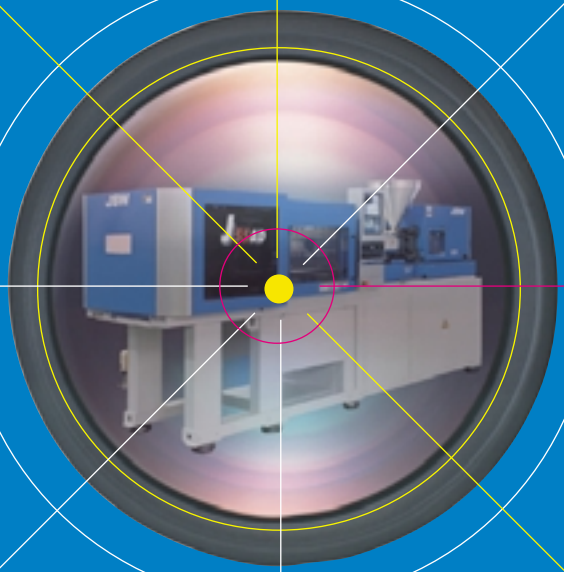
JAD SERIES

Small & Medium Size
Injection Molding Machine

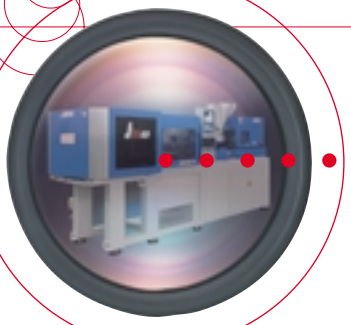


JSW

JSW Hiroshima Plant

JSW Injection Molding
Machinery Division

AD, the pinnacle of speed and precision



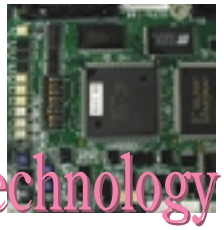
J-AD SERIES

"J-AD Series," this next generation of compact and medium size injection molding machines from JSW continues to lead the injection molding machine industry. The J-AD "ADvanced" Series of machines offers even greater high-speed performance and increased precision, made possible by the industry's highest-speed* servo control circuit.
This advanced technology, unique to JSW, has been accumulated over many years and results in injection molding expertise that is the envy of the industry.
Faster and more accurate, the J-AD Series achieves the highest levels of productivity and reliability.

*As of 2004

Complying with safety regulations
EU safety regulations (CE Marking)
Industrial machinery industry safety rules (JIMS K1001)

Promotion of product quality
(incorporating a servo control circuit
that boasts the industry's highest speed of 62 micro seconds)



Algorithm Technology

Remarkably improved operability and visibility
(large 15 inch LCD color monitor)

Innovative & Friendly Operation

Improvements made for stepped-up productivity with larger molds
(Faster-cycle molding with larger platens is realized
by the use of a robust clamping unit)

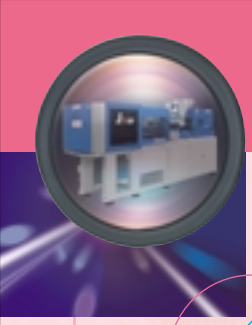
Faster Cycles

Faster Injection Speeds and quicker
Computer Response Time are coupled
with our Creative Control Package, which makes
Thin-walled/Precision molding more attainable

Quick Response

Adapted for diversified lines of products on application
(A wide selection of injection modules
and a wide array of equipment)

Wide Range of Injection Units



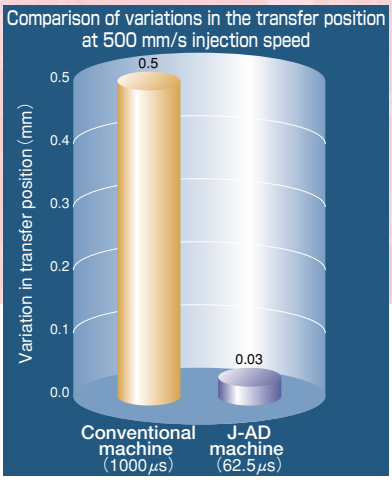
Algorithm Technology

JAD SERIES

The industry's fastest 62 micro second servo control circuit provides the highest product quality

The marvelous 62 micro second high-speed servo control circuit attains a new high in accuracy and stable quality levels

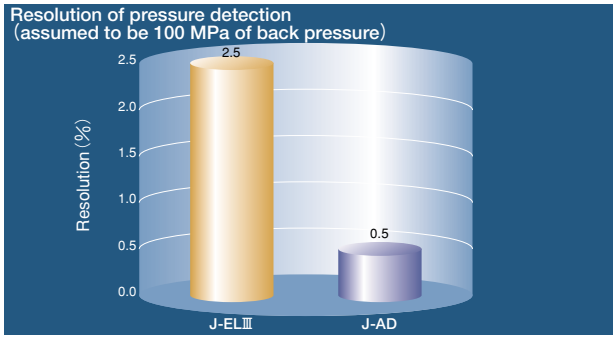
Use of a high-speed servo control circuit in the "J-AD Series" reduces scanning time to 1/16th of conventional controls and achieves an outstanding 62 micro seconds of scan time. It promotes product quality through a reduction in performance variation, such as holding transfer pressures.



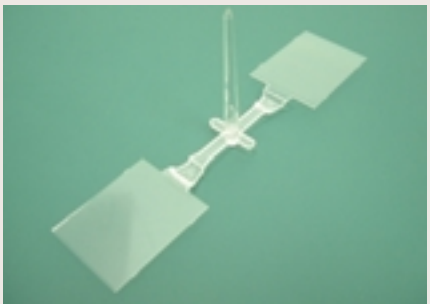
JSW original high-speed servo control board

Highly upgraded resolution of the injection pressure detector

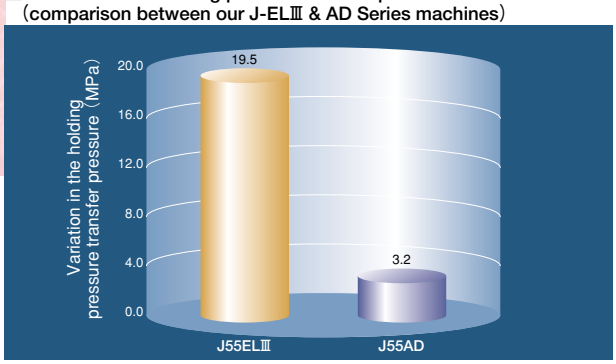
The resolution of the load cell amplifier for the injection pressure has been intensified five fold for more accurate back pressure control which helps insure stabilized precision molding.



