TOMY AUTOCLAVES

Secure Sterilization & Time-saving

	High-throughput Autoclave	Multiple Shared Use Autoclave	Biohazardous Waste Autoclave	Easy Fast Autoclave
	FLS-1000	**SX-700/500/300**	**SX-700BH/500BH**	**ASX-500**

Specifications

Model		FLS-1000	SX-700	SX-500	SX-300	SX-700BH	SX-500BH	ASX-500
		220V model / 230V model / 240V model	230V model (220~240V) / 120V model, 230V model (220~240V)	120V model, 230V model (220~240V)	230V model (220~240V)	230V model (220~240V) / 120V model, 230V model (220~240V)	120V model, 230V model (220~240V)	220~240V model
Temperature Setting Range	Sterilizing	105~123°C *1	105~135°C *1	105~135°C *1	105~135°C *1	105~135°C *1	105~135°C *1	105~132°C
	Heating	-	45~104°C	45~104°C	45~104°C	45~104°C	45~104°C	-
	Warming	-	45~95°C *1	45~95°C *1	45~95°C *1	45~95°C *1	45~95°C *1	-
Maximum Operating Pressure		0.193 MPa	0.250 MPa	0.263 MPa	0.263 MPa	0.250 MPa	0.263 MPa	0.263 MPa
Time Setting Range	Sterilizing	0:01~9:59 / 1~999 minutes / 0:01~9:59, 10~99 hours (Selectable)	0:01~9:59 / 1~999 minutes / 0:01~9:59, 10~99 hours (Selectable)	0:01~9:59 / 1~999 minutes / 0:01~9:59, 10~99 hours (Selectable)	0:01~9:59 / 1~999 hours / 1~999 minutes / 0:01~9:59, 10~99 hours (Selectable)	0:01~9:59 / 1~999 minutes / 0:01~9:59, 10~99 hours (Selectable)	0:01~9:59 / 1~999 hours / 0:01~9:59, 10~99 hours (Selectable)	0:01~9:59
Display	Warming	-	1~99 hours	1~99 hours	1~99 hours	1~99 hours	1~99 hours	-
	Heating	-						-
	Temperature	Digital	Digital	Digital	Digital	Digital	Digital	Digital
	Pressure Gauge	Analog	Analog	Analog	Analog	Analog	Analog	Analog
	Pressure	0~0.4 MPa	0~0.4 MPa	0~0.4 MPa	0~0.4 MPa	0~0.4 MPa	0~0.4 MPa	0~0.4 MPa
	Time	Digital	Digital	Digital	Digital	Digital	Digital	Digital
Safety Devices		Safety Valve / Lid Interlock / Leakage Breaker / No Water Heating Prevention / Over-temperature Prevention / Over-pressure Prevention / Temperature Sensor Malfunction Detection / Pressure Sensor Malfunction Detection / Exhaust Valve Malfunction Detection / Low Sterilizing Water Level Detection / Drain Access Cover Open Detection / Chamber Lid Open/Close Detection / Exhaust Tank Full Level Detection	Safety Valve / Lid Interlock / Leakage Breaker / No Water Heating Prevention / Over-temperature Prevention / Over-pressure Prevention / Temperature Sensor Malfunction Detection / Pressure Sensor Malfunction Detection / Exhaust Valve Malfunction Detection / Low Sterilizing Water Level Detection / Chamber Lid Open/Close Detection / Exhaust Bottle Detection			Safety Valve / Lid Interlock / Leakage Breaker / No Water Heating Prevention / Over-temperature Prevention / Over-pressure Prevention / Temperature Sensor Malfunction Detection / Pressure Switch Malfunction Detection / Exhaust Valve Malfunction Detection / Low Sterilizing Water Level Detection / Chamber Lid Open/Close Detection / Exhaust Bottle Detection		Safety Valve / Lid Interlock / Leakage Breaker / No Water Heating Prevention / Over-temperature Prevention / Over-pressure Prevention / Temperature Sensor Malfunction Detection / Pressure Sensor Malfunction Detection / Exhaust Valve Malfunction Detection / Low Sterilizing Water Level Detection / Chamber Lid Open/Close Detection
Chamber	Dimensions (mm)	φ450 × 678	φ370 × 774	φ325 × 733	φ325 × 553	φ370 × 774	φ325 × 733	φ325 × 733
	Capacity	100 L	79 L	58 L	44 L	79 L	58 L	58 L
	Material	SUS304 (Stainless Steel)	SUS304 (Stainless Steel)	SUS304 (Stainless Steel)	SUS304 (Stainless Steel)	SUS304 (Stainless Steel)	SUS304 (Stainless Steel)	SUS304 (Stainless Steel)
Main Body	Dimensions (mm) (excluding protruding)	600W × 600D × 940H	470W × 528D × 1,003H	410W × 47D × 970H	410W × 47D × 790H	470W × 528D × 1,003H (Bio Box φ215 × 525 H)	410W × 47D × 970H (Bio Box φ215 × 525 H)	410W × 47D × 970H
	Net Weight	108 kg	72 kg	60 kg	50 kg	72 kg (Bio Box: 5 kg)	60 kg (Bio Box: 5 kg)	60 kg
Power Requirements	Dimensions (mm)	AC220V 50/60Hz 15A 1P / AC230V 50/60Hz 15A 1P / AC240V 50/60Hz 15A 1P	AC120V 50/60Hz 15A 1P / AC230V 50/60Hz 15A 1P	AC120V 50/60Hz 15A 1P / AC230V 50/60Hz 15A 1P	AC120V 50/60Hz 15A 1P / AC230V 50/60Hz 10A 1P	AC120V 50/60Hz 15A 1P / AC230V 50/60Hz 15A 1P	AC120V 50/60Hz 15A 1P / AC230V 50/60Hz 15A 1P	AC220~240V 50/60Hz 15A 1P
Standard Basket		Stainless Steel Basket (φ415 × 233 mm) 2 pcs	Stainless Steel Basket (φ345 × 181 mm) 2 pcs	Stainless Steel Basket (φ300 × 181 mm) 2 pcs	Stainless Steel Basket (φ300 × 181 mm) 1 pc	Stainless Steel Basket (φ345 × 181 mm) 2 pcs	Stainless Steel Basket (φ300 × 181 mm) 2 pcs	Stainless Steel Basket (φ300 × 181 mm) 2 pcs
Compliance of Standard		IEC 61010-2-040, IEC 61326-1	-	-	-	-	-	-

