

Free-standing units - proven design for decades
facilitate fast loading and removal

Universal basic versions for the microbiological standard laboratory for

- Liquids, culture media
- Solids such as instruments, glassware and devices
- Waste

Safe and future-proof

- Modules available for **fast cooling, prevacuum and drying** and for **exhaust-air filtration** with condensate sterilization
- Direct and independent batch documentation
- Newly developed fitting blocks without dead spaces ensure sterilization quality and eliminate problem zones when sterilizing waste
- Abundant supply of accessories

One sterilizer with many advantages

- No cheap compromises: Processes, measurements, fittings, stainless steel finishing and batch documentation compliant with DIN and industry standards
- Fast closure - easy opening thanks to our Fingertip Quick Lock

**VARIOKLAV STEAM STERILIZERS
75 S AND 135 S**

The VARIOKLAV 75 S and 135 S steam sterilizers with their ultra-flat steam generators in their double bottoms combine the advantages of a double-walled device - **low energy consumption, permanently ready for use, effective deaeration and drying by built-in jacket heater** - with those of a single-wall device - **fast cooling**.

The chamber is free of furnishings and feed water and therefore easy to clean.

The basic version features four sterilizing programs, two for liquids and one each for solids and for waste. Up to 16 programs can be stored by the control unit, depending on the modules and options installed.

Up to eight pressure changes combined with effective steam flushing drive out the residual air from solids and waste, allowing faster heating by pulsating steam.

And after your purchase?

Benefit from fast batch processing, low operating cost thanks to efficient steam management and our close-knit service and consulting network.



Free-standing units with 75 and 135 litres

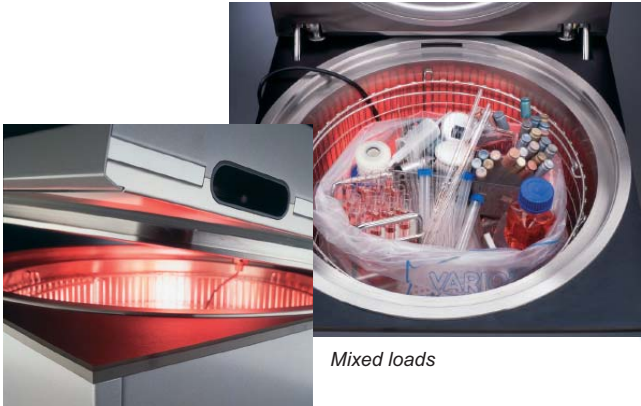
Safe and easy operation

- Direct selection of your three most important programs
- Extensive loading capacity of 75 and 135 litres
- **Minimum loading height** of 750 and 800 mm
- Two gas pressure springs equalize the weight of the lid
- No feed water in the chamber, a great advantage during loading and unloading, low steam escape when lifting the lid
- No heating elements in the chamber, no burning of agar

Advantages

- Ultra-narrow design, only 500 and 600 mm in width
- Innovative thermolock pursuant to TRB 402 for liquids
- Automatic spent-steam condensation
- **Versatile control unit**, simple for operators and flexible for lab management

Control unit: Sterilizing parameter ranges	
Sterilizing temperature:	98 - 134 °C (target value)
Sterilizing time:	1 - 999 minutes
Removal temperature:	40 - 95 °C (thermolock)
Key-operated switch:	For program configurations
Timer:	Start of sterilizing cycle by date and time
Removal pressure:	105 - 120 kPa
Customized settings can be configured by manufacturer's customer service:	
Temp. increase beyond target:	Up to +8 K in steam gener. during heating phase
Pressure changes:	0 - 8, adjustable
For more information see Technical Specifications datasheet	



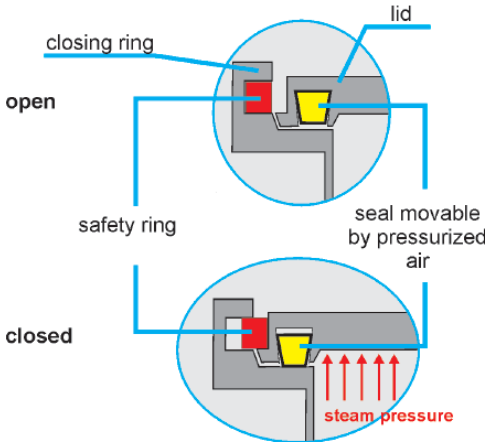
Unique Fingertip Quick Lock*

Never before has opening and closing a lid been so simple and convenient. When a button is pressed, a safety ring locks the lid. It is tensed pneumatically, circumferentially encloses the lid and places itself immovably inside the closing ring. A **movable seal** closes the sterilizing chamber, making it pressure-tight and vacuum-tight.

