WOOJIN PLAIMM

DL|AS series

Two platen direct locking injection molding machine

English Version

v. 2015.09

DL|A5 series

New and improved design with dynamic operation cost efficient two platens' technology

DL-A5 series is made from European technology two platens direct press type injection machine. With compact and practical design; it will reduce the noise and save more spaces. It is stable and energy efficient. DL-A5 series is designed so that booster cylinder has faster stress dispersion and high speed half nuts that are controlled at the same time; it will reduce dry cycle time.

DL-A5 Clamping unit

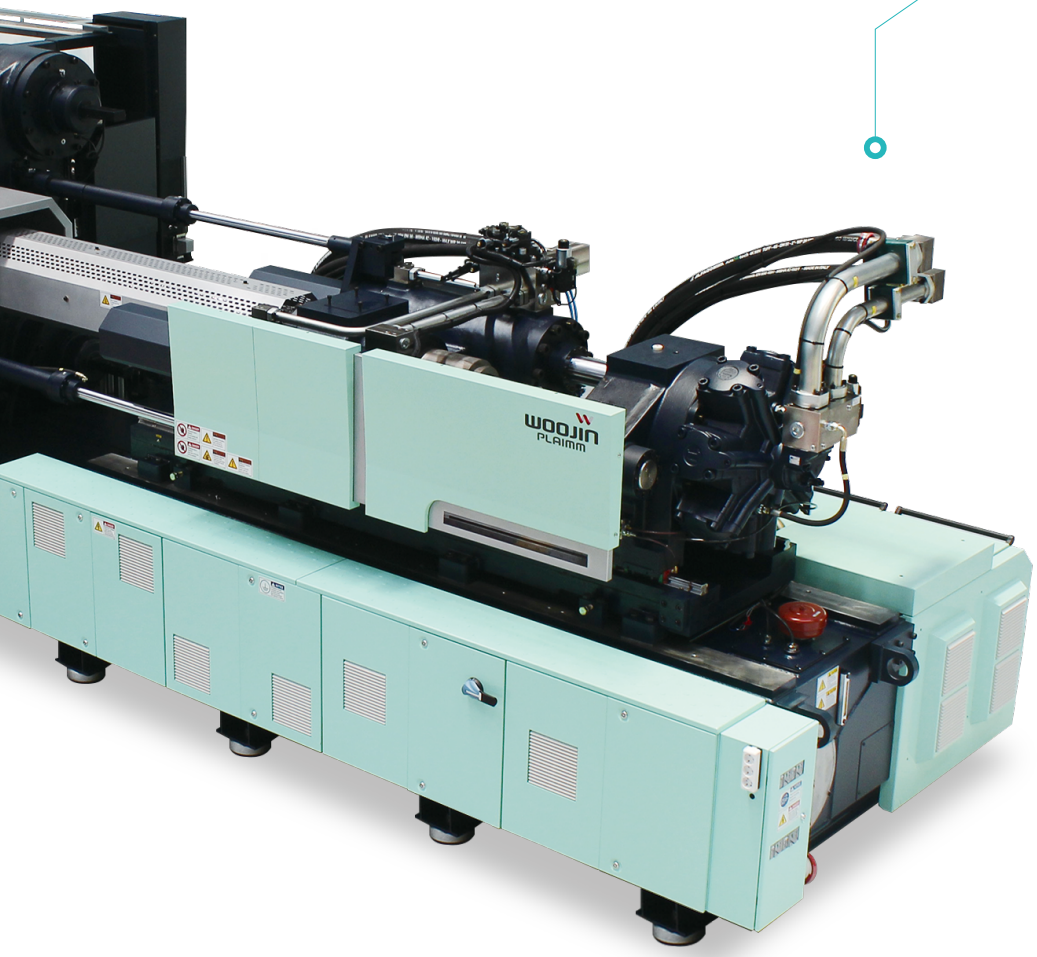
- Dynamic dry cycle time
- Save more spaces
- With finite element analysis
- Improve on tie-bar (stress dispersion)
- New and improved half nut control

Please scan the **QR code** !

Model	Clamping force	Tie-bar distance (H×V)	Unit No.	
				65
DL450A5	4413kN	860×810	IH 28	O
DL550A5	5394kN	915×915	IH 42	
DL650A5	6374kN	1010×1010	IH 59	
DL850A5	8336kN	1110×1110	IH 88	
DL1050A5	10297kN	1410×1110	IH 88	
DL1300A5	12749kN	1410×1410	IH 119	
DL1800A5	17652kN	1810×1610	IH 153	

DL-A5 Injection unit

- Stable dual cylinders
- In-line screw type
- Hydraulic block is clean and strong on rust
- Automatic swiveling injection unit
- Accurate injection control



Model	DL650A5
Product	Door trim
Weight	840g
Electric consumption (Kwh)	0.33
Kwh/Kg	0.39
Grade (EUROMAP 60.1)	8

Injection unit [Screw diameter in mm]							
70	80	90	95	105	115	125	140
A	B						
O	A	B					
	O	A		B			
			O	A	B		
			O	A	B		
					A	B	
						A	B

