

Co-innovating Excitement with Mechatronics



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RLS0008CT 2024/08

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Catalog 2024-2025





Co-innovating Excitement with Mechatronics

Company Mottos

1. Contribute to the advancement of human health and medicine, focusing on drug discovery and regenerative medicine.
2. Strive for research and development of leading-edge technologies in various fields, contributing to economic and societal development.
3. Commit to providing clean and safe products, aiming to create a livable earth and a prosperous society.
4. Build a corporate culture based on a 'good environment,' 'good people,' and 'good technology'.
5. Pursue long-term, stable growth with innovative management globally.
6. Work towards co-creation and mutual prosperity through open business relationships.

Cell Culture Solutions

Accuracy is significant for cell culturing, particularly for primary cells and iPSCs. Our company has addressed many challenges associated with traditional incubators. Additionally, providing automated instruments for various processes, including medium exchange, harvesting, seeding, observation, labware transport, etc.

Each instrument is modularized for independent operation or seamless integration into a system, leveraging the latest technologies such as scheduling software and data services. Moreover, we are establishing and operating wet labs dedicated to advancing regenerative medicine, developing innovative culture techniques and protocols.

Drug Discovery

In modern laboratories, integrating devices from global suppliers requires complex process design, making powerful scheduling software essential.

Green Button Go (GBG) scheduling software supports over 350 types of devices, and can perform sequential processing, parallel processing, and process interruption, allowing processes to be paused or modified. Furthermore, the 'Green Button Go Orchestrator' works in tandem with GBG to manage laboratory logistics, from individual workstations and standalone instruments to manual tasks.

Additionally, we innovate various lab automation devices, including storage, transport, sealing, shaking, capping/decapping, spin-down mechanisms, etc. To ensure precise execution of assay protocols, we implement ID management across various labware, including SBS standard plates, flasks, dishes, and sample tubes.

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Automated CO₂ Incubator
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SCALE Series

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iASP

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Stocker

Twist Decapper

Plate Spinner

Lid Station

Handling Robot

Automated Cell Culture System

Compatible Modle

SCALE Series



CellKeeper® Series



CellKeeper® Plus Series



The Automated Cell Culture System begins with the 'SCALE series' automated CO₂ incubator, developed specifically to meet user requirements. Building on this foundation, we introduced the 'CellKeeper series', featuring an automated medium exchange module, and subsequently the 'CellKeeper Plus series', which integrates an advanced microscope module. Emphasizing flexibility, our system can be used from 60 mm and 100 mm dishes to SBS standard plates while maintaining strict environmental conditions and rigorous contamination control.

The 'CellKeeper series' and 'CellKeeper Plus series' have dedicated schedulers to manage culture, medium exchange, and observation schedules. These systems can flexibly control various parameters, such as exchange volume and dispensing rate, automatically processing tasks according to preset conditions.

According to customers' needs, the system allows for the seamless combination of CO₂ incubator modules, medium exchange modules, and microscope modules, freeing researchers from routine tasks and enabling them to focus on more critical aspects of their work.

Automated CO₂ Incubator Lineup

	CO ₂ Incubator Module	Medium Exchange Module	Microscope Module	CellKeeper Scheduler
SCALE Series	✓	—	—	—
CellKeeper Series	✓	✓	—	✓
CellKeeper Plus Series	✓	✓	✓	✓

Module

CO₂ Incubator Module

- Supports stable culture of up to 120 dishes or plates.
- Maintains high stability through the separation of electrical components and drive systems from the high-temperature, high-humidity chamber.
- Enables the removal of internal components from the chamber for effortless cleaning.
- Provides consistent temperature control through direct heating technology.
- Capable of dry heat sterilization, efficiently handling cleaning, decontamination.
- Minimizes changes in the internal environment during plate loading and unloading with a innovative shutter mechanism.

