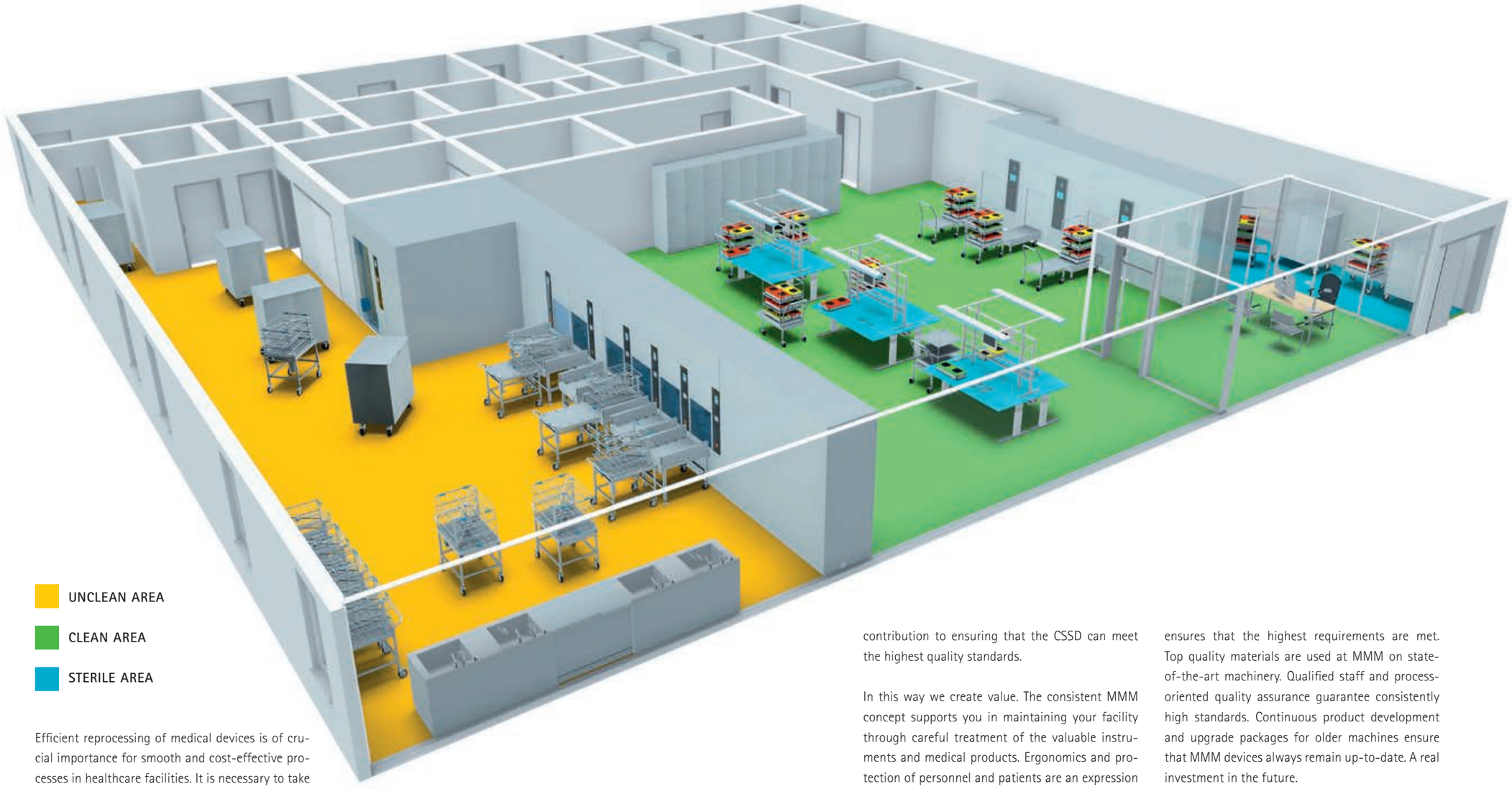
Selectomat® PL

Premium Line - Steam Sterilizer

The Intelligent Solution for the Reprocessing of Medical Devices

MMM. Protecting human health.



UNCLEAN AREA

CLEAN AREA

STERILE AREA

Efficient reprocessing of medical devices is of crucial importance for smooth and cost-effective processes in healthcare facilities. It is necessary to take into account requirements for hygiene as well as efficiency and quality.

Reliable processing of sterile goods, as a decisive factor for the economic success of operating facilities, must be understood as a complex comprehensive concept that is more than the sum of its individual processes.

MMM has been a successful partner for safe and cost-effective provisioning of sterile medical products for over 60 years. We are the experts when it comes to the planning, setup and technical management of all devices, processes and procedures in central sterilization facilities. We understand this task as a needs-based planning of the required device capacities, provisioning of all required machines, validation of all processes in the CSSD, a process documentation system that is coordinated with all machines as well as comprehensive customer service.