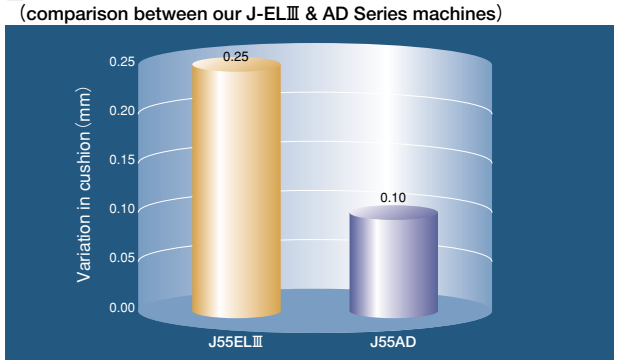
Injection molding machine : J55ELⅢvs J55AD
Product : 2.4 inch light guide panel for mobile phone (2-cavity mold, t = 0.6 mm)
Resin : PC



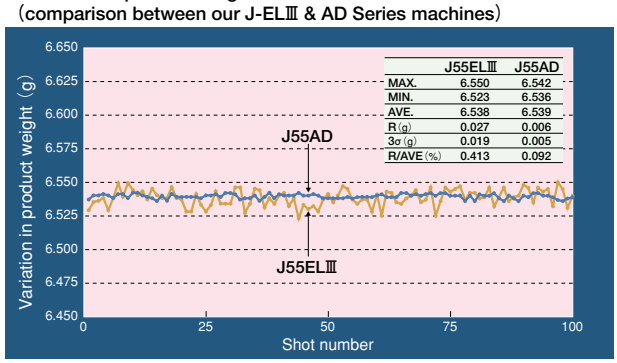
■Variation in the holding pressure transfer pressure (comparison between our J-ELⅢ & AD Series machines)



■Variation in cushion (comparison between our J-ELⅢ & AD Series machines)



■Variation in product weight (comparison between our J-ELⅢ & AD Series machines)



Innovative & Friendly Operation

JAD SERIES

Large 15 inch LCD color monitor Upgraded operability and increased visibility

Upgraded SYSCOM3000

●A vertically arranged large 15 inch TFT color LCD screen. The controller rotates to provide the operator with a clear view of molding parameters.
●An illustration of the machine, in conjunction with operation mode keys and a touch screen, insures easy operation.
●Languages are selectable from Japanese, Chinese and English. Other languages (Korean, Spanish and French) are optional.
●Storage of molding conditions: 120 conditions can be stored in internal memory and 1,000 conditions stored in external USB memory.

SYSCOM3000 screen

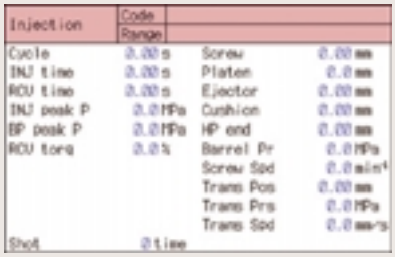
Operation includes the condition setting screen, the touch panel screen, and the selector switches.

Condition setting screen

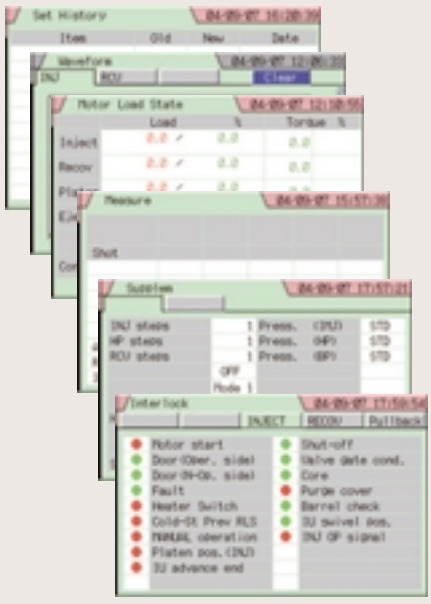
Touch panel screen

Selector switch

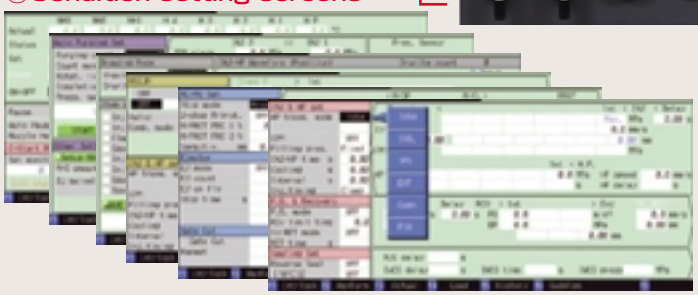
①Cycle monitor screen



② Convenient monitoring screens



③Condition setting screens



Faster Cycles

A more robust clamping unit promotes

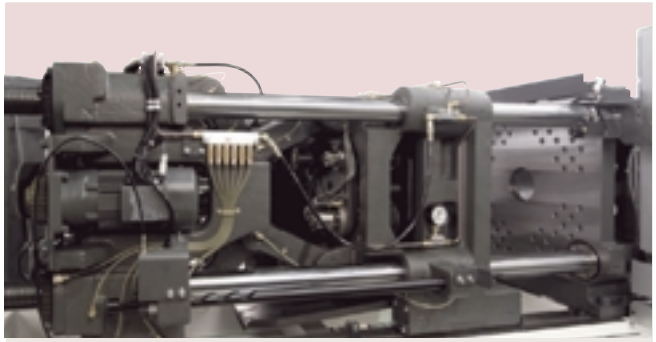
FEM analysis of lightweight but high-rigidity platens

Stationary platen

Movable platen

Wide platen

The horizontal tie bar distances are extended further than conventional machines to allow for wider molds.



Clamping unit

Tie bar pre-tensioning

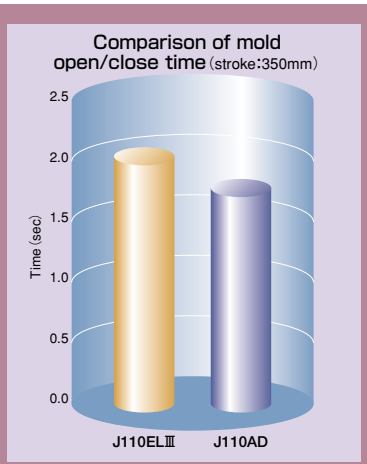
Stationary platen tensioning device <option>

The robust clamping unit ensures fast-cycle molding

●The high-rigidity clamping unit enables the use of wider platens and achieves high-precision stabilized molding.
●Platen Parallelism and mold positioning accuracy is achieved by using a high efficiency platen support mechanism, with extra long platen guides.
●JSW's original 5-joint, internally folding toggle mechanism attains improved faster cycle molding.
●The stationary platen and the movable platen, consist of a box construction with reduced weight and increased rigidity, exerts a clamping force evenly distributed over the mold surface.
●The pre-tensioned tie bars promote durability and decrease vibration during the mold open/close action.

