Shibaura Machine
View the Future with You

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On April 1, 2020, Toshiba Machine Co., Ltd. changed its corporate name to Shibaura Machine Co., Ltd.

Visit here for product information.

SM25033-700-MP
Printed in Japan

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View the Future with You

New Design

Injection Molding Machines

EC SX III SERIES

S-Concept



EC0202-CED-02

Next-Generation Injection Molding Machine for the Decarbonization Era

ECSX III SERIES S-Concept

NEW

"S-Concept" is Shibaura Machine's proposal to address key challenges in the molding industry: high productivity, labor reduction, and environmental responsibility.



Save Time

Optimizes input to maximize output

S-CUBE

- *High-Performance Screw DBG*
- *PLASTROLII*

SOLID-CLAMP

- *Reduced molding time cycle time (dry cycle)*

iPAQET4.0

- *iPAQET4.0 Trace Plus*

Save the Earth

Contributes to energy saving and building a sustainable society

- *Resin viscosity measurement*
- *Energy-saving heater cover*
- *Air purge*
- *iPAQET 4.0 EM Plus*

Save Workforce

Improves working environment and Helps prevent human error

- *Setting overview screen*
- *Automatic low-pressure clamping force setting*
- *Full-range mold protection*
- *Easy automatic purge setting*
- *Analog signal input*
- *Analog signal output*
- *Power consumption monitor*

Compliant with international safety standards



All-electric injection molding machine

EC SX III SERIES

Wide-range lineup from small to ultra-large machines

High-speed, high-pressure injection
For thick-wall molding

S-Concept

Small-size precision molding machines

- EC50SXIII
- EC75SXIII
- EC100SXIII
- EC130SXIII
- EC180SXIII
- EC230SXIII
- EC280SXIII
- EC350SXIII



High plasticization and the industry's fastest dry cycle time enables to improved efficiency and productivity

Medium and large-size molding machines

- EC450SXIII
- EC550SXIII
- EC650SXIII
- EC850SXIII
- EC1000SXIII

Ultra large-size molding machines

- EC1300SXIII
- EC1300SXIII W
- EC1600SXIII W
- EC1800SXIII
- EC2500SXIII
- EC3000SXIII



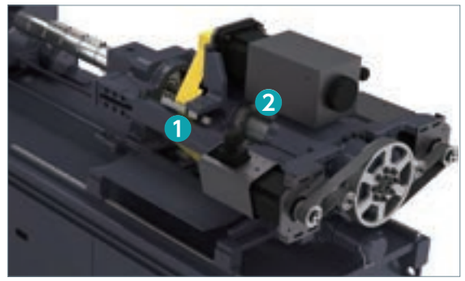


All-electric ultra large-size injection molding machines
EC3000SXIII

S-CUBE

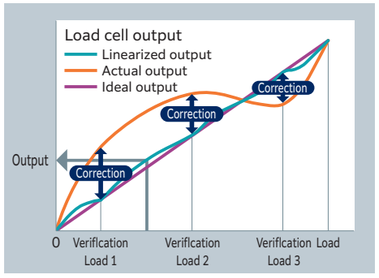
Injection unit for stable plasticizing, filling, andholding pressure

- Friction-free drive minimizes sliding resistance during injection and plasticizing
- Digital load cell with high noise resistance improves pressure detection accuracy
- Linearized correction eliminates variation between load cell units
- High-output motor delivers industry's top highest holding pressure capability

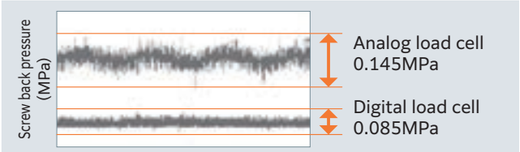


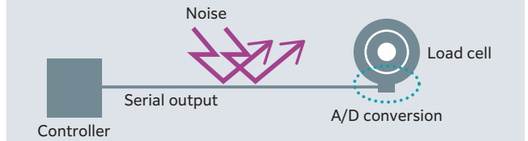


Linearization correction output
Patent No. 5401078



Screw back pressure



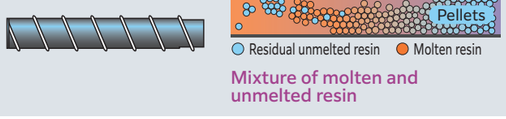


S-CUBE × High-performance Screw DBG

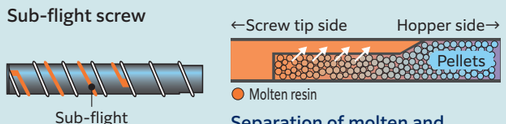
High-performance screw with excellent melting uniformity and dispersion

- Sub-flight at screw tip ensures uniform resin temperature and melt even at high screw speeds
- Sub-flight enhances masterbatch and filler dispersion

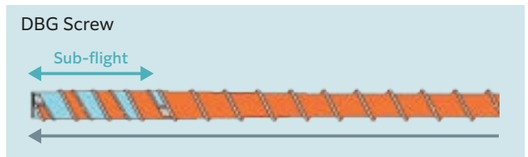
Conventional full-flight screw



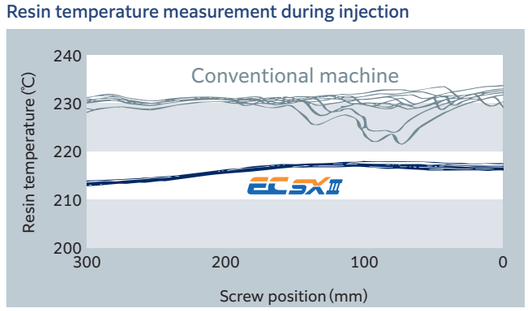
Sub-flight screw



DBG Screw



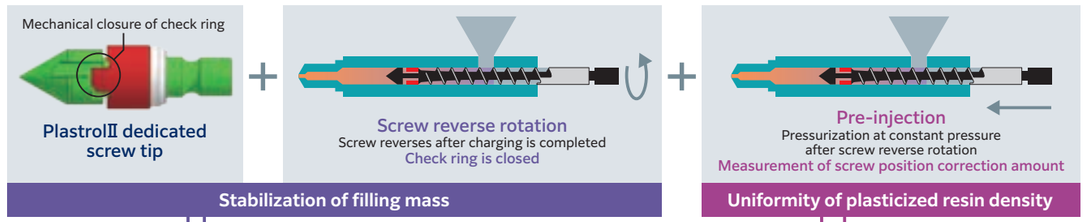
Resin temperature measurement during injection



