

Global Network



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● Photographs of machines and details may differ from actual products. ● Specifications subject to change without notice for performance improvement.
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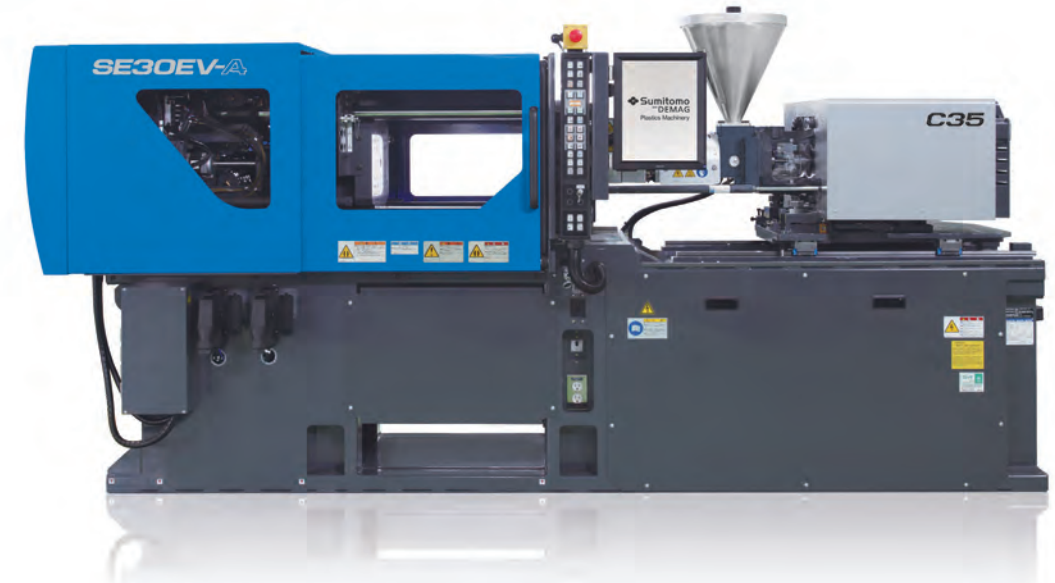
SE-EV-A

All-electric Injection Molding Machine for Lens



SE-EV-A

All-electric Injection Molding Machine for Lens



Lineup

SE30EV-A (300kN)

SE50EV-A (500kN)

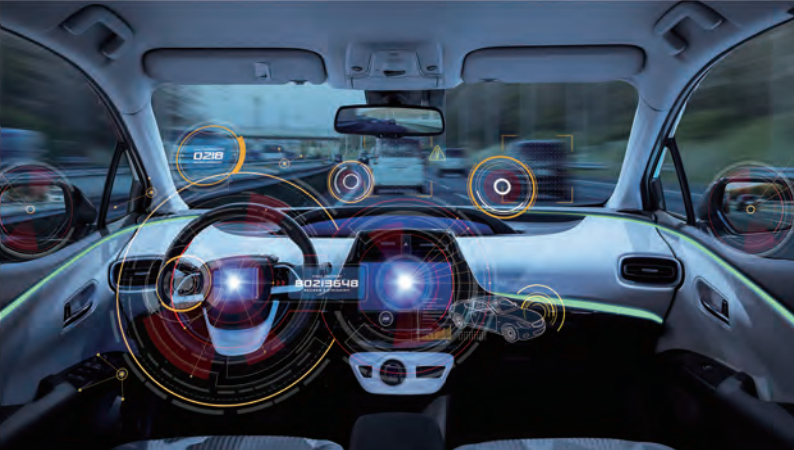


Our products have acquired ISO9001 certification.

www.shi.co.jp/plastics/



Sumitomo Heavy Industries, Ltd.



The lens molding machine leads the lens molding of the next generation

The SE30EV-A has been newly added to the SE-EV-A series lineup that brought amazing innovation to the precision molding. Two model machines SE30EV-A and SE50EV-A for the lens molding are available.



SE-EV-A



SE-EV

The lineage of lens molding machine

We have always been one step ahead of the trend towards smaller size, higher precision and thinner profile optical lenses.



SE-DU

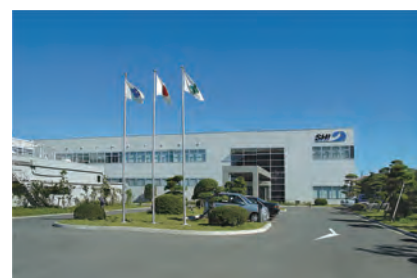


SE-DU



SE-D

Excellent R&D and customer support system



At the Yokosuka Technology Labs, basic and elemental technologies are developed across divisional lines.

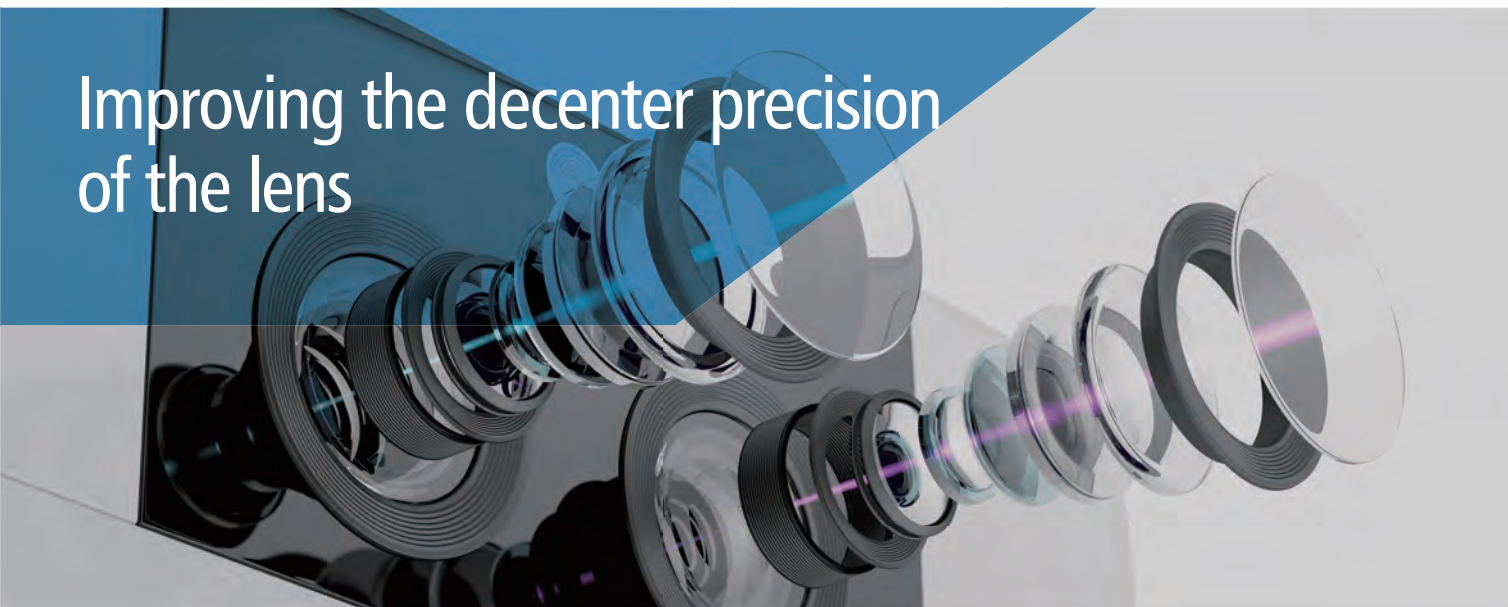


The Chiba Technology Center is equipped with the latest measuring instruments in order to better assist customers with their product development.



Introductory and intermediate level training classes are periodically imparted at business sites in Chiba, Japan and Suzhou and Dongguan, China. All sites have the latest molding machines for learning mass-production technologies.

