

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.



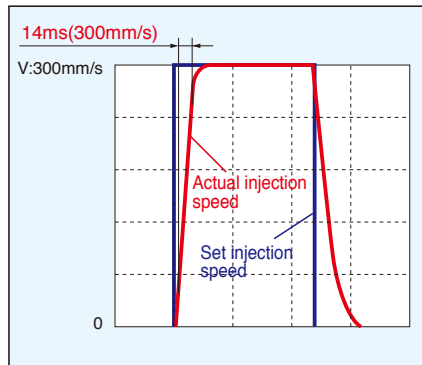
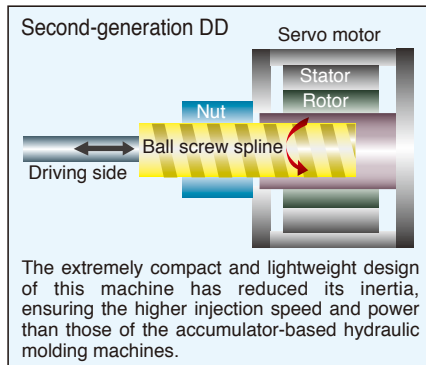
The Second Generation Direct Drive (DD) Mechanism

Patent
pending

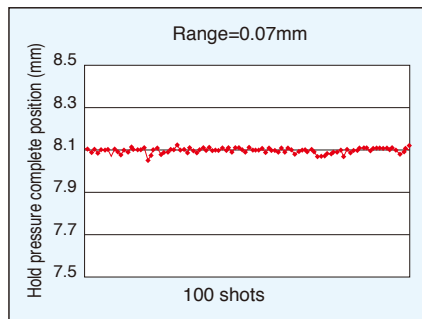
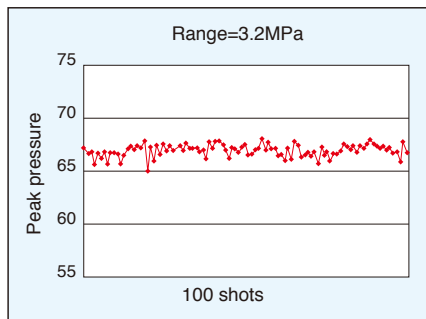
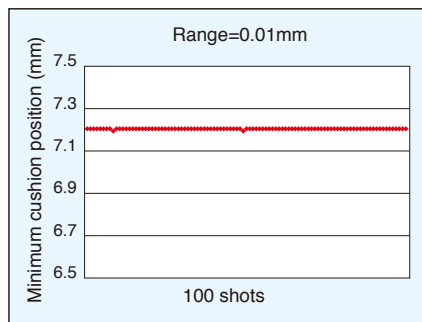
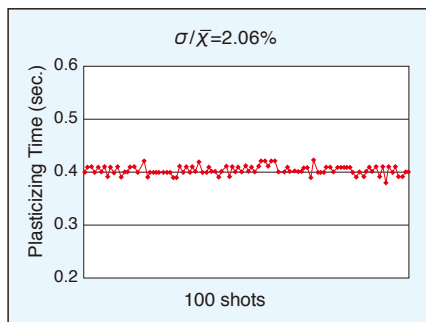
Standard
Equipment

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.



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



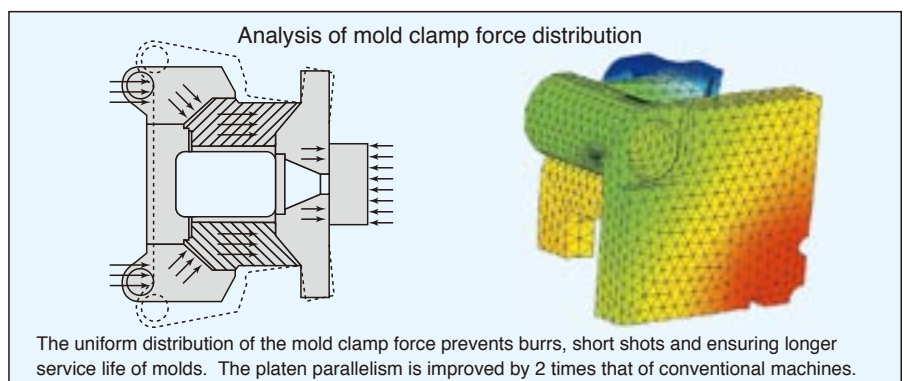
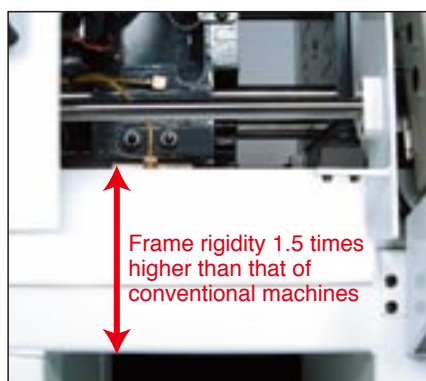
**Super-high
Precision Molding**