In personal consultations, we develop solutions in which every detail is the perfect response to the particular needs of our customers. We make our contribution to ensuring that the CSSD can meet the highest quality standards.

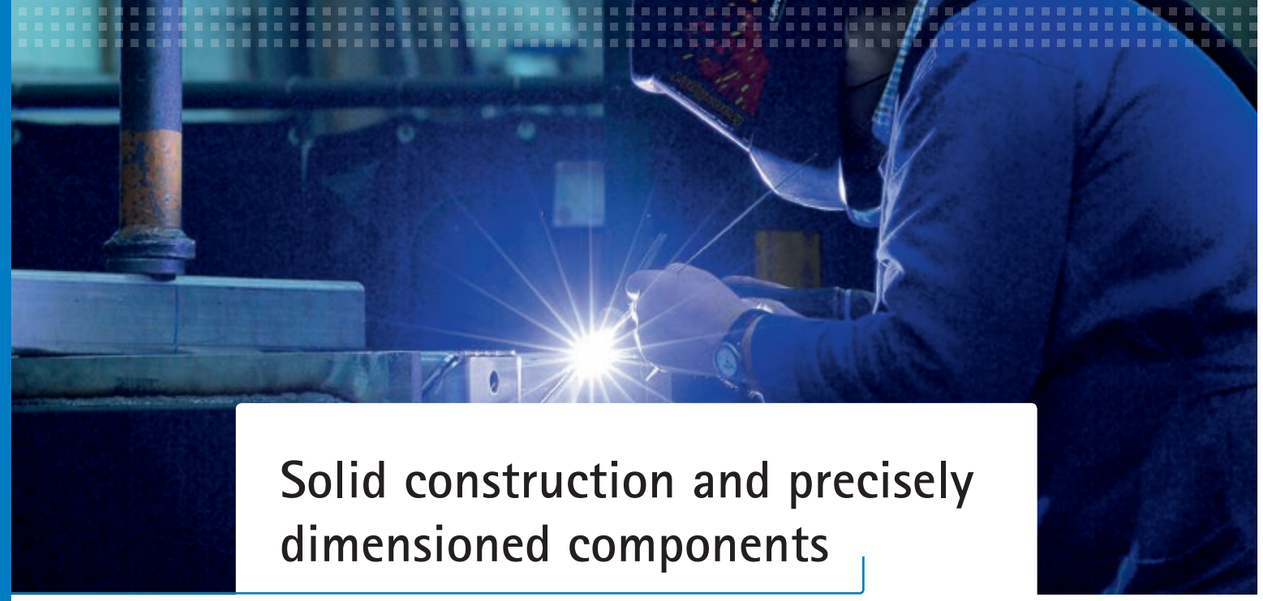
In this way we create value. The consistent MMM concept supports you in maintaining your facility through careful treatment of the valuable instruments and medical products. Ergonomics and protection of personnel and patients are an expression of respectful treatment of the people involved. An optimized workflow and aesthetically appealing machines make work more enjoyable.

Sustainable by design:
durable and resource-efficient.

MMM products are distinguished by their relevance throughout the complete product life cycle. The combination of industrial production and solid workmanship with a high vertical range of "Made in Germany" manufacturing, as well as sophisticated control systems, ensures that the highest requirements are met. Top quality materials are used at MMM on state-of-the-art machinery. Qualified staff and process-oriented quality assurance guarantee consistently high standards. Continuous product development and upgrade packages for older machines ensure that MMM devices always remain up-to-date. A real investment in the future.

Naturally, all MMM sterilizers of the **Selectomat® PL** series are manufactured in compliance with the national and European legal requirements necessary to bear the CE label (e.g. the directives 93/42/EEC, 97/23/EC, 2011/65/EC).

Due to the use of strict European and international technical standards (e.g. DIN EN 285), MMM sterilizers are able to meet the highest demands for quality.



Solid construction and precisely dimensioned components

Every healthcare facility and every central sterilization department is unique. This is why MMM sterilizers are individually adapted to the special requirements of our customers and offer maximum safety, reliability and convenience.

Solid workmanship, an elaborate selection of components and user-friendly features characterize the Selectomat® PL.

Designed for ease of assembly

All the functional benefits are evident once the sterilizer has been installed in the workflow at the place of operation. However, it is often the transport which presents the first hurdle. This is why we at MMM have also considered the transport, assembly and the workflow on-site. The frame of the MMM sterilizers can be transported in single parts through narrow corridors and gangways and assembled at the place of operation. With horizontal devices, for example, its compact design makes do with an installation width of just 1600 mm – without any additional lateral service access. Its construction which is easy to assemble and easy to service pays in the long run.

As the access to the equipment compartment is from the front, it is also easy to install within a row of machines. All model sizes are available with single or double doors. Large capacity sterilizers are designed to be loaded at ground level. Any uneven floors at the installation site can be compensated by the levelling stainless steel plinth.