*1. Max. operating temperature will be changed for the high altitude sterilization program and it depends on the altitude level.

Secure Sterilization   & Time-saving

Autoclave is essential for almost any type of laboratory, and **Secure Sterilization** and **Time-saving** are the high priority to with innovative features as standard.

it is crucial to choose the best autoclave that suits your needs. consider for researchers, and TOMY Autoclaves are designed

Secure Sterilization

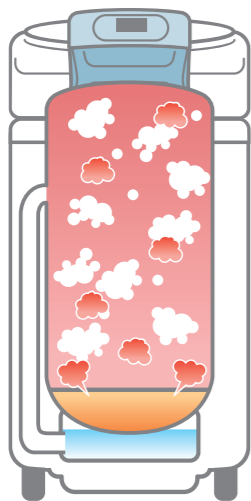**STD** Standard **Fine Pressure Adjustment**

Secure Sterilization condition is created by **saturated steam that temperature and pressure keep the balance** for a certain time.
TOMY Autoclaves heat water in the chamber and create steam. The generated steam is discharged with air from the chamber to approach the saturated steam condition.
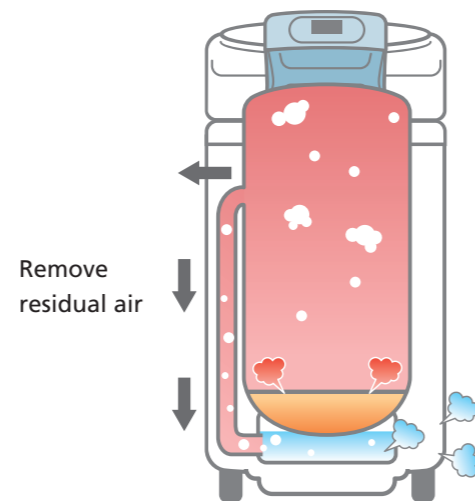When air remains in the chamber, the balance of temperature and pressure breaks and it makes pressure rise.
Fine Pressure Adjustment monitors temperature and pressure, **works automatically to remove residual air** from the chamber, and **adjusts pressure to approach ideal condition** for more effective sterilization.

Residual air may break the ideal balance.