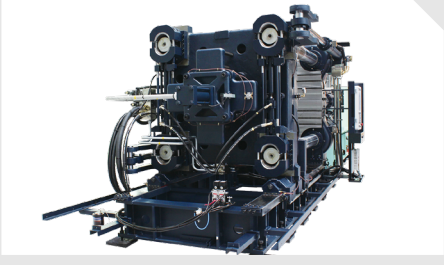
Dynamic, efficient clamping unit

High efficient two platen direct locking system

With faster mold open and close
With improved mechanical durability

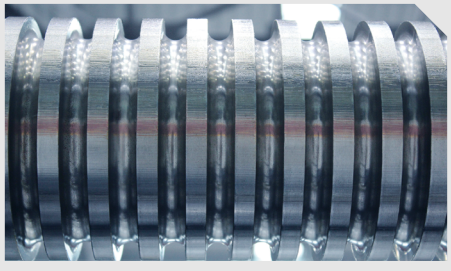
With optimized position sensor and new half nut control system it will have faster and precise control on mold.

New designed tie-bar and half nuts will have stress dispersion so it will reduce breaks on half nuts.



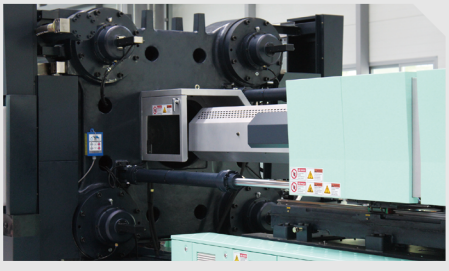
❶ High efficient two platen direct locking system

New half nut locking will reduce on/off time; it will reduce cycle time.



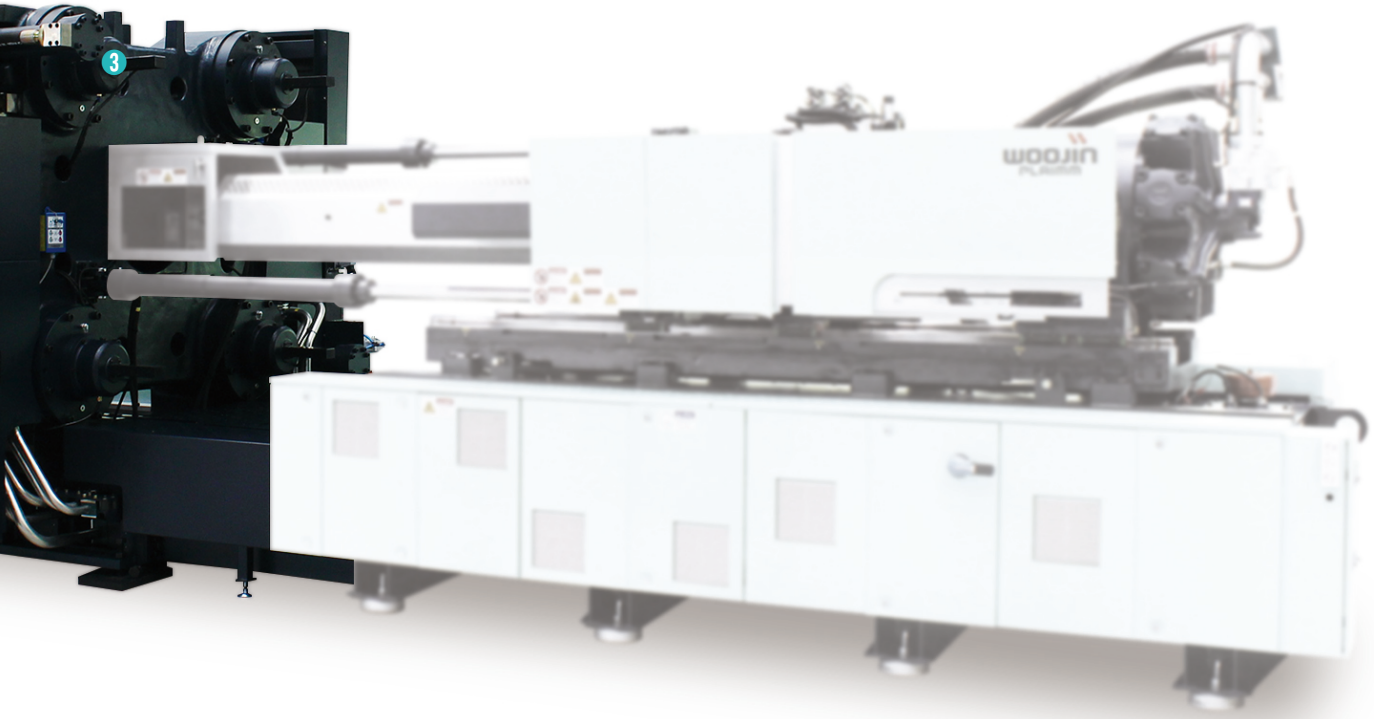
❷ Improved Stress dispersion on tie-bar

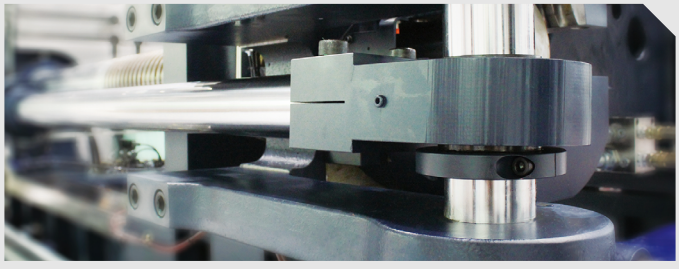
Improved tie-bar design so it has better durability.