High Precision Center Press Platen (CPP)

Patent
pending

Standard
Equipment

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.



Micro Part advances to

The SE7M model developed for the molding of micro parts features a compact design and mechanism to ensure high accuracy and high stability.



Injection Molding to a New Era.

Equipped for the most advanced features the servo control, screw ensure super-high precision, quality of molding.



High Productivity



High Response

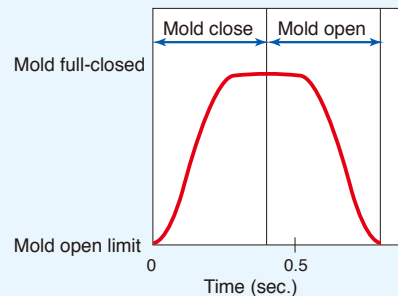
Fast Cycle Mold Clamp Unit

Standard Equipment

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



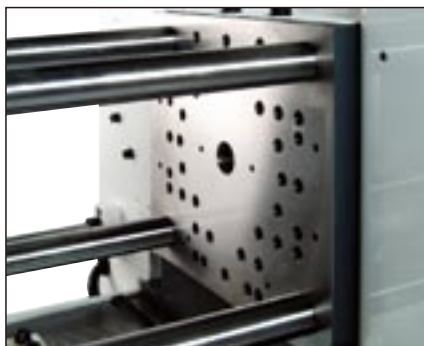
Platen Position



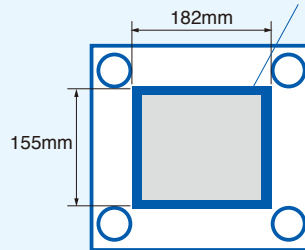
Wide Platen

Standard Equipment

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.



A 180-mm mold base loadable in the SE7M.



USB interface

Standard Equipment

- SE7M can store 200 molding conditions in machine. Moreover you can store molding conditions by USB memory.
- You can save screen copy, logging data, setting list and so on in USB memory. You can make reports more easily.
- You can take print-outs of screen, logging data, setting list and so on by using USB printer*.

(*PCL3 control code is required.)

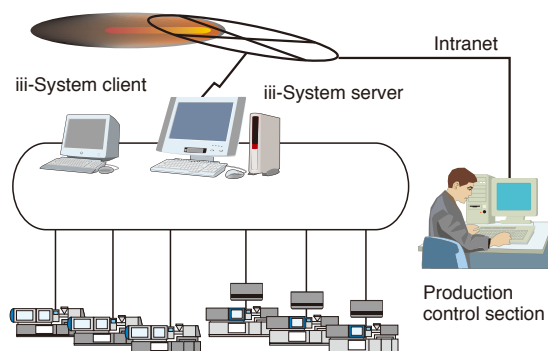


Molding process

iii-System Standard Edition [Intelligent Information for Injection]

Optional Equipment

- **Operating status indication**
Overview of the operating status of molding machines
- **Quality monitoring**
Check on the quality of molding machines
- **Control of molding conditions**
Control of the preset molding conditions
- **History of molding conditions**
Logging of changes of molding conditions
- **History of alarms**
Logging of alarm symptoms in molding machines



※iii-System can communicate with 50 machines by LAN.

