

CL2-7000

All-electric injection molding machine



Compact machine for **Large works**

*Supporting molded products
in excess of 8500 kN class.*

By consolidating the latest molding technologies of all-electric machines, condensed a plethora of advanced features and larger mold mounting performance into a compact machine frame, to deliver a "compact large class electric machine". Even the molded products at right - and larger versions as well -- that previously were produced on 8500 kN class machines can be made without defects, stress or waste using the CL2-7000 and its actual molding clamping force of 4420 kN.

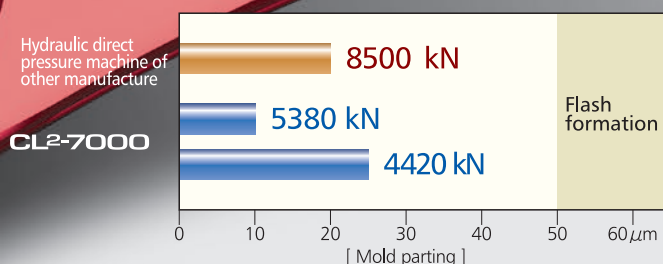
■ Data

Product: Outer panel
Resin: PC
Num. of cavities: 2 (1set)
Product weight: 580 g (1pc.)
Projected area: 2240 cm²
Cycle time: 65.0 sec

The figure of the product is 3D illustration of actual works.

■ Comparison of actual clamping force and mold parting

Molds same product without flash



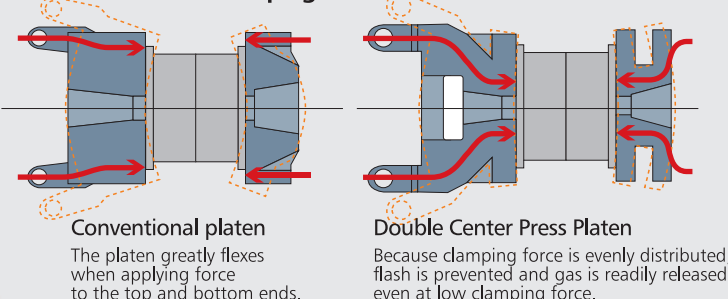
Mold parting: Opening between mold surfaces caused by injection pressure

Reduces the required clamping force by evenly distributing surface pressure against the mold

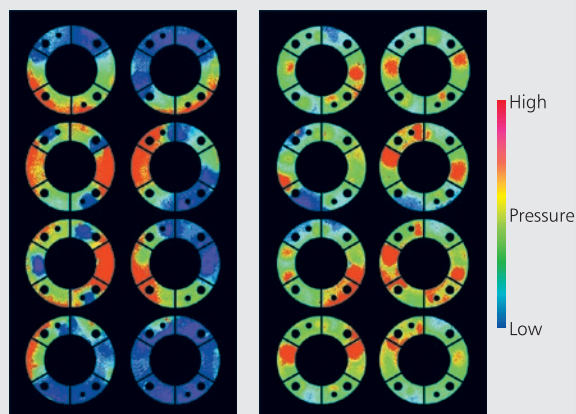
Double Center Press Platen

The Double Center Press Platen has greatly changed the concept of clamping force. Center Press Platens of extremely low flexing are provided on both the stationary and mobile sides. By evenly distributing surface pressure applied to the mold, the platens simultaneously eliminate center-lying burrs and short shots along the periphery, and enable molding at lower clamping forces than before.

■ Transmission of clamping force



■ Comparison of surface pressure distribution



Similarly structured platens of other manufacturer

Double Center Press Platen

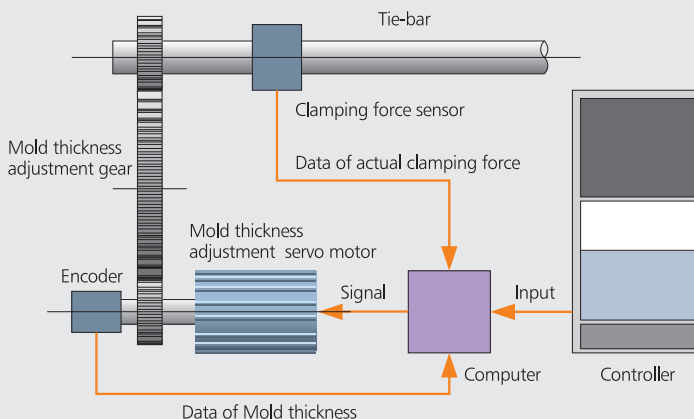
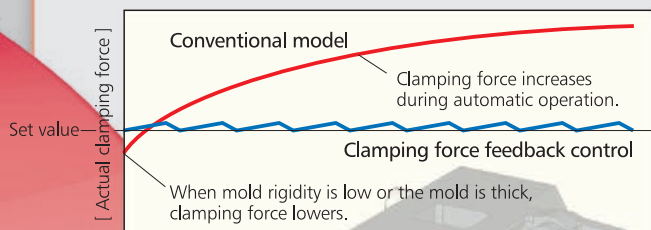
Surface pressure measurement of 8-cavity mold for container. Double Center Press Platen demonstrates excellent performance that similarly structured platens of other manufacturer cannot compare with.

