



# EKS Series

EKS Hydraulic Servo Energy  
Saving Injection Molding Machine



**Central Clamping Toggle  
Invention Patent in China**  
(Patent No.: ZL2011 10250342.5)



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%.

## • Economic

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‰

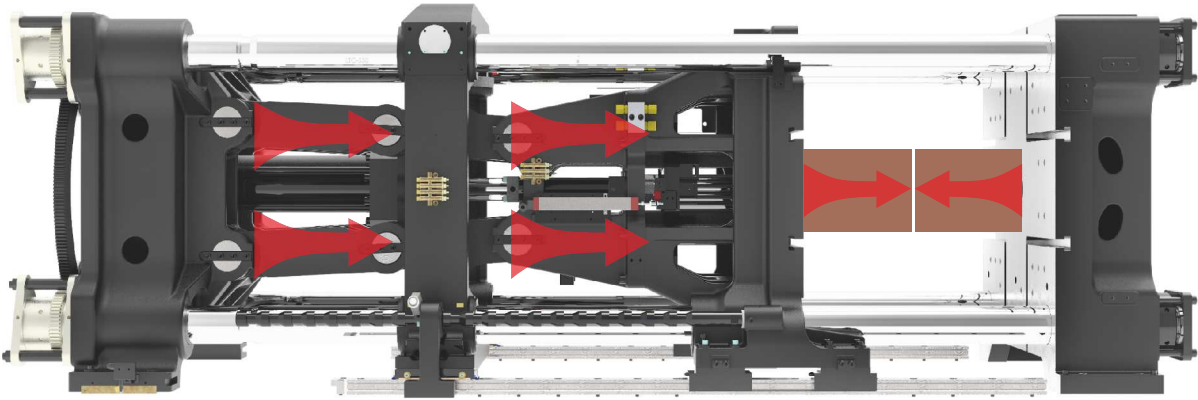
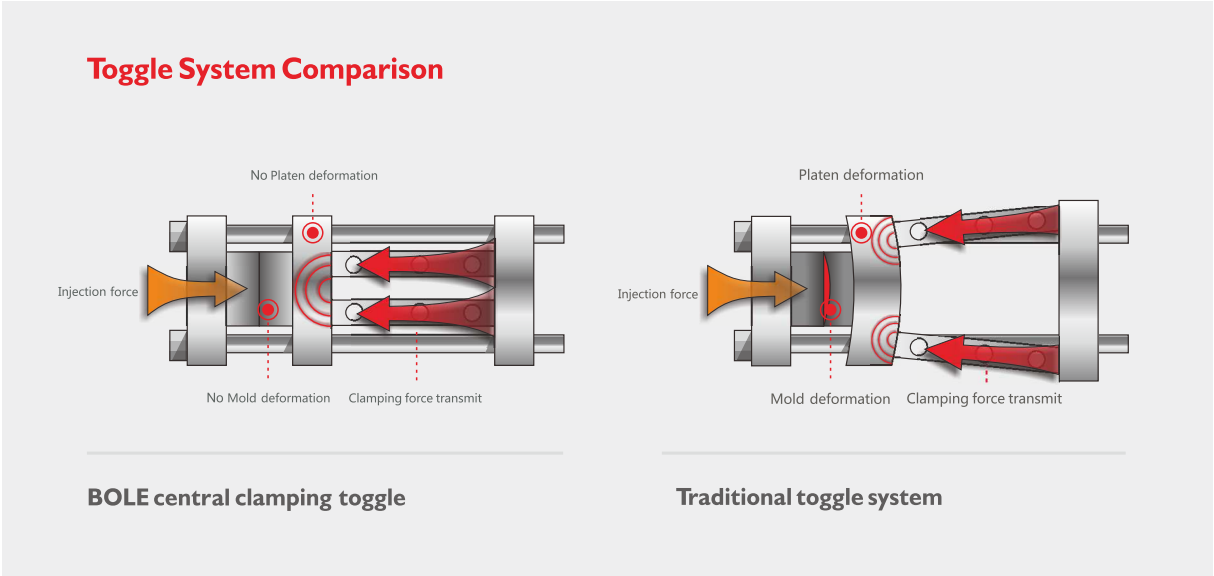
## • Intelligent

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

# Central Clamping Toggle, invention patent in China

**Central Clamping Toggle**  
Obtained the National Invention Patent of China  
(Patent No.: ZL2011 10250342.5)



**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).



# Clamping Unit

EKS central clamping toggle was design and stimulate by professional software .  
overall structure rigidity increased by30%



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

100-1000 ton 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.

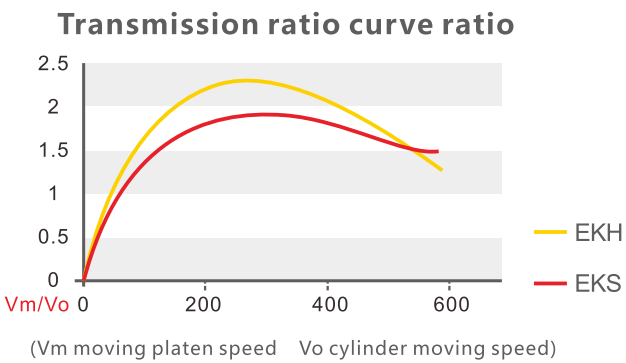
280-4000 Ton offer more spaces with  
built-in clamping cylinder compared  
with previous model

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

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

1200ton and above use non-slip foot design to  
make the machine more stable and reliable  
when heavy mold is loaded.

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.(100-1000EKS)





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 enviroments.

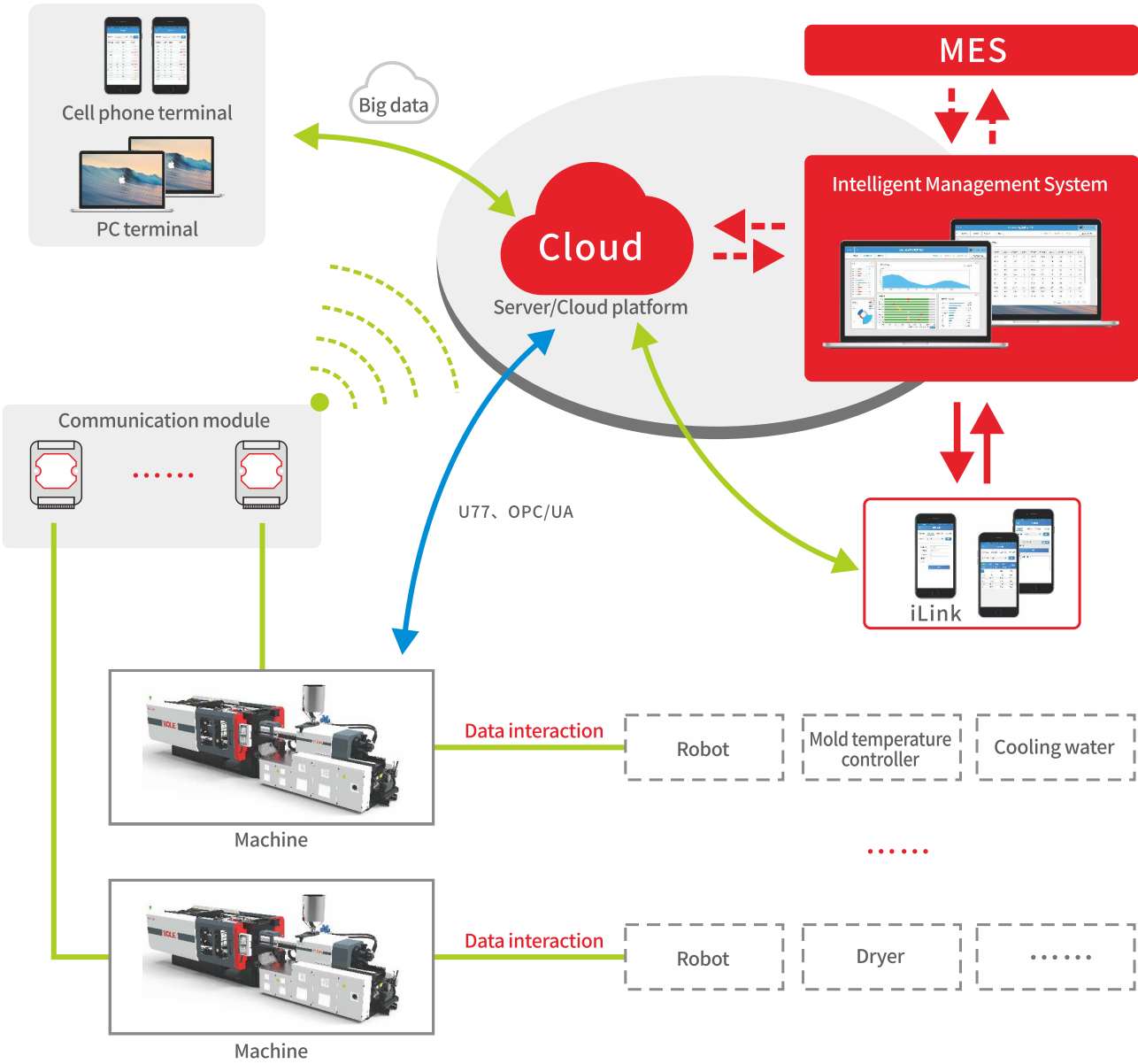
# Control Unit



- EKS series all equipped with KEBA-I2980 12" touch screen.
- Equipped with I/O safety advice against short circuit
- High accuracy, high intelligence and high scalability , self-design control software for patent, standard with reserved interface of industrial 4.0(MES,OPC etc).
- Unique hydraulic system for clamping combined with patent software, lead to repeatability precision.
- Main electric component use brand Schneider Eaton, ABB, Fuji, which ensure long service life.
- Strong and feeble electricity detach layout, high anti interface, and independent electric control box structure for the convenience of installation, debugging and maintainance.

# 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 Master 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 Master 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, EKS Master 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

Master 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 consumpition of electrical injection molding machine.

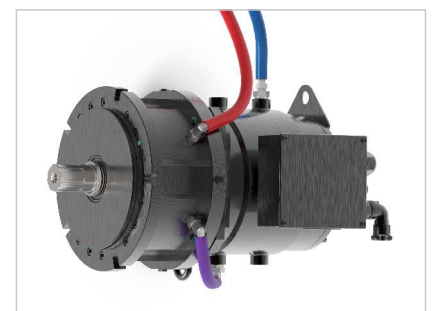
By sampling bole test, Master energy saving machine with the latest servo driving system technology, with the same tonnage model and produce the same products, under the same condition, BOLE machine save 15% at least than the traditional servo energy saving machine.