Fine Pressure Adjustment to approach ideal condition

Remove residual air

Time-saving

STD Standard **Cooling Fan System**
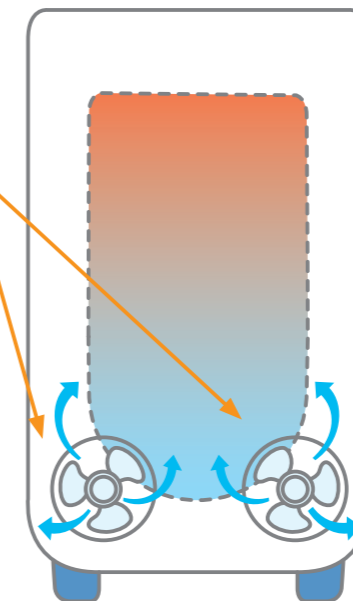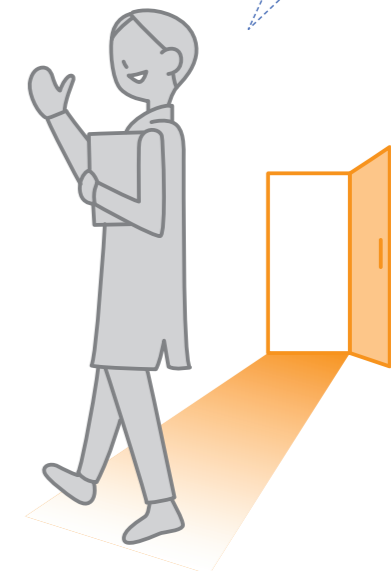
TOMY Autoclaves are **standard-equipped with a dual-fan cooling system**, shortening overall operation time. The Cooling Fan System reduces cooling time by 60 min.* compared to non-fan operation.It will save your time and give you more to focus on other things.
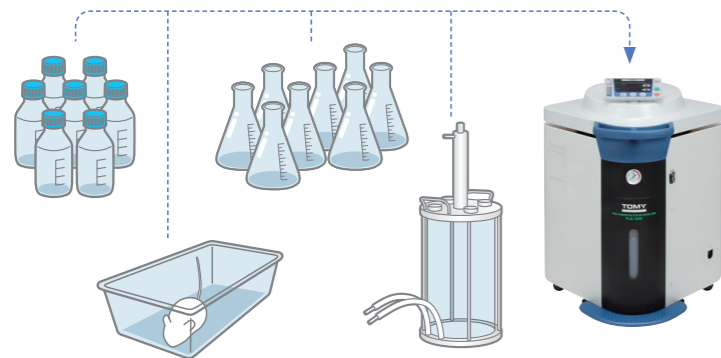
TIME-EFFICIENT

Dual-fan

*In the case of FLS-1000 under the test condition of no load operation, room temperature 25°C, sterilizing water 6 liters and power input AC200V 18A.

To Choose the Best Autoclave

Choosing the best autoclave largely depends on several factors, your throughput needs (how large your articles to be sterilized are and as well as convenience and personal preference. TOMY Autoclave line- including articles to be sterilized (what you are autoclaving), how much you need to autoclave) and available laboratory space, up will help you choose the right autoclave for your sterilizing needs.
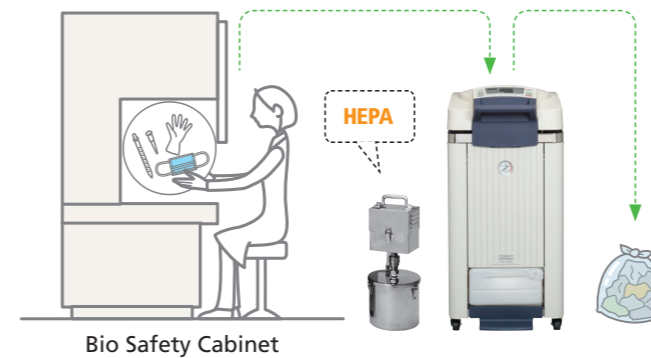
High-throughput Autoclave
FLS-1000

- Large volume of **liquid sterilization** like water, media or solvent
- **Bioreactor** and **fermenter** sterilization
- **Animal cage** sterilization

Biohazardous Waste Autoclave
SX-BH series

HEPA

Bio Safety Cabinet

- Next to **biosafety cabinet**
- Immediate sterilization **after bench-work**
- Decontamination before **disposal of biowaste**

Multiple Shared Use Autoclave
SX-series

SHARE

- For central **autoclave room** and **washing room**
- For **shared use** among some laboratories
- Both purpose for **preparation of labwares** and **decontamination of labwastes**

Easy Fast Autoclave
ASX-500

- **Entry model**
- **Simple** operation
- Dedicated to sterilize **solid articles** like labwares or labwastes

High-throughput Autoclave
FLS-1000

With an improved capacity and user-friendly design, the TOMY Autoclave FLS-1000 makes large volume sterilization easier and accommodates unique shaped articles like bioreactors, fermenters and animal cages. The FLS-1000 also supports you for secure sterilization in compliance with your facilities' guidelines and global standards like GLP/GMP.

