Restart from the origin.

Break & Breakthrough … the Zero-molding

Complicated molding made simple!

Innovative molding processes only Sumitomo can offer.

Imagine no defects, loss or faults, Zero.

Zero-molding by FFC (Injection system)

Stable molding conditions via smooth filling

In conventional molding systems, resin is fully charged into mold cavities and consequently is apt to suffer excessive compression.

In FFC (Flow Front Control), screw movement is restricted by Flash Control to optimize the flow front. This enables molding at low internal pressures inside cavities, which, besides preventing flash, eliminates short shots by effectively releasing gases when filling.

With conventional molding, flash forms because of complete filling. FFC molding offers good cavity balance, therefore complete filling can be done without raising peak pressure, hence preventing flash from forming.

FFC is a viscoelasticity-assisted injection molding scheme where resin is not exposed to high pressures.
Zero-molding by MCM (Mold clamping system)

Low pressure clamping without unnecessary force

The SE-HDZ, SE-HSZ builds in detection capabilities for sensing the minimum force (home position) required to clamp the mold. Even with molds for the complicated profiles of heat shields, springs, sliding cores or angular pins, the clamp force required for actual molding can be set by measuring the home position, so molding is performed effectively without applying unnecessary force. Moreover, the difference in mold sitting before and after maintenance can be easily identified.

Mold comparison after 1000 shots

MCM enables molding with the detected minimum required clamp force. Gas is greatly reduced to the following benefits.

- Burning and short shots are eliminated
- Mold maintenance is required less frequently

By reducing the mold clamp force, users can expect reductions in power consumption and shorter cycles, besides avoiding damage such as broken pins.

Zero-molding by SPS (Setting system)

SPS simplifies operation while eliminating mistakes and oversights

Process up to mass-production start

<table>
<thead>
<tr>
<th>Equipment checks</th>
<th>Conditions setting</th>
<th>Mold preparations and purging</th>
<th>Mass-production setup</th>
<th>Monitoring/Control setting</th>
<th>Mass-production start</th>
</tr>
</thead>
</table>

Comparison of screen operation 1 (Mold preparations and purging)

- Conventional operation (Screens arranged by function)
- Preparation for production
- Mold opening/closing
- Plasticizing
- Temperature

Comparison of screen operation 2 (Mass-production setup)

- Conventional screens
- Z-Screen

SPS (Simple Process Setting) arranges settings by process from the operator's position.

Setting screens have been created according to process operations rather than the conventional setup of functions. A series of setting operations can be completed on a single screen.

Example of improved operability

SPS reduces screen switching for mold preparations and purging by 68%.

Whereas the conventional screens that were arranged by function required frequent switching between screens, SPS reduces operations to a minimum by arranging setting parameters according to process.

Even the fine-adjustments used in mold changeover and parameter setting for production launches with new molds can be handled with this one Z-Screen.
New ISC for improved productivity

Intelligent Servo Control System

The ISC (Intelligent Servo Control) system employed by the SE-DUZ series has been newly incorporated into the SE-HDZ and SE-HSZ series. It comes standard on all drive shafts regardless of the type of drive system. The corresponding servo control card that was newly developed for this system delivers 4 times the processing capacity of earlier cards. Moreover, a new algorithm has sped up mold opening and closing, reduced mechanical vibrations and improved molding stability.

High speed, low vibrations

A new control algorithm reduces mechanical vibrations during mold opening and closing by 83%. It additionally improves both mold opening/closing speed and duty by 10% over conventional systems, thus shortening the shortest mold opening/closing time by 15%. With the SE-HSZ series, the shortest mold opening/closing time can be shortened an additional 5% as an option.

Improved molding stability

Because of the improved processing capacity in servo control, the fluctuations in cushion position and peak pressure have been minimized, which translates as improved molding stability.