Improving the decenter precision of the lens

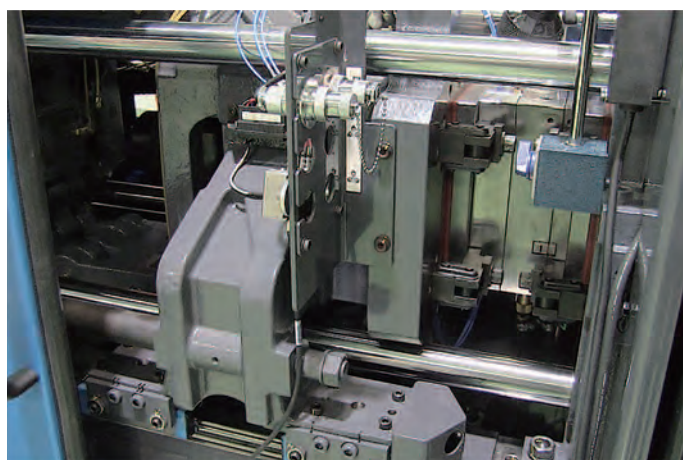


Keeps parallelism of platens

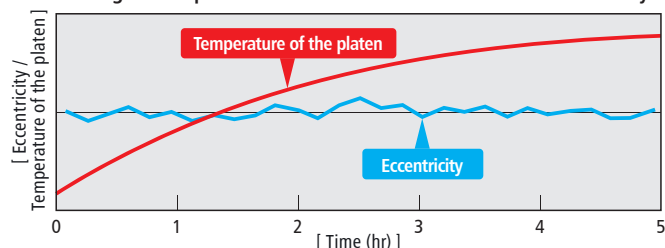
Thermal Free Platen

The lens machines employ specially structured Thermal Free Platen that minimize any irregular deformation due to heat, and improve parallelism and linearity.

PAT. pend. in Japan

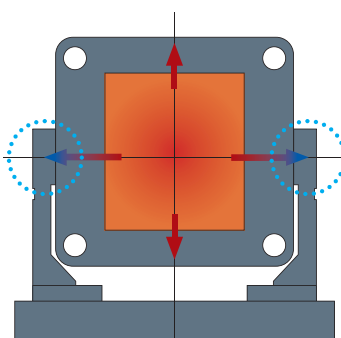


- Change in temperature of the Thermal Free Platen and eccentricity -

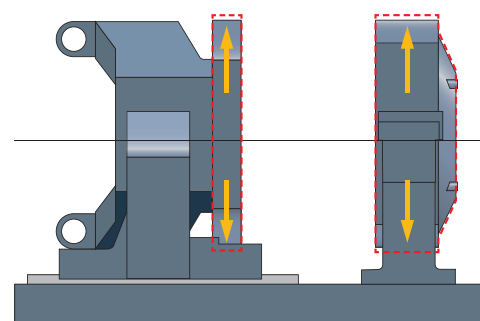


Thermal Free Platen

Heat propagates symmetrically upwards/downwards. Temperature is the same above and below the platen.



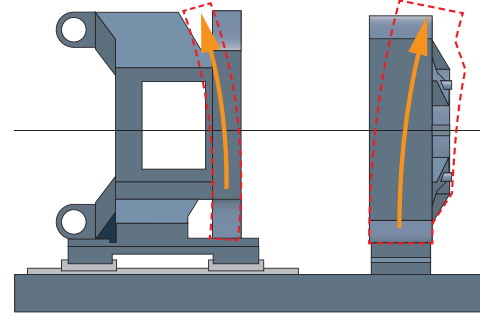
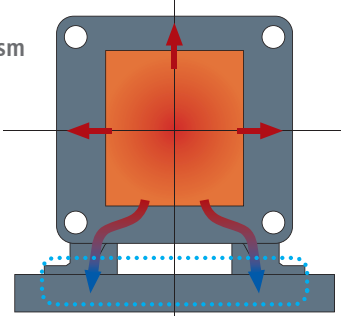
Heat flow model



Upward/Downward deformation is even across the platen, so the platen stays flat.

Conventional mechanism

Temperatures differ above and below the platen because heat propagated to the frame.

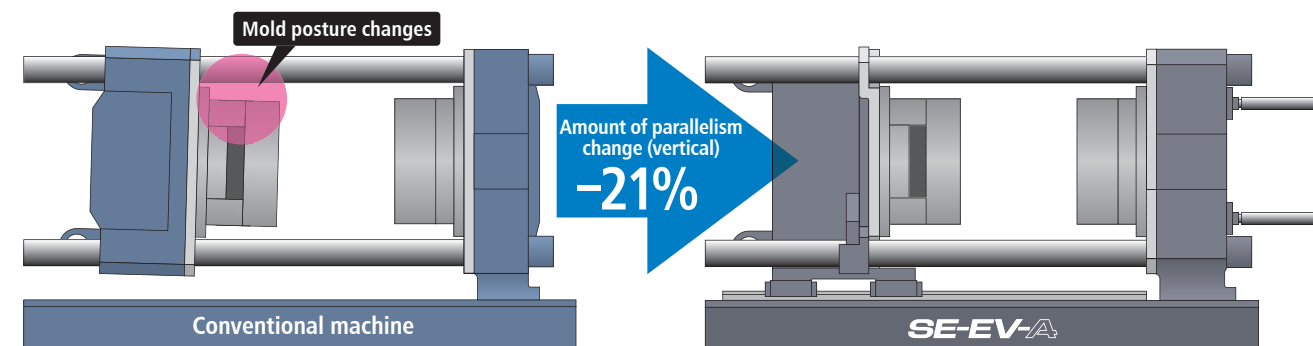
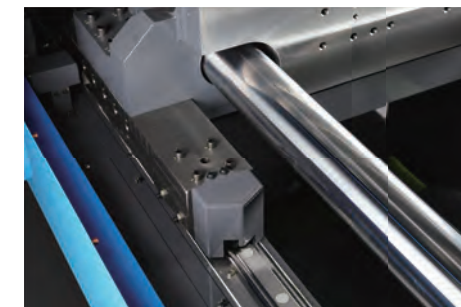


Deformation is uneven across the platen, so the platen does not stay flat.

Keeps linearity and parallelism of molds and prevents damages to the molds

Platen support and bush-less tie bar

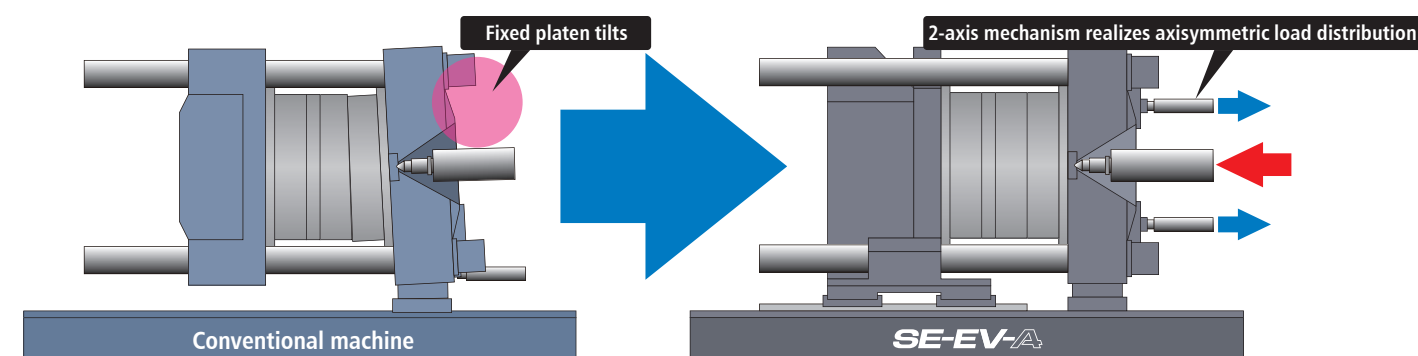
Even if installed a heavy mold, the mold open/close can be smooth while maintaining high parallel precision. Provide 100% mold precision and prevent damage to the mold, such as pin stuck, etc.



Prevents tilting of fixed platen

High precise nozzle touch

The 2-axis support mechanism provides a load distribution centered on the nozzle. Thus, it is possible to prevent the fixed platen from tilting during filling and holding pressure.