* Design patent



Fingertip Quick Lock:



Safety

- The steam pressure on the lid is transferred with maximum safety to innumerable many points on the closing ring - not just to two positions as with clip locks
- Two pressure sensors check for complete pressure release before the lid can be opened
- Silicone seal movable by pressurized air:
 - uniform closing pressure, reliable seal
 - wedge-shaped profiles automatically retract the seal when the pressure is gone
 - **long life**

Option

- Opening aid actuated by pressurized air
- Lid swings back on pressing a button
- Raises lid by up to 60°



FREE-STANDING UNITS - A NEW MILESTONE

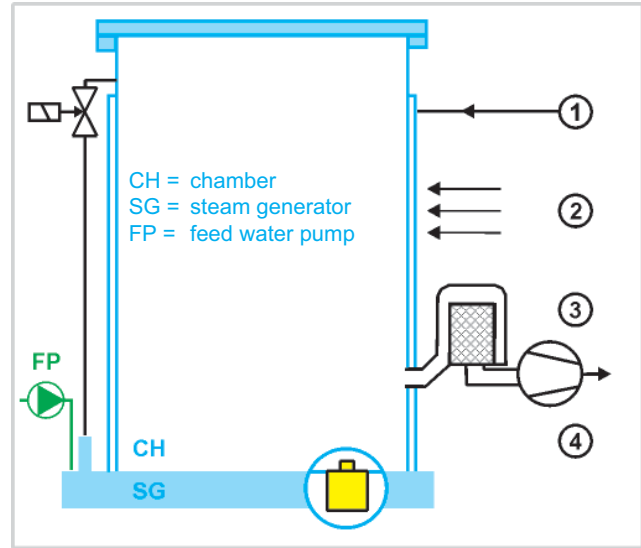


Double bottom as steam generator

This **ultra-flat double bottom** rapidly generates steam - a new milestone in steam sterilizer technology. This gives the sterilizers an unusually compact design.

Advantages

- Steam generation and chamber are separated - stores heat and feed water, preheats the sterilizing chamber, collects and separates condensate and permits the drying of solids
- No contamination of feed waters by drop condensates, waste, or culture media, leaving the sterile supplies free of deposits by impure steam
- **Minimum water volumes** in the steam generator make economic use of heating energy and reduce the amount of water used for fast cooling
- Water level control by exploiting the differences in heat conductivity between water and steam - no maintenance
- Fast heating and effective deaeration through tangential steam entry

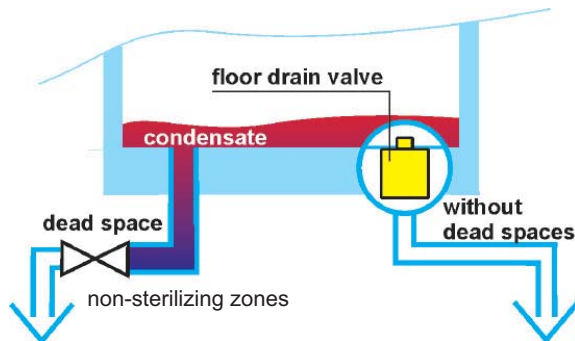


- Modules: ① Fast cooling ③ Exhaust-air filtration
 ② Drying ④ Vacuum

Double bottom and available modules (diagram)

Fitting blocks: e.g. Floor Drain Valve*

- Drain valve in the chamber floor eliminates dead spaces and thereby non-sterilizing zones, ensures a **sterile condensate** and prevents the spread of pathogens



- The valve seat closes directly inside the sterilizer and can be steam-sterilized from all sides
- A chamber sensor for the condensate temperature is integrated in the valve (flow sensor) and measures the temperature in the coldest spot - in the disposal line
- Drain valve is heated by double bottom - preventing agar deposits

*Patent pending

Loading capacity		75 S	135 S
Round laboratory flasks (500 ml)		26	63 - 66
Round laboratory flasks (1.000 ml)		16 - 18	30
Round laboratory flasks (2.000 ml)		8	16
Square laboratory flasks (250 ml)		80	140
Square laboratory flasks (500 ml)		28	66
Erlenmeyer flasks (1.000 ml)		10	24
Solids		≤ 25 kg	≤ 30 kg
Waste		≤ 25 kg	≤ 30 kg

Universal feed water connector

- Optionally suction from non-pressurized reservoir or feeding via demineralized water feed
- Integrated pump equalizes all **pressure variations** in external supply lines
- Automatic level control before, during and after the process ensures that the system is permanently ready for use

Options

Separate steam generator control

A comprehensive program package for chamber and steam generation that controls both pressure chambers **separately** offers extra versatility.