Ejector Tie-down Accessibility to Clamp area has been Opened Up

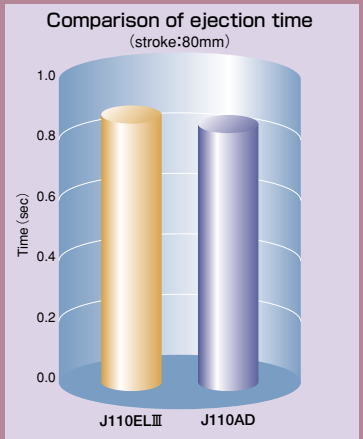
The opening is made larger to allow the stripper mechanism in the mold to be easily linked to the knockout plate on the machine.



Ultimate mold open/close speeds

●Reduces dry cycle as the result of the fast-cycle toggle mechanism.
●The high-accuracy platens eliminate part removal errors, of the product takeout robot, and promotes greater productivity.

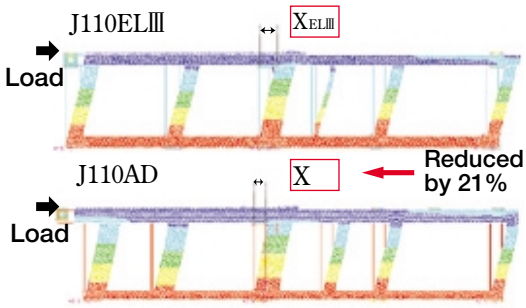
High-speed ejector



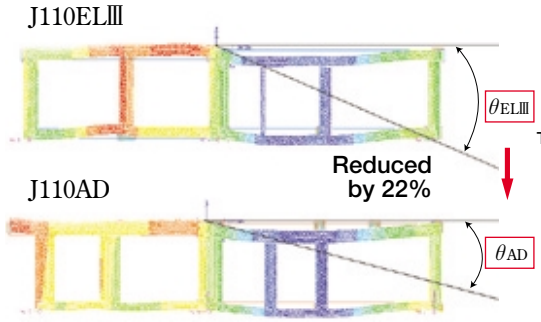
productivity and allows for larger molds

The rock solid foundation ensures platen rigidity

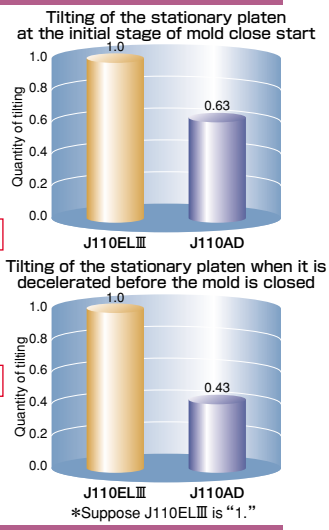
The horizontal distortion has been reduced by 21%



The distortion of the seat surface of the stationary platen: reduced by 22%



Distortion of the bed during fast speed mold open/close

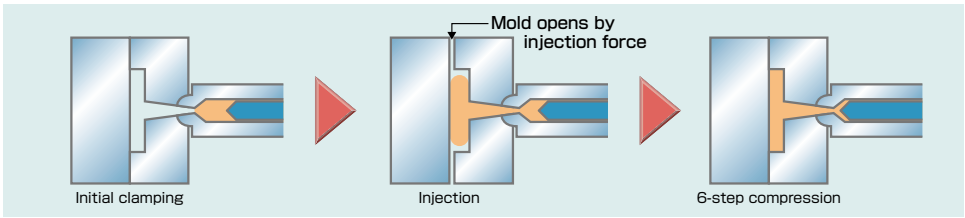


Injection compression molding

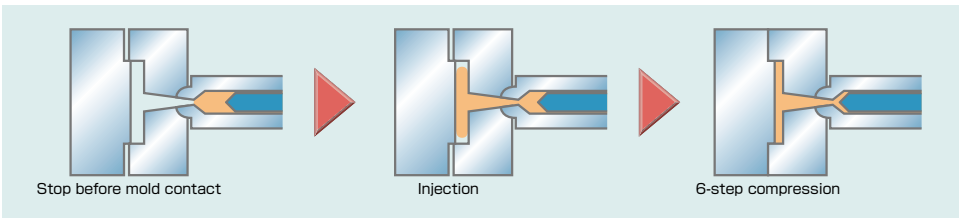
JSW's original injection compression function equipped as standard (Pat. # 1744469)

The JSW injection compression molding feature enables the mold position to be controlled to accuracies over 10 times that of direct-pressure molding.

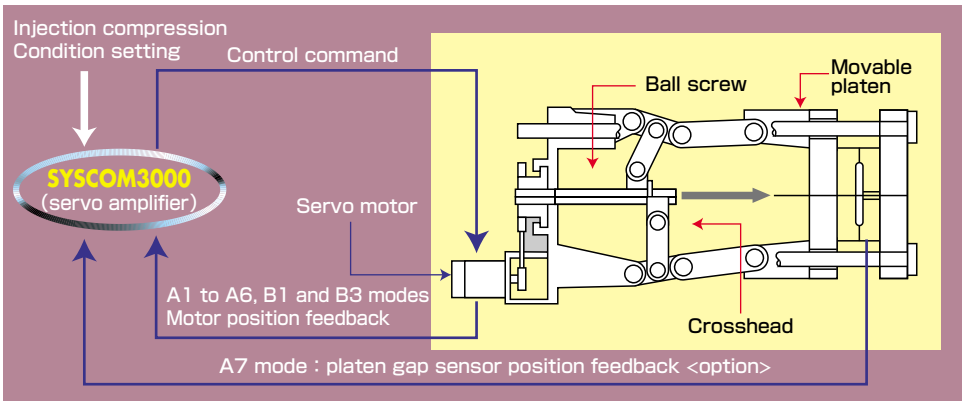
A-mode (A1 - A6, A7<option>)



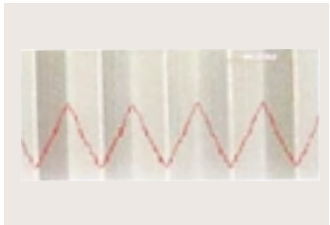
B-mode (B1 and B3)



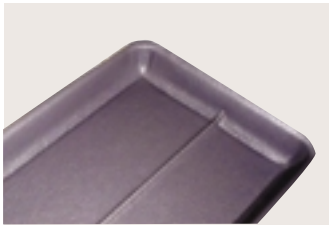
Control mechanism (A & B modes)



