



# UNISTERI<sup>®</sup> HP IL

"medium" steam sterilizer for labs and pharmacy  
- sophisticated and simple, with high performance



protecting human health



## MMM Group – Leading Service Supplier for Health Care

Since its establishment in 1921, the company BMT Medical Technology s.r.o., a traditional manufacturer of medical equipment, gradually changed from a small region-oriented company "Chirana" to the international company "BMT". In 1992, it became the member of European MMM Group, operating on the world market as a supplier of systems acting in health, science and research since 1954. The MMM Group has established 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.

## Intended Purpose of UNISTERI® HP IL Steam Sterilizers

The UNISTERI® HP IL steam sterilizer is a device intended for use in laboratories for sterilization by moist heat up to the temperature of 134 ° C. Some programs and functions of the device do not concern the processing of medical devices. Read the instructions for use carefully.

## Individually Built Sterilization Engineering

The newest modular line of steam sterilizers UNISTERI® HP IL is suitable for the field of microbiology, molecular biology, bio technology and waste decontamination. Line of sterilizers with chamber volume of 73, 160 and 254 litres. The steam sterilizer is designed for

## Technical and Legislative Standards

UNISTERI® HP IL is the representative of the new generation of "medium" steam sterilizers meeting basic technical and legislative EU regulations without any exceptions. The device concept is based on requirements of European regulations No. 2014/35/EU, 2014/30/EU and 2014/68/EU and related standards, mainly ČSN EN 285. The device is also adjusted to individual needs of individual work sites. The pressure chamber and steam generator are designed and manufactured within certified quality system according to the European regulation for pressure devices or – in case of individual requirements – according to ASME Code standards (for the USA and Canada) or according to licence regulations AQCIQ (for China). The device construction meets requirements of GMP and GLP. The device corresponds with recent

We offer performance of FAT and SAT tests and sterilizers take over. The validation tests according to the ČSN EN ISO 17665-1 standard are performed using the potential of our accredited testing laboratory.



laboratories

pharmacy

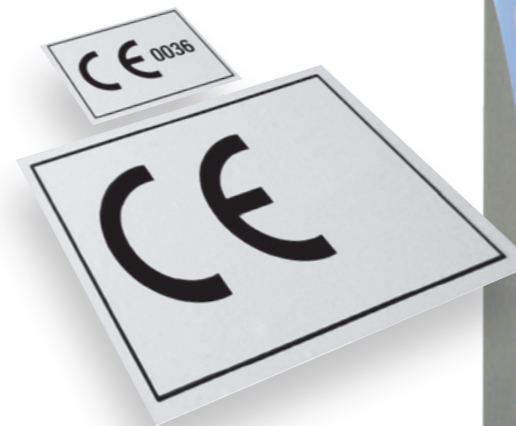
BSL 3 / BSL 4

bio-models

Knowledge and experience obtained in realisation of individual supplies to our clients all over the world together with technical innovation permanently and positively influence the development, construction and manufacture of our devices. The number of patents and utility and industrial designs, sophisticated construction and easy realisation of individual adjustments of our devices further confirm high levels of our works.

sterilization of solid objects without contents of liquids, for sterilization of liquids – solutions, cultivation and boiling soils, suspensions and emulsions, liquid medicament forms; steam decontamination. Steam sterilizer UNISTERI® HP IL – safe, fast, ergonomic design, easily controllable, possibility of individual adjustments and multi-purpose use. Top quality production, modern electronics and high quality materials of the device UNISTERI® HP IL are as natural as user features or exceptional level of safety and reliability.

requirements in labs, in pharmaceutical, chemical and food processing industry. So as to meet the GMP requirements towards proving the permanent quality of the sterilization process in compliance with device parameters as declared by the device manufacturer, it is possible to arrange for users of UNISTERI® HP IL steam sterilizers preparation of documents for the purpose of the process validation:  
 IQ – installation qualification  
 OQ – operation qualification  
 PQ – function qualification





# Laboratories, pharmacy, BSL 3, BSL 4, bio-models

## Complete made to measure systems

People in veterinary and research laboratories, pharmaceutical plants and hospital pharmacies work with highly sensitive laboratory materials requiring extremely responsible handling. Safety, reliability, speed and comfort in everyday use – these are the decisive criteria for use of sterilization and disinfection automats.

Modular principle of devices construction allows us to offer to you the line of products with unique characteristics – various principles of heat transfer, in several volume sizes, with safe operation procedures.

Steam sterilizer UNISTERI® HP IL represents a sterilization response to challenges of micro-organisms in the lab. Nutrient media, solutions in open or closed bottles, highly pathogenic samples of micro-organisms, solid or porous materials or materials sensitive towards pressure changes, contaminated material, used filters, animal boxes, animal food, food and other materials – all these items set the wide spectrum of our requirements towards materials that may be quickly, perfectly and reliably disinfected and sterilized by the steam sterilizer UNISTERI® HP IL.