The screw speed of Master 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 Master energy saving machine can save at least 25% consumption compare with the tradional 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 Master 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 (infraredquartz tube is easy to be damaged)





# New Electric Charging System

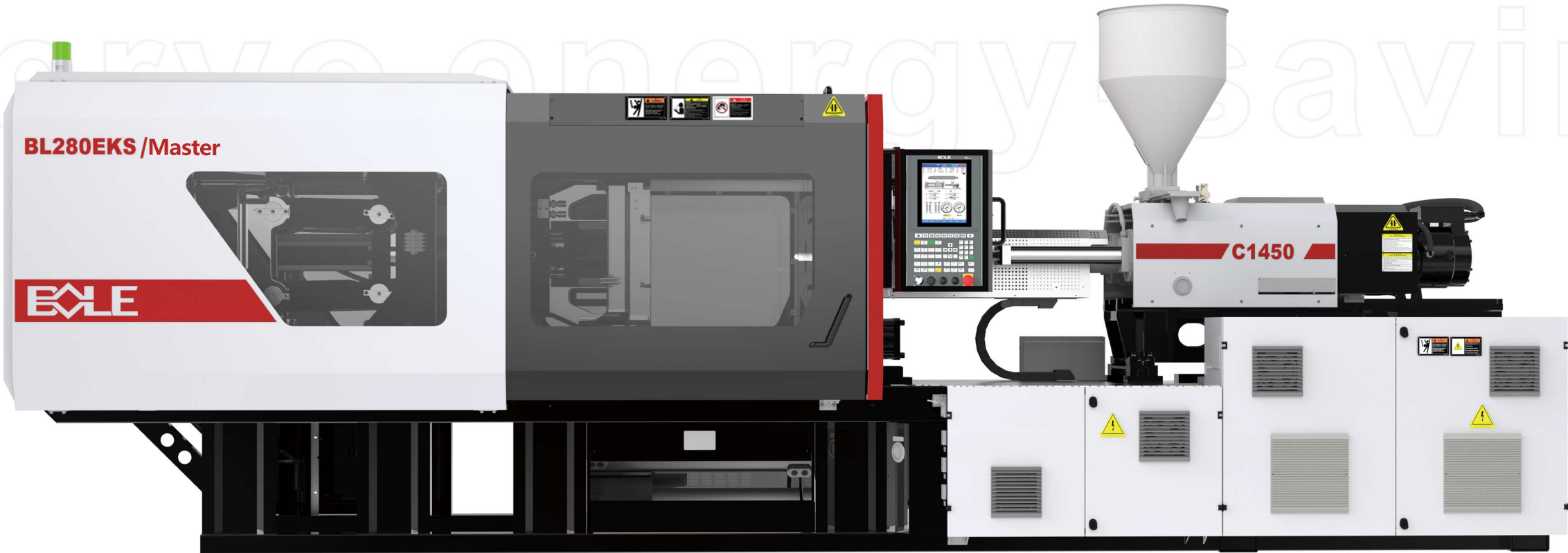
The energy consumption of charging action accounts for about 40%-50% of the total energy consumption for the injection molding machine. Reducing the energy consumption of charging action is the most effective scheme for injection molding manufacturer to realize energy saving. The charging transmission 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 hydaulic 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 electicty 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 Master 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



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 Master 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.



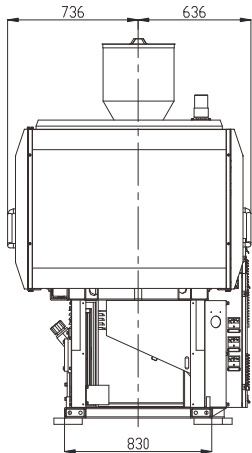
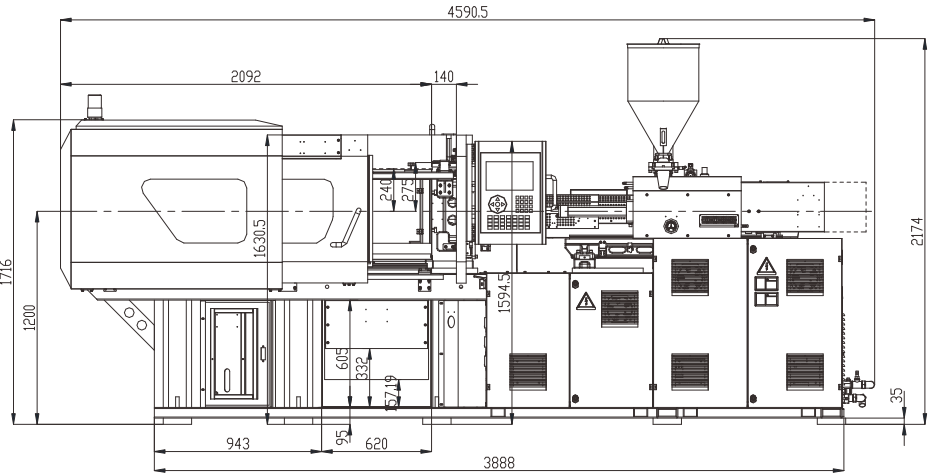
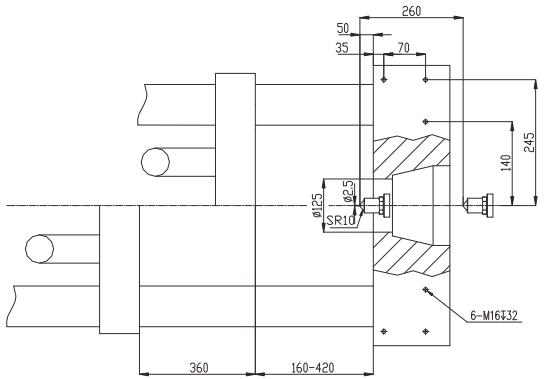
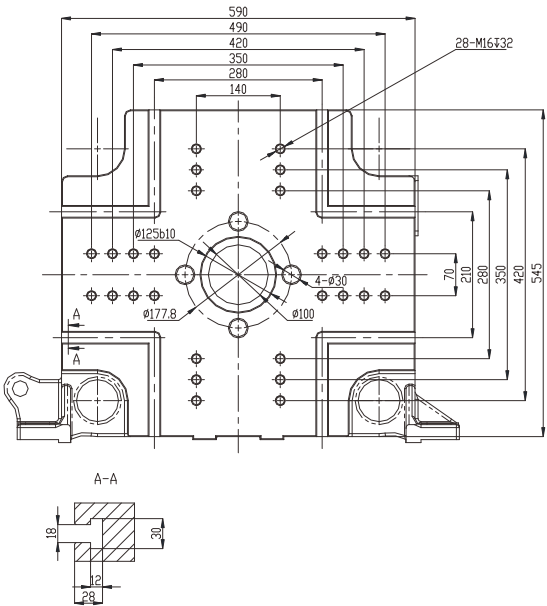
The fifth generation of oil-cooled servo power system



BL 100EKS

Technical Data

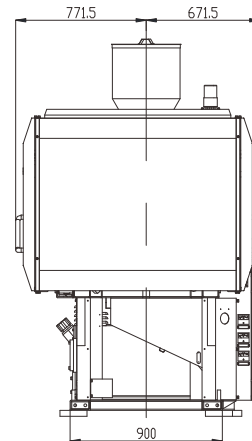
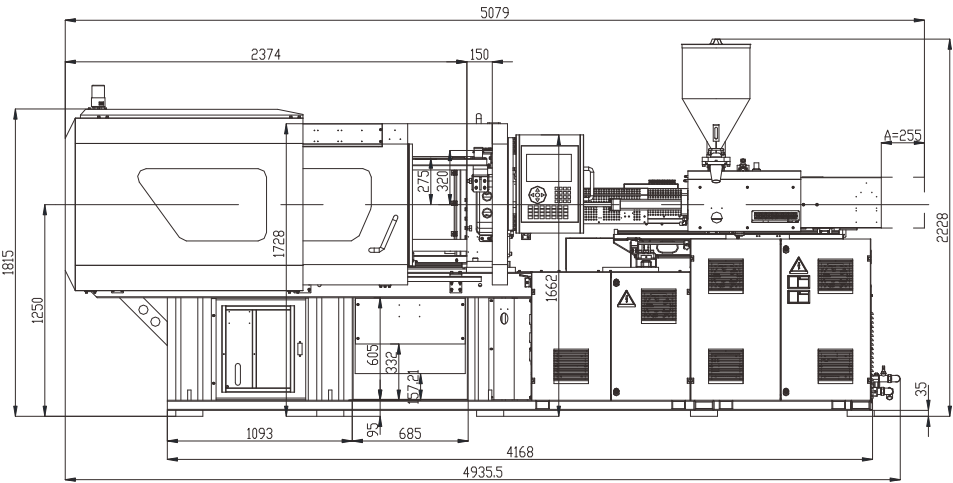
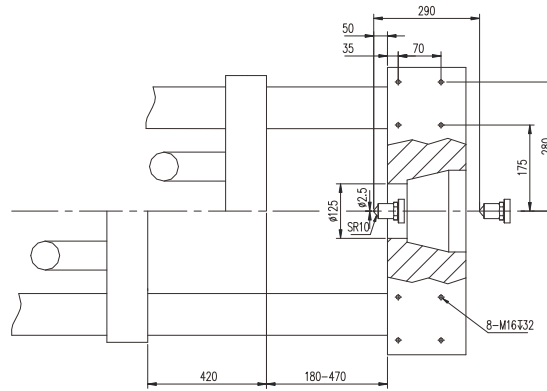
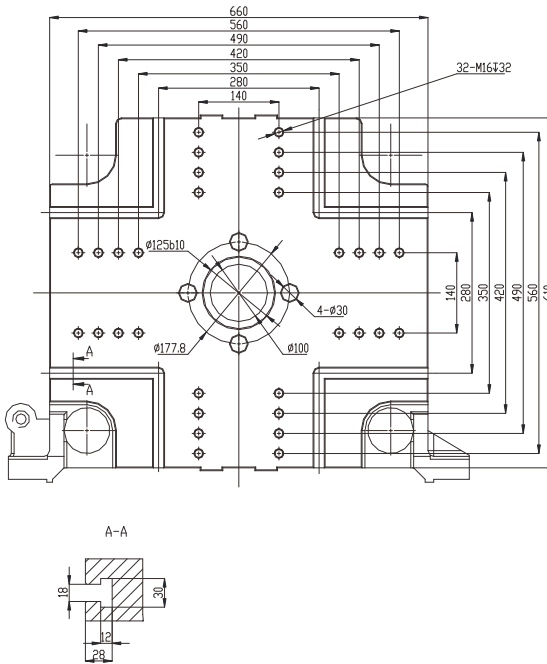
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International specification		C340			
Screw specifications		AA	A	B	C
Screw diameter	mm	28	32	36	40
Screw ratio	L/D	20	23	23	23
Theoretical injection capacity	cm³	111	145	183	226
Shot weight (PS)	g	102	133	168	208
	oz	3.6	4.7	6.0	7.3
Injection rate into Air	cm³/s	93	122	154	190
Injection rate into Air	g/s	85	111	140	173
Injection pressure	Mpa	313	239	189	153
Injection stroke	mm	180			
Max. injection speed	mm/s	152			
Screw speed	r/min	245			
Theoretical plasticizing speed	g/s (PS)	9	13	18	24
Sys. Pressure	Mpa	17.5			
Total motor power	kW	13.4~15.3			
Power of electric charging motor (ECO only)	kW	8.9			
Total motor power(During ECO synchronization)	kW	22.3~24.2			
Heater power	kW	5.8	7	7.6	8.2
Number of temp. control zones		3+1			
Clamping force	kN	1000			
Opening stroke	mm	360			
Space between tie bar	mm x mm	410×360			
Min. mould height	mm	160			
Max. mould height	mm	420			
Max. distance Platen	mm	780			
Ejector stroke	mm	100			
Ejector force forward	kN	34			
Ejector force back	kN	22			
Number of ejector bar	PC	5			
Dry Cycle Period	s	1.9			
Energy consumption lenel	kW.h/kg	≤0.4			
Hopper capacity	kg	25			
Oil tank capacity	L	155			
Machine dimensions (L×W×H)	m x m x m	4.6x1.4x2.2			
Machine weight	ton	3.7			



