



STERIVAP

Large steam sterilizer for health care



Excellent Price – High Quality Engineering



...protecting human health

MMM Group – leading service supplier for health care

Since 1954 the MMM Group has been active world-wide as one of the leading system suppliers to the health care sector.

With a complete range of products and services as well as sterilization and disinfection units for hospitals, institutes of science, laboratories and pharmaceutical companies, MMM has established itself as the excellent holder of quality and innovations within the German and international market place.

Economic use of utilities for reasonable price

The new STERIVAP steam sterilizer represents the ideal choice for everyday use in health care.

STERIVAP is the right choice for smaller health care facilities as well as for all the central sterilization facilities, specifically designed for economic use of utilities.

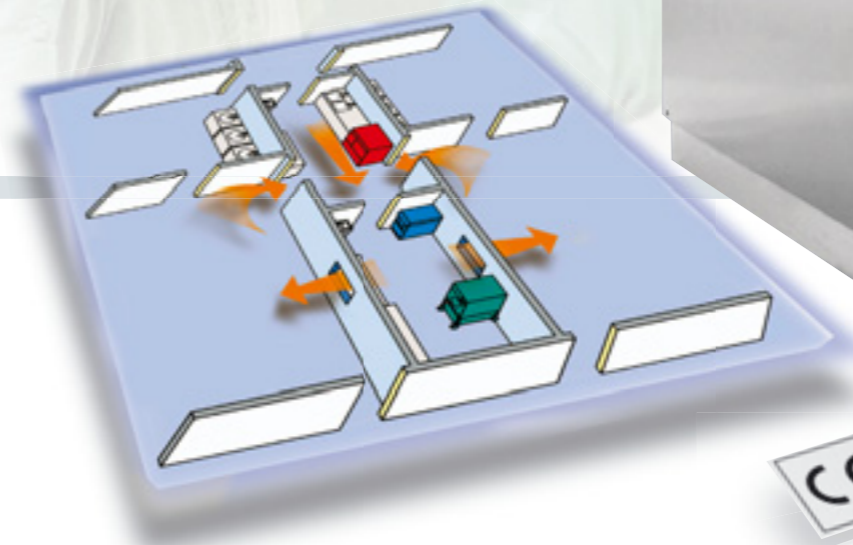
Technical legislative standards

The company BMT Medical Technology s.r.o. holds the certificate to provide a complete system of quality management:

- according to EN ISO 9001, EN ISO 13485
- for the purpose of proving the declaration of conformity according to European Directive no. 93/42/EEC as amended by the Directive no. 2007/47/EC (Class IIb medical devices)
- for production of pressure devices according to Directive No. 97/23/EC, module H/H 1
- for production of pressure devices according to ASME Code

The device meets a series of technical standards as for example, EN 285+A2; EN ISO 17665-1 etc.

The device has been issued with the Declaration of conformity.



It is at our production plants based in Stadlern, Germany and Brno, Czech Republic that we manufacture the products, which meet the requirements of our clients all over the world. Within both of these plants we ensure a high volume of production and thus meet the highly demanding requirements for quality in the field of medical instruments.

MMM Group – perfection of medical instruments

A high standard of production, up-to-date electronics and quality materials are the standards that STERIVAP devices adhere to as a matter of course, recognising the need for an extraordinary level of safety and reliability.

STERIVAP is designed for the sterilisation of solid, porous, plastic materials and solutions in open bottles.

The basic version of the device comes with a utilizable volume of 148 – 1490 litres, and together with the offer of optional equipment it will satisfy the interest of those looking to ensure fast, quality sterilization.

- for production of pressure devices and steam generators AQSIO making it possible for BMT to export to China
- certificate of the Accredited testing laboratory No. 1325