Product: Outer lens
Num. of cavities: 2 (1 set) Resin: GPPS

Coefficient of variation of weight: 0.04%
Basic configuration for delivering both capabilities and rigidity

DCPP (Double Center Press Platen)

The SE-HDZ and SE-HSZ series are equipped with Center Press Platens known for their extremely low warping, on both the stationary and mobile sides. Because surface pressure on the mold is kept consistent, flash at the center and short-shots around the perimeter are eliminated at the same time. Furthermore, molding is possible with 20 ~ 30% less the clamping force of earlier machines.

10 injection and pressure holding modes that broaden the molding conditions range for good products

The SE-HDZ and SE-HSZ series allow users to set injection speed and pressure response characteristics on 10 levels. For example, with molds that poorly release gas, filling can be matched to gas release rate by selecting the smooth injection and response of conventional hydraulic machines.

High precision, high power nozzle touch and nozzle touch control

Nozzle touch force can be instantly controlled during mold opening and closing

Adopted for these series is a high precision, high power nozzle touch mechanism symmetrically that arrays the nozzles around the center. The stationary and mobile sides of the mold remain parallel without any tilting in the stationary platens.

Offering both safety and operability

Compliant with JIMS K-1001
(Safety Standard of Japan Society of Industrial Machinery Manufacturers).
To ensure safe operation, the ejector comes standard with a brake that can keep the ejector from projecting products at the maximum force.

Maximum ejecting force vs. brake retention force

<table>
<thead>
<tr>
<th>Nozzle touch force</th>
<th>SE220HDZ/SE220HSZ</th>
<th>SE280HDZ/SE280HSZ</th>
<th>SE350HDZ/SE350HSZ</th>
<th>SE450HDZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. ejecting force</td>
<td>tf 6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Breaking force</td>
<td>tf 6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>10.0</td>
</tr>
</tbody>
</table>

*The SE-HDZ and SE-HSZ series use an HST drive system as the nozzle touch device. The pump, tank and motor are bundled into a compact all-in-one unit that is housed inside the injection unit.*
Delivers high value-added molding required for high dimensional accuracy of thick-walled products, etc

High torque injection motor that enables high pressure holding for long periods of time

The SE-HDZ series incorporates a high torque injection motor that enables extended filling and holding. It prevents flow marks and silver streaks with resins and complicated shapes that require high pressure during filling. Moreover, it is effective against whiskers with thick-walled products because the maximum injection pressure is maintained when switching to pressure holding processes. This high torque injection motor can work with a wide range of molding conditions required for large molded products.

For example, molding is possible without problems under the below harsh conditions. (theoretical values)
- Retains maximum injection pressure for 5 sec. (30-sec cycle)
- Retains 75% of the maximum injection pressure for 10 sec. (30-sec cycle)
- Retains 50% of the maximum injection pressure for 60 sec. (90-sec cycle)

High torque plasticizing motor that enables extended plasticizing with high viscosity resins

The SE-HDZ series also employs a high torque motor for plasticizing that enables stable molding even with high viscosity engineering plastics, without needing to lower plasticizing speed or extend molding cycles.

Molding is possible at - for example - the below conditions without any problems. (Example of past molding)

<table>
<thead>
<tr>
<th>Example</th>
<th>Resin</th>
<th>Temperature</th>
<th>Screw rotating rate</th>
<th>Cycle time</th>
<th>Plasticizing time</th>
<th>Plasticizing torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example 1</td>
<td>POM</td>
<td>205°C</td>
<td>70rpm</td>
<td>60s</td>
<td>25s</td>
<td>60%</td>
</tr>
<tr>
<td>Example 2</td>
<td>PC</td>
<td>280°C</td>
<td>30 ~ 100rpm</td>
<td>60s</td>
<td>30s</td>
<td>35%</td>
</tr>
<tr>
<td>Example 3</td>
<td>PC/PBT + Metal</td>
<td>280°C</td>
<td>10 ~ 50rpm</td>
<td>180s</td>
<td>45s</td>
<td>80%</td>
</tr>
</tbody>
</table>

Wider molding range owing to faster injection

The SE-HDZ series widens molding range by raising the fastest injection speed to 200 mm/sec, in addition to providing FFC molding support. Combined with the screw assembly used by the SE-HSZ series to obtain high plasticizing performance, cycles typical of the SE-HSZ series that deliver both high load injection and high cycle molding are possible. (Applicable with SE220HDZ--SE350HDZ)

Low speed injection performance

The injection system of the SE-HDZ series delivers linear speed control characteristics even in the low speed zone. Stable quality can even be obtained with thick-walled molded products that readily invite jetting when resins pass through the gate at high speed.