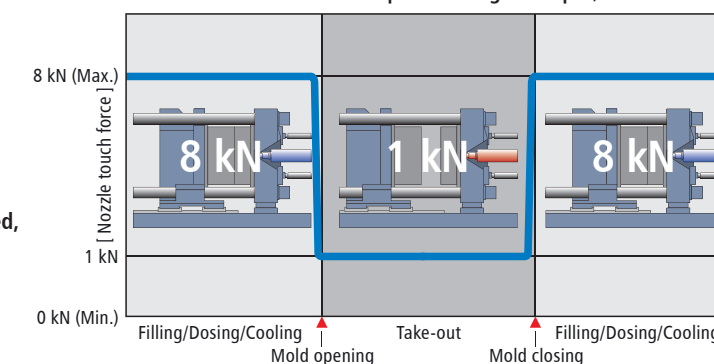


Prevents misalignment and galling

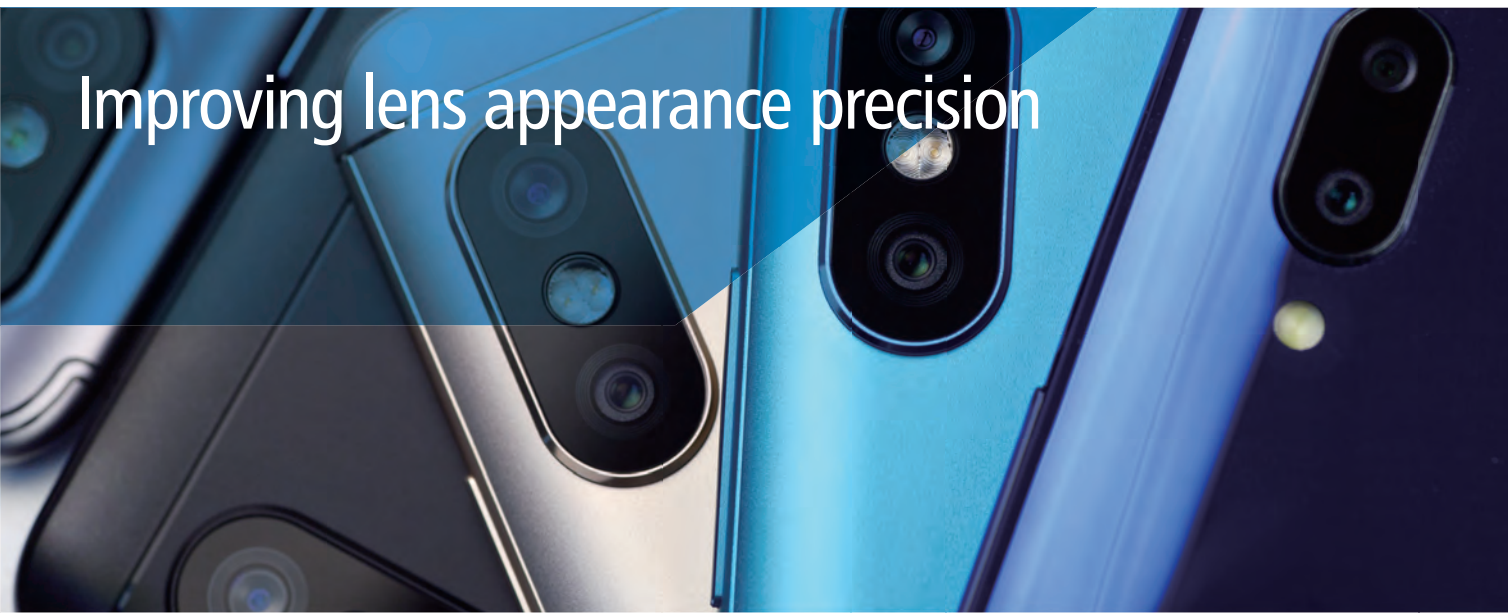
Nozzle touch force feedback control

It controls pressure-boosting/depressurizing of the nozzle touch according to each process. Since nozzle touch force can be set for each process, tilting of the fixed platen and deformation of the mold can be suppressed, and misalignment and pin galling can be prevented.

- Nozzle touch force profile during mold open/close -

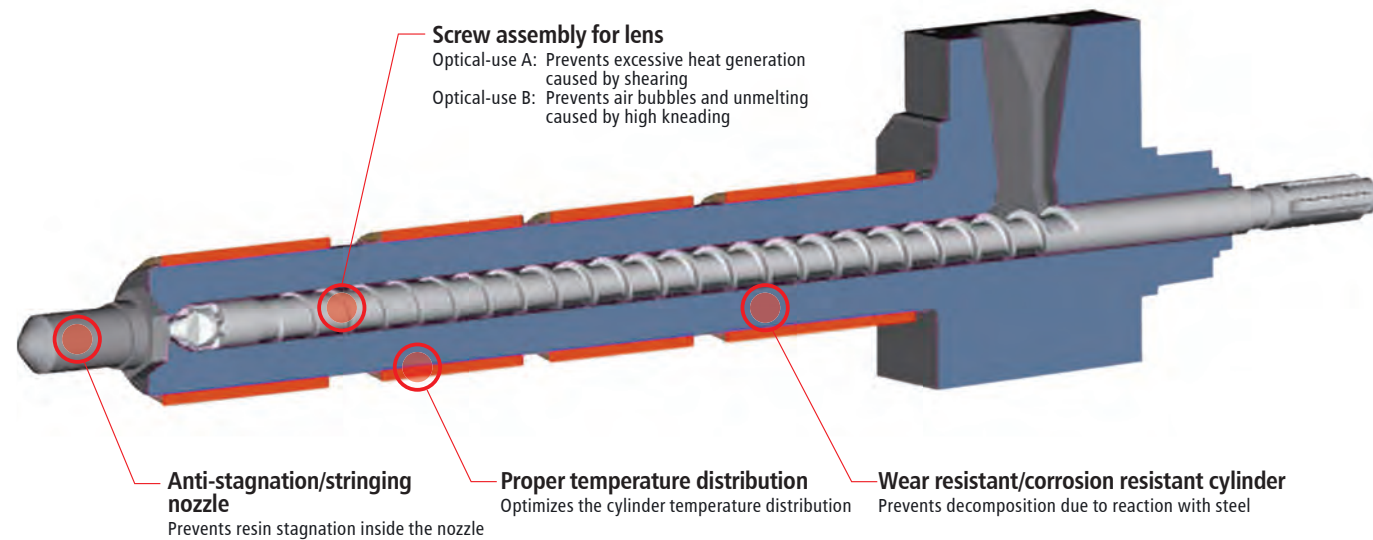
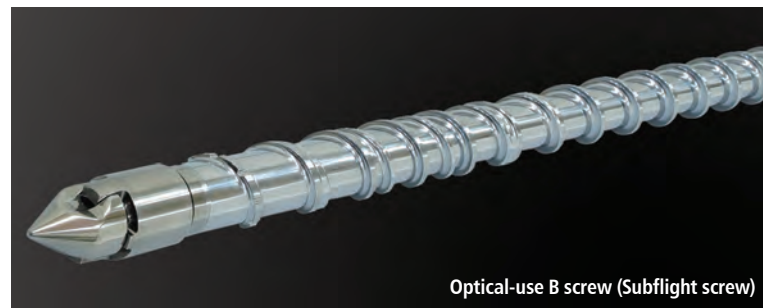


Improving lens appearance precision



Optimal design for optical molding Screw assembly for lens

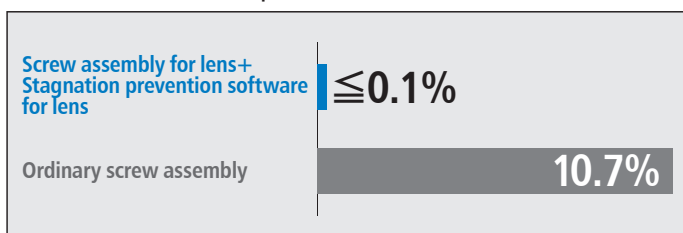
We offers two types of screw assemblies designed specifically for optical molding.
Optical-use A keeps shearing force low to prevent resin from carbonization. It works with all transparent resins but is particularly effective in COC molding.
Optical-use B is configured for extensive kneading (subflight) to prevent air bubbles and incomplete melting. It is effective for molding COP and PC lenses.



Resin	COC		COP, PC	
	Black spots	White spots/Air bubbles	Black spots	White spots/Air bubbles
Optical-use A	⊙	○	○	○
Optical-use B	○	⊙	○	⊙

⊙ Excellent ○ Good

- Comparison of defective rates -



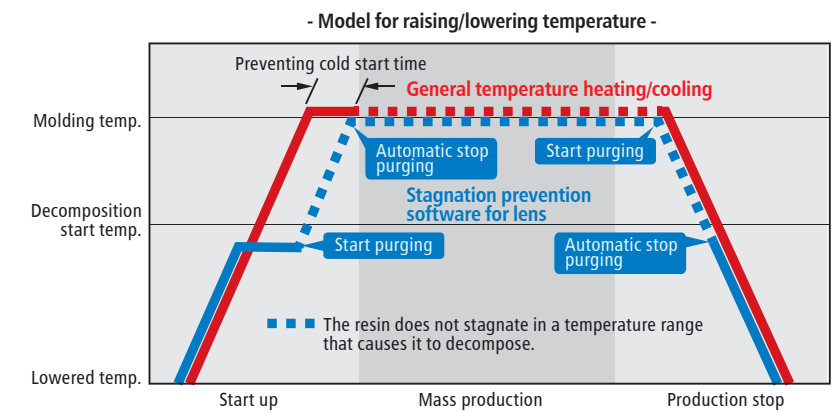
Plasticizing unit: C35 / Screw dia.: 18 mm / Resin: APEL 5514ML
According to the conditions set by us when using optical-use A screw assembly

Prevents defects caused by resin stagnation

Stagnation prevention software for lenses

This is a purging control software to prevent resin stagnation in the cylinder during the temperature range where the resin decomposes.
It is effective in preventing black spots when the screw stops due to maintenance.

