



Flight Dental Systems

Flight Autoclave Sales Presentation R1.0

Flight Dental Systems

History

- ▶ Flight Dental Systems is a Canadian owned and managed dental equipment manufacturer and distributor with operations in over 25 countries around the world.
- ▶ Our company was founded on a commitment to deliver high quality products that provide the design, function and durability demanded by today's dental professionals at an affordable price.

Mission

- ▶ To provide our customers with high quality products designed and engineered in Canada at an affordable price. Along with our excellent customer service and expert knowledge of the product from the top to bottom makes for better support for our products globally.

Motto

- ▶ Quality and reliability meets affordability. First Class has never been so affordable.





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Certifications



ISO 13485:2016



Health Canada Certification



ETL Mark



THE CANADIAN
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OF COMMERCE

LA CHAMBRE
DE COMMERCE
DU CANADA

What is Class S Steam Sterilizers?

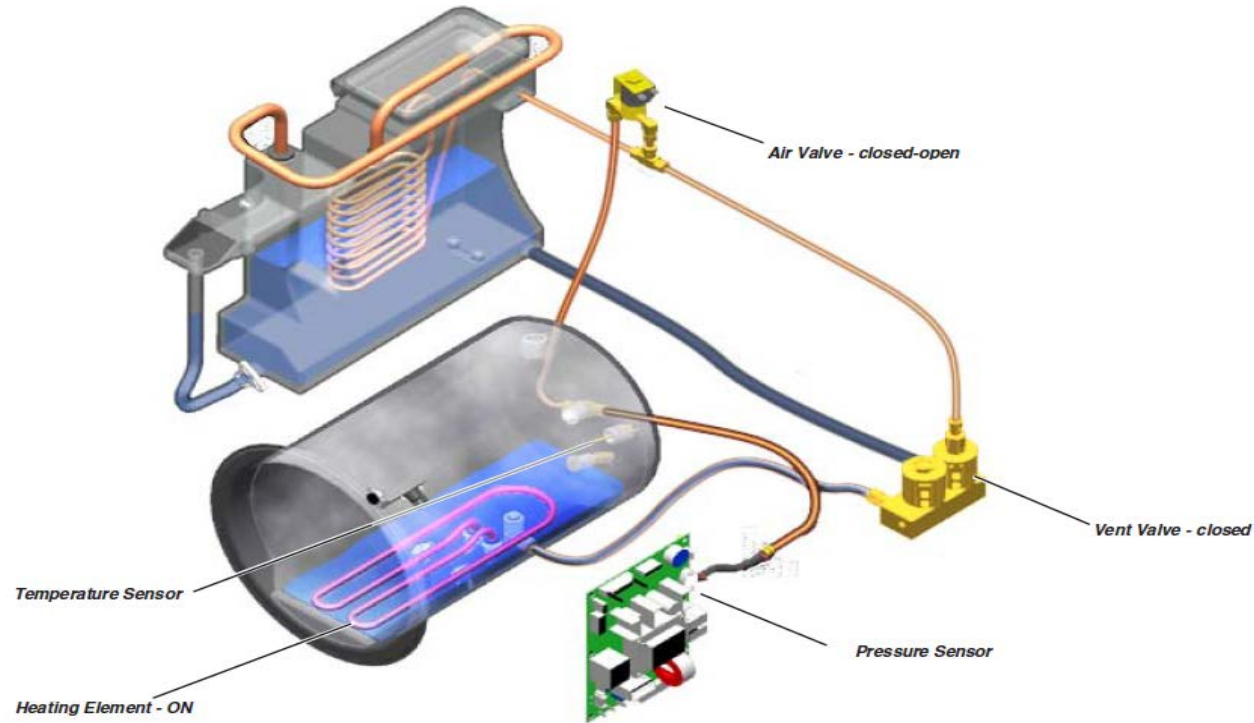
A Class S Sterilizer or also known as a positive pressure displacement autoclave uses steam to displace all of the air in the sterilization chamber before sterilization. The steam is released into a chamber using an independent steam generator which creates pulsating pressurized steam blasts, forcing the air out through the drain hole and before the sterilization process. **This results in a more accurate displacement of air than a downward displacement unit which uses a heating element that is submerged in water.**



Key Differences with Traditional Sterilizers

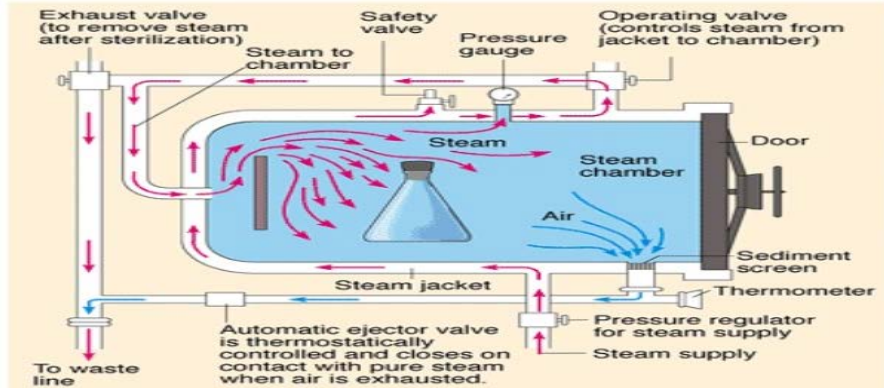
- Traditional Sterilizers use a Heating Element that heats up water to create the steam for a downward displacement of air
- Example – Midmark M9 and M11, Tuttanauer EZ9 and EZ11
 - Drawbacks: Not 100% accurate as air may not be completely removed
 - Results in improper sterilization
 - Additional Maintenance to clean chamber, heating elements and other parts due to mineral build-up
 - Results: Reduced heating efficiency, easily blocked or clogged pipes
 - Reuses water resulting in debris built up

Traditional Sterilizers

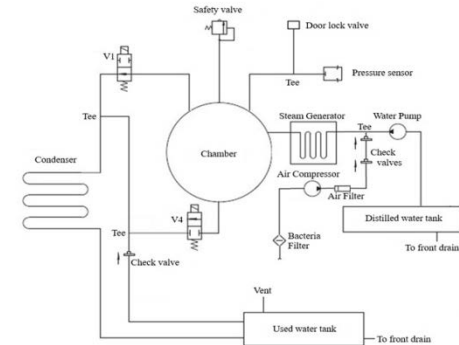


Flight's Steam Sterilizers

- Faster Heating Time with Immediate Steam Generation
- More complete removal of air with small bursts of steam injected into chamber
- Less maintenance then sterilizers using a heating element



This is an Example Only.



Flight Autoclave Models

Model	Chamber Dimensions (Diameter) x L in (mm)	Vol	Overall Dimensions DxWxH in (mm)	Tray Dimensions DxWxH in (mm)	No. of Trays	Voltage (V) Freq. (Hz)	Power (W) Current (A)	Shipping Weight lbs (kg)
Clave8+	6.7" x 12.6" (170mm x 320mm)	8 L	D 20.7" x W 16.5" x H 14.6" (D 525mm x W 420mm x H 370mm)	D 10.4" x W 5.1" x H 0.7" (D 130mm x W 265mm x H 18mm)	3	110 V - 60Hz	1600VA	82 lbs (87kg)
Clave16+	9.05" x 14.17" (230mm x 360mm)	16 L	D 23.6" x W 19.3" x H 17.9" (D 600mm x W 490mm x H 455mm)	D 11.2" x W 6.7" x H 0.7" (D 285mm x W 170mm x H 18mm)	3	110 V - 60Hz	1900V A	92 lbs (42kg)
Clave23+	9.72" x 17.71" (247mm x 450mm)	23 L	D 27.2" x W 19.3" x H 17.9" (D 690mm x W 490mm x H 455mm)	D 15" x W 7.6" x H 0.7" (D 380mm x W 192mm x H 18mm)	4	110 V - 60Hz	1900V A	121lbs (55kg)
Clave28+	11" x 19" (279mm x 483mm)	28 L	D 25.25" x W 22.5" x H 18.5" (D 640mm x W 570mm x H 475mm)	D 15.7" x W 8.4" x H 0.7" (D 400mm x W 212mm x H 18mm)	4	110 V - 60Hz	1600V A	202 lbs (92kg)
Clave45+	12.6" x 24.3 (319mm x 617mm)	45 L	D 33.1" x W 25.2" x H 22.0" (D 840mm x W 640mm x H 560mm)	D 21" x W 9.7" x H 0.7" (D 535mm x W 246mm x H 17mm)	2 or 5	220V - 60Hz	2600V A	227 lbs (103kg)
ClaveB	9.72" x 17.71" (247mm x 450mm)	23 L	D 27.2" x W 19.3" x H 17.9" (D 690mm x W 490mm x H 455mm)	D 15" x W 7.6" x H 0.7" (D 380mm x W 192mm x H 18mm)	4	230 V - 60Hz	2200VA	141 lbs (64kg)