Large Capacity
100ℓ
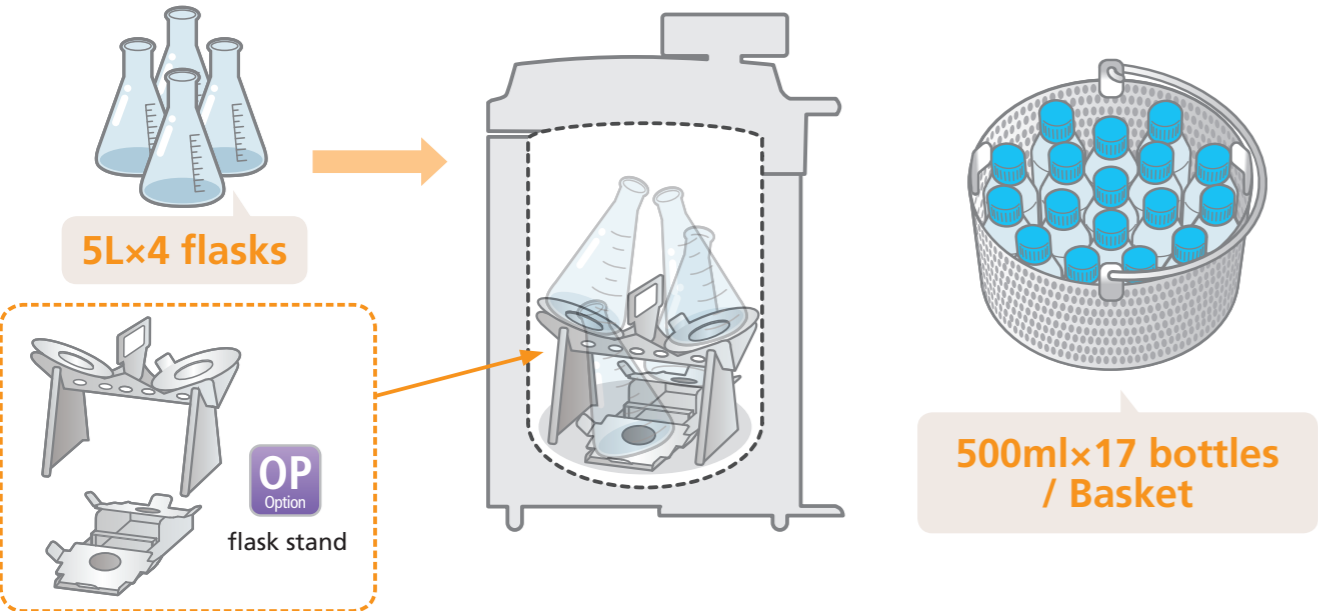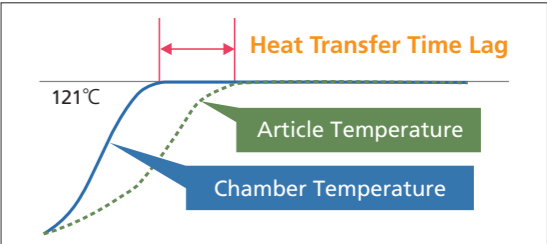
Wide Chamber
45cm

45cm Wide Chamber

High-throughput Liquid Sterilization

Do you have any experience that flasks and bottles can not be accommodated as desired when you sterilize a large amount of liquid such as culture media and solvents? The FLS-1000 has a large chamber dimension of 45cm so that it can accommodate 5L × 4 flasks easier with a option flask stand and 500ml × 17 bottles with a standard stainless basket.

5L×4 flasks

OP Option
flask stand

500ml×17 bottles / Basket

More Secure Sterilization considering Heat Transfer Time Lag

There is Heat Transfer Time Lag when using the steam autoclave. The display shows the ambient temperature inside the chamber, but the temperature of articles to be sterilized arrives later than the display temperature. This is called "Heat Transfer Time Lag".
For more secure sterilization, it is recommended to add the Heat Transfer Time Lag to the sterilization time.
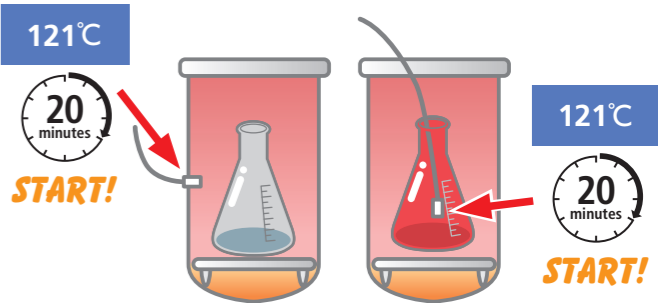
Heat Transfer Time Lag
121℃
Article Temperature
Chamber Temperature

Required sterilization time + Heat transfer time lag = Setting time
e.g. 500ml × 2 bottles at 121°C and 20min.
➡ 20min. + 12min. = 32 min.

OP Option Automatically timer countdown by sample temperature w/External Temperature Sensor

The TOMY Autoclave FLS-1000 can check the temperature of articles to be sterilized with an optional External Temperature Sensor. The detected temperature by the External Temperature Sensor can be used to count down the sterilization time (e.g. 20 min.) . That means sterilization will be done with the temperature of articles inside the chamber automatically without calculating Heat Transfer Time Lag manually by yourself.
The detected temperature also works to open the lid safely after sterilization. The lid can be opened after the temperature of articles drops down* and it prevents the sudden boiling of liquid sample.
These features help you to save your time to decide the sterilization time and to reduce troubles of spillage for media or solvent.

*The temperature to release the lid interlock can be changed.

121℃
20 minutes
START!

121℃
20 minutes
START!