❸ Position Sensor

Putting position sensor on fixed platen, it will have faster and precise locking control.





4 Booster cylinder

Optimized size of booster cylinders can speed up mold open and close time. Bilateral symmetry designed cylinders prevent platen's twisting. Also it is designed for stability.

5 High stiffness and efficient platen

· Two platen system for space efficiency
· Advanced user-friendly due to T slot design for mold clamping
· Wide space between tie-bars
· Excellent in platen's rigidity
· Good bearing degree of uniformity

More smart injection unit

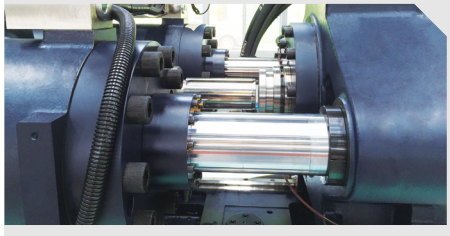
High rigid dual cylinder in-line injection unit

It is stronger and stable dual cylinders
It has automatic swiveling injection unit

Dual cylinder in-line injection is stable and will have powerful injection.

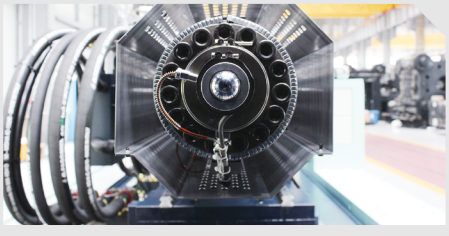
Use dual pull nozzle touch cylinders in first time in two-platen. It will improve nozzle touch.

Automatic swiveling injection unit will reduce the time of changing screw or barrel.

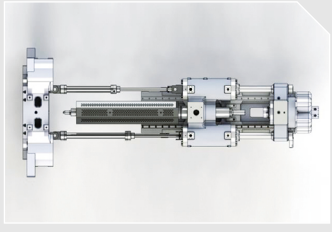


1 Dual cylinder in-line injection unit
Dual cylinder in-line injection unit is stable and powerful.

2 Automatic swiveling injection unit
Simple button touch will swivel the injection unit, so it will reduce the time of changing screw and barrel.



3 Barrel heating control system
With barrel heating control system it can control the barrel in section; it also control in real time.



4 Dual pull nozzle touch cylinder

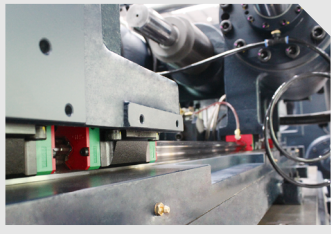
Dual pull nozzle touch cylinders are designed for stable nozzle touch. It can prevent inclining the fixed platen.

5 Inverter box unification

With inverter box unification it will reduce space.

6 Reduce noise

With improved cover design it will reduce the noise. Also by using one touch cover it is easy to remove the cover.



7 Linear guide in Injection unit

High stability and preciseness in maintaining injection parallelization. Low energy consumption due to low moving friction.

Cost efficient hydraulic unit

Energy efficient servo pump system

Energy efficiency is basic independent oil circulation system for maintaining clean hydraulic oil

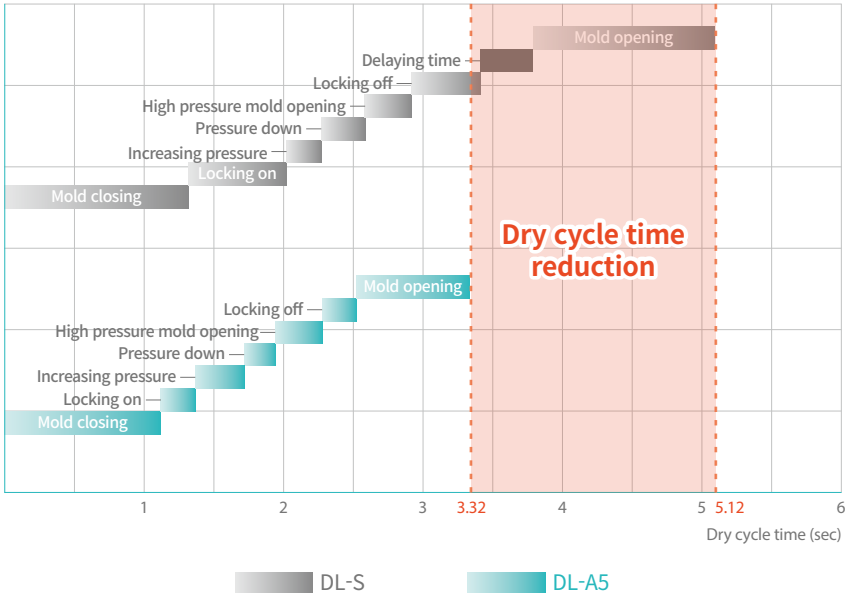
Servo pump system reduces noise and increases energy efficient.