Light guide panel fine prism transfer



Lamination molding



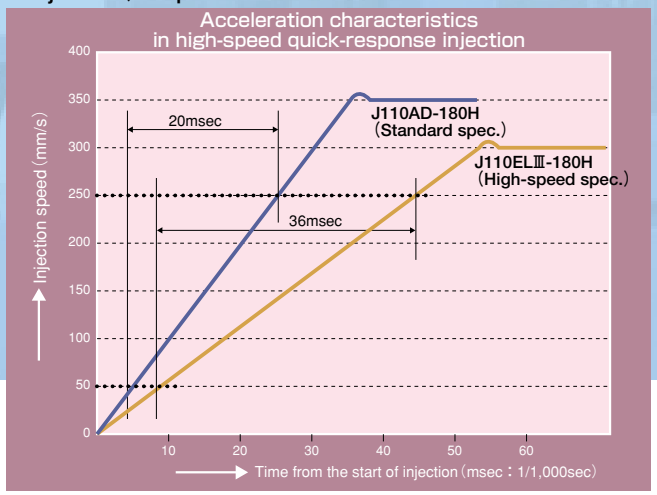
Quick Response

High-speed quick-response injection high-speed, high-pressure thin-walled

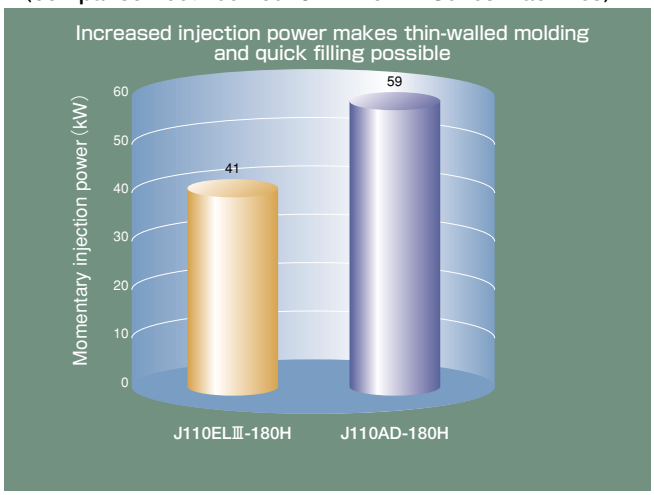
A JSW's original quick servo control circuit combined with a servo drive unit has achieved high-speed quick-response performance.

High-speed quick-response injection with increased injection power

●Acceleration characteristics in high-speed quick-response injection (comparison between our J-ELⅢ & AD Series machines)



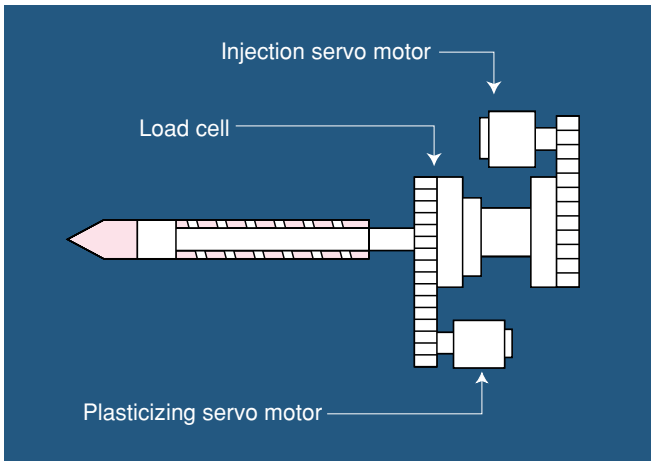
●High injection power (comparison between our J-ELⅢ & AD Series machines)



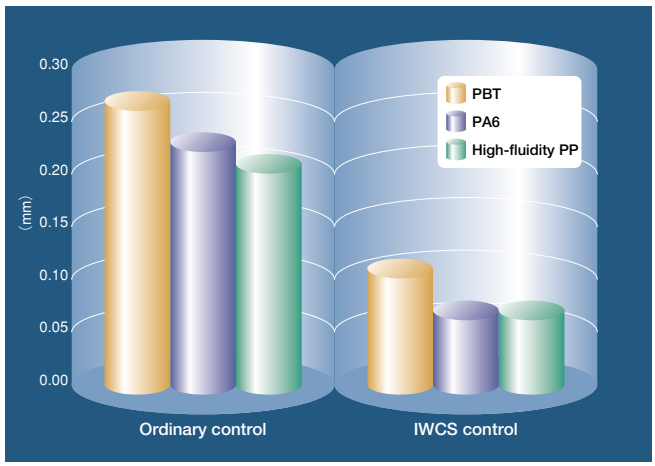
JSW's original injection control

●IWCS control (Injection Weight and Cushion Stability)

A patented control that stabilizes the density of the molten resin stored at the tip of the screw on every shot. This technology can minimize the variance in product weight. (Pat. # 3529771)



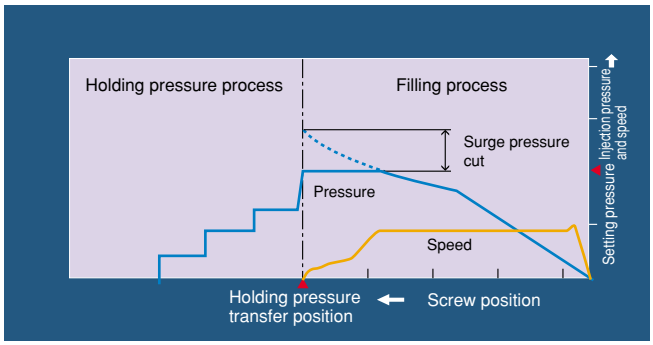
Effect of reduced cushion variation



with versatile control modes enables molding with increased precision

●Electric-driven Soft Pack Servo Control

The JSW patented control technology enables filling under optimum pressure while suppressing pressure peaks before holding pressure transfer during the injection process.
This will prevent over-packing in thin-walled molding.(Pat. #. 1755568)