Specifications

Model	FLS-1000
Operating Temperature Range	105 ～ 123℃ **
Sterilization Course	Solid Sterilizing (Sterilize/Normal)
	Liquid Sterilizing (Sterilize/Liquid)
Setting Time Range	0:01 ～ 99 hours
Chamber Capacity and Size	100 L
	Φ 450 × 678 mm
Size and Weight	600 W × 600 D × 940 H mm
	108 kg
Standard Accessory	Stainless Steel Basket ACA-1000B × 2 pcs

** Operating temperature range will be changed after selected the high altitude program.

Full Package for High-throughput Autoclave FLS-1000

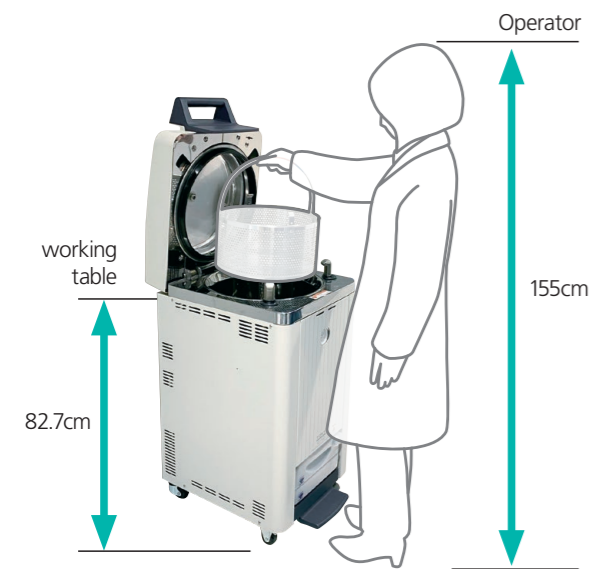| High-throughput Autoclave FLS-1000	OP Option Flask Stand for 5L × 4 flasks	OP Option External Temperature Sensor
×1 unit	×1 set	×1 set

Multiple Shared Use Autoclave
SX-series

The TOMY Multiple Shared Use Autoclaves SX-series are designed to meet the sterilization needs for a wide variety of sizes and shapes of articles to be sterilized especially in the washing room or central autoclave room arranged for shared use among a few or several laboratories.
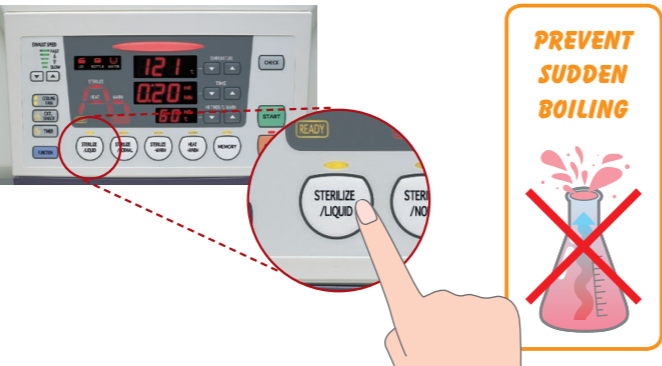
Ergonomic Height Design

The SX-Series Autoclaves are designed to be the perfect height to easily load and unload articles into the chamber.

Operator

working table

155cm

82.7cm

Attentive Liquid Sterilization Course

When autoclaving liquid samples, opening the lid while the liquid temperature is high may cause a sudden boiling. It is necessary to allow the pressure and temperature to drop naturally without forced exhaust after sterilization.

The SX-Series Autoclaves have a LIQUID course that automatically sterilizes like this process with a single operation. It reduces spillage of media or solvent inside the chamber and supports smooth shared use in your facilities.

PREVENT SUDDEN BOILING

OP Option Printer
supporting to keep Sterilization Log

Do you have any experience that you were worried if the sterilization was performed as set when you use a shared autoclave in a remote wash room or an autoclave room?
The Optional Printer can print out the operating parameters, chamber temperature, chamber pressure, temperature of articles to be sterilized * and sterilization cycle process.

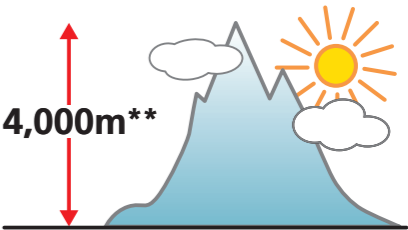 *In using the optional external temperature sensor

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==DATA===================
<Time> Time [hour:minute' second]
<TC> Chamber Temp. [°C]
<TE> External Temp. [°C]
<P>  Chamber Press. [MPa]

-<Time>---<TC>---<TE>-----<P>--
Temperature raising
00:00   19         0.000
00:03   20         0.000
00:06   23         0.000

Temperature & pressure raising
(00:22'09)
00:24  105         0.025
00:27  113         0.065

Sterilizing & Count start
(00:29'30) 121     0.103)
00:30  121         0.103
00:31  121         0.105

Temperature & pressure reduction
(00:49'34)
00:51  118         0.091
00:54  114         0.067