Easy to assemble:

- **Split transport**
- **Levelling stainless steel plinth**
- **Smaller space requirement due to compact design**

Easy to service:

- **Front-side maintenance access**
- **Easily accessible units**

User-friendly:

- **Ergonomic entry and working height**
- **Single and double door models**

Customized sterilizing chamber

The central component of every steam sterilizer is the sterilizing chamber. The interior walls of the cubic pressure vessel from MMM are of a stainless steel design (1.4404 / AISI 316L) with peripheral ring channels as casing (1.4571 / AISI 316Ti). MMM designs its own pressure vessels and manufactures them in its own production plants.

The chamber surfaces are either ceramic blasted or ground, depending on the application purpose. They can also be polished if required. The pressure vessel is designed for a relative excess pressure of at least 3.2 bar.

The sloping chamber floor is a standard design element which facilitates the draining of the condensate. It allows optimal drying even in short cycle times.

MMM pressure vessels:

- **Chamber size as required**
- **Pressure vessel interior casing (1.4404 / AISI 316L)**
- **Pressure vessel exterior casing (1.4571 / AISI 316Ti)**
- **Minimum design pressure of at least 3.2 bar excess pressure**
- **Design and manufacture as per pressure equipment directive 97/23/EC**
- **Hygienic design**

Reliable sealing and pipe system

The safety devices of the door sealing system prevents both opening of the doors while programs are running as well as objects being caught during closing. In two-door devices, the loading side and unloading side cannot be opened simultaneously. A contamination of the sterile area is thus excluded.

Pipes, valves, connectors, seals etc. with direct contact to the sterilizer medium directly influence the outcome of the sterilization. For this reason, all lines and valves are made of high-quality stainless steel.

All pipes in MMM sterilizers are laid at a slope to allow them to drain. Wherever possible, the weld joints are executed as orbital welds.

Generally, all pipes are installed with a slope in MMM sterilizers to ensure self-draining. Wherever possible, all welded connections are done by orbital welding.

Perfect chamber insulation

The chamber and jacket are covered with an insulation housing reducing the heat emission into the room to a minimum. This housing simultaneously serves as assembly base for various components and cable guides.

The pipe insulation is colour-coded according to the pressure medium so that it is possible to see at a glance whether a cold or a hot medium is being used.

Perfectly dimensioned components

The powerful, quiet water ring vacuum pump with stainless steel plate heat exchanger and water circulation tank ensures fast and reliable air removal from the sterilizing chamber and effective drying on process end.

The vacuum pump is dimensioned to perfectly suit the chamber size. The size of the plate heat exchanger is also adapted to the overall machine's power output.

To keep noise emissions at the workplace in the central sterilization facility at a minimum, the vacuum pump can also be installed in an external location, e.g. in the engineering room. When connected to the building's cooling circuit, the vacuum pump is cooled in circulation mode. Fresh water is only added when necessary. This reduces fresh water consumption to nearly zero and lowers operating costs.

High-power vacuum pump

Chamber insulation and colour-coded pipe insulation

Chamber sizes and dimensions

The following chamber sizes are available as standard at MMM. Individual sizes can also be obtained to suit application specifications. All models ar available with one or two doors and with the chamber on the right or on the left side.

Type	1 door	2 door	Capacity in StU	Clear internal chamber dimensions in mm (H x W x D)	Volumes in l	External device dimensions in mm (H x W x D)
Type H						
666	•	•	4 StE	710 x 650 x 690	320	1918* x 1600 x 990**
669	•	•	6 StE	710 x 650 x 990	460	1918* x 1600 x 1290**
6612		•	8 StE	710 x 650 x 1340	622	1918* x 1600 x 1640
966		•	6 StE	1000 x 650 x 690	451	1918* x 1600 x 990
969	•	•	9 StE	1000 x 650 x 990	647	1918* x 1600 x 1290**
9612	•	•	12 StE	1000 x 650 x 1340	875	1918* x 1600 x 1640**
9618		•	18 StE	1000 x 650 x 1940	1267	1918* x 1600 x 2240
Type V						
636	•	•	2 StE	670 x 350 x 700	160	1918* x 1000 x 990**
666	•	•	4 StE	702 x 652 x 690	314	1918* x 1300 x 990**
669	•	•	6 StE	702 x 652 x 990	453	1918* x 1300 x 1290**
6612	•	•	8 StE	702 x 652 x 1340	610	1918* x 1300 x 1640**
Type G						
969		•	9 StE	1360 x 720 x 1090	1067	1918 x 1900 x 1390
9612		•	12 StE	1360 x 720 x 1390	1361	1918 x 1900 x 1690
9618		•	18 StE	1360 x 720 x 2140	2095	1918 x 1900 x 2440