The injection system of the SE-HDZ series delivers high value-added molding required for high dimensional accuracy of thick-walled products, etc

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</tr>
<tr>
<td>Example 2</td>
<td>PC</td>
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Low speed injection performance

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Pursuing lower production costs via ultra-precision high speed molding of thin-walled products

Compared to conventional machines, the maximum injection speed of the SE-HSZ series is 17% faster. Furthermore, cycle time has been shortened by about 15% because of the shorter holding times made possible by FFC molding and the shorter mold opening/closing times that result from ISC.

Example shorter pressure retention time in FFC molding
To prevent whiskers from forming, pressure had to be retained for 0.3 sec with earlier molding techniques, but FFC molding features enable good products without pressure holding. Production efficiency is greatly improved particularly in high cycle molding of thin-walled products.

Injection characteristics
Injection speed is a standard 350 mm/sec.

Injection speed response
Injection speed response is about 2.5 times that of electric belt drive mechanisms and delivers the same performance as a hydraulic machine that uses servo valves with built-in accumulators.

An option is available to shorten the shortest mold opening/closing time by an additional 5%. The same shortest mold opening/closing time as the SE-HY series is obtained.

Direct drive system
The SE-HSZ series adopts Sumitomo’s original direct drive mechanism of low inertia and high response for the injection system. Because it can instantly control speed and pressure, it is suited for a higher degree of precision high cycle molding. The C1250 and C1700 injection units incorporate a high-powered dual-axis synchronized direct drive mechanism that delivers high response in a compact structure.
### SE-HDZ Screw assemblies

#### Plasticizing capacity

<table>
<thead>
<tr>
<th>Specification</th>
<th>SE220HDZ</th>
<th>SE280HDZ</th>
<th>SE350HDZ</th>
<th>SE450HDZ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Material</strong></td>
<td>Standard</td>
<td>Wear-resistant (I)</td>
<td>Wear/corrosion-resistant (II)</td>
<td>Wear/corrosion-resistant (III)</td>
</tr>
<tr>
<td><strong>Screw type</strong></td>
<td>SD screw</td>
<td>Standard specified</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td><strong>Applicable resin</strong></td>
<td>Resin containing no wear or corrosive compound agents</td>
<td>Contain wear and corrosion additives less than 30%</td>
<td>Contain wear and corrosion additives less than 30%</td>
<td>Contain wear additive more than 30% or strong corrosion additives.</td>
</tr>
</tbody>
</table>

#### Clamping unit

<table>
<thead>
<tr>
<th>Items</th>
<th>Unit</th>
<th>SE220HDZ</th>
<th>SE280HDZ</th>
<th>SE350HDZ</th>
<th>SE450HDZ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clamp system</strong></td>
<td>Direct drive</td>
<td>Direct drive</td>
<td>Direct drive</td>
<td>Direct drive</td>
<td>Belt drive</td>
</tr>
<tr>
<td><strong>Clamp force</strong></td>
<td>kN (ft)</td>
<td>2150 (220)</td>
<td>2740 (280)</td>
<td>3430 (350)</td>
<td>4410 (450)</td>
</tr>
<tr>
<td><strong>Clearance between tie-bars (L×H)</strong></td>
<td>mm</td>
<td>610×560</td>
<td>685×635</td>
<td>760×710</td>
<td>870×820</td>
</tr>
<tr>
<td><strong>Clamp platens max. (L×H)</strong></td>
<td>mm</td>
<td>880×830</td>
<td>950×885</td>
<td>1070×1020</td>
<td>1244×1154</td>
</tr>
<tr>
<td><strong>Daylight</strong></td>
<td>mm</td>
<td>1130</td>
<td>1220</td>
<td>1370</td>
<td>1600</td>
</tr>
<tr>
<td><strong>Mold opening stroke</strong></td>
<td>mm</td>
<td>550</td>
<td>600</td>
<td>700</td>
<td>800</td>
</tr>
<tr>
<td><strong>Mold installation height</strong></td>
<td>Min</td>
<td>300</td>
<td>350</td>
<td>400</td>
<td>450</td>
</tr>
<tr>
<td><strong>Max</strong></td>
<td>mm</td>
<td>580</td>
<td>620</td>
<td>670</td>
<td>800</td>
</tr>
<tr>
<td><strong>Locating ring diameter</strong></td>
<td>mm</td>
<td>φ120</td>
<td>φ150</td>
<td>φ150</td>
<td>φ150/φ200</td>
</tr>
</tbody>
</table>