S-CUBE × PlastrolⅡ Option

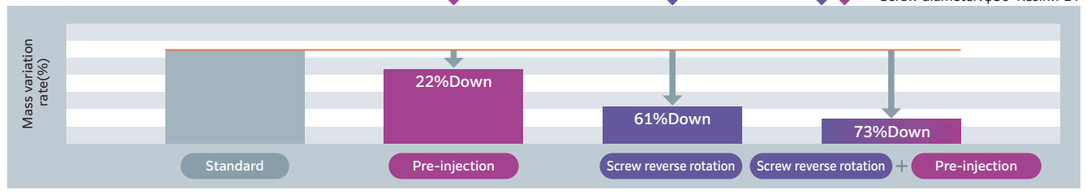
Suppression of resin backflow from the check ring and stabilization of filling mass by uniform plasticized resin density

- Mechanical closure of the check ring before injection eliminates variations during filling
- Stable density is ensured by applying constant temperature and pressure to the plasticized resin, and the screw position setting is automatically corrected according to the screw advance, eliminating shot-to-shot filling mass variation



Mass variation rate

Screw diameter:ϕ36 Resin:PBT

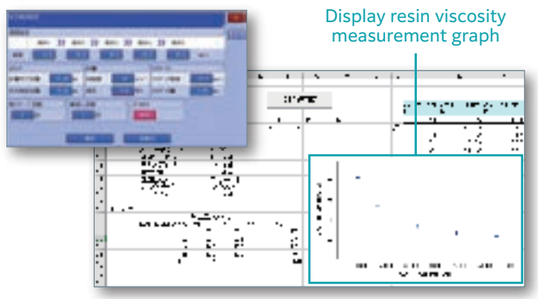


Conventional machine	Mass variation rate can be reduced by screw reverse rotation and pre-injection
ECSX III S-Concept	Mechanical closure of the check ring significantly improves mass variation rate

Resin viscosity measurement Option

Reduce defects and environmental impact by resin viscosity measurement

- Equipped with a function that substitutes for a capillary rheometer (resin viscometer)
- Quantitatively capture resin viscosity changes and use as a basis for adjusting molding conditions
- Measure resin viscosity through purge operation



Conventional machine	■ When the resin material lot changes, good products cannot be obtained even under the same molding conditions ■ Want to investigate resin properties to use as adjustment criteria but lack equipment
ECSX III S-Concept	■ Reduce defects by early decision detection and adjustment utilizing resin viscosity data as judgment criteria ■ Measurement possible without new equipment investment

※Example of molding defects caused by changes in the viscosity of recycled resin

● Increase in resin viscosity: Short shots due to inadequate filling ● Decrease in resin viscosity: Burrs flash due to overfilling (overpacking)

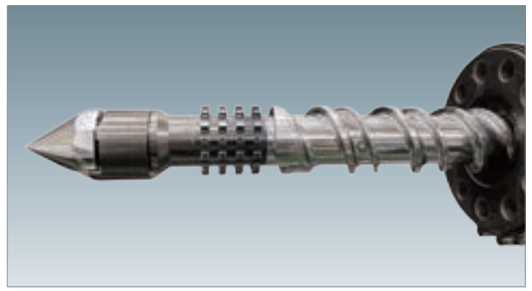
Wide variety of screws tailored to different resins

■ From the standard sub-flight screw (DBG) to other variants, we offer a wide range suitable for various resins

Type	DBG	DBC	ESB	SRB	DBO	BF (EPS3K)	ETIII
Purpose	General-purpose	For rigid PVC	High discharge	Super stable	For transparent resins	Stable adhesion Reduction	General-purpose
Feature			Olefin-based	For precision molding	Whitening streaks Silver streak suppression	Reduces carbides	
Screw diameter (mm)	22～160	25～160	60～160	22～55	40～60	22～45	22～160
Molded products	OA equipment Automotive parts Connectors	Fittings Building materials	Automotive parts Home appliance parts	CD cases Medical devices Precision molded products	In-vehicle lens Transparent molded products	Connectors	Automotive parts Home appliance parts
Resins	Flame-retardant ABS Engineering plastic PP･PE	PVC	PP PE	ABS PBT	PMMA PC	PA PBT POM	PP For filled materials

High dispersion element: Cross ring

■ Provides high color dispersion while reducing resin waste during color or material change
■ Reduces pressure loss during injection, a challenge with mixing nozzles



(Color dispersion performance) PP + 1% master batch

Back pressure	3MPa	7MPa
None		
Cross Ring		
Mixing nozzle		

Compliant with international safety standards

■ Compliant with JIS B 6711:2021 (ISO 20430:2020)

SR Safety Requirements JIS B 6711 2021
日本産業規格 JAPANESE INDUSTRIAL STANDARD JIS B 6711 適合



"Multi-material molding" for enhancing functionality and added value of molded products
Sub injection unit EC PLUS+ to meet those needs