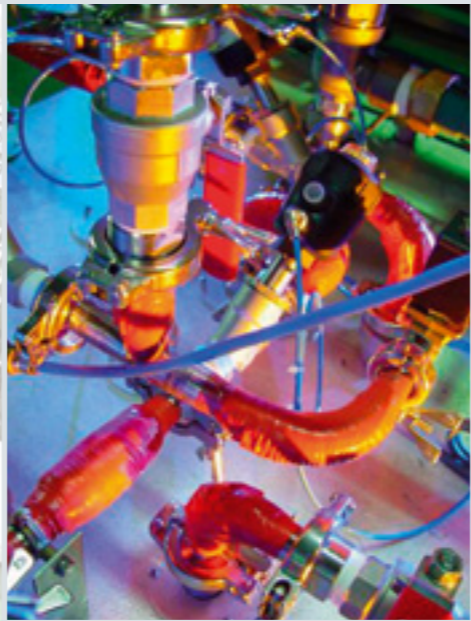
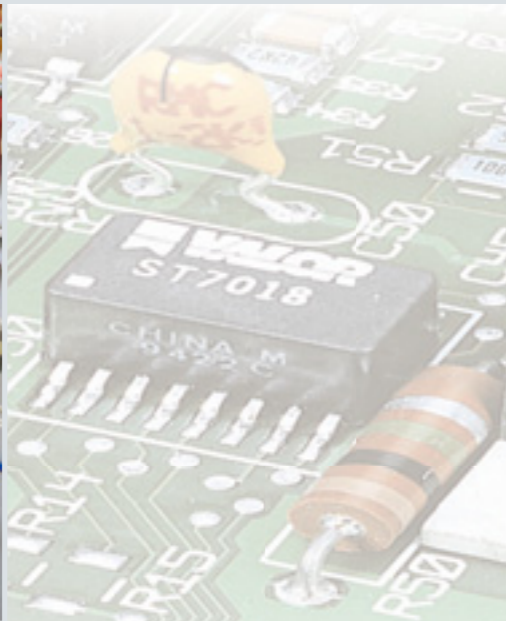


Completely new design A new design version

- massive pressure sterilization chamber with heated jacket, and are made of high-quality stainless steel, applied materials AISI 316 Ti and AISI 316 L
- gradient bottom of sterilization chamber for perfect drying
- ground inner surface of the sterilization chamber, coarseness Ra 1,25 µm (Ra 50 µinch)
- perfect thermal insulation of sterilization chamber with special insulation layer Rock wool in thickness of 125 mm and outer insulation jacket made of dip galvanized sheet for substantial reduction of heat losses and easy cleaning and maintenance
- all sterilization chambers are as standard, equipped with two easily accessible inlet connections for validation according to EN 285+A2
- piping distributions conducting steam into the sterilization chamber are made as a standard of stainless steel, valves are made of brass
- all piping distributions are thermally insulated
- high-performance, noiseless suction pump for higher efficiency and reliability (two-stage for types 636 to 669)
- single, mechanical filter on supply water inlet for protection of the valve and suction pump
- bacteriologic filter for vent of the sterilization chamber (0.1 µm)
- integrated drain – due to dampness elimination in the device space all pipes are led to one common sump
- single and double door (interleaving) type (type 446 – 6618 vertically and type 9612 – 9621 horizontally sliding doors)

Intelligent system for saving media

- special divided double chamber jacket of sterilization chamber for better and more accurate course of sterilization chamber with an independent and stable chamber pre-heating lowering consumption of demi-water ca 20 %
- integrated device for supply water saving, lowering consumption of operating cost by up to 15 %
- steam generator with microprocessor automatic control and unique design of steam generator with big capacity and automatic desalination ensures short times of sterilization cycles and permanently high steam quality



- stainless steel frame able to be divided making it possible for the sterilizer to pass through a door, minimum of 1 000 mm wide
- motor driven doors of sterilization chamber with unique spring-loaded mechanism, with double safety door protection (safety strip and clutch)
- integrated steam generator is made with heating elements as a standard of stainless steel
- stainless steel cover sheets are reinforced by a frame ensuring an extended working life in comparison with other usual designs
- easy access to the device is ensured by door lockable panels
- reinforced stainless cover sheets for quiet operation

**Benefits to you – shorter cycle times,
economical operation, very low consumption of services,
long-term life and reliability of the device**

