



# STERIVAP® HP

Large Steam Sterilizer for Health Care  
for Original Without Compromises



protecting human health

## Tradition, Quality, Innovation

Long-term experiences of BMT Medical Technology s.r.o., advanced patented solutions and the latest technology become the quality mark and standard in sterilisation technique.

Steam sterilizers line STERIVAP® HP with chamber volume of 148–1490 litres (1–21 STM) finds application in medical material processing in sterilization worksites of various health care facilities and in laboratories.

## Meeting the latest standards

The machines are manufactured in certified quality system according to European Directive for manufacturing of medical devices No. 93/42/EEC according to regulation No. 2007/47/EC (medical instruments class IIb), pressure chamber and steam generator are designed according to European Directive No. 97/23/EC or in case of individual requirement according to standards ASME Code, Section VIII, Division 1 (for USA and Canada) or according to licence rules AQCIQ (for China). The instruments fulfil requirements of many technical standards as e.g. EN 285+A2, and they are may be validated according to the EN ISO 17 665-1.

## Offer of Services

Besides of traditional supplies of instrumentation we offer further range of services, related to building of central sterilizations and sterilizations by the surgeries.

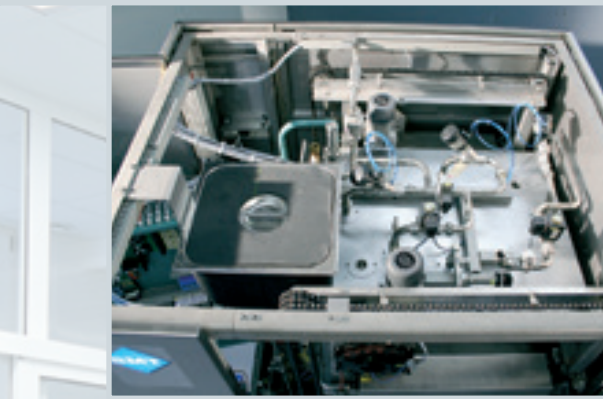
- consultancy and project elaboration including logistics and capacity calculation
- providing of substitute sterilisation by lending of instruments or mobile sterilization in container
- turn key supply of instrumentation including unified information system validation if sterilization instruments by accredited testing laboratory

## More Than You Can See at First Sight

- the all stainless steel instrument jacket
- divided all stainless steel instrument frame with attractive dimensions and width only 100 cm
- the massive chamber, door and the heating jacket are made of high-quality stainless steel AISI 316L with polished surface with surface roughness of Ra 1,25 µm (50 µinch)
- the outer insulating jacket of the sterilising chamber is made of dip galvanised sheet (optionally of aluminium or stainless steel AISI 304) with high-quality insulation, which reduces substantially the heat losses
- double-processor PLC control by two independent systems (Master-Slave) for highest safety
- cycle control by dual independent sensors of absolute pressure and temperature, ensuring operating accuracy, control and independent cycle documentation
- integrated drain – due to dampness elimination in the instrument all pipes are led to one common sump
- unique solution of steam distribution

mechanism reduces the instrument weight approx. by 50–100 kg

- piping distributions and fittings leading steam to the chamber are as a standard made of stainless steel



- consultancy in implementation of quality system ISO 9001 on the sterilization sites

- integrated device for supply water saving for suction pump, which saves approx. 15% of operating costs
- unique divided double chamber jacket with new system of steam filling to the sterilising chamber, which reduces the demi-water consumption by approx. 20%
- thermo-degassing of demi-water for the steam generator with minimising of content of the incondensable gasses for higher sterilizing reliability
- high- performance, noiseless, two-stage suction pump for higher efficiency and reliability (except of STERIVAP® HP 6612 and higher)
- innovative, colour, large-scale, ergonomically adjustable touch-screen 12"