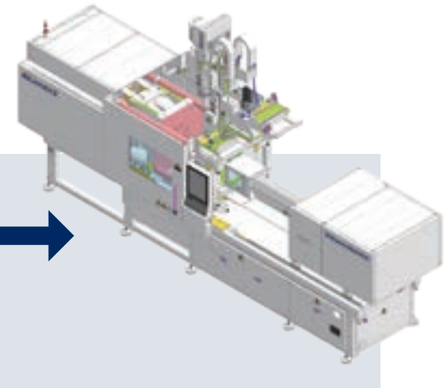
■ Supports sandwich molding with the addition of the newly developed sub injection unit “EC PLUS+”
■ Compatible with both vertical and horizontal injection layouts
■ Main and sub injection settings can be configured from the V70 interface
■ Optional electric rotary unit available


Vertical injection layout


Horizontal injection layout



V70 injection setting screen



■ Replaceable with platen plate
■ Can be used together with sub injection
■ Retrofit and on-site modification possible
■ Compatible models: 100, 230, 280, 350 ton

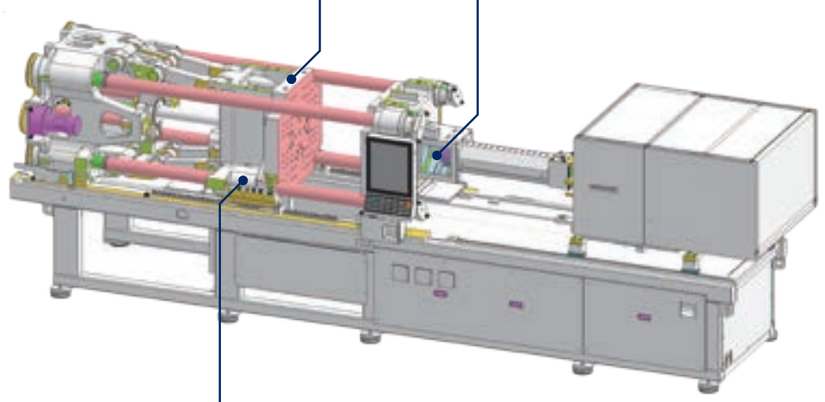


Rotary table module

※Daylight will be reduced when rotary module is installed.

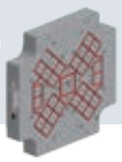
■ Add-on to control panel
■ Main and sub injection controlled from a single screen
■ Unified management of conditions and monitoring
■ Compatible screw sizes: ϕ18 to ϕ25

Sub injection module EC PLUS+



Magnet clamp module

■ Replaceable with platen plate
■ Minimal impact on daylight due to installation
■ Easy on-site installation
■ Compatible models: 50 ton to 350 ton



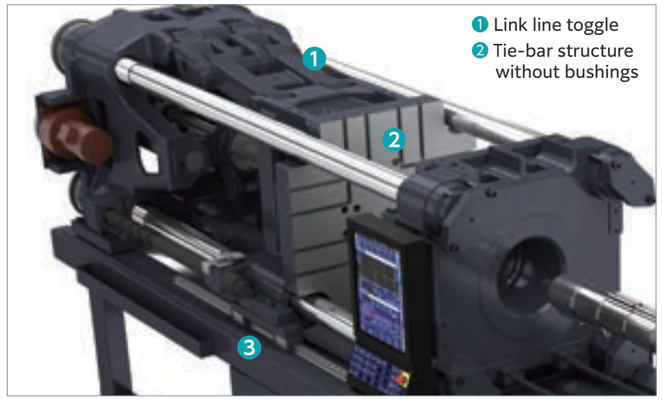
SOLID-CLAMP

Clamping Unit achieving high productivity and clean environment

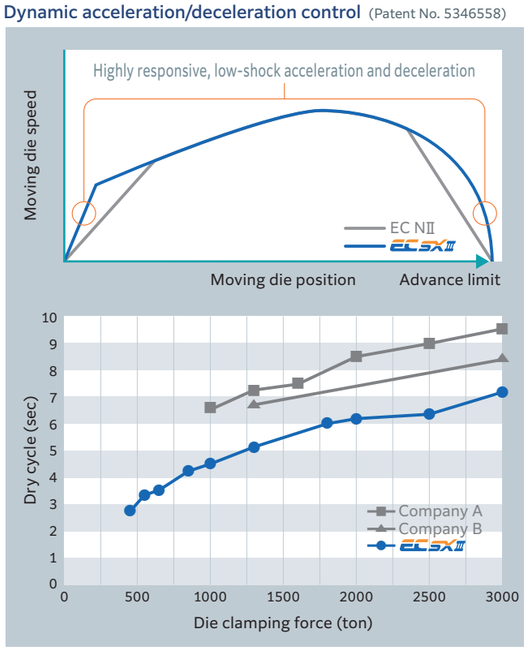
- Smooth mold opening/closing motion and improved linearity with moving platen linear guide support structure
- Uniform clamping force distribution enabled by double rigid plates and link line toggle mechanism
- Clean environment that prevents contamination of molded products and molds through tie-bar bushless structure and linear guides
- Includes dynamic acceleration/deceleration control (Shibaura Machine patented technology) for achieving both high-speed mold opening/closing and reduced shocks Fastest dry cycle times in the industry for even higher productivity
- Automatic clamping force compensation control [DST-PRESS] to maintain a consistent clamping force

