Tuttnauer

Innovation · Legacy · Partnership

Laboratory & Scientific Line

Horizontal Steam Sterilizers

Laboratory

Horizontal Steam Sterilizers
for Laboratory & Scientific Applications

Sterilization in a laboratory environment has its unique requirements. The types of loads that need to be sterilized are varied and include liquids, glassware, instruments, media, waste material and additional laboratory items.

Choosing the right steam sterilizer depends on several considerations: the types of loads, frequency of use, available utilities and load volumes. The Tuttnauer line of laboratory autoclaves successfully meets the stringent sterilization requirements posed by the most demanding facilities throughout the world. To maximize "uptime," we manufacture our complete line of sterilizers using reliable, non-proprietary components. A wide range of upgrades are available, including flexible door designs, advanced cycle options and clean steam piping packages. Tuttnauer offers a full range of sterilizer models designed to cover a large field of applications in laboratories and research facilities, serving the academic, biotechnological, food and animal care markets.

Construction

Chamber and Doors

The fully jacketed chamber and doors are constructed from long lasting 316L grade stainless steel material, with superior corrosion resistance. The autoclave doors are designed with a number of independent mechanical and digital safety features. The door is sealed using compressed air in lieu of steam to extend the life of the door gasket. For special applications, steam-to-gasket can be offered.

Jacket

The jacket is constructed from 304L stainless steel material. 316L is also available.

Piping

The pipes and fittings are constructed from stainless steel and brass. The pneumatically operated valves significantly reduce maintenance, downtime and operating costs.

All stainless steel piping, fittings, and components are available for clean steam applications. Clean steam can be used for tissue culture work, sterile water preparation and other special processes.

Mounting

The sterilizer can be supplied in one of the following mounting alternatives:

- Recessed in One or Two Walls
- Free-Standing with a Stainless Steel Cabinet Enclosure (Side Panels)
- Seismic Tie-Down Kit

Panels

All Tuttnauer sterilizers are provided with #4 finish, 304L stainless steel fascia panels. Special panel designs can be constructed according to the customer's requirements.

Door Configurations

Each model can be manufactured in either single or double door (pass-through) configurations. Automatic vertical sliding and automatic-locking hinged doors are available, depending on the chamber size.

Steam Supply

The sterilizer uses saturated steam as the sterilization agent. The steam can be provided to the autoclave from the building's central source, an electric steam generator (stainless steel or carbon steel), or a steam-to-steam generator.

Air Removal Method

All Tuttnauer models come standard with both gravity and pre/post vacuum capability. Pre/post vacuum is achieved with either a water ejector or liquid ring vacuum pump, combined with steam pressure pulsing.

Standards

Our high quality laboratory autoclaves comply with the strictest international and US directives and standards.

Equipment Warranty

Coverage includes one year on parts and labor, excluding consumable items. The ASME pressure vessel is further warranted to the original owner against material and workmanship failure for a period of 15 years from the date of initial operation.

Advanced Control System
for Your Laboratory

Take advantage of Tuttnauer's sophisticated user-friendly control system, BacSoft, for repeatable high performance.

Standard Features

- 7" Multi-color touch screen panel
- Full control capabilities on the unloading side (double door autoclaves)
- Stores the last 100 cycles in built in memory
- Multiple access levels and user passwords for added security
- USB port for importing/exporting cycle data
- Ethernet Connection
- Internal Battery Backup
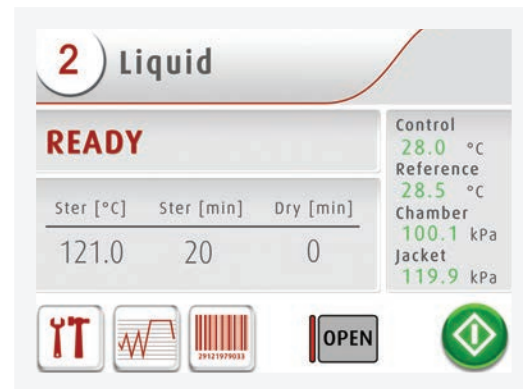- Automatic Utility Startup/Shutdown

Optional Features

- Biohazard Exhaust Filtration Cycle
- Isothermal Cycle for low temperature disinfection
- F0 Software Control
- Remote Monitoring via R.PC.R Software Package
- Form C Dry contacts for connection to Building Management System and exhaust ventilation fan

Designed to Handle
Diverse Load Types

The Tuttnauer line of laboratory autoclaves can handle a variety of load types. The sterilizer is provided with a total of 14 pre-set programs (up to 20 customizable) that range in temperature from 105°C - 137°C. Standard programs are set to handle:

- Sterilization of Liquids (Open/Vented Containers)
- Gravity Cycles
- Prevacuum Cycles
- 2 test programs: Air Removal and Vacuum Leak

All programs are fully customizable to suit the specific needs and requirements of the end user.