New control panel with intuitive control

- two built-in microprocessor control systems (Master-Slave) with own sensors for independent evaluation, control and documentation of operational cycles
- ergonomic positioned control panel at eye level, away from thermally exposed zone
- technology of touch-screen display 8.2" ensures transparent and easy operating on the loading side
- on unloading side (in case of two door type) of the device the LED display with a possibility of monitoring of actual working phase and pressure in the sterilization chamber
- "total stop" function integrated into the control panel
- built-in printer for documentation of sterilization processes
- system of chip cards
- possibility of language selection for communication with the device
- transparent digital description of steam pressure in the jacket of sterilization chamber and in steam generator, pressure and temperature in sterilization chamber (reference bottle)
- clock – indicator of the remaining time of the program and the real time indicator
- history of protocols – optional memory SD card allows storing of up to tens of thousands protocols (either in graphic or numerical form).
- print of error protocol with the record of all parameters at the moment of defect for a possibility of fast and remote service
- visual and acoustic signalling of states and processes

Within the basic software facility we offer up to 14 standard programs

The sterilizer is standardly equipped with "Preheating program" (134 °C/1 min).

Standard programs:

- Unwrapped tools 134 °C/4 min
- Wrapped materials 134 °C/7 min
- Wrapped materials with intensive subsequent drying 134 °C/7 min
- Wrapped products of glass, rubber and plastics 121 °C/20 min

Special programs with parameters according to the customer's specifications:

Seven free programs adjustable at the producer for individual software facility according to specific needs of a consumer e.g.:

- Prions 134 °C/60 min
- Disinfection 105 °C/20min
- Solutions in open bottles – 121 °C/20 min, spontaneous cooling
- Laparoscopy, alloplasts, plastic materials, optics, ...

Programs according to specific requirements must be validated at the customer's!

Top safety in solution sterilization – apart from standard working and safety procedures and processes is sterilization of solutions controlled as well as by three independent systems –temperature and pressure check in sterilization chamber,

temperature check in reference bottle and minimal necessary time of sterilization cycle. Only when meeting all the cycles mentioned-above will the program declare itself to be complete. The system will then allow the chamber door to be opened.

Standard testing programs for routine testing:

- Vacuum test – test of the chamber airtightness, duration of equalizing phase is 5 min, test duration of 10 min
- Bowie&Dick test 134 – test of steam penetration, 134 °C/3.5 min

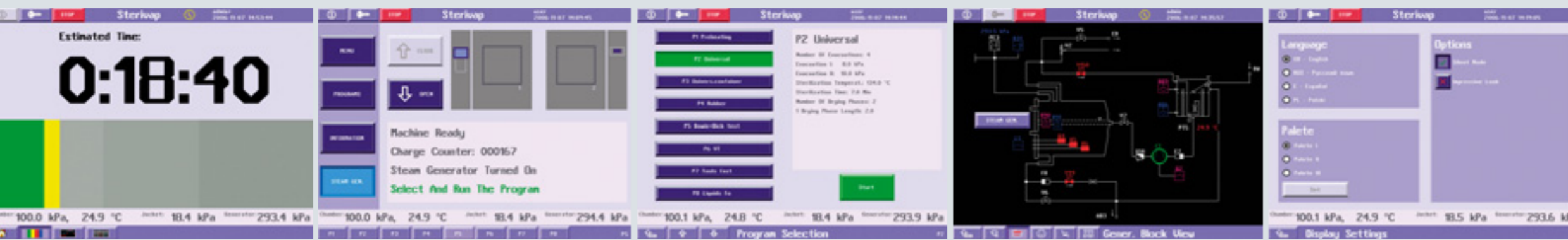
Equipment for service

Automatics control is equipped with a wide choice of software for easy check, maintenance and testing (interactive piping connection chart, testing programs enabling the testing of safety elements of the device, calibration adjustment etc.).

Software facility can be extended and modified by means of chip cards system and special service software.

Batch documentation

- all sterilizers are as standard equipped with quality and silent thermo-printer
- independent documentation of working cycles, possibility to store several cycles in memory of the sterilizer
- possibility of selection of one of four graphic outputs
- possibility of connection to PC and storage of protocols in the computer memory (RS 232)



Modular system

- 1 system for manual loading of material
 - a) shelf supports
 - b) perforated shelf
- 2 system of transport and loading carts
 - a) frame for the loading cart
 - b) loading cart
 - 1) universal
 - 2) special
 - 3) for solutions
 - c) transport and loading cart
 - d) dripping water for solutions
 - e) hook for unloading of the loading carts
- 3 stainless panel sheets of the device
- 4 possibility of building-in into stainless steel walls, double sided design of the device enabling to join two service rooms into one
- 5 print of graphic record of pressure and by means of build-in printer for documentation of sterilization cycle

- tropical version for countries with high temperature of cooling water
- regulation of the device operation
 - control of energy maximum take-off in case of connection of more devices into electric network
 - continual control of parameters of input media (pressure air, demi- and cooling water)
- automatic starting of warm up cycle is one of a series of energy saving features which will save your working time. The device is switched on according to the pre-set time without the presence of the operator. The equipment is pre-heated and a vacuum test is performed.