New concept independent oil circulation system can maintain hydraulic oil's refining and cooling.

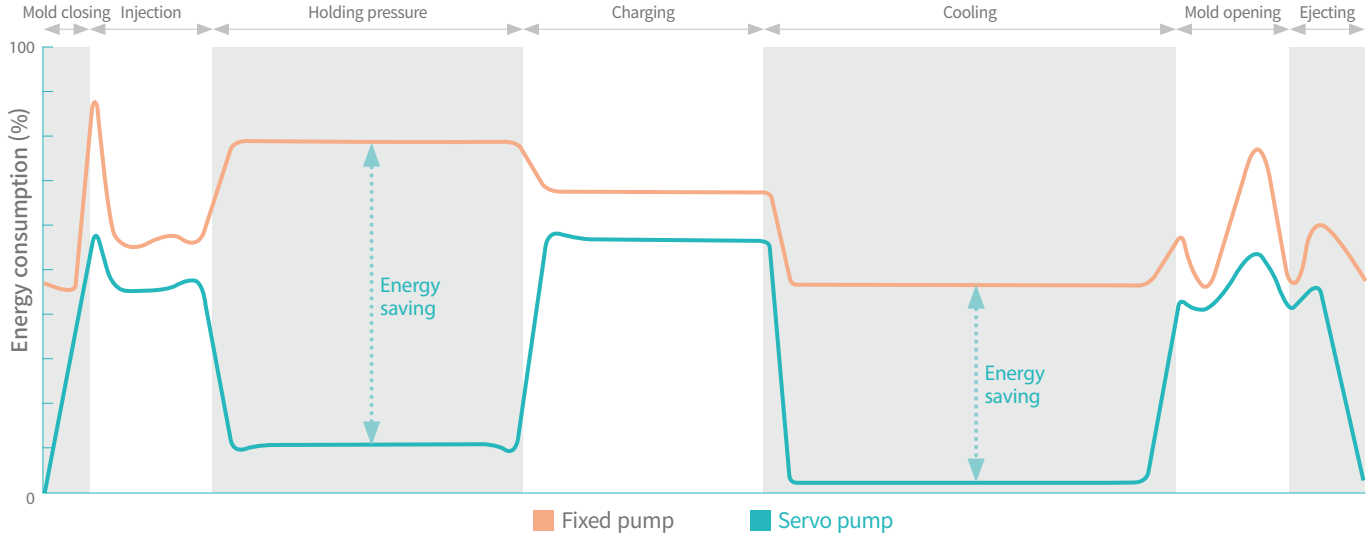
Efficient hydraulic system of DL-A5 series helps to reduce operating cost due to low consumption of hydraulic oil and cooling water.

DL-S vs DL-A5

Dry cycle time comparison

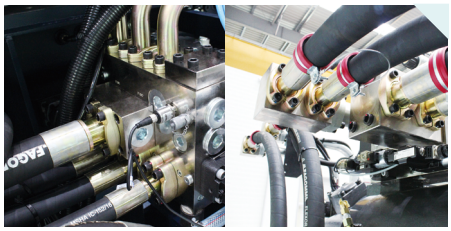


Energy Saving Rate



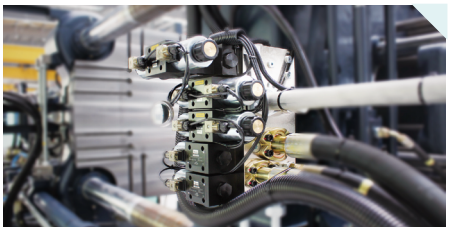
Air breather

It helps to maintain the oil's quality. Also it eliminates dust, moisture in the air and maintains atmospheric pressure when operating the pump.