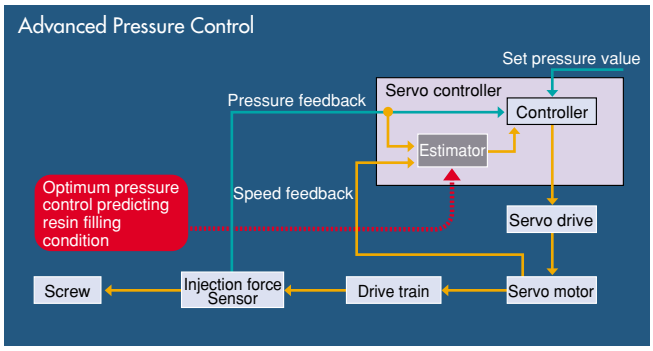


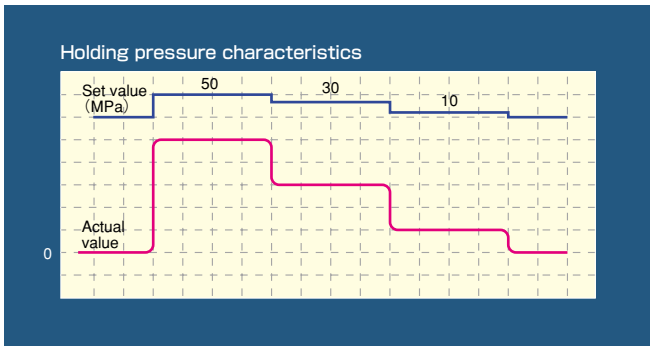
Effect of Soft Pack Servo Control

- ●Reduction of stress in molding
- ●Elimination of flashes
- ●Lessening variation in product weight
- ●Lowering the clamping force (low-pressure molding)
- ●Prevent mold damage

●APC (Advanced Pressure Control)

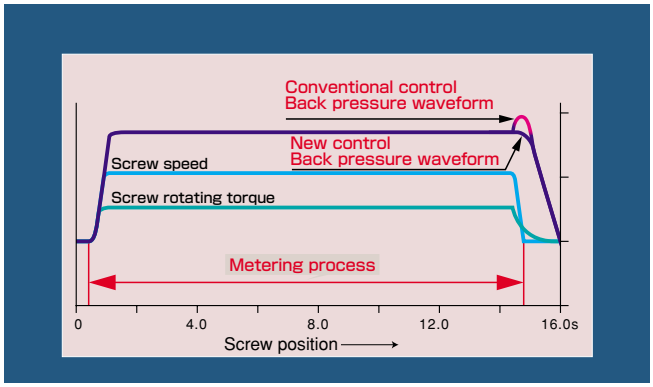
The JSW patented control technology that holds down both over and under shooting in pressure control, during the injection process, enables higher-dimensional follow-up and response to the set pressure.(Pat. # 3168289)





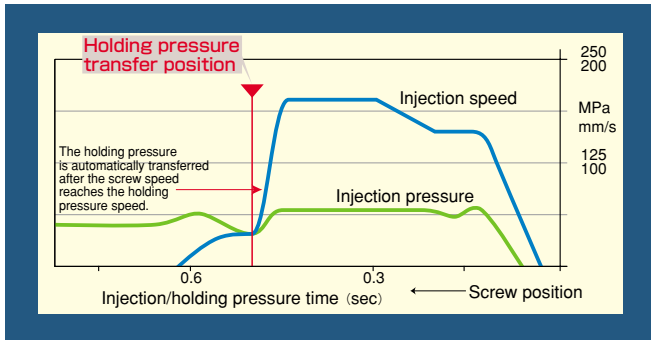
●Predicted control of metering

A control that smoothly stops the screw rotation and the back pressure, during the metering process, by predicting the metering beforehand. It decelerates the screw speed to an optimum value and decreases the screw back pressure smoothly.



●Before-holding pressure deceleration control

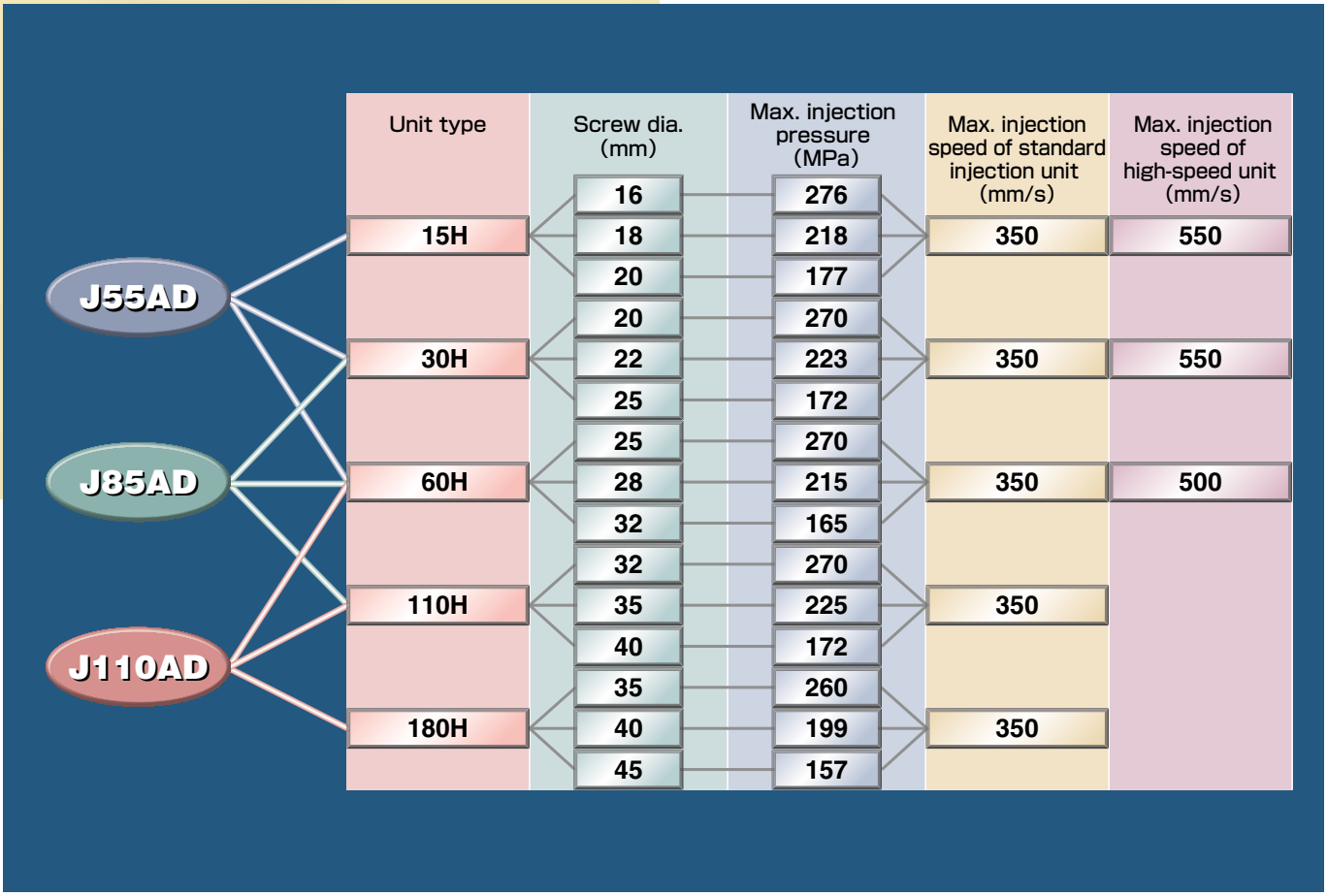
A control that decelerates the injection speed to optimum by predicting the holding pressure transfer position beforehand. During injection the inertial force the internal force is held down which is unique to electric servo drive injection molding machines.
The control promotes stability of the holding pressure transfer pressure.