Accurate, stable clamping force maintained

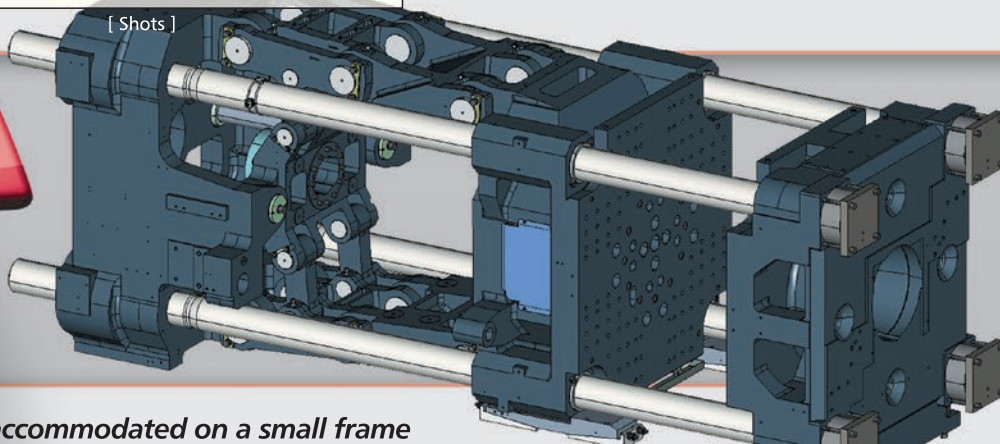
Clamping force feedback control

Clamping force fluctuations are minimized by detecting actual clamping force with a sensor and feeding those readings back. Molding is stable and consistent because the prescribed clamping force is maintained without being effected by mold rigidity or thermal expansion. Because the set clamping force is applied to the mold, it is unnecessary to set a margin on clamping force, which helps to reduce the required clamping force.

Transition model of actual clamping force



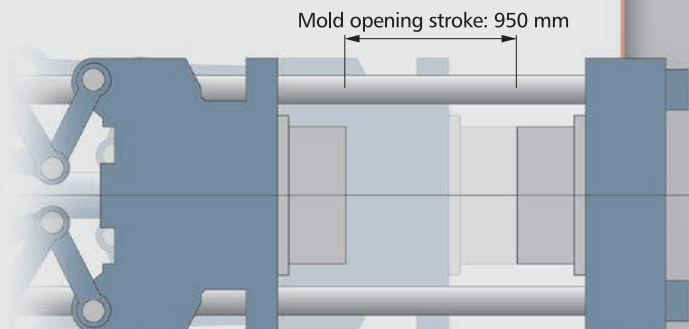
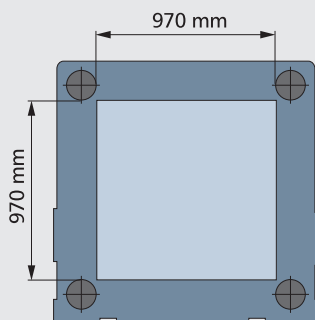
■ System chart



Large molds accommodated on a small frame

Wide platen and expanded mold opening stroke

Both complicated and large-sized modes are accommodated owing to a wide tie-bar spacing and ample opening stroke.



■ Clearance between tie-bars, mold opening stroke and mold thickness

Max. mold thickness: 800 mm
(1000 mm in case of option)

Compact machine size enabled by the latest plasticizing technology

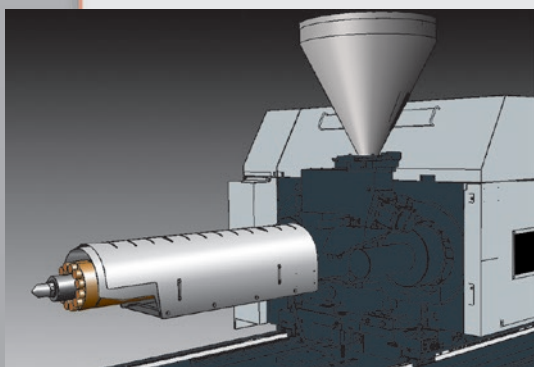
New plasticizing system

The CL7000 incorporates a new plasticizing system that employs the latest technology to eliminate stress and waste in plasticizing operations. Because of this new system, the full machine length has been greatly shortened.

Full length comparison against same class clamping force electric machines of other manufacture



CL2-7000 → Company A → Company B →



High performance, safe and energy-saving

Numerous high-tech features can be operated comfortably and safely. Moreover, advances in energy-saving technology help to reduce energy costs and protect the global environment.

High performance nozzle touch system

High precision, high power nozzle touch and nozzle touch control

The CL7000 adopts a 2-axis arm supporting structure that is symmetrically positioned with nozzles. The highly accurate, high output nozzle touch mechanism does not tilt the stationary platen. And, control capabilities are provided to remotely set nozzle touch force according to the type of mold.

■ Comparison of nozzle touch systems

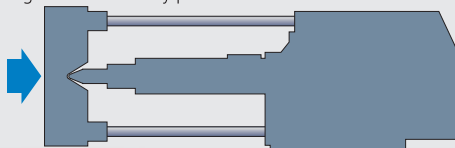
Conventional system

The high power nozzle touch causes a tilt of the stationary platen. High clamping force is needed to compensate the tilting and maintain accuracy.

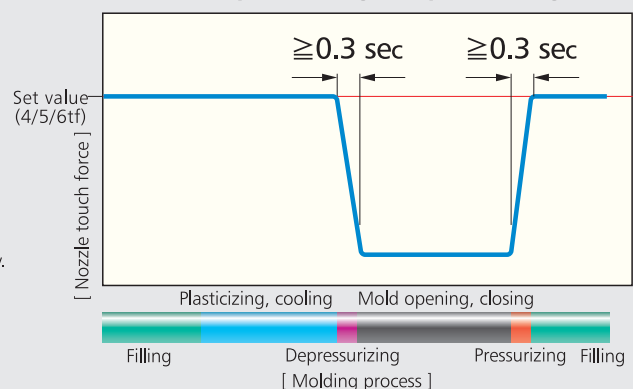


2-axis arm nozzle touch system of the CL2-7000

Despite the high power, mold clamping accuracy is maintained without tilting of the stationary platen.



■ Nozzle touch depressurizing and pressurizing



Nozzle touch depressurizing and pressurizing are very high response and short. By lowering the nozzle touch force during mold opening and closing, the load placed on the stationary mold is lessened, which effectively extends the service life of the mold. It is also effective towards minimizing cycle loss in molding processes that require nozzle retraction.