FULLY AUTOMATIC STERILIZER

Ultra Fast Class S



Clave8+

Class S Automatic Sterilizer



Clave16+



Clave23+



Clave28+



Clave45+

Class B Pre/Post Vacuum Sterilizer



ClaveB

Clave8+



Model	Voltage	Rated Power	Chamber Size	Weight
Clave8+	110V	1600W	Φ6.7"X 12.6" (8L)	82 lbs

Features

- Class S Steam Sterilizer
- Fast Sterilization Cycles – 12 Minutes Unwrapped Flash Cycle
- Integrated Distilled Water Reservoir and Waste Water Reservoir – No EXTRA Bottles Required
- 5 Programmed Sterilizations Cycles: Flash/Unwrapped, Wrapped, Liquid, Textile, Prions
- Powder Coated Solid Steel Construction
- Independent Steam Generator for positive pressure displacement dynamic pulsating steam injection
- Easy to repair – Quality Parts Made from Europe
- Built in Printer Included
- Double Door Protection System – Prevents door from opening during Cycles (Provides Closed Door Drying)
- Pressure Safety valve to prevent Over-pressure in chamber
- HEPA Filter to ensure clean air into chamber
- Dry-Assist Technology for Fast Drying



Clave8+



flash water tank



stainless steel chamber



water filter

USB port



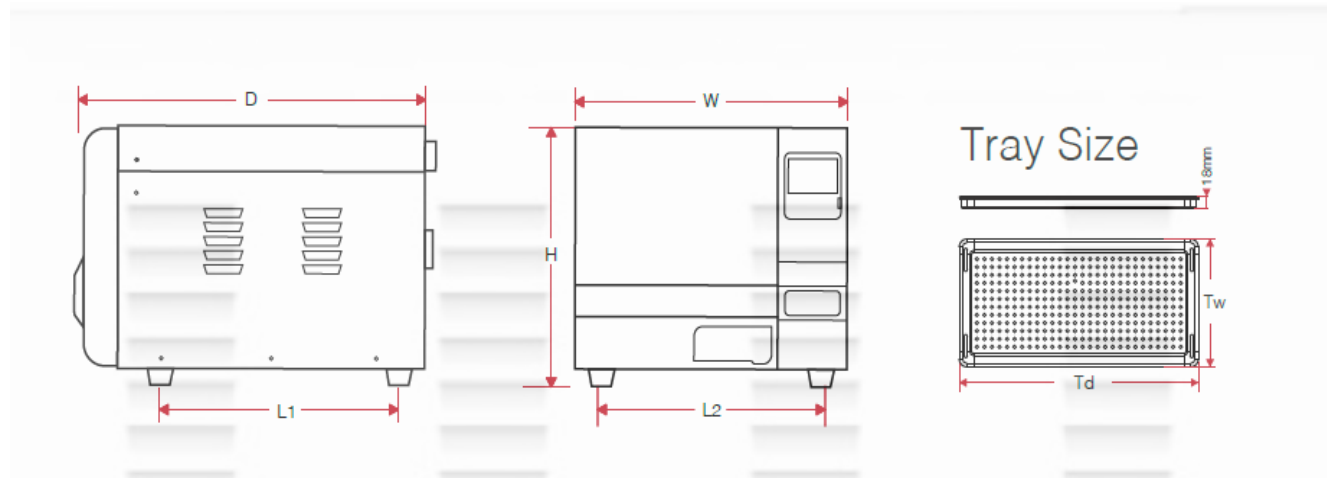
draining connector
for used water tank

draining connector
for flash water tank

LCD Screen



Clave8+ Dimensions



Model	Chamber Size	W	H	D	L1	L2	Td	Tw
Clave8+	Φ6.7"X 12.6"	16.5"	14.6"	20.7"	14"	13"	10.4"	5.1"

Clave8+ vs Enbio S vs Statim 2000 vs M7

	Flight Clave8+	Midmark M7	Enbio S	Statim 2000 G4
Capacity	8L	7.5" Diameter x 15" Depth 9L	2.7L	Volume: 1.8L
Load Size	3.3lbs – Wrapped	4.0 lbs	1.1lbs - Wrapped	2.2lbs
Cycle Time	12min Unwrapped	Manual Autoclave Unwrapped – 9 minutes	7min Unwrapped	Unwrapped @134C:3.5 min Total: 6 min
Internal Memory	10,000 Cycles	None	20 Cycles	None
Printer	Built in (Included)	None	None	None
Datalogger	USB	None	USB	USB
Warranty	2 Year	1 Year Warranty	1 Year	1 Year Warranty
Trays	3 Trays	3	1 Cassette	1 Cassette
Clean Water Reservoir	Internal Tank	Internal Tank	External Bottle *(Bottle Not Included)	Internal Tank
Waste Water	Internal Tank and Auto Drain	Recycle Water – Same Water Tank as Clean	External Bottle *(Bottle Not Included)	External Bottle with Condenser
Bowie Dick Test	Not Required	Not Required	Required Each Day	Not Required
Class of Sterilizer	Class S – Dynamic Pressure Pulsing Steam Injection	Class N – Gravity Displacement	Class B – Pre/Post Vacuum	Class S – Dynamic Pressure Pulsing Steam Injection

Clave 16+



Clave 16+

Key Features:

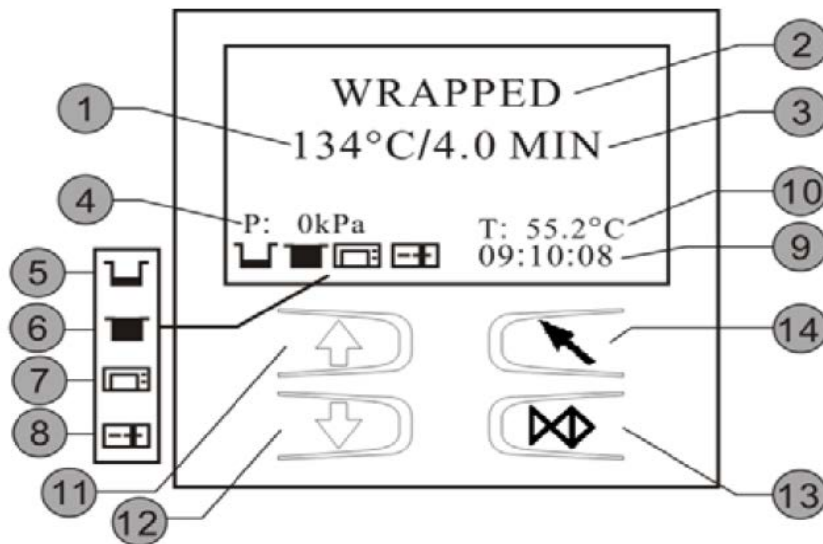
- Class S Steam Sterilizer
- 5 Programmed Sterilizations Cycles: Solid/Unwrapped, Wrapped, Liquid, Textile, Prions
- Powder Coated Solid Steel Construction
- Independent Steam Generator for positive pressure displacement dynamic pulsating steam injection
- Easy to repair – Quality Parts Made from Europe
- Built in Printer Included
- USB Port for Recording Cycles (USB Key included)
- Double Door Protection System – Prevents door from opening during Cycles (Provides Closed Door Drying)
- Pressure Safety valve
- HEPA Filter
- Dry-Assist Technology