Wide Range of Injection Units

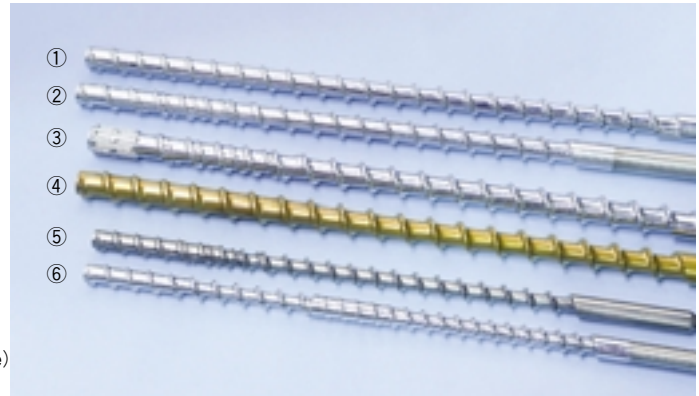
Adapted for diversified products with

A wide selection of injection modules and screws



A wide selection of screws

Meeting versatile user needs, based upon the technology and provisions that JSW has accumulated over many years in the manufacture of plastic extruders that boast an impressive share of the world market.



1. GP21 screw (standard type)
2. M7 screw (high kneading type)
3. HP screw (high dispersion type)
4.&5. Coating screw (high abrasion-resistant type)
6. Vent molding screw

a wide selection of injection modules

●Media parts

Recommended equipment

1. High-speed injection units
2. Barrel for high injection pressure
3. Various single-purpose screws

●Light guide panel

Recommended equipment

1. Special screws (highly polished + plating + various coatings)
2. Special barrel (N2000F + highly polished)
3. Special screw head etc. (highly polished + Cr plated)
4. Hopper throat (Cr plated)
5. Special-design clamping and injection units

●Lens

Recommended equipment

1. Special screws (highly polished + plating + various coatings)
2. Special barrel (N2000F + highly polished)
3. Special screw head, etc. (highly polished + Cr plated)
4. Hopper throat (Cr plated)
5. Special-design clamping and injection units

●Containers

Recommended equipment

1. M7 screw
2. High-speed clamping unit
3. High-speed injection unit

●Rigid PVC

Recommended equipment

1. Special-design double flight screw (MⅡK + Cr plated)
2. Special-design single flight screw (GP21 + Cr plated)
3. Screw head with a check ring
4. Screw head without a check ring
5. Special barrel/screw for vent molding

●Fluorine molding

Recommended equipment

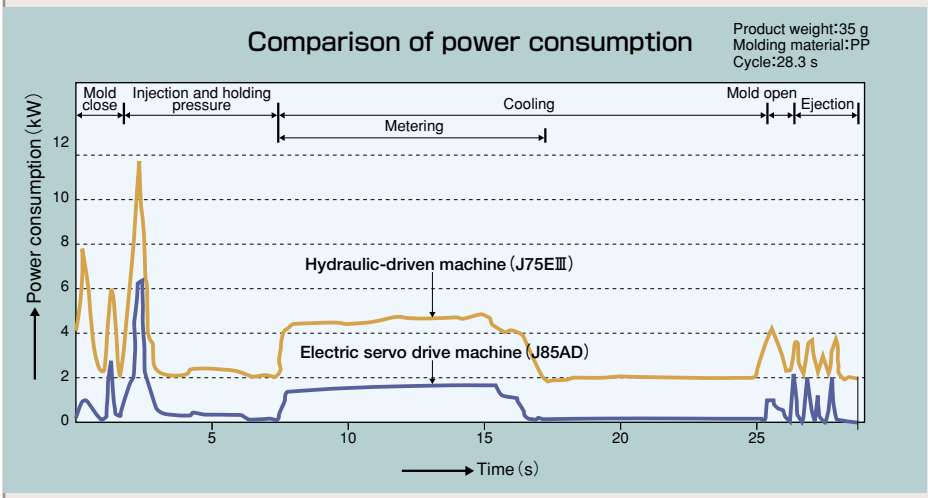
1. Corrosion-resistant barrel (S5 bi-metallic)
2. Corrosion-resistant screw (Plasthard)
3. Corrosion-resistant barrel head (S5 bi-metallic)
4. Corrosion-resistant nozzle (Plasthard)
5. Hopper throat (Corrosion-resistant treatment)

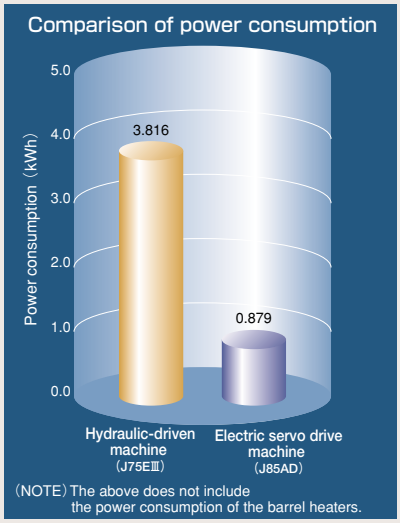
Energy Saving

JAD SERIES

The outstanding energy saving feature substantially reduces power consumption

●Power consumption: 1/3 to 1/4 of hydraulic-driven machines
●Cooling water consumption: less than 1/5 of hydraulic-driven machines





Easy Maintenance

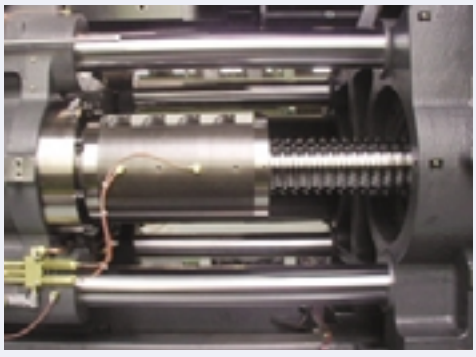
JAD SERIES

Promotion of maintainability

●Polycarbonate safety cover
A large see-through polycarbonate safety cover is employed. (Available in steel – (optional))
It allows the operator to easily see the clamping unit and facilitates maintenance.

●Automatic lubricator
It automatically lubricates the injection unit and the clamping unit to prevent problems from occurring due to poor lubrication.

●Highly durable ball screws are used
Ball screws that excel in durability and can maintain high levels of accuracy for an extended period of time.



●Lube oil level gauge
It allows the operator to easily check that sufficient oil is flowing to the bearings and other areas, and that the oil is not contaminated.