Applicable for heavy load molding of thick-walled products

Heavy duty motors for injection and plasticizing

Heavy duty injection motor for retaining pressure over longer periods of time

Because of the performance limitations of motors, existing electric machines could not retain high pressures for long periods of time. The CL2-7000 comes standard with a high torque injection motor and can retain 3x the pressure loads of existing electric machines. For example, molding is possible without problems under the below harsh conditions.

- Retains maximum injection pressure for 10 sec. (60-sec cycle)
 - Retains 75% of the maximum injection pressure for 18 sec. (60-sec cycle)
 - Retains 50% of the maximum injection pressure for 40 sec. (60-sec cycle)
- All figures above are theoretical.



■ Heavy duty injection motor

Heavy duty plasticizing motor that can plasticize high viscosity resins over long periods of time

With earlier electric machines, motor speed had to be reduced and cycles extended to mold high viscosity engineering plastics resin because of insufficient motor capacity. The CL7000 comes standard with a heavy duty plasticizing motor that supports stable molding of high viscosity resins.

Mold thickness remote control

■ Mold thickness control

WD INSTALL (565) Mold space (160.0-350.0)

INITIAL

Diagram: A schematic diagram of the mold assembly showing the mold, ejector, and various components. Dimensions are indicated: 3.0 mm for the mold space, 15.50 mm for the screw position, and 0.10 mm for the mold O/C pins.

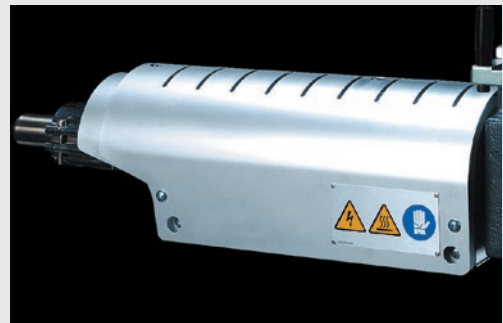
| Item | Setting | Unit | Monitor | Process | Setting | Unit | Inst. current |
|------|---------------------|------------------|---------|---------|--------------------------|----------|---------------|
| 1 | Mold space movement | 180.0 | mm | OFF | Mold open limit setting | Position | 200.0 |
| 2 | Mold insert | | | | | Velocity | 20.0 |
| 3 | Mold touch | Mold touch force | 0.0 | kgf | | Pressure | 0.0 |
| 4 | Nozzle touch | | | | | Position | 2.0 |
| 5 | Mold fix | | | | | Velocity | 20.0 |
| 6 | Clamp force adjust | Min. clamp force | UN | OFF | Ejector position setting | Pressure | 99.0 |

Bottom Bar: SET UP, CLAMP, 2-ENL, TEMP., 2-SIZE, ANALYSIS, C/LTY CODE, PROD. CNT.

Enhanced safety



■ Emergency stop button lockout



■ Heat cylinder with full cover

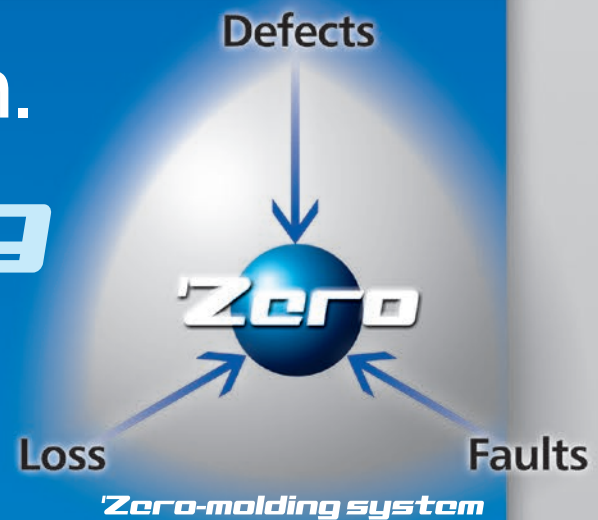
Low energy consuming, low running costs

| Machine Type | Power Consumption [kW] | Reduction (%) |
|---|------------------------|---------------|
| Same class clamping force hydraulic machine | ~58 | - |
| Same class clamping force conventional all-electric machine | ~18 | -27% |
| CL2-7000 | ~13 | -78% |

Restart from the origin.

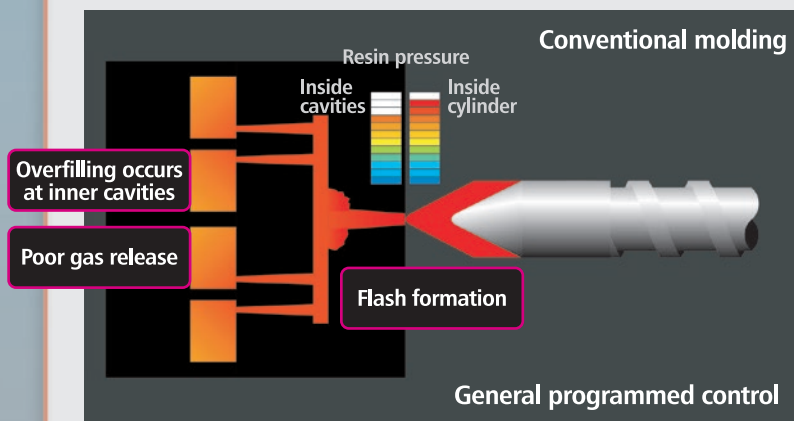
'Zero-molding

*Complicated molding made simple.
Innovative molding processes only
Imagine no defects, loss or faults! Zero!*

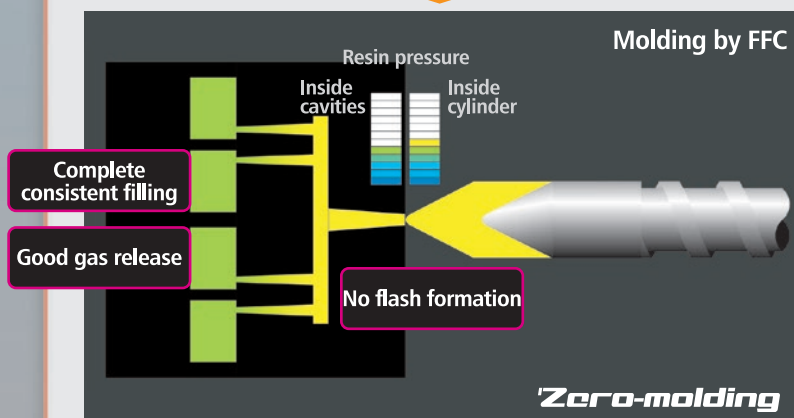


'Zero-molding by FFC (Injection system) PAT. P.