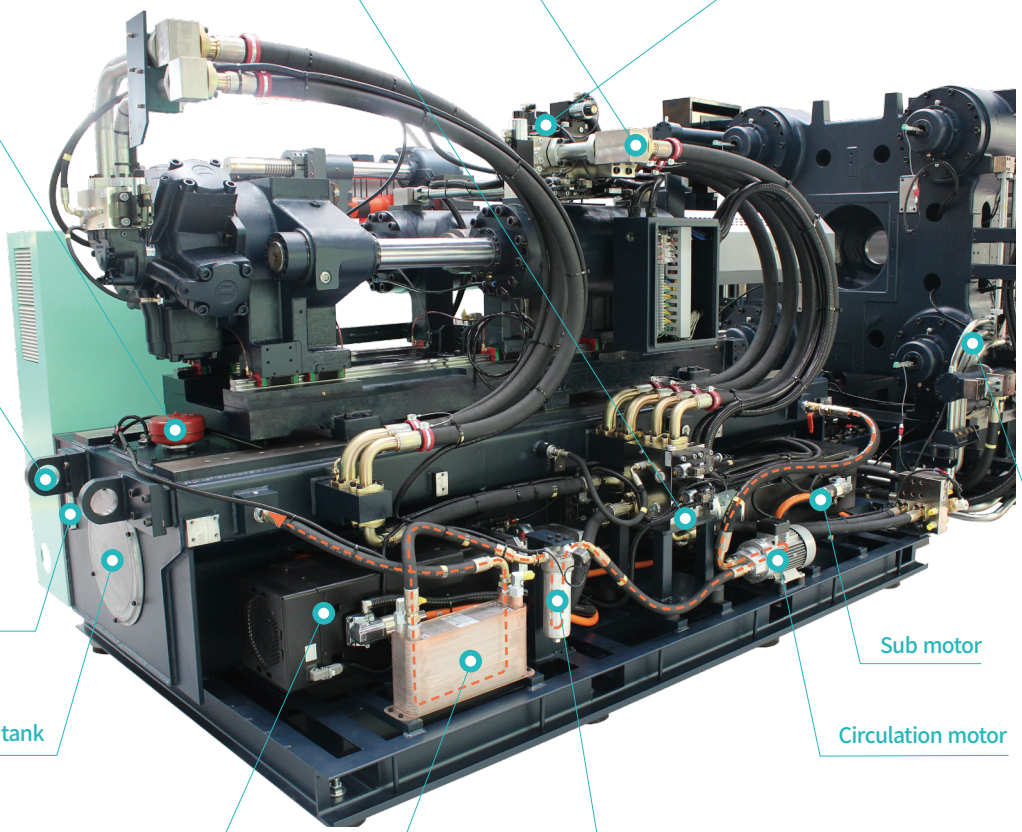
Hydraulic block with nickel coating

Clean inside and strong on rust.



Direct valve system

It can reduce the cycle time due to fast and precise valve on and off operation.



Moving tab

It will be easier to move the machine.

Oil temperature and oil level gauge

It is easy to check the temperature and volume of the oil.

Special inner paint in oil tank

Sub motor

Circulation motor

Main servo motor

Cooler

Filter

Seamless piping

Bolt fastening type seamless pipe is featuring clean inside and easy to change.

User-friendly controller

PP580

Intuitive design

15 inch TFT color monitor attached to the controller is easy to control and manage the information.

Central monitoring program interface

Compatible interface program is equipped in the system which is available to manage automation robot and auxiliary devices.

Remote monitoring

With VNC servo function it can monitor the machine in real time anytime and anywhere.

USB interface

It can store various mold data and parameters.

Multilingual support

Available to select various kinds of languages.

Central Monitoring System program (Option)

CMS can access up to 250 injection molding machines at the same time to facilitate the data transmission and management. Such injection related data will be converted into excel files for easier data management and retrieval.

System features

- OS : VxWorks real time operating system
- Screen : 15 inches TFT color (1024 x 768 touch screen)
- Based on PC control system and excellent expandability : Available to expand by using PCI slot.
- Easy for various accessing : Ethernet 10/100Mbps, CAN Bus port, USB port, Serial interface, etc...
- Processing time Max. 0.4ms : Prompt responsibility and increased reproducibility.
- Energy consumption monitoring function and CMS system set up.

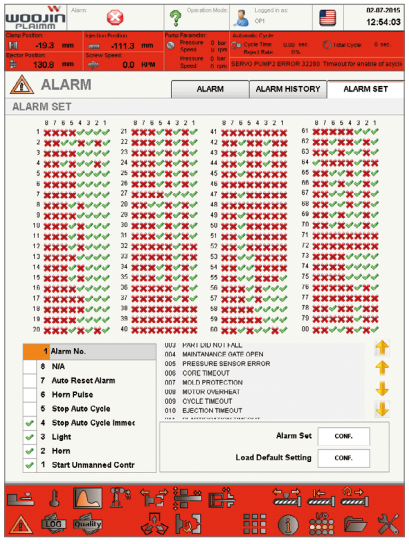
Functions

- Various core drives
- Production data storage
- Production data analysis
- Molding condition alterations and changes or alert details storage
- Injection speed graph display
- Robot interface circuit
- Automatic control of motor and heater for unmanned operation
- Rotation injection for large volume of injection
- Weekday heater reservation
- Heat insulation mode for cylinder to prevent carbonization of resin carbide
- System monitoring : communication state, module operation state, etc..
- Internal mold data storage : Up to 1,000 data files.
- External mold data storage system: USB memory storage.
- Screen save function : convert the current display into a hard copy to store the data in USB memory
- Injection speed, holding pressure closed-loop (Optional)
- Back pressure closed-loop (Optional)
- Injection pressure graph display (Optional)
- Light speed network is available thanks to Max. 1Gbps grade Ethernet support.
- High expandability due to RS232 communication support.
- Mega volume 2GB CF card for enough data space.
- Waterproof : Front (IP65), Back (IP20) ▶ IP65 : water proof grade can prevent shower water.