	Model: Clave I 6+
Chamber Size	16L (9" x 14.2")
Number of Trays	3
Voltage	110v 50/60 Hz
Power (W)	1900w
Overall Dimensions (WxHxD) Minimum Table Requirements	17.5" x 16.1" x 23.8" 19.25" x 19.75" x 21"
Programmed Cycle	Unwrapped: 4 Min Sterilization @ 134C, 20 min Sterilization @ 121C Total Time@ 134C: 44 min (Includes 30 Min Drying Time) Wrapped: 6 Min @ 134C, 30 min @ 121C Total Time@ 134C: 50 min (Includes 30 Min Drying Time) Liquid/Textile/Rubbers: 10 min @ 134C, 30 min @ 121C Total Time@ 134C: 60 min (Includes 30 Min Drying Time)



Clave 16+



- | | |
|----|---|
| 1 | Program temperature |
| 2 | Program |
| 3 | Holding time |
| 4 | Pressure |
| 5 |  Distilled water / Fill it flashing. |
| |  Filling the tank |
| |  Bad water quality |
| 6 | Used water tank full / Drain if flashing |
| 7 | Printer status |
| 8 |  Door open |
| |  Door closed |
| |  Door blocked |
| 9 | Time |
| 10 | Current internal temperature |
| 11 | Up button |
| 12 | Down button |
| 13 | Enter button |
| 14 | Menu button |

Clave 16+

Programmed Cycles

UNWrapped (121°C)

UNWrapped (134°C)

Wrapped (121°C)

Wrapped (134°C)

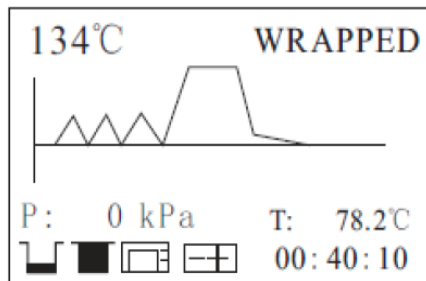
Wrapped

134°C/3.5 Min

16-07-2019

P: 0.0kPa T: 28.2°C

0:45:05



Total time or count down until completion

Clave 16+



Chamber Size:

Volume: 16L

Dimensions: 9" x 14.2"

Trays: 3 Stainless Steel

Trays



Distilled Water Reservoir

- Easily accessible and easy to fill
- Water Level Sensor
- Capacity to run 5-6 Cycles Before Adding water

Clave16+ Comparison

	Flight Clave16+	Tuttnauer 2340M	Midmark M9-05x
Capacity	9" x 14.2" Volume: 16L	9" x 18" Volume: 19L	9" x 15" Volume: 13.4L
Load Size	7.7lbs – Wrapped	N/A	8lbs - Wrapped
Cycle Time	Fully Automatic Unwrapped @273F/134C:4 min Total: 44 min Wrapped@273F/134C: 6 min Total: 50 min *30 Minute Drying Time	Manual Autoclave Unwrapped @273F/134C:3 min Total: 20 min Wrapped@273F/134C: 4 min Total: 17 min	Unwrapped @273F/134C:3 min Total: 44 min Wrapped@273F/134C: 5 min Total: 47 min
Internal Memory	10,000 Cycles	None	N/A
Printer	Built in (Included)	None	None
Datalogger	USB	None	USB
Drying	Closed Door Drying	Closed Door Drying	Open Door Drying
Warranty	2 Year	1 Year Warranty	2 Year
Trays	3 Trays	3 Trays	4 Trays
Bowie Dick Test	Not Required	Not Required	Not Required
Class of Sterilizer	Class S – Dynamic Pressure Pulsing Steam Injection	Class N – Heating Element – Gravity Displacement	Class N – Heating Element – Pressure Pulsing + Gravity Displacement

Clave23+



Clave23+



Specifications

- USB Data logger
- Printer Port Connection
- Built in Printer
- Steam Pulsing Steam Injection
- Closed Door Drying
- Meets all Infection Control Protocols

Distilled Water Reservoir

- Easily accessible and easy to fill
- Water Level Sensor
- Capacity to run 5-6 Cycles Before Adding water



Clave23+

Key Features:

- Class S Steam Sterilizer
- Fast Sterilization Cycles
- 5 Programmed Sterilizations Cycles: Solid/Unwrapped, Wrapped, Liquid, Textile, Prions
- Powder Coated Solid Steel Construction
- Independent Steam Generator for positive pressure displacement dynamic pulsating steam injection
- Easy to repair – Quality Parts Made from Europe
- Built in printer and USB Data Logger
- Double Door Protection System – Prevents door from opening during Cycles (Provides Closed Door Drying)
- Pressure Safety valve
- HEPA Filter
- Dry-Assist Technology

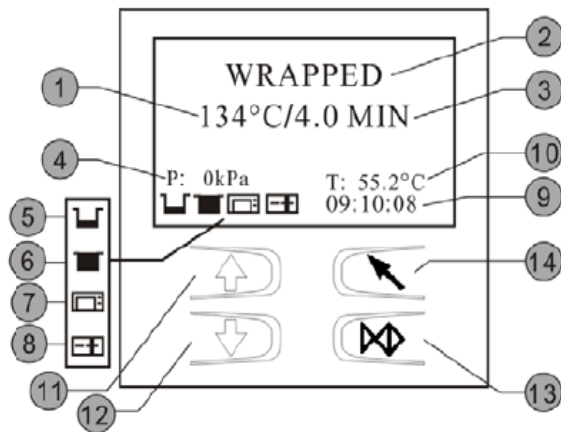


	Model: Clave23+
Chamber Size	23L (9.72"x 17.7")
Number of Trays	4
Voltage	110V 50/60Hz
Power (W)	1900W
Overall Dimensions (WxHxD) Minimum Table Requirements	18.9" x 18.3" x 27.6" 20.75" x 21.63" x 25"
Programmed Cycle	Solid/Unwrapped: 4 Min Sterilization @ 134C, 20 min Sterilization @121C - Total Time @ 134C: 44 min (Includes 30 Min Drying Time) Wrapped: 6 Min @134C 30 min @ 121C - Total Time: 50min (Includes 30 Min Drying Time) Liquid/Textile/Rubbers: 10 min @ 134C, 30 min @ 121C Total Time: 65 min (Includes 30 Min Drying Time)



Clave23+

Symbols:



- | | |
|----|---|
| 1 | Program temperature |
| 2 | Program |
| 3 | Holding time |
| 4 | Pressure |
| 5 |  Distilled water / Fill it flashing. |
| |  Filling the tank |
| |  Bad water quality |
| 6 | Used water tank full / Drain if flashing |
| 7 | Printer status |
| 8 |  Door open |
| |  Door closed |
| |  Door blocked |
| 9 | Time |
| 10 | Current internal temperature |
| 11 | Up button |
| 12 | Down button |
| 13 | Enter button |
| 14 | Menu button |

Clave23+

Programmed Cycles

UNWrapped (121°C)

UNWrapped (134°C)

Wrapped (121°C)

Wrapped (134°C)