Advanced Sterilization Cycles

F_O Cycle

F_O calculations begin when the slowest-to-heat load temperature sensor within the autoclave has reached a pre-determined set temperature. The cycle continues to calculate the F_O function until the pre-determined setpoint is satisfied.

Streaming Steam Cycle (105°C)

Low temperature sanitation cycle set at 105°C. Steam is allowed to enter the chamber and the fast exhaust valve is opened to allow steam to stream over the contents of the unit.

Disinfection/Isothermal Cycle (70°C)

A flexible low temperature cycle enables disinfection. Temperature range settings are flexible within 70°C - 95°C range.

Biohazard Exhaust Filtration Cycle

Tuttnauer sterilizers can be customized to meet the specific requirements of laboratories classified as BSL3/ABSL3 where harmful pathogens and viruses that leave the sterilizer prior to disposal must be fully sterilized. The biohazard exhaust filtration cycle will sterilize chamber effluent prior to their release into the drain.

Printer

For a clear and concise documentation of the sterilization process, the control unit is provided with a built-in thermal printer. This provides real-time cycle data including the pressure, temperature, change of phase, alarms and a summary at the end of the cycle.

Validation Packages

Tuttnauer provides our customers with services to help expedite the validation and commissioning of the equipment, including:

- Factory Acceptance Testing (FAT)
- Site Acceptance Testing (SAT)
- Installation Qualification/Operational Qualification (IQ/OQ)

R.PC.R Software

Automatic Recording of Cycle Information to Your PC
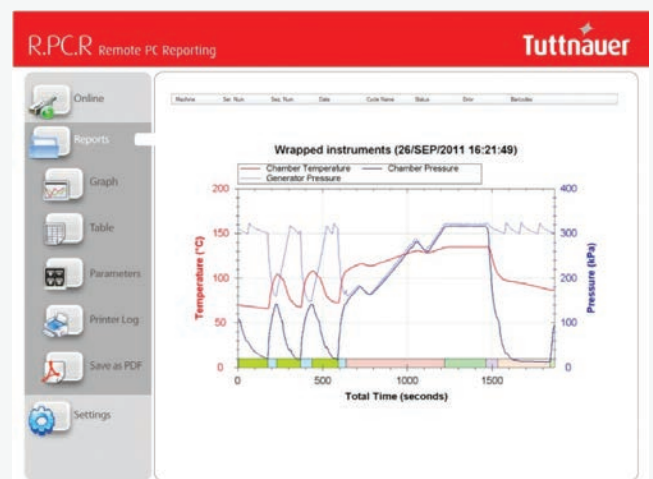
Reporting You Can Rely On

- Automatic recording of cycle information to any PC on your network
- Convenient access to graphs and tables that are easy to understand
- Easily generate PDF reports
- No need to file printouts, saving you time

Be in Control with Real-Time Remote Monitoring

- See the real-time autoclave display on your PC
- Monitor all activity for up to 8 autoclaves

With R.PC.R you can see graphs of the cycle data, numeric cycle data, cycle print-outs, measured values table, parameter table.

*R.PC.R software requires an ethernet connection provided at the autoclave.

A Flexible Range of Sizes and Models

Tuttnauer offers an unmatched range of models that are available in three series: Compact, Mid Range and Large Capacity. The sterilizer chambers range in volume from 120 to 1015 liters. Each model is available in either single or double door (pass-through) configurations.

The 44 and 55 Compact Series

Tuttnauer Small Laboratory Autoclaves with chamber volumes from 120 to 250 liters.

The 44 and 55 series is available with a fully automatic vertical sliding door.

