



UNISTERI HP

"Medium-sized" steam sterilizer for health care



INNOVATION



Efficient, intelligent, exceptional



protecting human health

MMM Group – leading service supplier for health care

Since the foundation of the company in 1921, BMT Medical Technology s.r.o. has expanded from a small, regionally oriented company into an international company. In 1992, it became the member of the European MMM Group, operating on the world market as an important supplier of systems used in

Individual assembly of the sterilizer

The most recent series of modular steam sterilizer UNISTERI HP is an ideal choice for everyday use in health care.

UNISTERI HP sterilizer is the right choice both for smaller health care providers and all central sterilization departments laying stress on the advantageous price/utility value ratio. UNISTERI HP devices are designed for quick sterilization in health service establishments:

- microbiological departments of health service establishments – sterilization of solutions in half-closed bottles, culture media, ...

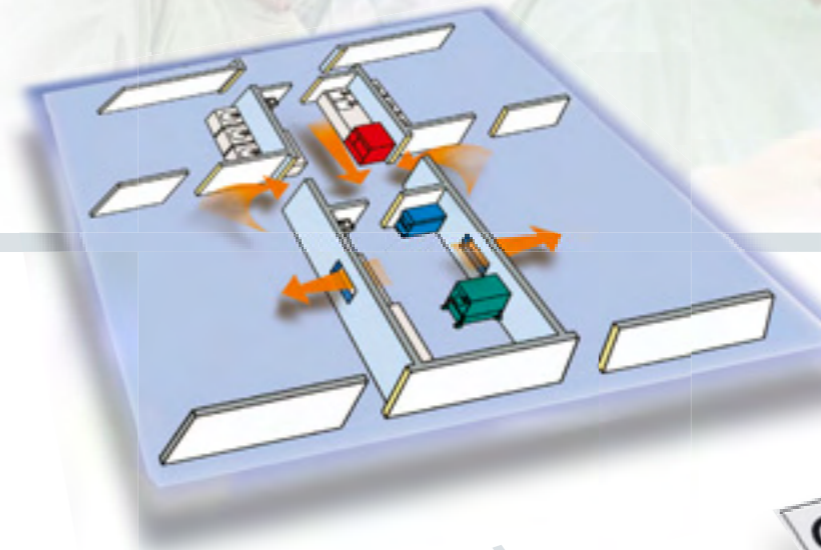
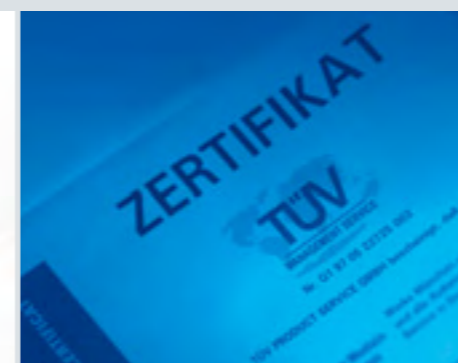
The steam sterilizers UNISTERI HP is designed for sterilization of solid, porous and plastic materials, and solutions in open bottles. Customers interested in a quick and high-quality sterilization will be satisfied with the standard option offering the usable volume 73, 160 and 254 litres, and with a variety of optional accessories.

General actively proved quality

The steam sterilizers UNISTERI HP is designed for the health service to sterilize medical devices. The sterilizer comply with the European Directive no. 93/42/EEC as amended by the Directive no. 2007/47/EC (Class IIb medical devices), and with the appropriate standards, especially EN 285+A2. It is manufactured within a certified quality control system according to EN ISO 13485 and adjusted to the individual needs of single worksites.

The pressure equipment of the sterilizer has been designed and can be produced alternatively in accordance with the European

Pressure Equipment Directive no. 97/23/EC and additionally for example ASME Code requirements (for the USA and Canada), or AQCIQ licence regulations (for China). Validation according to EN ISO 17665-1 is performed by our accredited testing laboratory.



health, science and research since 1954. The MMM Group has established itself with its complex offer of products and services for hospitals, science institutes, laboratories and pharmaceutical industry as an excellent quality and innovation holder over the worldwide market.

MMM Group – perfection in laboratory and medical technique.