BL 140EKS

Technical Data

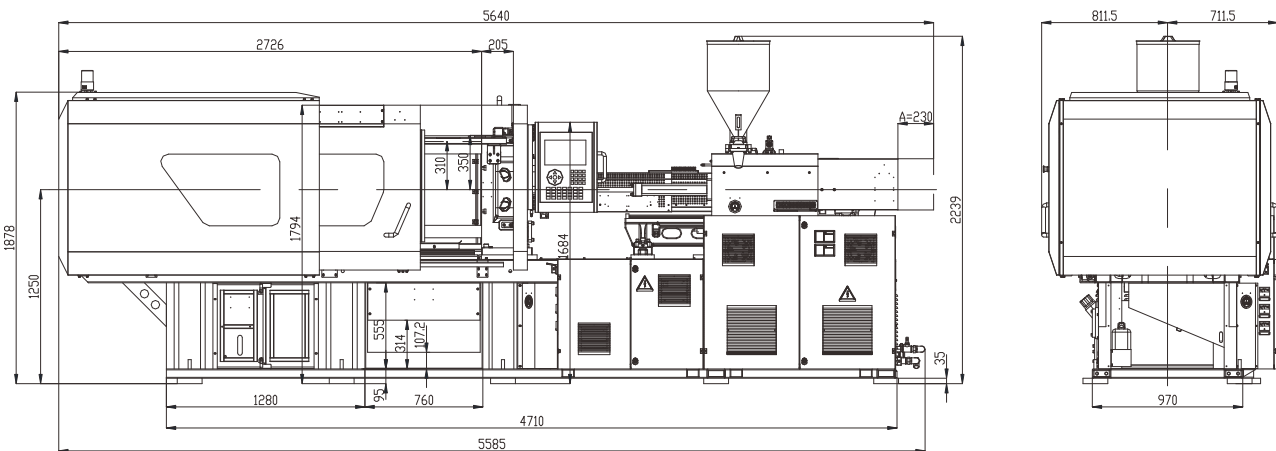
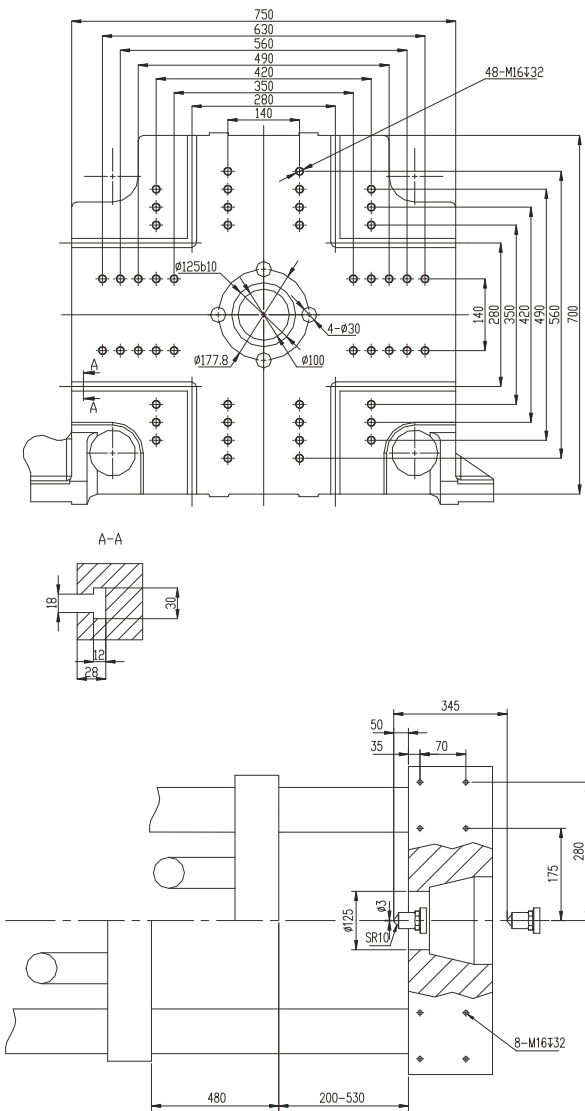
DESCRIPTION	UNIT	Parameter			
International specification		C460			
Screw specifications		AA	A	B	C
Screw diameter	mm	32	36	40	45
Screw ratio	L/D	20	23	23	23
Theoretical injection capacity	cm³	161	203	251	318
Shot weight (PS)	g	148	187	231	292
	oz	5.2	6.6	8.2	10.3
Injection rate into Air	cm³/s	125	158	196	247
Injection rate into Air	g/s	114	144	178	225
Injection pressure	Mpa	291	230	186	147
Injection stroke	mm	200			
Max. injection speed	mm/s	156			
Screw speed	r/min	245			
Theoretical plasticizing speed	g/s (PS)	12	16	22	30
Sys. Pressure	Mpa	17.5			
Total motor power	kW	16.4~17.1			
Power of electric charging motor (ECO only)	kW	8.9			
Total motor power(During ECO synchronization)	kW	25.3~26			
Heater power	kW	6.95	8.7	9.45	10.2
Number of temp. control zones		3+1			
Clamping force	kN	1400			
Opening stroke	mm	420			
Space between tie bar	mm x mm	460x410			
Min. mould height	mm	180			
Max. mould height	mm	470			
Max. distance Platen	mm	890			
Ejector stroke	mm	130			
Ejector force forward	kN	49			
Ejector force back	kN	37			
Number of ejector bar	PC	5			
Dry Cycle Period	s	2.1			
Energy consumption lenel	kW.h/kg	≤0.4			
Hopper capacity	kg	25			
Oil tank capacity	L	125			
Machine dimensions (L×W×H)	m x m x m	5x1.5x2.3			
Machine weight	ton	4.5			



BL 170EKS

Technical Data

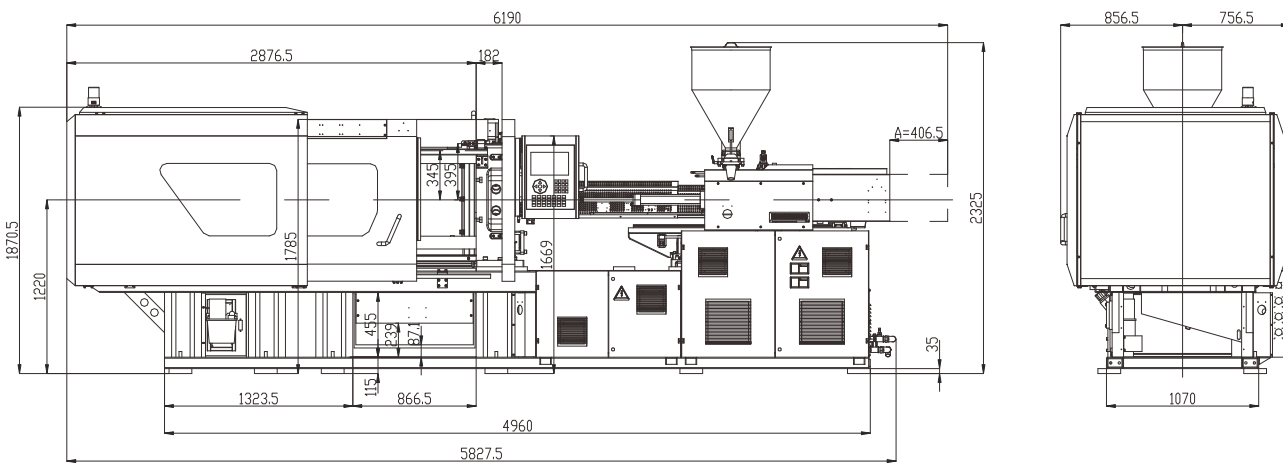
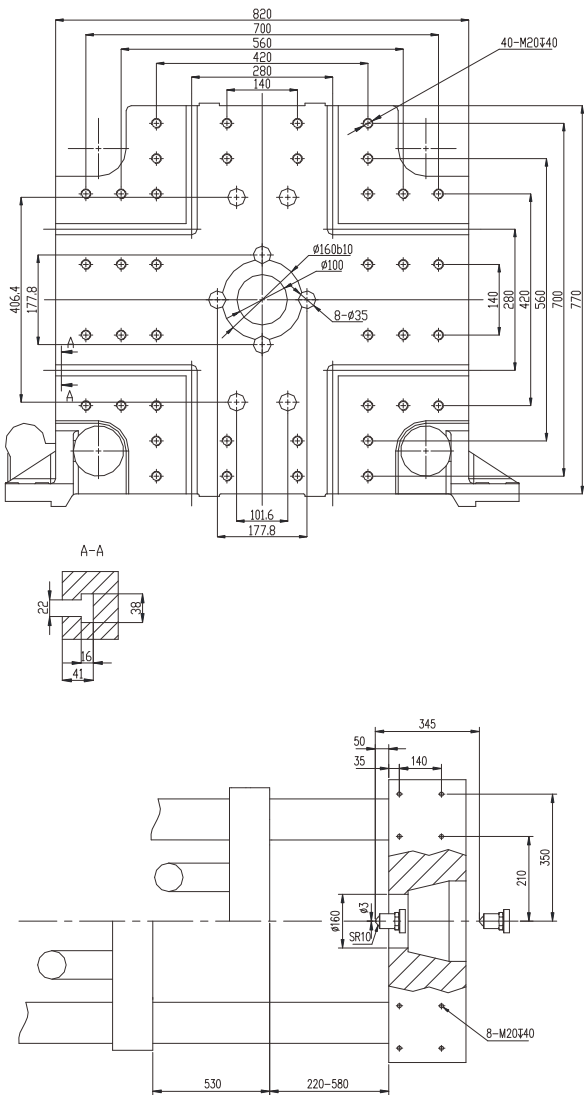
DESCRIPTION	UNIT	Parameter			
International specification		C630			
Screw specifications		AA	A	B	C
Screw diameter	mm	36	40	45	50
Screw ratio	L/D	20	23	23	23
Theoretical injection capacity	cm³	229	283	358	442
Shot weight (PS)	g	211	260	329	406
	oz	7.4	9.2	11.6	14.4
Injection rate into Air	cm³/s	132	163	207	255
Injection rate into Air	g/s	120	149	188	232
Injection pressure	Mpa	275	223	176	143
Injection stroke	mm	225			
Max. injection speed	mm/s	130			
Screw speed	r/min	220			
Theoretical plasticizing speed	g/s (PS)	14	19	26	34
Sys. Pressure	Mpa	17.5			
Total motor power	kW	16.4~17.1			
Power of electric charging motor (ECO only)	kW	17			
Total motor power(During ECO synchronization)	kW	33.4~34.1			
Heater power	kW	9.95	13.65	14.85	16.05
Number of temp. control zones		3+1			
Clamping force	kN	1700			
Opening stroke	mm	480			
Space between tie bar	mm x mm	510×460			
Min. mould height	mm	200			
Max. mould height	mm	530			
Max. distance Platen	mm	1010			
Ejector stroke	mm	150			
Ejector force forward	kN	49			
Ejector force back	kN	37			
Number of ejector bar	PC	5			
Dry Cycle Period	s	2.3			
Energy consumption lenel	kW.h/kg	≤0.4			
Hopper capacity	kg	50			
Oil tank capacity	L	235			
Machine dimensions (L×W×H)	m x m x m	5.6x1.6x2.3			
Machine weight	ton	6.5			