Standard Components (for Molding of Micro Parts)

Injection Unit
Wear & corrosion resistant screw assembly II
Zone I high capacity heater
Temperature controller for nozzle
Water cooling jacket temperature control device
Synchro-plast control
Flash Speed Mode
SK-control
High efficiency nozzle contact
Filling mode
High resolution of displayed and setting for fill time
Pressure control during plasticizing delay

Mold Clamp Unit
Pneumatic ejector
Ejector plate return signal (Input signal for molding machine) Connecting by metal concent
Multi-toggle
Ejector protrusion during mold closing
Multi-action ejector
Supervising Unit and Others
Heater band burnout monitor
Purging temperature
Nozzle heater delay control
Temperature lowering timer
Temperature control screen

Standard Components

Injection Unit
Protective purge shield (with limit switch)
Pull back delay control
Water cooling jacket temperature control device
Mold Clamp Unit
Ejector remote control (speed, stroke and pressure)
Moving platen support (Sliding type)
Automatic centralized greasing device
Interlock for ejector (In manual operation, only the mold open limit is available)

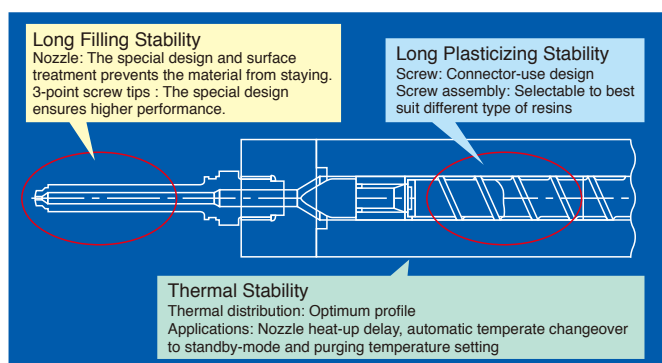
Supervising device and Others
Product quality control device, production quantity control
Printer connection circuit
Take-out robot connection circuit
USB connection circuit (printer, memory)
All-in-one setting screen
Signal output for machine condition (1ch)
Automatic centralized greasing device

Options

Injection Unit
High-temperature screw assembly (Max. temp. 450°C)
Connector-use screw assembly
SK screw tip (Material : STD, MK, TiN)
3-point connector-use screw tips
FTC I nozzle
LCP-dedicated nozzle
High capacity heater
Heating cylinder cover with heat insulator
Standard type hopper
V/P switchover by mold cavity pressure
FTC nozzle electric control circuit
High temperature heater control circuit (Max. temp. 499°C)
Plating resin inlet of cooling water jacket
Mold Clamp Unit
Temporary stop of mold opening/closing
Electric circuit for connection ejected product sensor
Product chute
High precision heat insulating plate (5mm)
Mold close and mold opening signals (Spear control signal) No-voltage dry contact
60φ attachment metal fitting correspondence

Monitoring device and Others
Leak circuit breaker (AC200V, 220V 3φ3W+E Japan and Asia only)
Mold temperature monitor 2 zone (without thermocouple and type K)
Auxiliary facility monitor
Analog circuit output for molding profile
Production control (Stocker feed signal)
Production control (2-direction rejection chute)
Mold temp. controller
Automatic starting system
Revolving alarm lamp
Multi function 3 colors LED alarm lamp
External memory card (SPACEII) molding conditions device (with 1 card)
4-Lines closed circuit cooling water piping connection (with flow detector, stop valve)
PC connection circuit (RS232C)
Electric power supply socket
Electric power supply socket for tools (with transformer)
Stop valve and filter for cooling water
Lock-up key-switch for data input
Flow indicator and stop valve (For closed-circuit type mold cooling water connection, 2 lines)
Signal output for machine condition (5ch)
iii-System Standard Edition

*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.



Connector-use Screw Assembly

The screw assembly is connector-use for long stability of molded products.



3-point SK screw tips **Patent pending**

With SK control, plasticizing stability is enhanced and resin density compensation function ensured shot to shot consistency.