- one-day surgical clinics and consulting rooms of polyclinics – sterilization of all necessary materials: Instruments, glass, textile, objects made of rubber, ...
- surgical departments of hospitals too far from the departments of central sterilization – in particular, optimization of the repeated use of necessary instruments
- health service clinics and first aid centres where quick sterilization of sanitary material is required
- dental practices where the necessary material volumes cannot be treated by table-top types of sterilizers

Top-quality production, modern electronics and high-quality materials used in the devices are as natural as the user properties or an extraordinary level of safety and reliability.

UNISTERI HP steam sterilizers – safe, quick, ergonomically designed, easy operable devices offering individual adjustments and multilateral applications.

... hospitals
clinics
consultation rooms
laboratories...



UNISTERI HP

New design, new construction

- control panel with an 8.2" touch-screen providing maximum operation and service comfort
- new unique rotary door lock with user-friendly operation; automatic door closing and sealing system
- immovable maintenance-free door sealing
- low-energy steam generator for lower operating cost (commencing from 7.5 kW)
- efficient water ring vacuum pump for short charge times and quick and accurate cycle processing
- double-processor control by two independent Master-Slave systems for quick, accurate and safe cycle processing
- patented method of control of the continuous steam filling of the sterilizer chamber with an independent and stable steam pre-heating for economical operation, and with low media consumption
- the device is made of high-quality stainless steel ensuring long-term lifetime and reliability



UNISTERI HP

Modular system

- both single-door and double-door models offering an installation into a stainless steel wall
- optional steam source – internal, external, or combined
- optional coarseness of the internal surface of the sterilization chamber
- system for manual material loading and system of transport and loading carts
- wide range of optional software
- various possibilities how to process the batch records
- wide range of optional accessories to minimize the operating cost
- possibility to select specific accessories (e.g. chamber provision with a flexible PT 100 sensor for safe and accurate cycle control during work with microbiological cultures and solutions; wide range of individual programmes adjustments, ...)
- wide range of services (including the ON-LINE internet diagnostics, various kinds of tests, validations, etc.)



medicine



laboratories

Efficient and comfortable

Unique microprocessor control

- the highest possible operating safety, doubled system sensors for collection and assessment of process information and their continuous comparison and assessment
- two built-in microprocessor control systems (Master-Slave) for independent cycle assessment, control and documentation
- any found deviation exceeding the permitted levels results in an error message
- unique error report for an accurate and quick error diagnostics
- up to 20 standard programmes in the basic programme equipment
- easy implementation of individual programme adjustments

Pressure sterilization chamber

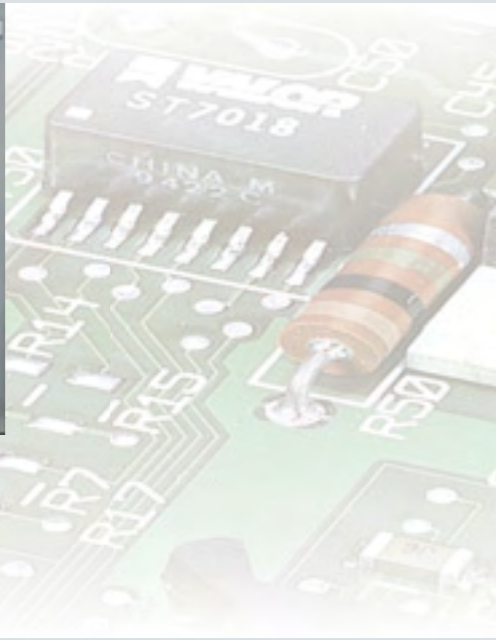
- the pressure chamber heated by steam through the heating jacket is made of high-quality stainless steel DIN 1.4571 (AISI 316 Ti) and DIN 1.4404 (AISI 316 L)
- patented method of control of the continuous sterilizer chamber steam filling with an independent and stable pre-heating for economical operation and low media consumption
- descending bottom of the sterilization chamber for perfect drying
- the sterilization chamber ground surface, coarseness Ra 1.25 µm (Ra 50 µinch)
- thanks to used high-quality insulation materials Rockwool (chlorides free) with an Al foil

Steam generator

- the steam generator and the heating elements are made of high-quality stainless steel DIN 1.4571 (AISI 316 Ti);
- high-quality insulation Rockwool (chlorides free) with an Al foil reducing markedly the heat losses;
- both water filling and the generator output are controlled and checked by a two-processor Master-Slave control system. The unique construction, thermal degassing of the demineralised feed water to minimize the uncondensable gasses (standard equipment of UNISTERI HP) and automatic desalting ensure short sterilization cycle times and permanently high steam quality.

