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SE7M

SUMITOMO ALL-ELECTRIC INJECTION MOLDING MACHINE for PRECISE MICRO PARTS



INNOVATION

The most advanced technology for compact molding systems is realized by the Sumitomo All-Electric Molding Machine for Precise Micro Parts.

SE7M

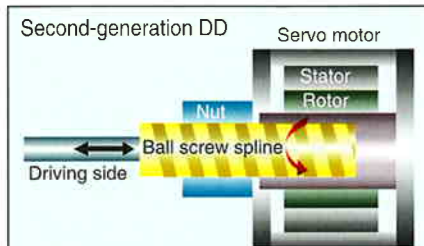
Most micro parts require extremely high quality, where product mass consistency of less than 1mg and dimension tolerance of just a few microns. Higher yields and high productivity with multiple cavitation are also required.

To meet these needs, Sumitomo recommends the new SE7M, the machine dedicated for these applications.

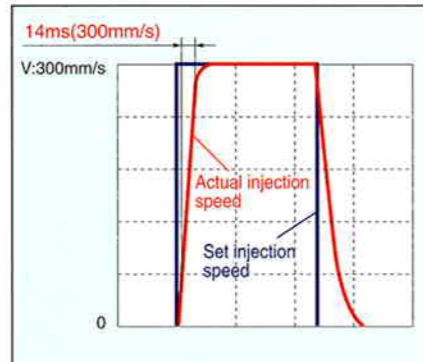


The Second Generation Direct Drive (DD) Mechanism

The injection unit with the second-generation DD developed for the SE-D series is combined with the improved servo control system, ensuring super-high precision and high response required for molding of most micro parts. The improved screw of small diameter ($\phi 14$) design with proven results realized super-high precision and highly stable plasticizing.



The extremely compact and lightweight design of this machine has reduced its inertia, ensuring the higher injection speed and power than those of the accumulator-based hydraulic molding machines.

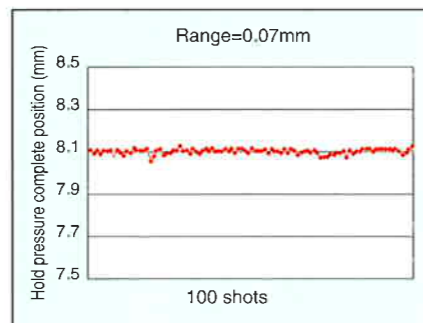
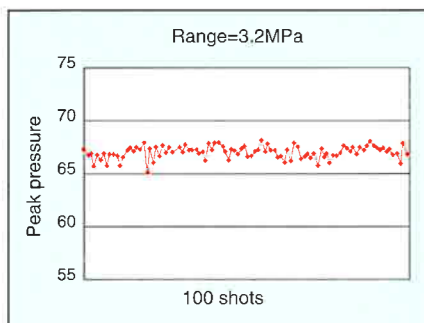
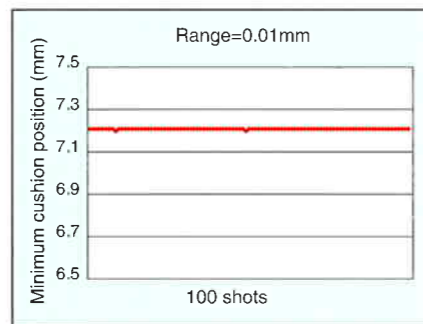
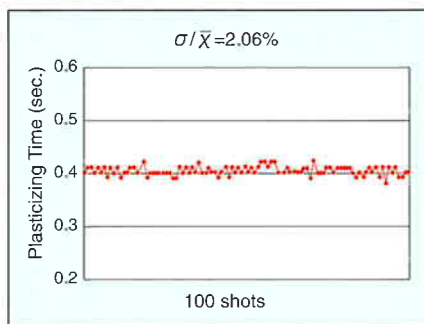


Micro Parts Molding advances to a New Era.

The SE7M model developed for the most advanced molding of micro parts features the servo control, screw design and mechanism to ensure super-high precision, high accuracy and high stability of molding.

