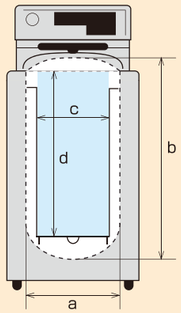
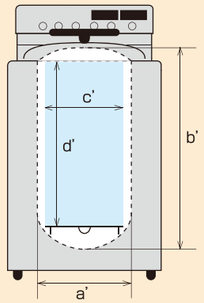
◆Part dimensional drawings

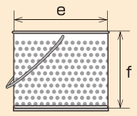


●**Chamber dimensions**
(a：Bore diameter)×(b：Inside dimension)
●**Usable dimension**※
(c：Inside diameter of a Stainless steel basket with slatted bottom plate)×(d：Effective depth)
▶ **Applicable models：ES-315／215**

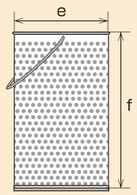


●**Chamber dimensions**
(a'：Bore diameter)×(b'：Inside dimension)
●**Usable dimension**※
(c'：Effective diameter)×(d'：Effective depth)
▶ **Applicable models：SDL-320／SR-240**

Stainless basket
Inside dimension (e：Bore diameter)×(f：Height)



〈**Standard Accessory**〉
ES-315 (2 pcs included)
SDL-320 (2 pcs included)
SR-240 (2 pcs included)



〈**Standard Accessory**〉
ES-215 (1 pc included)

※ The usable dimension shows recommended values considering safety during operation. The volume or position of the sterilization items may block the holes inside the chamber or interrupt the flow of steam or air, which will result in abnormal pressure increase or incomplete sterilization. To ensure safe operation of the autoclave, it is recommended that stainless steel wire mesh baskets supplied with the unit as standard accessories or optional stainless steel buckets be used.

◆The image shown for the product may not display its real color or shape.

◆Accessories

Stainless Basket
The entire basket is made of punched metal and is designed for easy penetration of steam.

Stainless Long Basket
Optimal for sterilizing the sterilizing bag. The structure of the lower section is without holes.

Stainless Bucket
Bucket without holes to prevent leakage of liquid from articles being sterilized.

Stand for Testing Durham's Tubes
Convenient for sterilizing test tubes containing culture media. Can be used as a stand independently.

Sterilizing Bag
Sterilizing bags fit to the vessel dimensions of each model are available.

Deodorant for autoclave
It allows for repeated use and removes offensive odors such as odors caused by culture media in the chamber.

Autoclavable waste container "ST-ZERO"
Waste inside the BSC can be collected in the container and autoclaved.

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TOMY

AUTOCLAVES

Sliding Door Type Series

HIGH PRESSURE STEAM STERILIZER
ES-315/215

SPEEDY AUTOCLAVE WITH DRIER
SDL-320

RETORT FOOD AUTOCLAVE
SR-240

Provided with an Automatic Air Release Time Setting Function

HIGH PRESSURE STEAM STERILIZER

ES-315 / ES-215

ES-315　　ES-215

Reliable & Speedy Sterilization

Automatic air release time setting function allows an optimal evacuation time for the remaining air in the chamber to be set automatically according to the type and quantity of article to be sterilized, and ensures more reliable and speedy sterilization. This function is equipped with ES-Series as a standard feature.

User-friendly Memory Function

Once turned on the system automatically sets and displays a pre-set value. Operation is done simply by pressing the start switch. ES-315/ES-215 enables the set temperature and time for each mode program to be stored in its memory.

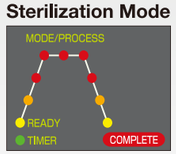
Easy-to-see Control Panel

※The control panel lighting image shown above may vary from actual display.

MODE/PROCESS display enables real time monitoring of operation status.

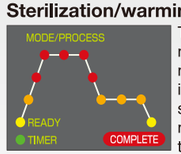
ES-315 / ES-215 offers three mode programs.

Sterilization Mode



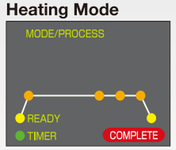
It contains a delay start timer function that allows operation to start 1 to 99 hours later.

Sterilization/warming Mode



This mode is useful when not removing culture media from the autoclave immediately after sterilization. Sterilized media can be kept warm to prevent coagulation.

Heating Mode



This mode program automates the dissolution of culture media that can sometimes be a painful process when using a water bath to boil them.

User-friendly design allows for even more easy maintenance.