UNISTERI HP

- the structural modular system allows an individual device assembly
- the shape simplicity and usefulness and high-quality surface of the face metals allow perfect hygiene
- the face metals fastened firmly to the device frame provide quiet operation and extended lifetime of the device
- ergonomic position of the touch control panel
- automatic system of door closing and sealing with an immovable and maintenance-free sealing for user-friendly operation
- maximum effective use of the inner sterilization space
- both manual and transporting and loading systems guarantee easy work of the personnel with the sterilized material
- easy software upgrade – the device properties can be adapted to the new future demands
- wide range of optional accessories according to individual needs
- possibility of integrated water treatment system



- unlimited number and easy changes of programmes by means of chip cards
- comfortable menu for service communication with interactive outputs control; more than 80 service programmes for easy setting, calibration, diagnostics, and service

- to allow validation, all sterilization chambers are equipped, as a standard, by two easy accessible inlet hollows according to EN 285+A2
- new horizontally rotating automatic system of the door closing, fixed in 4 points, with an immovable and maintenance-free door sealing reducing the maintenance costs; thanks to special door hinge there is secured enlarged space for the user for comfortable and safe manipulation with material and easy cleaning of inner side of the door

High utility value

New control panel – user-friendly with intuitive control

- two integrated microprocessor control systems (Master-Slave) with own sensors for independent assessment, control and documentation of working cycles
- ergonomically positioned control panel
- the technology of an 8.2" touch screen allows clear and simple operation on the loading side
- on the unloading side of the device (a two-door model), there is an LED display allowing monitoring of the actual working phase, sterilization chamber pressure and time remaining till the cycle end
- the Total Stop function integrated in the control panel allows stopping the device in case of need
- selection of language for communication with the device
- clear digital displaying of pressure in the sterilization chamber jacket and the steam

- chip card system (optional accessories)
- a printer installation option for the sterilization processes documentation (optional accessory)

The basic programme equipment offers up to 20 programmes

As a standard, the device is equipped with a preheating programme (134 °C/1 min).

Standard, validable programmes

- **"Instruments Quickly"** – 134 °C/ 4 min, with following short drying, for non packed instruments for immediately following use
- **"Universal"** – 134 °C/ 7 min, with following drying
- **"Universal Containers"** – 134 °C/ 7 min, with intensive drying
- **"Packed glass, rubber and plastics products"** – 121 °C/ 20 min, with following drying

Equipment according to the customer's specific needs

Special programmes

- Prions
- Disinfection 105°C/20 min
- Laparoscopy
- Alloplastics
- Plastic materials
- Optics, ...

Special programmes with possibility of use of the movable PT 100 sensor

- Solutions in open bottles 121°C/20 min, unprompted cooling
- Steaming
- Agars (culture media) with unprompted cooling

Solutions sterilization safety

Sterilization of solutions in open bottles and regeneration bottles with a GL 45 thread, corresponding to DIN 168, Part 1, ISO 4796, mark

Individual programme adjustments

The programmes installed in the device can be modified directly in the device at any time (depending on the access rights), or by means of a **chip card system** at the device user's site. On the chip cards, new programmes developed and tested by the manufacturer upon an order are saved. We offer a **special UNICONFIG software** as well, allowing modification of all sterilization cycle values (evacuation, vacuum depth, exposure, drying) and setting of the sterilization cycle temperature and time. (Verification by the manufacturer required.)

Cycle documentation

A clear documentation of work cycles can be ensured by:

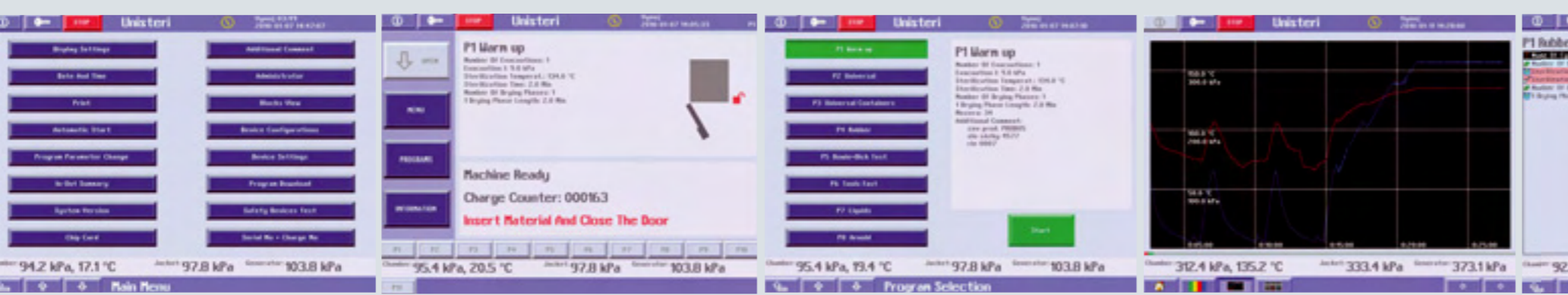
- Independent documentation of working cycles with pressure and temperature recording, allowing the storage of the last 10 records in the sterilizer memory (up to tens of thousands optionally – MMC card);

- Connection to a PC and storing the records in the computer memory by means of the "Printer Archiv" software;
- Connection of the sterilizer to a computer network (LAN) together with the software application Euro SDS and DP 3.5;
- Integrated printer allowing to select one of four graphic outputs.

Service equipment

The automatics is equipped with a rich software allowing easy checking, maintenance and testing (interactive schemes of the piping connection, testing programmes allowing the device safety

elements testing, calibration setting, etc.). We offer an ON-LINE internet diagnostics and monitoring of the sterilization device, allowing quick and direct communication with the device and providing for a continuous trouble-free operation of the worksite. This all guarantees low operating costs and long lifetime of the device. The device allows a detailed planning of service activities with a subsequent notification on the display or the printer record.



- generator, and of pressure and temperature in the sterilization chamber (reference bottle)
- clock – the remaining programme time and real time displaying
- error report with all parameters recording in the moment of a defect for both quick and distant service
- visual and acoustic condition and process signalling

Standard testing programmes for routine check

- Vacuum test – chamber air-tightness testing; compensating phase duration: 5 min.; test duration: 10 min.
- Bowie&Dick test 134 – steam penetration test, 134 °C/3,5 min

SIMAX, blue cap. In addition to the standard working and safety procedures and processes, the solutions safety is also checked by three independent systems – temperature and pressure checking in the sterilization chamber, temperature in the reference bottle, and the minimum required sterilization cycle time. Only if all above mentioned processes are complied with, the programme is declared to be finished and the system allows the chamber door opening.

... just a touch



Economy of operation

Intelligent systems of media and working time savings

The low consumption factor is reflected in the models of the future. The more and more demanding legislative requirements, laying emphasis on the introduction of safe products on the market, and the more and more rising prices of the input media constitute a pressure to the rise of the operating costs of the sterilisation technique. Therefore, the low consumption of cost saving and, at the same time, comfortably equipped sterilizers is the hit and advantage of the present age. Such sterilizers have increasingly been setting a new tone in the health care facilities.

with autonomous operation which totally eliminates the need of connecting the device to a water source. There is thus no cost of the cooling water. This version of the sterilizer is equipped additionally with an integrated cooling aggregate placed in the rear part of the device. The operation of this apparatus is controlled fully by the sterilizer automatics and requires no operating personnel. The electrical energy and demineralised water source for the integrated steam generator are sufficient for the proper steam sterilizer operation. The supply of the steam generator by demineralised water could be solved by a fixed connection to a water treatment apparatus or in an autonomous way, namely by a reservoir with the volume of approximately 25 litres. Demineralised water supply from it is controlled by the device automatics.

processes are controlled by double microprocessor control. Sealing put on tightly on the pressure vessel is used to seal the sterilization chamber. Its shape seals perfectly the sterilization chamber in all phases of the sterilization cycle. Such sealing does not require any specialized maintenance and thanks to its immovability, it gets less worn out, which influences positively its lifetime and operating cost. In case of a power failure, the chamber remains sealed for an unlimited period of time, which thus does not give rise to higher expenses related to media backup.

Easy maintenance of the sterilization chamber and door

The construction of the pressure vessel and the door, and the selection of the inner surfaces quality allow a perfect, quick and comfortable cleaning of all parts of the sterilization space.