BL 230EKS

Technical Data

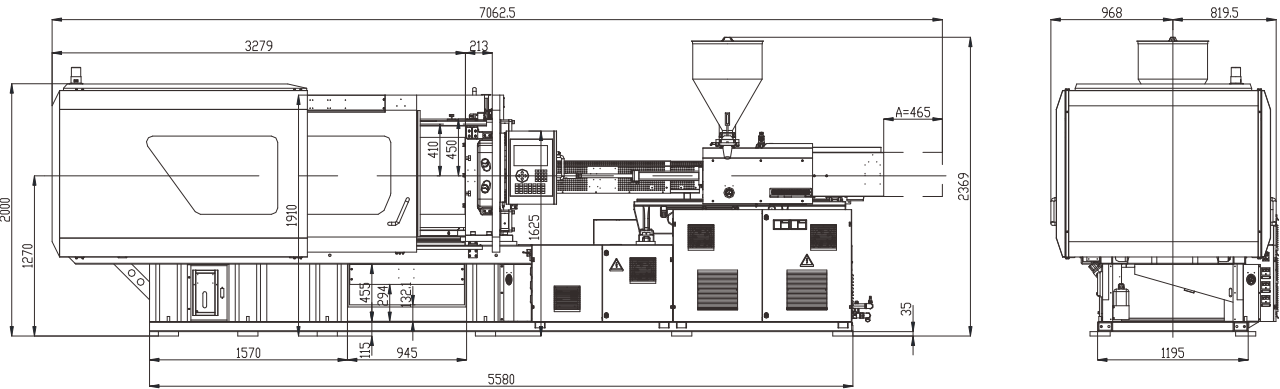
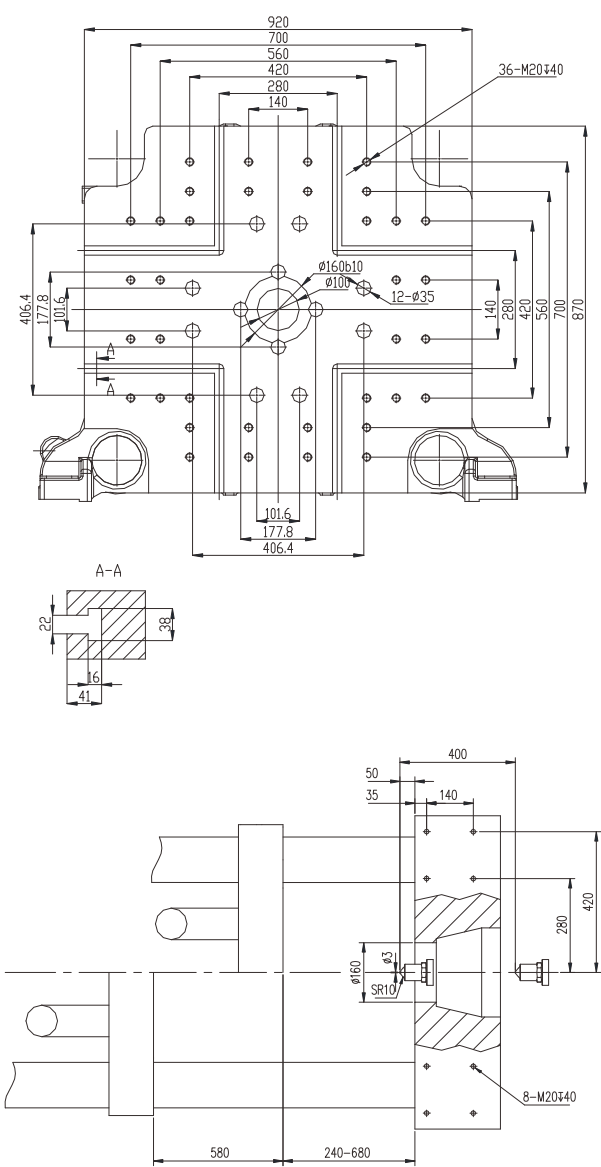
DESCRIPTION	UNIT	Parameter			
International specification		C860			
Screw specifications		AA	A	B	C
Screw diameter	mm	40	45	50	55
Screw ratio	L/D	20	23	23	23
Theoretical injection capacity	cm³	314	397	491	594
Shot weight (PS)	g	289	366	451	546
	oz	10.2	12.9	15.9	19.3
Injection rate into Air	cm³/s	166	210	259	313
Injection rate into Air	g/s	151	191	236	285
Injection pressure	Mpa	277	219	177	147
Injection stroke	mm	250			
Max. injection speed	mm/s	132			
Screw speed	r/min	220			
Theoretical plasticizing speed	g/s (PS)	19	27	35	46
Sys. Pressure	Mpa	17.5			
Total motor power	kW	20.5~22.4			
Power of electric charging motor (ECO only)	kW	17			
Total motor power(During ECO synchronization)	kW	37.5~39.4			
Heater power	kW	11.45	13.95	14.85	16.65
Number of temp. control zones		4+1			
Clamping force	kN	2300			
Opening stroke	mm	530			
Space between tie bar	mm x mm	560×510			
Min. mould height	mm	220			
Max. mould height	mm	580			
Max. distance Platen	mm	1110			
Ejector stroke	mm	150			
Ejector force forward	kN	67			
Ejector force back	kN	39			
Number of ejector bar	PC	9			
Dry Cycle Period	s	2.7			
Energy consumption lenel	kW.h/kg	≤0.4			
Hopper capacity	kg	50			
Oil tank capacity	L	245			
Machine dimensions (L×W×H)	m x m x m	5.9x1.7x2.4			
Machine weight	ton	7			