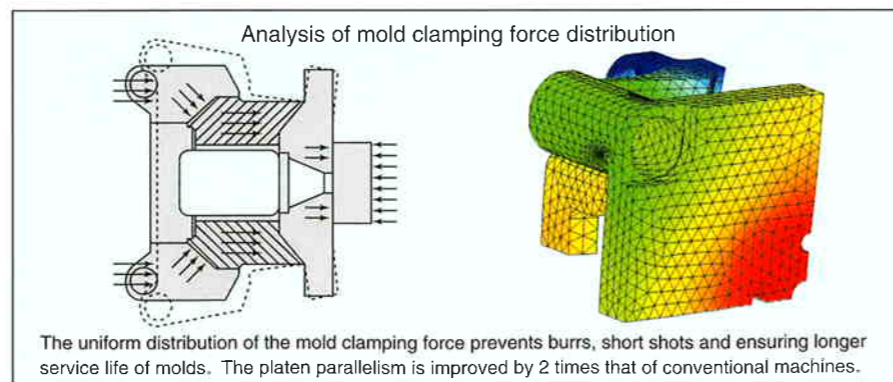
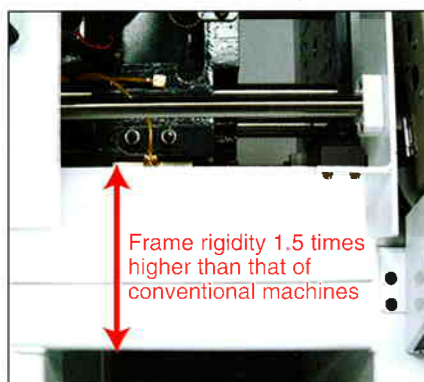


Examples of LCP-molded small electronic parts (0.5g-weight)



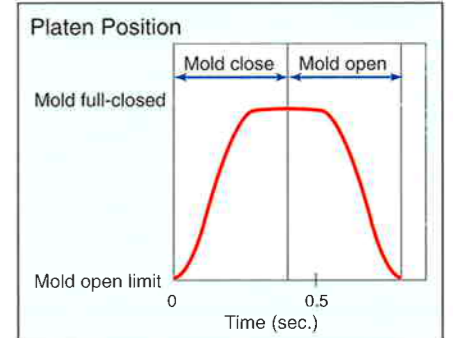
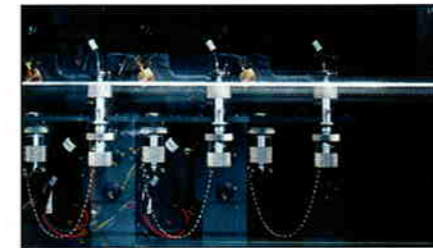
High Precision Center Press Platen (CPP)

The compact machine with enhanced frame rigidity has its platen parallelism improved by 2 times that of conventional compact machines. The CPP developed for the SE-D series has been improved to meet the size of small molds.



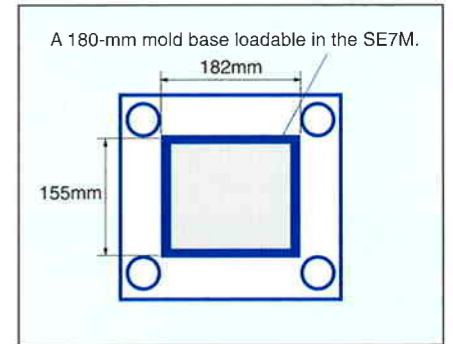
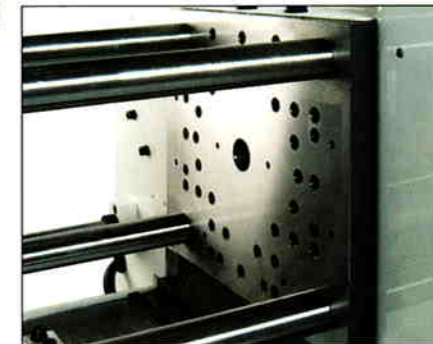
Fast Cycle Mold Clamping Unit

The industry's highest platen speed of 1000mm/sec. reduces the mold opening/closing time to less than 1 sec. at full stroke.



Wide Platen

The tie bar space designed to load larger molds and the Daylight (300mm) to meet the needs of 3-plate molds provide a potential to handle multi-cavity moldings.



Three-directional Take-out



Variety of Applications

- Main standard specifications**
- Synchronous plasticizing
 - Flash mode
 - SK control software
 - High-performance nozzle touch
 - Filling mode
- Main options**
- Connector-use screw assembly
 - 3-point SK screw tips
 - FTC I nozzle
 - LCP-dedicated nozzle

Man-machine Interface



The newly developed man-machine controller is configured as an easy-to-operate control system based on the most up-to-date technology and integrated in a 10.4-inch touch-panel LCD.

