple operating language	●		●	
Safety realy module monitoring	●		●	
Tricolor alarm light	●		●	
Real-time clamping force monitoring	●		●	
The driver adopts ac contactor protection device	●		●	
Parameter data protection lock	●		●	
Pid automatic temperature control,realizes the cylinder temperature self-correcting	●		●	
Heating dual protection and solid state relay control.	●		●	
USB interface, easy backup panel application update and mould parameters save	●		●	
Have stop memory function,random can store 240 sets mould data	●		●	
200 group abnormal alarm and 200 group modify record store	●		●	
Multi-level password settings to prevent the error revising/changing unintentionally and the user could be freely authorized the qualifier to access the related password level as request.	●		●	
Input, output point detection and i/o online simulation function, can quickly confirm the machine operation status.	●		●	
The front and rear door emergency stop switch protection	●		●	
Quality data process monitoring interface.	●		●	
Production statistical process control real-time list interface (spc)	●		●	
Equipped with feeding and detective sensor(100-350EKS)	●			
Socket: 5-core 32A×1+5 core 16A×1, 3-core multi-function ×2	●	◎		
Socket: 5-core 32A×1+5 core 16A×1, 3-core multi-function ×2		◎	●	
Socket: 5-core 32A×2+5 core 16A×2, 3-core multi-function ×2(1000EKS)		◎		◎
Real-time energy consumption monitoring		◎		◎
The(euro map)robot interface		◎		◎
Hot runner interface		◎		◎
Reserve air blow, core pulling, ejector backward protection and other kinds of interfaces.		◎		◎
KEBA Computer 10 inch color screen		◎		◎
IV3100 computer (10 inch, 12 inch)		◎		◎
KEBA Computer 12 inch color screen		◎		◎
Servo system adopts digital (CAN) communication (inovance drive)		◎		◎
Built-in operating instructions for computer (IV3100 computer )		◎		◎
Special requirement socket		◎		◎
Computer network centralized control, network monitoring system.		◎		◎
Injection moulding machine industry 4.0 networking function (RS232\CAN\ETHERCAT)		◎		◎
Front and rear safety door light curtains protection		◎		◎

● Standard ◎ Optional

Hydraulic Unit	100-470EKS		550-1000EKS	
	Standard	Optional	Standard	Optional
Servo energizing-savingsystem	●		●	
Oil temperature deviation automatic alarm	●		●	
Motor overload protection function	●		●	
Net oil suction filter	●			
Self-sealing soil filter			●	
Standard:one core pulling, reserve one core pulling(fixed platen)	●			
Standard with 2 core pulling(1 on fixed & 1 moving),reserve 2 core pulling(1 on fixed & 1 on moving) with core hold and release function.			●	
Uncovering high pressure hose with explosion-proof chain	●		●	
Mold open differential device	●		●	
Imported famous brand hydraulic control valve.	●		●	
Imported famous brand hydraulic seals.	●		●	
Imported nameplate high pressure hose.	●		●	
Multi-group sequential injection function (electrical interface)		◎		◎
Multi-group sequential injection function (independent 1 kw servo pump, ordinary motor, pneumatic valve available.)		◎		◎
High precision bypass filter		◎		◎
Enlarge plasticizing motor		◎		◎
Ejector backward buffering function		◎		◎
Nitrogen injection function (ACC)		◎		◎
Special numbers of core pulling		◎		◎
Enlarge pump motor power		◎		◎
Injection servo valve		◎		◎
Injection proportional valve		◎		
Mold open/clos proportional valve.		◎		◎
Ejector proportional valve		◎		◎
Cooling water filter	●		●	

● Standard ◎ Optional

Other	100-470EKS		550-1000EKS	
	Standard	Optional	Standard	Optional
Standard machine color of Bole EKS (BL470EKS-BL1000EKS)	●		●	
Adjustable level pad	●		●	
Spare parts tool box,common tools ,vulnerable parts ,extended nozzle,user's guide	●		●	
Machine fixed I-shaped positioning block		◎		◎
Special color (for cover)		◎		◎
Robot		◎		◎
Magnetic shelf		◎		◎
Hopper dryer		◎		◎
Auto-loader		◎		◎
Fumigation wood package		◎		◎
Hydraulic oil		◎		◎
Multiple language warning signs		◎		◎