Stable sound quality products via smooth filling



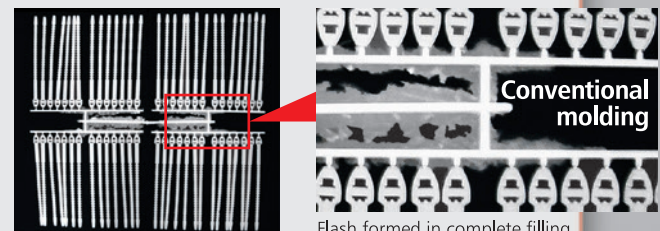
In conventional molding systems, resin is fully charged into mold cavities and consequently is apt to suffer excessive compression.



FFC is a viscoelasticity-assisted injection molding scheme where resin is not exposed to high pressures.

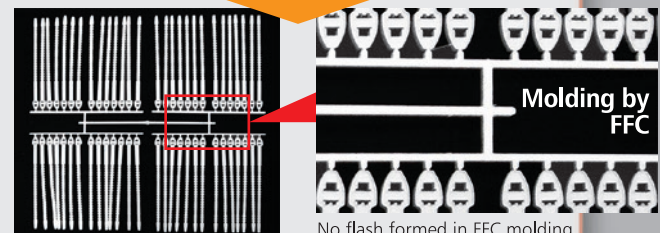
FFC (Flow Front Control) optimizes the flow front by restricting screw movement to match flash control. This enables molding at low internal pressures inside cavities, which, besides preventing flash, eliminates short shots by effectively releasing gases when filling.

■ Example improvement in cavity balance



Flash formed in complete filling.

No flash formed in FFC molding.



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.

■ Example clamping force reduction by FFC

In tests conducted by Sumitomo, a table disc was molded with a clamping force of 70 kN by FFC molding, whereas 1100 kN were required in conventional molding.



Clamping force reduced by 90% !

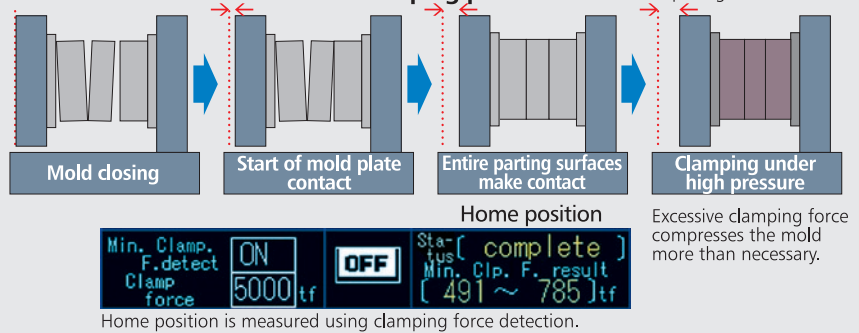
Product: Table disc Resin: PC

'Zero-molding' by MCM (Clamping system) PAT. P.

Low pressure clamping without unnecessary force

The CL2-7000 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 clamping 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.

Platen and mold behavior in clamping process



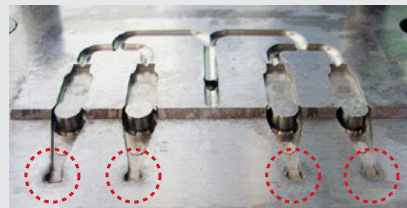
Mold comparison after 1000 shots

MCM (Minimum Clamping Molding) enables molding with the detected minimum required clamping force. Gas is greatly reduced to the following benefits.

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

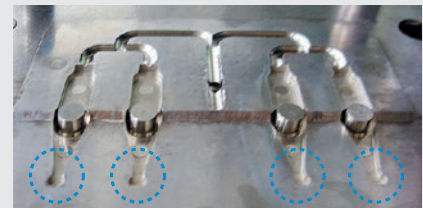
By reducing the mold clamping force, users can expect reductions in power consumption and shorter cycles, besides avoiding damage such as broken pins.

Conventional molding



Gas burning occurs in flow end.

Molding at low clamping force

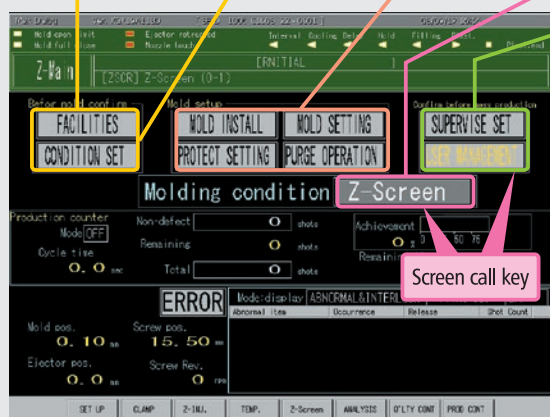


Gas burning is avoided because gas is released from entire parting surfaces.

'Zero-molding' by SPS (Setting system) PAT. P.

Simple operation without mistakes and oversights

Process up to mass-production start



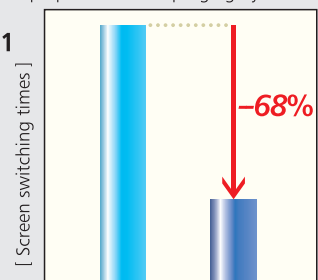
SPS (Simple Process Setting) arranges settings by process from the operator's position.