- **One-touch changeover of language display**
The 3-language, Japanese, English and Chinese, selection for display is a standard.
- **Memory card interface (Option)**
The optional interface is available for storage of additional molding conditions in addition to the standard internal memory (200 sets of conditions).
- **Compatibility with FA**
The machine is provided with the Ethernet interface as a standard function, allowing its easy connection to the iii-system (production quality control system).

Standard Components (for Molding of Micro Parts)

Injection Unit
Corrosion and wear resistant II screw assembly
High-capacity Zone I heater
Independent temperature control for nozzle assembly
Temperature control for water-cooling cylinder
Synchronous plasticizing
Flash mode
SK control software
High-performance nozzle touch
Filling mode
High-resolution filling time indication setting
Pressure control during plasticizing delay

Mold Clamping Unit
Air ejector
Mold plate retract confirmation
Multi-toggle
Ejector operation during mold clamping
Multi-action ejector
Supervising Unit and Others
Abnormality supervising unit (heater break)
Purging temperature setting
Automatic temperature changeover to standby mode
Temperature control output indication
Nozzle heat-up delay

Standard Components

Injection Unit
Purging cover with interlock
Screw pull-back delay control
Cooling jacket with flow detector
Mold Clamping Unit
Ejector (remote control of speed and stroke)
Connection circuit for product take-out unit
Moving platen support mechanism

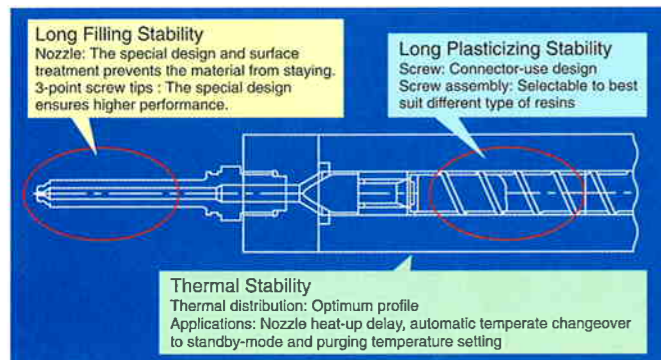
Automatic greasing unit
Ejector interlock
Non-operation side emergency stop pushbutton
Supervising device and Others
Molded product supervision function and automatic production stop
Printer connection circuit
Overall screen
Molding machine condition output function (one-channel output)

Options

Injection Unit
High-temperature specified screw assembly
Connector-use screw assembly
3-point SK screw tips
3-point connector-use screw tips
FTC I nozzle
LCP-dedicated nozzle
High-capacity heater
Heating cylinder cover with heat insulator
Standard-type hopper
VP changeover (mold internal pressure)
Electric control circuit for FTC nozzle
High-temperature heater control circuit
Hopper inlet plating
Mold Clamping Unit
Ejector (remote pressure control)
Mold close suspend
Mold open suspend
Product drop confirmation connection circuit
Product drop chute
High-precision insulating plate
Mold close/mold open signals (SPEAR signals)
60φ locating ring

Monitoring device and Others
Monitor (Leakage Breaker)
Monitor (Mold temperature)
Monitor (Fire detector)
Monitor (Auxiliary device)
Oscillograph analog output circuit
Production control unit (Stocker feed signal)
Production control unit (2-direction Chute)
Automatic mold temperature controller
Automatic start function
Revolving alarm light
3-color signal tower
Space II card unit
Closed circuit type 4-loop cooling water connection
Personal computer interface circuit
Spare power socket
Tool power socket
Cooling water with stop valve and filter
Key switch to prohibit change of settings
Flow detector/stop valve (for closed circuit type 2-loop cooling water connection)
Molding machine status output function (5-channel)

※Specifications subject to change without notice for performance improvements.
 ※The export of this product for use for or in development and/or production of massive destruction arms and weapons (nuclear weapons, biological weapons, chemical weapons, missiles) or the export of this product to any person, party or corporation engaged or involved in the development and/or production of above described goods is subject to the authorization of the Japanese government pursuant to Foreign Exchange and Foreign Trade Control Law.



3-point SK screw tips
With SK control, plasticizing stability is enhanced and resin density compensation function ensured shot to shot consistency.

With its unique design, material saving and the shorter cooling time can be realized and hence, fast cycling and molding stability resulted.