❸ Linear guide support structure

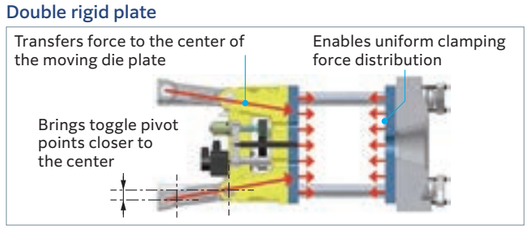




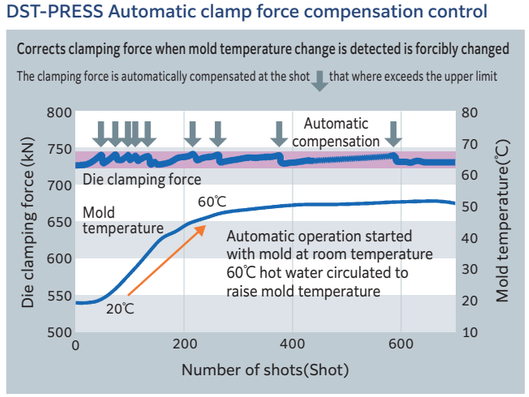
Dynamic acceleration/deceleration control (Patent No. 5346558)



Double rigid plate



DST-PRESS Automatic clamp force compensation control



Want to quickly boost production efficiency

Want to improve efficiency, but are concerned about quality impact from molding conditions change

Want to reduce cycle time to allow more flexibility for other processes

We have the solution

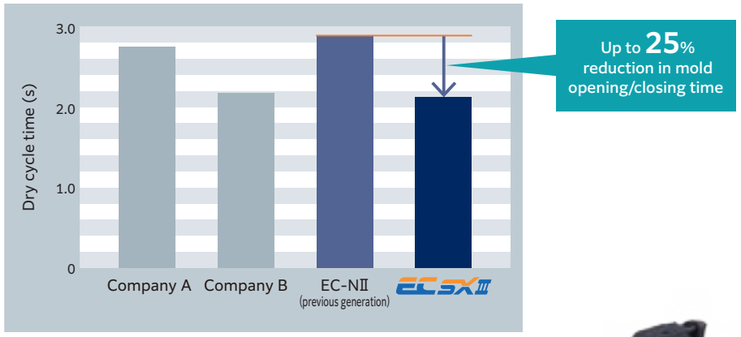
SOLID-CLAMP × Cycle Time Reduction

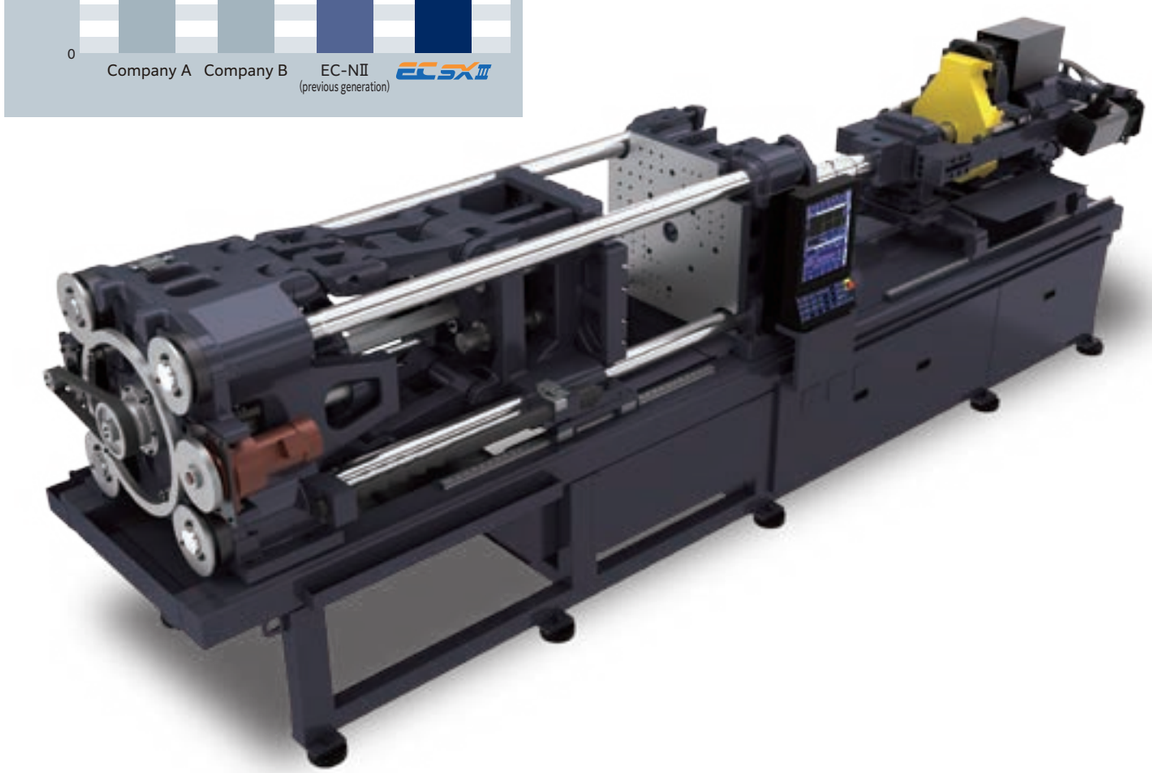
Shorten cycle time without changing molding conditions

- Shorter cycle time without affecting quality, using existing molding settings
- Up to 168 hours saved annually compared to EC-NII (previous generation)*

*Based on identical injection conditions, 10-second cycle time, and 200 production hours per month ※Adjustments may be required depending on your production system

Comparison of dry cycle time (clamping force 200t class)

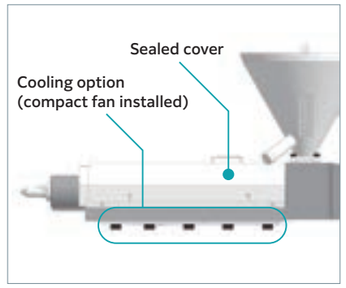




Energy-Saving Heater Cover

Achieve lower power consumption and higher productivity with the energy-saving heater cover!