PAT. pend. in Japan



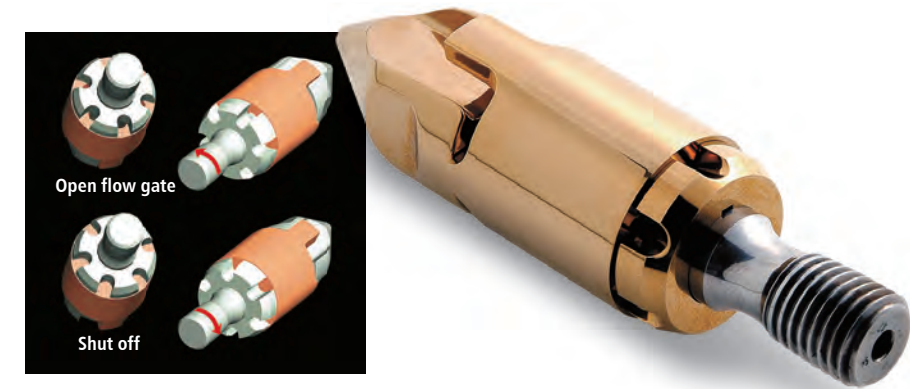
Enables more stable filling

SK Control+ Density correction

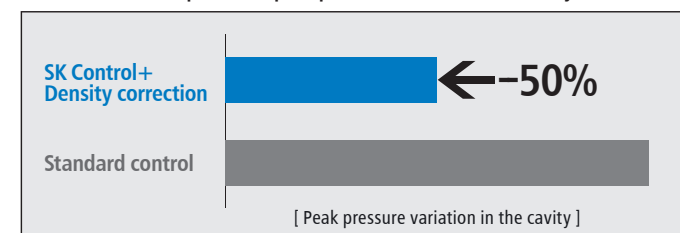
With a screw head equipped with a high-precision backflow prevention mechanism, performs density correction after dosing. In addition to suppressing variations in mold internal pressure and improving stability, it is also effective in preventing air bubbles.

PAT. pend. in Japan (SK Control)

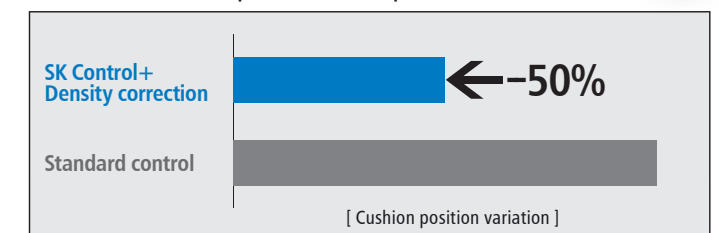
Optional



- Comparison of peak pressure variation in the cavity -



- Comparison of cushion position variation -

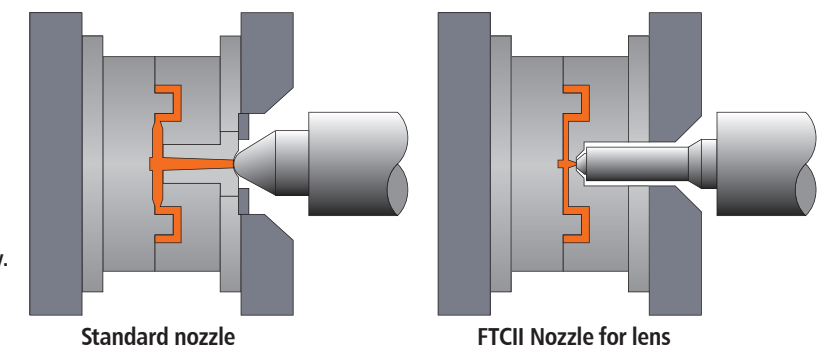


Eliminates stringing and nozzle clogging

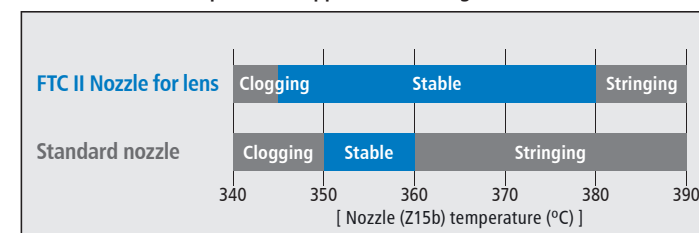
FTC II Nozzle for lens

The FTC II Nozzle for lens stabilizes the temperature distribution with 2-zone temperature control. By optimizing the temperature of the nozzle, the range of molding conditions can be expanded. It is easier to adjust the nozzle temperature condition and eliminates the stringing and clogging of the nozzle simultaneously.

Optional



- Comparison of applicable molding conditions -



The FTC II Nozzle for lens works with a wider scope of molding conditions that do not cause stringing or clogging, so molding conditions can be set more easily.

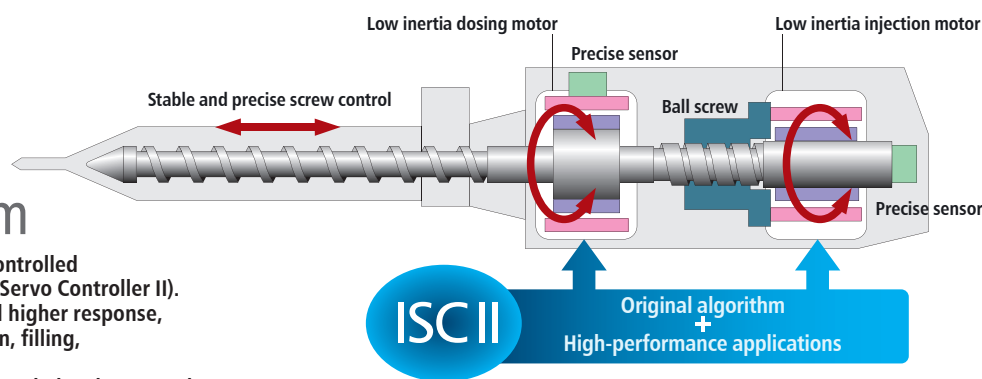
Improving lens thinning



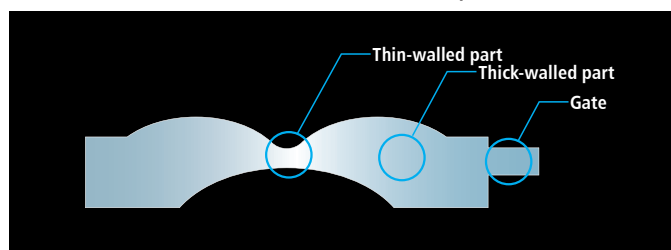
Excellent low-speed injection control The direct drive system

Originally-developed low-inertia servomotor is controlled by an up-to-date control system ISCII (Intelligent Servo Controller II). It enables screw control with higher accuracy and higher response, and realizes more precise and stable plasticization, filling, and holding pressure processes. It has excellent controllability in both high-speed and ultra-low-speed ranges, to realize precise and stable molding of thin-walled and thick-walled mixed lenses.

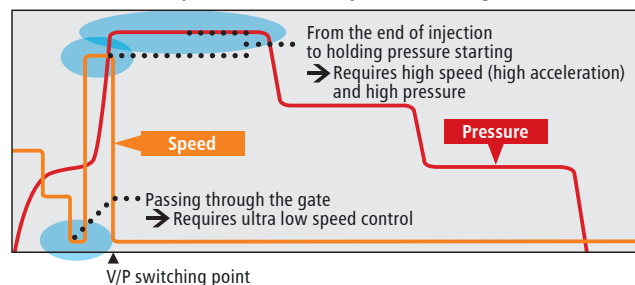
PAT. pend. in Japan



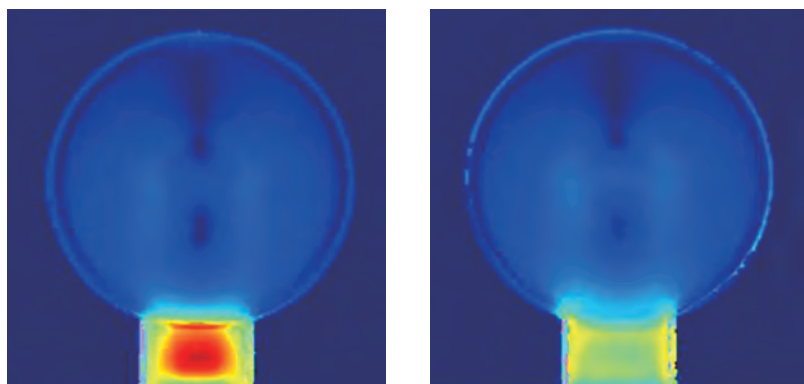
- Thin-walled and thick-walled mixed lens example (Cross section) -



- Injection controllability of lens molding -



- Comparison of residual stress using polarized photography -



Ordinal molding

The ejector compression

Compatible with thinner lenses High precise ejector compression

During the filling process, cavities are compressed by the ejector so that cavities are more evenly filled. It achieves low birefringence lens molding with minimal residual stress. Moreover, high-precise positioning in units of 1 μm ensures stable surface precision and supports thinner molding.