Optional equipment

- 6 thermo-degassing of supply demi-water for the steam generator to minimize the content of incondensable gases
- 7 possibility of installation for the device for after-cooling of condensate
- 8 stainless steel valves
- 9 "Air detector" for continual presence of air and incondensable gases in sterilization chamber in the course of each sterilization program for maximum safety of sterilization as compared to routine testing programs (Vacuum and Bowie & Dick test) performed only once a day before the start of a routine operation (HTM 2010)
- 10 special programs in chip cards (up to 20 programs on one chip card)
- 11 additional mechanical manometers
 - a) on loading side
 - b) on unloading side
- 12 ground inner surface of the sterilization chamber, coarseness Ra 0.8 µm (Ra 32 µinch), Ra 0.125 µm (Ra 5 µinch)
- optional steam source
 - FD – steam of central source
 - ED – own integrated steam generator
 - FED – combined steam supply
 - FDED – combined supply of medicinal/technical steam
 - FDD – integrated heat exchanger

- 4 GB memory card for the sterilization cycles recording (up to 100,000 hours of record).
- „Audit trail“ – system events recording on the memory card (conforms to 21CFR part 11)

Chamber utilization

- 13 sterilization basket
- 14 variability in the use of a series of containers
- 15 sterilization of solutions – reference bottle with temperature probe PT 100



Offer of clients services

In addition to the device supplies, we offer other range of services related to the development of central and operating room sterilizations:

- counselling and project drawing including the logistics and capacity calculation;
 - turnkey device deliveries including the individual information systems;
- Service and maintenance are ensured fully by a worldwide network of BMT Medical Technology s.r.o. contractual organizations.

Validation

The ability of the sterilization processes to be validated and recorded is one of the conditions for their quality assurance. For these purposes, the users of STERIVAP steam sterilizers are also offered a new service - Validation - which allows proving the compliance of the appropriate standards EN 285+A2 and EN ISO 17665-1 with the device parameters. The technical measurement are performed by our own accredited testing laboratory.

Environmental features

The device meets all present ecologic requirements. It does not burden the working conditions and environment. The outer cover of the insulated jacket of the sterilization chamber is manufactured using galvanized sheet with a quality insulation beneath. This substantially reduces the thermal losses therefore saving electric energy. As standard the equipment has a built-in device which saves up to 15 % of the water requirements consumed by the vacuum pump. A uniquely divided double chamber jacket with a steam system allows pressurization of the sterilization chamber, this reduces the demi-water consumption by approximately 20 %.

The steam generator is controlled by an automatic microprocessor system and as a standard it is equipped with a clarifying device. In production we monitor the quality of the materials ensuring a long operational life of the device.

The equipment is fitted with additional components that cool the waste water to a pre-set temperature before it enters the drainage systems.

The production of the equipment and its process cycles are all based on environmentally friendly methods.

All the substantial parts of the unit and packaging are recycled.

The unit is made up of 95 % steel, 4 % of other materials, 1 % electric material and plastics. Ecologic liquidation is performed after the disassembling by the authorized person in accordance with EU regulation, which meets the Regulation WEEE (Waste Electric and Electronic Equipment).