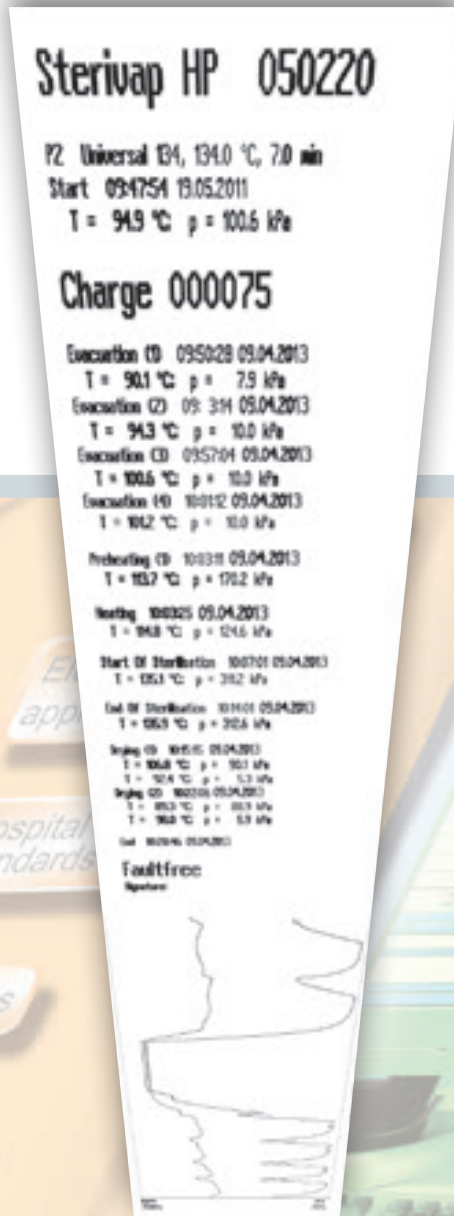
- for heating and sterilising process – enables accurate meeting of physical requirements standards
- simple mechanical filter on steam and supply water inlet
- the integrated steam generator is equipped as a standard by automatic clarifying device and is made as well as the heating elements of stainless steel AISI 316 Ti, optionally AISI 316L
- motor driven door of sterilizing chamber with unique spring-loaded



## Modular System and Optional Accessories

- single and double door type (type 446 – 6612 vertically and type 9612 – 9621 horizontally sliding door)
- optional steam source  
FD – steam supply  
ED – steam supply from an internal steam generator  
FDD – steam supply from internal steam/steam exchanger (steam/steam exchanger is supplied by technical steam)  
FD ED – steam supply from an external medicinal steam source, or steam supply from an internal steam generator (original FED)  
ED FDT – steam supply from an internal steam generator, and heating jacket supply by technical steam  
FD FDT – steam supply from an external medicinal steam source, and heating jacket supply by technical steam

- during the sterilization cycle; eventual leakages, not detected by the Vacuum test in the morning are identified immediately and the process is interrupted
- more than 60 other optional specific additives



## 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 12" ensures transparent and easy operating on the loading side
- on unloading side (in case of two door type) of the device the 5,7" 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



- 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
- "History of Protocols" – this function allows selection of required protocol from the history (10 recent protocols) and its printing or displaying of a record, pressure and temperature on the display (in graphic or numeric form)
- "Complementary Comment" – the device allows for the service staff to write complementary comments regarding the individual programs respectively cycles (e.g. name of the product, batch number, series number, etc.) to be contained even in the printer record
- "Logging" (access rights) – the device allows setting of user rights for the

## Broad Range of Operating Programmes Options

The steam sterilizers line STERIVAP® HP can be used for sterilization of solid, porous and plastic materials and solutions in open bottles.

In basic program design we offer up to 20 standard programmes. The sterilizer is standardly equipped with "Preheating program" (134°C/1 min).

### Examples of standard and validated 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

### Standard testing programs for routine testing:

- Vacuum test
  - Bowie&Dick test
- The program equipment can be extended and modified by means of chip cards and special service software MOVEX®.

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

- Prions 134°C/60 min
- Disinfection 105°C/20 min
- Solutions in open bottles 121°C/20 min
- Arnold 100°C and 75°C
- Automatic starting the instrument at the morning – pre-heating and Vacuum test – without operator

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



Statistics

Invoicing

Remote monitoring

- possibility of built-in device for cooling of condensate
- stainless steel valves, fittings
- optional polished surface of sterilising chamber with roughness of Ra 0,8 µm (32 µinch) or Ra 0,125 µm (5 µinch)
- double sided construction, enabling joining of two service rooms into one
- "Air detector" – device, evaluating quantity of air and incondensable gases in the sterilization chamber

- automatic sterilizer door opening during a power failure
- 32 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)

- 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
- "Errors history" – this function allows to display the last 20 error messages

device use – the mode "Free Use" and "Individual Access Rights"

- standard counter of batches and another optional daily counter of batches

## User Friendly Operation

Advanced "touch-screen" 12" technology with ergonomically adjustable panel ensures clear and simple operation. Standard equipment of the instrument is the built-in printer for documentation of sterilization processes.

## Service

Built-in automatic diagnosis and set of service programs together with ON-LINE internet diagnosis and monitoring of sterilisation device ensures an optimal service.



## Versatile Using

A broad range of accessories is available to the sterilizers.

Systems for manual material inserting or systems of transport and charging carts are adapted according to sterilizer size, optional container system and sterilization baskets.

Modular system enables to build in the instruments into stainless steel partition walls.

For sterilising of solutions the sterilizer can be equipped by movable temperature sensor PT 100 and dripping tank for solutions.