BL 280EKS

Technical Data

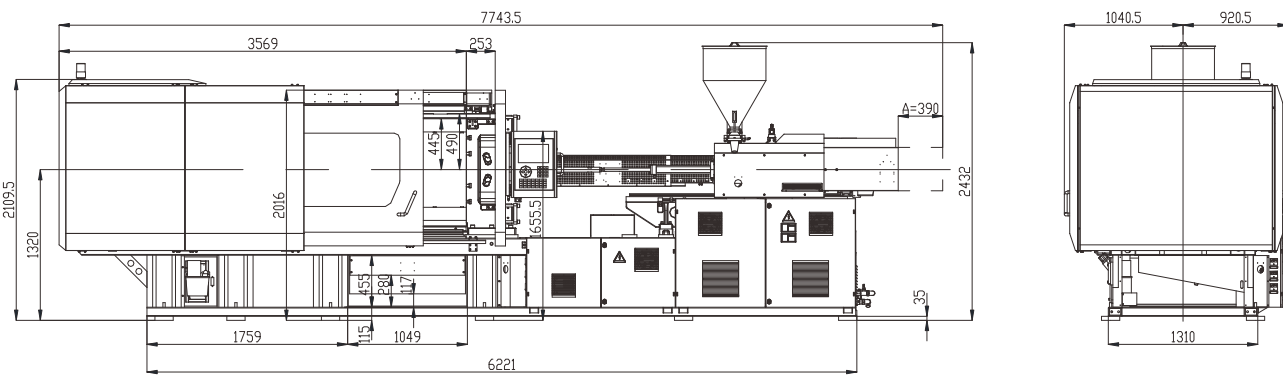
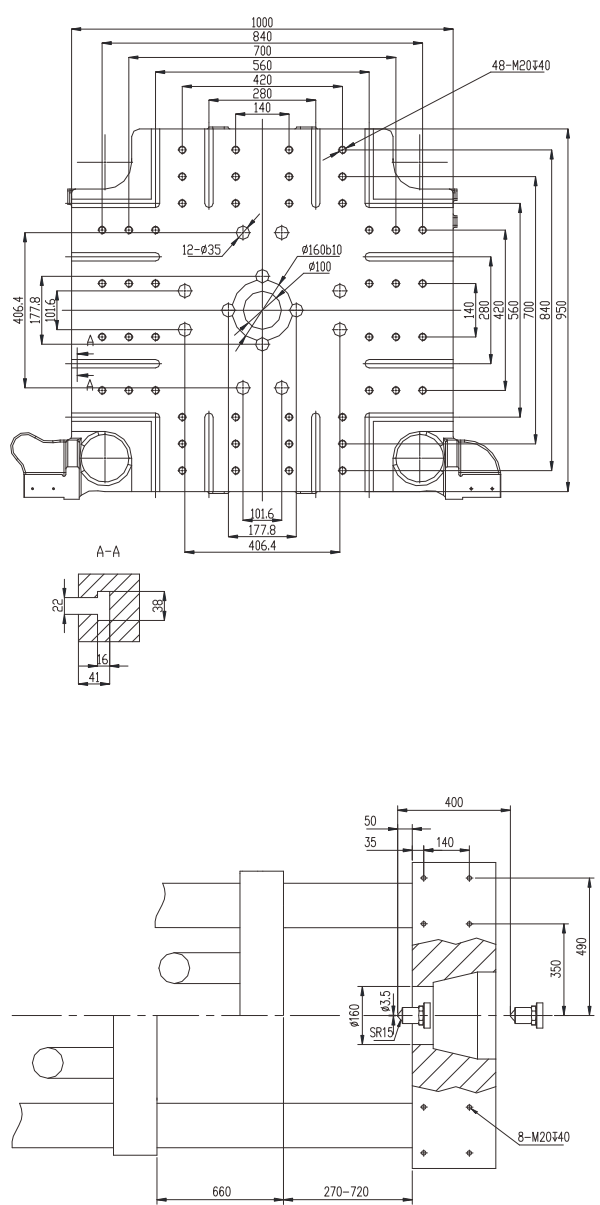
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International specification		C1450			
Screw specifications		AA	A	B	C
Screw diameter	mm	50	55	60	65
Screw ratio	L/D	20	23	23	23
Theoretical injection capacity	cm³	569	689	820	962
Shot weight (PS)	g	524	634	754	885
	oz	18.5	22.4	26.6	31.3
Injection rate into Air	cm³/s	228	276	328	385
Injection rate into Air	g/s	207	251	299	351
Injection pressure	Mpa	256	211	178	151
Injection stroke	mm	290			
Max. injection speed	mm/s	116			
Screw speed	r/min	210			
Theoretical plasticizing speed	g/s (PS)	33	44	55	69
Sys. Pressure	Mpa	17.5			
Total motor power	kW	26.7~29.9			
Power of electric charging motor (ECO only)	kW	21			
Total motor power(During ECO synchronization)	kW	47.7~50.9			
Heater power	kW	16.1	20	21.3	22.6
Number of temp. control zones		4+1			
Clamping force	kN	2800			
Opening stroke	mm	580			
Space between tie bar	mm x mm	660×610			
Min. mould height	mm	240			
Max. mould height	mm	680			
Max. distance Platen	mm	1260			
Ejector stroke	mm	190			
Ejector force forward	kN	68			
Ejector force back	kN	44			
Number of ejector bar	PC	13			
Dry Cycle Period	s	3.6			
Energy consumption lenel	kW.h/kg	≤0.4			
Hopper capacity	kg	50			
Oil tank capacity	L	330			
Machine dimensions (L×W×H)	m x m x m	6.6x1.8x2.4			
Machine weight	ton	9			



BL 350EKS

Technical Data

DESCRIPTION	UNIT	Parameter			
International specification		C2050			
Screw specifications		A	B	C	D
Screw diameter	mm	60	65	75	80
Screw ratio	L/D	23	23	23	21.3
Theoretical injection capacity	cm³	918	1078	1435	1633
Shot weight (PS)	g	845	992	1320	1502
	oz	29.9	35.0	46.7	53.1
Injection rate into Air	cm³/s	322	378	503	573
Injection rate into Air	g/s	293	344	458	521
Injection pressure	Mpa	226	193	145	127
Injection stroke	mm	325			
Max. injection speed	mm/s	114			
Screw speed	r/min	210			
Theoretical plasticizing speed	g/s (PS)	46	58	85	100
Sys. Pressure	Mpa	17.5			
Total motor power	kW	37~40.9			
Power of electric charging motor (ECO only)	kW	30			
Total motor power(During ECO synchronization)	kW	67~70.9			
Heater power	kW	24.65	26.25	29.45	29.45
Number of temp. control zones		4+1			
Clamping force	kN	3500			
Opening stroke	mm	660			
Space between tie bar	mm x mm	710×660			
Min. mould height	mm	270			
Max. mould height	mm	720			
Max. distance Platen	mm	1380			
Ejector stroke	mm	190			
Ejector force forward	kN	68			
Ejector force back	kN	44			
Number of ejector bar	PC	13			
Dry Cycle Period	s	3.8			
Energy consumption lenel	kW.h/kg	≤0.4			
Hopper capacity	kg	50			
Oil tank capacity	L	350			
Machine dimensions (L×W×H)	m x m x m	7.4x2x2.5			
Machine weight	ton	12.5			

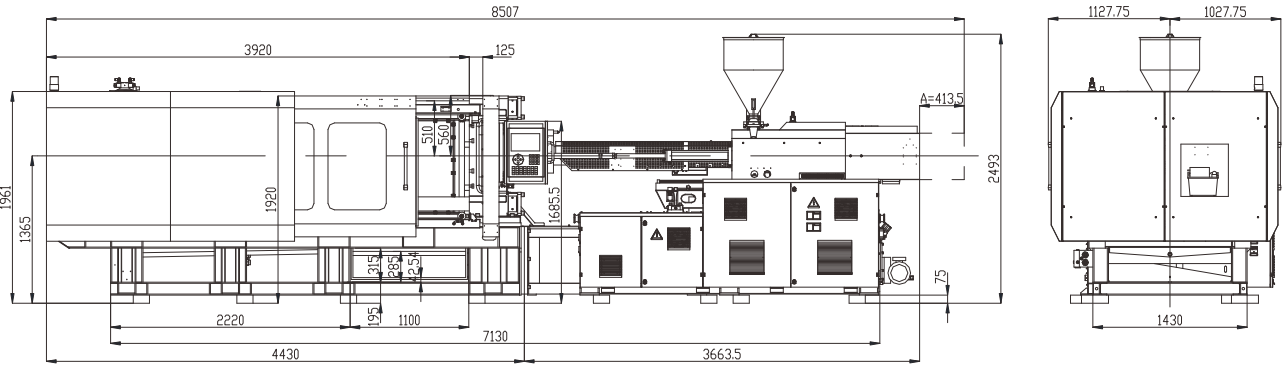
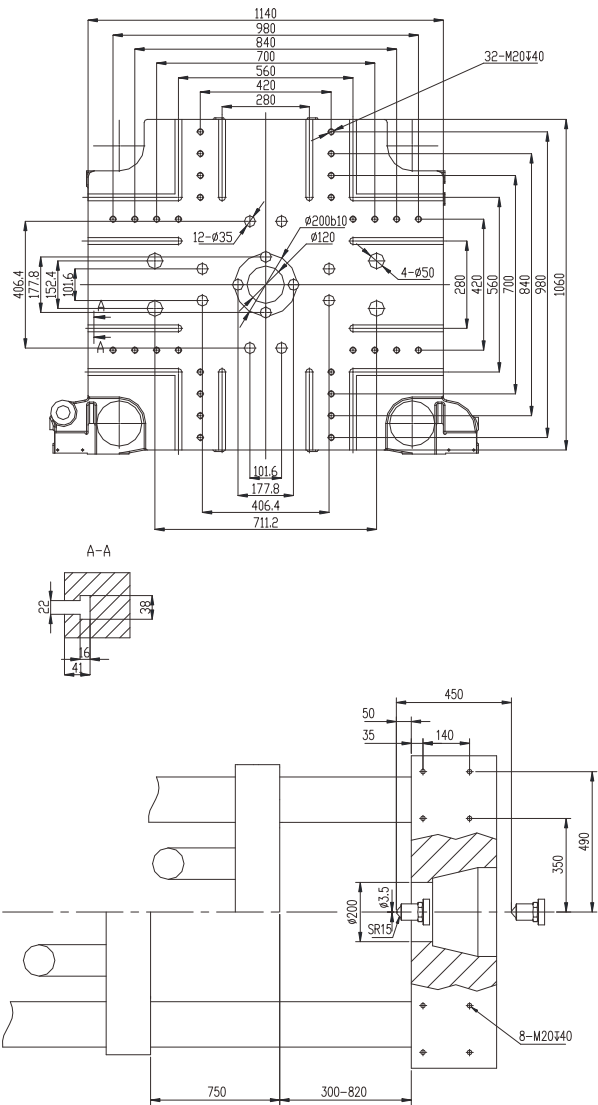