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.

1 process 1 screen

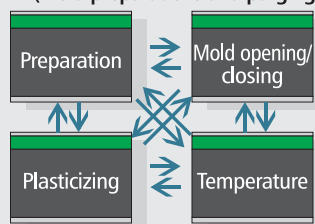
Example of improved operability

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

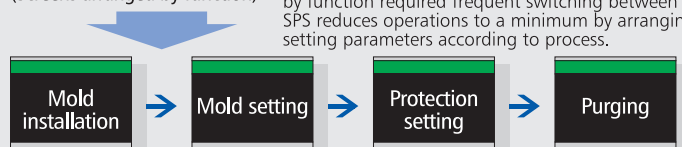


Conventional operation SPS

Comparison of screen operation 1 (Mold preparations and purging)



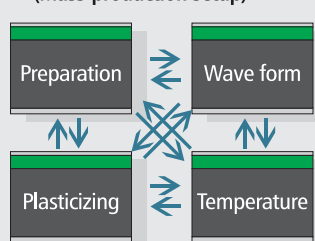
Conventional operation (Screens arranged by function)



SPS (Screens arranged by process)

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.

Comparison of screen operation 2 (Mass-production setup)



Conventional operation (Screens arranged by function)



Z-Screen

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.

Main specifications

| Items | unit | CL2-7000 |
|------------------------------------|------|--------------------------|
| ■ Clamping unit | | |
| Clamping system | | Double toggle (5 points) |
| Max. clamping force | kN | 5390 |
| Clearance between tie-bars (L x H) | mm | 970 x 970 |
| Platen size (L x H) | mm | 1410 x 1390 |
| Daylight | mm | 1750([5]1850/[6]1950) |
| Mold opening/closing stroke | mm | 950 |
| Mold space | Max. | mm 400 |
| | Min. | mm 800([5]900/[6]1000) |
| Locating ring diameter | mm | ø 150 |
| Ejector type | | Electric (21 points) |
| Ejection force | kN | 128 |
| Ejection stroke | mm | 200 |

| | | C2300 | | C3200 | |
|--|--------------------|-----------|------|-----------|------|
| | | CL | | CL | |
| Screw diameter | mm | 63 | 76 | 76 | 84 |
| Max. injection pressure [1][2] | MPa | 215 | 148 | 186 | 153 |
| Max. hold pressure [1][2] | MPa | 215 | 148 | 186 | 153 |
| Theoretical injection volume | cm ³ | 982 | 1429 | 1633 | 1995 |
| Injection weight (GPPS) | g | 943 | 1372 | 1568 | 1915 |
| Plasticizing capacity (GPPS) [3] (Screw rotation speed) | kg/h | 182 | 201 | 201 | 274 |
| Injection rate | cm ³ /s | 499 | 726 | 726 | 887 |
| Screw stroke | mm | 315 | | 360 | |
| Max. injection speed | mm/s | 160 | | 160 | |
| Max. screw rotation speed | min ⁻¹ | 250 | 200 | 200 | 200 |
| Number of temperature control zones | | 6 | | 6 | |
| Heater capacity | kW | 25.6 | 29.9 | 29.9 | 34.2 |
| Nozzle touch force | kN | 58 | | 58 | |
| Displacing stroke (Ejection quantity) | mm | 680 (100) | | 680 (100) | |
| Hopper capacity | L | 100 | | 100 | |

■ Machine dimensions and weight

| | | | |
|----------------------------|----|--|--|
| Dimensions (L x W x H) [4] | mm | 8440 x 2334 x 2573 ([5]8540 x 2334 x 2573) ([6]8640 x 2334 x 2573) | 8440 X 2334 X 2573 ([5]8540 X 2334 X 2573) ([6]8640 X 2334 X 2573) |
| Weight | t | 35.7 | 36.7 |

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

[2] The max. injection pressure and hold pressure are not pressures that can be generated continuously.

[3] Plasticizing capacity is the same level as when the SD screw is 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] Dimensions when the optional 100 mm mold thickness extension is selected.

[6] Dimensions when the optional 200 mm mold thickness extension is selected.

[7] The value in { } is given for reference.

[8] The specifications may be subject to change for performance improvement without notice.