Synoptic documentation of batches can be ensured:

- independent documentation of working cycles with pressure and temperature recording, allowing the storage of the last 10 records in the sterilizer memory (up to tens of thousands optionally – SD card);
- connection to a PC and storing the records in the computer memory by means of the "Printer Archive" software;
- connection of the sterilizer to a computer network (LAN) together with the software application Ecosoft and DP 3.5;
- integrated printer allowing to select one of two graphic outputs

If the pressurised air or demi-water is not available, we offer supply of compressors or water treatment device.

In case of built-in steam generator we offer monitoring of maximum of power take-off.

## Validation

We offer the validation of the instruments (IQ, OQ, PQ) according to EN ISO 17 665-1 to our clients on place of installation.

The tests are performed according to EN 285+A2 and according to the authorised methodologies by our accredited laboratory No. 1325.

# STERIVAP® HP – Technical Parameters



Model SP HP	Dimensions (h x w x d) [mm]		Number of sterilization modules	Chamber volume [l]	Weight [kg]		Cca max. input [kW]/ fuses [A]		Cca max. consumption per 1 sterilization cycle				
	Internal dim of the chamber	External dim. of the unit			Total	ED	FD	ED	FD	Water [m³]	Demineralized water [m³]	Steam [kg]	Electric energy [kWh]**
446 – 1	480x450x700	1918x1200x970	1	148	720	670	24,5/63	2/10	0,06	0,006	5	5	0,3
446 – 2	480x450x700	1918x1200x990	1	148	770	720	24,5/63	2/10	0,06	0,006	5	5	0,3
559 – 1	509x509x990	1918x1200x1270	***	254	910	850	24,5/32	2/6	0,07	0,008	7	6	0,3
559 – 2	509x509x990	1918x1200x1290	***	254	920	860	24,5/32	2/6	0,07	0,008	7	6	0,3
636 – 1	670x350x700	1918x1000x970	2	160	760	710	24,5/63	2/10	0,06	0,006	5	5	0,3
636 – 2	670x350x700	1918x1000x990	2	160	770	720	24,5/63	2/10	0,06	0,006	5	5	0,3
666 – 1	700x650x690	1918x1300x970	4	314	1030	850	38/63	2/10	0,07	0,008	7	6	0,4
666 – 2	700x650x690	1918x1300x990	4	314	1100	920	38/63	2/10	0,07	0,008	7	6	0,4
669 – 1	700x650x990	1918x1300x1270	6	453	1130	950	47/80	2/10	0,08	0,009	9	7,5	0,4
669 – 2	700x650x990	1918x1300x1290	6	453	1200	1020	47/80	2/10	0,08	0,009	9	7,5	0,4
6612 – 1	700x650x1340	1918x1300x1620	8	610	1330	1150	48/80	3/10	0,09	0,011	11	9	0,6
6612 – 2	700x650x1340	1918x1300x1640	8	610	1400	1220	48/80	3/10	0,09	0,011	11	9	0,6
6618 – 2	700x650x1940	1918x1300x2240	12	885	1600	1400	66/100	4/16	0,2	0,013	15	15	1,4
969 – 1	1000x650x990	1918x1900x1270	9	647	1350	1200	48/80	4/16	0,12	0,012	12	11	0,7
969 – 2	1000x650x990	1918x1900x1290	9	647	1400	1250	48/80	4/16	0,12	0,012	12	11	0,7
9612 – 1	1000x650x1340	1918x1900x1620	12	868	1700	1500	66/100	4/16	0,2	0,013	15	16	1,4
9612 – 2	1000x650x1340	1918x1900x1640	12	868	2000	1800	66/100	4/16	0,2	0,013	15	16	1,4
9615 – 2	1000x650x1640	1918x1900x1940	15	1060	2000	1800	76/125	4/16	0,25	0,02	20	21	1,6
9618 – 1	1000x650x1940	1918x1900x2220	18	1260	2000	1800	76/125	5/16	0,3	0,025	23	23	1,7
9618 – 2	1000x650x1940	1918x1900x2240	18	1260	2000	1800	76/125	5/16	0,3	0,025	23	23	1,7
9621 – 2	1000x650x2300	1918x1900x2600	21	1490	–	2900	–	5/16	0,4	–	26	–	2

Model 969, 9612, 9615, 9618, 9621 with horizontally sliding door(s).  
 Model 6618, 969, 9612, 9615, 9618, 9621 – steam generator is placed above or beside the sterilizer  
 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 FD – steam of central source.  
 \*\* Model ED – own integrated steam generator  
 \*\*\* The dimensions are not standardized for the container system



The values may differ depending on specific charge and media parameters. Changes in the design and make reserved.



**STERIVAP®**  
 – high utility value for reasonable price

**STERIVAP® HP**  
 – more individuality and comfort

**Model line STERIVAP® offers optimum solution for your individual requirements**

More information  
is available direct from  
our internet web site

**www.bmt.cz**



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Cleaning and disinfection agents



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