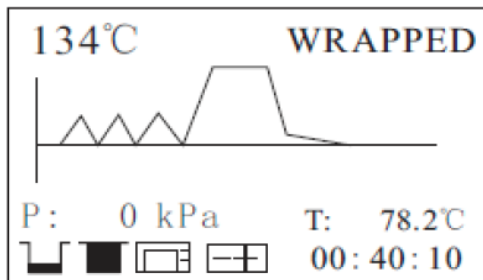
Wrapped

134°C/3.5 Min

16-07-2019

P: 0.0kPa T: 28.2°C

0:45:05



Total time or count down until completion

Flight Dental System's

Autoclaves

Key Selling Points:

- **Fast Sterilization Cycles** Unwrapped: 4min, Wrapped: 6 min, Rubber/Textiles: 10min
- **Local** Inventory, Technical Support, and Spare Parts Inventory
- **Larger** Chamber compared to Statim with Similar Sterilization Time
- Data Logger with USB and Built-in Internal Printer
- Closed Door Drying
- Dynamic Steam Injection Pulsing Technology
- **2Year** Parts Warranty

Clave23+ Comparison

	Flight Clave23+	Tuttnauer T-Top 10
Capacity	10" x 18" Volume: 23L	10" x 18" Volume: 23L
Load Size	8.8lbs – Wrapped	7.9lbs - Wrapped
Cycle Time	Fully Automatic Unwrapped @273F/134C:4 min Total: 44 min Wrapped@273F/134C: 6 min Total: 50 min *30 Minute Drying Time	Unwrapped @273F/134C:3 min Total: 55 min Wrapped@273F/134C: 4 min Total: 56 min
Internal Memory	10,000 Cycles	500 Cycles
Printer	Built in (Included)	None
Datalogger	USB	USB
Drying	Closed Door Drying	Closed Door Drying
Warranty	2 Year	1 Year Warranty
Trays	4 Trays (Max 5)	4 Trays (Max 5)
Bowie Dick Test	Not Required	Not Required
Class of Sterilizer	Class S – Dynamic Pressure Pulsing Steam Injection	Class S – Dynamic Pressure Pulsing Steam Injection

Clave28+



Model	Voltage	Rated Power	Chamber Size	Weight
Clave28+	110V	1600W	Φ11.0"X 19" (28L)	150lbs

Features

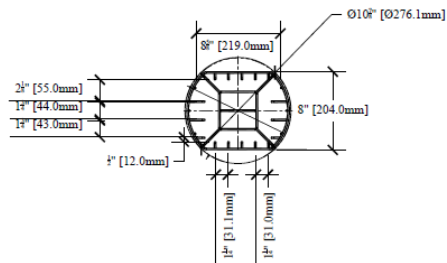
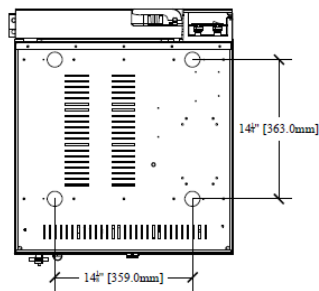
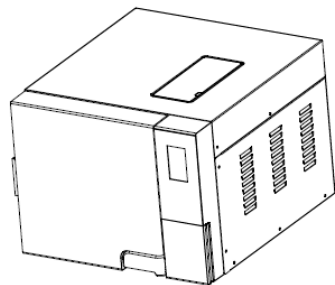
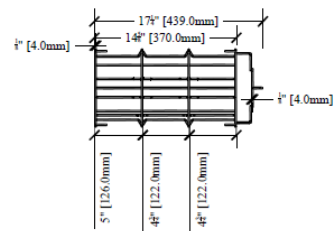
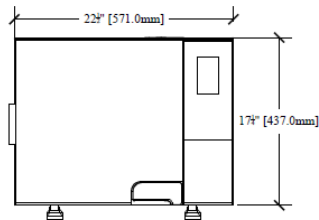
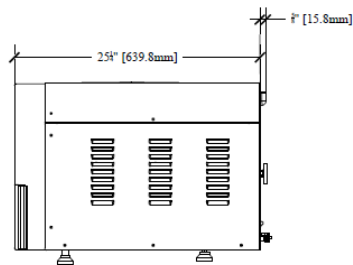
- Class S Steam Sterilizer
- Fast Sterilization Cycles – Wrapped 134C Cycle will be 50 minutes
- Integrated Distilled Water Reservoir and Waste Water Reservoir
- 5 Programmed Sterilizations Cycles: Unwrapped, Wrapped, Liquid, Prions, Drying Only
- Powder Coated Solid Steel Construction
- Independent Steam Generator for positive pressure displacement dynamic pulsating steam injection
- Easy to repair – Quality Parts Made from Europe
- Built in Printer Included
- Double Door Protection System – Prevents door from opening during Cycles (Provides Closed Door Drying)
- Automatic Door Closing Mechanism
- Pressure Safety valve to prevent Over-pressure in chamber
- HEPA Filter to ensure clean air into chamber
- Dry-Assist Technology for Fast Drying with post-vacuum
- Perfect for Labs, Dental, Medical, Veterinary and Food Processing Facilities

Clave28+ Dimensions



Model	Width	Height	Depth
Clave28+ Overall Dimension	22.5"	18.5"	25.25"