- Improved heat retention performance reduces power consumption
- Optional enhanced cooling performance shortens setup time



	Power consumption	Annual CO_2 emissions	Cooling time
Conventional model	2.1 kW	5600 kg-CO_2	70 min
	Compared to EC-NII (Previous generation):		
EC-SX III S-Concept	1.6 kW 24% reduction※1	4300 kg-CO_2 24% reduction※1	30 min 60% reduction※3
	Approx. JP¥52,000 annual savings※2		High productivity

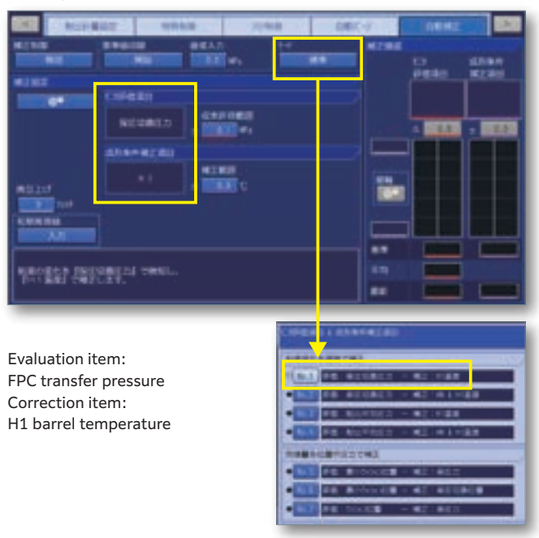
※In this catalog, "cooling" refers to situations where temperature is lowered.
※Available in standard specification only
※1: Measured at 240°C heat retention (i6A: ϕ45) ※2: Calculated with 60% operation rate and 1kWh=JP¥20
※3: With cooling option installed (240℃ → 180℃)

Utilization of regrino Materials

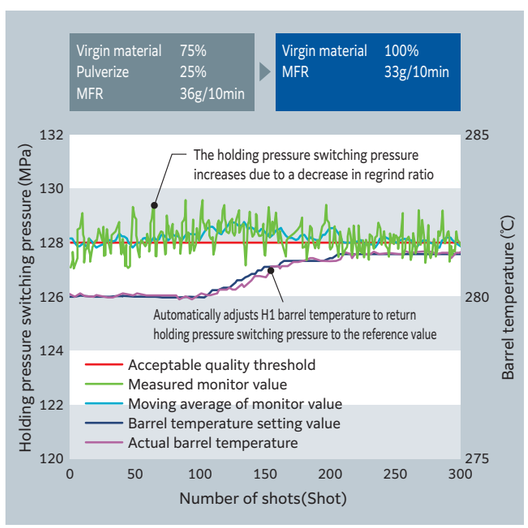
Reduce defects caused by resin property variation fluctuations with auto molding condition adjustment function [DST-FILL]

- Viscosity changes due to regrind material ratio variations cause defects such as short shots or flashes
- Monitors viscosity changes via data like holding pressure switching pressure, and automatically adjusts barrel temperature and other settings to keep resin viscosity constant and prevent defects

Setting Screen



Evaluation item:
FPC transfer pressure
Correction item:
H1 barrel temperature

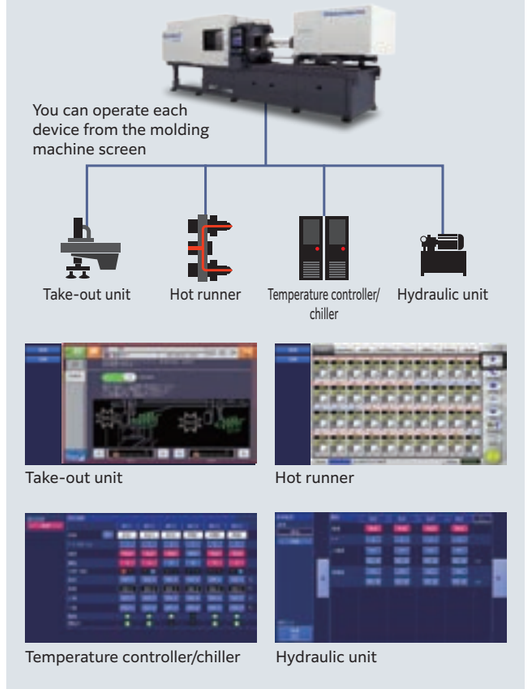


Peripheral Equipment Plugin Function

Option

Make operation easier! Just plug in!

- Operation of each device is possible from the molding machine screen

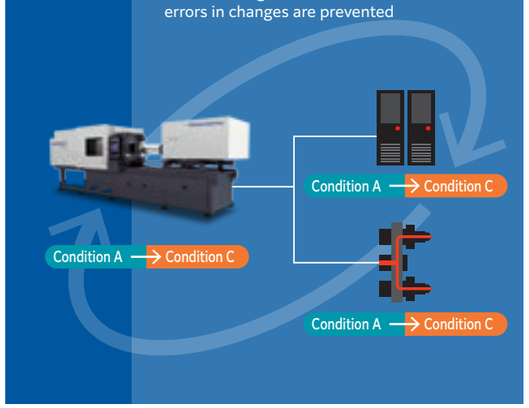


Before introduction

- Every time molding conditions (mold) are changed, the equipment must be operated to adjust peripheral equipment conditions
- Each device operates independently, which may cause errors when changing conditions