Accessories for documentation and independent data storage

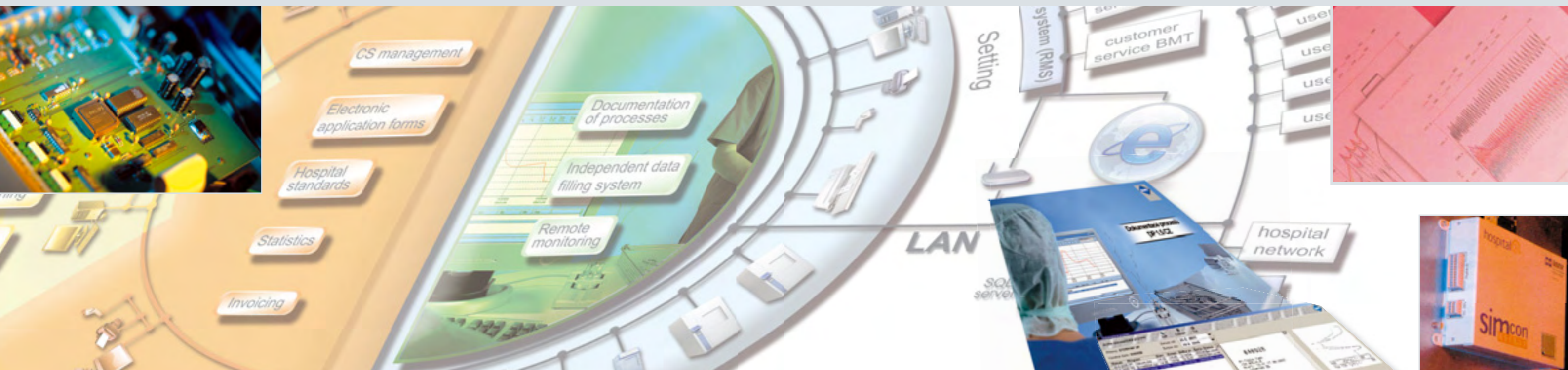
Use the new EURO SDS software application which, together with the connection of the device on the sterilisation work site to the computer network (LAN), allows the documentation of all sterilisation processes and independent data storage, reports printing on an A4 paper, and connection of a bar code reader.

Accessories for energy peaks watching

This is a set of software and hardware sterilizer modifications that give the possibility of a single and mutual regulation of the integrated steam generators operation to secure the energy peaks watching and communication with the central technical office, or the possibility to limit the electrical distribution system sizing on the installation place.

Air Detector

The Air Detector is a device which monitors and detects continuously the air and/or non-condensable gasses penetration and presence in the sterilisation chamber during each programme of packed materials sterilisation. The equipment of the device with this apparatus represents a higher guarantee of the sterilisation safety than the so far performed routine checks by testing programmes (Vacuum Test and Bowie&Dick Test) done once a day only before the commencement of the common operation.



Version with autonomous operation

The UNISTERI HP steam sterilizers can be equipped with the system for cooling water saving by which water consumption can be reduced by about 25%.

In cases of strict requirements for low sterilizer operating costs in the health-care facilities, field hospitals, or in regions with drinking water absence, this principle of cost savings might not be sufficient. Therefore, we offer a version

Version with the low consumption cost saving steam generator

Thanks to a unique design solution, we have achieved the reduction of the energy demand of the steam generator by approximately 50 %.

Immovable maintenance-free door sealing

Comfort and safety of the user by operation of the device is secured by automatic door closing system including door sealing; course and multiple checks of

The Automatic Morning Switching-on function

This is another one of the economy product series that you can order together with the device and that will save your time. The Automatic Morning Switching-on function is able to start the device at a time set by you and to perform the pre-heating and the Vacuum Test automatically without any operator's presence. The routine test programmes can thus be performed more effectively.