BL 470EKS

Technical Data

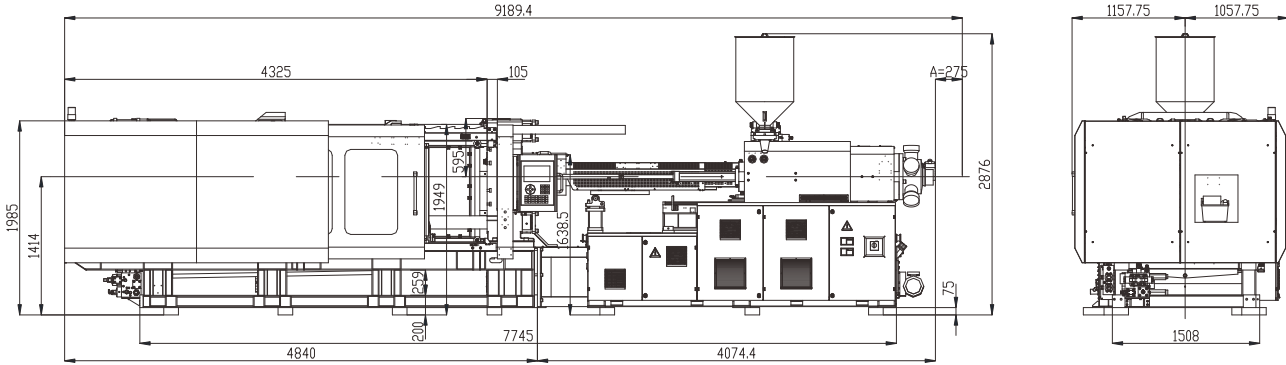
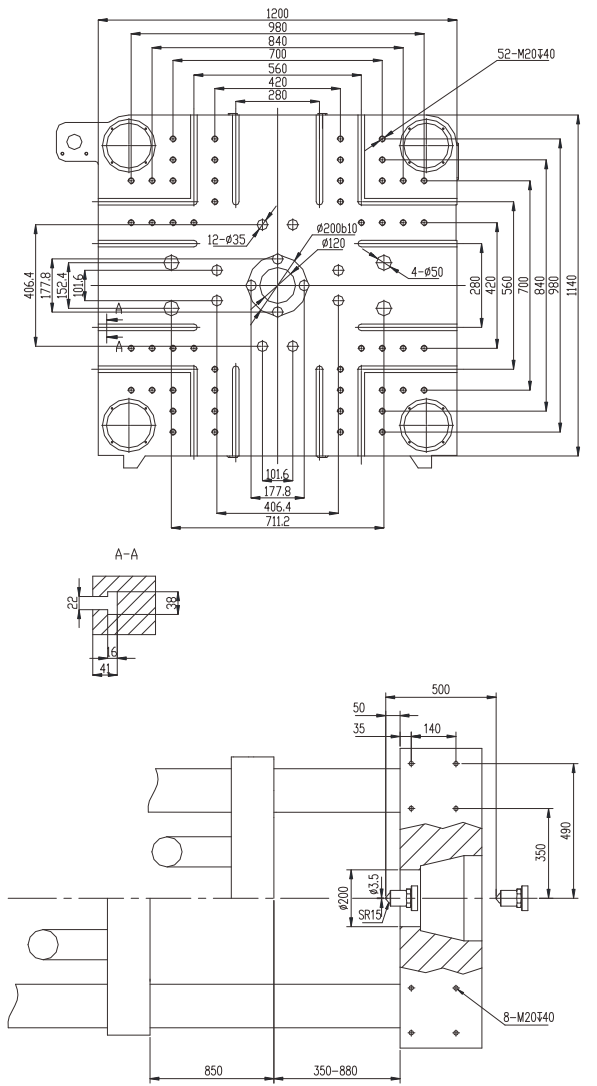
DESCRIPTION	UNIT	Parameter			
International specification		C3000			
Screw specifications		A	B	C	D
Screw diameter	mm	70	75	85	90
Screw ratio	L/D	23	23	23	21.5
Theoretical injection capacity	cm³	1423	1634	2099	2353
Shot weight (PS)	g	1309	1503	1931	2164
	oz	46.3	53.1	68.2	76.5
Injection rate into Air	cm³/s	430	493	634	710
Injection rate into Air	g/s	391	449	576	646
Injection pressure	Mpa	212	185	144	128
Injection stroke	mm	370			
Max. injection speed	mm/s	112			
Screw speed	r/min	164			
Theoretical plasticizing speed	g/s (PS)	66	79	111	129
Sys. Pressure	Mpa	17.5			
Total motor power	kW	47.2~50.7			
Power of electric charging motor (ECO only)	kW	42			
Total motor power(During ECO synchronization)	kW	89.2~92.7			
Heater power	kW	31	33	37	37
Number of temp. control zones		4+1			
Clamping force	kN	4700			
Opening stroke	mm	750			
Space between tie bar	mm x mm	810×760			
Min. mould height	mm	300			
Max. mould height	mm	820			
Max. distance Platen	mm	1570			
Ejector stroke	mm	220			
Ejector force forward	kN	116			
Ejector force back	kN	72			
Number of ejector bar	PC	17			
Dry Cycle Period	s	4.1			
Energy consumption lenel	kW.h/kg	≤0.4			
Hopper capacity	kg	50			
Oil tank capacity	L	430			
Machine dimensions (L×W×H)	m x m x m	8.1x2.2x2.5			
Machine weight	ton	16			



BL 550EKS

Technical Data

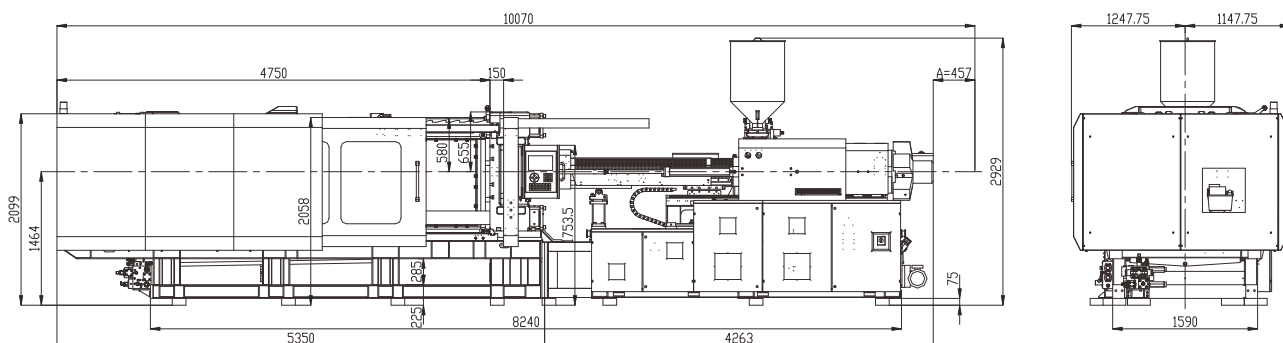
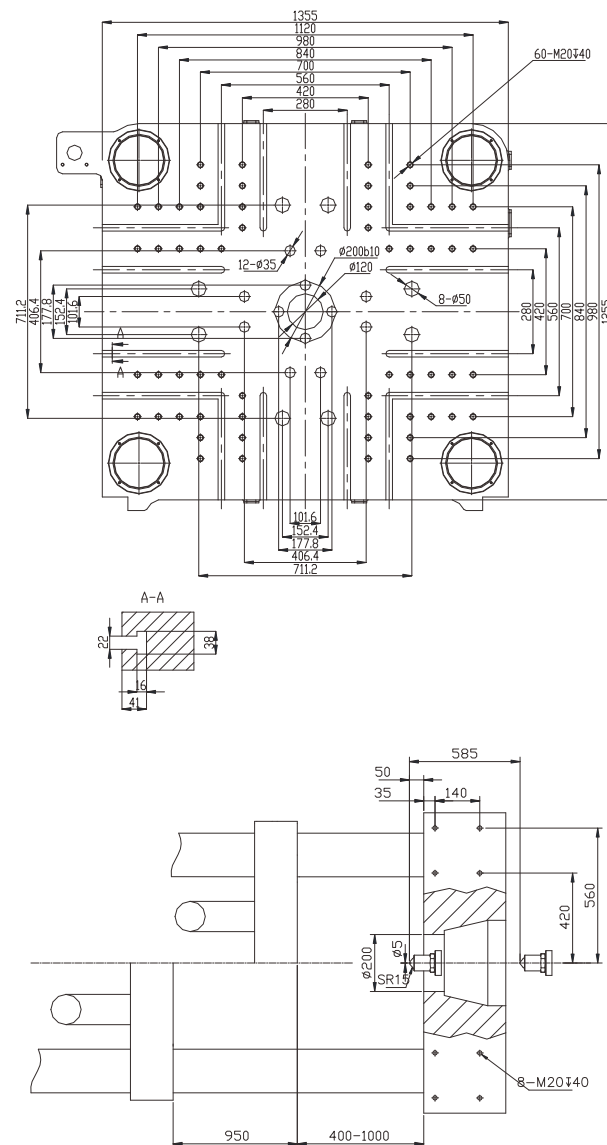
DESCRIPTION	UNIT	Parameter			
International specification		C3700			
Screw specifications		A	B	C	D
Screw diameter	mm	75	80	90	95
Screw ratio	L/D	23	23	23	21.7
Theoretical injection capacity	cm³	1832	2085	2639	2940
Shot weight (PS)	g	1686	1918	2428	2705
	oz	59.6	67.8	85.8	95.6
Injection rate into Air	cm³/s	583	663	839	935
Injection rate into Air	g/s	530	603	764	851
Injection pressure	Mpa	204	179	142	127
Injection stroke	mm	415			
Max. injection speed	mm/s	132			
Screw speed	r/min	150			
Theoretical plasticizing speed	g/s (PS)	76	90	124	144
Sys. Pressure	Mpa	17.5			
Total motor power	kW	59.4~61.4			
Power of electric charging motor (ECO only)	kW	52			
Total motor power(During ECO synchronization)	kW	111.4~113.4			
Heater power	kW	31.35	32.95	36.15	36.15
Number of temp. control zones		5+1			
Clamping force	kN	5500			
Opening stroke	mm	850			
Space between tie bar	mm x mm	860×800			
Min. mould height	mm	350			
Max. mould height	mm	880			
Max. distance Platen	mm	1730			
Ejector stroke	mm	220			
Ejector force forward	kN	116			
Ejector force back	kN	72			
Number of ejector bar	PC	17			
Dry Cycle Period	s	4.2			
Energy consumption lenel	kW.h/kg	≤0.4			
Hopper capacity	kg	100			
Oil tank capacity	L	540			
Machine dimensions (L×W×H)	m x m x m	9x2.3x2.9			
Machine weight	ton	20			