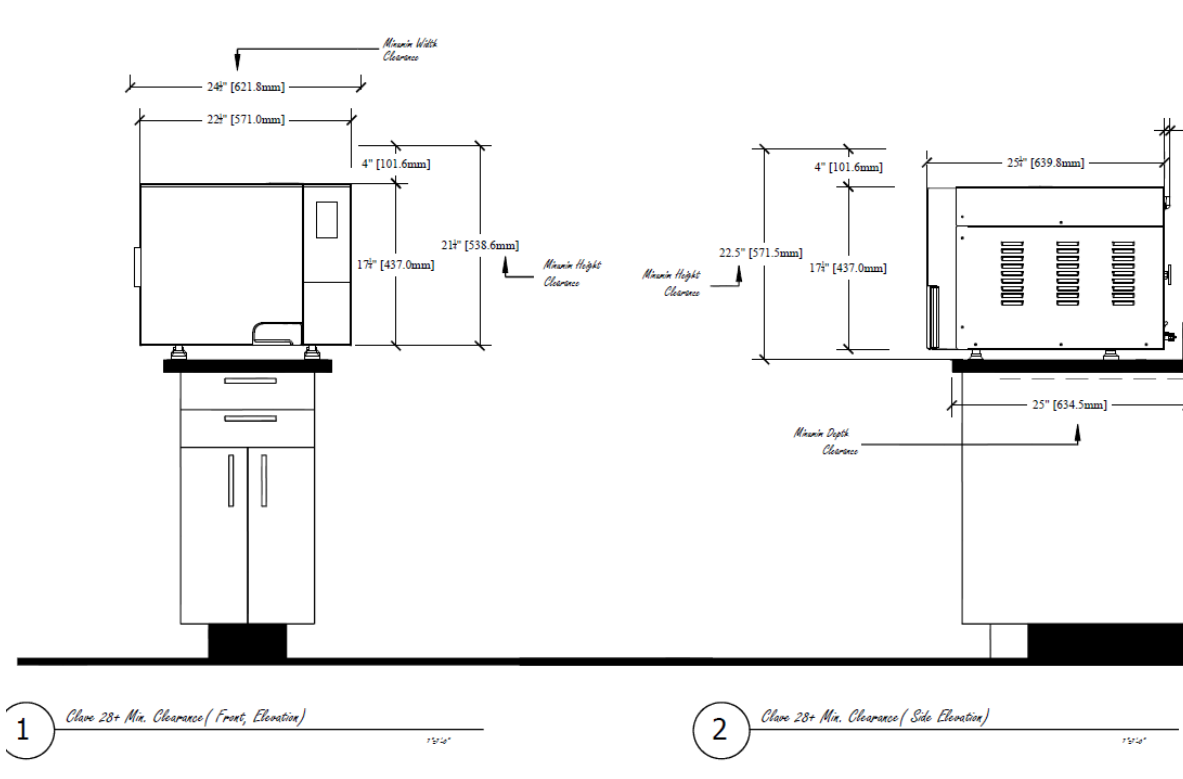
Clave28+ Dimensions



1 Clave 28+

2 Rack Design

Minimum Space Requirements



Clave28+

	Flight Clave28+	Tuttanauer T-Top II	Midmark MII	W & H Lexa
Capacity	Φ11" x 19" (28L) 28L	Φ11" x 18" (28L) 27L	11" x 18" Volume: 24.6L	Φ11" x 19" (28L) 28L
Load Size	10lbs – Wrapped	9lbs - Wrapped	9 Lbs - Wrapped	14lbs - Wrapped
Cycle Time	Fully Automatic Unwrapped @273F/134C: 4 min Total: 44 min Wrapped@273F/134C: 6 min Total: 50 min *30 Minute Drying Time	Unwrapped @273F/134C: Total: 38 min Wrapped@273F/134C: 6 min Total: 66 min	Unwrapped @273F/134C: Total: 48 min Wrapped@273F/134C: Total: 54 min	Unwrapped @273F/134C: Total: 26-39min Wrapped@273F/134C: Total: 48-58 min
Internal Memory	10,000 Cycles	500 Cycles	Unlimited	50 Cycles
Printer	Built in (Included)	None	None	None
Datalogger	USB	USB	USB	USB
Drying	Closed Door Drying	Closed Door Drying	Open Door Drying	Closed Door Drying
Warranty	2 Year	1 Year	2 Year	2 Years
Trays	4 Trays (Max 5)	4 Trays (Max 5)	4 Trays	4 Trays
Bowie Dick Test	Not Required	Not Required	Not Required	Not Required
Class of Sterilizer	Class S – Dynamic Pressure Pulsing Steam Injection	Class S – Dynamic Pressure Pulsing Steam Injection	Class N – Heating Element – Pressure Pulsing + Gravity Displacement	Class S – Dynamic Pressure Pulsing Steam Injection

Clave45+



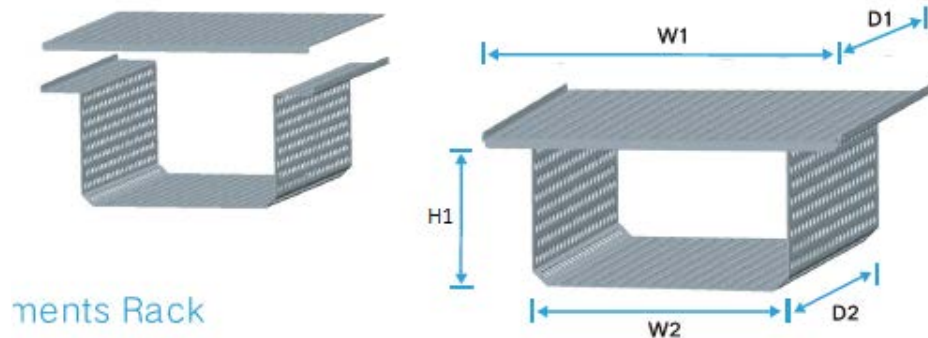
Model	Voltage	Rated Power	Chamber Size	Weight
Clave45+	220V	2600W	Φ12.5"X 24.3" (45L)	265 lbs

Features

- Class S Steam Sterilizer
- Fast Sterilization Cycles – Wrapped 134C Cycle will be 70 minutes
- Integrated Distilled Water Reservoir and Waste Water Reservoir
- 5 Programmed Sterilizations Cycles: Unwrapped, Wrapped, Liquid, Prions, Drying Only
- Powder Coated Solid Steel Construction
- Independent Steam Generator for positive pressure displacement dynamic pulsating steam injection
- Easy to repair – Quality Parts Made from Europe
- Built in Printer Included
- Double Door Protection System – Prevents door from opening during Cycles (Provides Closed Door Drying)
- Automatic Door Closing Mechanism
- Pressure Safety valve to prevent Over-pressure in chamber
- HEPA Filter to ensure clean air into chamber
- Dry-Assist Technology for Fast Drying with post-vacuum
- Perfect for Labs, Dental, Medical, Veterinary and Food Processing Facilities

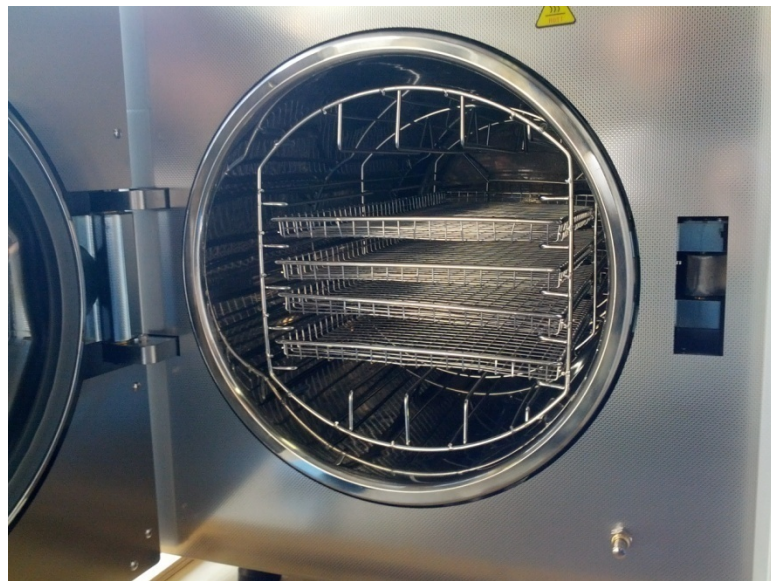
Clave45+

► 2 Rack Options



Model	W1	D1	W2	L1	D2	H	H1	H2
Clave45+	12.2"	20"	8.75"	14"	20"	11"	4.5"	6.5"

Clave45+

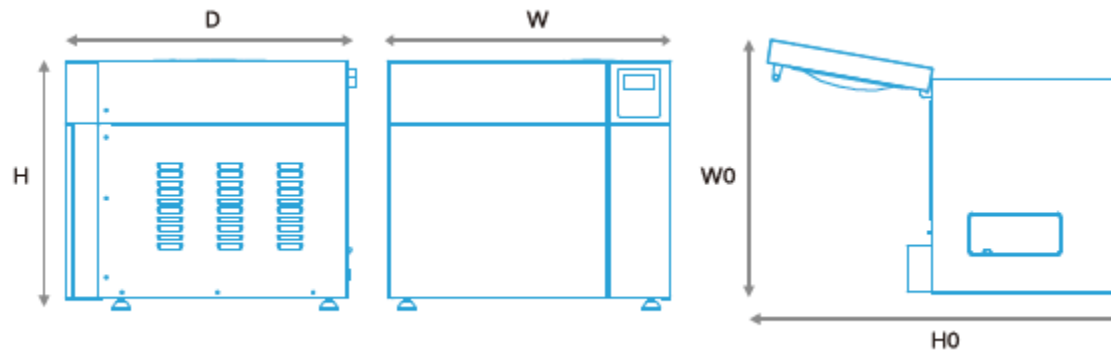


Clave45+

► Stainless Steel Cart



Clave45+ Dimensions



Model	Chamber Size	W	H	D	Door Open Width (WO)	Door Open Depth (HO)
Clave45+	Φ12.5"X 24.3"	25.2"	22"	33.1"	29.9"	49.8"

Clave45+

	Flight Clave45+
Capacity	45L
Load Size	22lbs – Wrapped
Chamber Size	Φ12.5"X 24.3" (45L)
Cycle Time	70min Wrapped
Internal Memory	10,000 Cycles
Printer	Built in (Included)
Datalogger	USB
Warranty	2 Year Parts Warranty
Trays	2 or 4
Clean Water Reservoir	Internal Tank
Waste Water	Internal Tank and Auto Drain
Bowie Dick Test	Not Required
Class of Sterilizer	Class S or Upgradable to B