Optional

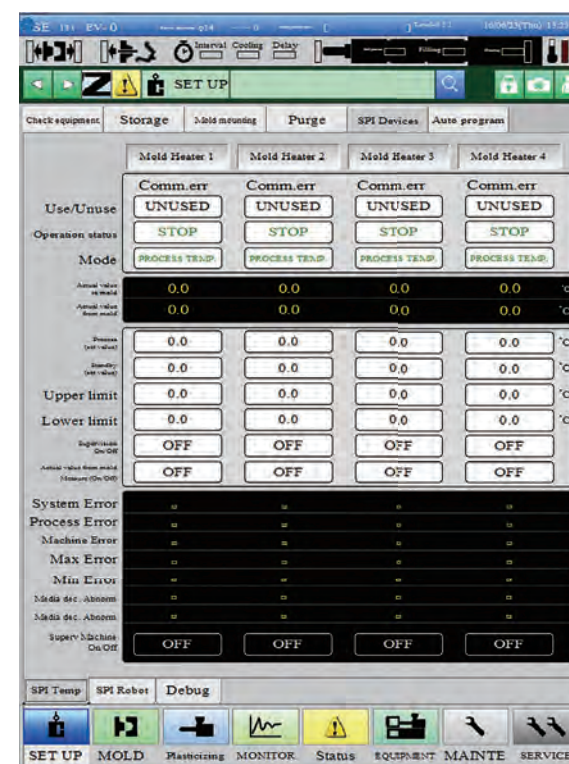
Support next-generation lens molding Various quality control functions

Achieves higher quality control Quality Control Package

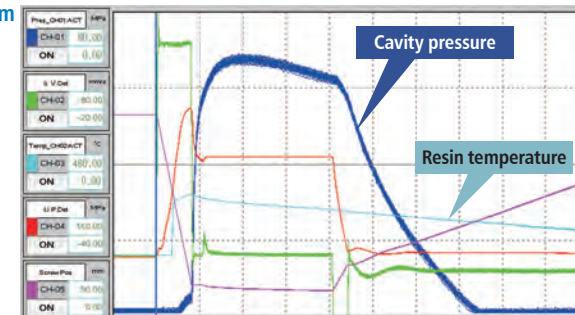
It can read signals from external sensors (flowmeter, cavity pressure sensors, etc.) through the dedicated connector with analog signals, so actual values can be recorded and monitored on the waveform screen or the logging screen. This application package provides superior quality control.

- "Cavity Pressure", "Flowrate", "Temperature" and "Sensor" can be selected on waveform and logging items.

Optional



Waveform



Logging

Product Control	Monitor	Waveform	Logging	
Total	34 shots	Non-Defect	34 shots	
	Defect	0 shots	Reject	0 shots
Data logging ON				
Monitoring ON				
Ave	10.8	10.3	0.0	
Range	8.8	4.5	0.0	
Max	11.8	11.8	0.0	
Min	1.8	7.8	0.0	
Std Dev	2.4	1.1	0.0	
Defect	0	0	0	
Start	Fixed	Fixed	Fixed	
Control	40.0	40.0	8.0	
Range	8.0	8.0	2.0	
Shot count	Time	State	CH1	
34	14:00:01	11.8	10.7	
32	13:58:10	11.3	10.8	
32	13:58:18	11.6	10.7	
31	13:58:11	11.7	10.4	

Control and monitor mold temperature controller on IMM

SPICCP Communication for the Mold Temperature Controller

By connecting the molding machine and the mold temperature controller through SPICCP, the mold temperature controller can be operated from the molding machine.

Not only does it shorten the time to setup conditions, but it also prevents careless mistakes.

- Please contact us to confirm available temperature controller manufacturers and cable types.

Optional

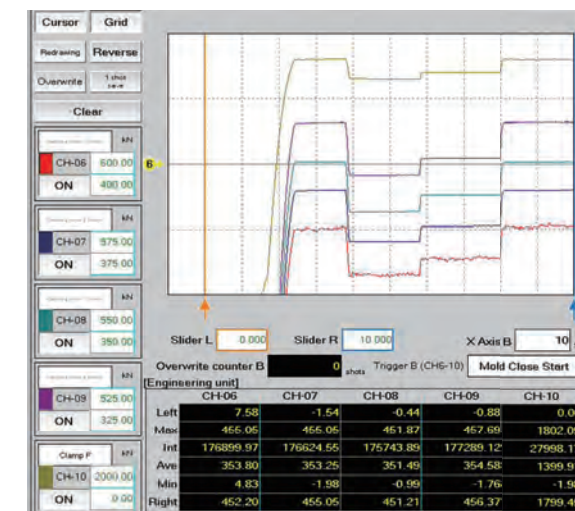
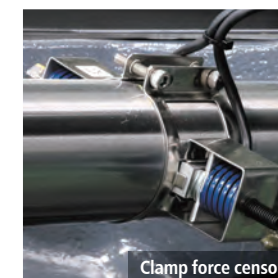
Improves the precision of quality control

Tie bar force balance monitor

Equipped with a clamp force sensor on every tie bars and each axial force is displayed in real time. It can be combined with waveform display/logging/monitoring functions to improve the precision of quality control. You can check changes over time, which is effective for maintenance management.

PAT. pend. in Japan (Clamp force sensor)

Optional



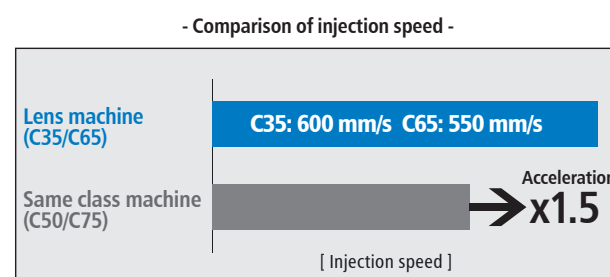
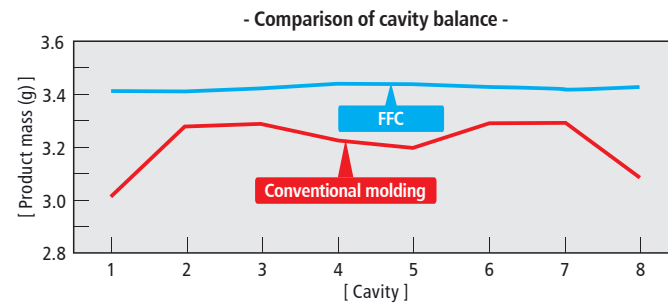
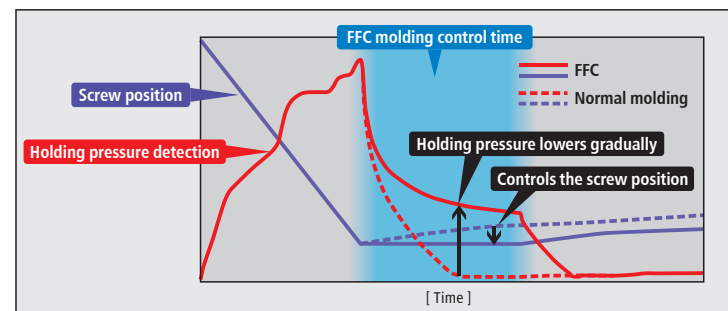
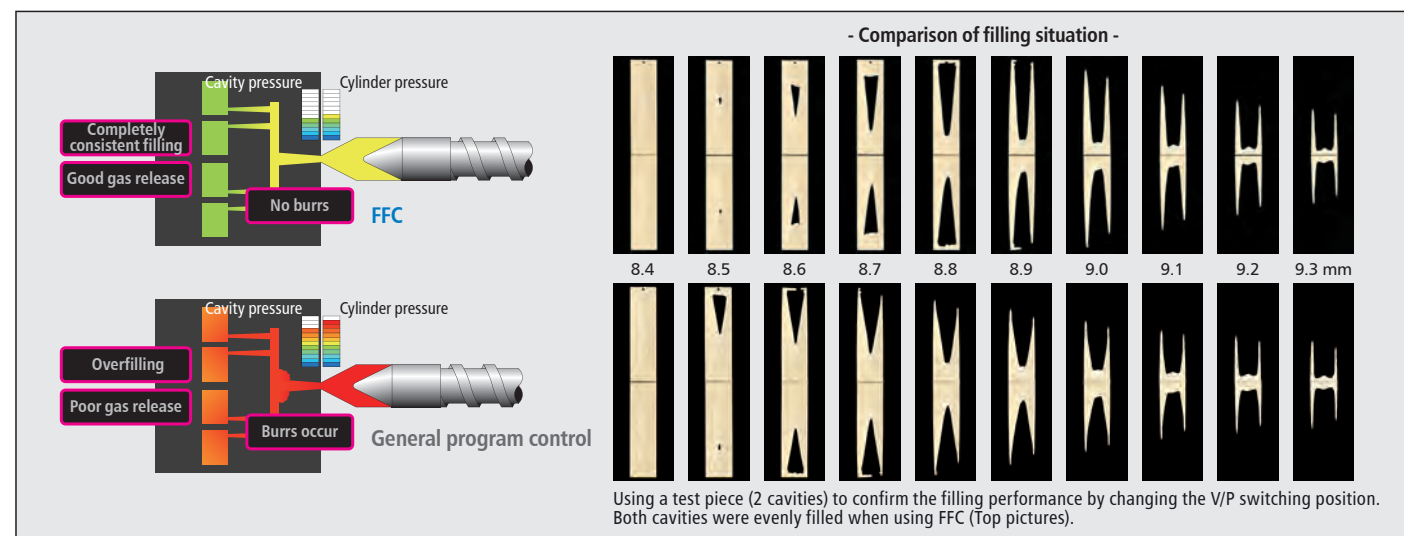
Improving performance of the lens module