UNISTERI® HP IL – variable use, modular construction of the steam sterilizer with wide range of its use.



laboratories



pharmacy



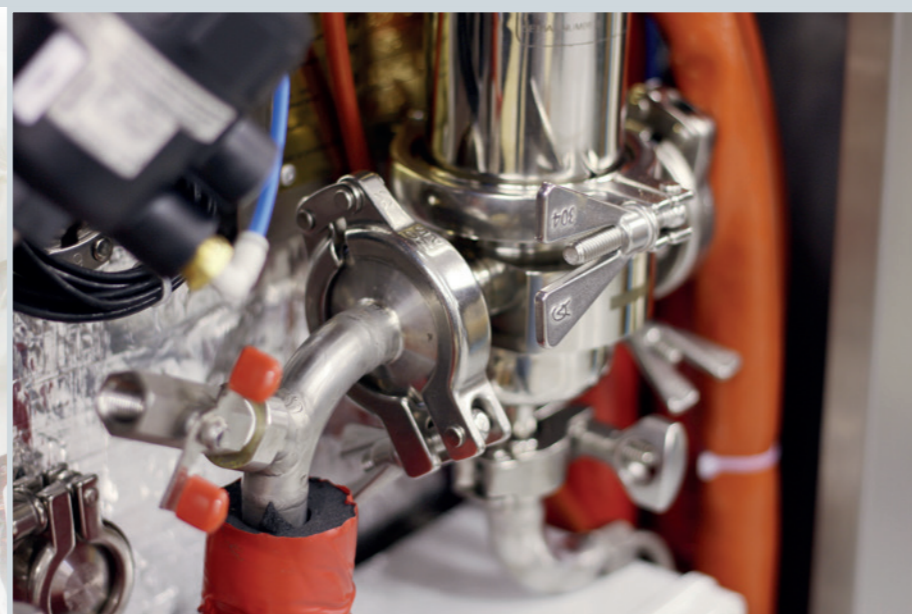
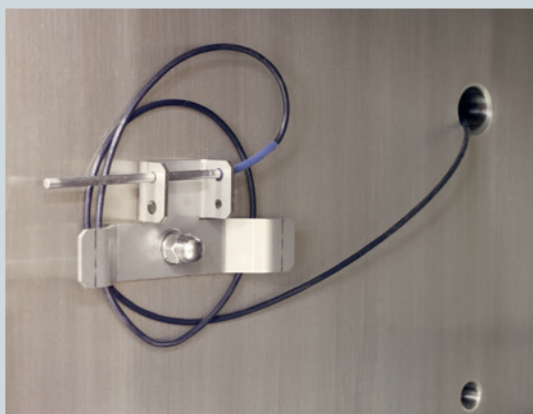
BSL 3 / BSL 4



biomodels

## Unique Characteristics of Optional Equipment

- gastight version of the device "Bio-Seal" with possibility of independent and permanent sealing of the chamber door with pressure air and with possibility of independent control of door at any side
- stainless steel frame of the device, pressure sterilization chamber with mirror shine
- complete stainless steel design of piping (tri-clamps, valves, safety valve)
- special stainless steel sterilizable filters at the inlet and outlet of the sterilization chamber with integrity test
- $F_0$  control of sterilization process, forced cooling of the shell with supporting air pressure, possibility of charge spraying
- air compressor including air jet and cabinet
- basic documentation for validation according to GMP and GLP (DQ, FAT, SAT, IQ, OQ, PQ)
- "Air-detector"
- wide range of special laboratory programs with the possibility of individual modification using a special software UNICONFIG or directly from the touch display
- documentation of sterilization processes with possibility of the device connection to computer network (LAN)





## Modular layout system

- single-door and double-door (interlaying) version with possibility of building into the stainless steel wall
- optional steam source – own, external, combined
- optional roughness of inner surface of the sterilization chamber
- system for manual insertion of materials and system of transport and charging carts
- wide range of optional program equipment

- various possibilities of batch documentation processing
- wide range of optional equipment for minimization of operation costs
- possibility of specific additives selection (e.g. possibility of chamber equipment with a flexible sensor PT 100 for safe and precise control of cycles while working with microbiological cultures and solutions, possibility of building-in

the device for additional cooling of condensate, possibility of adjustment for decontamination of materials, gastight version "Bio-Seal", pressure manometers, wide range of individual adjustments of programs, ...)

- wide spectrum of services (incl. ON-LINE internet diagnostics, various types of tests, validation, etc.)



336

636

559

## New design, new construction

- touch-screen 8.4" – control panel with maximum operator and service convenience
- touch-screen 5.7" on the unloading side of the device for well-organised and easy operation
- automatic closing and sealing system for (manually operated) hinged doors, user-friendly operation
- movable door seal
- steam generator with reduced power consumption for lower operating costs (from 7.5 kW)
- powerful water-ring vacuum pump for short batch times, fast and accurate cycles progress
- dual-processor PLC control with two independent systems for reliable, efficient and safe cycles progress
- a special method of controlling the continuous steam injection into the steam sterilizer chamber
- the device is made of high quality stainless steel for long-time durability and reliability



... a touch is sufficient

Powerful and Comfortable



## Unique Microprocessor Control

- the highest possible operation safety, double system of sensors for process information collection and assessment and for their continuous comparison and assessment
- two built-in microprocessor control systems (Master-Slave) for independent assessment, control and documentation of operation cycles
- any established variation exceeding allowed limits induces an error message
- unique error protocol for exact and fast diagnostics of errors
- the basic program equipment includes up to 20 standard programs
- easy realization of individual adjustments of programs
- easy import / export of programs using a USB flash disc
- easy and intuitive access for service allows a technician to comfortably set all and any calibrations and configurations and to perform fast diagnostics of the device
- the Audit Trail function allows you to record, view and archive important events