# BL 650EKS

## Technical Data

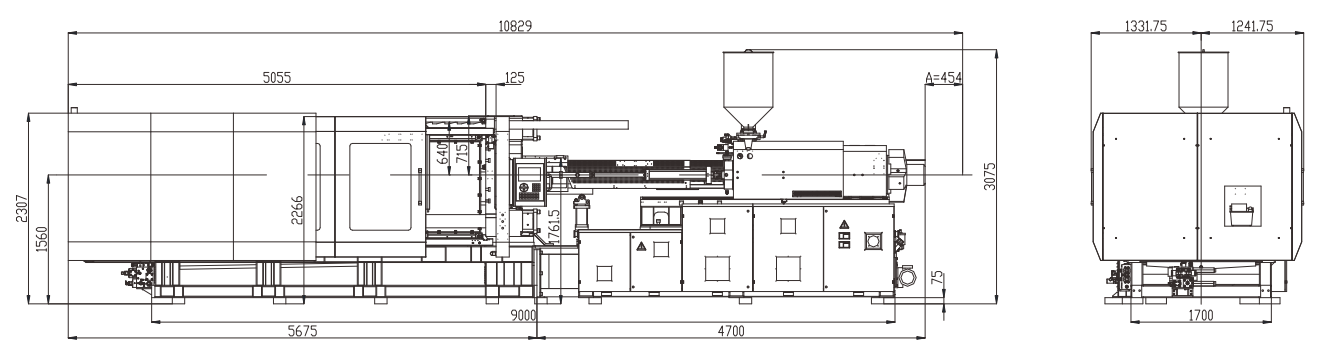
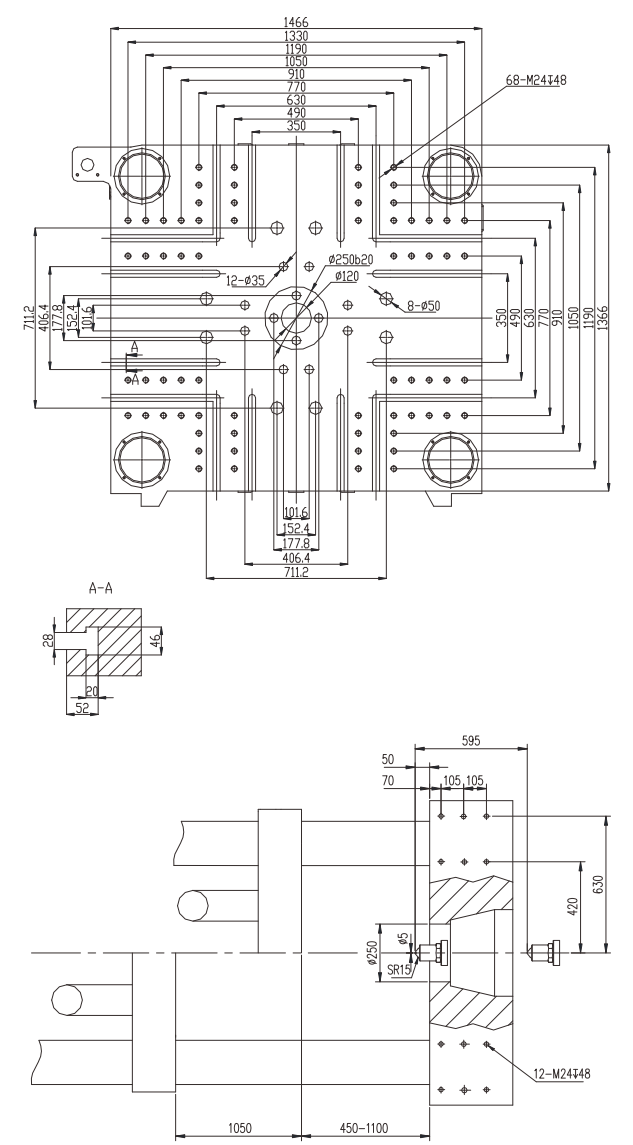
DESCRIPTION	UNIT	Parameter			
International specification		C4800			
Screw specifications		A	B	C	D
Screw diameter	mm	80	85	90	100
Screw ratio	L/D	23	23	23	20.7
Theoretical injection capacity	cm³	2286	2581	2893	3572
Shot weight (PS)	g	2103	2374	2662	3286
	oz	74.3	83.9	94.1	116.1
Injection rate into Air	cm³/s	608	686	769	949
Injection rate into Air	g/s	553	624	700	864
Injection pressure	Mpa	210	186	166	134
Injection stroke	mm	455			
Max. injection speed	mm/s	121			
Screw speed	r/min	150			
Theoretical plasticizing speed	g/s (PS)	88	103	121	163
Sys. Pressure	Mpa	17.5			
Total motor power	kW	64.3~67.1			
Power of electric charging motor (ECO only)	kW	52			
Total motor power(During ECO synchronization)	kW	116.3~119.1			
Heater power	kW	39.1	41.1	43.1	43.1
Number of temp. control zones		5+1			
Clamping force	kN	6500			
Opening stroke	mm	950			
Space between tie bar	mm x mm	960×860			
Min. mould height	mm	400			
Max. mould height	mm	1000			
Max. distance Platen	mm	1950			
Ejector stroke	mm	240			
Ejector force forward	kN	154			
Ejector force back	kN	110			
Number of ejector bar	PC	21			
Dry Cycle Period	s	4.3			
Energy consumption lenel	kW.h/kg	≤0.4			
Hopper capacity	kg	100			
Oil tank capacity	L	650			
Machine dimensions (L×W×H)	m x m x m	9.7x2.4x3			
Machine weight	ton	25			



# BL 750EKS

## Technical Data

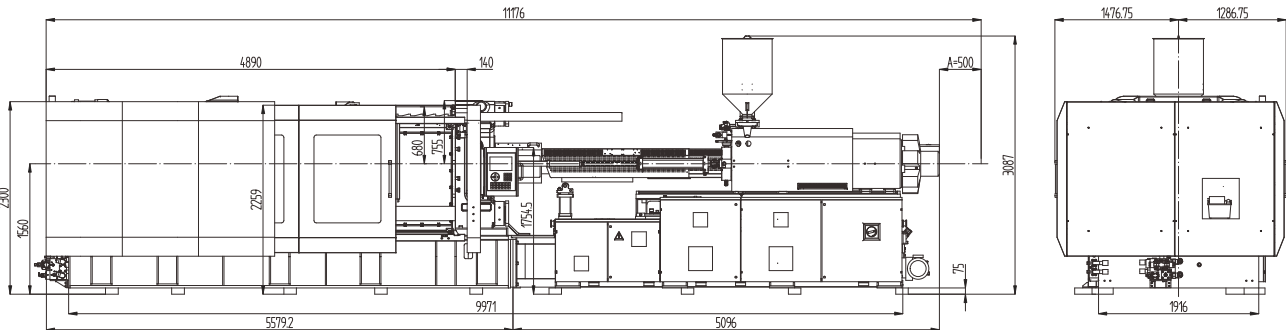
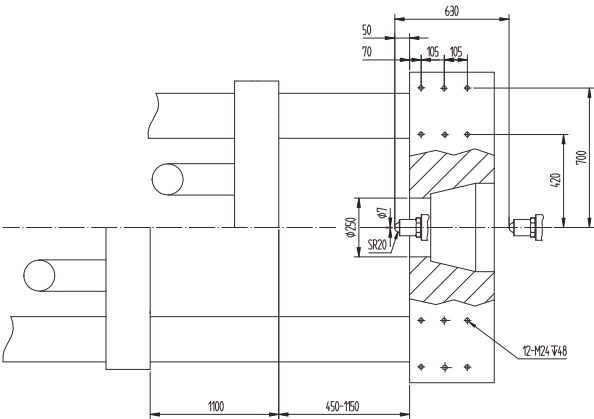
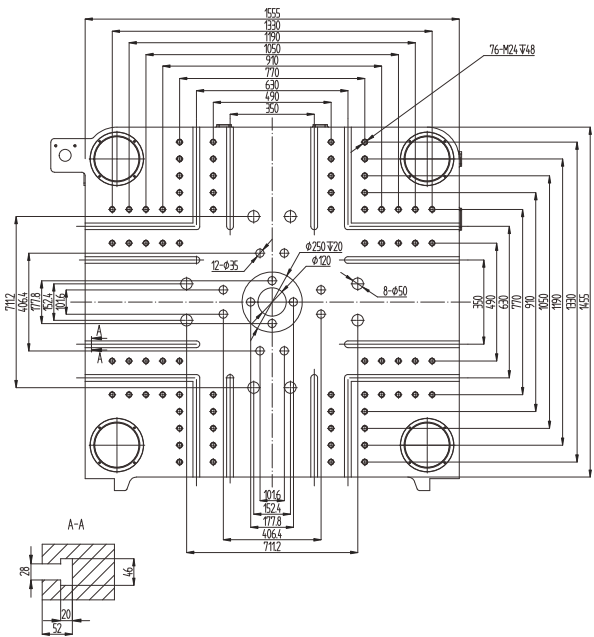
DESCRIPTION	UNIT	Parameter			
International specification		C5900			
Screw specifications		A	B	C	D
Screw diameter	mm	80	90	100	110
Screw ratio	L/D	23	23	23	21
Theoretical injection capacity	cm <sup>3</sup>	2512	3179	3925	4749
Shot weight (PS)	g	2311	2925	3611	4369
	oz	81.7	103.4	127.6	154.4
Injection rate into Air	cm <sup>3</sup> /s	651	824	1017	1230
Injection rate into Air	g/s	592	750	925	1120
Injection pressure	Mpa	230	181	147	121
Injection stroke	mm	500			
Max. injection speed	mm/s	130			
Screw speed	r/min	150			
Theoretical plasticizing speed	g/s (PS)	80	109	148	189
Sys. Pressure	Mpa	17.5			
Total motor power	kW	77.1~77.4			
Power of electric charging motor (ECO only)	kW	52			
Total motor power(During ECO synchronization)	kW	129.1~129.4			
Heater power	kW	44.05	48.85	53.65	53.65
Number of temp. control zones		5+1			
Clamping force	kN	7500			
Opening stroke	mm	1050			
Space between tie bar	mm x mm	1060×960			
Min. mould height	mm	450			
Max. mould height	mm	1100			
Max. distance Platen	mm	2150			
Ejector stroke	mm	270			
Ejector force forward	kN	198			
Ejector force back	kN	129			
Number of ejector bar	PC	21			
Dry Cycle Period	s	4.8			
Energy consumption lenel	kW.h/kg	≤0.4			
Hopper capacity	kg	100			
Oil tank capacity	L	940			
Machine dimensions (L×W×H)	m x m x m	10.4x2.6x3.1			
Machine weight	ton	31			