Applications

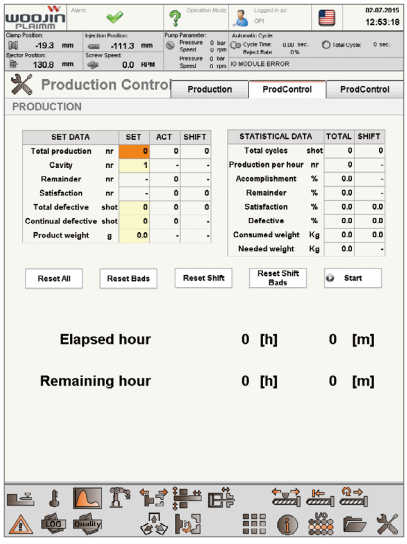
Alarm function

It can record various error information in real time and show on the screen. Also all the recorded information can be printed out.



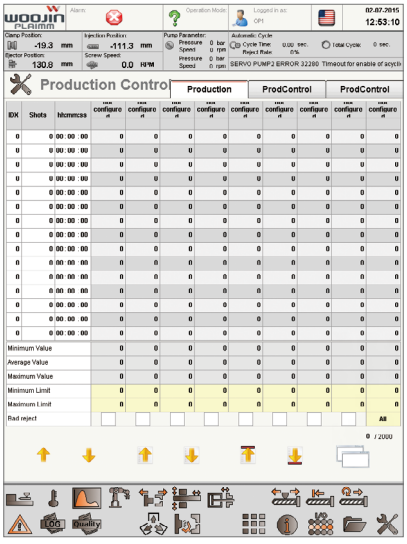
Quality management

Selective data storage and management for quality assurance under maximum 7 categories and 2,000 process information.



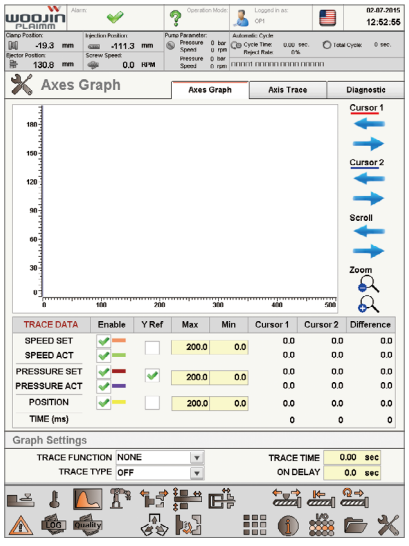
Production management

The user can set up targeted production amount and time. Also user can check the total production amount, current production amount, total production time, and remaining production time through monitor.



Graph display

The user can find out production status easily through graph on the monitor such as injection speed and pressure, and detailed information about charging stage as well.

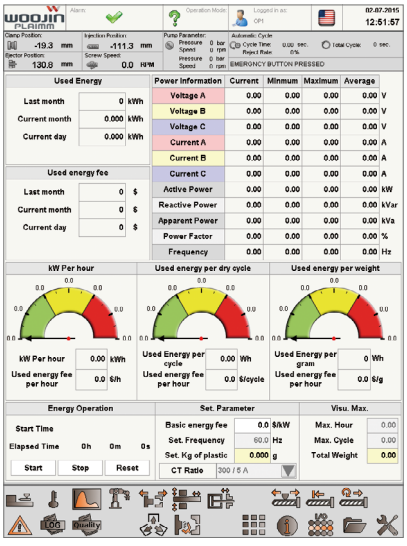


Mold setting information

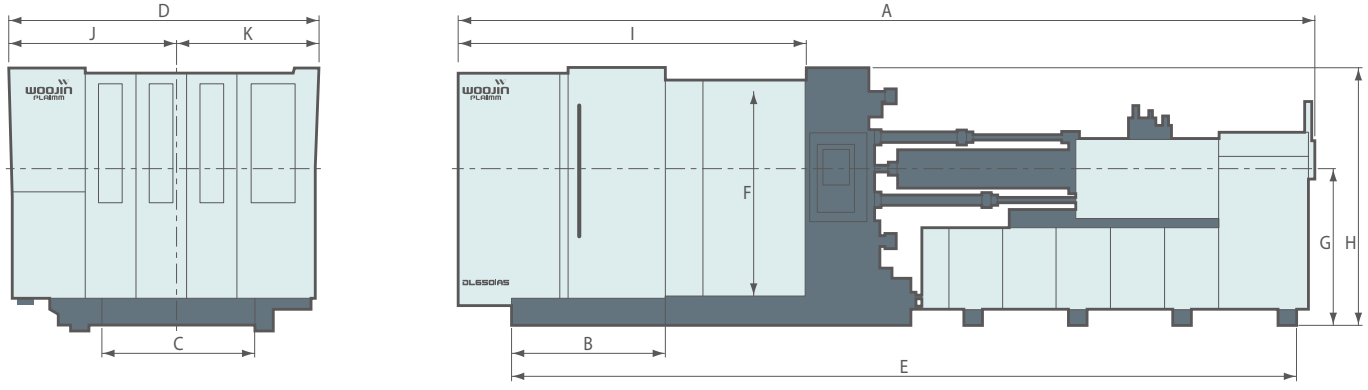
Up to 1,000 mold data can be stored in the controller and USB memory. The mold data can easily retrieved and used from controller for convenient molding information setting.