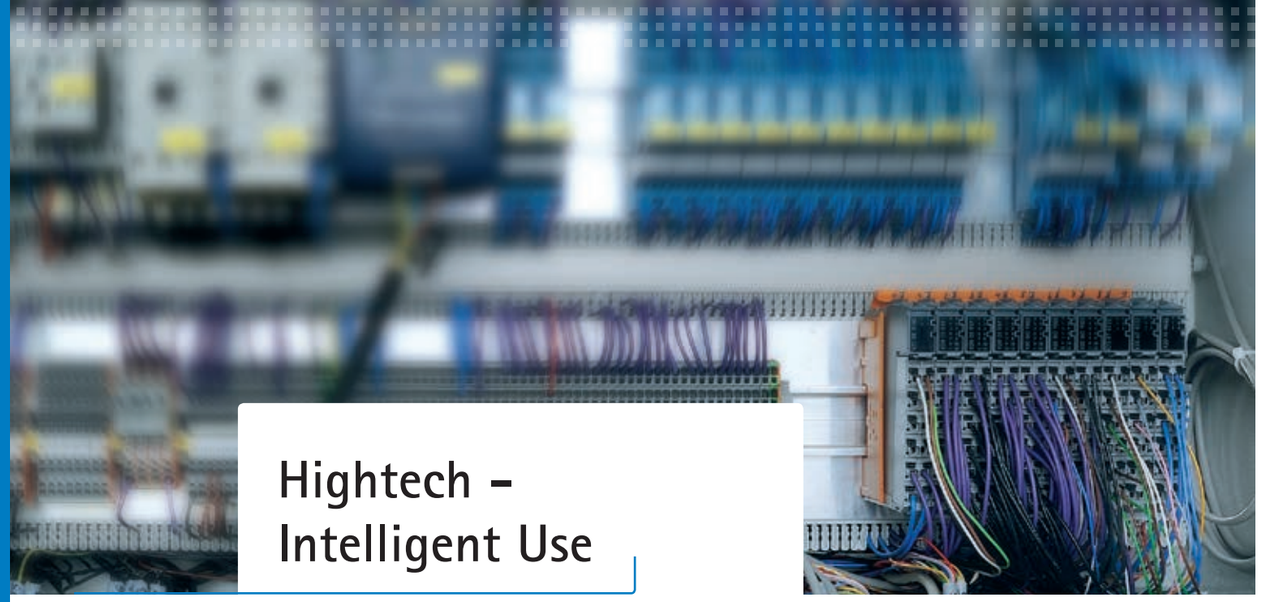
Technical specifications subject to change without notice.

* including 100 mm base
** with single-door devices, subtract 20 mm from depth

Type H: Loading height 625 / 390 mm

Type V: Loading height 850 mm

Type G: Accessible at floor level



Hightech – Intelligent Use

The controller continuously receives information from the sensor system on the actual state of the device (temperatures, pressures, etc.) and regulates the actuators such as valves, pumps and contactors according to the target values set during commissioning. Redundant sensors as well as the monitoring of important operational parameters provide for the highest possible process safety.

The Control System

The control system offers immense resources and enables extremely dynamic configurability, allowing all project-specific details to be taken into account individually. This control module demonstrates its flexibility not least through the options for printing the log. The options include a built-in printer integrated in the front of the sterilizer or a DIN A4 printer, either directly connected to the controller or connected over a network.

Precise process regulation:

- **Established industrial controller without mechanical moving parts**
- **Ethernet interface on the controller for optimal networking**
- **Redundant sensors for the highest process safety**
- **PPV system: Process Parameter Validation**

The Software – a clever solution

The MMM software is validated in accordance with DIN EN 62304 "Software Lifecycle Processes" and thus fulfils the highest standards. The sophisticated parameter structure enables a high degree of flexibility in the configuration of the machine. Up to 50 programs can be configured at the same time. If the unit is not used for a long period of time, an energy-saving idle mode is activated.

Individual device configuration

- **Continuous monitoring of all measured values**
- **Precise regulation of the actuators**
- **Barcode reading system with automatic program selection**
- **User IDs and user management**
- **Automatic early start for optimal time management**

The MMM Smart HMI – clear and appealing

The human-machine interface is only one component of the MMM concept for making the work of the operating personnel easier. The visualisation of the navigation through the colour touch display, which is hygienically integrated in the glass panel on the front of the device, appears in friendly colours and unambiguous symbols and text. All process-relevant information, such as device status, process step, values and graphs, is available at a glance on the display. The remaining time of the program is displayed in numbers that can be viewed from a distance, allowing the workflow to be optimized without waiting times.

Ease of operation:

- **Intuitive menu guide on a colour touch display**
- **10-inch display**
- **Large remaining time display**
- **Easy operation**
- **Easy to clean**

Large remaining time display
for an optimal workflow

On the safe side with safe procedures

The majority of items for sterilization in healthcare are able to be sterilized using a saturated steam process. For this, all programs required for the daily clinical routines are factory preset and validated on-site. The fractionated vacuum process before the actual sterilization phase ensures reliable air removal.