## Pressure Sterilization Chamber

- the pressure chamber is heated by steam through heating jacket and it is made of high-quality stainless steel 1.4404 (AISI 316 L)
- special method of control of continuous steam filling into the steam sterilizer chamber
- down bottom of the sterilization chamber for perfect drying
- sterilization chamber with ground surface with roughness of Ra 1,25  $\mu\text{m}$  (Ra 50  $\mu\text{inch}$ ); optional polishing with roughness Ra 0,8  $\mu\text{m}$  (Ra 32  $\mu\text{inch}$ ) or polishing to mirror shine with surface roughness Ra 0,125  $\mu\text{m}$  (Ra 5  $\mu\text{inch}$ )
- thanks to high-quality insulation materials Rockwool used (no chlorides), equipped with an Al foil, there are reduced the radiated heat losses and requirements towards air-conditioning
- as a standard, all the sterilization chambers are equipped for validation with two easily accessible inlet necks
- new, unique, horizontally revolving, automatically lockable door fixed in four points
- if required, we perform chamber passivation (staining)

## Steam Generator

- the steam generator together with the heating elements is made of high-quality stainless steel 1.4571 (AISI 316 Ti)
- high-quality Rockwool insulation with AL foil significantly reduces heat loss
- unique automatic control of the steam generator including water filling
- thermal degassing of feed demi water (optional) and automatic desalination to minimize non-condensable gases and for consistently high steam quality



High Utility Value



- user friendly, with intuitive control
- two built-in microprocessor control systems (Master-Slave) with own sensors for independent assessment, control and documentation of operation cycles
- ergonomic position of touch control panel
- touch screen technology 8,4" provides well-organised and simple servicing on charging side
- on discharging side of the device (in case of two-door version): LED display with possibility of monitoring of current work phase, pressure in sterilization chamber and time left by the end of the cycle
- "Emergency stop" function integrated to the control panel allows for the device to be put into standby status if needed
- possibility of language selection for communication with the device
- well organised digital displaying of steam pressure in sterilization chamber shell and in steam generator, pressure and temperature in sterilization chamber (reference bottle)
- clock – an indicator of remaining time of the program and real time indicator
- error protocol with recording of all and any parameters at the moment

- of a fault for the possibility of fast or remote service
- visual and acoustic signalling of statuses and processes
- possibility of building-in a printer for sterilization processes documentation (optional equipment)

## Documentation of Batches

- It is possible to arrange well-organized documentation of operation cycles.
- Independent documentation of operation cycles with recording of pressure and temperature and with the possibility of saving 10 recent protocols in the sterilizer memory (optionally up to dozens of thousands – SDHC card)
  - By connection to PC and by saving protocols in the computer memory using the "Printer Archive" software
  - The Audit Trail function allows recording, displaying and archiving of important events.
  - By connection of the sterilizer to computer network (LAN) together with software application Ecosoft and DP 3.5
  - By built-in printer with the possibility of selection of one of four graphic outlets.

The automatics is equipped with extensive software for easy control, maintenance and testing (interactive schemes of tube connection, testing programs allowing testing of safety elements of the device, calibration settings, etc). We offer ON-LINE internet diagnostics and monitoring of the sterilization device, providing fast and direct communication with engineering and providing fluent and trouble-free operation of the construction site. All these features guarantee low operation costs and long service life of the device. The device allows detailed planning of service tasks with consequent warning on the display or on pharmacy statement.

**UNISTERI HP IL 5170661**  
System Version: 2.4.2  
Linux BMTDIST Version: 2.0

P02 Universal  
Ster: 134°C (PT3.1), 7.0min  
User1: SERVA1  
User2: Open User  
Parameters Modified by User  
Start 13:30:58 2020-03-19  
T(PT3.1)=111.2°C; p=99.8kPa

**Charge 00442**

Evacuation (0)  
T(PT3.1)=111.1°C; p=100.3kPa; 13:31:19  
Evacuation (1)  
T(PT3.1)=107.9°C; p=137.4kPa; 13:34:21

Preheating (3) 13:43:24 2020-03-19  
T(PT3.1)=62.2°C; p=20.3kPa  
Heating 13:44:57 2020-03-19  
T(PT3.1)=108.0°C; p=124.4kPa

Preparation  
T(PT3.1)=129.8°C; p=270.4kPa  
Start of Sterilization 13:49:48 2020-03-19  
T(PT3.1)=134.4°C; p=314.3kPa  
End of Sterilization 13:53:19 2020-03-19  
T(PT3.1)=135.2°C; p=314.5kPa  
Aeration 14:01:02 2020-03-19  
T(PT3.1)=55.8°C; p=90.7kPa

End 14:01:42 2020-03-19  
Program Length = 00:30:44

**Program Passed**  
User: SERVA1

Signature:

**UNISTERI HP IL 5170661**  
System Version: 2.4.2  
Linux BMTDIST Version: 2.0

P03 Universal Containers  
Ster: 134°C (PT3.1), 7.0min  
User1: SERVA1  
User2: Open User  
Parameters Modified by User  
Start 11:29:36 2020-03-23  
T(PT3.1)=116.5°C; p=100.6kPa