Model	Chamber Dimensions (Inches)	Chamber Volume Cubic Feet (Liter)
4472	16x16x28	4 (120)
5596	20x20x38	9 (250)

Vertical
Sliding Door

The 66 Mid Range Series

Tuttnauer Medium Laboratory Autoclaves with chamber volumes from 430 to 660 liters.

The 66 series is available with a fully automatic vertical sliding door.

Model	Chamber Dimensions (Inches)	Chamber Volume Cubic Feet (Liter)
66C	26x26x39	15 (430)
66D	26x26x49	19 (540)
66E	26x26x60	23 (660)

Vertical Sliding Door

The 69 Large Capacity Series

Tuttnauer Large Laboratory Autoclaves with chamber volumes from 510 to 1015 liters.

The 69 series is available with an automatic-locking hinged door.

Model	Chamber Dimensions (Inches)	Chamber Volume Cubic Feet (Liter)
69A	24x36x36	18 (510)
69B	24x36x48	24 (680)
69C	24x36x60	30 (840)
69D	24x36x72	36 (1015)

Automatic Hinged Door

Additional Options

Loading Equipment

All Tuttnauer loading equipment is manufactured from high quality stainless steel material. All models can be provided with:

- Loading Cart with Two Shelves & Transfer Carriage
- Rack & Two Shelves

Additional shelves can be provided, upon request.

The 69 Large Capacity Series can be configured with a Drop Wheel Loading Cart, eliminating the need for a Transfer Carriage.

Steam Generator

If your facility does not have an in-house steam source, Tuttnauer offers steam generators in various sizes and steam capacities. Stainless Steel and Carbon Steel generators are available.

Room Isolation Seals

To provide separation of dissimilar environments, the sterilizer can be fitted with the proper room isolation seal appropriately designed for the individual application.

- **Bio-Seal** Manufactured using a gasket material designed to prevent airborne contaminants from entering the clean areas of the facility.

- **Air Differential Seal** Manufactured using a gasket material designed to maintain a barrier between the load and unload side.

- **Vermin Seal** Manufactured using aluminum or stainless steel designed to prevent vermin from passing between areas.

Air Compressor

If pressurized air is not available, Tuttnauer offers a small and quiet compressor. The compressor is used to operate the unit's pneumatic valves and power door.

Water Conservation Systems

Utilizing tap or chilled water supplies. Savings can be up to 90% when compared to standard installations. Contact Tuttnauer for additional information.

Effluent Decontamination System

Tuttnauer's biohazard exhaust filtration cycle utilizes an external jacketed bio filter with sterilize-in place technology.

Rack & Two Shelves

Loading Cart & Transfer Carriage

Specifications

Compact & 66 Mid Range Series

Model	4472	5596	66C	66D	66E
Chamber Dimension (Inches) WxHxL	16X16X28	20X20X38	26X26X39	26X26X49	26X26X60
Chamber Volume (Liter) Cubic Feet	(120) 4	(250) 9	(430) 15	(540) 19	(660) 23
External Dimensions Cabinet Enclosed (Inches) WxHxL Single Door	29x75x48	33x75x55	46.5x78.5x57	46.5x78.5x67	46.5x78.5x78
Autoclave Weight Empty Chamber, Cabinet Enclosed Lbs., Single Door	1400	1700	2500	2800	3100

Utility Consumptions/Requirements

Model		4472	5596	66C	66D	66E
Plant Steam Supply 50-80 PSIG Dynamic 97-100% Dry Saturated Vapor Condensate Free	Pipe Size	3/4" NPT	3/4" NPT	1" NPT	1" NPT	1" NPT
	Flow Rate (Peak) Avg. Consumption*	60 Lbs/Hr 22 Lbs/Cycle	90 Lbs/Hr 42 Lbs/Cycle	100 Lbs/Hr 74 Lbs/Cycle	145 Lbs/Hr 89 Lbs/Cycle	180 Lbs/Hr 111 Lbs/Cycle
Cold Water Supply 45 PSIG Dynamic, Minimum, <70° F Contact Tuttnauer for recommended Water Quality	Pipe Size	3/4" NPT	3/4" NPT	3/4" NPT	3/4" NPT	1" NPT
	Flow Rate (Peak)	8 GPM	8 GPM	13 GPM	13 GPM	13 GPM
Building Drain	Pipe Size	2" ODT	2" ODT	2" ODT	2" ODT	3" ODT
Compressed Air Requirements (Optional Air Compressor can be provided)	90 PSIG dynamic minimum, 3.5 SCFM. Minimum 3/8" NPT					
Electrical Requirements (Control System)	1-Phase, 120V, 60Hz. 20A (Dedicated Circuit)					
Electrical Requirements (Optional Vacuum Pump)		1-Phase, 120V 4A	3-Phase, 208V 5A	3-Phase, 208V 5A	3-Phase, 208V 5A	3-Phase, 208V 9A
		1-Phase, 120V 4A	3-Phase, 480V 4A	3-Phase, 480V 4A	3-Phase, 480V 4A	3-Phase, 480V 5A
Electrical Requirements (Optional Steam Generator)	Contact a Tuttnauer representative for specific electrical requirements.					