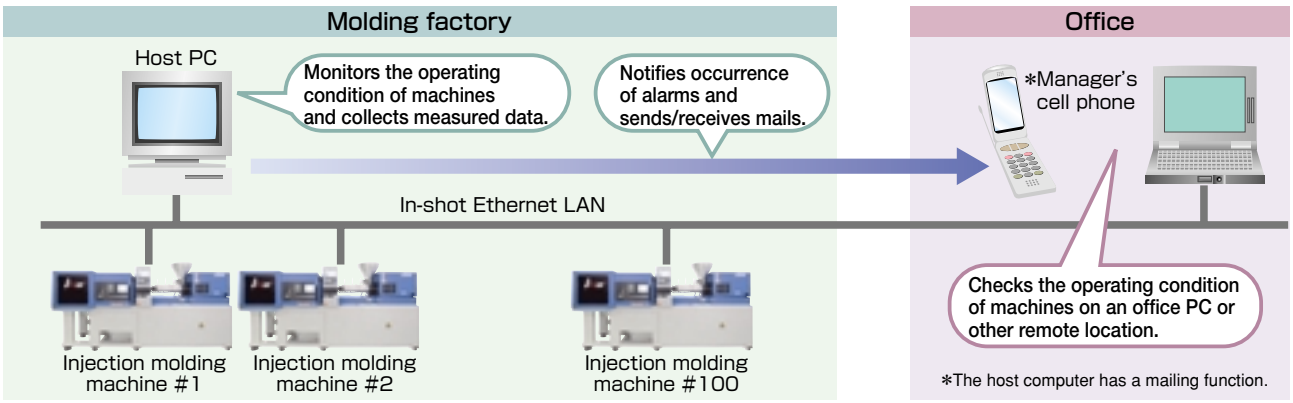
JAD SERIES

An advanced centralized monitoring system and a remote management system

NET100 system and LINK10 system

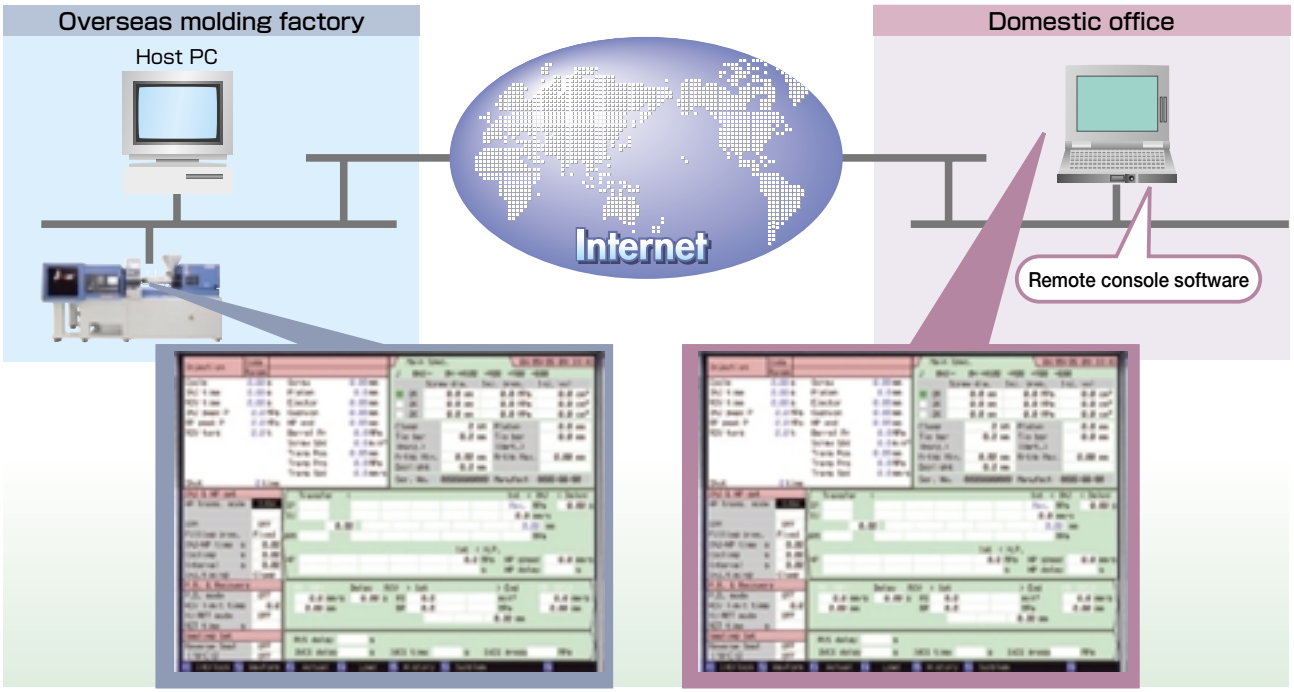
JSW network systems perform quality control and production control of injection molding machines and enables data to be exchanged with machines that are connected with in-shop LAN network.

Up to 100 machines can be linked together on the NET100 system and up to 10 machines on the LINK10 system. ∗Option



Remote management system

If you are in an Internet environment, you can monitor the machine condition, display the controller screens and change the controller settings from anywhere in the world via the NET100 system or the LINK10 system.
Machines in a faraway overseas factory can be monitored over the Internet, which helps promote business efficiency. ∗Option



Controller screen

Remote console software screen

Specifications

Maintaining the standard of high quality and reliable production

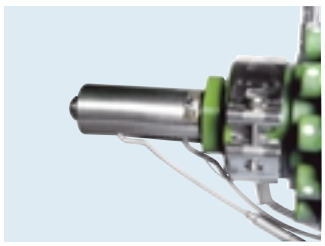
Standard equipment

■Standard equipment list

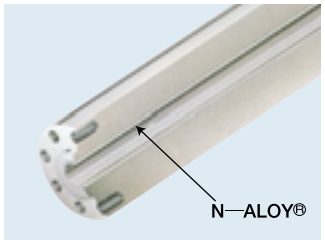
	Item	
Injection unit	KC nozzle	
	N2000F barrel	(Note 1)
	Corrosion- and abrasion-resistant screw (Injection units up to 180H)	
	Cr-plated screw (Injection units 300H and larger)	
	Screw pull-back	
	Purge cover (with a limit switch)	
	Injection unit swiveling device (with a limit switch)	
	Screw cold start prevention	
	Molding/Pause temperature select	
	Auto purging circuit	
	Nozzle retract select	
	Pull-back select	
	Auto grease lubrication	
	Injection/metering programmed control	Injection/holding pressure: 1 to 6 steps (variable) Metering/back pressure: 1 to 3 steps (variable)
	Holding pressure transfer by speed detection (IVS control)	
	Barrel temperature remote setting	
	Barrel temperature control (SSR)	
	Soft Pack Servo control	
	Hopper flange temperature control	
	IWCS control	
	2-freedom PID control	
Clamping unit	Grease-free toggle bushing	
	Auto grease lubrication	
	High-performance platen support	
	Wider platens	
	Tie bar pre-tensioning mechanism	
	Mold open/close and ejection programmed control	Mold open/close: 4 steps (fixed) Ejection: 1 to 3 steps (variable)
	Electric-driven mold thickness adjusting device	
	Mold thickness remote setting	
	Auto clamping force setting	
	Toggle type injection compression function	A-mode B-mode Compression: 1 to 6 steps
	Mold protection function	
	Clamping safety device (electrical/mechanical)	
	Robot mounting holes	