**Charge 00445**

Evacuation (0)  
T(PT3.1)=119.2°C; p=100.6kPa; 11:29:58 2020-03-23  
Evacuation (1)  
T(PT3.1)=111.4°C; p=143.7kPa; 11:30:26

Preheating  
T(PT3.1)=

Heating 1  
T(PT3.1)=

Preparation  
T(PT3.1)=

Start of St  
T(PT3.1)=

End of Ster  
T(PT3.1)=

Aeration 1  
T(PT3.1)=

End 12:15  
Program L

**Progr**  
User: SERVA1

Signature:

**UNISTERI HP IL 000000**  
System Version: 2.4.2  
Linux BMTDIST Version: 2.0

P06 Vacuum Test  
Vac: 10kPa, 10.0min  
User1: SERVA1  
User2: Open User  
Bacteriologic Filter - Off  
Start 10:20:12 2020-02-25  
T(PT1.2)=22.9°C; p=97.6kPa

**Charge 00002**

Prevacuum 10:21:21 2020-02-25  
T(PT1.2)=23.1°C; p=9.9kPa  
Vacuum Test 10:26:20 2020-02-25  
T(PT1.2)=24.2°C; p=10.4kPa  
End of Vacuum Test 10:36:19 2020-02-25  
dp = 0.3kPa  
T(PT1.2)=26.9°C; p=10.7kPa

End 10:37:10 2020-02-25  
Program Length = 00:16:58

**Program Passed**  
User: SERVA1

Signature:






# Wide Offer Of Working Programs According To The Specific User Needs

- Laboratories
- Pharmacy
- BSL 3, BSL 4
- Bio models (laboratory animals breeding)

The UNISTERI® hp IL steam sterilizer can be used for sterilization of solid, porous and plastic materials, processing and subsequent sterilization of agars (substrates), sterilization of solutions in open and closed bottles, disinfection of materials, waste decontamination, etc.

The instrument enables the installation of up to the 50 fixed programmes in the basic version, according to the specific customer needs.

## Standard programmes

● **Heating** 134°C/ 1 min  
**Sterilizing programmes with possibility of validation**

- **Universal** 134°C/ 7 min, with following drying
- **Universal Containers** 134°C/ 7 min, with intensive drying
- **Rubber** 121°C/ 20 min, with following drying
- **Instruments Quickly** 134°C/ 4 min, with following short drying, for non packed instruments for immediately following use

### Testing programmes

- **Bowie&Dick Test**  
 – Steam penetration test – 134°C/ 3,5min
- **Vacuum Test** – Chamber air tightness test – compensatory phase length is 5 min, test length is 10 min

The installed programs in the device can be modified at any time. The individual programs are downloaded to the device using a USB flash disc and can also be read back to the USB flash disc (up to 50 programs).

**Special laboratory software** enables to the operating personnel to make individual modifications of already programmed sterilization programmes E.g. Arnold steaming 100°C and 75°C.

The user can modify:

- sterilization temperature, the upper limit is 135 °C
- sterilization time
- the drying phase duration
- number of drying phases
- number of evacuations
- for solution programs, the cooling temperature
- for programs controlled by the  $F_0$  parameter, the  $F_0$  parameter

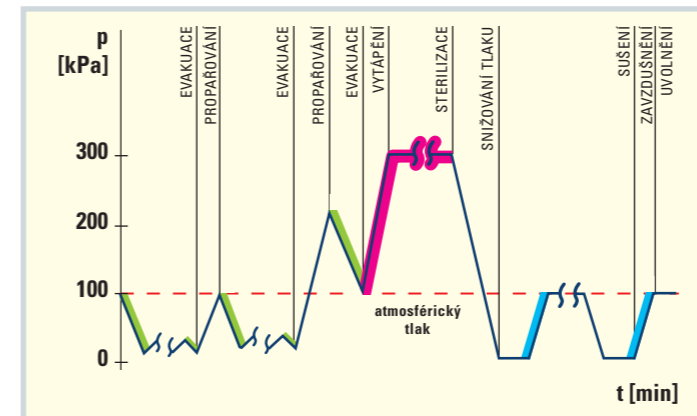
We also offer **special UNICONFIG software** enabling to modify all values of the sterilisation cycle (evacuation, vacuum depth, exposition, drying) and to set the values of the sterilisation cycle temperature and time.

(The verification by producer is necessary.)

# Optional Programmes

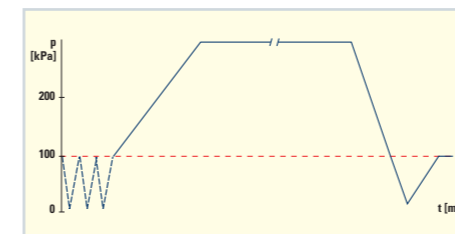


## Special programmes (without necessity of using of PT 100 sensor)

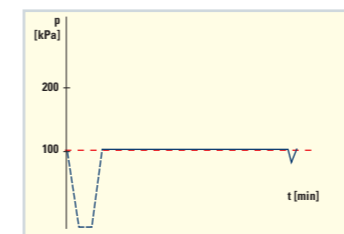


- Endoscopes
- Prions
- Creutzfeldt
- Laparoscopes
- Waste decontamination
  - laboratories (with using of the bacteriological filter and with the condensate sterilisation); BSL 3, BSL 4 – cabs; waste in the laboratories
- Disinfection 105°C
- Optical instruments
- Plastic cells
- Wooden dust