#### Screw type

<table>
<thead>
<tr>
<th>Screw type</th>
<th>Features</th>
<th>General</th>
<th>Engineering plastic/amorphous</th>
<th>Engineering plastic/crystalline</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SD screw</strong></td>
<td>Universal screw for a variety of resins</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
</tr>
<tr>
<td><strong>SF screw</strong></td>
<td>Screw suitable for highly mixed melting and low-temperature injection</td>
<td>★★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
</tr>
<tr>
<td><strong>SM screw</strong></td>
<td>Screw suitable for highly mixed melting and low-shear stress</td>
<td>★★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
</tr>
</tbody>
</table>

---

**Note1:** The maximum injection pressure and hold pressure are calculated values, which are the outputs of the machine, not the resin pressures.

**Note2:** The maximum injection pressure and hold pressure are no pressures that are the outputs of the machine, but not the resin pressures.

**Note3:** The injection capacity is a value with the SD screw installed.

**Note4:** The total length of the machine is the value measured up to the advance position of the injection unit with a smallest screw installed.

**Note5:** Specifications subject to change without notice for performance improvement.

**Note6:** The value in ( ) is given for reference.
### Clamp unit

<table>
<thead>
<tr>
<th>items</th>
<th>unit</th>
<th>SE220HSZ</th>
<th>SE280HSZ</th>
<th>SE350HSZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamp system</td>
<td></td>
<td>Double toggle (5 point)</td>
<td>Double toggle (5 point)</td>
<td>Double toggle (5 point)</td>
</tr>
<tr>
<td>Clamp drive type</td>
<td></td>
<td>Direct drive</td>
<td>Direct drive</td>
<td>Direct drive</td>
</tr>
<tr>
<td>Clamp force</td>
<td>kN (ft)</td>
<td>2150 (220)</td>
<td>2740 (280)</td>
<td>3430 (350)</td>
</tr>
<tr>
<td>Clearance between tie-bars (L×H)</td>
<td>mm</td>
<td>610×560</td>
<td>685×635</td>
<td>760×710</td>
</tr>
<tr>
<td>Clamp platens max. (L×H)</td>
<td>mm</td>
<td>880×830</td>
<td>950×885</td>
<td>1070×1020</td>
</tr>
<tr>
<td>Daylight</td>
<td></td>
<td>1130</td>
<td>1220</td>
<td>1370</td>
</tr>
<tr>
<td>Mold opening stroke</td>
<td>mm</td>
<td>550</td>
<td>600</td>
<td>700</td>
</tr>
<tr>
<td>Mold installation height</td>
<td>mm</td>
<td>300</td>
<td>350</td>
<td>400</td>
</tr>
<tr>
<td>Locating ring diameter</td>
<td>mm</td>
<td>φ 120</td>
<td>φ 150</td>
<td>φ 150</td>
</tr>
<tr>
<td>Ejector type</td>
<td></td>
<td>Electric (13 point)</td>
<td>Electric (13 point)</td>
<td>Electric (13 point)</td>
</tr>
<tr>
<td>Ejector force</td>
<td>kN (ft)</td>
<td>58 (6.0)</td>
<td>58 (6.0)</td>
<td>58 (6.0)</td>
</tr>
<tr>
<td>Ejector stroke</td>
<td>mm</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Ejector drive type</td>
<td></td>
<td>Belt drive</td>
<td>Belt drive</td>
<td>Belt drive</td>
</tr>
</tbody>
</table>