Superior cavity balance

FFC Flow Front Control

Screw control before and after V-P switch over enables low-pressure, smooth, and complete filling. It improves the cavity balance and eliminates burrs and short shot at the same time.

PAT. pend. in Japan



Supports advanced lens molding

High-speed, high-response injection unit

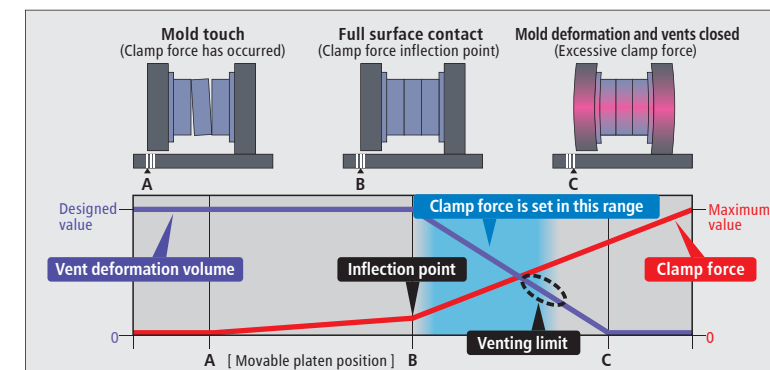
The lens machine is equipped with a dedicated injection unit that has excellent ultra-low speed controllability for precise lens molding, and high-speed, high-response injection performance. The superior performance unique to the direct drive enables precise screw control.

Better vent effects by reducing the clamp force

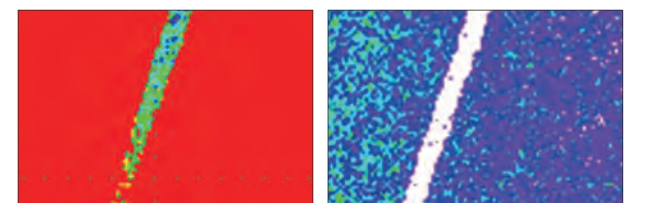
MCM Minimum Clamping Molding

The clamp force with requisite minimum and best surface pressure balance is realized by optimization of clamping precision and surface pressure.

PAT. pend. in Japan



Excessive clamp force



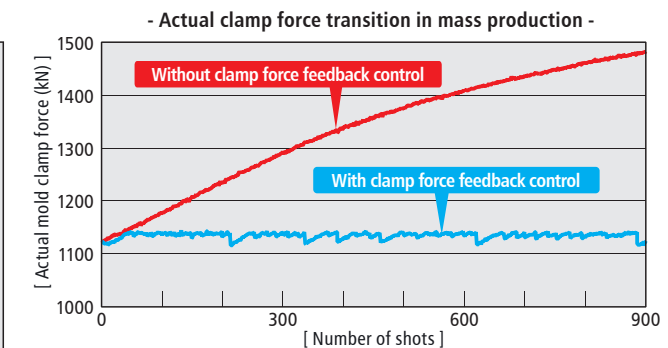
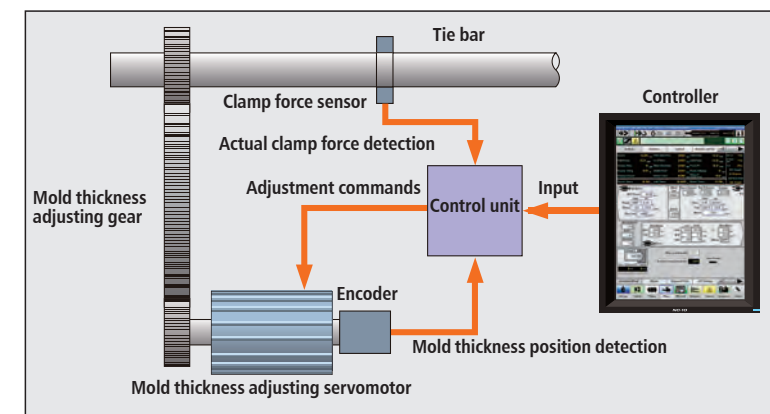
Vent deformation and venting function without working if excessive clamp force

Staying constant clamp force in mass production

Mold clamp force feedback control

The mold clamp force tends to increase due to thermal expansion of molds in mass production. The lens machine provides constant mold clamp force by correcting the mold thickness based on the actually value.

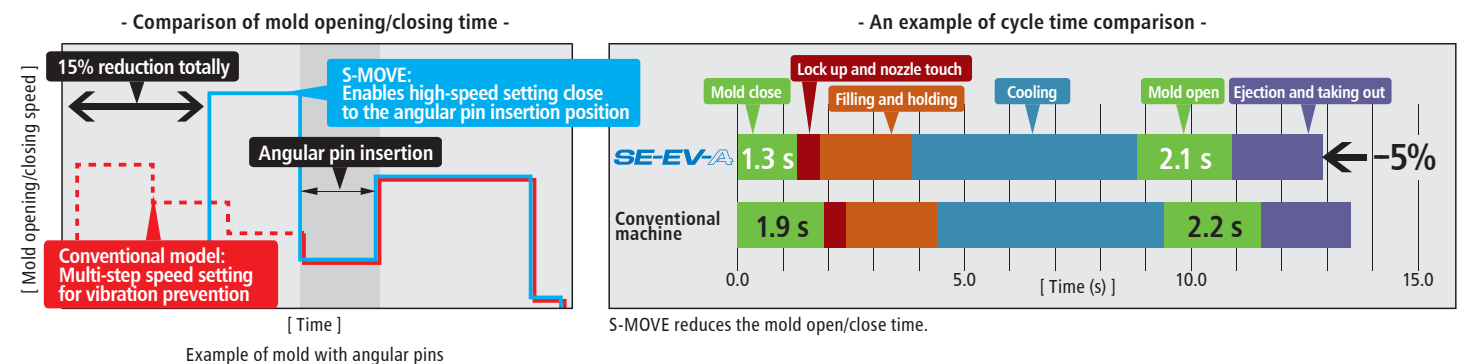
PAT. pend. in Japan



Lesser cycle time

Acceleration/deceleration control with vibration suppression S-MOVE

Smooth speed patterns in acceleration/deceleration achieved vibration suppression and faster clamp movement.