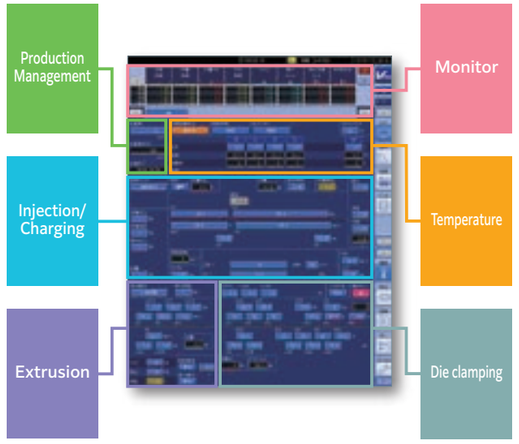
After introduction

- No need to change peripheral equipment conditions individually
- Since molding conditions are linked, errors in changes are prevented



V70 Setting Screen

Aggregates the six essential elements for settings into one screen, improving efficiency in condition setting



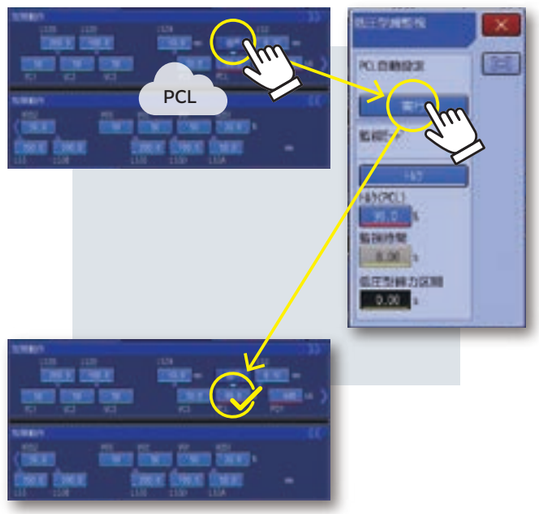
Conventional model
- Set molding conditions while switching to the desired screen
- Create molding condition sheets by handwriting

EC-SX III S-Concept
- Basic settings are completed on one screen, reducing screen switching and improving efficiency in molding condition creation
- Screenshots can be directly used as molding condition tables

Automatic Low-Pressure Clamping Force (PCL) Settings

Automatically sets reference values. Advanced mold protection function

- Automatically calculates and sets recommended values for low pressure clamping force (PCL)
- Fine adjustments from the automatic settings can enhance mold protection effects



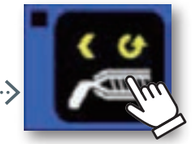
Conventional model
- Setting methods are unclear
- Trial and error is frequent to set properly
- If the setting value is too high, mold protection effect is reduced

EC-SX III S-Concept
- Reference values can be automatically set with one button
- Fine-tuning from the reference reduces the range for trial and error
- Proper settings result in greater mold protection effects

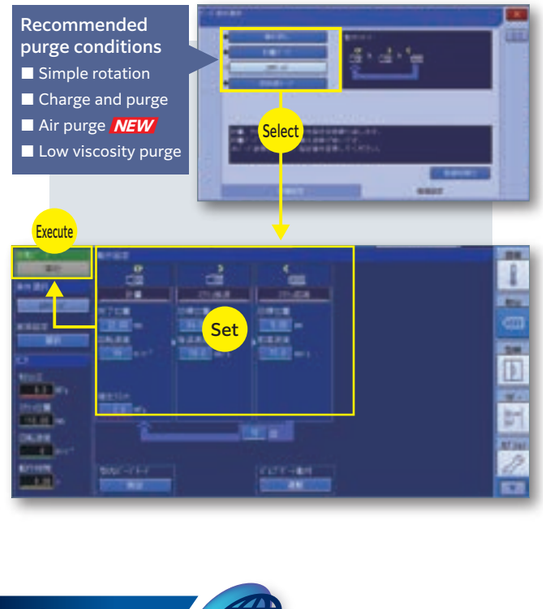
Simple Auto-Purge Settings

Reduces purging time and resin loss. Simplifies purging operations

- Automatically sets recommended purge conditions and values
- Execute purge operation with simple steps — Can also be executed from the operation panel



Recommended purge conditions
- Simple rotation
- Charge and purge
- Air purge NEW
- Low viscosity purge



Conventional model
- Extra time and resin are wasted due to unclear operations or settings
- Purge operations are done manually by operators

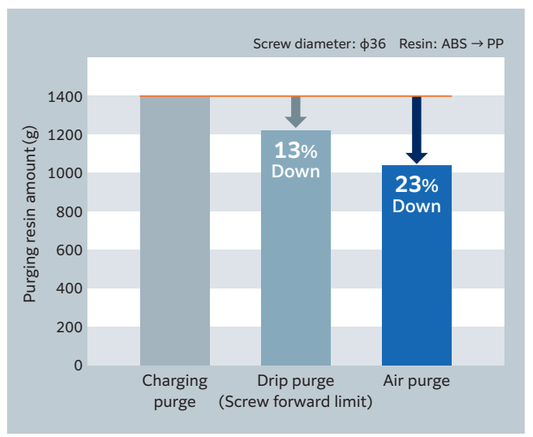
EC-SX III S-Concept
- No need to decide fine operations or settings, reducing purge time and resin loss
- Automatically executes predefined purge operations with one button, simplifying steps and preventing human error

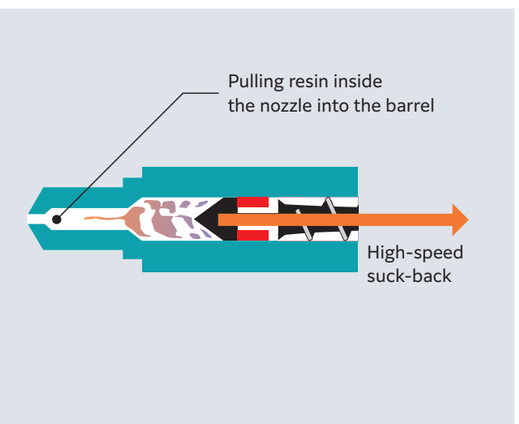
- Purge can be performed without changing production molding conditions
- Recommended values can be modified and saved
  Please adjust according to the resin and operating conditions