Temperature reduction
(01:06'16)
01:09   98         0.000
Work completion.
(01:09'17)
```

OP Option High Altitude Sterilization Program

Autoclave operates by generating steam under pressure and temperature. Therefore, its sterilization process can be greatly affected by the atmospheric pressure at the location where the autoclave is installed.
The SX-series Autoclaves allow users to operate even though at high altitude place**.

4,000m**

**Available atmospheric pressure is until 616 hPa or higher (equivalent to an altitude of 4,000m).
 Operating temperature range will be changed after installed the high altitude program.

Specifications

Model	SX-700	SX-500	SX-300
Operating Temperature Range	105 ～ 135℃ ***		
Sterilization Course	Solid Sterilizing (Sterilize/Normal)		
	Liquid Sterilizing (Sterilize/Liquid)		
	Sterilizing and Warming (Sterilize - Warm)		
	Heating and Warming (Heat - Warm)		
Setting Time Range for Sterilizing	0:01 ～ 99 hours		
Chamber Capacity and Size	79 L	58 L	44 L
	Φ 370 × 774 mm	Φ 325 × 733 mm	Φ 325 × 553 mm
Size and Weight	470 W × 528 D × 1,003 H mm	410 W × 477 D × 970 H mm	410 W × 477 D × 790 H mm
	72 kg	60 kg	50 kg
Standard Accessory	Stainless Steel Basket ACA-700B × 2 pcs	Stainless Steel Basket ACA-315B × 2 pcs	Stainless Steel Basket ACA-315B × 1 pc

*** Operating temperature range will be changed after installed the high altitude program.

Full Package for Multiple Shared Use Autoclave SX-700

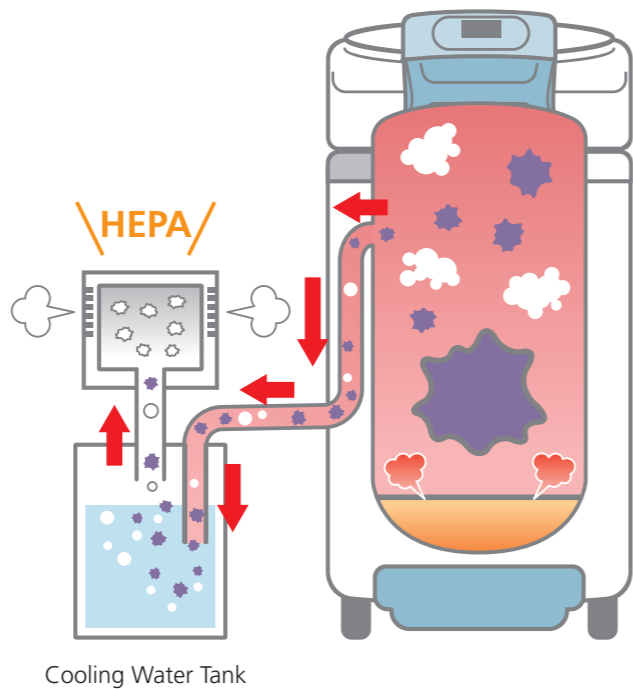| Multiple Shared Use Autoclave SX-700	OP Option Optional Printer (Thermal Paper Type)
×1 unit	×1 set

Biohazardous Waste Autoclave
SX-BH series

Numerous biosafety guidelines endorse the use of autoclaves to inactivate potentially infectious laboratory waste prior to disposal, as part of creating secondary barriers that prevent infectious disease from spreading to laboratory workers, waste management personnel and the general public. The TOMY SX-BH series are designed to exhaust air and steam coming from the chamber through HEPA filter.

Air and steam exhaust through HEPA Filter (DOP 99.97%)*

Air and steam inside the chamber go to the cooling water tank.
After cooling down, they are exhausted to the laboratory work area through HEPA filter unit that is equipped with a HEPA filter (DOP 99.97%).

\HEPA/

Cooling Water Tank

* It does not guarantee to remove contaminants completely.
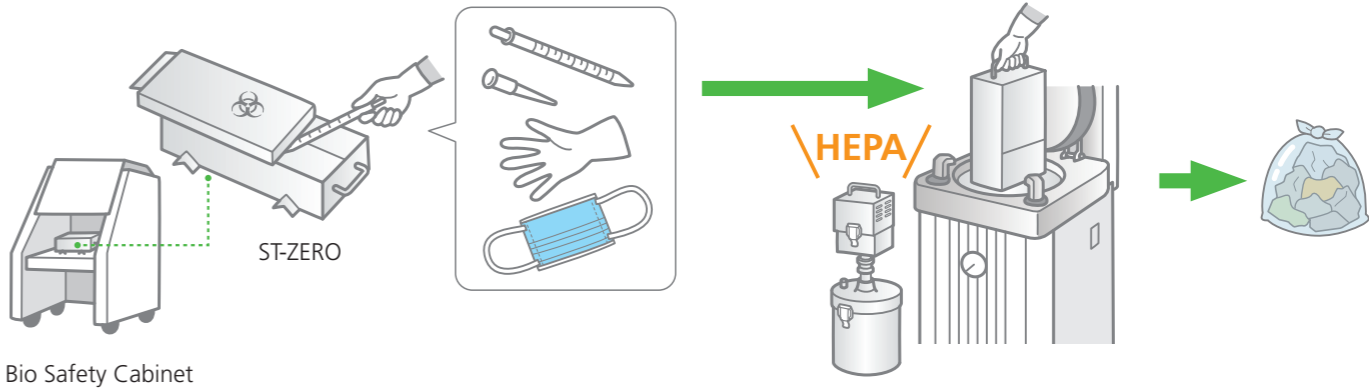 Follow the biosafety guideline in your laboratory.

OP (Option) Biowaste Sterilization Container ST-ZERO

How do you handle disposables generating from the bench work of the biosafety cabinet including PCR test kits, gloves, pipette tips and petri dishes containing specimens?
Biowaste Sterilization Container ST-ZERO can sit on the workbench of the biosafety cabinet without disturbing air-flow and accommodate disposables inside the work area of the biosafety cabinet.