BL 850EKS

Technical Data

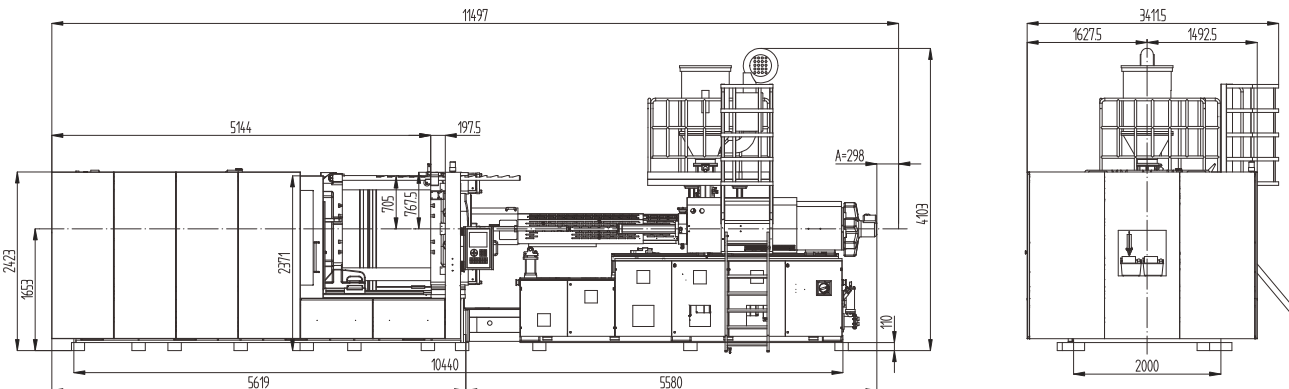
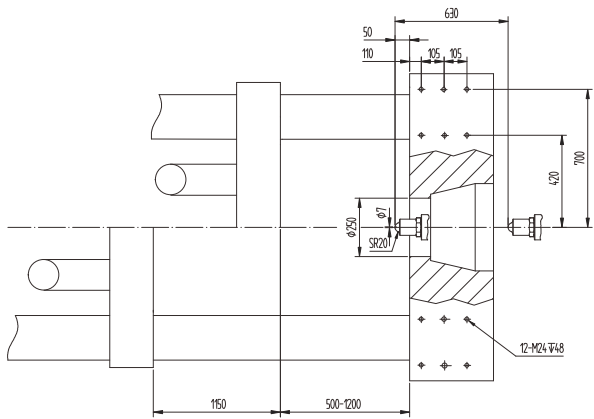
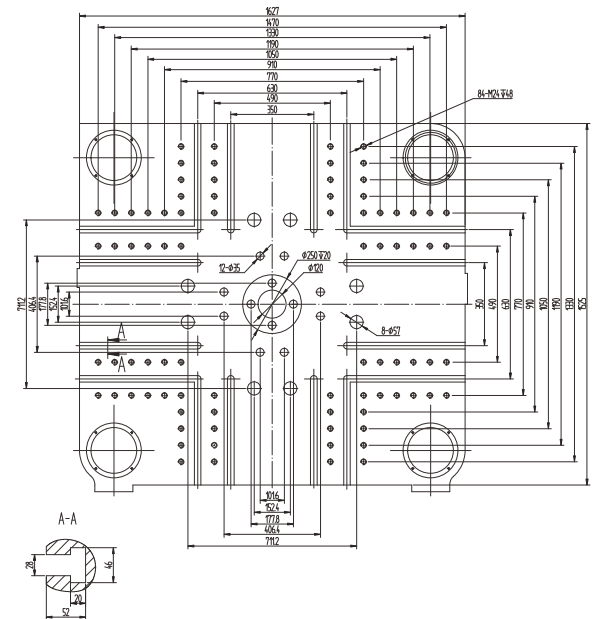
DESCRIPTION	UNIT	Parameter			
International specification		C7900			
Screw specifications		A	B	C	D
Screw diameter	mm	90	100	110	120
Screw ratio	L/D	23	23	23	21
Theoretical injection capacity	cm³	3465	4278	5177	6161
Shot weight (PS)	g	3188	3936	4763	5668
	oz	112.7	139.1	168.3	200.3
Injection rate into Air	cm³/s	793	979	1185	1410
Injection rate into Air	g/s	722	891	1078	1283
Injection pressure	Mpa	230	186	154	129
Injection stroke	mm	545			
Max. injection speed	mm/s	125			
Screw speed	r/min	130			
Theoretical plasticizing speed	g/s (PS)	96	130	166	214
Sys. Pressure	Mpa	17.5			
Total motor power	kW	92.6~101.4			
Power of electric charging motor (ECO only)	kW	65			
Total motor power(During ECO synchronization)	kW	157.6~166.4			
Heater power	kW	46	50	54	54
Number of temp. control zones		6+1			
Clamping force	kN	8500			
Opening stroke	mm	1100			
Space between tie bar	mm x mm	1120×1020			
Min. mould height	mm	450			
Max. mould height	mm	1150			
Max. distance Platen	mm	2250			
Ejector stroke	mm	300			
Ejector force forward	kN	198			
Ejector force back	kN	129			
Number of ejector bar	PC	21			
Dry Cycle Period	s	5.8			
Energy consumption lenel	kW.h/kg	≤0.4			
Hopper capacity	kg	100			
Oil tank capacity	L	1200			
Machine dimensions (L×W×H)	m x m x m	10.7x2.8x3.1			
Machine weight	ton	40			



BL 1000EKS

Technical Data

DESCRIPTION	UNIT	Parameter			
International specification		C10000			
Screw specifications		A	B	C	D
Screw diameter	mm	100	110	120	130
Screw ratio	L/D	23	23	23	21
Theoretical injection capacity	cm³	4671	5652	6726	7894
Shot weight (PS)	g	4297	5199	6188	7262
	oz	151.8	183.7	218.7	256.6
Injection rate into Air	cm³/s	976	1180	1405	1649
Injection rate into Air	g/s	888	1074	1278	1500
Injection pressure	Mpa	215	178	149	127
Injection stroke	mm	595			
Max. injection speed	mm/s	124			
Screw speed	r/min	125			
Theoretical plasticizing speed	g/s (PS)	129	164	212	253
Sys. Pressure	Mpa	17.5			
Total motor power	kW	106.6~112.1			
Power of electric charging motor (ECO only)	kW	125			
Total motor power(During ECO synchronization)	kW	231.6~237.1			
Heater power	kW	57	61.8	69	69
Number of temp. control zones		6+1			
Clamping force	kN	10000			
Opening stroke	mm	1150			
Space between tie bar	mm x mm	1160×1060			
Min. mould height	mm	500			
Max. mould height	mm	1200			
Max. distance Platen	mm	2350			
Ejector stroke	mm	300			
Ejector force forward	kN	248			
Ejector force back	kN	165			
Number of ejector bar	PC	21			
Dry Cycle Period	s	6.3			
Energy consumption lenel	kW.h/kg	≤0.4			
Hopper capacity	kg	200			
Oil tank capacity	L	1400			
Machine dimensions (L×W×H)	m x m x m	11.2x3.5x4.2			
Machine weight	ton	45			





● Standard    ◎ Optional

Clamping Unit	100-470EKS		550-1000EKS	
	Standard	Optional	Standard	Optional
Optimized version of the patented outside five-point mold clamping structure	●		●	
Auto greasing & lubrication for clamping	●		●	
Platen /cross head/toggle use qt500-7 high rigid ductile iron	●		●	
Linear guideway structure for 100～1000EKS only	●		●	
Anti-down support in slide shoes of movable platen, high hardness steel strip, reduce the deformation of tie-bar (1200-4000EKS)			●	
Hydraulic and Electric, dual security protection	●		●	
Mechanical safety protection	●		●	
Hydraulic motor drive gear automatic mould high adjust mould	●		●	
Automatic adjustment of clamping force on demand	●		●	
EU18 robot position	●		●	
Low pressure mould protection	●		●	
Equipped with safety screen in the clamping unit. (1000-4000EKS)			●	
Auto-door control and safety switch in its bottom and confirmed button in mold closing (650～4000EKS)			●	
NOVO transducer for mold opening/closing, ejection movement	●		●	
Proportional backpressure valve for mold opening	●		●	
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. (1000-4000EKS)			●	
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 safty door	●		●	
Open type security door (1000-4000EKS)			●	
Central ejector rod reinforce reseting function	●		●	
Glass water tube 6 in/6 out	●			
Glass water tube 8 in/8 out			●	
Glass water tube 12 in/12 out				
Buffer strip for security door	●		●	
EU2 platen mounting dimension	●		●	
2 Air blowing valves	●		●	
Magnetic platen		◎		◎
Hydraulic clamper		◎		◎
Moveable tiebar (230-4000EKS)		◎		◎
Mould heat shiled plate		◎		◎
Bigger mould height		◎		◎
Electric/dydraulic spin demolding system		◎		◎
Mold lifting rod		◎		
Wider machine cover&door		◎		◎
Heightened frame(100-850EKS)		◎		
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 (including SPI platen)		◎		◎

● Standard    ◎ Optional

Injection Unit	100-470EKS		550-1000EKS	
	Standard	Optional	Standard	Optional
Linear guide rail support structure	●		●	
Low speed but in large torque hydraulic motor	●		●	
Bimetal B screw + Standard nitride barrel	●		●	
Ceramic heating band	●		●	
Multi-section pid temperature control for nozzle and barrel	●		●	
Fully enclosed heat shield	●		●	
Twin injection cyclinder design	●		●	
The strimming device of the nozzle	●		●	
Pre-heating function	●		●	
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	●		●	
Hopper temperature control	●		●	
Bearing type mobile hopper seat with ordinary hopper 1000-4000EKS loading platform)	●		●	
Feeding plate, without hopper (1000-4000EKS)			●	
Barrel supporting structure			●	
NOVO transducer for injection and injection carriage movements	●		●	
Anti-slip board for injection base	●		●	
Auto greasing pump	●		●	
Extented nozzle,extent to 50mm.	●			◎
Extented nozzle,extent to 100mm.		◎	●	
Spring or hydraulic,penumatic and self-locking nozzle		◎		◎
Enlarging the carriging structure		◎		◎
Special designed screw&barrel, e.g. electroplating, alloy, full-hard, pa, etc		◎		◎
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		◎		◎

● Standard    ◎ Optional

Control Unit	100-470EKS		550-1000EKS	
	Standard	Optional	Standard	Optional
KEBA 12inch touchable screen	●		●	
Transducer brand NOVO	●		●	
Transducer, weak current switch, solenoid valve line, control line with waterproof bellows.	●		●	
Equipped set value reference & online operation help function	●		●	
EU67 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	●		●	
Emergency stop switch protection of mold area (1200-4000eks)			●	
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(1000-4000EKS)		◎		◎
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.		◎		◎
B&R computer (10.4inch, 18.5inch)		◎		◎
IV3100 computer (10 inch, 12 inch)		◎		◎
Beckhoff computer (10 inch, 12 inch)multiple operating language		◎		◎
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
INOVANCE energy-saving servo system	●		●	
Oil temperature deviation automatic alarm	●		●	
Motor overload protection function	●		●	
Net-type suction filter on oil tank	●			
Self-sealing suction filter on oil tank			●	
Standard with 2 core pulling (one on fixed & one on moving)	●		●	
Cooling water filter	●		●	
Uncovering high pressure hose with explosion-proof chain	●		●	
Mold open differential device	●		●	
Hydraulice control valve	●		●	
Hydraulice seals	●		●	
High pressure hose	●		●	
Bypass oil filter	●		●	
Oil level meter with alarm sensor	●		●	
Multi-group sequential injection function (electrical interface)		◎		◎
Multi-group sequential injection function (independent 11kw servo pump, ordinary motor, pneumatic valve available.)		◎		◎
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		◎		◎

Other	100-470EKS		550-1000EKS	
	Standard	Optional	Standard	Optional
Standard machine color of Bole EKS (BL470EKS-BL4000EKS)	●		●	
Adjustable level pad	●		●	
Ground steel plate(1850-4000EKS)Ground bolt (1000-4000EKS)			●	
Spare parts tool box,common tools ,vulnerable parts ,extended nozzle,user's guide	●		●	
Pick-up platform(1850-4000eks)			●	
Machine fixed I-shaped positioning block		◎		◎
Special color (for cover)		◎		◎
Robot		◎		◎
Magnetic shelf		◎		◎
Hopper dryer		◎		◎
Auto-loader		◎		◎
Fumigation wood package		◎		◎
Hydrualic oil		◎		◎
Multiple language warning signs		◎		◎