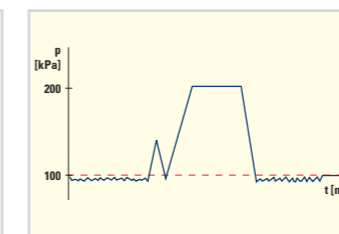
- Legend**  
 (suitable for BSL 3, BSL 4 operations)
1. chamber evacuation through the bacteriological filter
  2. condensate accumulation with continuous sterilisation
  3. air sucking through the bacteriological filter



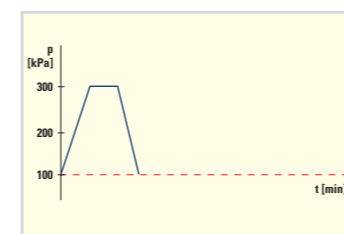
Dekontaminace ● ●



● Steaming  
 100°C/10 min. – Arnold-type programmes

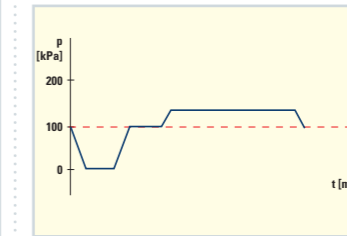


● Alloplastic

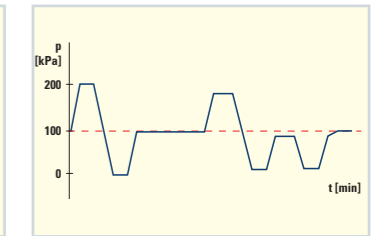


● Passage (of the material through the chamber) – for material transport from clean to non-clean side, with possibility of disinfection by steam

- with special charge testing (illustrative charts)



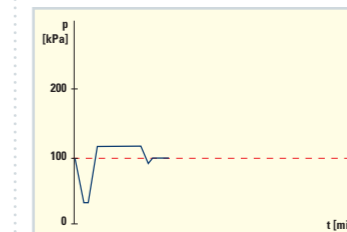
● Methylene test



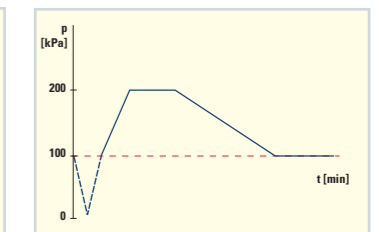
● Crash test / Showering

## Special Programmes With Possibility of Use of The Movable PT 100 Sensor

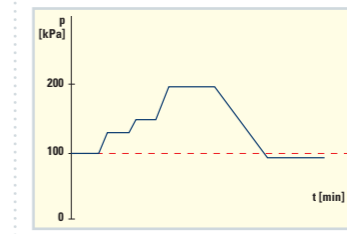
- with spontaneous cooling



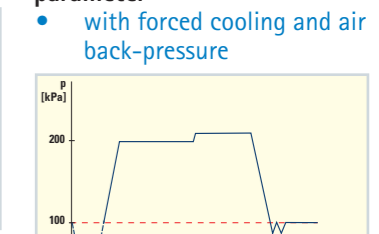
● Animal food  
 (possible individual sensor use according to the food type)



● Solutions with spontaneous cooling  
 ● Solutions with evacuation  
 ● Solutions controlled by  $F_0$  parameter



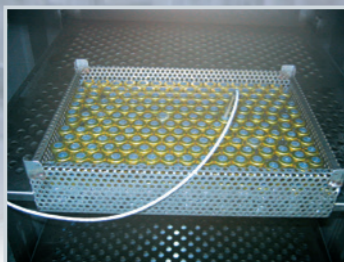
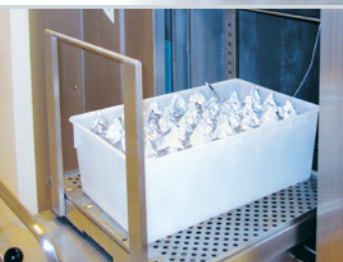
● Agars (substrates) with spontaneous cooling



● Solutions with forced cooling and air back-pressure  
 ● Solutions with forced cooling and air back-pressure and air back-pressure controlled by  $F_0$  parameter  
 ● Ampoules  
 ● Agars (substrates) with forced cooling, with possibility to boil in soft

## Special Programmes

- with bacteriological filter on the sterilisation chamber input/output and with continuous condensate sterilisation (suitable for ● BSL 3, BSL 4 operations)
- with wide scale of following specified optional accessories





# Operation Economy



## Intelligent System of Media and Work Time Saving

The low consumption factor affects the models of the future. More and more demanding legislative requirements putting stress on launching safe products in the market and permanently increasing price of input media represent pressure on sterilization engineering operation costs increase. That is why it is the hit and advantage of current era to provide saving and comfortably equipped sterilizers they represent the very new trend in health care industry operations.

## Door Mechanism

The comfort and safety of staff's work with the device is automatically arranged by a locking mechanism of the door, including sealing. The two-processor automatic controls the course and multiple check of processes.

## Easy Maintenance of Sterilization Chamber incl. Door

The construction of the pressure vessel including the door and selection of high-quality of internal surfaces allow perfect, fast and comfortable cleaning of all and any parts of the sterilization space.