Air purge

Greatly improves resin change efficiency. Clean and waste-free resin replacement

- During auto purge, fast suck-back pulls resin inside the nozzle back into the barrel, greatly improving resin change efficiency





V70 Power Consumption Monitor

Displays power consumption of molding machine (Calculated Value)

- Displays power consumption, accumulated power, trend graph of power over a specific period, electricity cost, etc.
- Power consumption data can be saved to USB memory. Backup data for up to one year can be retrieved





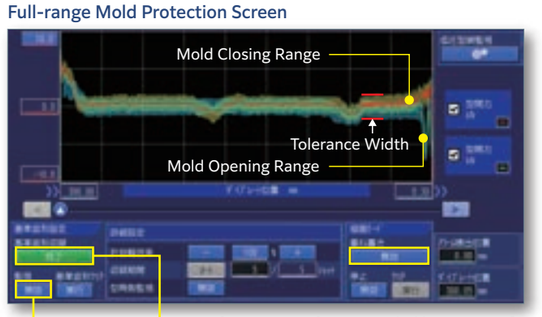
Conventional model	■ Want to know the electricity cost per product unit ■ Want to know the daily power consumption of the molding machine
ECSXIII S-Concept	■ Easily check “electricity cost” and “power consumption” ■ Retrieve backup data for the past year ■ Data can be saved in CSV format to USB memory

Full-range Mold Protection

Monitor abnormalities during the entire mold open/close operation with simple settings

- Captures reference waveform and enables one-touch setting
- Monitors both mold closing and mold opening processes
- Higher precision protection than before to prevent mold damage in advance

Full-range Mold Protection Screen



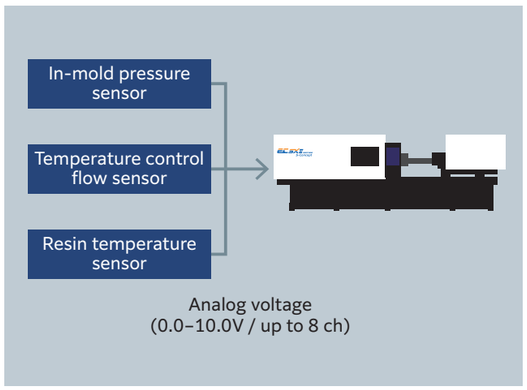
Reference waveform recorded by pressing [Start] for [Reference Waveform Capture]
Set [Mold Protection] from [Disabled] to [Enabled] to activate

Conventional model	■ Too many setting items and complex configuration ■ Monitoring range must be set partially
ECSXIII S-Concept	■ Just press three buttons in sequence on the screen Anyone can easily set it up ■ Uniform monitoring of the entire mold opening/closing range is possible

Analog Signal Input Option

Simplify "Visualization"

- Visualize by importing external sensor data into the molding machine
- Quality control using external sensor data

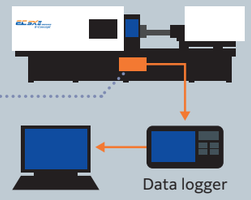


Conventional model	■ Data management is cumbersome ■ Cannot import external sensor data into the molding machine
ECSXIII S-Concept	■ Centralized management of all data on the molding machine ■ Saved as monitoring data Alarm output in case of abnormalities

Analog Signal Output Option

Want to analyze molding machine data

- Outputs each axis's speed, barrel temperature, etc. as analog voltage (current)
- Always possible to import operation data of the molding machine into a data logger