Medium Exchange Module

- Accommodates up to four 2 L medium bottles.
- Provides refrigerated storage for culture media, with a heating mechanism to warm the media before dispensing.
- Utilizes disposable tips for medium aspiration to prevent cross-contamination.
- Ensures dispensing accuracy within CV±1% (with 10 mL dispensing).
- Supports medium exchange for 16 or more dishes (Φ100 mm) per hour.
- Capable of adjusting aspiration volume.
- Possible to set culture schedules by plate unit and group unit.

Microscope Module

- Synchronized control of a microscope and high-precision XY stage.
- Functionality to save observation positions as templates.
- Customizable settings for coordinates, magnification, and autofocus per imaging unit.
- Enables batch observation of the entire well using synthesized images with the tiling function for observation data.
- Allows for consistent control of CO₂ concentration and temperature during imaging.

Scheduler

- A dedicated scheduler for both the CellKeeper® series and CellKeeper® Plus series.
- Enables scheduling on a dish or plate basis.
- Controls schedules and manages parameters including medium type, exchange volume, and dispensing rate.
- Easy operation via the front touch panel.

Transfer Robot

- Dishes/plates are supported from below by the robot arm to prevent dropping during transportation.
- Collision prevention is ensured by detection sensors at the robot arm's tip and stocking sensors.
- The CO₂ incubator employs innovative shutter mechanisms for plate loading and unloading.

SCALE Series

The SCALE series integrates a CO₂ incubator with a robot, developed in response to our user feedback.

It utilizes independently controlled heater panels to achieve exceptional temperature accuracy through direct heating, ensuring uniform temperature distribution within the chamber.

A shutter mechanism is employed to minimize changes in the chamber environment. Additionally, autonomous distributed control eliminates the necessity for air circulation, eliminating HEPA filters and air ventilation fans to reduce edge effects and minimize contamination spread within the chamber.



SCALE 48

SCALE 120

Specifications

Product Name	SCALE 48	SCALE 120
Product Number	iPIC-0806-01R-RSIF	iPIC-2006-01R-RSIF
External Dimensions (W × D × H) (mm) *Excluding protrusions	620 × 917.5 × 720	620 × 911 × 1,260
Weight (approx.)	230 kg	250 kg
Compatible Vessel Type	SBS standard plate Φ100 mm dish* Φ60 mm dish*	
Storage Capacity	SBS standard plate: 48 ea.	SBS standard plate: 120 ea.
	Φ100 mm dish: 48 ea.	Φ100 mm dish: 120 ea.
	Φ60 mm dish: 96 ea.	Φ60 mm dish: 240 ea.
Temperature	RT. +7~50 °C	
CO ₂ Concentration	0~20% (at 5% ± 0.5%)	

*Special adapters are required when using dishes.

CellKeeper® Series

The CellKeeper series is a comprehensive automated cell culture system integrating a CO₂ Incubator Module, Media Exchange Module, and Transfer Robot.

The culture medium is refrigerated for storage and warmed before supply to minimize cell damage, ensuring stable cell quality.



CellKeeper 120

CellKeeper II 120

Specifications

Product Name	CellKeeper 120	CellKeeper II 120	
Product Number	iCCS-120-ME1-001	iCCS-120-ME2-001	
External Dimensions (W × D × H) (mm) *Excluding protrusions	620 × 882 × 1,900	852 × 903 × 1,900	
Weight (approx.)	350 kg	500 kg	
CO ₂ Incubator Module			
Compatible Vessel Type	6 well plate~96 well plate: 120 ea. Φ100 mm dish*: 120 ea. Φ60 mm dish*: 240 ea.		
Temperature	RT. +7~50 °C		
CO ₂ Concentration	0~20% (at 5% ± 0.5%)		
Medium Exchange Module			
Medium Cooling Unit	Channel Numbers	1 Channel	4 Channels
	Storage Volume	2 L	
	Storage Temperature	2~8 °C	
Dispense Unit	Dispense Temperature	RT. +7~40 °C	
	Dispense Speed	0.1~1 mL/s	
	Dispense Volume	0.1~50 mL	
Aspiration Unit	Aspiration Method	Peristaltic pump	
	Aspiration Speed	0.1~2 mL/s	
	Nozzle Type	Disposable tip	
SBS plate medium exchangeable area	Accessible 2/3 of all well	Accessible all well	

*Special adapters are required when using dishes.