### Plasticizing capacity

<table>
<thead>
<tr>
<th>items</th>
<th>unit</th>
<th>SE220HSZ</th>
<th>SE280HSZ</th>
<th>SE350HSZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection pressure max.</td>
<td>MPa (kgf/cm²)</td>
<td>289 (260)</td>
<td>293 (275)</td>
<td>293 (275)</td>
</tr>
<tr>
<td>Hold pressure max.</td>
<td>MPa (kgf/cm²)</td>
<td>290 (262)</td>
<td>290 (262)</td>
<td>290 (262)</td>
</tr>
<tr>
<td>Theoretical injection capacity</td>
<td>cm³</td>
<td>86 129 163 201 254 314 329 406 510</td>
<td>329 406 510 448 562 711 448 562 711</td>
<td>448 562 711 734 925 1172 448 562 711</td>
</tr>
<tr>
<td>Max. injected mass (GPPS)</td>
<td>g</td>
<td>83 124 156 193 244 302 316 390 489</td>
<td>316 390 489 430 539 682 430 539 682</td>
<td>430 539 682 742 943</td>
</tr>
<tr>
<td>Plasticizing rate max. (GPPS)</td>
<td>kg/h</td>
<td>37 53 76 101 136 173 172 213 246</td>
<td>172 213 246 267 314 390 267 314 390</td>
<td>267 314 390 448 562 711</td>
</tr>
<tr>
<td>Screw stroke</td>
<td>mm</td>
<td>140 160 160 160 160</td>
<td>207</td>
<td>207</td>
</tr>
<tr>
<td>Injection speed max.</td>
<td>mm/s</td>
<td>400</td>
<td>400</td>
<td>350</td>
</tr>
<tr>
<td>Plasticizing drive type</td>
<td></td>
<td>Direct drive</td>
<td>Direct drive</td>
<td>Direct drive</td>
</tr>
</tbody>
</table>

### Machine dimension & mass

<table>
<thead>
<tr>
<th>items</th>
<th>unit</th>
<th>SE220HSZ</th>
<th>SE280HSZ</th>
<th>SE350HSZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine dimension (L×W×H)</td>
<td>mm</td>
<td>6436×1580×2065</td>
<td>6436×1580×2254</td>
<td>7217×1680×2254</td>
</tr>
<tr>
<td>Machine mass</td>
<td>t</td>
<td>10.1</td>
<td>10.9</td>
<td>13.0</td>
</tr>
</tbody>
</table>

Note 1. The maximum injection pressure and hold pressure are calculated values, which are the outputs of the machine, but not the resin pressures.

Note 2. The maximum injection pressure and hold pressure are no pressures that can be generated continuously.

Note 3. The injection capacity is a value with the SD screw installed.

Note 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.

Note 5. The value in ( ) is given for reference.

Note 6. Specifications subject to change without notice for performance improvement.