Standard Equipment

Plasticizing and injection unit
1. Injection program control function (Multi-stage control)
2. Holding pressure program control function (Multi-stage control)
3. Screw pull back function (Before starting dosing/After dosing is completed)
4. Digital display function of screw position (0.01 mm setting)
5. Holding time 0.01 seconds setting function
6. V-P switchover function (Pressure/Position)
7. Filling delay timer function
8. Pursing device with interlock (Select the position where the interlock function is unused or the injection device is retracted)
9. Heating cylinder temperature control max. 5 zones *2
10. Heating cylinder temperature switching function (Molding/Lowered temperature/Pursing)
11. Standard capacity heater
12. Screw cold start prevention function (With variable interlock timer)
13. Remote setting function for sprue break stroke (Reverse timing selection with delay timer, Nozzle contact detection, Movement time setting)
14. Screw rotation speed digital display function
15. Purging cover device (With limit switch)
16. Injection unit swivel device (With nozzle alignment adjustment mechanism)
17. Remaining cooling time display function
18. Dosing start delay timer function
19. Injection speed/Holding pressure rise speed selection function (10 modes)
20. Screw forward speed setting function during holding pressure
21. Screw pull back delay control function
22. Synchro dosing function
23. Screw reverse rotation control function
24. Independent temperature control device of nozzle
25. Standard energy saving heating cylinder cover (Two-layer structure)
26. Water cooling jacket temperature control device
27. Mold open operation function during dosing (Shut off nozzle drive control)
28. Filling pressure multi-stage control function
29. Resin residence prevention function
30. One-touch manual dosing function
31. Stainless steel purge resin saucer
32. Plating resin inlet of cooling water jacket
33. Purge function to prevent resin residence
34. Lens use control
35. Deceleration pattern of V/P switchover (Slow landing) (Only for SE30EV-A)
36. High-efficiency nozzle control
37. Nozzle surface processing plating

Control unit
1. 15-inch TFT color LCD screen
2. Touch panel type setting input device
3. Molding condition storage function
4. Operation support function
5. Molding support function
6. Waveform display function (Waveform memory function, Display value reading function, Data storage by trigger, etc.)
7. Screen hard copy function
8. Take-out robot connection circuit device *1
9. Screen switching function in up to 15 languages
10. Maintenance management function (Inspection time, Grease greasing time, Item, Operation method display)
11. Automatic start/stop function (Lowered temperature/Heater start/Molding machine stop) *1
12. Process display function
13. SSR heater drive circuit device
14. Industrial unit input function (Speed, Position, Pressure and rotation speed)
15. Molding machine status output signal (5 CH) *1
16. USB connection circuit device (Memory)
17. Protection function of saved conditions
18. Abnormal processing selection function
19. Initial reject/Short stop reject function
20. Screen color change function
21. Numerical and character input keypad layout change function (Select from 2 types)
22. Take-out robot entry permission signal
23. Clean control cabinet (Only for SE30EV-A)

Monitor unit
1. Actual value display function
2. Heater breakage monitoring device
3. Auxiliary equipment abnormality monitoring function (3 ch) *1
4. Abnormality monitoring function (Maximum cushion, Minimum cushion, Filling pressure, Mold protection, Cycle time, Dosing time)
5. Abnormality monitoring condition automatic setting function
6. Abnormal history display function (Abnormal item/Occurrence time display)
7. Quality control function (Statistical function of actual values, various graph functions, 100,000 shot storage and data confirmation function)
8. Production number management function (Molded product discrimination function, Automatic production completion, Stocker feed signal, Data logging, Production counter with reset)
9. Auto start function (Heater, External output signal)
10. Heating cylinder temperature monitoring function (All zones)
11. Self diagnosis function
12. Abnormal alarm buzzer
13. Shot counter
14. Processing function when cycle monitoring is abnormal (Heater processing mode change)
15. All process display screen function
16. Monitoring function to prevent forgetting to set monitoring
17. Ejector protrusion torque monitoring function
18. Maintenance time notification function (Maintenance time notification based on the number of shots / Elapsed time)
19. Injection pressure monitoring function (5 points)
20. Cycle analysis function

Clamp unit
1. Mold opening/closing position and speed program control function (5-stage/3-stage switching)
2. Mold protection function
3. Low pressure mold clamp function
4. Mold opening/closing pause function
5. Remote control function of clamp force
6. Remote control function of mold space
7. Ejector remote setting function (2-speed control, Pressure, Stroke, Delay timer, Multiple time protrusions)
8. Current value input function (Ejector protrusion position)
9. Current value input function (Mold open limit position)
10. Clamp mode selection function (Lockup)
11. Ejector protrusion interlock function (Ejector can be operated only at the mold opening completion position in manual mode)
12. Ejector protrusion function during mold opening
13. Ejector protrusion function during mold clamp
14. Mold plate return confirmation device (Input signal to molding machine) (Metal outlet connection) *1
15. Mold opening/closing signal (Spear control signal) *1
16. Valve gate drive circuit device (Control circuit only) *1
17. Stand by mode function for mold installation (Low mold opening/closing speed)
18. Toggle cover with polycarbonate window
19. Emergency stop push button switch (Operation side/Non-operation side)
20. Safety door with polycarbonate window
21. Screw holes for mounting the take-out robot
22. Grease centralized greasing device for mold clamp/injection unit
23. Mold clamp safety device (Electric/Mechanical)
24. Mold opening/closing low vibration or high speed mode selection function
25. Movable platen support device (Linear guide type)
26. Product drop confirmation connection circuit *1
27. Multi-toggle function (Multi-stage clamp force setting)
28. Tie bar plating specification
29. Ejector motor device with brake
30. S-MOVE function (Low vibration control)
31. Ejector standby position function
32. Control device for mold installation space with servo motor
33. Dust-proof cover on top of toggle (Fixed type)
34. Dry cycle mode function
35. High rigidity platen device
36. Super high precision mold clam unit (Center support type)
37. High rigidity mold clamp adjust

Others
1. Auto grease supply unit (Cartridge grease type)
2. Three-directional ejection frame
3. Mold cooling water block (2 systems) (Flow indicator and valve are options)
4. Standard spare parts (Hook for hosting machine, fuse, air filter)

*1 All input and output signals are no-voltage contact signals. Power is not supplied with output signals.

*2 The number of zone varies depending on the screw diameter and screw type.

*4 All input signals are no-voltage contact signals. All output signals are 24 V DC signals.

*5 All input and output signals are 24 V DC signals.

*6 The ejector stroke will be shortened, and maximum ejector speed slows down.

*7 The overall machine length and maximum mold thickness are larger by 50 mm.

● Specifications are subject to change without notice for performance improvement.

Standard Equipment

Zero-molding features
1. Zero-molding main screen: Simple process setting
2. Zero-molding main screen : Production monitor (Production number/Process/Abnormality/Actual results)
3. Specifications/Function confirmation screen (Standard functions/Optional functions/Abnormality handling/Specification list/Monitoring device)
4. Minimum mold clamp force detection function (Automatic measurement)
5. Setup support: Mold installation screen (Mold height, Mold contact, Clamp force, Mold open/close in preparations, Ejector setting)
6. Setup support: Mold condition setting screen (Open/close, Ejector multi-stage setting)
7. Setup support: Mold opening limit/Ejector protrusion position teaching function (Current value input)
8. Setup support: Protection setting screen (Mold protection, Ejector protection)
9. Setup support: Multi-purging function (Gate purging, Resin replacement purging, Slight time stop purging, Low-viscosity resin purging, Resin viscosity measurement)
10. Setup support: Temperature condition reference/Calling function
11. Setup support: Resin residence alarm/Monitoring function
12. Setup support: Nozzle/Heating cylinder temperature rise mode function (Step/Nozzle delay/Process temperature control)
13. Zero-molding Molding condition setting screen: Z-Screen (Filling, Holding pressure, Dosing, time, Temperature, Mold clamp force)
14. Zero-molding: FFC control function
15. Zero-molding: FFC control, mode setting function
16. Zero-molding: Function to check the filling position and short shot position by flow front check
17. Screw reversal decompression control function
18. Zero-molding: Clamp force feed back function
19. Clamp force multi-stage control function (Cross-head position control)
20. Multi-toggle function (Gas vent function/Deformation prevention function)
21. Zero-molding: Molding condition support monitor function (Peak clamp force, Pack pressure, Status display)
22. Actual value monitor switching function (Actual/Process/Power/Waveform/Temperature graph)
23. Monitoring setting: Function to automatically set all at once
24. Molding condition access restriction function (Condition range, Screen display, Password function)
25. Automatic condition change function for molding start (By short shot method)
26. Protection: Screw protection function
27. Energy saving mode function of holding pressure
28. Waveform display function: Simple display by process (Injection, Holding pressure, Dosing, Mold opening, Mold closing, Ejector, Mold height)
29. Waveform display function: Waveform save completion message
30. Waveform display function: Automatic waveform save function (Always/Trigger/Abnormal)
31. Quality control function: Waveform monitoring function
32. Quality control function: Molding process monitor logging function (Temperature, Temperature control output, Peak clamp force, Pack pressure)
33. Production control function: Function to set the number of cavities and manage the number of products
34. Production control function: Operation status management function (Operating time, Motor load factor, Power consumption display)

Control unit 23

Clean control cabinet

The control console is equipped with IP54-equivalent dust lockout capabilities. The console is kept internally pressurized to prevent dust infiltration so that instrumentation components last longer.



