



Laboratory- and sterilisation equipment

AXER LAB SOLUTIONS
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PROFILE

Consistent marketing of technologies and the conversion of new ideas create product ranges, that are tailor-made for the requests of modern laboratories. Results of discussions with purchasers and users out of industry, chemistry, research and medicine.

Quality at first place.
HMC stands for competence, innovation and reliability.

Whether practical and economical small tabletop sterilizers or vertical autoclaves up to 130 litres are required. HMC offers products which are used in the following areas: in biotechnology, in the agricultural economy, in the clinical laboratory and also in environmental research in biology, pharmacy and chemistry.



Laboratory- and sterilization equipment

Service means serving - serving you, the customer.

We take that literally!

You benefit from 80 years of experience in sterilization – experience you can put to work for you when looking for solutions to complicated problems and difficult tasks with limited resources. We offer simple and cost-effective solutions.

And after your purchase?

We deliver on time and give you a thorough introduction to your unit. From first commissioning to maintenance agreements, from qualification to validation: we are right there for you.

HMC EUROPE

Laboratory- and sterilization equipment



HG SERIE

HMC steam sterilizers, vertical units
50, 80, 113 and 133 litres



HV SERIE

HMC steam sterilizers, vertical units
25, 50, 85 and 110 litres



HMT SERIE

HMC steam sterilizers, table top units
16 and 24 litres



SAFETY CABINETS

HMC Biological safety cabinets
Table top units BSC-700II



WASHERS

smeg Laboratory glassware washers
GW 3060, GW 4090, GW 6090



CYCLONE

HMC Magnetic stirrers
Extremely flat

From first using...

Procedure

The sterilization process has remained essentially unchanged since the times of Louis Pasteur and Robert Koch. Basically, sterilization is effected in a pressure vessel in an atmosphere of saturated steam in the absence of residual air. Depending on the items to be sterilized and the microorganisms to be eliminated, the sterilizing temperature will be either 121° C (1.1 bar overpressure) or 134° C (2.2 bar overpressure). To obtain a safe pressure/temperature correlation, all residual air has to be meticulously removed (vented).

Since sterilizing conditions do not yet prevail in the sterilization chamber during the venting phase (because the sterilizing temperature has not been attained and the holding time has been far too short at that point), a contaminated steam/air mixture is emitted by the steam sterilizer during venting. For this purpose an exhaust-air filtration is recommended.



Louis Pasteur (1822 - 1895)

Sterilization is a function of temperature and time

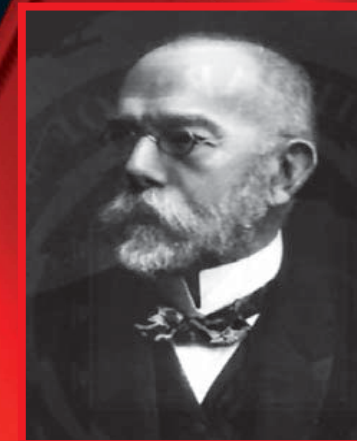
Only sufficient holding times can assure sterilization success. In microbiological laboratories, the sterilization time is usually 15 to 20 minutes. It should be noted that liquids and culture media take much longer to reach the required sterilization temperature due to delayed heat conduction.

The sterilization time must be calculated from the point in time at which the core of the items to be sterilized has reached the required sterilization temperature. At the end of the holding time, the materials in the chamber will be sterile. Glass or instruments can be quickly taken out once the steam has been removed and the pressure has been released. Liquids should be cooled quickly to minimize liquid loss. The laboratory staff must never be endangered by delayed boiling (causing the liquid to overboil explosively).

Why steam sterilization?

The high heat storage capacity of water, the additional heat released during the condensation of steam and the moisture contained in the steam form the basis of the excellent microbiological effect of steam.