---

**SE-HSZ Screw assemblies**

<table>
<thead>
<tr>
<th>Plasticizing capacity</th>
<th>SE-HSZ</th>
<th>C560</th>
<th>SE-HDZ</th>
<th>C750</th>
<th>C900 ~ C1700</th>
<th>C1100 ~ C2200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Screw</td>
<td>Standard</td>
<td>Wear/corrosion-resistant</td>
<td>Wear/corrosion-resistant</td>
<td>Plated</td>
<td>Plated</td>
</tr>
<tr>
<td></td>
<td>Heating cylinder</td>
<td>Ion-nitride</td>
<td>Wear/corrosion-resistant</td>
<td>Wear/corrosion-resistant</td>
<td>Plated</td>
<td>Plated</td>
</tr>
<tr>
<td>Screw type</td>
<td>Screw tip</td>
<td>STD (Rotating check ring)</td>
<td>STD (Rotating check ring)</td>
<td>STD (Rotating check ring)</td>
<td>Plated</td>
<td>Plated</td>
</tr>
<tr>
<td></td>
<td>SM screw</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Standard specified</td>
<td></td>
</tr>
<tr>
<td>Applicable resin</td>
<td>Resin containing no wear or corrosive compound agents</td>
<td>Contain wear and corrosion additives less than 30%</td>
<td>Contain wear additive more than 30% or strong corrosion additives</td>
<td>Weak for long residence time resin. Not contain wear and corrosion additives.</td>
<td>Weak for long residence time resin. Not contain wear and corrosion additives.</td>
<td></td>
</tr>
</tbody>
</table>

The SE-HDZ series accepts the screw assembly for the SE-HSZ series.
Zero-molding system list of new functions

1. Zero-molding Main Screen : Simple Process Setting
2. Zero-molding Main Screen : Product Molding monitor
3. Mold condition change (Screw dia., Unit, Add IL display)
4. Screen for confirm Spec.Funcion
   (STD, Option, Abnormal transaction, Peripheral device signal)
5. Minimum Clamp force detect
6. SET-UP guidance : Mold install Screen
7. SET-UP guidance : Mold condition setting
8. SET-UP guidance : Mold protection setting screen
9. SET-UP guidance : MULTI parge
10. SET-UP guidance : Reference & Call TEMP condition
11. SET-UP guidance : Supervise & warning remain mode
12. SET-UP guidance : Nozzle/Heating cylinder heated up mode
   (STEP/Nozzle delay)
13. SET-UP guidance : Nozzle/Heating cylinder/water cooling jacket TEMP
   profile graphic display
14. Zero-molding : Molding condition setting screen Z-Screen
   (Fill., HP, Plast.Time, TEMP, Clamp force)
15. Zero-molding : Flash mode control
16. Zero-molding : Short shot mode by Flash control
17. Decomp. by Revers after plasticizing
18. Zero-molding : Clamp force feedback
19. MULTI clamp force control (X, head pos. control)
20. Zero-molding : Molding condition guidance monitor
   (Peak clamp force, Pack Press., Situation monitor)
21. Detect monitor change (Detect, detail, Detect+real time, wave, TEMP graph)
22. Protection for molding condition
23. Initial molding by auto chage (condition)
24. Protection : Screw protection
25. Wave : Display by process (UP, HP, Plast., Mold open, Mold close, EJ)
26. Wave : Wave preservation message
27. Quality Control : Wave distinction
28. Quality Control : Molding process monitor logging
29. Production control : Production count control (Cavity count setting)
30. Production control : Operation status control
   (Operation time, Motor over load monitor, Electricity consumption monitor)

Standard Equipment

Plasticizing & injection unit
1. Standard SD screw assembly (open exclusive nozzle, ion-nitride) (wear resistant type (cylinder) (Only for SE-HSZ)
2. Standard SD screw assembly (open exclusive nozzle, fit-screw, on-nitride cylinder (unavailable for SE-HSZ C560)
3. Programming control of injection
4. Programming control hold pressure
5. Screw pull back (after screw rotating/after holding pressure)
6. Screw position digital indicator (0.01mm)
7. Step timer for hold pressure to 0.01 sec.
8. V-P switchover controller (position, pressure)
9. Injection start delay timer
10. Automatic screw forward/reverse selecting (Select between nozzle touch and plasticizing unit withdraw limit)
11. Heater 6 division control (diagram = 50 (M): 5division)
12. 2-modes temperature control (production/standby)
13. Cold screw startup protecto (Interlock variable timer attaching)
14. Injection unit retraction delay selector (with delay timer)
15. Sprue break stroke remote setting (Detection of nozzle touch, Moving time)
16. Screw speed digital indicator
17. Flow indicator for water cooling jacket
18. Protective purge shield (with limit switch)
19. Swivel injection unit (with nozzle core adjuster)
20. Remaining cooling time indicator
21. Plasticizing start delay timer
22. Injection/Holding response 10-mode
23. Hold pressure speed setting
24. Pull back delay control
25. Flash Speed Mode
26. Temperature controller for nozzle
27. Stepped heat-up operation
28. Energy-saving heating cylinder cover (2-layer structure)
29. Water cooling jacket temperature control device
30. High-precision, high-output nozzle touch system
31. Screw centering mechanism
32. Mold open operation during plasticizing (needle nozzle drive control)
33. Multi-step filling pressure control
34. Resin staying protection
35. Manual one-touch plasticizing