Clave45+

Installation Requirements

- 1) 208-230V 15A Dedicated Line - If voltage is lower or higher you will need to order Buck and Boost Auto transformer PN: 2900601
- 2) Check Receptacle Type – Tandem 220v 15A Receptacle



Or



- 3) Check Space requirements are sufficient for Clave45+



Technical Info

Compact Class S Steam Sterilizer

- Removable panels for easy servicing
- Independent water pump, circuit board, steam generator, Heat Exchanger, Solenoid Valves
- Chamber made with 300 Series High Quality Stainless Steel



Technical Info

Water Pump

- High Quality Independent Water Pump –

ULKA Model E Type EP5, 120V 60 Hz, 1/1min, Cl.A, 4IW



Models		Voltage	ON/FF [min]	Class	W	Certificates
EP4, EP5, EP7	EX4, EX5, EX7	240V~50Hz	2/1	F	48	IMQ
		230V~50Hz	2/1	F	48	IMQ/VDE
		220V~50Hz	2/1	F	48	IMQ
		220V~50-60Hz	2/1	F	48	
EP4GW, EP5GW, EP7GW	EX4GW, EX5GW, EX7GW	230V~50Hz	2/1	F	48	VDE
		120/60	2/1	F	52	
		220/60	2/1	F	64	
EAP4, EAP5, EAP7	EAX4, EAX5, EAX7	220V~60Hz	1/2	A	64	c-UL
EP4, EP5, EP7	EX4, EX5, EX7	200V~50-60Hz	2/1	F	48	
		120V~60Hz	1/1	A	41	c-UL
EAP4, EAP5, EAP7	EAX4, EAX5, EAX7	120V~60Hz	1/1,5	A	52	c-UL
EFP4, EFP5, EFP7	EFX4, EFX5, EFX7	120V~60Hz	2/1	F	52	c-UL
EP4, EP5, EP7, EP4GW, EP5GW, EP7GW	EX4, EX5, EX7 EX4GW, EX5GW, EX7GW	100V~50-60Hz	2/1	F	55	
		24V~50-60Hz	2/1	F	48	

Technical Info

Air Compressor

- Reliable and Efficient Compressor

Brand: Medo USA Nitto Kokhi

Model: VC0201B Dual Type



Rated Pressure	10 kPa (0.1 kgf/cm ²) 0.1 bar 1.42 psig	
Rated Airflow	20 L/min 0.71 cfm	
Maximum Pressure	18 kPa (0.18 kgf/cm ²) 0.18 bar 2.56 psig	
Attainable Vacuum	-18.7 kPa (-140 mmHg) -187 mbar -5.51 in.Hg	
Rated Voltage	120 V AC	230 V AC
Power Consumption	21 W	
Rated Frequency	60 Hz	50 Hz
Rated Performance	10,000 hours	
Working Pressure Range	-18.7 kPa to 18 kPa (-140 mmHg to 0.18 kgf/cm ²) -187 mbar to 0.18 bar -5.51 in.Hg to 2.56 psig	
Inlet	10.5 mm O.D. hose barb	
Outlet	8.5 mm O.D. hose barb	
Duty Cycle	Continuous	
Coil Insulation Class	E or its equivalent (JETL) and A for UL	
Mounting Dimensions	125 (L) x 56 (W) mm 4-59/64" (L) x 2-13/64" (W)	
Weight	1.7 kg 3.7 Lbs	
Leadwire Length	300 mm 11-13/16"	

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Technical Info

Steam Generator

- Independent One Piece Steam Generator
- Thermal cutoff Sensor to protect against over heating
- Immediate Steam Generation – Efficient and Effective



Technical Info

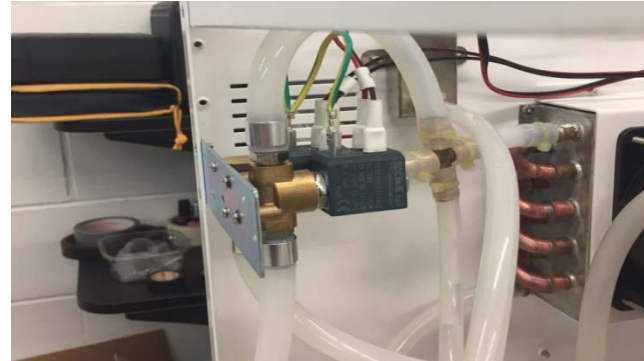
Condenser with Fan

- Able to rapidly cool exhausted steam for ventilation



Solenoid Valves

- Quality Solenoid Valves for controlling water and air pressure release



Technical Info

Distilled Water Reservoir

- Distilled water reservoir with filter
- Water Level Safety Sensor prevents running reservoir dry



Waste Water Reservoir

- Waste water reservoir with filter
- Water Level Safety Sensor prevents waste water overflow

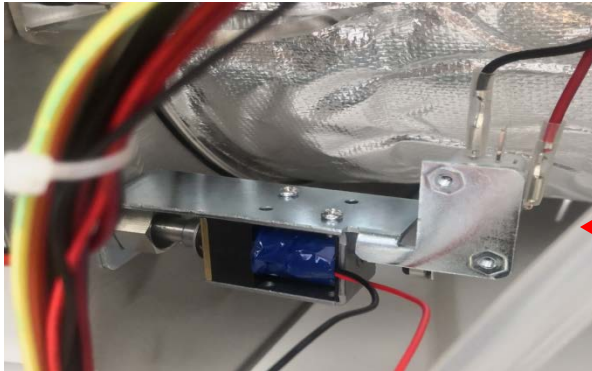


Technical Info



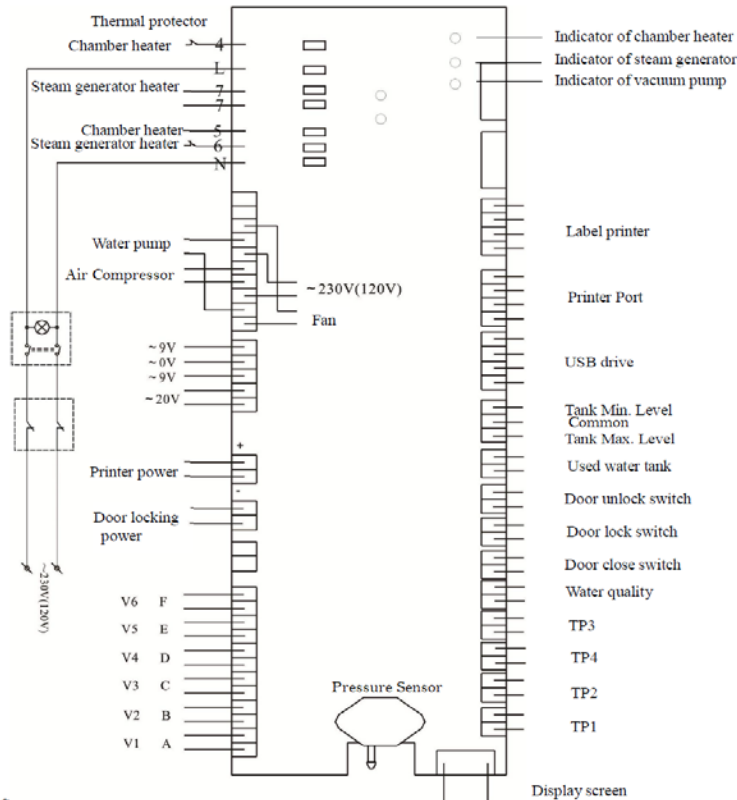
Door Lock Safety Mechanism

- Dual Safety Door Lock Sensor
- Prevents door from opening during Cycle
- Will not allow cycle to start if door is not closed