By contrast with chemical sterilization or sterilization with hot air, both of which are suitable only for heat-resistant materials such as glass or metal instruments, steam sterilization is the generally accepted sterilization mode in the microbiological laboratory. From sample preparation to destruction sterilization, steam sterilizers (or autoclaves) can be used in an environmentally friendly manner.



Robert Koch (1843 - 1910)

STERILIZING SIMPLY AND WELL

...to maintenance

Selection criteria

- What legal provisions must be complied with?
Genetic engineering laws, laws concerning the prevention of epidemics...
- Must other provisions be met? GLP, GMP...
- Space requirements, minimum sterilization chamber volume
- Uses: Sample preparation, waste sterilization
- Sterilization of high infectious materials, documentation
- Calibration, validation, qualifications - what requirements must be fulfilled?
- Constructive requirements, electricity, demineralized water, disposal...
- Operating and secondary costs
- Customer service
- Safety, quality and price

Quality has its price ...
... but it doesn't have to be expensive!

HMC EUROPE

HG SERIES



Sophisticated yet economical functionality

A large illuminated program display and easy to operate – the HG series fulfils every requirement of modern sterilization units and all wishes of the user regarding functionality and comfort.

And all that at a sensationally low price!

Open and close at a touch - for safety reasons!

Simply press a button to open and close. However, the lid is not just opening and closing. At first it is only opening for about three inches – the first surge of steam is able to escape – then the lid is completely open and the internal space is ready to use.

While the lid is moving to the closing position, it pauses shortly before it is completely shut. When the lid is in the final position, the lock is automatically bolted. The bolt is monitored by two independent safety systems. It is impossible to open the lock unintentionally if it is under pressure.



INNOVATION



HMC EUROPE

Clearly arranged and illuminated

The large program display makes operation simple and instantly shows the most important parameters:

- Sterilizing temperature and pressure
- Sterilization time
- Remaining time until program end is reached

The run-down display gives an overview.

Configured

3 preselected programs each for:

- Liquids
- AGAR sterilization, including a residual heat cycle
- Solids
- Steam pot programs

Special programs, e.g. for Durham tubes, can be selected without any problems.

Timer-controlled night-time program.

Spent-steam condenser as standard

A state-of-the-art condensation system with a large heat storage facility almost completely reduces the spent-steam emission during the deaeration phase. The condensate collector can be easily emptied. It is equipped with an electronic filling level indicator on the display.

No water connector is required for the spent-steam condenser!

Fast cooling as standard

A 100% practical feature and saves up to 40% of the batch time when sterilizing liquids: an air cooling that can be switched on during all programs and at any time.



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TECHNIC



Safety included

All HMC steam sterilizers are manufactured at a modern plant using state-of-the-art processes and technologies. The design has been approved by TÜV Bayern e.V.

All units comply with all applicable European standards and regulations and bear the CE mark.

Flexible temperature sensor - Thermolock

Flexible temperature sensor for precision termination of the sterilization time by monitoring the media temperature. Thermolock pursuant to EN 61010-2 and related national regulations.

Comfort as standard

A low loading height and a smooth surface make loading and unloading a child's play. The baskets can not be caught accidentally on bolts or edges, because there are none.

Modern documentation via RS232 SegoSoft® process documentation, automatic paper-free archive, data output as graphics or charts in PDF format and digital signature.

Double secured

The locking system includes a monitoring system for pressure and temperature. Sensors monitor the safe locking of the bolt.

It is impossible to open the lid unintentionally. The opening temperature (an important feature for sterilization of liquids) can be preselected from 60 - 97° C.



OPTIONS



Extended display

The 113 and 133 models have special extended control keys.
Activation of pre- and drying vacuum.