Optional Equipment

Plasticizing selection
1. Optical specification screw assembly
2. Optical-use A screw
3. Optical-use B screw
4. Screw tip set - rotation type, TiN coating
5. Open nozzle
6. Open type nozzle (Optical specification)
7. Extension nozzle

Plasticizing and injection unit
1. Standard type hopper
2. V/P switchover by mold cavity pressure
3. FTC nozzle electric control circuit (Built-in type)
4. High temperature heater control circuit (Max. temp. 499°C)
5. Hopper swivel mounting plate

Control and monitor unit
1. Leak circuit breaker (AC200V, 220V 3ø3W+E) (Japan and Asia only)
2. Mold temperature monitor (2 zones on movable platen, Without thermocouple, Type K)
3. Mold temperature monitor (1 zone on movable platen and 1 zone on fixed platen, Without thermocouple, Type K)
4. Mold temperature monitor (2 zones on movable platen and 2 zones on fixed platen, Without thermocouple, type K)
5. Production control (2-directional rejection chute)
6. Mold temperature controller (K=CA, 2 zones on movable platen)
7. Mold temperature controller (K=CA, 1 zone on movable platen and 1 zone on fixed platen)
8. Automatic starting system (Heater+Water supply+External output signal) *1
9. Revolving alarm lamp
10. Multi function 3-color LED alarm lamp
11. 4-line closed circuit water connection lines (With flow detector, Stop valve, Cooling water stop valve, Filter)
12. 2-line closed circuit water connection lines (With flow detector, Stop valve, Cooling water stop valve, Filter)
13. Personal computer connection circuit, Ethernet
14. Spare power supply outlet selection
15. Electric power supply receptacles (Operation side)
16. Name plate: Blue
17. Name plate: Black
18. Motion07
19. MotionGB
20. Korea Certification Mark
21. OPC UA

Clamp unit
1. SPI AN-146/EUROMAP67 take-out robot connection circuit
2. Product chute
3. High precision heat insulating plate (5 mm/10 mm, Cross type)
4. Valve gate drive circuit (Control circuit+Pneumatic circuit) *4
5. Full metallic toggle cover
6. Ejector compression device (SE50EV-A: 49 kN) *6
7. Mold space extension 50 mm *7
8. Slide core return signal *1
9. Ejector stroke extension (SE50EV-A: 100 mm)
10. Pneumatic control circuit *5

Spare parts and accessories
1. Spare parts A (Mechanical parts: Lub. parts)
2. Spare parts A (Electrical parts: Thermocouple)
3. Spare parts for export (Encoder, Limit switch, Inductive proximity sensors)
4. Leveling pads (For one machine)
5. Locating ring (Transition fit) Inner diameter: ø26 mm/Outer diameter: ø60 mm (Only for SE30EV-A)
6. Mechanical parts and hooks for hosting machine
7. Tool A
8. Ejector rods
9. Grease gun
10. Grease cartridge for automatic lub (700 cc)
11. Grease cartridge for manual lub (400 cc)
12. High precision heat insulating plate (5 mm/10 mm, Cross type)
13. Mold clamp
14. Box end wrench for open nozzles

Main Specifications

Item	Unit	SE30EV-A	
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■ Clamp unit

Clamp system		Double toggle (5 points)	
Clamp force max.	kN	300	
Clearance between tie-bars (W x H)	mm	310 x 290	
Platen size (W x H)	mm	440 x 420	
Daylight	mm	530	
(When mold thickness extension 50 mm is selected)		(580)	
Mold opening stroke	mm	230	
Platen speed max.	mm/s	1200	
Mold thickness (Min. - Max.)	mm	130 - 300	
(When mold thickness extension 50 mm is selected)		(130 - 350)	
Locating ring diameter	mm	ø60	
Ejector system		Motor driven type (1 point)	
Ejector force	kN	7.8	
(When ejector compression device is selected)		—	
Ejector speed max.	mm/s	333	
(When ejector compression device/ejector force power up is selected)		—	
Ejector stroke	mm	50	
(When ejector stroke extension is selected)		—	
(When ejector compression device/ejector force power up is selected)		—	

■ Injection unit

Plasticizing capacity		C35		C65			
		S		S			
Screw diameter	mm	18	20	18	20	22	25
Injection pressure max. *1,*2	MPa	224	181	274	265	220	170
Holding pressure max. *1,*2	MPa	224	181	274	265	220	170
Theoretical injection capacity	cm ³	14	18	19	24	29	38
Injection mass (GPPS)	g	13	17	19	23	28	36
Plasticizing rate *3,*4	kg/h	11	14	10	13	18	26
Injection rate	cm ³ /s	152	188	139	172	209	269
Screw stroke	mm	58		78			
Injection speed max.	mm/s	600		550			
Screw rotating speed max.	min ⁻¹	430		400			
Number of temperature control zone		4		4		5	
Heater capacity	kW	2.8	3.3	2.8	3.3	3.6	4.1
Nozzle contact force	kN	7.8		14			
Injection unit moving stroke	mm	185		185 - 210			
Protrusion	mm	30		30			
Hopper capacity (When the standard hopper is selected)	L	(15)		(15)			

■ Machine dimensions and mass

Machine dimensions (L x W x H) *5	mm	3185 x 958 x 1470	
(When mold thickness extension 50 mm is selected)			(3235 x 958 x 1470)
Machine mass *6	t	2.0	
		2.2	

- *1 The max. injection pressure and max. hold pressure are calculated values and represent machine output, not resin pressure.
 *2 The max. injection pressure and max. hold pressure are not sustained pressure levels.
 *3 The plasticizing rate is given for a machine mounted with the SD Screw.
 *4 50% of the value in the table is the threshold value when the SL screw is selected.
 *5 The total length of the machine is to the front end of the injection unit when mounting the screw of the smallest diameter.
 *6 The machine mass is subject to change depending on mounting optional equipment.
 © Specifications are subject to change without notice for performance improvement.

Item	Unit	SE50EV-A	
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■ Clamp unit

Clamp system		Double toggle (5 points)	
Clamp force max.	kN	500	
Clearance between tie-bars (W x H)	mm	360 x 360	
Platen size (W x H)	mm	500 x 500	
Daylight	mm	600	
(When mold thickness extension 50 mm is selected)		(650)	
Mold opening stroke	mm	250	
Platen speed max.	mm/s	1200	
Mold thickness (Min. - Max.)	mm	160 - 350	
(When mold thickness extension 50 mm is selected)		(160 - 400)	
Locating ring diameter	mm	ø60	
Ejector system		Motor driven type (5 points)	
Ejector force	kN	21	
(When ejector compression device is selected)		(49)	
Ejector speed max.	mm/s	333	
(When ejector compression device/ejector force power up is selected)		(250)	
Ejector stroke	mm	70	
(When ejector stroke extension is selected)		(100)	
(When ejector compression device/ejector force power up is selected)		(60)	

■ Injection unit

Plasticizing capacity		C65				C110	
		S				S	
Screw diameter	mm	18	20	22	25	22	25
Injection pressure max. *1,*2	MPa	274	265	220	170	274	212
Holding pressure max. *1,*2	MPa	274	265	220	170	274	212
Theoretical injection capacity	cm ³	20	25	30	38	40	51
Injection mass (GPPS)	g	19	24	28	37	38	49
Plasticizing rate *3,*4	kg/h	10	13	18	26	18	26
Injection rate	cm ³ /s	140	173	209	270	190	245
Screw stroke	mm	78				104	
Injection speed max.	mm/s	550				500	
Screw rotating speed max.	min ⁻¹	400				400	
Number of temperature control zone		4		5		5	
Heater capacity	kW	2.8	3.3	3.6	4.1	3.6	4.1
Nozzle contact force	kN	14				14	
Injection unit moving stroke	mm	250				250	
Protrusion	mm	30				30	
Hopper capacity (When the standard hopper is selected)	L	(15)				(15)	

■ Machine dimensions and mass

Machine dimensions (L x W x H) *5	mm	3682 x 1113 x 1575	
(When mold thickness extension 50 mm is selected)			(3732 x 1113 x 1575)
Machine mass *6	t	2.8	
		2.8	