Selection of injection module

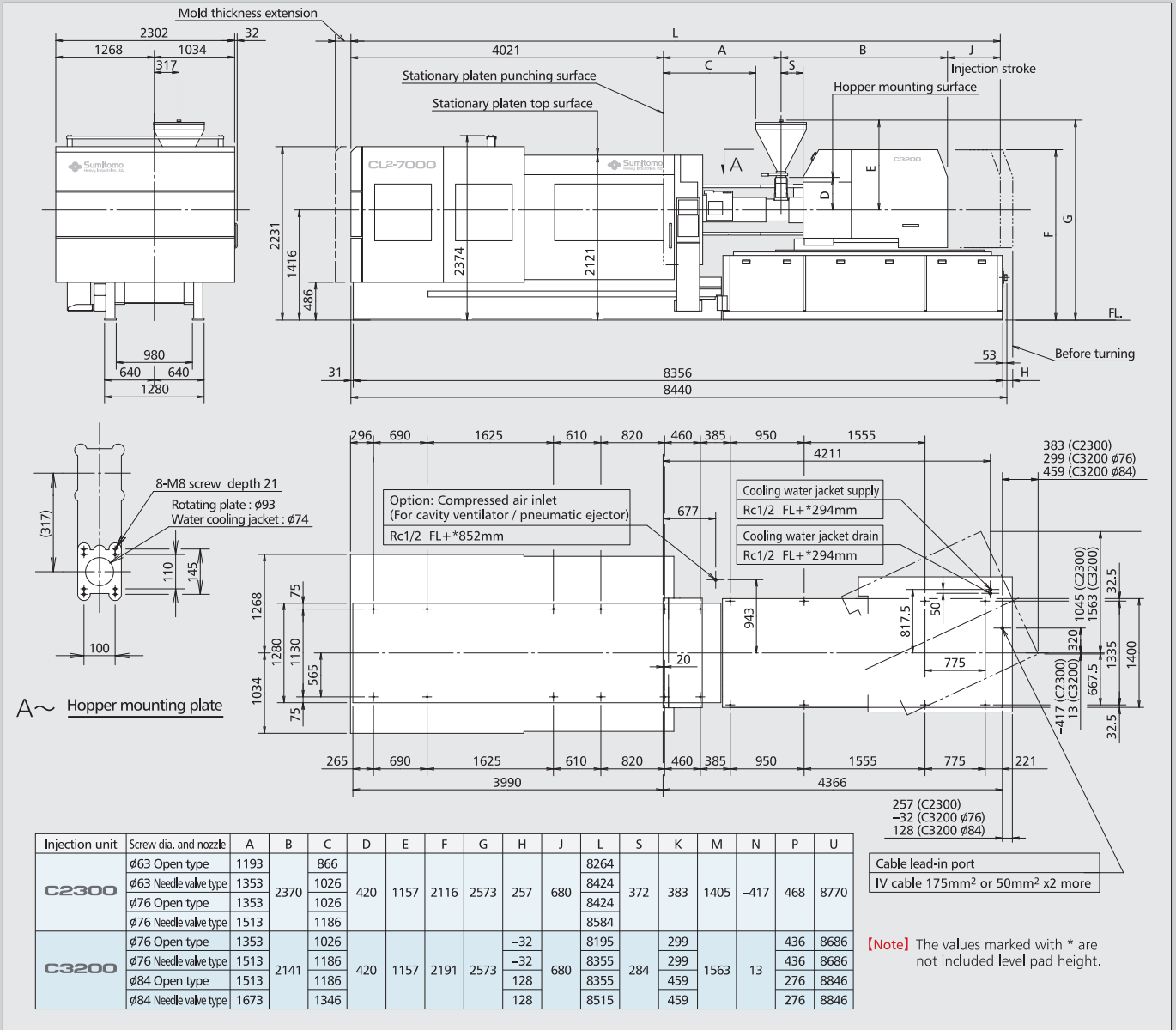
| Model | Injection unit | Screw dia. mm | Max. injection pressure MPa{kgf/cm ² } | Theoretical injection volume cm ³ |
|----------|----------------|------------------|---|--|
| CL2-7000 | C2300 | 63 | 215 {2200} | 982 |
| | | 76 | 148 {1510} | 1429 |
| | C3200 | 76 | 186 {1900} | 1633 |
| | | 84 | 153 {1560} | 1995 |

Screw assembly

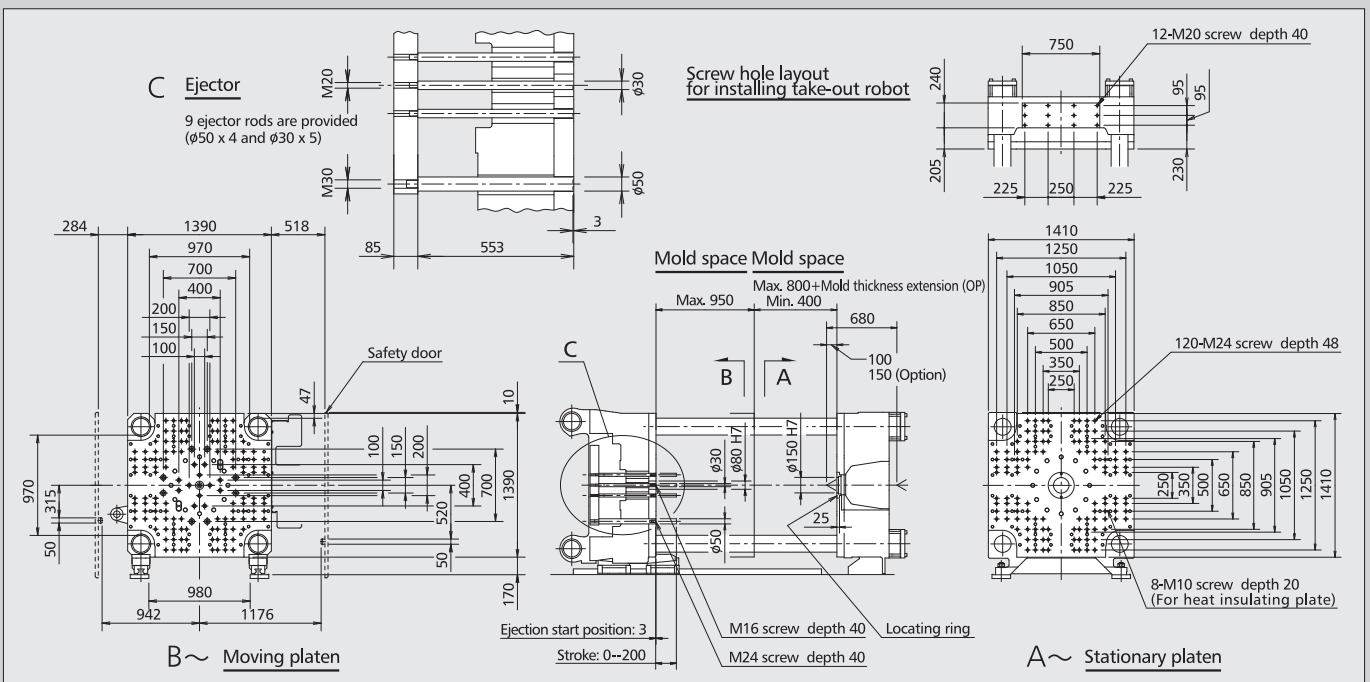
| Specifications | Wear resistant (I) | Wear and corrosion resistant (II) |
|----------------|---|--|
| Screw | Wear and corrosion resistant (II) | Wear and corrosion resistant (II) |
| Barrel | Wear resistant (I) | Wear and corrosion resistant (II) |
| Screw tip | Wear and corrosion resistant (II) (No corotation) | Wear and corrosion resistant (II) (No corotation) |
| Resin | Resin not containing wear-prone additive / Resin of low wear-prone additive and no corrosive additive | Resin containing less than 30% wear-prone additive / Resin containing corrosive additive |

[Note] Contact using resins that contain 30% or more wear-prone compounding ingredients or highly corrosive compounding ingredients.