Main Specifications

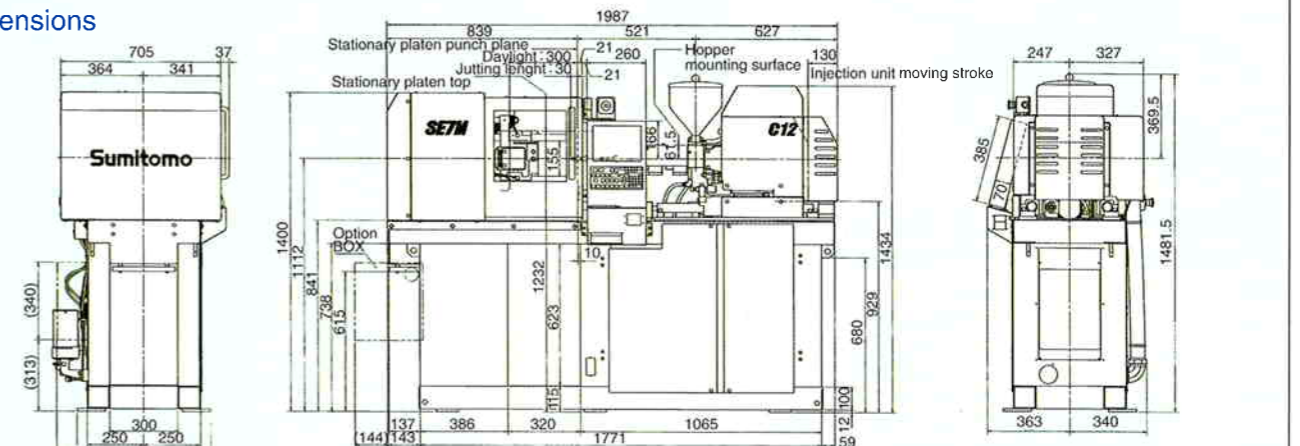
Clamping Unit		Double-toggle system
Mold clamping system		Double-toggle system
Maximum mold clamping force	kN {tf}	69 {7}
Tie-bar interval (H x V)	mm	182×155
Platen dimension (L x W)	mm	275×255
Daylight	mm	300
Mold open/close stroke	mm	130
Mold space (Min. - Max.)	mm	110~170
Ejector type		Electric type (1 point)
Ejector ejection force	kN {tf}	5 {0.5}
Ejector speed	mm/s	200 max.
Ejector stroke	mm	30

Injection Unit		
Screw diameter	mm	14
Maximum injection pressure	MPa {kgf/cm ² }	196 {2000}
Maximum hold pressure	MPa {kgf/cm ² }	196 {2000}
Theoretical injection volume	cm ³	6.2
Injection weight (GPPS)	g	5.9
	OZ	0.2
Plasticizing capacity	kg/h	3.3
Injection rate	cm ³ /s	46
Injection speed	mm/s	300
Screw rotation speed	rpm	300

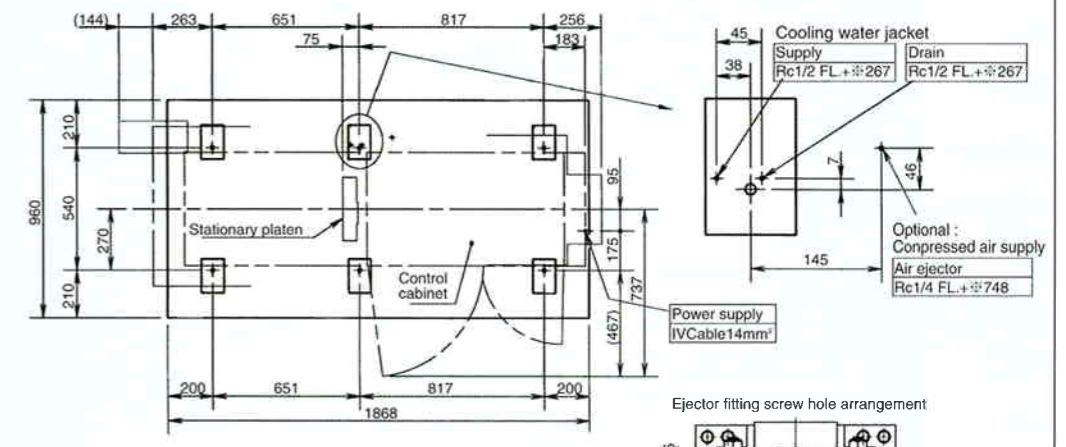
Mechanical Dimension & Weight		
Dimensions (L×W×H)	mm	1987×742×1482
Weight	t	0.9

※*1 The maximum injection pressure and the maximum hold pressure are calculated values, which are the outputs of the unit, but not the resin pressure.
 ※*2 The maximum injection pressure and the maximum hold pressure can be attained provided that its duty does not exceed 30% of the injection motor capacity.
 ※*3 The above specifications may subject to change for enhancement of performance.