Control unit
1. 12.1 inch TFT Color LCD screen
2. Input setting device : Sheet-key and touch panel
3. Internal memory of mold conditions (200 conditions)
4. Operation guide for beginners
5. Production guide for beginners
6. Molding profiles display functions (mold profiles storage, cursor, display and so on)
7. Screen hard copy
8. Printer connection circuit
9. Take-out robot connection circuit
10. Three languages screen changeover (Japanese/English/Chinese)
11. Operation guide for maintenance
12. Automatic starting system (heater warming, heater start, machine stop)
13. Molding process indication
14. SSR control circuit for heater bands
15. Input expressed in industrial units of velocity, position, pressure & screw revolution
16. Signal output for machine condition (5ch)
17. Automatic startup function (heater + external output signal)
18. Space I card unit (card: option)
19. PC connection circuit (RS232C)
20. Molding condition protection
21. Alarm sequence selection
22. Initial rejection + short stop rejection

Clamp unit
1. Programmed control of mold opening/closing speed (5-step/3-step)
2. Mold protection
3. Low pressure mold clamp
4. Temporary stop of mold opening/closing
5. Remote control of clamp force
6. Remote control of mold space
7. Ejector (with selective multi-functions & return check)
8. Ejector protrusion delay timer
9. Ejector remote control (speed, stroke and pressure)
10. Ejector 2-speed control
11. Interlock for ejector (In manual operation, only the mold open limit is available)
12. Ejector protrusion during mold opening
13. Ejector protrusion during mold closing
14. Ejector plate return signal (input signal for molding machine) Connecting by metal contact
15. Mold close and mold opening signals (Spear control signal) No-voltage dry contact
16. Valve gate drive circuit (control circuit only)
17. Standby mode for mold mounting (low mold closing/opening speed)
18. Safety doors with clear PMMA windows
19. Emergency stop switch (on both side)
20. Toggle covers with clear PMMA windows sides
21. Tapped hole for take-out robot installation
22. Grease central lubrication
23. Safety doors (interlocked electrically/mechanically)
24. Mold oprcl selection low vibration or high speed mode
25. Moving platen support (Sliding type)
26. Double center press platen
27. Ejected products sensor circuit
28. Multi-toggles
29. Ejector unit with brake
Optional Equipment

Plasticizing & injection unit
1. Hard chromium plating screw assembly (Only for SE-HDZ)
2. Wear resistant type screw assembly (Only for SE-HDZ)
3. Wear & corrosion resistant screw assembly II & III (Only for SE-HDZ)
4. SM screw assembly (Only for SE-HDZ)
5. SE-HSZ screw assembly
6. Needle valve nozzle (pneumatic nozzle actuating cylinder)
7. Extension nozzle
8. Cylinder nozzle
9. Zone 1 high capacity heater

Plasticizing selection
1. Resin temperature finder (only for needle type with thermocouple)
2. Standard type hopper
3. V/P switchover by mold cavity pressure
4. Needle valve nozzle drive circuit (pneumatic cylinder)
5. Hopper swivel mounting plate
6. Plating resin inlet of cooling water jacket
7. Assist of pneumatic of the swiveling of plasticizing unit
8. Purging saucer (Stainless steel)
9. Injection speed 200mm/s (Only for SE-HDZ)
10. Injection speed 200mm/s + SE-HSZ cycle (SE220HDZ~SE350HDZ)
11. Heater for PA (nylon) resin (Only for SE-HDZ)