CellKeeper® Plus Series

The CellKeeper Plus series represents an advanced integration of the 'CellKeeper series' with the automated microscope module 'CellShot'.

'CellShot' features a high-precision XY stage, facilitating precise image capture at desired coordinates.

This series includes medium cooling unit for 2 L medium bottles and simultaneously supports the culture of up to 48 plates.

Furthermore, it regulates temperature and CO₂ concentration during observation to minimize potential damage to cells.

Specifications

Product Name	CellKeeper 48 Plus	CellKeeper II 48 Plus	
Product Number	iCCS-48-ME1-002	iCCS-48-ME2-002	
External Dimensions (W × D × H) (mm) *Excluding protrusions	620 × 917.5 × 1,900	852 × 917.5 × 1,900	
Weight (approx.)	480 kg	600 kg	
CO ₂ Incubator Module			
Compatible Vessel Type	6-well plate~96-well plate: 48 ea. Φ100 mm dish*: 48 ea. Φ60 mm dish*: 96 ea.		
Temperature	RT. + 7~50 °C		
CO ₂ Concentration	0~20% (at 5% ± 0.5%)		
Medium Exchange Module			
Medium Cooling Unit	Channel Numbers	1 Channel	4 Channels
	Storage Volume	2 L	
	Storage Temperature	2~8 °C	
Dispense Unit	Dispense Temperature	RT. + 7~40 °C	
	Dispense Speed	0.1~1 mL/s	
Aspiration Unit	Aspiration Method	Peristaltic pump	
	Aspiration Speed	0.1~2 mL/s	
SBS plate medium exchangeable area	Accessible 2/3 of all well	Accessible of all well	
Microscope Module			
Temperature	RT. + 7~45 °C		
CO ₂ Concentration	0~20%		
Optical System	Inverted phase contrast microscope		
Light Source	Red LED		
Magnification (approx.)	× 1.6 (4.24 × 3.39 mm), × 4.0 (1.69 × 1.36 mm)		
Camera	High-sensitivity 1.31-megapixel monochrome camera Effective pixel count: 1,280×1,024 pixels		
Image Storage Format	BMP, TIFF, JPEG		

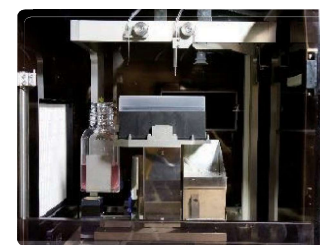
*Special adapters are required when using dishes.



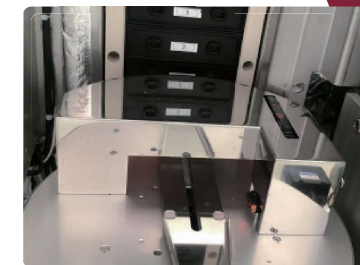
CellKeeper II 48 Plus



CellKeeper 48 Plus



Medium exchange module



Block-type shutter & Transfer robot



Lightweight racks & Completely flat for easy chamber maintenance



Automated loading and unloading per plate/dish



Four cooling units for medium storage

SCALE Series

CellKeeper Series

CellKeeper Plus Series

CELLSHOT

IASP

IDSP

Shocker

Twist Deepener

Plate Spinner

Lid Station

Handling Robot

SCALE Series

CellKeeper Series

CellKeeper Plus Series

CELLSHOT

IASP

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Plate Spinner

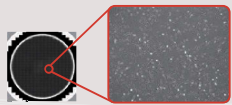
Lid Station

Handling Robot

CellShot®



CellShot Interface



Bone marrow-derived mesenchymal stem cells (x1.6 times)

Cellshot is an imaging system that automatically captures and records microscope images of cell cultures using dishes or multi-well plates.

- Features a high-precision XY stage for precise imaging position control.
- Allows observation at different magnifications for each position.
- Utilizes a tiling function for batch observation of entire wells with synthesized images.
- Integrates seamlessly with various equipment, including the SCALE series and CellKeeper series.