Chamber having a flat inner surface

All models are supplied with stainless steel wire mesh baskets. No protrusions on inner surface of the chamber enable smooth loading and unloading of the basket as well as block design of all pipe fittings ensures safe operation.

Front access for easy maintenance

The exhaust bottle to capture and store exhaust steam is placed on the front panel of the autoclave unit. Access to the chamber for replacing water inside, as well as for routine maintenance and inspection, is done on the front of the unit, which also permits operators to replace bellows, saving costs for services by the service personnel.

A microprocessor controlled monitoring system provides safe sterilization.

Incomplete sterilization protection

In case of abnormal chamber temperature rise, the autoclave stops its operation. In case of abnormal decrease in temperature, the sterilization timer is temporarily suspended and then reactivated when the set temperature is reached.

Chamber overpressure protection

If overpressure in the chamber is detected, the autoclave stops all the function and indicates an error message simultaneously.

Chamber interior overtemperature protection

If the temperature inside the chamber exceeds the set temperature by 5 °C or more, the autoclave stops all the function and indicates an error message simultaneously to avoid overheating.

Chamber exterior overtemperature protection

The thermostat switch detects the temperature of chamber exterior wall, which allows the autoclave to stop all the function if the temperature exceeds 130°C.

◆ Specifications

Model		ES-215	ES-315
Operating temperature range (during sterilizing)		105 - 123°C	105 - 132°C
Operating pressure range		0 - 127kPa	0 - 186kPa
Maximum operating pressure		147kPa	216kPa
Temperature control		Digital, microprocessor controlled	
Temperature display / display range		Digital / -15 - 180°C	
Pressure display / display range		Analog / 0 - 250kPa	Analog / 0 - 400kPa
Heat source		1.5kW electric heater	2.0kW electric heater
Timer control		Digital, microprocessor controlled	
Timer display		Digital	
Timer display range	Sterilizing mode:	1 - 240min. or continuous	
	Sterilizing-warming mode:	1 - 240min. (sterilizing) / 1 - 8hours (warming)	
	Heating mode:	1 - 8hours	
Start-timer setting range		1 - 99hours in each operation mode	
Memory function		A set of temperature and time setting in each operation mode	
Safety devices		● Inside the chamber overheat prevention, ● Outer wall of the chamber overheat prevention, ● Overpressure prevention, ● Temperature sensor disconnection prevention, ● Empty heating prevention, ● Leakage breaker, ● Safety valve	
Malfunction prevention devices		● Low water level detection, ● Exhaust valve knob open/close detection, ● Insufficient sterilization detection, ● Chamber lid open/close detection	
Leakage breaker	Rated breaking current:	20A (120V) , 15A (220 / 230 / 240V)	30A (120V) , 15A (220 / 230 / 240V)
	Rated sensed current:	30mA (120V) , 10mA (220 / 230 / 240V)	
Protection type		Class 1 equipment	
Operating environment	Ambient temperature:	5 - 35°C	
	Relative humidity:	30 - 85%	
	Atmospheric pressure:	700 - 1060hPa	
	Gradient:	Within 2°	
Dimensions		φ248 × 543mm	φ325 × 740mm
Usable dimension		φ236 × 450mm	φ312 × 635mm
Capacity of chamber		22 ℓ	53 ℓ
Chamber material		SUS304	
Capacity / material of exhasut bottle		3 ℓ / polyethylene	
Type / material of lid gasket		Accommodating internal pressure / silicone rubber	
Dimensions of main unit (mm)		400W × 460D × 920H (Height from floor to control panel:705)	490W × 560D × 1090H (Height from floor to control panel:875)
Net weight		50kg	80kg
Rated Voltage		AC 120 / 220 / 230 / 240V	
Power input		15A (120V), 7A (220 / 230 / 240V)	20A (120V), 10A (220V), 9A (230 / 240V)
Power supply requirements		Single-phase 120V AC (50 / 60Hz) 15A or above	Single-phase 120V AC (50 / 60Hz) 20A or above
		Single-phase 220 / 230 / 240V AC (50 / 60Hz) 15A or above	
Power Comsumption (calorific value)		1.5kW (1290kcal/h)	2kW (1720kcal/h)
Accessories		● Stainless steel basket with slatted bottom plate 1, ● Water level sensor 1, ● Inspection sheet 1, ● Warranty card 1, ● Customer card 1, ● Operator's manual 1, ● Clear plastic accessory case 1, ● Attachment screw for clear plastic accessory case 1	
		Stainless basket 1 (φ224 × 376mm)	Stainless basket 2 (φ300 × 182mm)

◆For dimension details on the chamber and usable or inside dimension, please refer to each part dimensional drawing on the back page.