With the optional air detector, leaks in the system can be easily monitored through measurement of the temperature at a defined measuring point during the sterilization cycle. The air detector can also optionally monitor the temperature during the sterilization phase and, should it fall below the specified sterilization temperature, trigger the program to abort either immediately or after a delay time.

A total of 50 programs can be set. Within the scope of ensuring sterility, the sterilization temperature, pressure and vacuum are optimally adapted for the material properties of the product being treated.

The following programs are standardly preset:

- **Universal 134°C**
  Sterilization program for packaged laundry and instruments; fractionated vacuum process with drying. Sterilization temperature 134°C.
- **Universal SD 134°C**
  Sterilization program for instruments, especially for super heavy trays and assemblies; fractionated vacuum process with intensive drying. Sterilization temperature 134°C.
- **Plastics 121°C**
  Sterilization program for packaged products with lower heat resistance; fractionated vacuum process with drying. Sterilization temperature 121°C.
- **B & D test 134°C**
  Bowie & Dick test, test program for steam penetration test with test packet, packaged; fractionated vacuum process with drying. Sterilization temperature 134°C.
- **Vacuum test**
  Program for automatically testing the air-tightness of the chamber.
- **Passing through**
  Program for returning empty loading or transport carts from the unloading side to the loading side through the device chamber.
- **Preheating**
  Program for preheating the sterilizer.

The following programs are optionally available:

- **Prion prevention 134°C**
  Sterilization program for medical devices used in interventions on high-infectivity tissues. Please see national guidelines on the treatment of prion-contaminated medical instruments for minimising the risk of CJD / vCJD transmission. Sterilization temperature 134 °C, Sterilization time 18 Minutes.
- **Alloplast 134°C**
  Sterilization program for alloplastics such as mammary and testicular prostheses made from silicone gel, at 134 °C followed by drying without a vacuum. Sterilization temperature 134 °C.

Clear process documentation

To record the successful sterilization, the batch data is initially saved locally in the sterilizer. If available, the process data is then forwarded to a process documentation system such as MMM EcoSoft. The process documentation contains all the relevant information required for standard documentation: program name, batch number, sterilizer temperature, pressure, start and end of the process etc. Pressure and temperature are also displayed as a graph in colours. For long-term archiving, the batch data can be transferred to an external server using an on-site network. Nothing will be lost in the process. In the event of a power failure, files are automatically transferred as soon as the network is up and running again.

Nothing will be lost:

- **Process log with plain text and colour graph display**
- **Batch logs can be printed using a built-in printer or a DIN A4 colour printer**
- **Zero voltage-resistant data storage in the control system**
- **At least 10,000 batches can be locally stored on an insertable CompactFlash memory card**
- **Optional: Network storage for back-up data archives**

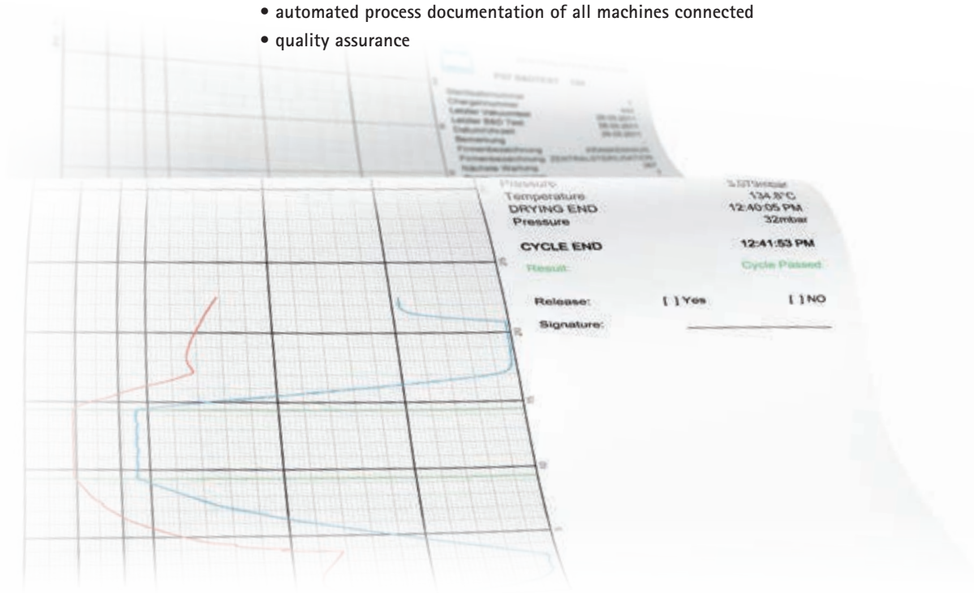
We have included a suitable software package for processing your batch data:
With **SimServ**, the batch data is stored on an external computer as a file and is available for a variety of operations on the **Chargenviewer.**

Available anytime

- **Long-term archiving of batch data as files**
- **Can be reprinted at any time**
- **Can be subsequently viewed and evaluated**
- **Can be exported to Excel**
- **Can optionally be saved in PDF format**

EcoSoft – needs-based process documentation and tracking and tracing of sterile goods

- **documentation of the whole sterile processing cycle through the CSSD**
- **set assembly and set management**
- **automated process documentation of all machines connected**
- **quality assurance**



CSSD Management

To a great extent, it is the cycle time of your reprocessing machines that determine the total operating performance of your department. The Intelligent Service Advisor (ISA) helps you to utilize your CSSD equipment and your available time more efficiently.