Specifications

Product Number	iCWS-N02-001
External Dimensions (W × D × H) (mm) *Excluding protrusions	290 × 348 × 460
Weight (approx.)	25 kg
Power Supply	AC100-240V 2A
Optical System	Inverted Phase-Contrast Microscope
Light Source	Red LED
Magnification (approx.)	× 1.6 (4.24 × 3.39 mm), × 4.0 (1.69 × 1.36 mm)
Camera	High-sensitivity 1.31-megapixel monochrome camera
Effective Pixel Count	1,344 × 1,024 pixels
Focus	Manual/ Auto
Position	Specify any position via software
Image Storage Format	BMP, TIFF, JPEG

iASP • iDSP

iASP

The iASP is an aspirator system compatible with hydrogen peroxide sterilization

- Utilizes peristaltic pump system for liquid delivery.
- Offers the flexibility to choose between integrated and detachable pump heads.
- Controller operates separately, controlled by a foot switch.

Specifications

Product Name	Aspirator (STD)	Aspirator RM (Magnet Coupling)
Product Appearance		
Product Number	iASP-01-ST	iASP-01-MC
Type	Integrated pump head type	Detachable pump head type (Operated by magnet coupling)
External Dimensions (W × D × H) (mm) *Excluding protrusions	Pump Head	100 × 154.8 × 85
	Pump	124 × 127 × 180
	Controller + Foot Switch	150 × 280 × 185
Weight (approx.)	10 kg	
Power Supply	AC100V 50/60Hz 6A	
Speed	1~10 mL/s	

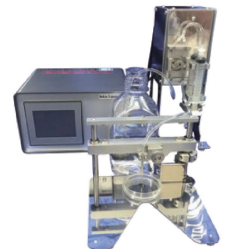
iDSP

The iDSP is a dispenser system compatible with hydrogen peroxide sterilization.

- Utilizes syringe pump system for liquid delivery.
- Allows adjustable dispensing speed and volume.
- Controller operates separately, controlled via a touch panel.

Specifications

Product Name	Dispenser RM	
Product Number	iDSP-01	
External Dimensions (W × D × H) (mm) *Excluding protrusions	Nozzle	160 × 140 × 120
	Pump	127 × 120 × 255
	Controller + Touch Panel	200 × 160 × 125
Weight (approx.)	8 kg	
Power Supply	AC100V 50/60Hz 6A	
Speed	0.1~3.0 mL/s	



Stocker

PeltierStock

Peltier Element Module Cooling Storage

Specifications

Product Number	iPPS-18-HTL-01
Weight (approx.)	90 kg
Power Supply	AC100V 50/60Hz 15A
External Dimensions (W × D × H) (mm) *Excluding protrusions	640 × 350 × 1,560
Storage Capacity	18 plates/rack (for shallow plates)*
Temperature Control Accuracy	4 ± 3°C (Installation environment: Room temperature)

*The slots can be adjusted to accommodate the height of the plates. Please feel free to contact us for more information.



PeltierStock

VariStock • VariPort Slim

- Supports storage of over 200 SBS standard plates (for shallow plates) with capacity for 8 racks.
- Customizable settings for plates of varying types (thickness) are available per rack.
- Designed for convenient rack loading and unloading.
- The Variport Slim features an integrated transfer robot that provides random access to plates, functioning as both a hotel-type stocker and a stacker. It is also equipped with barcode scanning capability to enhance operational efficiency.