FTC I nozzle

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

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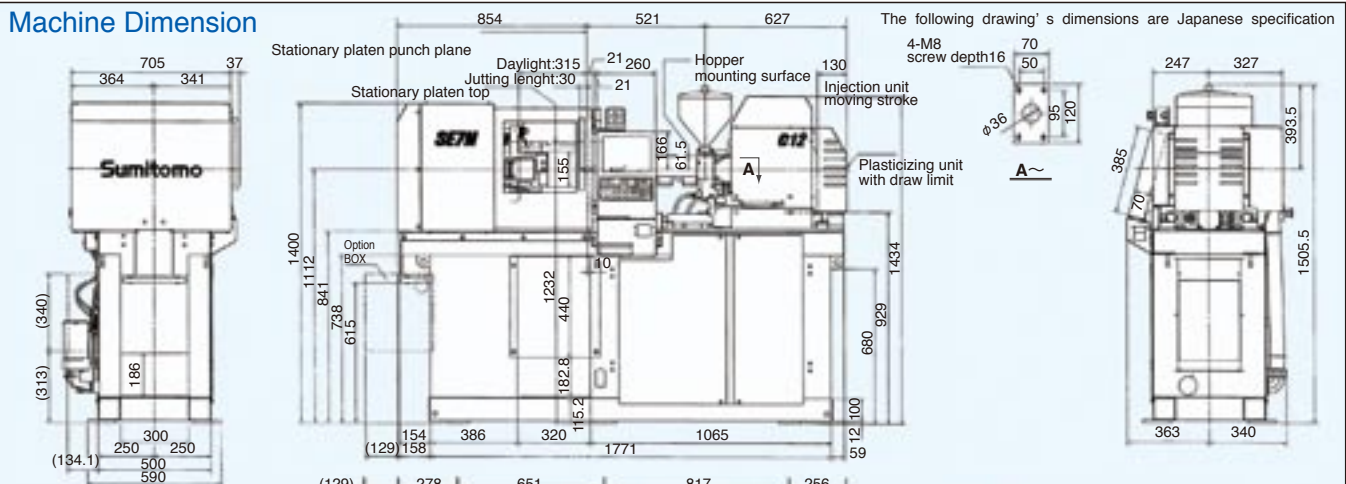
Clamping Unit		
Mold clamping system		Double-toggle system
Maximum mold clamping force	kN {tf}	69 {7}
Tie-bar interval (H x V)	mm	182×155
Platen dimension (L x W)	mm	275×255
Daylight	mm	300
Mold open/close stroke	mm	130
Mold space (Min. – Max.)	mm	110~170
Ejector type		Electric type (1 point)
Ejector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

1. The maximum injection pressure and hold pressure are calculated values, which are the outputs of the machine, but not the resin pressures.
2. The maximum injection pressure and hold pressure are no pressures that can be generated continuously.
3. The injection capacity is a value with the SD screw installed.
4. The total length of the machine is the value measured up to the advance position of the injection unit with a smallest screw installed.
5. The value in (") is given for reference.
6. Specifications subject to change without notice for performance improvement.
7. The dimensions are Japanese specification.

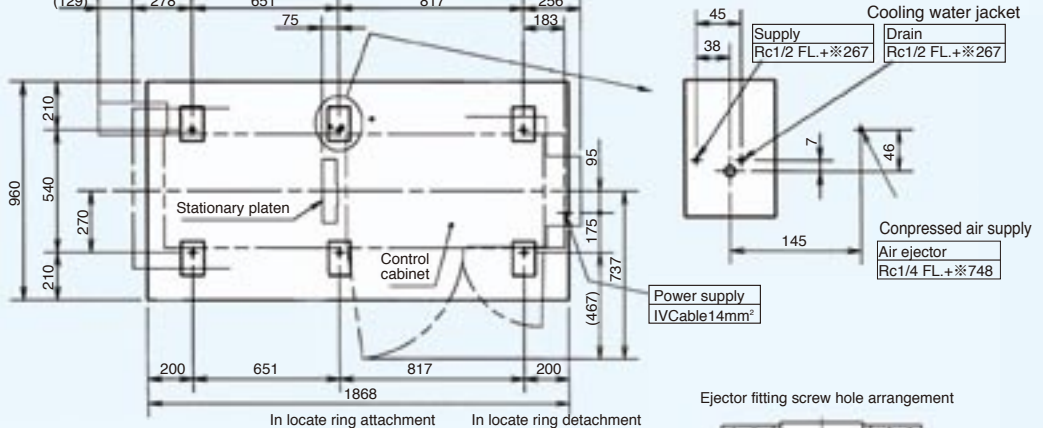
Injection Unit		
Screw diameter	mm	14
Maximum injection pressure	MPa {kgf/cm ² }	196 {2000}
Maximum hold pressure	MPa {kgf/cm ² }	196 {2000}
Theoretical injection volume	cm ³	6.2
Injection weight (GPPS)	g	5.9
	OZ	0.2
Plasticizing capacity	kg/h	3.3
Injection rate	cm ³ /s	46
Injection speed	mm/s	300
Screw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

◇This series originally comply to safety standards of Japan, the US and Europe, in addition, also China GB22530 and KC mark.