ISA – Intelligent Service Advisor

ISA is an optional software program for MMM reprocessing machines in CSSDs, which facilitates the communication between man and machinery. ISA sends text messages or e-mails with important information about the machine status to single or multiple defined recipients, for instance, operator, the CSSD management, the facility manager or MMM customer service. This information provides greater liberty and flexibility to manage the workflow, making work in CSSD more efficient and smooth.

Optimized workflow management

No more waiting for program end. While the machine is working, the user can fully concentrate on his or her other tasks. No matter where he or she is, a text message or e-mail informs when the cycle is over and the machine can be unloaded.

Advanced planning of service intervention

Unscheduled service interventions are cumbersome. Thanks to the integrated maintenance counter, the control system signals the next regular maintenance in good time. An automatic e-mail to the CSSD management or MMM customer service allows you to accurately plan this activity and in doing so, reduce inconvenient down time of the machines.

Autostart and Night-time shut-off

The control system also has a standby function which activates an energy-saving standby mode for lengthier standstills of the device.

The sterilizer is completely powered down at the end of the workday, i.e. even the jacket heating is automatically shut off after the last sterilization program has completed. This feature, in combination with automatic discharge, makes waiting for a program to finish no longer necessary.

Each day can likewise be individually programmed with an automatic autostart. The program will then start the vacuum test and the preheating program at the specified time so that the device is ready for operation at the beginning of a shift. Together with the MMM SteamSpy, the electronic Bowie & Dick test, which makes inclusion of a test packet unnecessary, even the mandatory B&D test can be integrated into the morning preparation routine. For the operator, this translates into a time savings of two hours per day.

SteamSpy: Integrated, automatic B&D test

The optional MMM SteamSpy is a program-controlled electronic Bowie & Dick test integrated in the sterilizer, which immediately outputs the test result to the batch documentation. At the same time, it also functions as a running batch monitoring system which cannot be forgotton to be inserted and documented. The real highlight of the MMM SteamSpy lies in its simplicity of handling.

Safe and simple

No more laborious handling, no more puzzling over the test result. The Bowie-Dick test runs fully automatically by simply pressing the start button. You can even integrate the test run in the automated cycle start.

Increased safety in daily routine: When used for batch control, MMM SteamSpy delivers a clear and unambiguous result which is a perfect aid in deciding the outcome of each batch. The operator no longer needs to interpret the colour change of the chemical indicator. And the rugged test piece (process challenge device) also withstands the sometimes ungentle treatment in everyday life.

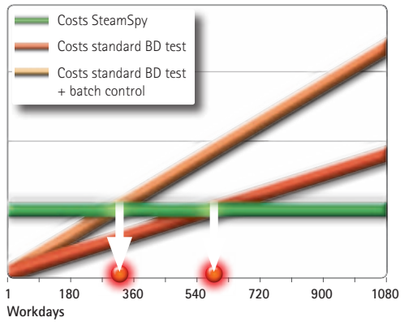
Economical and reliable

- **No manual handling**
- **Automatic documentation**
- **Can be integrated in the automated early start (vacuum test, preheating, B&D test)**
- **No chemicals, no paper waste**
- **A conventional B&D test is unnecessary**
- **The result is immediately available after program completion**
- **Higher productivity**
- **Greater process safety**

Certified

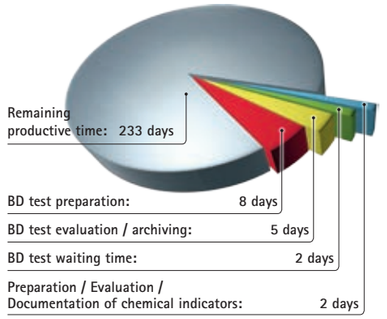
MMM SteamSpy meets all requirements of ISO 11140-4 and is approved as alternative Bowie-Dick test system.

Expenditure of costs



Depending on its use, the Bowie-Dick test and the batch control par for its original investment after about one year.

Expenditure of time



A full 17 work days on average per year are used in a CSSD to carry out the daily Bowie-Dick test and regular batch control.