SDL

Equipped with drying equipment, the SDL-320 Autoclave maximizes the effectiveness of sterilization.

SPEEDY AUTOCLAVES WITH DRIER

SDL-320

SDL-320

Space-saving design minimizes laboratory space occupied.

The area required for installation is reduced to approximately 0.34m^2 (W × D: 605mm × 565mm). The sliding door type model also minimizes door clearance to preserve valuable laboratory space.

Easy-to-use control panel

A real time work monitor displays 6 status indicators for each working process of the autoclave.

When the autoclave is turned on, the work monitor simultaneously indicates “Main On” . After setting parameters, the monitor displays status indicators of the current working process, including “Sterilizer” , “No Water” , “Exhaust” , “Dry” and “Finish” , which provides an at-a-glance monitoring of the operation status.

※The control panel lighting image shown above may vary from actual display.

The autoclave is designed with safety features that ensure operator safety.

Boil-dry safety mechanism

A water level sensor is electrically responsive to the volume of water inside the chamber. If it detects low water levels, the work monitor on the control panel indicates “No Water” .

Lid open / close direction

Lid opening/closing mechanism reduces the risk to the operator of being exposed to hot air and steam escaping from the chamber.

Current leakage breaker

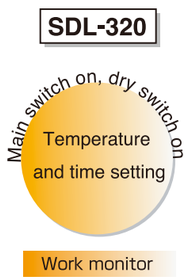
It quickly detects abnormalities in the electrical system and protects the operator against electric shock caused by any malfunction such as a short circuit.

Gravity-operated safety valve

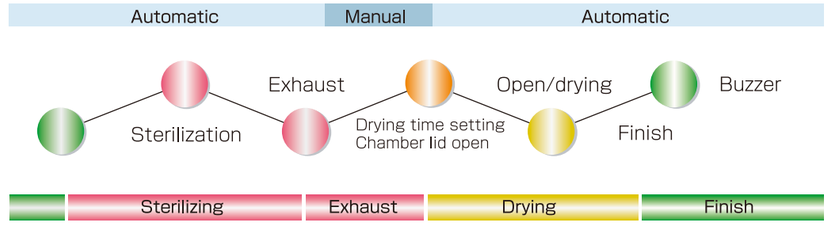
A safety valve fitted in the front panel allows easy monitoring of its operation status. When the pressure inside the chamber is too high, the safety valve is activated to protect the operator against hazardous conditions.

Sterilizing-Drying Process

SDL-320



SDL-320 employs an open heat-drying system, which performs drying with open lid after sterilization.



◆ Specifications

Model		SDL-320
Operating temperature range (during sterilizing)		60 - 132°C
Operating pressure range		0 - 186kPa
Maximum operating pressure		216kPa
Temperature control		Electronic
Temperature display / display range		Analog / 80 - 160°C
Pressure display / display range		Analog / 0 - 400kPa
Heat source		2kW electric heater
Timer control		Electrically-operated
Timer display		Analog
Timer display range	Sterilizing timer	0 - 60min. 50 / 60Hz
	Drying timer	0 - 60min. 50 / 60Hz
Safety devices		●Empty heating prevention, ●Leakage breaker ●A dead weight safety valve
Malfunction prevention devices		●Low water level detection
Leakage breaker	Rated breaking current:	30A (120V) , 15A (220 / 230 / 240V)
	Rated sensed current:	30mA (120V) , 10mA (220 / 230 / 240V)
Protection type		Class 1 equipment
Operating environment	Ambient temperature:	5 - 35°C
	Relative humidity:	30 - 85%
	Atmospheric pressure:	700 - 1060hPa
	Gradient:	Within 2°
Dimensions		φ325 × 770mm
Usable dimension		φ315 × 670mm
Capacity of chamber		55 ℓ
Chamber material		SUS304
Capacity / material of drain trap		10 ℓ / polyethylene
Type/material of lid gasket		Accommodating internal pressure / silicone rubber
Dimensions of main unit (mm)		605W × 565D × 1080H (Height from floor to control panel:880)
Net weight		100kg
Rated Voltage		AC 120 / 220 / 230 / 240V
Power input		20A (120V), 10A (220V), 9A(230 / 240V)
Power supply requirements		Single-phase 120V AC (50 / 60Hz) 20A or above Single-phase 220 / 230 / 240V AC (50 / 60Hz) 15A or above
Power Comsumption (calorific value)		2kW (1720kcal/h)
Accessories		●Drain trap 1, ●Drain hose 1, ●Warranty card 1, ●Customer card 1, ●Operator's manual 1, ●Stainless basket 2 (φ300 × 182mm)

◆For dimension details on the chamber and usable or inside dimension, please refer to each part dimensional drawing on the back page.