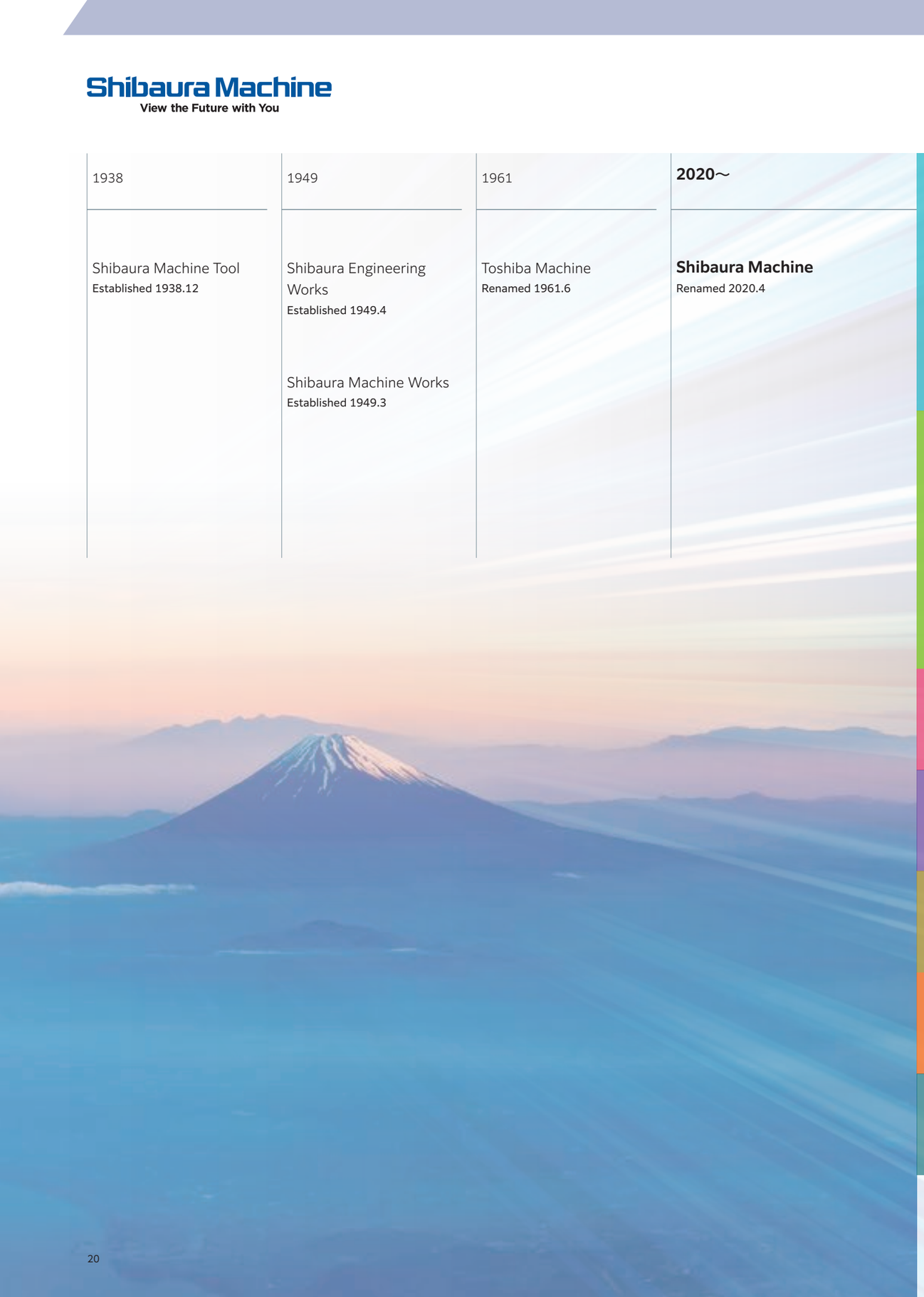


- **Injection** (Torque, speed, position, pressure)
- **Charging** (Torque, speed)
- **Clamping** (Torque, Crosshead position, Moving platen position, clamping force)
- **Extrusion** (Torque, speed, position)
- **Barrel** (Temperature, energization rate) etc

Conventional model	■ Customers cannot handle it themselves ■ Installation of measuring instruments (not for sale) ■ Setting measurement range using conversion coefficients
ECSXIII S-Concept	■ Enables continuous data acquisition ■ Connect customer's own data logger ■ Easy measurement range setting method

Shibaura Machine
View the Future with You

1938	1949	1961	2020～
Shibaura Machine Tool Established 1938.12	Shibaura Engineering Works Established 1949.4 Shibaura Machine Works Established 1949.3	Toshiba Machine Renamed 1961.6	**Shibaura Machine** Renamed 2020.4



OUR PRODUCTS

Injection Molding machines
■ All electric type







Die-casting machines
■ Die casting machine with electric die locking mechanism





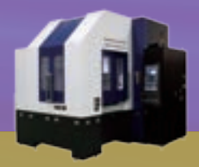


Plastic Extrusion machines
Converting Equipment
■ Twin Screw Extruder



High- Precision machines, Optical Glass Mold Press machines
■ High-Precision aspheric generator machines
■ High-Precision vertical machines
■ High-Precision optical glass molding press machines





Machines Tools
■ Table type
■ Double column type machining centers
■ Vertical boring and turning mills





Foundry & machining



Industrial Robots, Electric Controls
■ Robots
■ FA control systems



Offices and Plants

Europe

Sales and Service Offices

Shibaura Machine Europe S.R.L.
- Milan Head Office

East Asia

Sales and Service Offices

Shanghai Shibaura Machine Co., Ltd. (China)
- Shanghai Head Office
- Beijing Office
- Tianjin Office
- Dalian Office
- Chongqing Office
- Ningbo Office

Shibaura Machine (Shenzhen) Co., Ltd. (China)
- Shenzhen Head Office
- Guangzhou Branch

Shibaura Machine Taiwan Co., Ltd. (Taiwan)
- Taipei Head Office

Production Sites

Shibaura Machine (Shanghai) Co., Ltd. (China)
- Shanghai Head Office

Southeast Asia

Sales and Service Offices

Shibaura Machine (Thailand) Co., Ltd. (Thailand)
- Bangkok Head Office

Shibaura Machine Singapore Pte. Ltd. (Singapore)
- Singapore Head Office
- Kuala Lumpur Office
- Pt. Shibaura Machine Indonesia (Jakarta)

Shibaura Machine Vietnam Company Limited (Vietnam)
- Hanoi Head Office
- Ho Chi Minh Office

Shibaura Machine India Private Limited (India)
- Chennai Head Office
- Delhi Office
- Mumbai Office

Production Sites

Shibaura Machine Manufacturing (Thailand) Co., Ltd. (Thailand)
- Rayong Head Office

Shibaura Machine India Private Limited (India)
- Chennai Head Office

North and South America

Sales and Service Offices

Shibaura Machine Company, America (U.S.A.)
- Chicago Head Office
- Los Angeles Office
- Charlotte Office
- Canada Branch

Shibaura Machine Mexico, S.A. DE C.V. (Mexico)
- Leon Head Office

Shibaura Machine Do Brasil Comercio De Maquinas Ltda. (Brazil)
- Sao Paulo Head Office



Numazu Headquarters/Numazu Plant



Sagami Plant



Gotemba Plant



Shibaura Machine India Private Limited (India Plant)



Shibaura Machine (Shanghai) Co., Ltd. (China Plant)



Shibaura Machine Manufacturing (Thailand) Co., Ltd. (Thailand Plant)