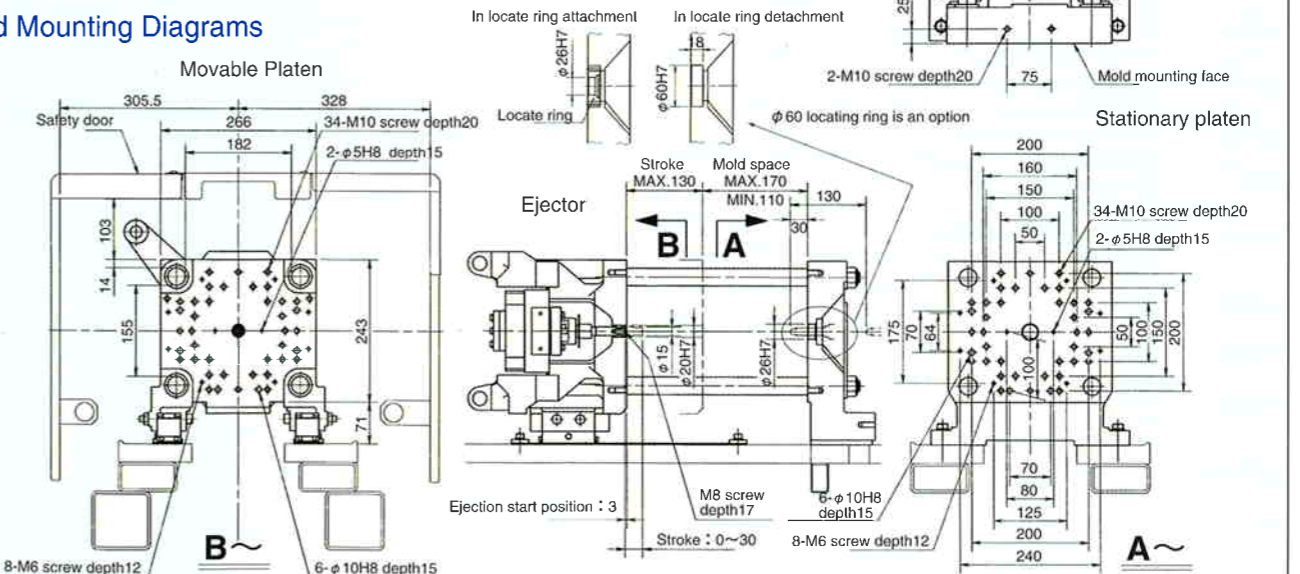
Dimensions

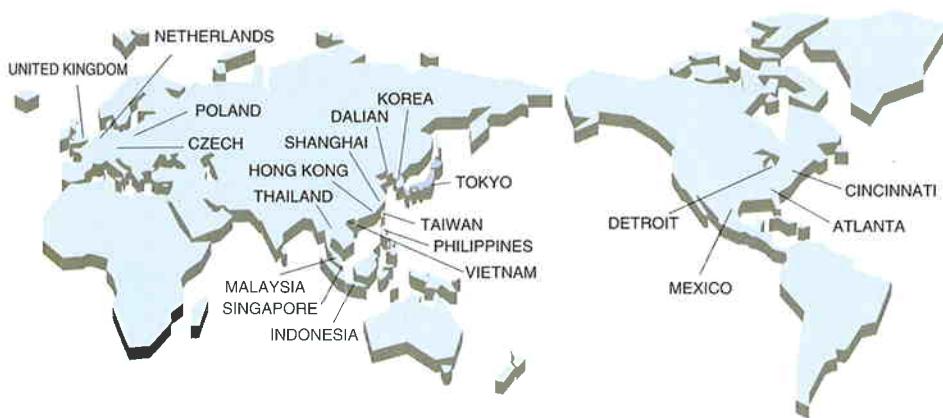


Foundation Plan



Mold Mounting Diagrams





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