## Version with "Automatic Morning Switch-On" Function

One of the economic product line elements, saving your time. The function of "Automatic Morning Switch-On " is able to start the device in pre-set time and to perform pre-heating and Vacuum test without the staff presence. In this way, routine testing programs can be performed in a more efficient way.

## All For Cost Savings

You will save with us!

## Accessories for documentation and independent data storage

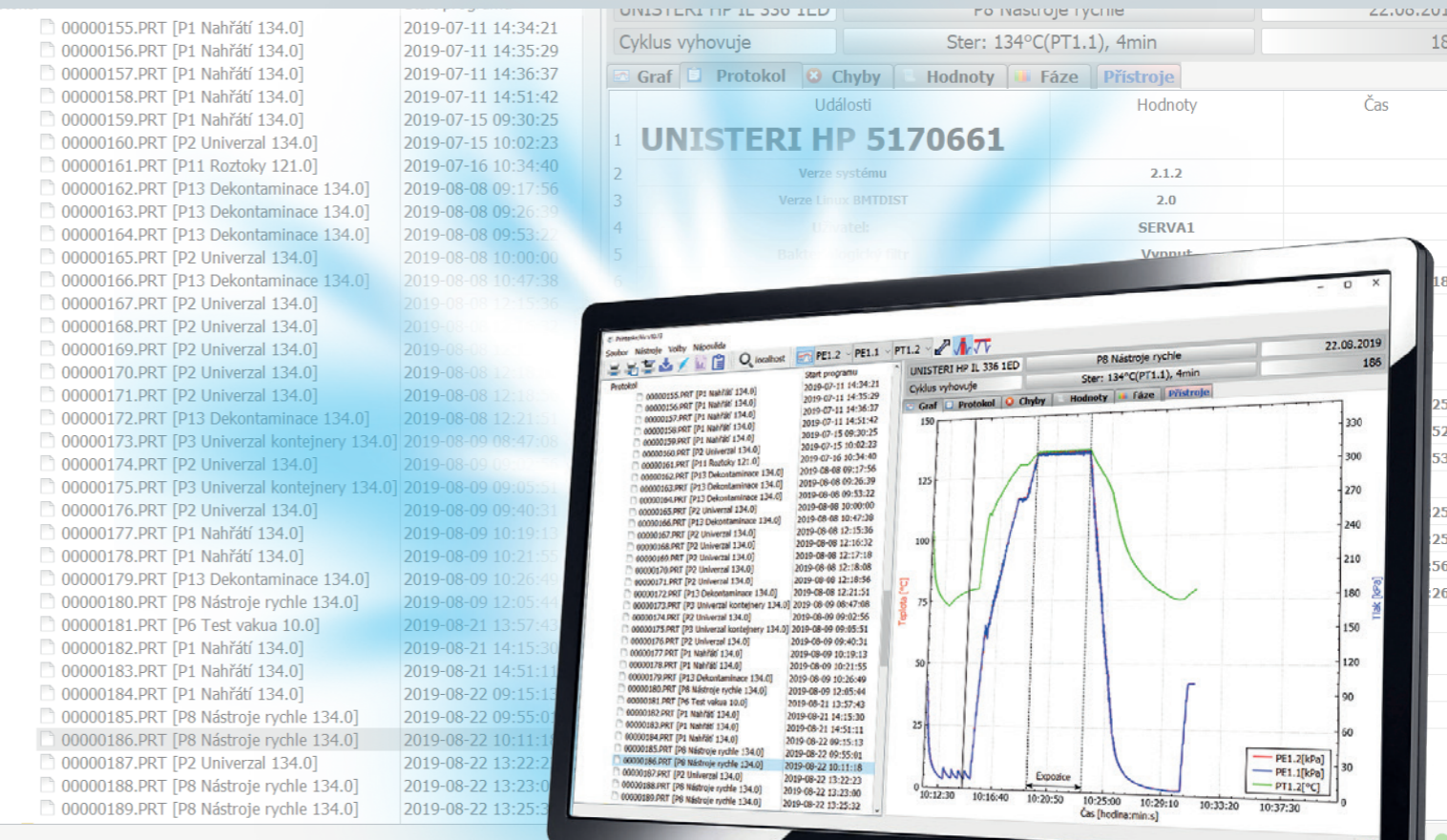
Use of the new Ecosoft software application which, together with the connection of the device on the sterilisation work site to the computer network (LAN), allows the documentation of all sterilisation processes and independent data storage, reports printing on an A4 paper, and connection of a bar code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

## Accessories for energy peaks watching

It is a set of software and hardware modifications of the sterilizer, which give the possibility of individual and mutual regulation of the operation of the built-in steam generators so as to ensure monitoring of the maximum energy consumption and the possibility to limit the sizing of the power distribution at the installation site.