Machine Dimension

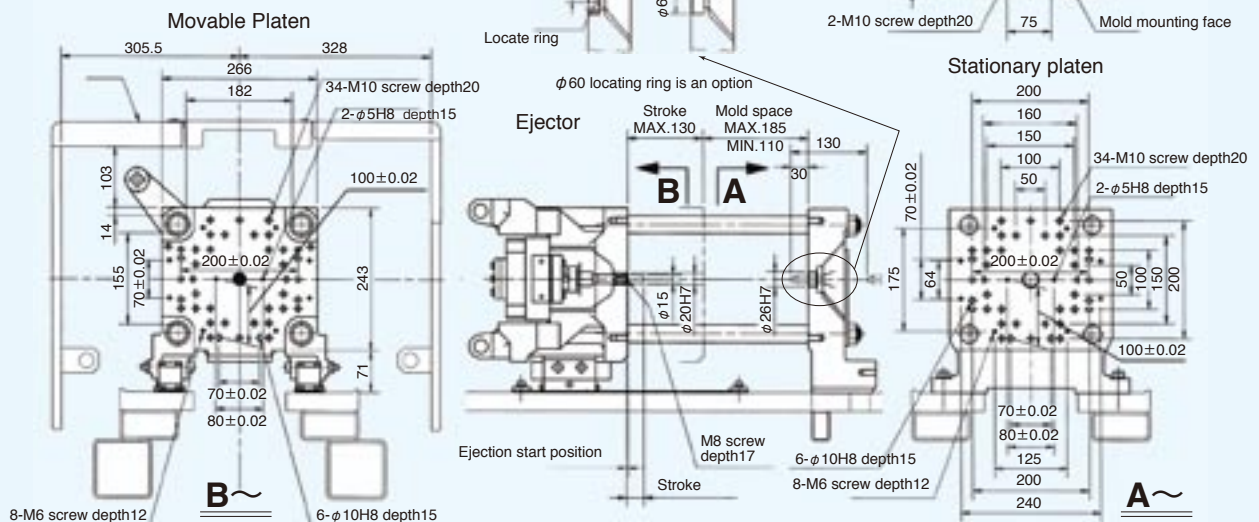


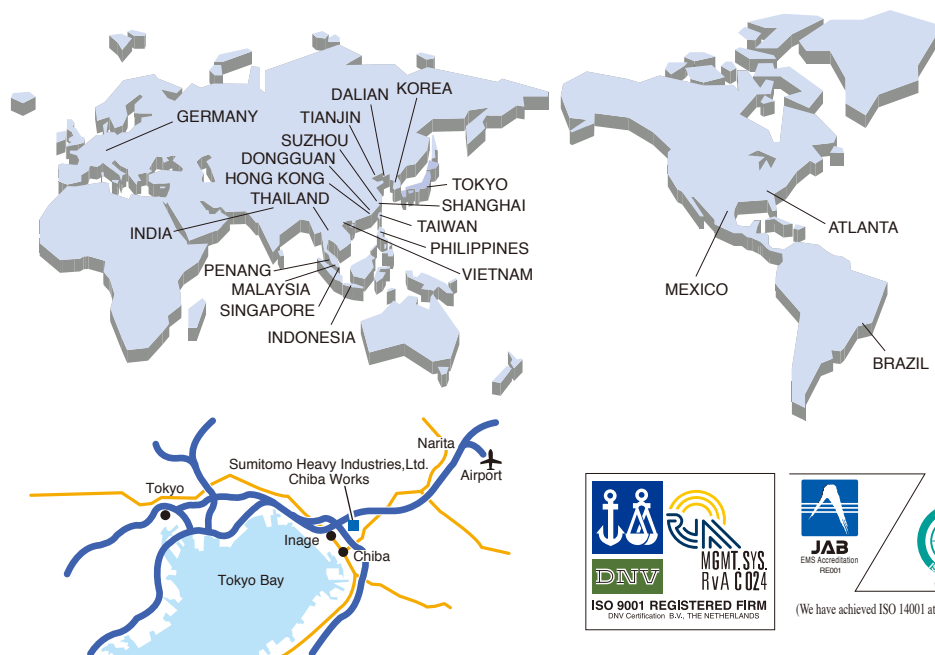
Installation Diagram



Mold Mounting Diagram

(Mold Mounting Diagrams comply with JIS B 6701.)





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