ST-ZERO can be vertically loaded to the Autoclave without a liquid drop falling. A several ST-ZERO can be accommodated in the chamber of Autoclave SX-700BH.

Put disposals and close the lid of ST-ZERO inside the Bio Safety Cabinet.

Load to Autoclave vertically.

\HEPA/

ST-ZERO

Bio Safety Cabinet

Specifications

Model		SX-700BH	SX-500BH
Operating Temperature Range		105 ～ 135℃ *	
Sterilization Course		Solid Sterilizing (Sterilize/Normal)	
		Liquid Sterilizing (Sterilize/Liquid)	
		Sterilizing and Warming (Sterilize - Warm)	
		Heating and Warming (Heat - Warm)	
Setting Time Range for Sterilizing		0:01 ～ 99 hours	
Chamber Capacity and Size		79 L	58 L
		Φ 370 × 774 mm	Φ 325 × 733 mm
Size and Weight	Autoclave Mainbody	470 W × 528 D × 1,003 H mm	410 W × 477 D × 970 H mm
		72 kg	60 kg
	Bio Box	Φ 215 × 525 H mm	
		5 kg	
Bio Box Exhaust Filter		HEPA Filter 0.3 μm DOP 99.97 %	
Standard Accessory		Stainless Steel Basket ACA-700B × 2 pcs	Stainless Steel Basket ACA-315B × 2 pcs

*Operating temperature range will be changed after installed the high altitude program.

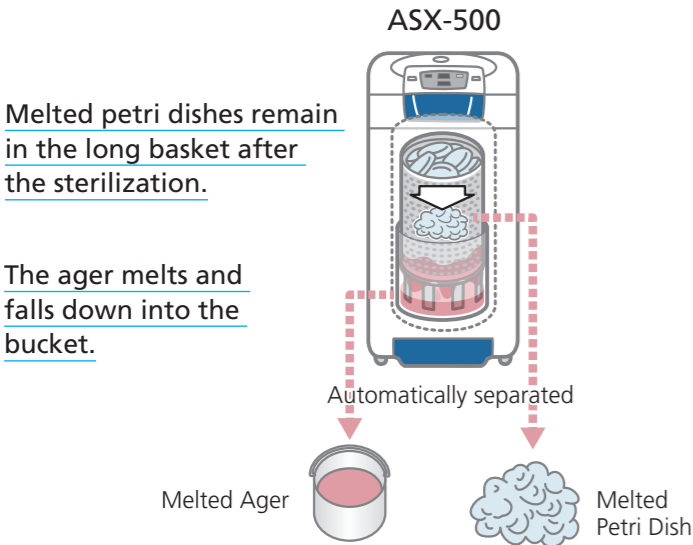## Full Package for Biohazardous Waste Autoclave SX-700BH

Autoclave SX-700BH (including Bio Box)	OP (Option) Biowaste Sterilizing Container ST-ZERO
×1 set	×1 set

Easy Fast Autoclave
ASX-500

The TOMY Easy Fast Autoclave ASX-500 is a dedicated model for a quick operation to sterilize solid articles like flasks, bottles, petri dishes, pipet tips, lab glass & plastic wares and so on.
Easy operation just by setting temperature and time, provides fast sterilization to save your time.
The ASX-500 is a entry model but also has a wide variety of optional accessories to reduce troublesome works and to shorten overall operation time. Each laboratory can choose the suitable accessories for the articles to be sterilized.

OP Option Separator Kit for Disposal Petri Dish

ASX-500

Melted petri dishes remain in the long basket after the sterilization.

The ager melts and falls down into the bucket.

Automatically separated

Melted Ager

Melted Petri Dish

Put petri dishes with the medium remained directly into the long basket of Separator Kit. They are automatically separated into petri dishes and liquid after sterilization.
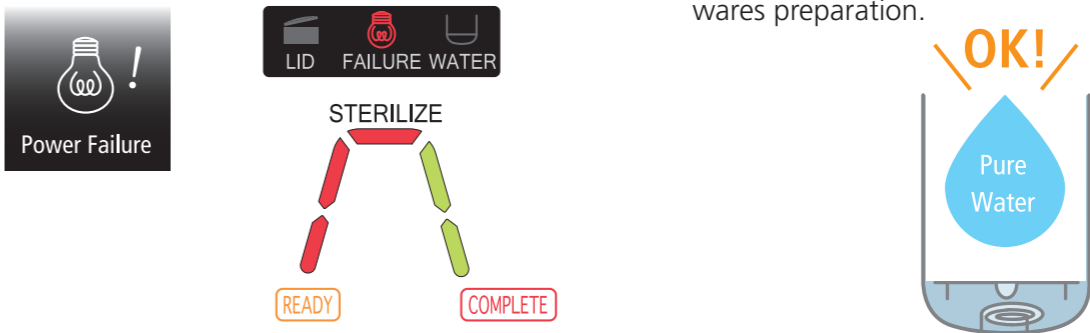
OP Option Waste-bin Kit

Long Basket
ACA-325TP

+

=

Sterilization Bag
DAB-321

Use the Long basket as a waste-bin with the sterilization bag.
Put a Sterilization Bag into the Long Basket and directly it into the chamber. Close the bag and dispose it after sterilization.

Power Failure Alert Function

Operation can be continued from the process when the power failure occurs. It saves waiting time and re-sterilization work.

Power Failure

LID   FAILURE WATER

STERILIZE

READY   COMPLETE

Pure water, DI water and RO water available