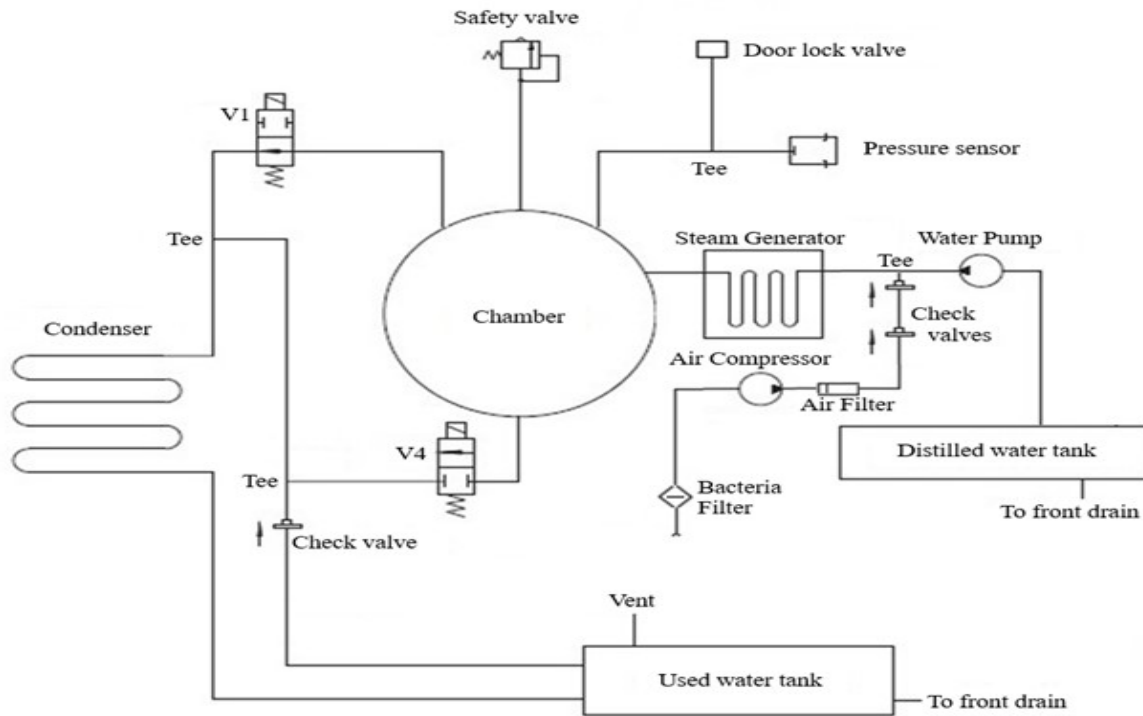
Clave23+ uses a hook type door close and a electronic door lock

Wiring Diagram



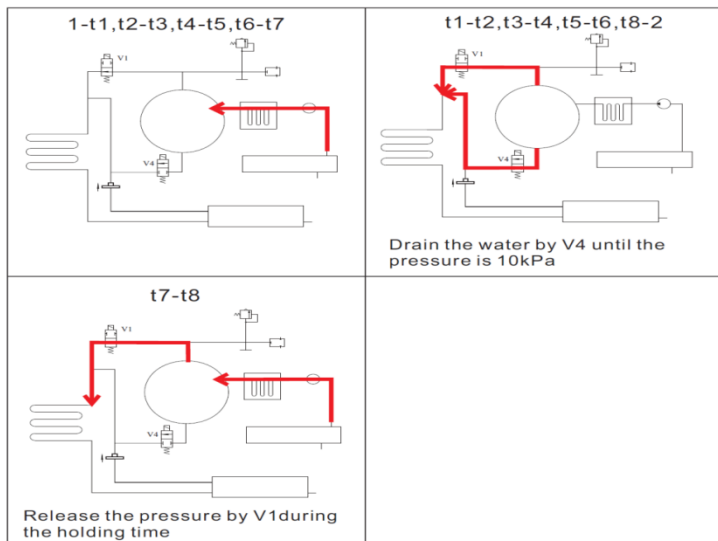
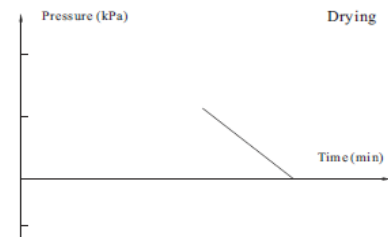
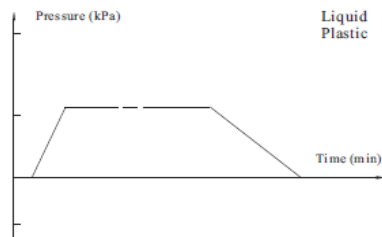
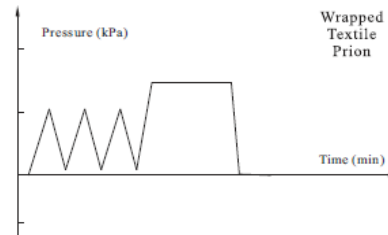
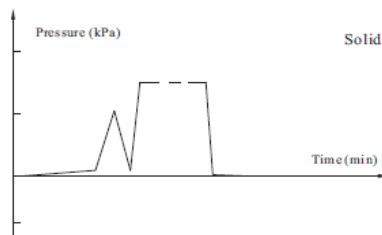
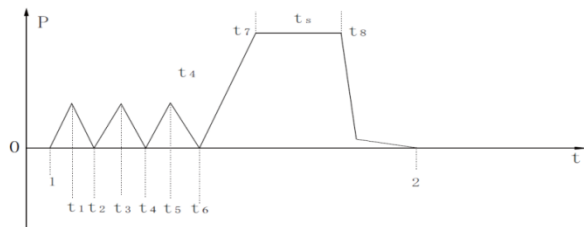
TP1: Steam generator temperature sensor
 TP2: Inner temperature sensor of chamber
 TP3: Temperature sensor of chamber wall
 V1: Air release valve
 V4: Water release valve

Technical Diagram



V1: Air release valve (normally open) P/N 90012077
V4: Water release valve (normally closed) P/N 90012025

Working Principle



What are Class B Steam Sterilizers?

A Class B Sterilizer is a steam sterilizer that uses a vacuum pump to remove air/steam mixtures from the chamber prior to sterilization commencing. This process can remove 99% of the air inside of the chamber before the temperature and pressure increases to its necessary parameters. This dynamic air removal provides the necessary conditions to sterilize load type, including porous or hollow materials, products in pouches, textiles and hollow items like wands, turbines, handpieces and tips.

According to the Public Health of Ontario Dynamic Air Removal Sterilizers (Class B) are the preferred method of sterilization.



Class B vs. Class S Sterilizers

Class B Sterilizer	Class S Sterilizer
Autoclave with Vacuum – Pre-Vacuum for Cold Air Removal and Post Vacuum for Hot Air Removal/Venting	No Vacuum Function – Air removal performed with Gravity Displacement
Provide better penetration and sterilization of wrapped hollow instruments	Drying Performed by Compressor or natural Venting
Shorter Sterilization Process	Longer Sterilization Process
Shorter Drying Time	Longer Drying Time Required
Daily B&D Test Required	
Faster Total Cycle Time	



How a Class B Works

Step 1 - Air Removal: Vacuum pump removes air from the chamber with short pulses. This conditioning process of the chamber for sterilization will remove 99% of the air inside the chamber.

Step 2 – Heating: Once all the air is removed the steam generator will inject small burst of steam into the chamber until the pressure and temperature reaches the appropriate parameters to start the sterilization time (holding time).

Step 3 – Sterilization: Once the temperature and pressure is reached the system will maintain this temperature and pressure throughout the sterilization time. This is the stage where the sterilization takes place.



How a Class B Works

Step 4 – Exhaust : The exhaust valve/solenoid valve will open to release the pressure/steam inside the chamber until the pressure is equal to atmospheric pressure.

Step 5 – Drying: After all the air is exhausted after the sterilization cycle. The vacuum pump will again pump out all the moisture and steam from the load until the load is completely dry. The heating elements around the chamber will stay on to allow the water to evaporate into gas and be pumped out by the vacuum.