Resource management

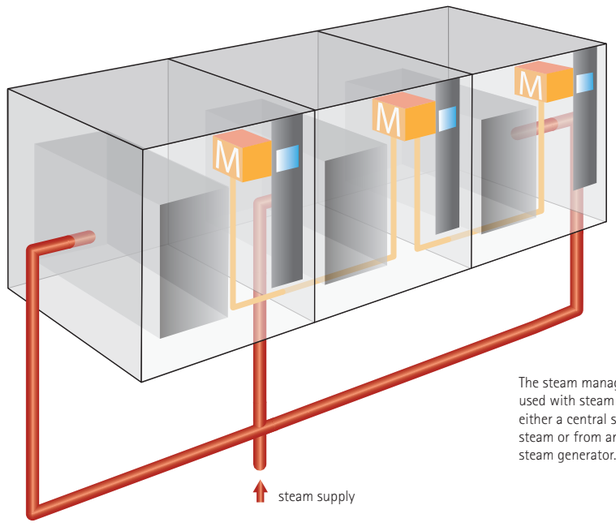
The MMM sustainability concept conserves the environment even in everyday business operations. Only water is used as a sterilizing medium for steam sterilization. To conserve the precious resource of water, MMM devices can be equipped with energy and media recovery systems. MMM is a DIN EN ISO 14001 certified organization. We have implemented the Environmental Management system to improve both our products and our operative processes in terms of environmental friendliness.

Water Conservation System

When connected to the building's cooling circuit, the vacuum pump is cooled in water-saving circulation mode. Fresh water is only added when necessary. The optional energy recovery system enables a reduction in cold water consumption by as much as 95%.

Steam Manager

The optional MMM Steam Manager controls the program running cycles of multiple sterilizers so that steam is uniformly extracted from the supply network to prevent peaks in steam consumption. This enables down-sizing of the steam supply system, thereby reducing investment and media costs.



The steam manager can be used with steam supply from either a central source of steam or from an individual steam generator.

Clean steam generation for your sterilizer

If your facility does not dispose of a clean steam supply, Selectomat® PL can as well be run with a steam generator of MMM. No matter what the situation on site is like, the steam generator can be integrated into the sterilizer or mounted on top or next to it or even installed in some distance. The generator is easily switched on and off from the sterilizer's operating panel.

MMM steam generators stand out due to their long service life and the high quality of the clean steam they provide. For that purpose, the boiler feed water is thermally degassed to keep the amount of non-condensable gas contained in the sterilization steam as low as possible. This process is continually controlled and monitored by temperature probes.

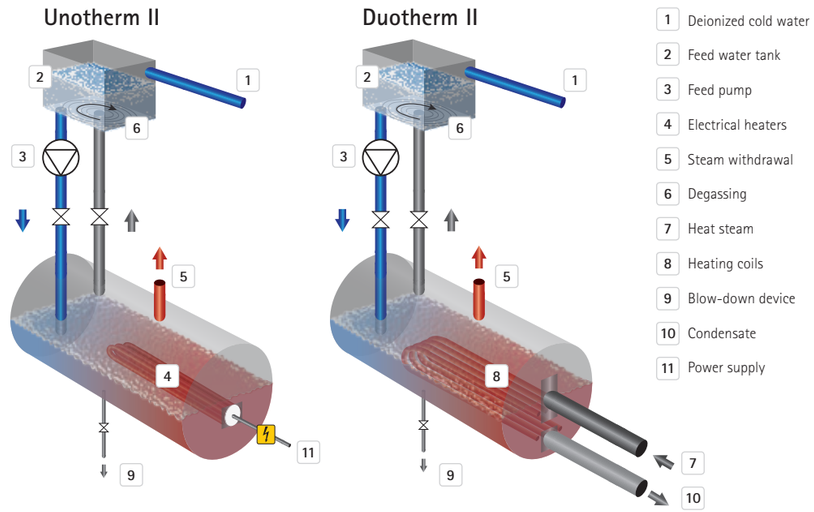
The same applies to the boiler water quality which is kept on a constantly high level through automatic blow-down. Optionally, the blowing-down interval is controlled by the conductivity value measured in the water. Thus, any impairments caused by deposits or corrosion are avoided in the first place, the life-time of the boiler components is prolonged and the instruments are protected during sterilization.

Electrical steam generator Unotherm II

Unotherm II is a low-noise electrical steam generator that requires little energy and supplies a high output. It was particularly developed to suit the demand of facilities without central steam supply. It might as well be used for the economic steam generation as emergency supply or during the weekend. The boiler output can be individually adapted to the demand of the sterilizer connected.

Steam-to-steam generator Duotherm II

Duotherm II offers an extremely economic possibility of transforming heating steam into clean steam if the facility disposes of a central heating steam supply. This high-performance steam-to-steam generator ensures a fast reaching of the required steam pressure, generates perfect sterilization steam and thanks to the long life-time of the single components its costs of maintenance are low. Even if the pressure of the supplied heating steam is 4 bars only, Duotherm II is a suitable steam transformer providing excellent sterilization steam.