Control & monitor unit
1. Leak circuit breaker (AC200V, 220V 3φ3W+E Japan and Asia only)
2. Mold temperature monitor 2 zone (without thermocouple and type K)
3. Mold temperature monitor 4 zone (without thermocouple and type K)
4. Auxiliary facility monitor (STD.+2ch)
5. Analog data output connection circuit
6. Mold temp. controller (2 zone) 3kW
7. Mold temp. controller (4 zone) 3kW
8. Automatic starting system (Heater + water supply + external output signal)
9. Revolving alarm lamp (non-operation side)
10. Revolving alarm lamp (operation side)
11. Multi function 3-color LED alarm lamps (non-operation side)
12. Multi function 3-color alarm lamps (operation side)
13. 1-Lines closed circuit water connection lines with flow indicator and stop valve, and filter for cooling water
14. 2-Lines closed circuit water connection lines with flow indicator and stop valve, and filter for cooling water
15. Electric power supply sockets (area 1 to 4 x type 1 to 4) 100A in total
16. Electric power supply socket for tools (1kW on operation side)
17. Electric power supply socket for tools (1kW on non-operation side)
18. Electric power supply socket for tools (1kW on operation side + 1kW on non-operation side)
19. Key-lock switch for molding setup
20. iii-System Standard Edition
21. Main power supply for US, 460V Trans built-in
22. Motion 07

Clamp unit
1. Pneumatic ejector
2. Cavity ventilator
3. Hydraulic core pull control circuit 1 lines (control circuit+piping connection)
4. Hydraulic core pull control circuit 2 lines (control circuit+piping connection)
5. Pneumatic core pull circuit 1 lines
6. Pneumatic core pull circuit 2 lines
7. Core rotation control circuit (motor drive:1.5kw or less)
8. SPI take-out robot connection circuit
9. Heat insulating plate (10mm, cross type)
10. Mold clamp control unit
11. Auto grease lubrication selection on liner guide
12. Valve gate drive circuit (control circuit & pneumatic circuit)
13. Valve gate drive circuit (control circuit & hydraulic circuit)
14. Full metallic toggle cover
15. Hydraulic package (for core-pull & valve gate) (SE220HDZ·HSZ~SE350HDZ·HSZ : built-in type)
16. Tie-bar support
17. Tie bar platting (Hard chromium)
18. Locating ring for cooling fit I.D. Ø110/Ø150
19. Locating ring for cooling fit I.D. Ø120/Ø150
20. Automatic opening/closing of safety door (operation side)
21. Tie-bar grease adherence prevention
22. Additional frame supports

Spare parts and accessories
1. Spare parts A (Mechanical parts : Brake lining, Lub. parts)
2. Spare parts A (Electrical parts : Thermocouple)
3. Spare parts for export. (Encoder, Limit swit, and Inductive proximity sensors)
4. Leveling pads (for one machine)
5. Anchor bolts (for one machine)
6. Locating ring (Transition fit) (I.D. Ø110/Ø150) (Only for SE220HDZ·HSZ)
7. Locating ring (Transition fit) (I.D. Ø120/Ø150) (Only for SE280HDZ·HSZ)
8. Locating ring (Transition fit) (I.D. Ø120/Ø150) (Only for SE280HDZ·HSZ)
9. Mechanical parts and hook for hoisting machine
10. Tools A
11. Ejector rods
12. Grease gun
13. Grease cartridge for Automatic Lub (700cc)
14. Grease cartridge for Manual Lub (400cc)
15. Plasticizing unit rotation handle (Larger than on C1250)
16. Special tool for removing Screw head set

1. Specifications may subject to change without notice for performance improvements.
2. The export of this product for use for or in development and/or production of massive destruction arms and weapons (nuclear weapons, biological 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.

11