Machine dimensions and Installation diagrams



Mold mounting diagram



'Zero-molding equipment

- | | | | |
|----|--|----|--|
| 1 | 'Zero-molding Main screen: Simple process setting | 15 | Decompression by reverse after plasticizing |
| 2 | Zero-molding Main Screen : Product molding monitor (Product count, Process, Abnormal, Detect) | 16 | 'Zero-molding: Clamping force feedback |
| 3 | Screen for confirm spec. and functions (STD., Option, Abnormal transaction, Peripheral device signal) | 17 | Multiple clamping force control (Cross head position control) |
| 4 | Minimum clamping force detect | 18 | 'Zero-molding: Molding condition guidance monitor (Peak clamping force, Pack Pres., Situation monitor) |
| 5 | Setup guidance: Mold installation setting screen | 19 | Detection monitor change (Detect, Detail, Process, Detect and real time) |
| 6 | Setup guidance: Mold condition setting screen | 20 | Protection for molding condition |
| 7 | Setup guidance: Mold protection setting screen | 21 | Initial molding by auto change (Condition) |
| 8 | Setup guidance: Multiple purge | 22 | Protection: Screw protection |
| 9 | Setup guidance: Supervise and warning for resin remaining | 23 | Wave form: Display by process (IJ,HP, Plast.,Mold open, Mold close, EJ) |
| 10 | Setup guidance: Nozzle and heating cylinder heating-up mode (Step/Nozzle delay) | 24 | Wave form: Display by process (Preservation message) |
| 11 | Setup guidance: Nozzle, heating cylinder, water cooling jacket temp. profile graphic display | 25 | Quality Control: Wave form distinction |
| 12 | 'Zero-molding: Molding condition setting screen-- Z-Screen(Fill., HP, Plast.,Time, Temp.,Clamping force) | 26 | Quality Control: Molding process monitor logging |
| 13 | 'Zero-molding: Flash Control | 27 | Production control: Operation status control (Operation time, Motor over load monitor) |
| 14 | 'Zero-molding: Short shot mode by Flash Control | | |

Standard equipment

Plasticizing and injection unit

- 1 Wear resistant (I) Screw assembly
- 2 Zone1 High capacity heater
- 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
- 7 Step timer for hold pressure to 0.01 sec.
- 8 V-P switchover controller (Pressure, Position)
- 9 Injection start delay timer
- 10 Automatic purging program Interlock attaching (Select between nozzle touch and plasticizing unit withdraw limit)
- 11 Heater 6 division control
- 12 2-mode temperature control (Production/Standby)
- 13 Cold screw startup protection (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 timer indicator
- 21 Plasticizing start delay timer
- 22 Injection/Holding response 10-mode
- 23 Hold pressure speed setting
- 24 Pull back delay control
- 25 Synchro-plast control
- 26 Temperature controller for nozzle
- 27 Energy-saving heating cylinder cover (2-layer structure)
- 28 High-precision, high-output nozzle touch system
- 29 Screw centering mechanism
- 30 Mold open operation during plasticizing (Needle nozzle drive control)
- 31 Multi-step filling pressure control
- 32 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, etc.)
- 7 Screen hard copy
- 8 Take-out robot connection circuit
- 9 Three languages screen changeover (Japanese/English/Chinese)
- 10 Operation guide for maintenance
- 11 Automatic starting system (Heater warming, Heater start, Machine stop)
- 12 Molding process indication
- 13 SSR control circuit for heater bands
- 14 Input expressed in industrial units of velocity, position, pressure & screw revolution
- 15 Signal output for machine condition (5 ch)
- 16 Automatic startup function (Heater, External output signal)
- 17 USB ports (Printer, Memory card)
- 18 PC connection circuit (RS232C)
- 19 Molding condition protection
- 20 Alarm sequence selection
- 21 Initial rejection and short shot rejection

Clamping 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 protrusion delay timer
- 8 Ejector remote control (Speed, Stroke, Pressure)
- 9 Ejector 2-speed control
- 10 Ejector protrusion holding device
- 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) Metal connector
- 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 with lockout ring (Operation sides)
- 20 Emergency stop switch (Non-operation sides)
- 21 Toggle covers with clear PMMA windows sides
- 22 Tapped hole for take-out robot installation
- 23 Grease central lubrication for clamping and injection
- 24 Interlocked safety doors (Electrically, Mechanically)
- 25 Mold opening/closing mode selection (Low vibration/High speed)
- 26 Moving platen support (Sliding type)
- 27 Double Center Press Platen
- 28 Ejected products sensor circuit
- 29 Multi-toggles
- 30 Ejector with break mechanism

Monitor unit

- 1 Actual operating values indicator
- 2 Heater band burnout monitor
- 3 Auxiliary facility monitor (1 ch)
- 4 Alarm monitor (6 items)
- 5 Automatic setting of monitor high/low value
- 6 Abnormal history (Item and time)
- 7 Statistics product quality control (Actual value control, Quality transition graph)
- 8 Production control
- 9 Automatic starting system (Heater, External output signal)
- 10 Cylinder heater temperature monitor (All zones)
- 11 Self-diagnosis
- 12 Audible alarm
- 13 Shot counter
- 14 Molding cycle time monitor (Attended/Unattended selection)
- 15 Low fluid level monitor
- 16 Monitor setting fail protection