The low consumption factor is projected into the models of future

UNISTERI HP – basic equipment

- 13 Frame: Stainless steel
- 12 Inner surface of the sterilization chamber – ground surface, coarseness Ra 1.25 µm (Ra 50 µinch);
- Pipelines and valves transporting the steam to the sterilization chamber and demineralised water to the integrated steam generator are made of stainless steel, valves of brass
- Technology of touch-screen display 8.2" ensures transparent and easy operating on the loading side
- 1 Control panel on the unloading side in the two-door variant – LED display
- „The Automatic Morning Switching-on function”

UNISTERI HP – Optional Accessories

- 1 Both one-door and two-door (pass-through) variant; stainless-steel face metals of the sterilizer
- Possibility to built the device into stainless steel partition walls
- Mirror variant of the device allowing joining of two service areas into one if more devices are installed side by side
- 2 Optional steam source
 - FD – Steam from a central source,
 - ED – Integrated steam generator (7.5 kW)
 - FDED – Combined steam supply either from a central source or an integrated steam generator
- Inner surface of the sterilization chamber – ground surface, coarseness Ra 0.8 µm (Ra 32 µinch); Ra 0.125 µm (Ra 5 µinch)
- Chamber passivation (acid cleaning) – only in ground/polished surface
- Stainless steel valves transporting the steam to the sterilization chamber and demineralised water to the integrated steam generator
- 3 Control panel on the unloading side – touch screen 8.2"
- 4 Optional language version for communication with the device
- Air Detector for a continuous control of air and uncondensable gasses presence in the sterilization chamber Thermal degassing of the steam

- Thermal degassing of the steam generator for higher operation reliability and sterilization safety
- Media monitoring – continuous checking of input media parameters (both demineralised and cooling water)
- Energetic Maximum function: Regulation of the device operation – energy peaks watching when more devices are connected to the electric power mains
- 5 Integrated equipment for condensate aftercooling to reduce the waste water temperature if plastic waste piping is used
- 6 Rolling wheels for easy handling during assembly and/or service



- Back-up power distribution for the device automatics (2 kW)
- 7 Additional mechanical gauges
 - on the loading side
 - on the unloading side
- Tropical version for countries with high temperature of cooling water
- Optional electrical connection depending on the required power mains parameters
- 8A/B Integrated printer for the sterilization cycle record printing
- 9 Printer Archiv software for batches documentation in a PC
- 10 Software (Euro SDS and DP 3.5) for the ste-ri-lizer connection to a computer network (LAN)

- 11 Flexible PT 100 temperature sensor in the chamber
- Special programmes – allow the operator to perform individual adjustments of pre-programmed programmes (e.g. microbiological laboratories)
- Special UNICONFIG software allows the modification of the individual phases of the sterilization cycle (evacuation, vacuum depth, exposure, drying) and setting of the sterilization cycle temperature and time values (verification with the manufacturer required)
- 14 Chip cards system
 - According to the ASME, AQSIO
 - Optional electrical connection depending on the requested main parametrs
 - 3-phase socket
 - Steam generator for Decontamination feeded with mineral tap water
 - Stainless vat under device
 - Testing and validations according to EN 285+A2 and EN ISO 17665-1



- 26 Integrated equipment for demineralised water preparation
- External water treatment apparatus (e.g. Goro)
- Monitoring indicators starting package
- ... and others

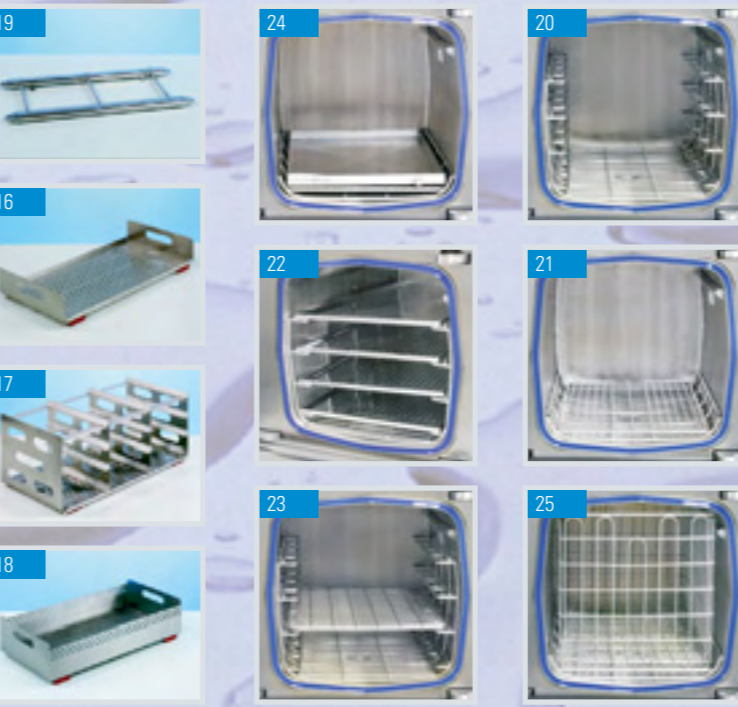
UNISTERI HP

Transport loading system

- 15 Transport cart
- Loading cart
 - 16 Container-type
 - 17 Cassette-type
 - 18 For solutions
- 19 Frame for the loading cart
- Hook for unloading of the loading carts