Pure water, DI water and RO water are available as sterilization water to prevent contamination for lab wares preparation.

OK!

Pure Water

Specifications

Model	ASX-500
Operating Temperature Range	105 ～ 132℃
Sterilization Course	Solid Sterilizing (Sterilize/Normal)
Setting Time Range	0:01 ～ 9:59 hours
Chamber Capacity and Size	58 L
	Φ 325 × 733 mm
Size and Weight	410 W × 477 D × 970 H mm
	60 kg

Full Package for Easy Fast Autoclave ASX-500

A : Separator Kit Package

Easy Fast Autoclave ASX-500	OP Option Separator Kit for Disposal Petri Dish
×1 unit	×1 set

B : Waste-bin Kit Package

Easy Fast Autoclave ASX-500	Waste-bin Kit		
	OP Option Long Basket ACA-325TP	OP Option Lid for Long Basket 300TL	OP Option Sterilization Bag DAB-321
×1 unit	×1 set		×1 set

C : Stainless Steel Basket Package

Easy Fast Autoclave ASX-500	OP Option Stainless Steel Basket ACA-315B
×1 unit	×2 set

Model Selection Guide

Model		FLS-1000	SX-700	SX-500	SX-300	SX-700BH	SX-500BH	ASX-500
Fine Pressure Adjustment		●	●	●	●	●	●	●
Cooling Fan		●	●	●	●	●	●	●
Ergonomic Height Design(Height to working table)		● (78.5 cm)	● (82.7 cm)	● (79.4 cm)	● (61.4 cm)	● (82.7 cm)	● (79.4 cm)	● (79.4 cm)
Sterilization Course	Sterilization - Normal (Labware and Waste)	●	●	●	●	●	●	●
	Sterilization - Liquid (Media, Solvent and Water)	●	●	●	●	●	●	
	Sterilization & Warming (Sterilizing and keep warming media)		●	●	●	●	●	
	Warming (Melting and keep warming media)		●	●	●	●	●	
OP High Altitude Sterilization Program*1	until 616 hPa or higher (equivalent to an altitude of 4,000m)		●	●	●	●	●	
	until 750 hPa or higher (equivalent to an altitude of 2,000m)	● (Standard)	●	●	●	●	●	
Exhaust through HEPA filter (Bio Box)						●	●	
OP External Temperature Sensor		●	●	●	●	●	●	
OP Printer		● (Dot Matrix)	● (Thermal)	● (Thermal)	● (Thermal)	● (Thermal)	● (Thermal)	
OP Biowaste Sterilizing Container ST-ZERO		●	●	●	●	●	●	●
OP Separator Kit for disposal petri dish				Separator Kit 500				Separator Kit 500
OP Flask Stand for 5L x 4 flasks		●						
Basket	Model	ACA-1000B	ACA-700B	ACA-315B	ACA-315B	ACA-700B	ACA-315B	ACA-315B
	Standard equipped number per unit	2	2	2	1	2	2	0
	Max. loaded number per unit	2	3	3	2	3	3	3
	Size of basket	φ 415 × 233 H mm	φ 345 × 181 H mm	φ 300 × 181 H mm	φ 300 × 181 H mm	φ 345 × 181 H mm	φ 300 × 181 H mm	φ 300 × 181 H mm
	Max. loaded number of 500ml bottle per basket*2	17	10	8	8	10	8	8
	Max. loaded number of 500ml flask per basket*2	10	7	5	5	7	5	5
OP Long Basket	Model	ACA-1000TP	ACA-710TP	ACA-325TP	ACA-310TP	ACA-710TP	ACA-325TP	ACA-325TP
OP Sterilizing Bag	Model		DAB-700	DAB-321	DAB-321	DAB-700	DAB-321	DAB-321
OP Bucket	Model	ACA-1000K	ACA-700K	ACA-315K	ACA-315K	ACA-700K	ACA-315K	ACA-315K

*1 Operating temperature range will be changed after installed/selected the high altitude program.
*2 Visit our website for more detailed information.

Please visit for more details

TOMY AUTOCLAVES — SEARCH