## 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.



The low consumption factor is projected into the models of future



## UNISTERI® HP IL – 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 8.4" 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"
- standard batch counter and an additional optional daily batch counter
- 6 rolling wheels for easy handling during assembly and/or service

## UNISTERI® HP IL – 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 (from 7.5 kW)
  - FDED – Combined steam supply either from a central source or an integrated steam generator
- 12 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
- 3 control panel on the unloading side – touch screen 8.4"
- 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 generator for higher operation reliability and sterilization safety
- media monitoring – continuous checking of input media parameters (water, demi water, compressed air, softened water, steam)

- 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
- 7 additional mechanical gauges
  - on the loading side
  - on the unloading side
- tropical version for countries with high temperature of cooling water
- 8 integrated printer for the sterilization



- cycle record printing
- 9 Printer Archive 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 individual adjustments of already programmed programmes from the sterilizer screen (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 USB flash disc
- optional electrical connection depending on the requested main parametrs
- 3-phase socket
- stainless vat under device
- according to the ASME, AQSIO
- testing and validations according to EN ISO 17665-1
- monitoring indicators starting package
- 32 GB memory card to record the sterilization cycles
- "Audit trail" – system events recording to a memory card (conforms to 21CFR part11)
- rotary door lock with user-friendly operation; automatic door closing and sealing system
- ... and other



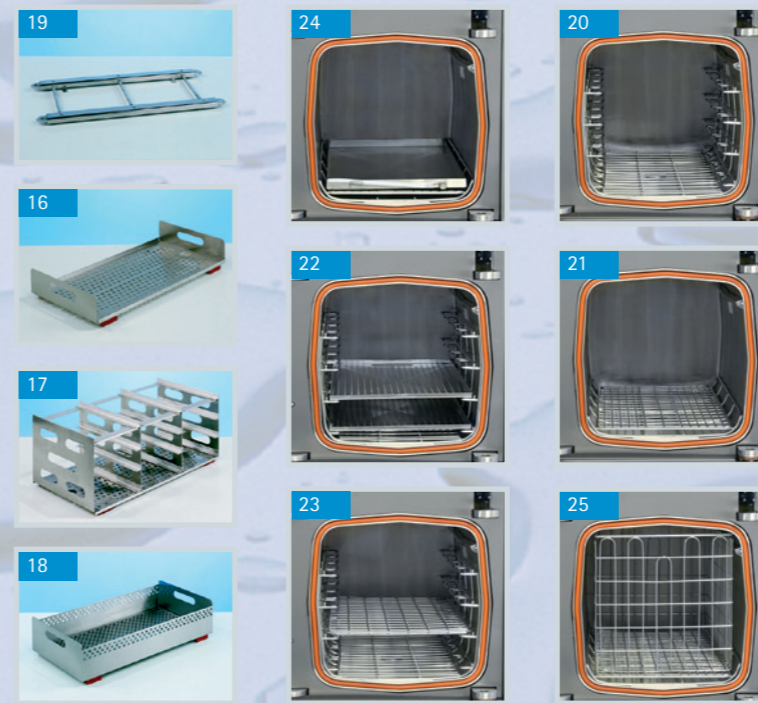
## UNISTERI® HP IL

### 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, 1/2 STU

### 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



# Modular System of The Device Arrangement

Unique Solution for Your Individual Requirements



**UNISTERI HP IL 000000**  
System Version: 2.4.2  
Linux BMDIST Version: 2.0  
PO6 Vacuum Test  
Vac: 10kPa; 10.0min  
User1: SERVA1  
User2: Open User  
Bacteriologic Filter - Off  
Start 10:20:12 2020-02-25  
T(PT1.2)=22.9°C; p=97.6kPa

**Charge 00002**

**UNISTERI HP IL 5170661**  
System Version: 2.4.2  
Linux BMDIST Version: 2.0  
PO2 Universal  
Ster: 134°C (PT3.1), 7.0min  
User1: SERVA1  
User2: Open User  
Parameters Modified by User  
Start 09:51:57 2020-02-25  
T(PT3.1)=97.8°C; p=95.1kPa

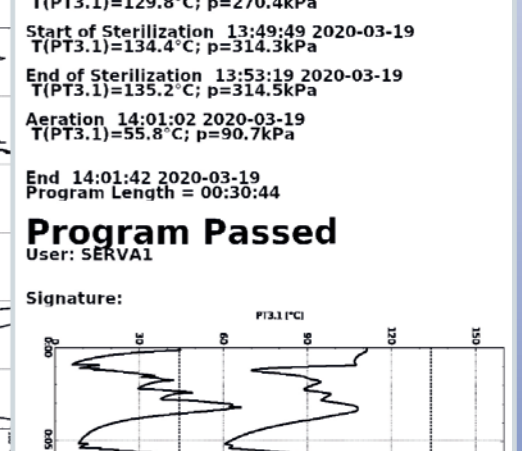
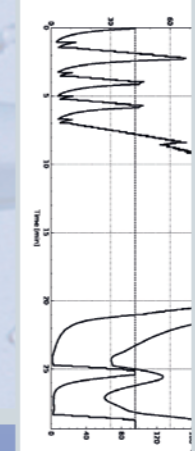
**Charge 0042**  
Evacuation (0)  
T(PT3.1)=96.3°C; p=96.1kPa  
Evacuation (1)  
T(PT3.1)=112.2°C; p=15.2kPa  
Preheating (3) 09:58:59  
T(PT3.1)=118.3°C; p=15.2kPa  
Heating 10:00:34 2020-03-19  
T(PT3.1)=109.6°C; p=12.2kPa  
Preparation  
T(PT3.1)=130.2°C; p=27.0kPa  
Start of Sterilization 10:01:19  
T(PT3.1)=134.4°C; p=31.1kPa  
End of Sterilization 10:11:25  
T(PT3.1)=135.4°C; p=31.1kPa  
Aeration 10:20:47 2020-03-19  
T(PT3.1)=72.3°C; p=57.4kPa  
End 10:21:27 2020-02-24  
Program Length = 00:29:08