Energy consumption display (Option)

The total production time, energy consumption amount can be displayed on the monitor so that the user can find out cycle time and electric consumption amount easily.



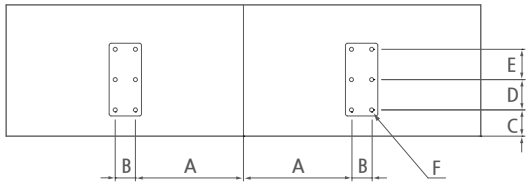
Machine dimensions



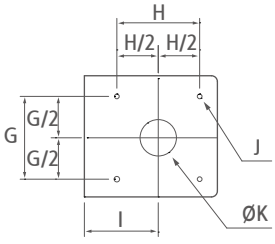
	A	B	C	D	E	F	G	H	I	J	K
DL450A5	7101	2260	1280	2579	6660	1960	1410	2193	2701	1426	1153
DL550A5	7421	2480	1330	2716	6830	2028	1410	2222	2961	1498	1218
DL650A5	7657	2740	1430	2870	7315	2130	1450	2388	3234	1577	1293
DL850A5	9429	3340	1610	3130	8741	2240	1490	2497	3919	1657	1473
DL1050A5	9589	3500	1910	3404	8900	2260	1490	2483	4079	1807	1597
DL1300A5	10591	3600	1890	3500	9605	2656	1730	2925	4511	1717	1783
DL1800A5	12045	4690	2340	3934	11045	3010	1830	3295	5340	1967	1967

Unit : mm

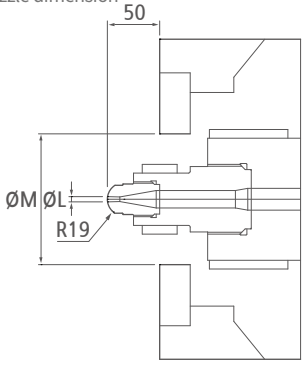
▼ Automatic extractor installation



▼ Hopper installment drawing



▼ Nozzle dimension

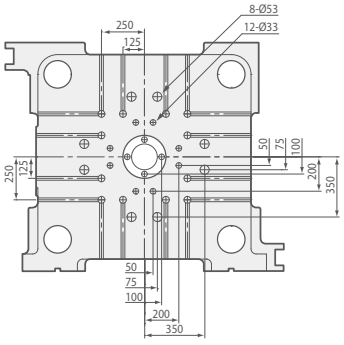


	Automatic extractor installation						Hopper installment drawing					Nozzle dimension	
	A	B	C	D	E	F	G	H	I	J	ØK	ØL	ØM
DL450A5	210		105	185		4-M20	165	165	120	4-M12	68	4	100
DL550A5	195		105	245		4-M20	165	165	130	4-M12	78	5	100
DL650A5	235		110	265		4-M24	165	165	140	4-M12	88	5	100
DL850A5	235		115	330		4-M24	165	165	170	4-M12	103	6	100
DL1050A5	335		125	375		4-M30	165	165	170	4-M12	103	6	100
DL1300A5	560	280	70	140	140	12-M24	280	200	190	4-M16	113	6	120
DL1800A5	725	450	150	150	150	12-M30	280	200	200	4-M16	123	6	120