Miscellaneous

- 1 Automatic centralized greasing device
- 2 Mold cooling water block (2 lines) (Flow indicator and valve are optional)
- 3 Standard tools (Nozzle ring spanner)
- 4 Standard spare parts (Touch-up paint, Fuses)
- 5 File folder (Inside control panel)

Optional equipment

Plasticizing selection

- 1 Wear and corrosion resistant (II) Screw assembly
- 2 Needle valve nozzle (Pneumatic nozzle actuating cylinder)
- 3 Extension nozzle (protrusion: 150mm)

Plasticizing and injection unit

- 1 Resin temperature finder (Only for needle type nozzle)
- 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 Purging saucer (Stainless steel)
- 7 Hopper stage
- 8 Emergency stop switch on injection unit side (Operation and non-operation sides)

Control and monitor unit

- 1 Leak circuit breaker (AC200V, 220V 3ø/3W+E For Japan and Asia only)
- 2 Mold temperature monitor 2 zones (Without thermocouple and type K/J)
- 3 Mold temperature monitor 4 zones (Without thermocouple and type K/J)
- 4 Auxiliary facility monitor (Standard+2ch)
- 5 Analog data output connection circuit
- 6 Mold temperature controller (type K/J 2 zones) 3kW
- 7 Mold temperature controller (type K/J 4 zones) 3kW
- 8 Mold temperature controller (16 zones) 1kW For Hot runner system
- 9 Automatic starting system (Heater, Water supply, External output signal)
- 10 Revolving alarm lamp (On the toggle support, non-operation side)
- 11 Revolving alarm lamp (On the toggle support, operation side)
- 12 Revolving alarm lamp (On the injection unit, operation side)
- 13 Multi-function 3-color LED alarm lamps (On the toggle support, non-operation side)
- 14 Multi-function 3-color LED alarm lamps (On the toggle support, operation side)
- 15 Multi-function 3-color LED alarm lamps (On the injection unit, operation side)
- 16 Closed circuit type cooling water piping 4 lines (Back side of the injection unit)
- 17 Electric power supply sockets (Area 1-4, Type 1-4) 150A in Total
- 18 Electric power supply socket for tools (1kWA, Operation side)
- 19 Electric power supply socket for tools (1kWA, Non-operation side)
- 20 Electric power supply socket for tools (1kWA, Both sides of Operation and Non-operation)
- 21 Key-lock switch for molding setup
- 22 Motion07

Clamping unit

- 1 Pneumatic ejector 1 line
- 2 Pneumatic ejector 2 lines
- 3 Cavity ventilator
- 4 Hydraulic core pull control circuit 1 line (Control circuit, Piping connection)
- 5 Hydraulic core pull control circuit 2 lines (Control circuit, Piping connection)
- 6 Hydraulic core pull control circuit 4 lines (Control circuit, Piping connection)
- 7 Pneumatic core pull control circuit 1 line (Control circuit, Piping connection)
- 8 Pneumatic core pull control circuit 2 lines (Control circuit, Piping connection)
- 9 SPI take-out robot connection circuit
- 10 Heat insulating plate (10mm, Rectangle type)
- 11 Mold clamp control unit
- 12 Slide core return signal (Input signal for molding machine) Metal connector
- 13 Auto grease lubrication on liner guide
- 14 Pneumatic valve gate drive circuit 1 line (Control circuit, Pneumatic circuit)
- 15 Pneumatic valve gate drive circuit 2 lines (Control circuit, Pneumatic circuit)
- 16 Pneumatic valve gate drive circuit 8 lines (Control circuit, Pneumatic circuit)
- 17 Hydraulic valve gate drive circuit 1 line (Control circuit, Hydraulic circuit)
- 18 Hydraulic valve gate drive circuit 2 lines (Control circuit, Hydraulic circuit)
- 19 Hydraulic valve gate drive circuit 4 lines (Control circuit, Hydraulic circuit)
- 20 Hydraulic drive circuit
- 21 Hydraulic drive package
- 22 Tie bar plating
- 23 Locating ring (Fixed with bolts) I.D. ø100
- 24 Locating ring (Fixed with bolts) I.D. ø120
- 25 Automatic opening/closing of safety door (Operation side)
- 26 Mold thickness extension 200mm
- 27 Mold thickness extension 100mm
- 28 Tie-bar grease adherence prevention
- 29 Circuit for magnet clamping system
- 30 Full metallic toggle cover
- 31 Tie-bar protector
- 32 Closed circuit type cooling water piping 1 line, 8/12/16/20/28 divergence (Clamping side)
- 33 Closed circuit type cooling water piping 2 lines, 16/20 divergence (Clamping side)

Spare parts and accessories

- 1 Spare parts A (Mechanical parts : Lubricant parts)
- 2 Spare parts A (Electrical parts : Thermocouple)
- 3 Spare parts for export. (Encoder, Limit switch, Proximity sensors)
- 4 Leveling pads (For one machine)
- 5 Anchor bolts (for one machine)
- 6 Locating ring (Fixed with bolts) I.D. ø100
- 7 Locating ring (Fixed with bolts) I.D. ø120
- 8 Tools A
- 9 Ejector rods
- 10 Grease gun
- 11 Lubricant cartridge for automatic greasing (700cc x 6pcs./set)
- 12 Lubricant cartridge for automatic greasing (400cc x 6pcs./set)
- 13 Handle for the swiveling plasticizing unit
- 14 Emergency stop button release prevention key
- 15 Tools for exchange the screw tips



External views appearing in this catalog may differ from the actual equipment.

Global Network



Sumitomo Heavy Industries, Ltd. Industrial Machinery Segment, Plastics Machinery Div.

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CL2-7000

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JIS B 6711:2021 (equivalent to ISO 20430:2020)
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We support the enhancement of our customers'
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