**UNISTERI HP IL 5170661**  
System Version: 2.4.2  
Linux BMDIST Version: 2.0  
PO5 Bowie-Dick Test  
Ster: 134°C (PT3.1), 3.5min  
User1: SERVA1  
User2: Open User  
Parameters Modified by User  
Start 13:30:58 2020-03-19  
T(PT3.1)=111.2°C; p=99.8kPa

**Charge 00442**  
Evacuation (0)  
T(PT3.1)=111.1°C; p=100.3kPa; 13:31:06 2020-03-19  
Evacuation (1)  
T(PT3.1)=107.9°C; p=137.4kPa; 13:34:21 2020-03-19  
Preheating (3) 13:43:24 2020-03-19  
T(PT3.1)=62.2°C; p=20.3kPa  
Heating 13:44:57 2020-03-19  
T(PT3.1)=108.0°C; p=124.4kPa  
Preparation  
T(PT3.1)=129.8°C; p=270.4kPa  
Start of Sterilization 13:49:49 2020-03-19  
T(PT3.1)=134.4°C; p=314.3kPa  
End of Sterilization 13:53:19 2020-03-19  
T(PT3.1)=135.2°C; p=314.5kPa  
Aeration 14:01:02 2020-03-19  
T(PT3.1)=55.8°C; p=90.7kPa  
End 14:01:42 2020-03-19  
Program Length = 00:30:44

**Program Passed**  
User: SERVA1  
Signature:

**Program Passed**  
User: SERVA1  
Signature:





## Client service arrangement

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 support of users are fully arranged by a worldwide network of contractual organisations of the company BMT Medical Technology s.r.o. We have an extensive network of brand service work sites connected to HOT-LINE service providing fast response to clients' questions and requirements. So as to arrange user comfort and fast and high-quality service intervention we developed a special auto-diagnostic program. We offer ON-LINE internet diagnostics and monitoring of the sterilization device (RMS), providing fast and direct communication with the instrumentation and it arranges fluent and trouble-free operation of a work site. All these features guarantee low operation costs and long service life of the device.

## Validace

Validation is one of the conditions for arrangement of sterilization process quality. For this purpose, the steam sterilizer UNISTERI® HP IL is offered with the service "Validation", allowing proving of the sterilization processes competence according to the EN ISO 17665-1 standard; the technical measuring is performed by our own testing laboratory.

## Environmental awareness

The device meets all and any current environmental requirements. It represents no burden for the work and life environment. A powerful suction pump with built-in device for feeding water saving saves approximately 15% of operation costs. The unique construction of the steam generator with automatic desalting arranges permanently high quality of steam.

High quality materials guaranteeing long service life of the device are used for its manufacture. Optionally, the device can be equipped with an element for additional cooling of waste water,

allowing its drainage temperature setting. The device does not produce any harmful waste. Environment - friendly methods are used for its manufacture in the workshop. All the main parts of the device as well as the packages are recyclable. The device consists of 95% of steel, 4% of other materials, 1% electro material and plastics. Environment-friendly liquidation to be performed after dismantling by an authorised person in compliance with EU regulations, corresponding with WEEE directive (Waste Electric and Electronic Equipment).

# TECHNICAL PARAMETERS

## UNISTERI® HP IL

Chamber	Dimension (mm) (height x width x depth)		Number of sterilization modules	Chamber volume (l) Total	Weight (kg)	Cca max. input (kW) / fuses (A)		Consumption cca max. per ster. cycle				
	Internal of the chamber	External of the unit				ED	FD	Water [m³]	Demineralized water [m³]	Steam [kg]	El. energy ** [kWh]	El. energy * [kWh]
336 - 1	320 x 320 x 625	1500 x 600 x 805	1	73	260	8,5 / 16	1 / 16	0,06	0,003	2,7	3,0	0,2
336 - 2	320 x 320 x 625	1500 x 600 x 860	1	73	297	8,5 / 16	1 / 16	0,06	0,003	2,7	3,0	0,2
636 - 1	670 x 350 x 700	1720 x 690 x 965	2	160	520	17 / 25	2 / 16	0,07	0,005	5,0	5,0	0,3
636 - 2	670 x 350 x 700	1720 x 690 x 1020	2	160	635	17 / 25	2 / 16	0,07	0,005	5,0	5,0	0,3
559 - 1	509 x 509 x 990	1720 x 850 x 1255	***	254	690	24,5 / 40	2 / 16	0,08	0,008	8,0	8,0	0,4
559 - 2	509 x 509 x 990	1720 x 850 x 1310	***	254	710	24,5 / 40	2 / 16	0,08	0,008	8,0	8,0	0,4

Chamber xxx-1 single - door  
Chamber 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  
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

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

## UNISTERI® HP IL

... a touch is sufficient



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





For more information see  
our internet web site

[www.bmt.cz](http://www.bmt.cz)

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Small steam sterilizers 15-25 l



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Stainless steel instrumentation



Formaldehyde sterilizer 110 l



Hot-air sterilizer 400-3900 l



Washer Disinfectors



Cleaning and disinfection agents



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