	Item	
Controller	Touch panel TFT color LCD controller	
	120 internal mold conditions	(Note 2)
	Soft start molding	
	Printer interface port	(Note 3)
	Self diagnostics	
	Overall setting screen	
	Help function	
	Pop-up display	
	Pre-heat timer	
	Compound action	
	Clock action	
	Attended/unattended operation select	
	Product takeout robot circuit	
	Multi-language select (English, Chinese, Japanese)	
Monitor	Barrel temperature monitor	
	Heater system fault	
	Injection pressure monitor (IPM)	
	Injection/metering waveform monitor	
	Injection/metering waveform storage	
	Oscillograph waveform monitor	
	Injection overshoot alarm	
	Statistical graph	
	Actual value display	
	Mold temperature display	(Note 4)
	Grease lubrication fault alarm	
	Fault alarm buzzer	
	Production monitor	
	Cumulative operating hour display	
	Cycle monitor	
	Molding condition upper/lower limit monitor	(Note 5)
	Inspection and maintenance	(Note 6)
	Alarm history	
	Set value history	
	Servo fault alarm	
Others	Cooling water closed circuit (with a flow indicator)	
	Accessories (maintenance tools and ejector rods)	

KC nozzle



Barrel



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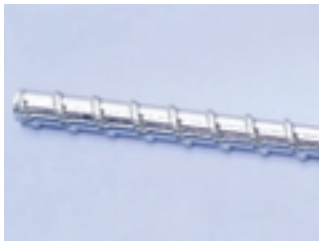


Screw head

(Note)
1. ①For injection units 1400H or smaller, one set of K, A or B type is equipped as standard.
   ②For injection unit 2300H, one set of A or B type is equipped as standard.
2. The external memory is capable of storing conditions for 1000 molds.
   Prepare commercial USB data storage media.
3. The printer and the printer cables are options.
4. Temperature sensors and electric wiring are not included.
5. A maximum of 8 items and alarms can be selected out of the following monitor items.
   ①Cycle time ②Injection time ③Metering time ④Cushion position ⑤Holding pressure end position
   ⑥Injection pressure ⑦Holding pressure transfer pressure ⑧Screw back pressure
   ⑨Metering end position ⑩Injection start position ⑪Holding pressure transfer position ⑫Mold open time
   ⑬Mold close time ⑭Metering torque ⑮Holding pressure transfer speed ⑯Mold inner pressure <option>
6. Indicates inspection times and items.

Options list

■Options list

	Item	
Injection unit	Long nozzle (KC nozzle)	
	Various shut-off nozzles	(Note 1)
	M7screw (High Plasticization type)	(Note 2)
	HP screw (high dispersion type)	(Note 2)
	Abrasion-resistant plated screw	
	One set of screws and barrels for molding optical products	
	Special screw	(Note 3)
	HT screw head	
	One set of screws and barrels for high temperature molding of super engineered plastics	
	Barrel insulation cover	
	Barrel blower cooling unit	
	Hopper (option for all the region)	
	Hopper swiveling device	
	High-speed injection (excl. injection units 110H and 180H)	(Note 4)
	High holding pressure molding (for long-time holding pressure molding)	(Note 5)
	Vented barrel	
Clamping unit	Daylight extension	
	Thermal insulation plate for platens	(Note 6)
	Various locating rings	
	Air jet	
	Core pull devices (pneumatic type and hydraulic type)	(Note 7)
	Unscrewing motor circuit	
	Ejector gate cutting device	
	Ejector plate return check circuit	
	Valve gate device (pneumatic type and hydraulic type)	(Note 7)
	Product drop detector (photoelectric)	
	Chute	
	Rejecting product detecting chute	
	Mold setup device	
	T-groove plate	(Note 6)
	Simple mold clamper	

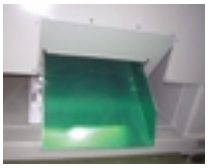
	Item	
Electrical instrumentation and control	Other language select (French, Spanish and Korean)	
	Simple centralized monitor system LINK10	(Note 8)
	Centralized control system NET100	(Note 9)
	Heater burnout alarm	
	Mold temperature display (with mold temperature upper/lower limit alarms)	
	Mold temperature control device (with mold temperature upper/lower limit alarms)	
	Printer (with a printer cable)	
Other	Cooling water open circuit device	
	Cooling water failure warning device	
	Leveling pad for installation	
	Rotary warning light	
	Export specification	(Note 10)
	Designated color	(Note 11)

(Note)

1. A spring type SVN shutoff nozzle, a pneumatic shut-off nozzle and a hydraulic shut-off nozzle can be mounted. For the hydraulic type, a separate hydraulic unit is needed. For injection units 180H or smaller, a pneumatic shut-off device is provided as a standard option. Regarding the hydraulic shut-off device, discussion is needed separately.
2. Regarding the M7 screw and the HP screw for the injection units 15H and 30H, discussion is needed separately.
3. Regarding special screws, contact us separately.
4. The high-speed injection specification applies to the injection units 15H, 30H and 60H. The injection speed differs depending on injection unit.
5. The motor is prevented from being overloaded in a long holding time and high holding pressure molding condition.
6. In case a thermal insulation plate and a T-groove plate are installed on the machine, extended nozzle stroke equal to the thickness of those plates is required. Note that the usable mold thickness range will change.
7. For the hydraulic type, a separate hydraulic unit is needed.
8. The LINK10 has actual data collection, molding condition control and remote control functions.
9. The NET100 has quality control and production control functions in addition to the functions that the LINK10 has.
10. Regarding the export specifications, separate discussion is needed in some cases, depending upon the export destination.
11. Designate colors, referring to color samples or Munsell codes.

■Examples of optional equipment

Part Chute



Air jet

Hopper swiveling device

Hydraulic core interface plug

Spare receptacle

Multi cooling water manifold

- The appearance and the specifications of the machine may be altered for improvement without notice.
- Unauthorized reprint from this leaflet is prohibited.
- The photographs in this leaflet include options.