Advantages

- Preheating: Steam generator permanently under pressure
- More efficient air removal by faster pressure changes and shorter intervals, which is a great advantage especially when sterilizing waste in waste bags
- Following sterilization, the chamber is free of condensate, which further reduces the amount of steam that escapes when the lid is opened and additionally helps avoid unpleasant odours when sterilizing waste
- Shortens batch processing times by up to 30 %

Aquastop at sterilizer water intake avoids water damage and turns water supply lines off even in standby mode.





135 S with lifting jack

VARIOKLAV Steam Sterilizers	Order No.
Media temperature controlled timing	24415
Separate steam generator control (preheating)	20029
Batch documentation, direct or independent	20061 or 20062
Modules	
Fast liquid cooling	(RM) 20034 (RO) 20041, or (RG) 20042
Prevacuum , single or fractionated	20026 or 20027
Drying , in vacuum or in sterile air stream	20028, 20029 or 20040
Exhaust-air filtration with condensate sterilization	20068
Operation supply and spent steam removal	
Sterile steam, spent steam condenser, aquastop, e.g.	
	on request
Additional options	
e.g. cooling with coiled tubing or air, stainless-steel cover, sterile venting, higher sterilizing temperatures, chamber extension / volume enlargement, prion programs, additional sterilizing programs	
	on request
Accessories	
Sterilization baskets, lifting jack for sterilization baskets, bases, consumables	
	on request



Media temperature controlled timing

Product temperature is attained more quickly through controlled temperature increments. No overheating of medial, timer-controlled sterilizing times, includes flexible liquid sensor.

These innovative VARIOKLAV steam sterilizers represent the current state of the art and guarantee rapid, safe and reproducible sterilization processes. This ensures long-term problem-free routine operations.

- 1-year warranty against material and manufacturing defects, except for consumables**
- 3-years warranty on electric heating elements**
- 5-years warranty for stainless-steel pressure vessel**

Electrolytically polished chamber - long-term assurance of high infection control standards and corrosion protection

Program steps		Deaeration / Heating Prevacuum	Sterilization 121 / 134 °C	Steam release	Cooling ST 90 °C	Fast cooling module		
						RM	RO	RG
Liquids	(min)	15 - 45	20 / 10	-	30 - 110	15 - 60	10 - 45	10 - 50
Solids	(min)	15 - 30	20 / 10	2 - 4	-	-	-	-
Waste	(min)	15 - 30	- / 15	4 - 8	-	-	-	-

* Load: empty and fully loaded Captions: ST= forced cooling RM = jacket cooling RO/RG = with fan

TECHNICAL DATA

		75 S	135 S
External dimensions (WxDxH)	(mm)	500 x 650 x 1000	600 x 750 x 1050
Internal dimensions (ØxH)	(mm)	400 x 600	500 x 700
Loading height	(mm)	750	800
Usable volume	(Litres)	75	135
Steam generator (water vol./ total vol.)	(Litres)	4,0 / 6,0	5,0 / 8,0
Power requirement / Heat output	(kW)	4,8 / 4,5*	7,8 / 7,5
Power / Supply frequency	(V/Hz)	3N ~ 400 / 50*	3N ~ 400 / 50
Quick lock		ring quick lock	ring quick lock
Weight	(kg)	140	170
Material for pressure vessel		1.4571 DIN 17440	1.4571 DIN 17440
Standards		DIN 58951-2	DIN 58951-2
Max. operating temperature	(°C)	138	138
Max. operating pressure / vacuum	(bar)	2,5 / -1	2,5 / -1
Mark of conformity / Notified body		CE / 0036	CE / 0036
European Pressure Equipment Directive	(category)	II	II
Order No.		22425	22525

*) instead of 4,5 kW ⇒ 3,0 kW for 230 V mains connection