- Dimensions, weights and consumptions are for reference only.
- The addition of certain options could impact the above stated utilities.
- Contact a Tuttnauer representative to obtain certified drawings.
- Due to continuing equipment development, specifications are subject to change without notice.
- Consumptions may vary based on load configurations and cycle.

Specifications

69 Large Capacity Series

Model	69A	69B	69C	69D
Chamber Dimension (Inches) WxHxL	24x36x36	24x36x48	24x36x60	24x36x72
Chamber Volume (Liter) Cubic Feet	(510) 18	(680) 24	(840) 30	(1015) 36
External Dimensions Cabinet Enclosed (Inches) WxHxL, Single Door	49.25x73.25 x56.75	49.25x73.25 x68.75	49.25x73.25 x80.75	49.25x73.25 x91.5
Autoclave Weight Empty Chamber, Cabinet Enclosed Lbs., Single Door	2300	2600	2900	3300

Utility Consumptions/Requirements

Model		69A	69B	69C	69D
Plant Steam Supply 50-80 PSIG Dynamic 97-100% Dry Saturated Vapor Condensate Free	Pipe Size	1" NPT	1" NPT	1" NPT	1" NPT
	Flow Rate (Peak) Avg. Consumption*	180 Lbs/Hr 85 Lbs/Cycle	210 Lbs/Hr 113 Lbs/Cycle	320 Lbs/Hr 142 Lbs/Cycle	320 Lbs/Hr 170 Lbs/Cycle
Cold Water Supply 45 PSIG Dynamic, Minimum, <70° F Contact Tuttnauer for recommended Water Quality	Pipe Size	3/4" NPT	1" NPT	1" NPT	1" NPT
	Flow Rate (Peak)	13 GPM	13 GPM	13 GPM	13 GPM
Building Drain	Pipe Size	3" ODT	3" ODT	3" ODT	3" ODT
Compressed Air Requirements (Optional Air Compressor can be provided)		75 PSIG dynamic minimum, 3.5 SCFM. Minimum 3/8" NPT			
Electrical Requirements (Control System)		1-Phase, 120V, 60Hz. 20A (Dedicated Circuit)			
Electrical Requirements (Optional Vacuum Pump)		3-Phase, 208V 5A	3-Phase, 208V 9A	3-Phase, 208V 9A	3-Phase, 208V 13A
		3-Phase, 480V 4A	3-Phase, 480V 5A	3-Phase, 480V 5A	3-Phase, 480V 7A
Electrical Requirement (Optional Steam Generator)		Contact a Tuttnauer representative for specific electrical requirements.			

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Company Profile

Tuttnauer Ltd. has been a worldwide manufacturing company specializing in sterilizers since 1925. With a presence in over 140 countries, Tuttnauer is a market leader in providing sterilization and infection control solutions for autoclaves in various industries such as hospitals, research institutes, clinics and laboratories.

All of Tuttnauer's medical autoclaves adhere to the relevant international standards and regulations.

Renowned global leaders in infection control solutions with more than

97 years' experience

Products distributed to clinics, hospitals and research institutions in more than

140 countries

Your Sterilization & Infection Control Partners

Beyond our unmatched range of products, we also manage complete turnkey solutions, including planning, design and installation of equipment, as well as consultation and feasibility studies, for projects of all sizes.

Large Capacity Sterilizers for Medical Use

Fully Automatic Table-Top Autoclaves

Manual Table-Top Autoclaves

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Learn from our experts.
Visit our blog: tuttnauer.com/blog

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