Technical parameters



Model SP HP E	Dimensions (hwxwd) [mm]		Number of sterilization modules	Chamber volume [l] Total	Weight [kg]		Max. input [kW]/ fuses [A]		Max. consumption per 1 sterilization cycle				
	Internal dim. of the chamber	External dim. of the unit			ED	FD	ED	FD	Water [m ³]	Demineralized water [m ³]**	Steam [kg]	Electric energy [kWh]**	Electric energy [kWh]*
446-1	480x450x 700	1918x1200x 970	1	148	700	650	24,5/63	2/10	0,06	0,006	5,0	5,0	0,3
446-2	480x450x 700	1918x1200x 990	1	148	750	700	24,5/63	2/10	0,06	0,006	5,0	5,0	0,3
559-1	509x509x 990	1818x1200x1270	1	254	910	850	24,5/63	2/6	0,07	0,008	7,0	6,0	0,3
559-2	509x509x 990	1818x1200x1290	1	254	930	870	24,5/63	2/6	0,07	0,008	7,0	6,0	0,3
636-1	670x350x 700	1918x1000x 970	2	160	740	690	24,5/63	2/10	0,06	0,006	5,0	5,0	0,3
636-2	670x350x 700	1918x1000x 990	2	160	770	720	24,5/63	2/10	0,06	0,006	5,0	5,0	0,3
666-1	700x650x 690	1918x1300x 970	4	314	1030	850	38/63	2/10	0,07	0,008	7,0	6,0	0,4
666-2	700x650x 690	1918x1300x 990	4	314	1100	920	38/63	2/10	0,07	0,008	7,0	6,0	0,4
669-1	700x650x 990	1918x1300x1270	6	453	1130	950	47/80	2/10	0,08	0,009	9,0	7,5	0,4
669-2	700x650x 990	1918x1300x1290	6	453	1200	1020	47/80	2/10	0,08	0,009	9,0	7,5	0,4
6612-1	700x650x1340	1918x1300x1620	8	610	1330	1150	48/80	3/10	0,09	0,011	11,0	9,0	0,6
6612-2	700x650x1340	1918x1300x1640	8	610	1400	1200	48/80	3/10	0,09	0,011	11,0	9,0	0,6
6618-2	700x650x1940	1918x1300x2240	12	885	1750	1500	66/100	4/16	0,20	0,013	15,0	15,0	1,4
9612-1	1000x650x1340	1918x1900x1620	12	868	1750	1500	66/100	4/16	0,20	0,013	15,0	16,0	1,4
9612-2	1000x650x1340	1918x1900x1640	12	868	1850	1600	66/100	4/16	0,20	0,013	15,0	16,0	1,4
9618-1	1000x650x1940	1918x1900x2220	18	1260	2240	1930	76/125	5/16	0,30	0,025	23,0	23,0	1,7
9618-2	1000x650x1940	1918x1900x2240	18	1260	2450	2200	76/125	5/16	0,30	0,025	23,0	23,0	1,7
9621-2	1000x650x2300	1918x1900x2600	21	1490	-	2400	-	5/16	0,40	-	26,0	-	2,0

Model 9612, 9618, 9621-2 with horizontally sliding door(s).
 Model xxx-1 single-door type, model xxx-2 double-door type.
 Connecting voltage 3P/PE 400 V, 50/60 Hz, connecting voltage of the model 559 – 3P/N/PE 480 V, 60Hz (for the U.S.A.)
 Noise level max. 78 dB.
 Model 6618, 9612, 9618, 9621 – steam generator is placed above or beside the sterilizer

* Model FD – steam of central source.
 ** Model ED – own integrated steam generator
 FD/ED; FDD – combined supply of technical/medicinal steam



Changes in the design and make reserved.

Model line STERIVAP offers optimum solution for your individual requirements



STERIVAP

- high utility value for reasonable price

STERIVAP HP

- more individuality and comfort

Technology training of service people, simply, economically, safely.

More information
is available direct from
our internet web site



Make acquaintance with our further offers...



Small steam sterilizers 15 – 25 litre



Steam sterilizer 70 litre



Laboratory drying devices and incubators 22 – 707 litre



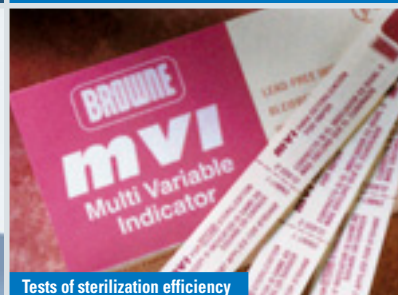
Stainless steel instrumentation



Formaldehyde sterilizer 110 litre



Exchanger steam/steam



Tests of sterilization efficiency



Cleaning and disinfection agents



MMM Group



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