System for manual loading

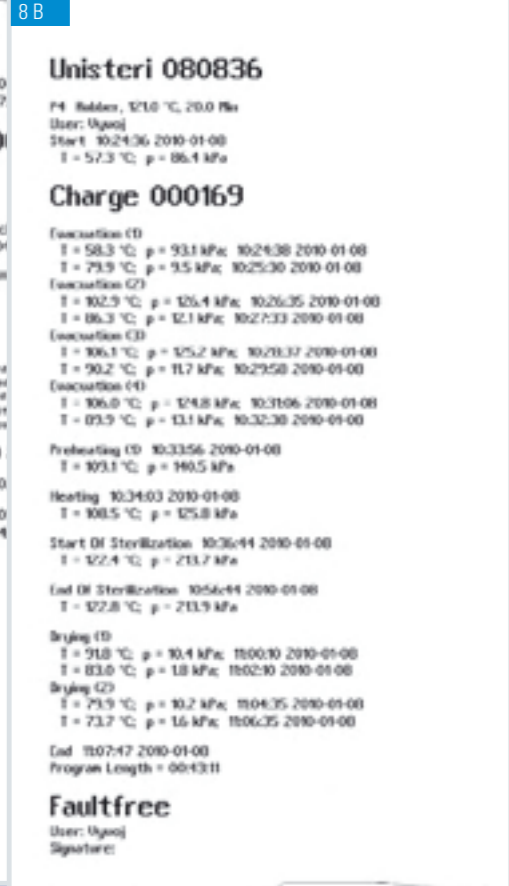
- 20 Stainless steel wire insert for shelves and sieves
- 21 Stainless steel wire insert for containers and baskets
- 22 Stainless steel shelf (max. 4 pcs)
- 23 Stainless steel sieve (max. 4 pcs)
- 24 Drip tank for solutions put inside the sterilization chamber
- 25 Sterilization basket – 1 STU, ½ STU
- 26 Integrated equipment for demineralised water preparation



- External water treatment apparatus (e.g. Goro)
- Monitoring indicators starting package
- ... and others

Modular system of the device arrangement

Unique solution for your individual requirements



Provision for the customer service

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;
- 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 UNISTERI HP 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. Service and maintenance are ensured fully by a worldwide network of BMT Medical Technology s.r.o. contractual organizations. We have a wide network of branded service

worksites connected to the HOT-LINE service that ensures a quick reaction to the customer's questions and requirements. To ensure the user's comfort and possibility of a quick and high-quality service action, we have developed a special autodiagnostic programme. We offer an ON-LINE internet diagnostics and monitoring of the sterilization device, providing a quick and direct communication with the device and providing for a continuous trouble-free operation of the worksite. This all guarantees low operating costs and long lifetime of the device.

Environmental awareness

The device complies with all up-to-date ecological requirements. It does not burden the working and living environment. An efficient vacuum pump with a standardly intergated feeding water sparing equipment saves 15 % of the operating costs. A unique construction of the steam generator with an automatic desalting ensures a continuous high quality of the steam.

High-quality materials ensuring a long lifetime of the device are used during the manufacture. We offer an equipment by the waste water aftercooling apparatus allowing the waste temperature setting. The device does not produce any harmful wastes. During its manufacture, ecological methods of processing are used as well. All substantial parts of the devices and the package are recyclable. The device contains 95 % of stainless steel, 4 % of other materials, and 1 % of electrical and plastic materials. Ecological liquidation is carried out after a disassembly by an authorized person in accordance with EU regulations complying with the WEEE (Waste Electric and Electronic Equipment) Directive.