Add-ons for greater safety and convenience

MMM transport system : A comprehensive concept

The problem-free transport of the sterile products is handled by a specifically calibrated logistical system from MMM.

The transport trolley is equipped with the appropriate safety devices to convey the loading cart safely into the sterilizing chamber, or onto the feeding ramp, respectively.

The universal loading cart enables optimal space utilisation of the sterilizing chamber with excellent loading and drying characteristics.

For the transport of sterile products outside of the CSSD, MMM offers the Euro Clean Car (ECC) system as a hygienically flawless solution. In combination with the MMM transport systems such as loading cart and transport trolley, the ECC enables an especially ergonomic handling of the product.

Loading cart

Transport trolley

Closed transport trolley (ECC)

Automatic Loading and Unloading

The automatic loading and unloading system enables working in the CSSD with even greater flexibility. The next batch is placed on the loading ramp and scanned fully independently of the sterilizer's program sequences. As soon as the sterilizer is ready for the next cycle, the batch is automatically conveyed into the chamber and the correct program matching the barcode is started.

Making work easier:

- **Optimized workflow**
- **No waiting times dependent on machine readiness for loading and unloading**
- **Faster cooling of the load**
- **No touching of hot loading carts**

The ramps can also be combined with automatic sliding windows or passing-through hatches for return of the loading carts from the sterile to the non-sterile side.

Barcode management

The barcode reader enables the scanning and recording of barcodes on sterile products. The intelligent barcode management system automatically detects when barcodes are unintentionally scanned twice. The scanned barcodes are shown on the machine display and a sterilization program suitable for the scanned item is automatically preselected by the machine.

The barcodes for the next batch can be scanned while a cycle is still running. Scanned barcodes are printed out on the batch log and read out by a documentation system.

Optimized workflow:

- **Scanning of the product being loaded**
- **Interface to the sterilizer (program preselection)**
- **Interface to the documentation system (batch log)**

MMM customer service: Faster and more efficient than anyone else.

Our knowledgeable service organisation is available to you around the clock, ensuring long-lasting, trouble-free operation of the installed systems. Thanks to our branches and representative offices optimally distributed throughout Europe, we are always nearby and can very quickly be on site in an emergency.

The sophisticated and innovative design of our systems and devices makes it possible in many cases to quickly rectify functional impairments with a remote diagnosis by qualified personnel. On the basis of professional maintenance planning, we guarantee you the highest degree of availability of your systems.

It is our goal, however, to ensure that no problems occur. We do not hand over the systems to you until everything is running flawlessly, all programs have been validated and accepted in accordance with your individual items to be cleaned, and the operating personnel have been trained in the use of our systems.

In addition to performing maintenance and repair, we also make sure that the installed systems are up-to-date. With tailored solutions for adaptation to changed situations, for optimisation of consumable materials and for continuous adjustment to individual needs and legal requirements, the service life and cost-effectiveness of the systems are increased and the investment is secured.

Maintenance planning
Inspection and maintenance
Repair
24-hour hotline
Spare parts logistics – 24-hour service
Upgrade service
Process validation

MMM complete service for
- All in-house products
- WDs of various manufacturers
- Gas plasma sterilizers (service partner of ASP in Germany, Austria and Switzerland)

Europe's market leader in process validation.

MMM is your partner when you need to prove that your systems and processes are always consistent with the required specifications.
We offer a variety of packages for validation and preparatory measures such as calibration, adjustment and optimisation of the processes as well as the devices. Process validation by MMM is always according to the current guidelines of DGKH, DGSV and AKI as well as in accordance with DIN EN ISO 15883 Part 1 and 2 if required. It's not for nothing that we are Europe's market leader, with more than 1000 process validations. More than 40 validation technicians with corresponding premium measurement equipment are available to you daily just in Germany.

Validation from a single source
- Cleaning and disinfection processes
- Steam sterilisation processes
- Steam-formaldehyde sterilisation processes
- Gas plasma sterilisation processes
- Hot-sealing processes

MMM Group

MMM has been operating worldwide as one of the leading system providers in the service of health since 1954. With a complete range of products and services relating to all aspects of cleaning, disinfection and sterilization systems for the areas of **Healthcare** and **Life Science**, MMM has positioned itself as a crucial quality and innovation driver in the German and international market. Our products are individually adapted to the requirements of our customers all over the world. The high vertical range of manufacturing in our production plants ensures that we fulfil the strictest demands of quality in the medical technology sector. More than 1100 employees apply their expertise and dedication to the mission of the MMM Group: **Protecting human health.**

Health
made in Germany

MMM Münchener
Medizin Mechanik GmbH
Semmelweisstraße 6
82152 Planegg / Munich, Germany
Phone: +49 89 89918-0
Fax: +49 89 89918-118
www.mmmgroup.com

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CE 0036

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