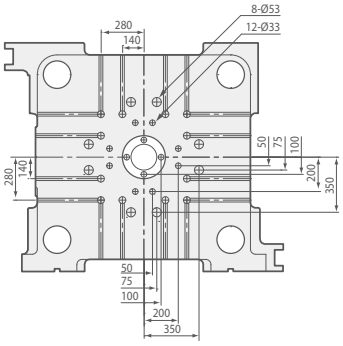
Unit : mm

Platen dimensions

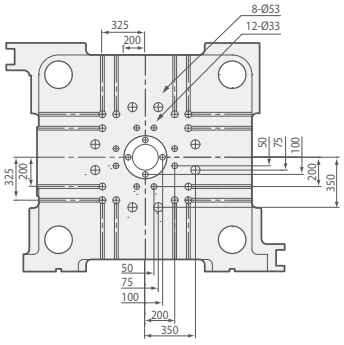
450 ton



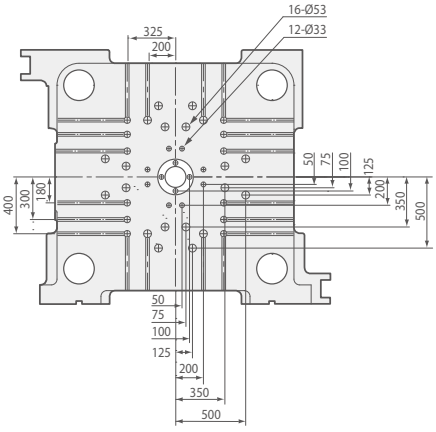
550 ton



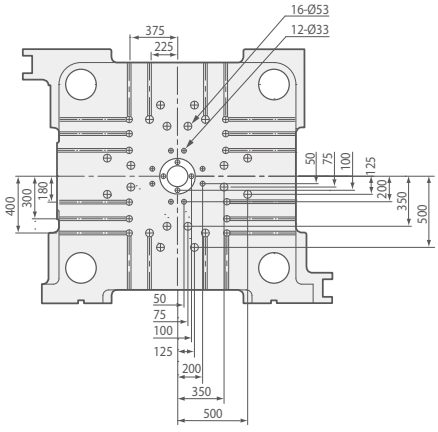
650 ton



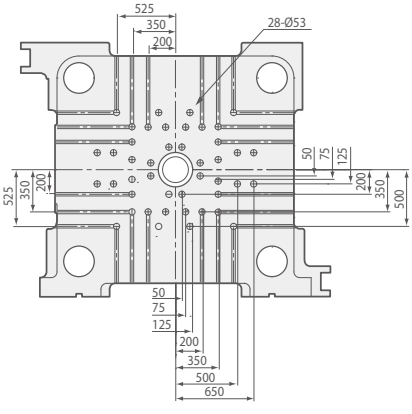
850 ton



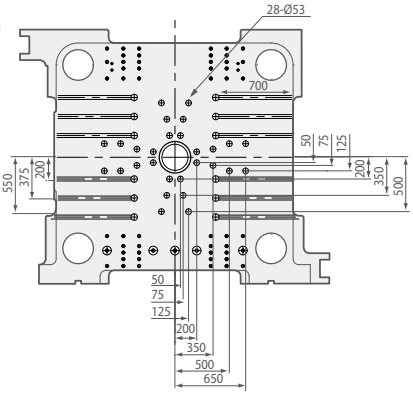
1050 ton



1300 ton



1800 ton



Option lists

S : Standard O : Option X : Not applicable

Injection unit	450~850	1050~1800	Clamping unit	450~850	1050~1800	General	450~850	1050~1800
Standard								
01 Injection process control stage (Speed/Pressure)	10	10	01 Mold opening control stage (Speed/Pressure)	5	5	01 Molding data memory capacity (Internal/External)	1000/usb	1000/usb
02 Holding process control stage (Speed/Pressure)	5	5	02 Mold closing control stage (Speed/Pressure)	5	5	02 Alarm history display & saving	S	S
03 Charging process control stage (Speed/Pressure)	3	3	03 Ejector control stage (Speed/Pressure)	2	2	03 Record of setting-value changed	S	S
04 Back pressure control stage	3	3	04 Hydraulic core puller (1 stage)	S	S	04 Statistical function	S	S
05 Suck-back control (Before charging)	S	S	05 Air blow off unit	S	S	05 I/O circuit display	S	S
06 Suck-back control (After charging)	S	S	06 Foot board (1300 ton)	X	S	06 Multi language display	S	S
07 Injection speed graph display	S	S	07 Safety foot board inside of machine	X	S	07 Robot interlock circuit	S	S
08 Cushion amount display & alarm	S	S				08 Print connection port	S	S
09 Screw RPM display	S	S				09 Hydraulic oil level check & alarm	S	S
10 Auto purge circuit	S	S				10 Hydraulic oil temperature abnormal alarm	S	S
11 Screw cold start prevention device	S	S				11 Auto grease for clamping unit	S	S
12 Heater pre-heating timer (Weekly)	S	S				12 Shot data file saving by external way	S	S
13 Heater temperature abnormal display & alarm	S	S				13 Auto safety door open & close device	S	S
14 PID heater temperature control device	S	S				14 Hydraulic oil cleaner	S	S
15 Cylinder temperature keeping mode	S	S				15 Edge sensor for door	S	S
16 Valve gate (1 stage)	S	S				16 Beam sensor in clamping unit	X	S
17 Double flight screw	S	S				17 Anchor bolts	S	S
18 Injection pressure graph display	S	S				18 3 stage alarm lamp	S	S
19 Closed-loop of back presure	S	S				19 Maintenance tools	S	S
						20 Spare parts	S	S
						21 Electrical outlet (5 socket)-2 set	S	S
Option								
01 Charging on fly (Mold opening during charging)	O	O	01 Mold opening during core operation	O	O	01 Robot interlock interface (Euromap 12/SPI)	O	O
02 Shut-off nozzle (Hydraulic)	O	O	02 Mold opening during ejecting	O	O	02 Hydraulic oil temperature control device	O	O
03 Hopper footboard & ladder	O	O	03 Unscrewing device	O	O	03 Eliminating device for precipitate of oil cooler	O	O
04 Antiwear screw & barrel	O	O	04 Foot board (1050 ton)	X	O	04 Hopper throat temperature control device	O	O
05 Antiwear & corrosion screw & barrel	O	O				05 Hopper moving device	O	O
						06 Auto clamps (Quick Die Changer)	O	O
						07 Insulation heater cover	O	O
						08 Electrical outlet (5 socket)-additional set	O	O

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