Extended functions

USB-Port
Flash Memory

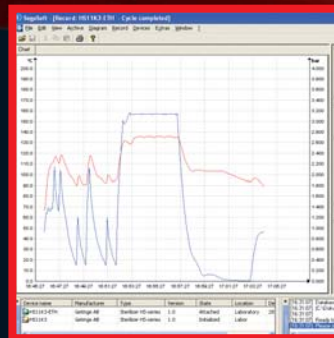
Vacuum generator

Sterilizing in vacuum is recommended at

- textiles
- hollow article, tubes, bottles
- porous goods as long as these can be deaerated easily
- mixed materials (waste) easily accessible to steam, such as open waste bags or bins

The steam generator facilitates a deep vacuum and external chamber heating.
Vacuum programs comply with applicable standards and directives





Batch documentation

Batch documentation makes processes transparent, assures quality and offers protections against legal claims. Batch printer or software for direct recording of sterilization data to demonstrate successful sterilization.

Loading capacity for baskets and cans					
Model		Basket	Basket	Basket	Can
Internal dimensions Ø x H	(mm)	338 x 220	338 x 310	325 x 450	330 x 185
Round laboratory flasks	250 ml	16	32*	48*	15
Round laboratory flasks	500 ml	8	8	16	8
Square laboratory flasks	500 ml	10	10	20	10
Erlenmeyer flasks	500 ml	7	7	14	7
Erlenmeyer flasks	1000 ml	-	4	8	-

* with rack

TECHNICAL DATA

Modell		HG-50	HG-80	HG-113	HGS-113	HGD-113	HG-133	HGS-133	HGD-133
Chamber capacity	Liter	50	80	108	113	113	129	133	133
Chamber dimensions ØxH	mm	364 x 482	364 x 730	500 x 552	500 x 576	500 x 576	500 x 656	500 x 680	500 x 680
Ext. dimensions WxDxH	mm	455 x 691 x 890	455 x 691 x 1030	686 x 870 x 930	686 x 870 x 930	686 x 870 x 930	686 x 870 x 1034	686 x 870 x 1034	686 x 870 x 1034
Operating temperature	°C	105° - 135°							
Warming temperature	°C	45° - 60°							
Max. operating pressure	bar	2,5							
Timer		1 minute to 7 days							
Sterilization time		from 1 up to 300 minutes							
Power	kW	3,0	3,85	5,7	6,8	8,4	5,7	7,1	8,7
Power supply	V	AC 230 V / 240 V			AC 400 V 50/60 Hz 3-phase				
Weight	kg	62	73	137	153	184	145	161	192
Locking mechanism		Finger-tip quicklock							
Safety marks		CE, TÜV Bayern e.V.							
Boiler material		SUS304 (stainless steel)							
Steam generator		-	-	-	Vacuum	Vacuum	-	Vacuum	Vacuum
Safety features		Electromechanical safety closure, safety valve, low-water interrupt, overpressure protection switch, overheating protection switch, circuit breaker, diagnostic messages (visible and audible)							
Extensions		-	-	-	USB Port Flash memory	USB Port Flash memory	-	USB Port Flash memory	USB Port Flash memory
Order No.		21001	21002	21003	21005	21007	21004	21006	21008



ACCESSORIES

Sterilizing baskets, inserts and cans

Made of electropolished stainless steel.
The use of sterilizing cans is recommended
for sterilizing waste and liquids.

Stainless-steel sterilizing baskets and cans		
elektropoliert	Internal dim. Ø x H	Order No.
Basket	338 x 220 mm	51009
Basket (closed bottom)	338 x 220 mm	51010
Basket	338 x 310 mm	51019
Basket (closed bottom)	338 x 310 mm	51023
Basket long	325 x 450 mm	51005
Can	330 x 185 mm	51007
Can (without holes)	330 x 185 mm	51008

Expansion levels and accessories	Order No.
Flexible temperature sensor	51001
Integrated printer	51016
Exhaust air filtration	51011
Automatic feed water connection HG 50	51012
Automatic feed water connection HG 80	51013
SegoSoft® process documentation, automatic paper-free archive, data output as graphics or charts in Adobe® PDF format and with digital signature.	51014

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- STERILIZING SIMPLY AND WELL**

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