SR

SR-240 adopts pressurized steam sterilization and pressurized cooling systems that deliver high performance and achieve more stable sterilization.

RETORT FOOD AUTOCLAVE

SR-240

Equipped with a pressurized steam sterilization system that is unavailable on a standard sterilizer.

Retort Food Autoclave SR-240 employs a pressurized steam sterilization system that provides constant flow of steam under pressure, and allows more stable sterilization at operating temperatures in the range of 100 to 140°C.

SR-240

Pressurized cooling system

SR-240 adopts a cooling method in which water is introduced into the pressurized chamber during cooling process to prevent a sudden drop in chamber pressure or temperature which can cause damage to retort foods, including canned foods and aluminum foil packed foods.

Automatic pressurization / automatic feed water for cooling

After turning the main power switch on and setting a sterilization time, the operation cycle progresses automatically through processes of pressurizing, sterilizing, and depressurizing by feeding water into the chamber for cooling.

Versatility for a wide range of applications

It is also equipped with pressurized steam sterilization/boiling water sterilization system that is best suited for retort packs.

Control panel with many user-friendly features

The control panel lighting image shown above may vary from actual display.

Real time work monitor displaying 6 status indicators for each working process

When the autoclave is turned on, the work monitor simultaneously indicates “Main On”. After setting parameters, the monitor displays status indicators of the current working process, including “Sterilizer”, “No Water”, “Cool”, “Exhaust” and “Finish”, which provides an at-a-glance monitoring of the operation status.

The control panel lighting image shown above may vary from actual display.

The autoclave is designed with safety features that ensure operator safety.

Boil-dry safety mechanism

A water level sensor is electrically responsive to the volume of water inside the chamber. If it detects low water levels, the work monitor on the control panel indicates “No Water” .

Spring safety valve

A safety valve fitted in the front panel allows easy monitoring of its operation status. When the pressure inside the chamber is too high, the safety valve is activated to protect the operator against hazardous conditions.

Cooling water tank safety valve

A safety valve is installed to prevent pressure buildup in the cooling water tank.

Current leakage breaker

It quickly detects abnormalities in the electrical system and protects the operator against electric shock caused by any malfunction such as a short circuit.

◆ Specifications

Model		SR-240
Operating temperature range (during sterilizing)		100 - 140°C
Operating pressure range		0 - 275kPa
Maximum operating pressure		343kPa
Temperature control		Electronic
Temperature display / display range		Analog / 80 - 160°C
Pressure display / display range		Analog / 0 - 600kPa
Heat source		3kW electric heater
Timer control		Electrically-operated
Timer display		Analog
Sterilizing timer setting range		0 - 60min. 50 / 60Hz
Pressurized sterilization	System	Pressurized by compressor
	Setting range	0 - 294kPa
Pressurized cooling	System	Pressurized by compressor
	Setting range	0 - 343kPa
Cooling		Fill the chamber with tap water
Safety devices		● Empty heating prevention, ● Leakage breaker, ● Safety valve
		● A cooling water tank safety valve or a safety valve installed in the cooling tank
Malfunction prevention devices		● Low water level detection
Leakage breaker	Rated breaking current:	30A (220 / 230 / 240V)
	Rated sensed current:	30mA (220 / 230 / 240V)
Dimensions		φ248 × 542mm
Usable dimension		φ238 × 435mm
Capacity of chamber		21 ℓ
Chamber material		SUS304
Type / material of lid gasket		Accommodating internal pressure / silicone rubber
Dimensions of main unit (mm)		820W × 560D × 950H (Height from floor to control panel:750)
Net weight		150kg
Rated Voltage		AC 220 / 230 / 240V
Power input		15A (220 / 230 / 240V)
Power supply requirements		Single-phase 220 / 230 / 240V AC (50 / 60Hz) 15A or above
Power Comsumption (calorific value)		3kW (2580kcal/h)
Accessories		● Hose kit for supplying water 1, ● Hose kit for draining water 1, ● Inspection sheet 1,
		● Warranty card 1, ● Customer card 1, ● Operator's manual 1,
		● Stainless basket 2 (φ224 × 181mm)

◆For dimension details on the chamber and usable or inside dimension, please refer to each part dimensional drawing on the back page.