Step 6- Completion: After the drying is done the cycle is complete and you can open the door.



Clave B



Clave B

Large Chamber can allow up to 4 trays or 3 rows of cassettes

Distilled Water Reservoir



Internal Printer Connection

USB Port for Documentation
(USB Key Included)

230 Volt Power Switch

Waste Water Drain

Distilled Water Drain

Clave B

Key Features:

- Class B Steam Sterilizer with pre/post vacuum
- Better penetration for hollow and porous instruments
- Faster Sterilization Times and Cycle
- 5 Programmed Sterilizations Cycles: Solid/Unwrapped, Wrapped, Liquid, Textile, Prions
- Powder Coated Solid Steel Construction
- Independent Steam Generator for positive pressure displacement
- Easy to repair – Quality Parts Made in Europe
- Optional Printer
- USB Port for Recording Cycles (USB Key included)
- Triple Door Protection System – Prevents door from opening during Cycles and cycle from starting if door is not closed
- Pressure Safety valve

Clave B

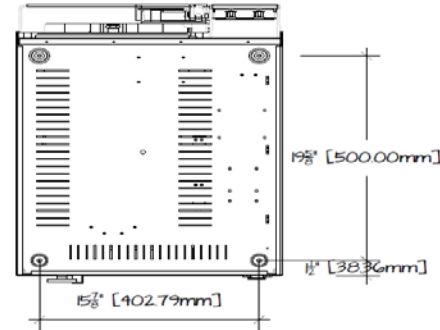
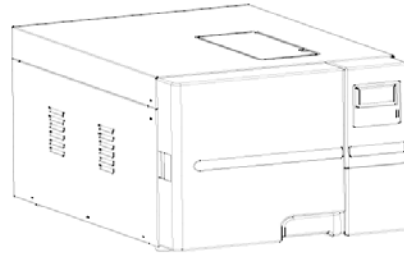
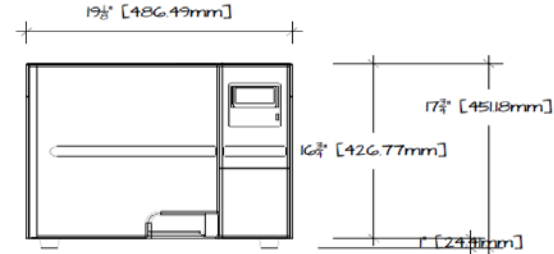
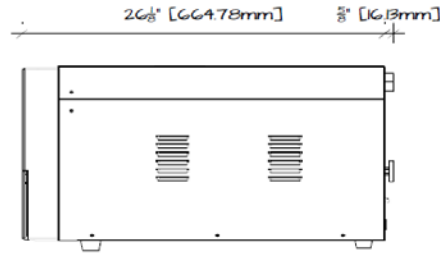
Key Selling Points:

- **Fast Sterilization Cycles** Unwrapped: 4min Clave B, Wrapped: 4min Plastic : 30min Clave B
- **Local** Inventory, Technical Support and Spare Parts Inventory
- **Larger** Chamber compared to Statim with Similar Sterilization Time
- **2 Year** Parts Warranty

	Model: ClaveB
Chamber Size	23L (9.72"x 17.7")
Number of Trays	4 Trays included
Voltage	230V 60Hz
Power (W)	1750VA
Overall Dimensions (WxHxD)	19.3" x 17.9" x 27.2"
Programmed Cycle	Solid/Unwrapped: 4 Min Sterilization @ 134C, 20 min Sterilization @121C Total Time: 14-30 Mins * Includes Drying Time Wrapped: 4 Min @134C 20 min @ 121C Total Time: 30-50min* Includes Drying Time Plastics: 30 min @ 121C Total Time: 35-60 min* Includes Drying Time

Clave B Specifications

Overall Dimensions



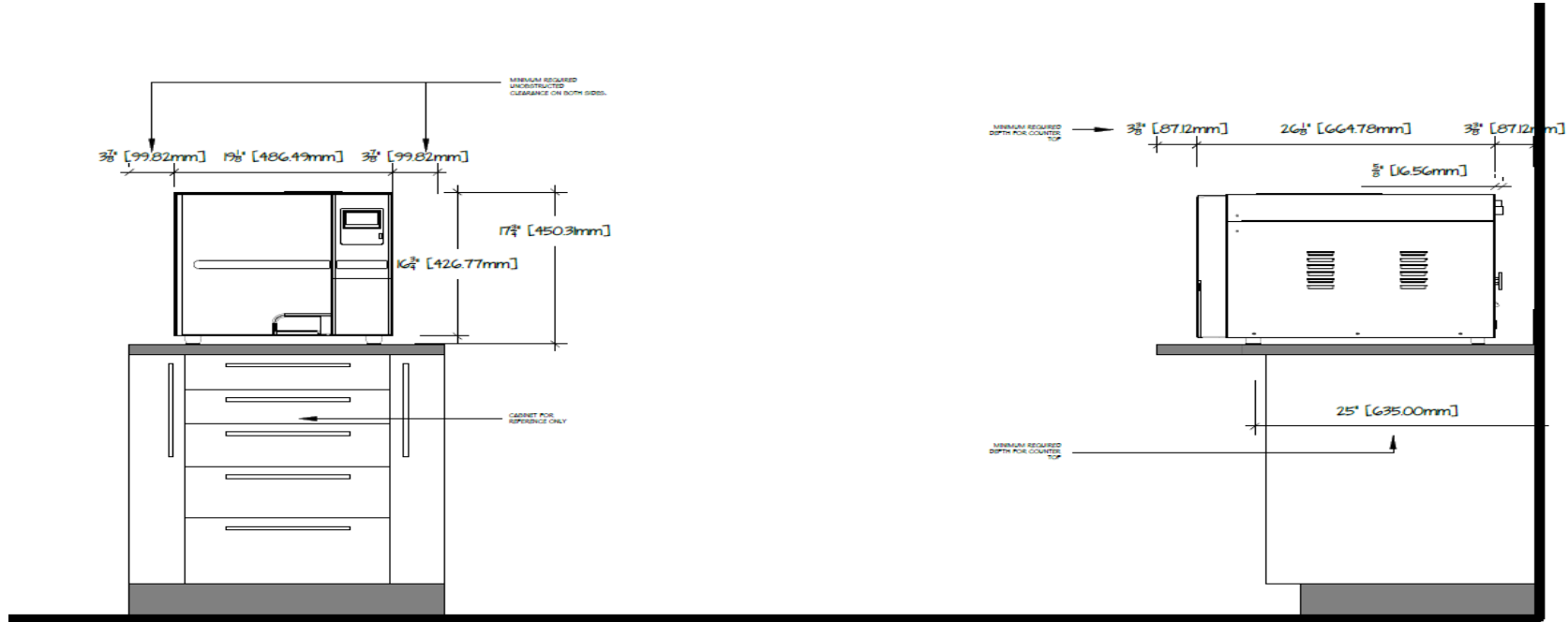
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Clave B

14 1/2" x 14 1/2"

Clave B

Minimum Space Requirements



Clave B Installation Requirements

- 1) 208-230V 15A Dedicated Line - If voltage is lower or higher you will need to order Buck and Boost Auto transformer PN: 2900601
- 2) Check Receptacle Type – Tandem 220v 15A Receptacle



Or



- 3) Check Space requirements are sufficient for Clave B



Maintenance

Frequency	Maintenance Required
Daily	Clean door seal Clean the external surface Drain used water tank
Weekly	Clean distilled water reservoir (drain tank) Clean sterilization chamber
Monthly	Clean filter inside chamber and tank
Every 6-12 Months	Replace door seal
Every Year	Replace silicone tubing, filters and door seal
Every 2 Years	Replace battery on main PCB that controls timer