VariPort Slim

VariStock

Specifications

Product Name	VariStock	VariPort Slim
Product Number	iCPPS-200-00-000	iCPPS-200-SBY-01-02
Type	Without Robot	With internal transfer robot (with Barcode Reader)
External Dimensions (W × D × H) (mm) *Excluding protrusions	600 × 610 × 1,360	600 × 910 × 1,230
Weight (approx.)	50 kg	120 kg
Storage Capacity	Shallow plate 25 slots × 8 cartridges = 200 ea. Tip Box 8 slots × 8 cartridges = 64 ea.	Shallow plate 350 ea. (stack rack type) Shallow plate 25 slots × 8 cartridges = 200 ea. Tip Box 8 slots × 8 cartridges = 64 ea.
Rack Options	Type① 5 Slots Rack : Pitch = 140 mm Type② 8 Slots Rack : Pitch = 84 mm Type③ 10 Slots Rack : Pitch = 70 mm Type④ 20 Slots Rack : Pitch = 35 mm Type⑤ 25 Slots Rack : Pitch = 28 mm	Type① 5 Slots Rack : Pitch = 140 mm Type② 8 Slots Rack : Pitch = 84 mm Type③ 10 Slots Rack : Pitch = 70 mm Type④ 20 Slots Rack : Pitch = 35 mm Type⑤ 25 Slots Rack : Pitch = 28 mm Type⑥ Stack Rack (Capable of storing over 40 shallow plates)

Twist Decapper

- Capable of efficiently removing and attaching screw caps for racks containing 48 or 96 tubes in bulk.
- Compatible with screw cap tubes in SBS standard racks.
- Option to choose between standalone manual access type and automation-compatible type.
- Includes our patented decapping mechanism.



TWD-96



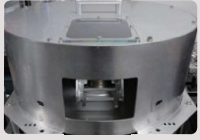
TWD-96R

Specifications

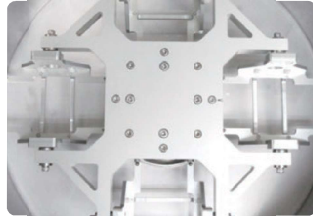
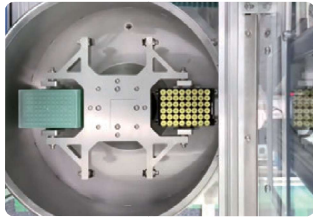
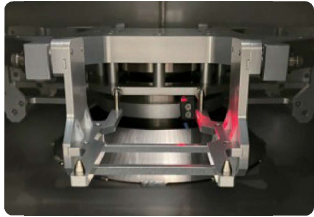
Product Name	TWD-96	TWD-96R
Product Number	iTWD-96-01-(H01 or H02) (*1)	iTWD-96-02R-RSIF-(H01 or H02)
External Dimensions (W × D × H) (mm) *Excluding protrusions	300 × 300 × 450	219 × 575 × 530 (*2)
Weight (approx.)	30 kg	35 kg
Type	Manual	Automated

(*1)Head selection is based on the type of tube.
(*2)Dimensions may vary based on integration. Please feel free to contact us for more information.

Plate Spinner



- /// Spins down up to 4 SBS plates or tube racks (up to 55 mm thick) simultaneously.
- /// Possible to be integrated into the automation process.
- /// Capable of tolerating imbalances up to 100 g.



Specifications

Product Name	Spinner
Product Number	iSPIN-04-25S-RSIF
External Dimensions (W × D × H) (mm) ※Excluding protrusions	500 × 508 × 715
Weight (approx.)	145 kg
Plate Type	Plates up to 55 mm thick
Maximum Spin Force (approx.)	2,000 rpm (800 G)
Maximum Rotation Time	5 min
Imbalance Tolerance	Up to 100g

Lid Station



- /// Effective for pre- and post-dispensing processes, and supports integration with low-deck liquid handlers.
- /// Supports labware of different heights within one mechanism (with limitation).

Plate Transfer Module

Handling Robot

- /// The robot connects each device in the automation process.



/// Paddle-type Arm Robot

- Supporting labware from below to prevent it from falling during transportation.
- Prevents double stacking with work detection sensors.
- Maximizes transportation space with the utilize of a combination of traveling and turning components.
- Features barcode scanning functionality.



/// Scalar-type robot

- Equipped with encoders on horizontal multi-joints.
- Capable of gripping both the short and long sides of the plate, making it compatible with various devices.

Various configurations such as sliders, arms, and self-driving robots can be customized to suit specific applications. For more information, please feel free to contact us.