TECHNICAL PARAMETERS

UNISTERI HP

| Model | Dimension (mm) (height x width x depth) | | Number of sterilization modules | Chamber volume (l) Total | Weight (kg) | Max. input (kW) / fuses (A) | | Consumption max. per ster. cycle | | | | |
|---------|--|----------------------|---------------------------------------|-----------------------------------|----------------|--------------------------------|-------|----------------------------------|--|---------------|------------------------|-----------------------|
| | Internal of the chamber | External of the unit | | | | ED | FD | Water [m ³] | Demineralized water [m ³] | Steam [kg] | El. energy ** [kWh] | El. energy * [kWh] |
| 336 – 1 | 320 x 320 x 625 | 1500 x 600 x 805 | 1 | 73 | 280 | 8,5 / 16 | 1 / 6 | 0,06 | 0,003 | 2,7 | 3,0 | 0,2 |
| 336 – 2 | 320 x 320 x 625 | 1500 x 600 x 860 | 1 | 73 | 290 | 8,5 / 16 | 1 / 6 | 0,06 | 0,003 | 2,7 | 3,0 | 0,2 |
| 636 – 1 | 670 x 350 x 700 | 1720 x 690 x 967 | 2 | 160 | 410 | 17 / 32 | 2 / 6 | 0,07 | 0,005 | 5,0 | 5,0 | 0,3 |
| 636 – 2 | 670 x 350 x 700 | 1720 x 690 x 1022 | 2 | 160 | 420 | 17 / 32 | 2 / 6 | 0,07 | 0,005 | 5,0 | 5,0 | 0,3 |
| 559 – 1 | 509 x 509 x 990 | 1720 x 850 x 1247 | *** | 254 | 740 | 24,5 / 35 | 2 / 6 | 0,08 | 0,007 | 7,0 | 6,0 | 0,4 |
| 559 – 2 | 509 x 509 x 990 | 1720 x 850 x 1302 | *** | 254 | 750 | 24,5 / 35 | 2 / 6 | 0,08 | 0,007 | 7,0 | 6,0 | 0,4 |

Model xxx-1 single – door
 Model xxx-2 double – door.
 Connecting voltage model 336 and 636 – 3P/PE 400 V, 50/60 Hz
 Connecting voltage model 559 – 3P/N/PE 480 V, 60 Hz (for USA)
 Noisiness: max. 65 dB

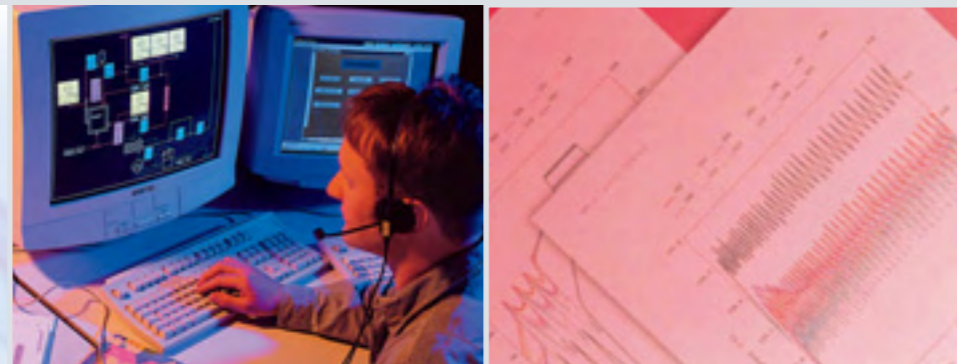
* FD type – without steam generator, to be connected to external steam distribution
 ** ED type – with steam generator
 *** the dimensions are not standardized for the container system

Changes in the design and make reserved.



UNISTERI HP

– equipped with more individuality and comfort



Technology in the man's service
 – easily, economically, safely

Make information is available
direct from our internet web site



Make acquaintance with our further offers...



Small steam sterilizers 15 – 25 litre



Steam sterilizers 140 – 1 490 l



Laboratory drying devices and incubators 22 – 707 litre



Stainless steel instrumentation



Formaldehyde sterilizer 110 litre



Exchanger steam/steam



Tests of sterilization efficiency



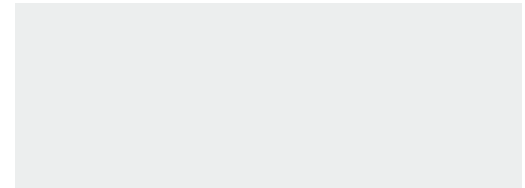
Cleaning and disinfection agents



MMM Group



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